THE CONFLICT SHORELINE

Eyal Weizman | Fazal Sheikh

ERASURE

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COLONIZATION AS CLIMATE CHANGE IN THE NEGEV DESERT

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Steidl

In association with Cabinet Books, Brooklyn

Between 2010 and 2015, Fazal Sheikh traveled through Israel/Palestine conducting the field research that culminated in *The Erasure Trilogy* (Steidl, 2015). In the winter of 2013, Sheikh initiated a discussion with Eyal Weizman about the aerial images of the Negev which make up the *Desert Bloom* volume, part of the trilogy. In 2014, the two traveled together to the Negev, visiting some of the sites on the ground and meeting some of those who inhabited, or had been expelled from, the areas captured in the images. Weizman's essay, "The Conflict Shoreline," is a response to Sheikh's images and the result of his subsequent investigations. It was submitted as evidence to the "Truth Commission on the Responsibility of Israeli Society for the Events of 1948–1960 in the South," an initiative of the NGO Zochrot.

Settlements and Land Use in the Negev/Naqab

Revised and updated version of *Map of Unrecognized Arab Bedouin Villages in the Negev* (2006), published by the Regional Council for the Unrecognized Arab Bedouin Villages in the Negev

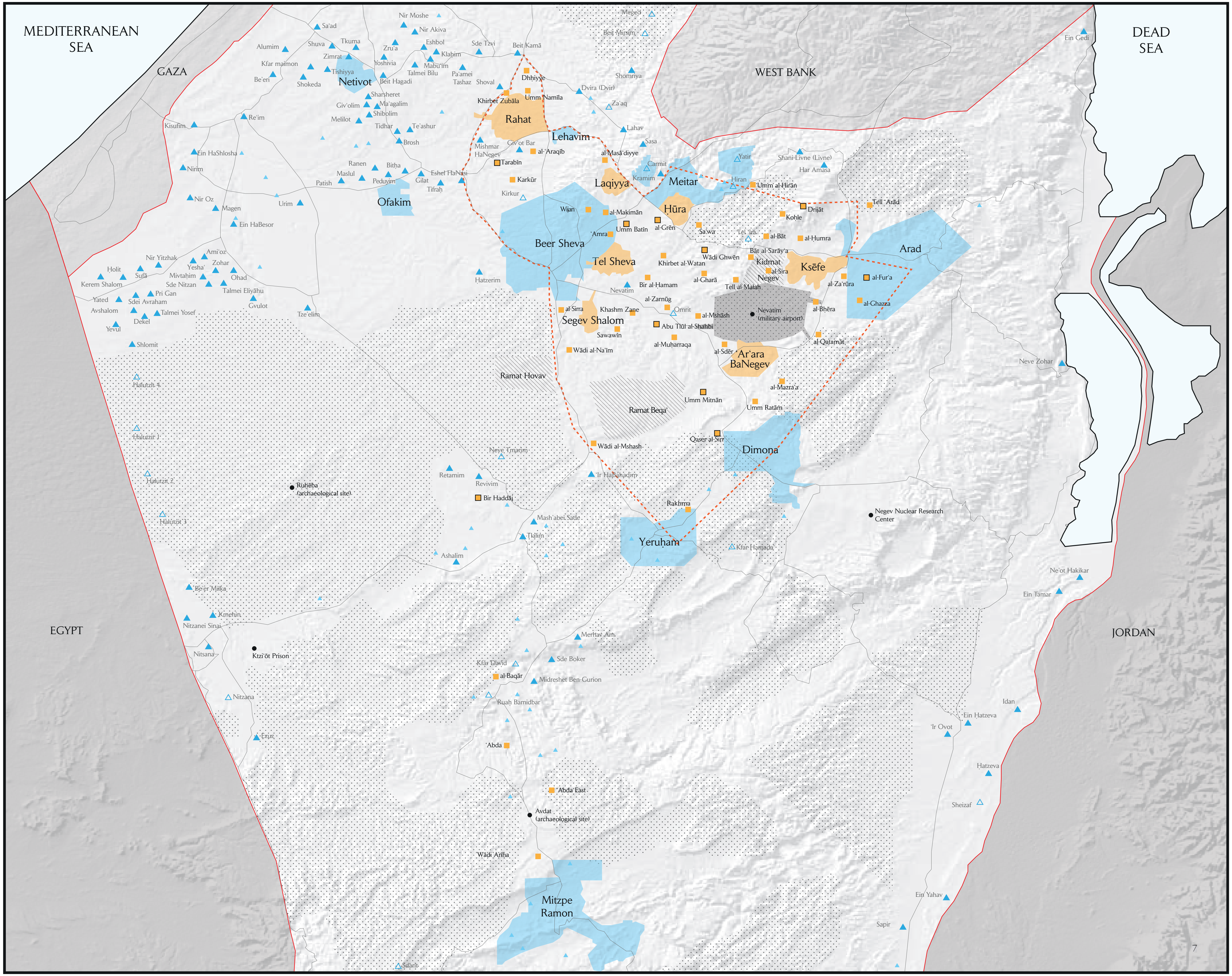
Map design by Francesco Sebregondi/Forensic Architecture

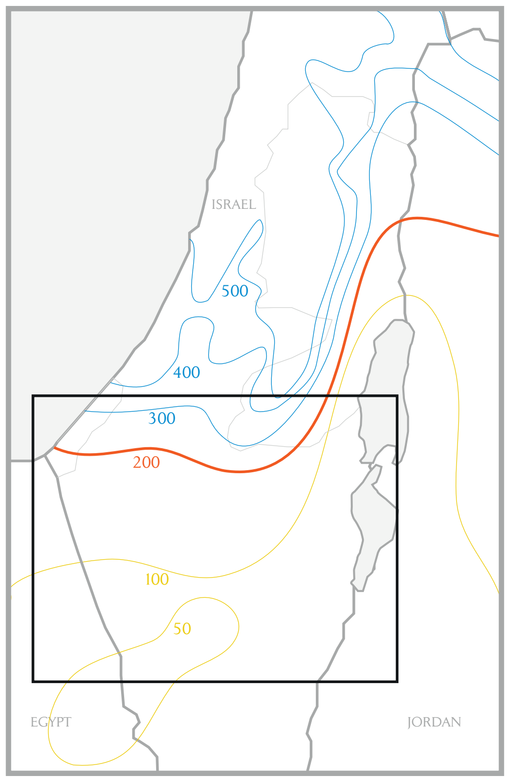
N

0 10m 20m 50 km

Legend

- Unrecognized Bedouin village
- Recently recognized Bedouin village
- Jurisdiction area of Bedouin concentration townships
- Border of the Siyāj (1951–1966)
- Rural Jewish community
- Planned rural Jewish community
- Individual Jewish family ranch
- Jurisdiction area of Jewish towns/cities
- Industrial Zone
- Closed military firing zone
- Main road
- Internationally recognized border
- Notable site





Average annual precipitation (in mm) in Israel, the Occupied Territories, and western Jordan, Israel Meteorological Service, 2014

THE AL-TŪRI CEMETERY IN AL-ʿARAQĪB, 200 MM RPA (RAINFALL PER ANNUM)
Fazal Sheikh, October 9, 2011

The al-Tūri village in al-ʿAraqīb was first destroyed in July 2010. Those remaining on site moved their homes into the fenced-up area of their ancestral cemetery dating back to 1914. Outside the cemetery fence there are several protest tents, distinct for their blue cloth, marking the area of the destroyed village and the area claimed by the al-Tūris. On the left is one of the branches of the al-ʿAraqīb Stream (Naḥal Faḥar in Hebrew). Behind the cemetery is a small tributary dammed by the al-Tūris to create a number of small fields, seen here freshly plowed. Like all fields in the Negev they were harvested in September, a few weeks before the photograph was taken. The earthworks around the cemetery were undertaken by the Jewish National Fund (JNF) in preparation for the extension of the Ambassador Forest. Planting is usually carried out before the rainy season begins in October/November. Since the image was taken the structures within the cemetery compound, including the fence around it, have been removed.

The Conflict Shoreline

THE CONFLICT SHORELINE

COLONIZATION AS CLIMATE CHANGE IN THE NEGEV DESERT

Eyal Weizman

Early in the morning of June 12, 2014, immediately after procuring a demolition order from the Beersheba District Court, several hundred Israeli policemen, accompanied by trucks and bulldozers, entered the fenced-up al-Tūri cemetery in the nearby village of al-ʿAraqīb and started smashing up the homes and livestock pens built beside the graves. The few Bedouin families who had believed the cemetery would offer them a refuge after their homes had been demolished time and again retreated further into an improvised mosque they had built there but were dragged out of that, too, and the structure brought down. The families still refused to leave and remained without a shelter over their heads. Sheikh Sayāh al-Tūri, the leader of the resistance to these forceful evictions, had promised that: "We will either live on this land with dignity or be buried in it with dignity."[1]

This was the sixty-fifth time[2] that a Bedouin settlement in the area of al-ʿAraqīb—several dozen square kilometers along a forked seasonal stream of the same name, a few minutes' drive north of Beersheba—had been demolished, and most likely it will not be the last. Demolitions in al-ʿAraqīb began in 2002, 4 years after Bedouin families started returning to settle in the places from which they had been forcefully evicted 50 years earlier. The demolitions proceeded hand in hand with, and in spite of, legal petitions filed by the inhabitants in the desperate hope that the Israeli courts would help protect their lands, or at the very least provide a temporary respite. Nūri al-ʿUqbi, for almost 40 years a prominent Bedouin land rights activist, had led a public campaign and a fierce legal battle from a protest tent he had erected in a different part of al-ʿAraqīb, a few kilometers west of the cemetery. His tent was destroyed dozens of times until in 2009 the police evicted him and forbade his presence near the area.

The demolitions in al-ʿAraqīb, just like those of other illegalized Bedouin settlements, form the most recent chapter in what the Israeli media now calls "the battle over the Negev": a systematic state campaign meant to uproot the Bedouins from the fertile northern threshold of the desert, concentrate them in purpose-built towns located mostly in the desert's more arid parts, and hand over their arable lands for Jewish settlement, fields, and forests. With this recent cycle of escalation, the Negev has become one of the most contested frontiers in Palestine. But unlike the other physical borders created by and fought over during the Israel–Palestine conflict, this one is not demarcated by fences and walls but rather by a seam between two climatic conditions: the subtropical Mediterranean climate zone and the arid desert belt. It is a climatic threshold that stretches continuously for more than 7,500 kilometers, from along the northern edge of the Sahara over the great Arabian Desert to the Gobi. The history of the village of al-ʿAraqīb has unfolded in relation to its location on this vast and shifting environmental threshold and shares something of the fate of other locations along this line.

The threshold of the desert is an elusive demarcation. Botanists define it by looking at changes in plant type, geologists by studying soil formations, and geographers by studying the density and form of human inhabitation. However, the desert line is most commonly defined in meteorological terms by the distribution of rainfall and dry air masses. As elusive as this threshold is, maps demand clear demarcations. To set climatic areas apart, meteorologists draw what one termed "isohyets"—lines that connect all points with the same average amount of annual rainfall (see inset map, p. 6).

In the climate conditions of the Middle East and North Africa, it is the 200 mm annual isohyet that has marked,

since 1918, the threshold of deserts. This is because 200 mm per annum is the minimum amount of water necessary to cultivate cereal crops without artificial irrigation on a flat surface.[3] On most meteorological maps it is across the 200 mm isohyet—the so-called aridity line—that a narrowing gradient of greens flips over to a widening spectrum of yellows.[4] The threshold of the desert is thus not only a natural condition but is defined as an interplay between meteorological data (rainfall/temperature), patterns of human use (modern agricultural practices), and plant species (the cereal types used in intensive farming).

On the ground there is, of course, no clear borderline to be seen but a gradient of slowly changing conditions. The Bedouin have developed ways to use much smaller quantities of rainwater to cultivate their crops well beyond the aridity line. Whereas the north–south borders of the triangular Negev Desert with Egypt and Jordan are marked by fixed, straight international boundaries,[5] the northern border is defined by the aridity line, which over centuries has shifted continuously.[6] On the one hand, the remains of Nabataean and Byzantine towns are found some 50 kilometers south of the aridity line; on the other, since the late nineteenth century, cartographers such as the German–American Gottlieb Schumacher and the British colonial administrator Herbert Kitchener drew the threshold of the desert north of where it is marked today at a place roughly along where the 300 mm isohyet is now drawn.[7]

Since 1931, when Zionists instituted precise meteorological measurements, the location of the aridity line has been a product of monitoring, calculation, averaging, and adjustment. Like a shoreline, it ebbs in drought years and washes past its cartographic delineation in rainy ones. The line drawn on the official maps in the *Atlas of Israel* and constituting the border of the Negev is the average between all the years available on record, with fluctuations being in the range of fifteen to eighteen kilometers on either side.[8]

When a shifting and elusive meteorological borderline is drafted as a fixed cartographic line, it affects the political processes conducted along it. The threshold of the desert has long been an important political and juridical marker. Before the establishment of Israel in 1948, it was designated by Zionists as a "dead area" to be "revived." The colonization of the Negev was not only concerned with territorial expansion, but also with transforming the climate. The agrarian imaginary of Zionism saw the settlement of the Negev as a part of a "natural force" able to "make the desert bloom." The introduction of artificial irrigation, new seed types, intensive farming technologies, fertilizers, pesticides, and large-scale afforestation forced the desert gradually to retreat. This displacement of the desert also involved the enforced displacement of its Bedouin inhabitants. Decades after the State of Israel was established, a juridical mechanism based on the meteorological threshold of aridity was developed to justify these expropriations. Since the threshold of the desert marked a border beyond which permanent agricultural cultivation and settlement was deemed impossible, Israeli jurists argued that the area was not cultivated in practice and therefore no Bedouin property rights could be respected there. The threshold of aridity thereafter marked the border of a zone of expropriation within which the Bedouins were put completely at the mercy of the state and tolerated only as a matter of charity. It was an act of cartographic and territorial violence.

Let us now follow the cartographic/meteorological threshold of the desert as it cuts across Israel/Palestine and beyond (see inset map, p. 6). On the west coast of Palestine, the aridity line makes its landfall on the southern shores of the Gaza Strip, a little north of Khān Yūnis. This is an area of sand dunes inhabited by the poor fishing community of the al-Mawāsi Bedouins. It was on the ruins of their homes that the largest Israeli settlement bloc of Katif was established in the early 1970s. When Israel evacuated the settlements in 2005, their buildings were destroyed along with many Palestinian homes around them.[9] So it is both ominous and fitting that the aridity line enters Palestine over a pile of ruins. Moving along the meteorological threshold, we pass through several of the neighborhoods and refugee camps of Gaza until we cross the mighty siege lines that incarcerate the Strip (we are traveling with the weather, don't forget). Now within Israeli territory, the aridity line moves through agrarian settlements and development towns, across the miles of fields along the northern edge of the desert. It then crosses over the al-ʿAraqīb stream, the old cemetery, and the ruined homes of the al-Tūri family. It is here and in the surrounding hills that "the battle for the Negev" is being waged.

After this, the line climbs the gently corrugated slopes of the Hebron Hills made of interspersed soft and hard limestone. Traveling with it, we again cross a system of fences, this time those that make up the infamous West Bank Wall. On the other side of the Wall it is the military and "independent" settler groups, rather than the police and members of the Israeli Green Patrol, who carry out the destruction of homes, the blocking of wells, and the displacing of Bedouin communities; and all with no pretense to the due legal processes required within Israel. The aridity line then takes us east of Hebron and the militant-religious-nationalist Jewish settlement of Kiryat Arba, whose inhabitants put the Palestinian families living at the center of the city under permanent siege.[10] North of the city the hills rise like broken teeth, made up of sharp hard cliffs and canyons

MAʿALE ADUMIM AND THE BEDOUIN SETTLEMENT OF THE JAHĀLĪN TRIBE, ≈200 MM RPA

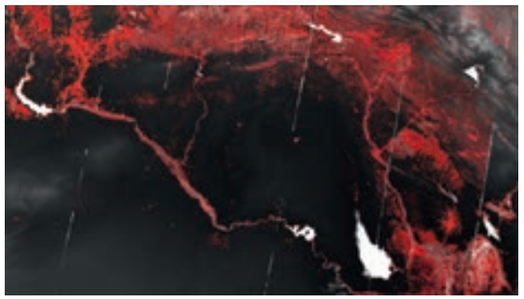
Fazal Sheikh, July 16, 2011

This settlement is located at the threshold of the "Judaea Desert" on the main road leading to Jericho and the Dead Sea. It was built on an area settled by the Jahālīn Bedouins, who still inhabit its southern edges. There are frequent attempts, undertaken by settlers and the military, to evict the Bedouins from this area.

that drain rapidly into the Dead Sea. Keeping to a more or less constant altitude of about 300 meters above sea level, we pass by several settlements including Nokdīm, home to the hardline foreign minister Avigdor Lieberman, and east of Jerusalem to Maʿale Adumim, one of the biggest settlements in the West Bank, built on the lands of the Jahālīn Bedouins, who still struggle to hold on to the outskirts of this green garden suburb. Several years ago, the settlement authorities attempted to displace the Jahālīn by releasing raw sewage from the settlement onto the slopes where they had constructed their homes.[11]

Following the aridity line we then descend several hundred meters downhill and start moving along the western slopes of the Jordan Valley at an altitude close to the universal +0.00 Sea Level. Many of the 8,000 Bedouins in this area are refugees displaced from the Negev during and after the 1948 war. Most of the area is designated as "nature reserves," "closed military zones," or "agricultural fields" belonging to the 37 Jewish settlements of the Jordan Valley. The military, trying to keep "sterile" the area bordering Jordan, holds the Bedouins away by shooting at herders and herds.[12] It is now planning a new town in which the Jordan Valley Bedouins will be concentrated.[13] Several dozen kilometers north of the Dead Sea it is almost a relief to see the tail of this environmental monster slide past the border fences into Jordan and disappear behind the western slopes of Jabal ʿAmmān.

This is not the last of the aridity line, of course. Along the threshold regions of the great deserts of North Africa and the Middle East, colonial and then national authorities have employed artificial irrigation to cultivate the lands at the desert's meteorological edge and have acted to bring the Bedouins under control by displacing and concentrating them.[14] But in recent decades a formidable counter



CHANGES IN CULTIVATION ALONG THE
TIGRIS AND EUPHRATES RIVERS 1987–2013
Territorial Agency, 2014

This satellite image registers transformation in vegetation cover along the Mesopotamia river system in eastern Turkey (top left), Syria (left), central Iraq (right), and the Baghdad metropolitan region (bottom right), now all zones of conflict. Areas represented in gray scale record no change in vegetation cover and are primarily desert land. Bright red records increases in agricultural activity in the northeast since 2013 due to damming and irrigation projects across the Turkish border, and gradual decreases since 1987 of agricultural activity in Syria and Iraq (dark red and claret), due to less water made available and a series of droughts that led to the abandonment of fields and the expansion of the desert. (Territorial Agency)

force has arrived to push the desert in the opposite direction. Temperature and evaporation rates are on the rise. Desertification, the consequence of human-induced climate change, has started to reclaim lost ground. Millions of square kilometers of steppe and agricultural land are falling fallow as the desert expands. Agricultural fields are dry, impoverishing hundreds of millions of people worldwide. Droughts have led to increased competition over shrinking resources and aggravated the consequences of civil strife.[15] The land degradation brought about by conflict further aggravated desertification.

Beyond the boundaries of Jordan, the line moves north and east, crossing into Syria at the border city of Daraa, where, in 2011, farmers' protests, borne out of an extended cycle of droughts, marked the beginning of the Syrian civil war. The line then passes through the battlefields of the ongoing war, on to the eastern outskirts of Damascus, then Homs, along the threshold of the Great Syrian Desert. Irrigation projects along the desert edge have provided the open channels, dams, and pipes that are now distinct as the sites of conflict. From here the line arcs east, towards al-Raqqa, currently the capital of the Islamic State, and into the volatile zones of northern Iraq.[16] It then crosses Iran and moves into the frontier provinces of Afghanistan and Pakistan, where some of the fiercest fighting in the ongoing insurgency has taken place in areas along the desert threshold.[17] War and insurgency have occurred across the entire African continent all along the northern and southern threshold of the Sahara desert.

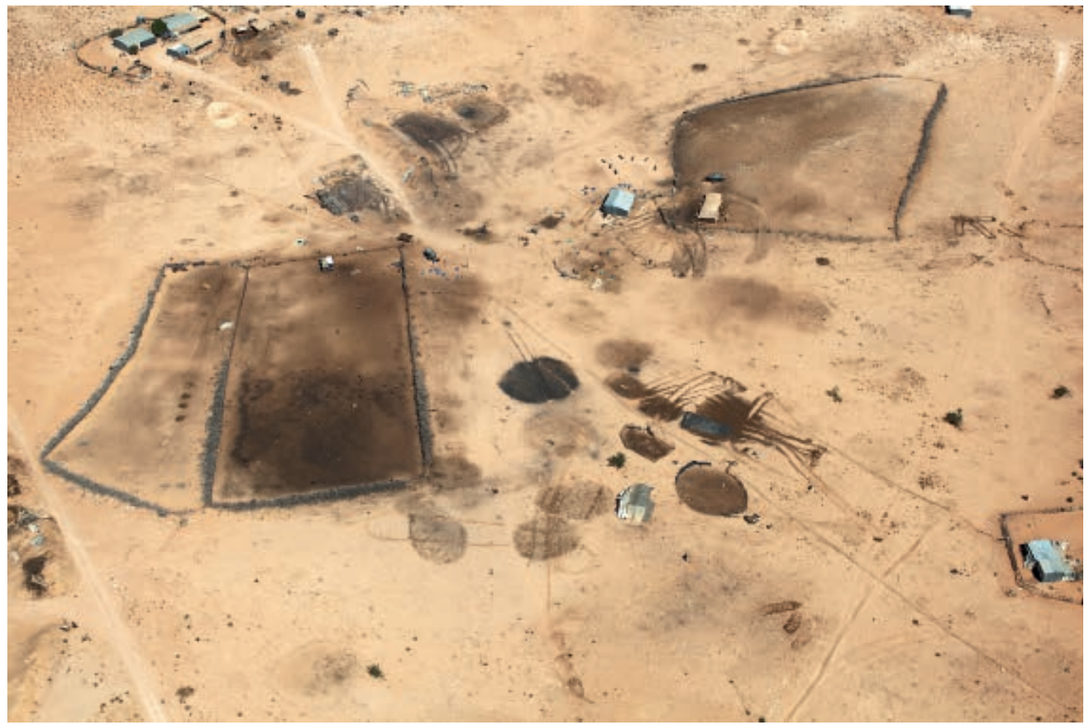
Plotting the location of western drone strikes on meteorological maps demonstrates another astounding coincidence: many of these attacks–from South Waziristan through northern Yemen, Somalia, Mali, Iraq, Gaza, and Libya–are directly on or close to the 200 mm aridity line.[18] Al-ʿAraqīb is located on the same shoreline of the desert as these places; when the desert line ebbs or flows it does so along its entire length.

To follow this line on its journey east and west is not to claim that conflicts along it have been directly determined by climatic factors,[19] but rather to point to an ongoing historical process by which political developments have violently interacted with changing climatic conditions along this seam. Existing tensions have been aggravated by climate-related shifts in the aridity line, and, in turn, continued conflict in these areas has caused the destruction of vegetation and agriculture, accelerating the processes of desertification.

Fernand Braudel, the great French historian of the mid-twentieth-century Annales School, proposed to extend the frame of history to include the environment, topography, climate, and wind over centuries, a historical perspective he called the *longue durée*. In his book on the Mediterranean he pays considerable attention to life on the thresholds of the desert. But 60 years ago, Braudel thought of nature as a slowly shifting cycle. The history of "man in his relationship to the environment," he wrote, was so slow that it was "almost timeless."[20] But the climate can no longer be considered as a constant. It is changing at the same speed as human history, racing alongside it, interacting with it in an ever-aggravating feedback loop of cause and effect, and with consequences that have spiraled out of control.[21] The current acceleration of climate change is not only an unintentional consequence of industrialization. The climate has always been a project for colonial powers, which have continuously acted to engineer it.

THE EARTH PHOTOGRAPH

My work on this essay began about a year ago, when Fazal Sheikh showed me the *Desert Bloom* series of aerial images of the Negev that he had taken in the fall of 2011. This was a period in which the threshold of the desert was undergoing rapid transformations: Bedouin settlements were being forcefully evicted, forests were being planted, and the line of afforestation was being expanded. While it is on the surface of the earth that this entanglement of conflicts, land use, and climate change was being registered,



UNRECOGNIZED BEDOUIN SETTLEMENT OF THE ABU ASA FAMILY NEAR THE
RECOGNIZED BEDOUIN TOWN OF BĪR HADDĀJ, AL-ʿAZĀZME TRIBE, ≈100 MM RPA
Fazal Sheikh, October 9, 2011

The darker circular stains indicate the earlier presence of livestock pens (*sire*). The stains are the result of the body fluids (urine and excrement) from the sheep or goats kept there. These pens are reconstructed on a yearly basis. Before such pens are reused they are often disinfected by fire, which accounts for an even darker surface. The circular stain at the top of the image, closer to the homes, shows traces of attempts to put out a fire that got out of control. The larger enclosures are for horses or camels. The stains remain in the earth for several years. The gradient of their saturation is an indication of how many rainy seasons have washed away at the stains, indicating age in years. The multiple, but not perfectly overlapping, circles indicate that the place might have been evacuated and reconstructed several times.

it was from the aerial perspective that it became most clearly visible.

I know the area well. Driving south past the clutter of the peripheral ring of logistical infrastructural and industrial zones surrounding Israel's metropolitan center, the vista slowly opens up into a hilly landscape of fields and forests. Paradoxically, most of the year, the threshold of the desert seems greener than the center of the country, but further south, the green slowly thins out. Sheikh's aerial photographs show this landscape in its arid state with the yellow of dry plants shading away into the brown and orange spectrum of the mineral geology of the desert, here and there augmented by the toxins of polluting industries. The photographs were taken in October and November. This is the best period for aerial photography in the entire Middle East and is favored by aerial archaeologists. It is the very beginning of the rainy period, which lasts four to five months. The first storms wash the dust from the air. Shortly after the rain, a space of enhanced optics is opened up, with skies of dazzling sunsets and starry nights. Later in winter the air becomes too humid and produces haze effects that interfere with vision and distort the form and dimension of objects captured on film. Those days of early autumn are just after the harvest, when the cereal crops have been closely shaven off the skin of the earth, and before the land has been plowed and seeded. Without vegetative cover

RUḤĒIBA/REHOVOT, <100 MM RPA

Fazal Sheikh, November 13, 2011

Ruḥēiba/Rehovot was the second largest Nabataean city (c. 500 BC to 100 AD) along the ancient spice route. In the fifth century, during the Byzantine era, the city's population numbered over 10,000 inhabitants. It is now located on dunes close to the border with Egypt and encircled by military live-fire training zones, operative during weekdays. In the bottom left of the image is a water pool connected to a deep well and a Byzantine-era church lies to the right, just outside the image frame. Visible also is the main access route (from the left) and the reconstructed central square, as well as portions of the outer perimeter wall of the city. From the ground these remains are the only ones that could be easily identified; the rest of the city appears as subtle topographical wrinkles partially covered by sand.

the surface of the earth appears continuous and almost translucent, revealing features on and under it that would otherwise be obscured by the light cover of plants.

The Negev Desert is the largest and busiest training area for the Israeli Air Force and has one of the most cluttered airspaces in the world. The airspace is partitioned into a complex stratigraphy of layers, air-boxes, and corridors dedicated to different military platforms: from bomber jets through helicopters to drones. This complex volume is an integral part of the architecture of the Negev.

It is from the lowest layer in this stratigraphy that Fazal Sheikh took his photographs. The small two-seater single-engine Cessna, cruising at 2,000 feet, had one door removed, so that, fastened to the seat, Sheikh could lean out to take oblique photographs. The photographic sorties took place on weekends when military training flights cease, and mostly early in the mornings when long shadows can reveal subtle undulations in the topographical surface, and buried or small artifacts—variations that are visible only when images are patiently studied.

For those willing and able to read photographs closely, the surface of the desert at this time can reveal not only what is present, but also the subtle traces of what has been erased: traces of ruined homes, small agricultural installations to fields that are no longer, watering holes, and the stains of long removed livestock pens. In these images the surface of the earth appears as if it was itself a photograph, exposed to direct and indirect contact, physical use, and

WALLED FARM, PROBABLY BYZANTINE (FIFTH CENTURY AD), NORTH OF AVDAT, <100 MM RPA

Fazal Sheikh, October 9, 2011

This ancient walled farm is made of agricultural terraces within the bed of a seasonal stream. Ancient agriculture in the Negev and the Bedouin agriculture that evolved from it are based on the principle of "runoff irrigation." Small terraces act as dams that channel and collect floodwater into irrigation basins. The water sinks deep into the soil and is stored there, rising to the surface over a long period. In an area with less than 100 mm rpa of rain such irrigation systems could collect up to 400 mm rpa and support cereal cultivation. The small mounds of earth on the slope at top right center are ancient grape mounds, referred to in Arabic as *tuleilat al-ʿ ēnab.* The structure at the lower right would have been used for dwelling and storage.

climatic conditions in a similar way in which a film is exposed to the sun's rays. Sheikh's aerial images must thus be studied as photographs of photographs.[22]

Beyond the threshold of the desert, climate and photography interact in other ways, too. There is an inverse relation between humidity and visibility: the further south one flies, the drier the air and the thinner and more conducive to vision it becomes.[23] It is for this reason that the only star observatory in Israel is located in the arid part of the Negev. Its telescopes traverse the same medium of desert air to that of aerial and satellite photographers, but in the opposite direction: *campo/contra-campo.*

I looked for other aerial photographs of the threshold of the desert from different periods before and after the establishment of the State of Israel. A military frontier, the threshold of the Negev has been overflown by several generations of aviators since the advent of aerial photography almost exactly a hundred years ago. Crucial for the history of the Negev, and to the story of Bedouin land claim trials, are two sets of aerial photographs. The first was captured during the summer of 1918, at the end of WWI; the second in the winter of 1945, towards the end of WWII. Not only do these sequences document different periods in the Negev's history, they were taken in different seasons and thus capture the threshold of the desert in each of its alternate states, either arid or in bloom.

Taken together, these photographs present us with a palimpsest in which evidence of earlier patterns of

BYZANTINE WALLED FARM, PARTIALLY RECONSTRUCTED AS PART OF A DESERT RESEARCH STATION, SOUTH OF AVDAT, <100 MM RPA

Fazal Sheikh, October 9, 2011

This walled farm, which originated in Byzantine times, is part of an area fenced in and run by the Jacob Blaustein Institute for Desert Research of Ben-Gurion University of the Negev in Sde Boker. The circles and squares, a few meters in diameter, are isolated areas for focused analysis and are surrounded by a low fence. The site is a few hundred meters upstream from the Avdat Farm, an experimental farm reconstructed in the 1950s from ancient ruins and repurposed by a team of botanists and archaeologists led by Michael Evenari.

habitation and agricultural use have been overlaid by successive settlements, military zones, and areas of cultivation. The interpretation of images such as these helps the Bedouins argue their claims.

THE MYSTERY OF THE DESERT CITIES

The Negev is governed by violent shifts in climate. From late October or early November meteorological depressions heavy with moisture start rolling eastwards from the Mediterranean. Rain falls on the coastal plains and northern mountains. But south of Gaza the coastline makes a sharp turn, changing orientation from the north–south axis to an east–west one. The westerly wind arrives at the Negev not from over the sea, pregnant with rain, but dry from over the hot North African coastal area. Rainfall in the Negev decreases at a staggering annual 4 millimeters for every kilometer south of this line.

With only slight changes in wind direction, rain clouds could blow southwards and reach the desert. When they collide with hot air rising up from the surface they break into sudden storms. The dry crusty earth cannot absorb such quantities of water falling at once and floods begin to rush down thousands of gullies that are dry for the rest of the year. This is a dangerous time. The Bedouins know how to gauge their distance from the rushing streams, but travelers and adventurers have throughout the generations been taken by flash floods, their bodies found kilometers downstream. The Bedouins, like the ancient farmers of the Negev, have learnt to make dams and

THE NEGEV: THE CHALLENGE OF A DESERT

Michael Evenari, Leslie Shanan, and Naphtali Tadmor (Cambridge, Mass.: Harvard University Press, 1971), pp. 210–11

channels to control the runoff from the hillsides and to collect it to irrigate their fields within or close to the beds of seasonal streams.

Because of the density of diverse climatic zones in Israel/Palestine, abrupt fluctuations in the aridity line such as cycles of drought or plentiful years of rain have a severe impact on the human environment, and since antiquity have been understood in theological terms. Divine retribution was exercised by turning fertile lands to desert ("the cities of the Negev shall be shut up…")[24] or, conversely, biblical prophesies promised that, given good conduct and some prayer, the desert would flourish (turning "the desert into pools of water, and the parched ground into springs").[25] This was the backdrop against which early Zionists saw the settlement of the Negev in the context of a meteorological–theological imaginary of "making the desert bloom."

Nothing validated Zionism's self-perception as a climatic force more than the presence of archaeological ruins of large abandoned cities in the arid part of the Negev–Ḥalutza, Mamshīt, Avdat, Ruḥēiba/Rehovot, and Shivta. These cities were built by the Nabataeans around the second century BC, fell to the Romans, and were subsequently expanded by the Byzantines who turned them into self-sufficient agricultural settlements. All these cities and villages were abandoned during the early Arab period, between the seventh and tenth centuries. In the valleys around them there are thousands of ancient terraces, flour mills, cisterns, and wine and olive presses, as well as a strange feature made of piles of rocks known in Arabic as *tuleilat al-ʿēnab* (grapevine mounds). These agricultural installations have posed a scientific mystery during the past two centuries given the area's aridity.

There is scientific debate, somewhat ideologically colored, over the reasons for the abandonment of these cities. There are two main schools of thought: one long-held explanation suggests that the desertion of the Negev was the consequence of climate change—a northward shift in the aridity line. This theory was recently supported by geologists and paleo-climate historians who found organic substances–remnants of grasses, scrubs, and trees–in rock formations in the arid parts of the Negev and carbon-dated them to several millennia back. There were not only tidal fluctuations of the aridity line, they concluded, but importantly a consistent northwards crawl over the past two millennia: climate change, they concluded, is what affected life patterns in the Negev.[26]

Another school of thought favored a political/historical scenario. Starting in the mid-1950s, Israeli scientists, led by the botanist Michael Evenari, established several experimental desert farms in the Negev and tried to cultivate them using the agricultural technologies available to the ancients. They repaired or reconstructed the ancient terraces and dams that channeled floodwater into special irrigation basins. Using this method, they managed to collect some 400 millimeters from about 100 millimeters of available annual rainwater.[27] With the first crops of wheat the scientists could argue that the climate in the region must not have necessarily been wetter in antiquity. The ancient agrarian settlements, they proposed, were the result

Pages 18–19:

EXPERIMENTAL RUNOFF FARM NEXT TO SDE BOKER, <100 MM RPA

Fazal Sheikh, October 9, 2011

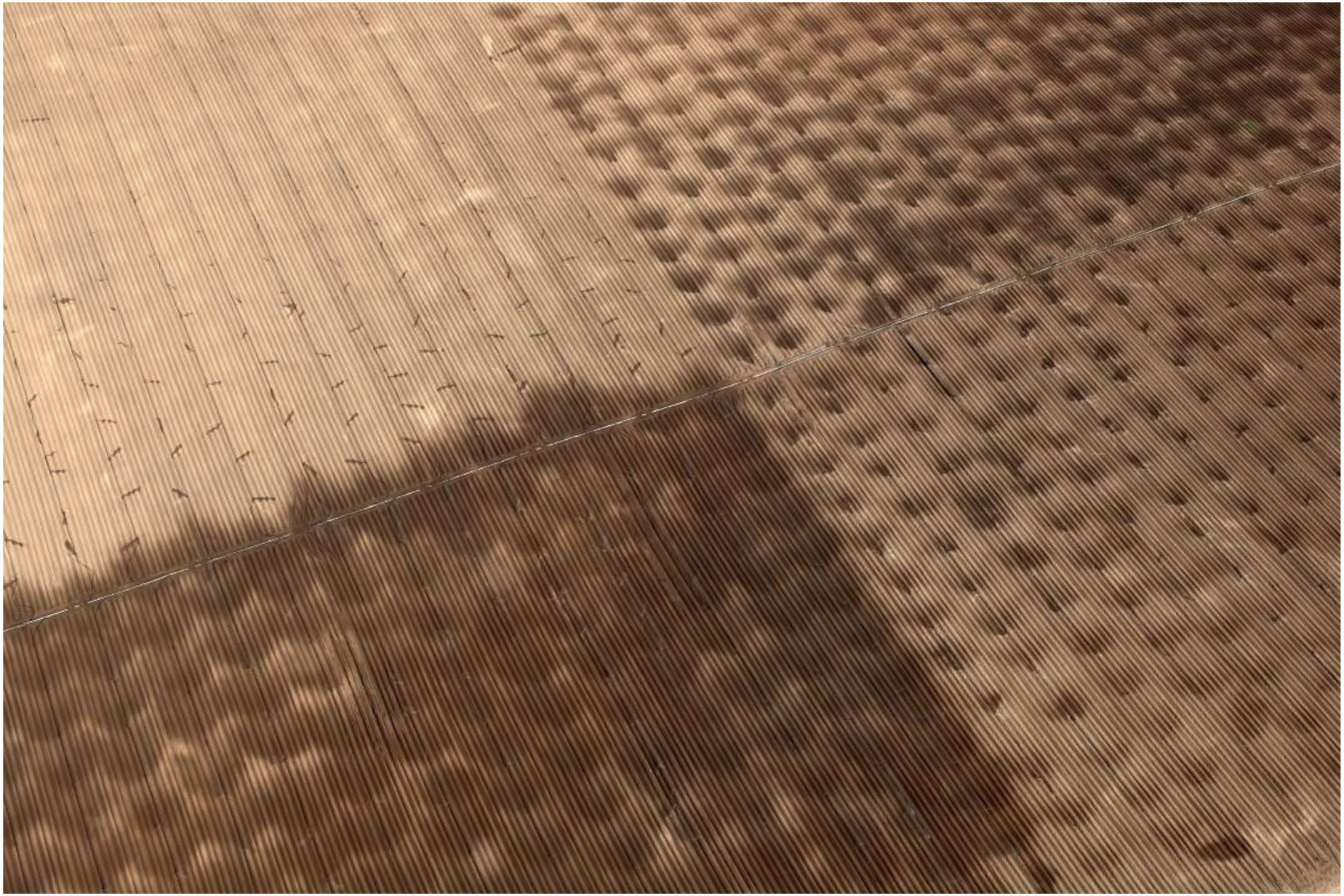
This experimental runoff farm, sponsored by the Ministry of Agriculture, was created around the year 2000. A Bedouin homestead in the vicinity of the farm was demolished, ostensibly because it was within the area of the agricultural farm. Leading into the basins on the lower right is an irrigation channel. The farm is still in use although at the time the photograph was taken it appears quite desolate.

Pages 20–21:

SOWN AND IRRIGATED WHEAT FIELDS OF MOSHAV YOSHIVIA, >200 MM RPA

Fazal Sheikh, October 10, 2011

The fields are watered by a drip irrigation system called Netafim, developed in 1965 at Kibbutz Ḥatzerim, near Beersheba. It has since been exported to 150 countries, mainly in arid parts of the world. The fields lie between three moshav-type villages built after 1948: Yoshivia, established in 1950 for immigrants from Algeria; Zruʿa, established in 1953 for immigrants from Morocco; and Talmei Bilu, also established in 1953, for immigrants from Kurdistan. They are built on lands previously part of the villages of al-Muḥarraqa, al-Gatātwe, and al-ʿUrūr, cultivated by the Tiyāha tribe, which was expelled in the winter of 1948–49. The area is currently contested by Bedouin communities seeking to regain ownership.



TREES PLANTED BY THE JEWISH NATIONAL FUND ON SAND DUNES, SOUTH OF BEERSHEBA, >100 MM RPA

Fazal Sheikh, November 14, 2011

These trees were planted between 1950 and 1952 when the JNF resumed planting forests following the 1948 war. The area, between Wādi al-Na'īm and Wādi al-Mshash, was part of the territory of the al-'Azāzme tribe. These years were particularly plentiful with rain allowing the otherwise difficult task of planting eucalyptus and tamarisk in arid areas. The afforestation was meant to create windbreaks and stabilize the dunes.

of concentrated hard work, and were subsidized by the Byzantines in order to fortify the frontier. This explanation sat well with Zionist ideology, which employed similar territorial strategies. Because the abandonment of the Negev cities took place after the Arab conquest, the scientists proposed, it must have happened due to Arab neglect. They quoted the English orientalist traveller Edward Henry Palmer who, while crossing the Negev in 1869, said of the Bedouins: "he brings with him ruin, violence and neglect. To call him a 'son of the desert' is a misnomer, half the desert owes its existence to him, and many fertile plains from which he has driven its useful and industrious inhabitants become, in his hand, like the 'South Country', a parched and barren wilderness."[28] That the Arabs were not "the sons of the desert but rather its fathers"[29] was an idea often repeated by Zionists, who thought themselves historically justifiable in displacing the Negev's bad Samaritans.

This scenario does not tally, however, with more recent archaeological evidence, which suggests that soon after the Arab conquest in 640 AD, during the early Umayyad period and up until the mid-eighth century, the cities of the Negev were expanded and proliferated and improved techniques of irrigation were installed.[30] The Israeli scientists engaged in the desert farms experiments could have also avoided much of their trouble had they looked carefully at Bedouin cultivation, which was similar to that of the ancients. After the establishment of the State of Israel, most of the Bedouin tribes were forcefully displaced, and large parts of the Negev were emptied. But when Evenari's scientists complained that the labor force assigned to them was composed of "new immigrates from Morocco, Tunis, India or Pakistan [who…] proved rather difficult to manage" and did not allow them to complete their job, it was a neighboring Bedouin tribe, spared the fate of transfer experienced

THE PALEOCLIMATE OF THE NEGEV RECONSTRUCTED FROM CROSS SECTIONS OF SPELEOTHEMS

Anton Vaks, 2008

These are cross-sections of mineral deposits (speleothems) formed in caves in different locations in the Negev. On the left is a stalactite from the northern Negev, in the center is a flowstone from the central Negev, and on the right is a stalagmite from the border to the southern Negev. The rings on the speleothems are a geological record of rainfall over the last 500,000 years. By dating the different colored rings (the unit is ka, or per 1,000 years) it is possible to tell at which points in history the Negev has been wetter. Because the sequence of speleothems is narrower in the south, we know this indicates less rain. Testing the carbon samples dating to the numerous wetter periods (thicker rings), Dr. Vaks, a research fellow at Oxford, found that vegetation species during that time were Mediterranean and calculated that the border between the Mediterranean climate and the semi-desert (the aridity line) has periodically been 20–25 kilometers further south of where it is today.

by so many others, which sent "21 men and camels" to skillfully plow the fields on behalf of the Israeli scientists.[31] Rather than neglecting the Negev, the Bedouins were the only people to have maintained their ancient knowledge of the land and further developed the existing infrastructure of ancient runoff farming, using (and often repairing existing) terraces, dams, canals, wells, and cisterns.

RAINMAKERS

When, in the late 1930s, David Ben-Gurion set the task of Zionism to "make the desert bloom" he meant to establish a line of agricultural settlements that would push against the line of the desert. Israeli environmental historian Alon Tal described the process by which Zionist settlement efforts shifted southwards: "In 1939 British land restrictions had essentially shut down the expansion of Jewish settlement in the north of Israel. Although land transfers and agricultural settlement were permissible in the south, British 'flexibility' appeared disingenuous, because there was no water there."[32]

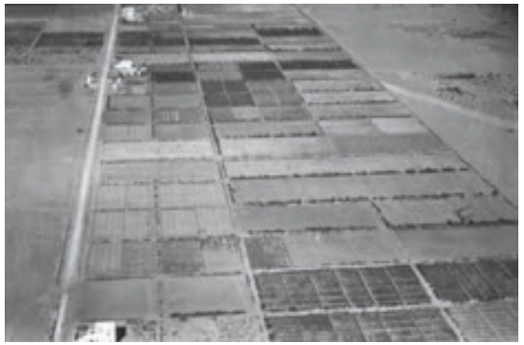
It was finally with a combination of new seed types and synthetic fertilizers and pesticides that the Zionists opened the thresholds of the deserts to agricultural exploitation. The paramount challenge involved the trafficking of water. It was the ability of the national water company (Mekorot) to undertake large-scale water engineering projects that enabled the establishment–during a single day in 1946–of eleven settlement points in the northern Negev. When the aquifers close to the Negev could not provide enough water to irrigate the fields, water was channeled from the coastal plains. The Yarkon–Negev water link was constructed in the 1950s with recycled fire-fighter pipes imported from London, where they had been used during the Blitz.[33] The pumping stations and pipelines were built underground for "security reasons" and in order to avoid water theft. A decade and a half after the establishment of the state, the National Water Carrier, one of the largest of its kind, started channeling an annual quantity of 100 million cubic meters of water from the Jordan valley basin to the Negev settlements.[34] The Bedouins had cultivated mainly along the streams and tributaries, but now it was the entire land surface, including the shallow hills, that was put to agricultural use. The transformation of the desert's edge had an ecological footprint that reached far beyond the region, and has contributed, since the 1960s, to a drop of about one meter a year in the level of the Dead Sea. The further south the cultivation line was pushed, the lower the lowest point on earth has become.

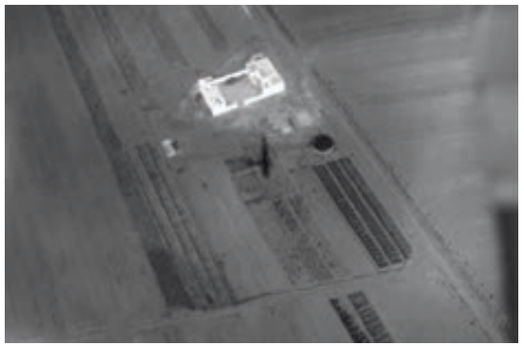
Zionists were not alone in seeking to make the desert green. The French, Spanish, and Italians who colonized North Africa used artesian wells and artificial irrigation to push the line of cultivation beyond the threshold of the desert which runs closely parallel to the southern Mediterranean coastline. This similarly displaced Bedouins and other semi-nomadic people, pushing them deeper into the desert. But of all the colonial projects in northern Africa, it was the Italians, who colonized Libya from 1910

IRRIGATION PIPES LEADING TO KIBBUTZ MISHMAR HANEGEV, 1946

Photograph of an image in an exhibition cabinet in the kibbutz

Kibbutz Mishmar HaNegev was established in October 1946 with ten other agrarian settlements as part of an operation called "11 points in the Negev." The kibbutz has now been completely privatized with its land and property divided between its individual members.





Top:
AERIAL VIEW OF THE OLIVETTI PROJECT BY THE ITALIAN ARCHITECT FLORESTANO DI FAUSTO, BUILT TO THE WEST OF TRIPOLI FROM 1935 TO 1938

Photographer and date unknown

Bottom:
AERIAL VIEW OF THE COLONIAL FARMHOUSES AT THE NORTHERN THRESHOLD OF THE SAHARA, LIBYA, 1939

Photographer unknown

These images form part of a series of photographs that mark the arrival of 20,000 Italian settlers, produced by the "photo lab at Bengasi aerodrome." (Courtesy Pier Giorgio Massaretti)

(and as Fascists from 1922), who were the most similar to the Zionists. Not only did the colonization of Libya coincide with the heyday of pre-state Zionism, it was similarly argued as a form of "return," meant, in this case, to "connect the fascist present to the Roman past."[35] A string of agrarian settlements was built along the edge of the Libyan steppe and forests were planted to stabilize the Saharan sand dunes. Almost half the Cyrenaican Bedouin population was displaced into concentration camps deeper in the desert.[36] When they rebelled, starting in 1930, the Italians unleashed overwhelming force and undertook massacres with mustard gas. In late 1932, while the "pacification wars" were drawing to a close, an enthusiastic American journalist reported from Libya under the headline of "Will the Libyan Desert Bloom Again?" The journalist wrote:

> The far-seeing eyes of Mussolini looked way beyond the wastelands that had been abandoned for more than a thousand years by all but fighting Arabs when he made a triumphal journey through the colony […] the frontier of cultivation moved 35 miles from the coast […] acreage of barley has been quadrupled, hundreds of thousands of new olive trees have been set out, bringing the total to about a million.[37]

This could have been a Zionist text about the Negev.

In the Negev, before the establishment of the State of Israel, various organizations were set up and a number of legal and political mechanisms were employed in order to "green" the emptied desert edge. Afforestation in Israel is the responsibility of the Jewish National Fund (JNF), an international organization that for the past 100 years has been in charge of planting trees in the "land of Israel."[38] The forests envisioned by the JNF were European in nature. Otto Warburg, a professor of botany and an expert in colonial agriculture (and in 1911 the third president of the Zionist Organization), was explicit in arguing for afforestation as a mode of climate change: he suggested that forests could change the country's climate into a more European one, reduce temperature, and increase rainfall.[39] Since 1932, the force behind afforestation was Yosef Weitz, head of the JNF lands and forests department. Forests, in Weitz's eyes, were not only a matter of changing the climate, but were used as "a biological declaration of Jewish sovereignty" and for "setting up geopolitical facts."[40] During the 1948 war, Weitz was also the leading figure in the notorious three-member "Transfer Committee," which sought to expedite the expulsion of Palestinians from areas occupied by the Israeli military.

Starting in 1939, the JNF launched a number of ecological experiments exploring ways to grow trees on saline, arid soils. But JNF afforestation of the Negev began in earnest only during the 1950s. Two years after the establishment of the state, Weitz, who now had at his disposal the labor power of new Jewish immigrants from North African states (who were sent to be employed on all sorts of initiated tasks, including archaeology, as we have seen before), could report back to Ben-Gurion about the planting of a million eucalyptus and tamarisk seedlings for windbreaks and shelter belts in the southern, more arid parts of the Negev desert. The following agricultural year of 1950–51 was plentiful in rain, and under Weitz's energetic overseeing the JNF used this opportunity to plant 5 times the area

DEIR AL-SHEIKH, >500 MM RPA

Fazal Sheikh, November 23, 2011

Deir al-Sheikh was a Palestinian village of about 200 inhabitants west of Jerusalem. It was occupied by the Israeli military on October 21, 1948, and depopulated. Visible among the trees is the mosque of Sheikh Sultān Badr, which dates back to the thirteenth century, possibly earlier. The "Forest of the Martyrs," where planting started in 1950, refers to Holocaust victims and contains roughly six million trees. It is the largest planted forest in the Jerusalem area.

that it had planted in the previous 50 years of its existence. But in the 1960s, a cycle of drought years increased the number of failed saplings and made JNF efforts retreat north together with the shifting aridity line.

Yatir, the largest forest in Israel, was planted, starting in 1966, between the southern border of the West Bank and the northern Negev. Weitz said it combined ecological and security logic in "rolling back the desert with trees, creating a security zone for the people of Israel."[41] The relation between afforestation and Judaization of the landscape was not confined to the Negev. Shortly after Israel's establishment in 1948, the JNF planted millions of conifers in different parts of the country, covering up the remains of Palestinian villages that had been destroyed during or after 1948, pre-empting any claim or possibility of return. This practice still takes place in the Negev, where afforestation is used as a means of erasure of former Bedouin settlements and of preventing their return to resettle these lands.

THE DESERT ROLLS BACK

Although undertaken for a multiplicity of reasons and political considerations, afforestation is most often explained as an ecological necessity. In recent years, one of the most common justifications for planting forests is that it is a response to desertification—a shift in the aridity line by which fertile land dries, losing its bodies of water, vegetation, and wildlife. Recognition of desertification in the Negev started in the early 1970s and went hand in hand with increased global attention to the consequences of human-induced

GARI AND BORANA SHARED BURIAL SITE, UNHCR REFUGEE CAMP FOR ETHIOPIAN REFUGEES, WALDA, KENYA, <200 MM RPA

Fazal Sheikh, 1993

The Walda camp was a small provisionary refugee camp of 8,000 people situated in northern Kenya, about 70 kilometers south of the Ethiopian border. The refugees were Ethiopians fleeing Kenya in 1991, following the ethnic tensions that followed the overthrow of the Mengistu regime, a conflict that was aggravated by droughts, desertification, and food insecurity. The camp, routinely targeted by Ethiopian forces, leaving many dead, closed in 1993 and the refugees transferred deeper inland.

climate change. Although natural cycles, now visible in rock fossils, made deserts expand and contract over long periods of time,[42] the process of desertification is at present largely manmade, fast, sudden, and erratic. On the global scale it is largely a consequence of climate change produced by $C0_2$ emissions into the atmosphere and heat absorption by intensive farming. On the regional scale, desertification is a response to land use practices. The threshold of the desert is a delicate and unstable environment that is sensitive to over-farming and over-grazing and needs to be treated and lived in carefully.[43]

It was in the Sahel, on the southern threshold of the Sahara Desert, that the consequences of desertification were first noticed in the late 1960s, following repeated cycles of drought and famine that aggravated social tensions and cold war conflicts. The word *sahel* is Arabic for "shoreline"–a shoreline that, however, is only ebbing as the desert expands southwards, gaining millions of hectares of former arable land and leaving miles of baked plant remains where the sparse green pastures and fragile agriculture of the savannah once survived. In past decades, conflicts have broken out in most countries from East to West Africa, along the shoreline: Eritrea, Ethiopia, Somalia, Sudan, Chad, Niger, Mali, Mauritania, and Senegal.[44]

Security experts now refer to the Sahel as a "corridor of terror,"[45] pointing to the loss of agricultural land as the "underlying cause of social, economic and environmental problems that feed recruitment for violent extremist organizations [...such as] Al Qaeda-linked groups."[46] This perspective, as the architectural scholar Adrian Lahoud has convincingly shown, saw local land mismanagement as the principal cause of desertification, but neglected to note the responsibility of the industrial North for desertification and climate change through industrial emissions. The West could therefore conceptualize its help in humanitarian terms as a matter of charity rather than a recognition of responsibility.[47] As such this description of the state of affairs has something in common with the nineteenth-century orientalist perspective that saw the inhabitants of the desert as "its fathers rather than its sons." The London *Sunday Times* recently reported on a European-funded 5,000-mile long wall made of millions of trees across the Sahel, meant to slow down desertification and do nothing less than "hold back Saharan terror."[48]

Ever sensitive to global trends, Israel has also started to explain the need to settle the Negev Bedouins in towns as a local chapter in the global war on terror. In this scenario, the Bedouins need to be put under control because as

BORDER ZONE BETWEEN THE NEGEV AND EGYPTIAN SINAI, <100 MM RPA

Fazal Sheikh, November 13, 2011

The Negev–Sinai border goes through the zone of extreme aridity, part of the "Saharan climate zone," where annual levels of precipitation are below 100 mm pa. The road at top left leads to the border a few hundred meters away. The white cubic boxes connect underground communication and power cables that serve the border fence. The intersecting line is a "seismic test line," one of a number of parallel cuts that divide the area into distinct oil exploration zones. Oil was drilled for in the late 1980s but no commercial quantities were found here. This area is one of the most frequently used clandestine routes for illegalized migrants seeking asylum from war and famine in sub-Saharan Africa, mainly Eritrea and Darfur. In 2013, a fence was built along the entire length of the border to block asylum-seekers from entering Israel. The area is a no-go zone, much of it taken up by closed-off live-fire training zones run by the Israeli military. A few kilometers south the state runs various prisons, initially for Palestinians from the West Bank and Gaza, later for illegalized migrants.

"nomads" they are involved in the smuggling of weapons from the disintegrating Libyan military into Gaza and the West Bank.[49] The Bedouins of Sinai, neglected and disenfranchised by the Egyptian state, have indeed been involved in such smuggling activities, but they, like the Negev Bedouins, have long since ceased to be nomads.

It is not only arms that travel through the Negev. The conflict and hardships along the drying Sahel compel its inhabitants to embark upon increasingly perilous journeys to reach the southern European coast, or with the help of some Saharan, Sinai, and Negev Bedouins, to cross the Negev and reach Israeli cities.[50] In response to these cross-border flows, Israel had by 2013 completed the fencing up of the entire length of its border to Egypt, along which it constructed a series of detention camps. In this hot and arid area the state holds sub-Saharan refugees against all international conventions. Sudanese and Eritreans, who cannot be deported back into war zones, can be detained there indefinitely.[51] While tens of thousands are held in detention camps on the northern shore

Pages 28–29:
EARTHWORKS IN PREPARATION FOR PLANTING OF THE AMBASSADOR FOREST, ALONG THE AL-ʿARAQĪB STREAM, 200 MM RPA
Fazal Sheikh, October 4, 2011

Plantation work for the Ambassador Forest was organized by the JNF. Using a method known as "savannization," it is a mix of sparsely scattered acacia or eucalyptus trees with bushes and grass between. Irrigation comes from long terraces that collect rainwater. Although the average rainfall is around 200 mm pa, the saplings absorb between 500 and 1,000 mm pa during the rainy season. The fields around the planted area, distinguished by shallow plowing or "scratching," are cultivated by Bedouins. The small spots within the field show where wheat was collected in previous years. At the lower center of the planted area are traces of a *bāyka* (a hard house). These indicate that the forest was planted atop a Bedouin settlement. The name of the village was Abu ʿAbdūn, of the Tiyāha tribe. It was abandoned and destroyed after 1948. The path, accompanied by a shallow fence that runs diagonally from lower left to top right through the center of the image, coincides with the planned route of a railway line.

of the Sahara, millions are held in refugee camps on its southern one.[52] A shared history thus connects the people that inhabit the opposite shorelines of the Sahara–the Fur, Zaghawa, and Masalit, as well as the Guhayna Arabs of the Darfur/Sudan and eastern Chad regions, the Maasai of Kenya, the Tuareg and Songhai of west Sahel and Mali, and the Bedouins of the Negev.[53] When the savannah ebbs it does so in all these locations.

The JNF used the alarm about the consequences of climate change and desertification to promote its own agenda, and suggested that in the Negev "desertification could be stopped by large-scale afforestation" and by "restrictions imposed on livestock grazing."[54] Here both methods are directly mobilized against the Bedouins: the former by planting forests over and around their settlements and the latter by further restricting their pastoralism.[55]

The Negev has become Israel's ecological laboratory within the context of a state that uses ecology as a political tool. In the late 1980s, researchers at the Sde Boker campus at the Ben-Gurion University in the Negev started to develop a new model of planting for the Negev, using species of salt-resistant and water-efficient bushes and trees. This is referred to as "savannization," a reference to the ecologies of desert thresholds worldwide. With only ten trees per dunam (1,000 square meters), and using traditional irrigation technologies, savannization allowed the expansion of afforestation further into the desert.[56] On the lands in and around al-ʿAraqīb, the JNF has overseen the planting of three separately named savanna forests. The Ambassador Forest, inaugurated in 2005, had diplomats from 49 countries planting trees on behalf of their countries–thus unwittingly made complicit in an act of dispossession. Only the South African ambassador was wise enough to decline the honor.[57] Another is the God TV Forest planted in 2008, the money for which was donated by an organization that uses the media to propagate a millenarian theology that foresees all Jews converting to Christianity or facing an "everlasting lake of fire." The Nuremberg Forest, paid for by the German city, had a dedication sign that reads: "Lest We Forget."

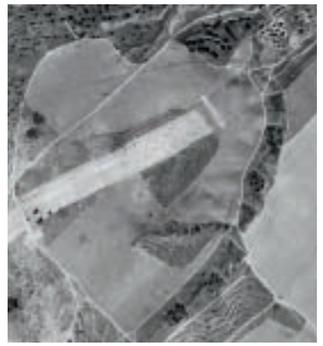
Although relatively successful in terms of seizing land, Israeli environmentalists have continuously protested, usually in vain, that JNF afforestation, including their savannization efforts, has ended up damaging the ecosystem. For a start, earthworks undertaken before planting employ heavy machinery that destroys surface soil composition, pile high and long mounds of earth, and make the area toxic with the herbicides used to eradicate local vegetation prior to planting the saplings.[58] The earth mounds built to irrigate trees along the slopes stop most rainwater from reaching the valleys below, drying up large swathes of land downstream and destroying the entire ecosystem in them. Since naturally occurring waterways can no longer remove the alluvial deposits there, the salinity of the soil also increases over time, making the land inhospitable for cultivation. The restriction on grazing (primarily a Bedouin economy) leads to the increase of vegetation between trees and thus to the more frequent occurrence and damage of forest fires. Trees do cool the areas around them, but only because they remove precious water from the soil and release it into the atmosphere. Although carbon sequestration (the absorption of CO_2) might help slow the consequences of climate change, there is an ongoing debate regarding the effects of afforestation in general. The Society for the Protection of Nature in Israel, which together with Israel's Parks and Nature Authority opposes the JNF afforestation efforts, points to research that posits the likelihood that forested areas might actually contribute to global warming because of the increased heat absorption due to their darker color compared to the light-colored steppe which better reflects heat. The desert's light yellow areas, rather than the thicker greens of the forest, actually protect it from overheating.[59]

The gift that Ben-Gurion thought Zionist cultivation would bring to nature has seemingly been rejected.[60] Intense agricultural farming using artificial irrigation, fertilizers, and pesticides has contributed to global climate change and radically affected local climate.[61] Carbon sequestration data from ecological research and monitoring stations shows a significant year-on-year increase in temperature and in the rate of evaporation over the past decades, as the desert reclaims some of its lost ground. Weather conditions such as flooding and droughts have become more extreme and there is an overall decrease in ecological activity.[62]


December 31, 2004


December 5, 2009


March 30, 2011


April 7, 2012


January 27, 2013


May 28, 2013

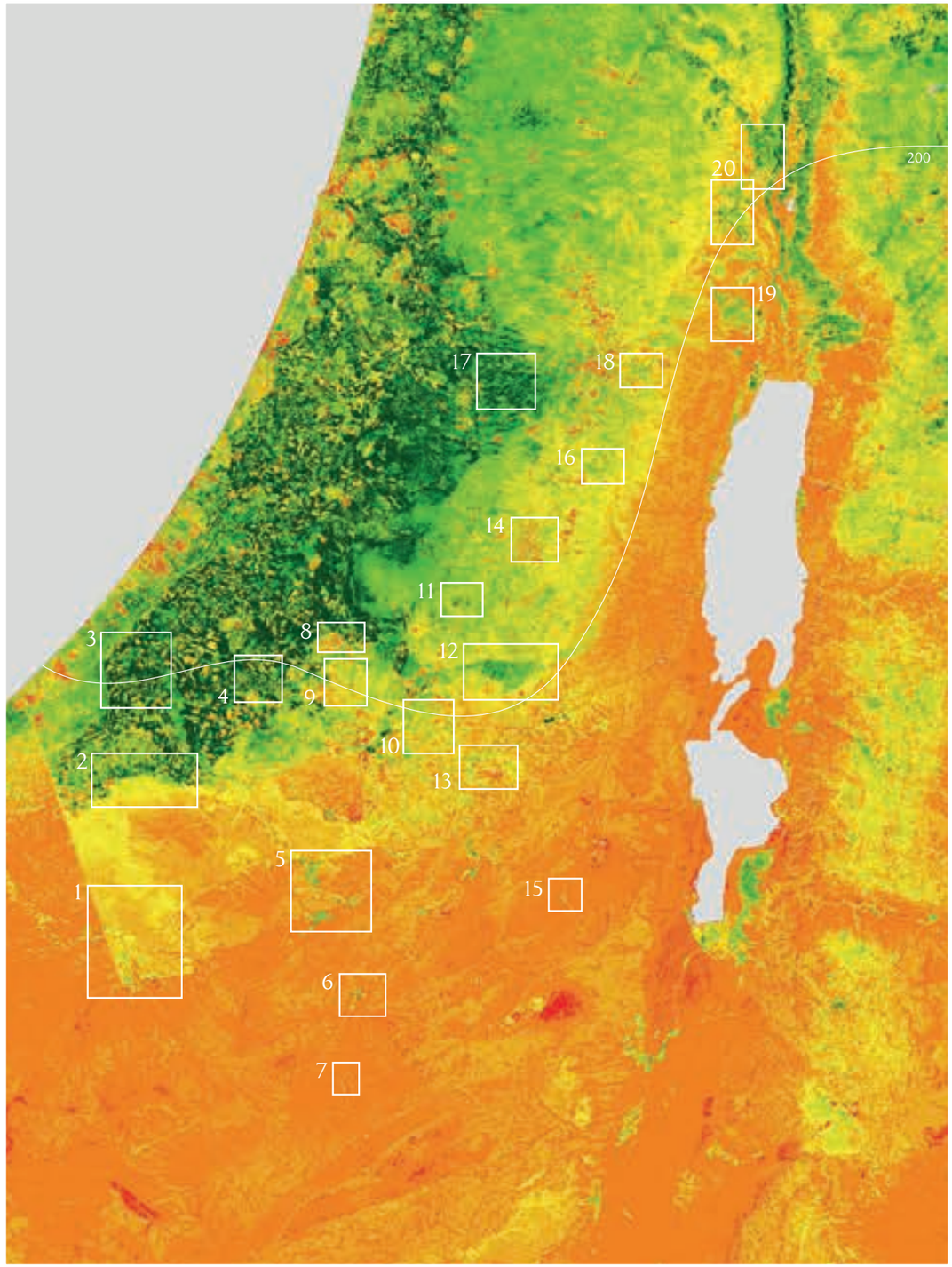

October 12, 2013


November 11, 2013


December 20, 2013

GOOGLE EARTH TIMELINE SEQUENCE OF THE AMBASSADOR FOREST, 2004–2013

The rhetoric of environmentalism can be a smoke screen behind which a political conflict takes shape. Sometimes forests were used as placeholders, pre-empting Arab return, until another necessary installation could make use of the ground. This sequence of satellite photographs shows a new spur of the Beersheba–Ashkelon train line cutting right through a patch of recently planted forest.



LAND AND CLIMATE DISPLACEMENT

Locations along the threshold of the desert, across Israel/Palestine

The Normalized Difference Vegetation Index (NDVI) is a graphic indicator that measures coverage and robustness of vegetation. It shows that the border of the arid area, now generated by artificial irrigation, no longer overlaps the 200 mm isohyet.

1. The border between the Negev (Israel) and Sinai (Egypt) is distinguished by the heavy grazing of goats and camels on the Egyptian side, leaving only pallid vegetation. On the Israeli side of the border, the exclusion of Bedouin shepherds is indicated by the moderate but consistent vegetative cover. At the bottom of the frame are a number of agrarian settlements established to "fortify the border." Ktzi'ot was abandoned because of the harsh climatic conditions and subsequently converted into a detention camp, initially for Palestinians and then for illegalized African migrants. An Israeli "prison archipelago" has developed around it, indicated here by small green gardens within the prison walls.
2. The cultivation border between a number of Israeli agrarian settlements and the dunes of Nitzana. This is where some of the Jewish settlers evacuated from Gaza in 2005 were relocated.
3. The border with Gaza is apparent in the differing agricultural patterns and vigor. On the Israeli side are large well-irrigated fields; on the Gaza side small fields are cultivated with less available water. This border area was the site of the 2014 Israel–Gaza conflict.
4. The development town of Ofakim hosts a cluster of small gardens within the larger fields of the neighboring agrarian settlements.
5. A group of artificially irrigated agrarian settlements of Revivim, Mash'abei Sadeh, and Ashalim.
6. Sde Boker, a kibbutz practicing experimental desert agriculture and a college specializing in solar research. This is where Ben-Gurion lived at the end of his life and where he is buried.
7. The Avdat experimental desert farm, where Byzantine irrigation methods are used to support cultivation for scientific purposes.
8. Rahat, the largest Bedouin town in the Negev, is an arid island surrounded by well-irrigated fields. Its urban center and adjacent lands are much drier than the nearby Jewish development town of Ofakim.
9. Al-'Araqīb; see separate time sequence of annual maps on p. 36.
10. Area within the former *Siyāj*, the Bedouin enclosure of 1948–66, where many of the illegalized Bedouin villages are located. The former *Siyāj* area is made distinct by the low vegetative vigor associated with its small subsistence fields.
11. The Otni'el settlement within the West Bank, distinguished by the vigor of its vegetation and well-irrigated domestic gardens.
12. The forest of Yatir, where planting started in 1966 and has been ongoing ever since. Its northern edge abuts the border of the West Bank, seen clearly in the immediate reduction of vegetative cover and vigor.
13. The air force base of Nevatim is located in the middle of an area dense with (legal and illegalized) Bedouin villages within the former *Siyāj*. Note how the runways are visible as zones without vegetation, but how the gardens in the residential part of the base are better irrigated than the surrounding Bedouin settlements.
14. The city of Hebron. East of the city, where the settlement of Kiryat Arba is located, vegetation levels increase due to greater water allocation to the Jewish settlers.
15. The Negev Nuclear Research Centre near Dimona. The small spots of vegetation here are the decorative gardens around the secret reactor laboratories where Israel is reportedly constructing its nuclear weapons.
16. The settlement blocs of Nokdīm (home to Israeli politician Avigdor Lieberman), Tekoa, and Kfar Eldad are distinguished by high vegetative vigor at the edge of the desert.
17. Afforestation within the Jerusalem corridor on both sides of the Tel Aviv–Jerusalem Highway 1 started immediately after the establishment of Israel. Tens of millions of conifers, mainly Aleppo pines, were planted by the JNF atop the ruins of dozens of Palestinian villages, their orchard groves, and fields. This densely populated Palestinian area was ethnically cleansed in 1948. Today it is the largest afforestation area in Israel. The forest's edge clearly marks the border of the West Bank and extends to the east at the threshold of the desert.
18. The settlement of Ma'ale Adumim, conspicuous by the vigor of its vegetation at the edge of the desert.
19. The Palestinian city of Jericho, a desert oasis fed by springs from underground aquifers, surrounded by many orchards and fields.
20. An Israeli agricultural settlement bloc and agricultural fields. The surrounding arid areas are where the Bedouin communities of the Jordan Valley are located.

NDVI map by Jamon Van Den Hoek; analysis by Jamon Van Den Hoek and Forensic Architecture, 2014; courtesy of Landsat 8, NASA; captions by Jamon Van Den Hoek and Eyal Weizman

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Page 34:

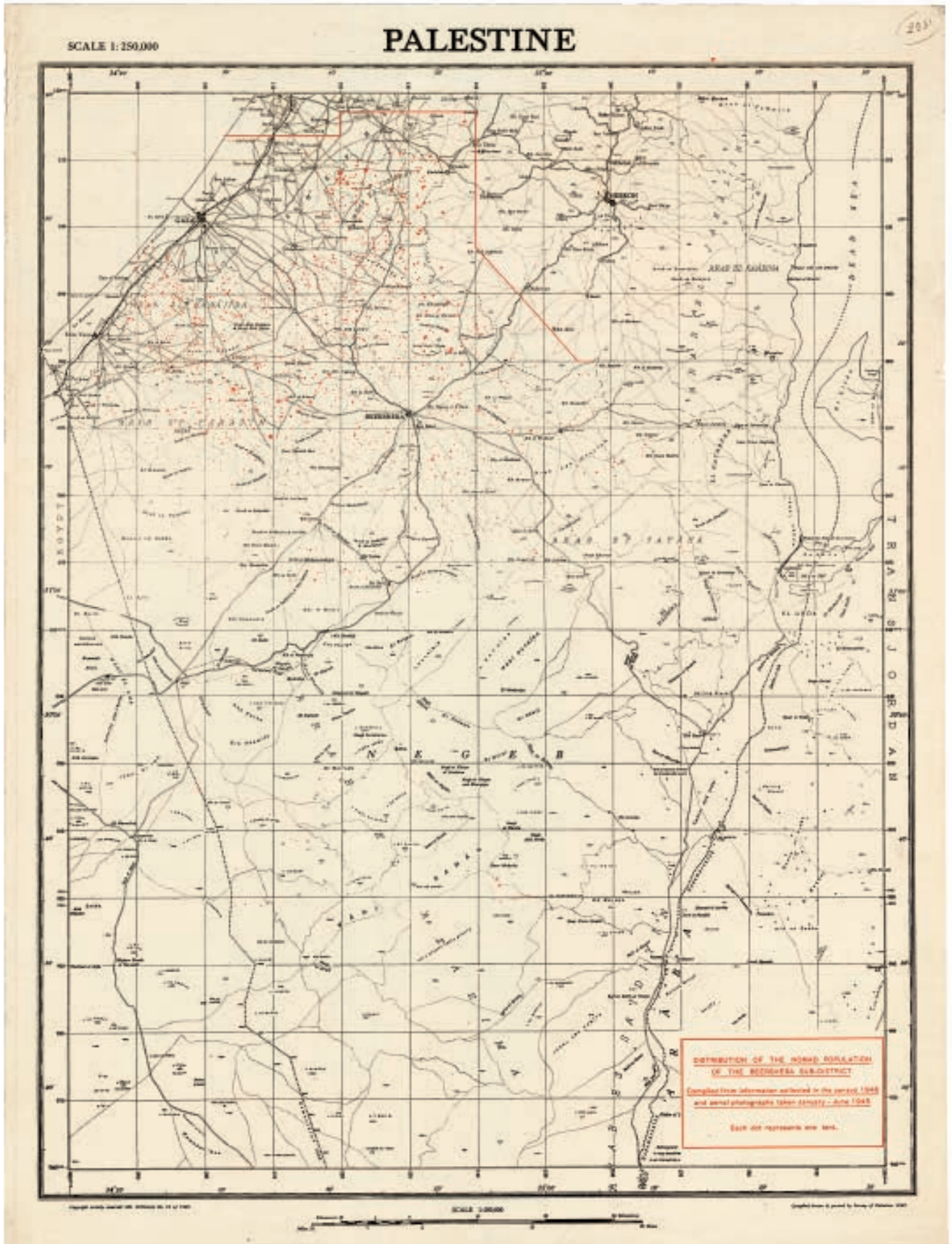
A BRITISH SURVEY OF PALESTINE MAP FROM 1947 MARKING THE DISTRIBUTION OF BEDOUIN TENTS (EACH TENT IS A RED DOT) IN THE NEGEV

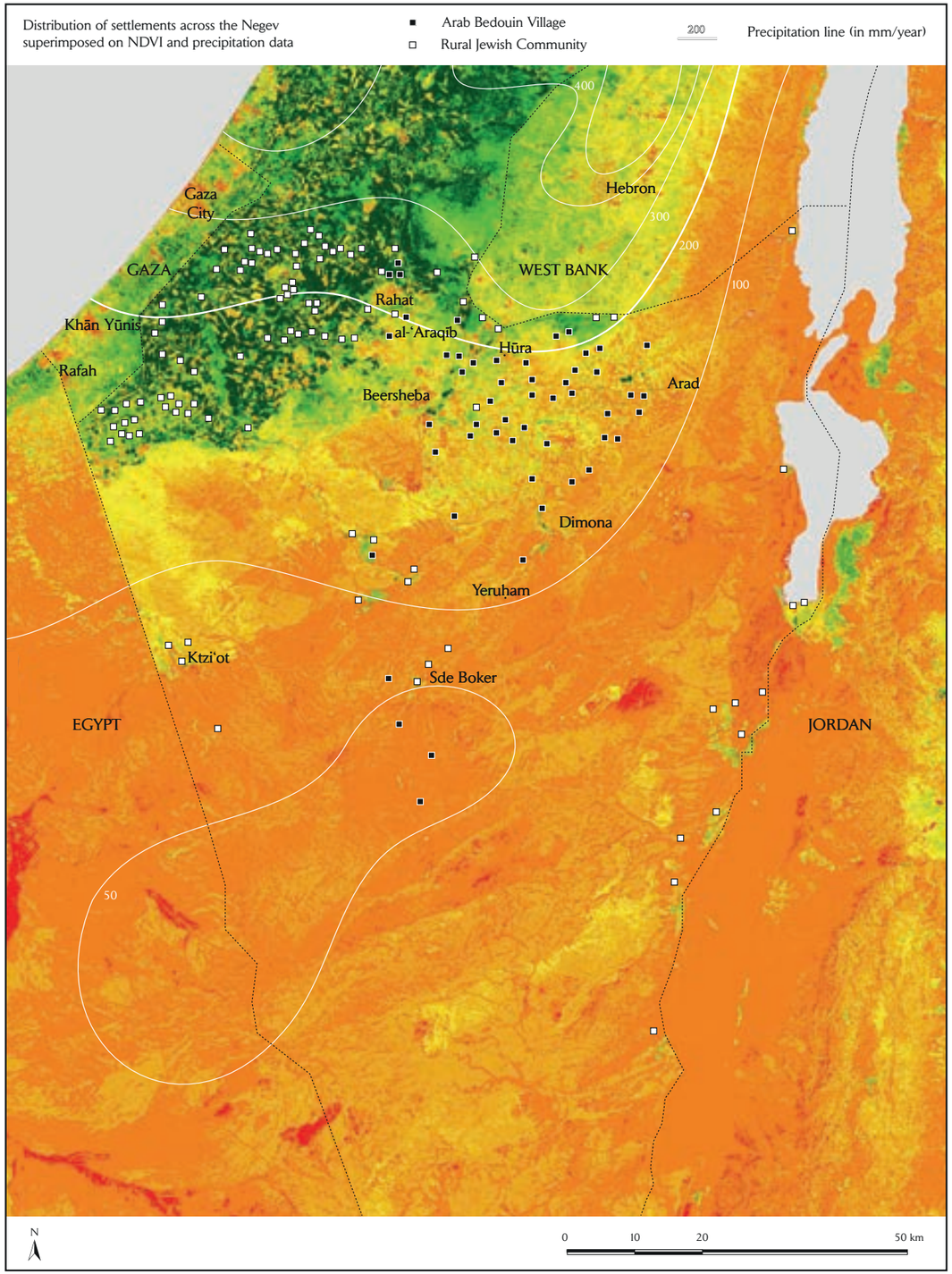
Page 35:

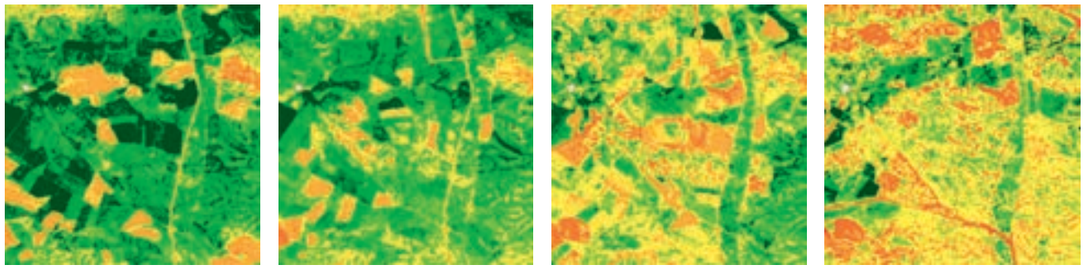
AGRARIAN SETTLEMENTS AND ANNUAL PRECIPITATION MARKERS ON TOP OF AN NDVI MAP

Prepared by Jamon Van Den Hoek, Francesco Sebregondi/Forensic Architecture, 2014

In 1947, Bedouin tents are densest in the northwestern part of the Negev and exist on both sides of the aridity line. The contemporary map shows the villages of the descendants of the remaining Bedouins concentrated in the more arid eastern parts of the northern Negev, almost entirely south of the 200 mm isohyet, with the ground around and between them showing weak signals of vegetation vigor. Jewish settlements are now located in the area previously most densely settled by the Bedouins. They are surrounded by robust vegetation–fields and gardens–supported by artificial irrigation. The juxtaposition of the maps tells the story of the displacement of Bedouins in relation to meteorological conditions and the uneven distribution of land and water.


PALESTINE
SCALE 1:250,000
N E G E B
DISTRIBUTION OF THE NOMAD POPULATION
OF THE BEERSHEBA SUB-DISTRICT
Compiled from information collected in the period 1945
and aerial photographs taken January – June 1945
Each dot represents one tent.
SCALE 1:250,000


Distribution of settlements across the Negev
superimposed on NDVI and precipitation data
Arab Bedouin Village
Rural Jewish Community
200
Precipitation line (in mm/year)
400
300
200
100
50
Gaza City
Hebron
GAZA
WEST BANK
Rahat
Khān Yūnis
al-'Araqib
Hūra
Rafah
Beersheba
Arad
Dimona
Yeruham
Ktzi'ot
Sde Boker
EGYPT
JORDAN
N
0
10
20
50 km



THE AREA OF AL-ʿARAQĪB IN 1998, 2002, 2008, AND 2014

NDVI reading by Jamon Van Den Hoek, 2014

This series of four images shows the decline of agriculture in the area of al-ʿAraqīb from 1998 to 2014, manifest in two ways. First, the reduction of vigorous agricultural vegetation is replaced by thinner tree plantation beginning in the early 2000s. Second, farm plot boundaries are dissolved as planted trees encroach upon and eventually dominate agricultural fields. (Jamon Van Den Hoek)

Pushing the line of cultivation south beyond the aridity line has contributed to the northward movement of the meteorological aridity line. The gradient of cultivation that has for generations been slowly and gradually shifting from arable to barren lands has been replaced by a fragmented territory of micro-climatic conditions with interspersed patches of dry land and artificially and intensively irrigated greens, roughly coextensive with Jewish Israeli and Bedouin (also Israeli) inhabited and cultivated areas.

Debates about the origins of climate change tend to foreground the adverse effects of industrialization and the excessive atmospheric accumulation of greenhouse gases produced mainly by the burning of fossil fuels. This was the reason that when climate scientists introduced the concept of the Anthropocene to signify a new geological epoch in which humans are considered as a climatic and geological force they proposed dating its beginning to the invention of the steam engine.[63] Climate change in this scenario is the indirect and unintended consequence of modernization and industrialization: its "collateral damage." If, however, following historian Dipesh Chakrabarty, we look at climate change from the point of view of the history of colonialism, we no longer simply see it as a collateral effect of modernity, but rather as its very target and aim.[64] Indeed, colonial projects from North America through Africa, the Middle East, India, and Australia sought to re-engineer the climate. Colonizers did not only seek to overcome unfamiliar and harsh climatic conditions, but rather to transform them. Native people, who were seen as part of the natural environment, were displaced along with the climate or killed. Although the attempt was to make the desert green, instead the green fell fallow, lakes deadened, and oceans rose.

In the Negev, as we have seen, the Bedouins were squeezed between two forces pushing in opposite directions: Israeli settlements pushed the desert edge south, while desertification pushed it north.

THE BEDOUIN NAKBA

In the years before the state was established, the Zionists, settling beyond the aridity line, entered the areas of the Tarabīn, al-ʿAzāzme, al-Jubarāt, and Tiyāha tribes and, in recognition of their land ownership, bought land from them.[65] They admired and often imitated their costume and dress. The Bedouins, for their part, saw the few settlements in the Negev as an opportunity of sorts. There were some mutual raids, retributions, and other incidents of irruptive violence, but in general, as the historian Meron Benvenisti explains, Zionists saw the Bedouins not as dangerous competitors possessed with a strong national identity but rather as orientalized biblical figures embodying the way of life of their forebears.[66] A Zionist geographer even went so far as to propose that the Bedouins were "the type closest to that of ancient Semitic population" and thus blood relations of the Jews.[67]

What Zionists could not see then (and still cannot see today) was that at the turn of the twentieth century the Bedouins were in the midst of a process of fundamental social and political transformation.[68] Towards the end of the Ottoman period the Bedouins began to adopt a more settled pattern of life in the northern Negev. Although there had always been an agricultural element to their subsistence, the balance now shifted towards cultivation. Some movement between fixed summer and winter accommodation, mainly from higher to lower altitude, was

BĀYKAT MUSALLAM AL-QAWĀSMI AL-ʿALAMĀT, SITE OF THE 1948 MASSACRE IN AL-ʿARAQĪB

Fazal Sheikh, April 14, 2014

The ruins of the house where fourteen Bedouin men were murdered by Zionist forces lie within a small field now cultivated by Bedouins. It has greener shoots because the foundations were left in place and not plowed over. At the time the photograph was taken, the surrounding wheat fields were drying out before the harvest.

still practiced within ever-shrinking but well-defined territories of tribal control, or *dira*, but the process of sedentarization led to the "closure of the frontier" (shortly after it was closing in the Americas), and nomadic life effectively ceased.[69] The settling of Bedouin tribes was apparent in the proliferation of hard structures or *bāyka*, built of adobe and stone at the center of tribal lands.

In the period between the 1948 war and 1953, the Israeli military expelled about 90 percent of the 100,000 Bedouins of the Negev to the West Bank and Gaza, and further into Jordan and Egypt.[70] Those displacements involved massacres of people and livestock, the burning of tents, the destruction of *bāyka,* and the sealing of wells, as well as attacks from light planes. Nūri al-ʿUqbi, who was born in and displaced from al-ʿAraqīb, described an event that took place there during the last stages of the 1948 war:

> I remember that in the year of the Nakba, planes were passing overhead on their way to bomb Bir a-Ssabʿ [Beersheba]. We heard the blasts because it is very close. The family members say that once an airplane bombed in al-ʿAraqīb, hit a house and killed two brothers. But the most horrific thing that happened here in the year of the Nakba is the killing of fourteen men from the area by one of the Jewish gangs. I do not remember the case myself, but heard it from the elders: four armed Jews passed with a Jeep between the tents and "arrested" fifteen men from different tribes. They took them to a peripheral house whose remains are today between al-ʿAraqīb and Rahat in front of Givʿot Bar. They took them out of the car and shot them inside the house. Only one managed to jump out of the car and run away; his name was Abu Mubārak al-Qarʿīni. The kidnappers shot and wounded him seriously. The following day, or two days later, he died. Before he died he told of what had happened in that house.[71]

Only around 12,500 Bedouins were spared expulsion and were registered as citizens of Israel. On the eve of the 1948 war, the area most densely settled by Bedouins was northwest of the 200 mm isohyet. Between 1948 and 1953, those who remained were relocated to a closed-off arid and saline area southeast of this annual precipitation line marker. Bedouin displacement in the Negev was not only a matter of territory but also a matter of climate. The area to which Bedouins were displaced, 1,000 square kilometers in size, was known as the *Siyāj*, Arabic for "enclosure" or "fence." Until 1966, it was placed under military regime and functioned, according to political scientist Neve Gordon, like a Native American reservation of the nineteenth century.[72]

The most visible remains of the Bedouin villages near the aridity line were removed. Also completely erased, as Benvenisti explains, were the names of the hills, rivers, and archaeological sites by which the desert was known for hundreds of years. A new Hebrew map was drawn up, new textbooks were introduced, and new road signs installed. Zalman Lifshitz, head of the Negev Name Committees, established by David Ben-Gurion in the late 1950s to take charge of this cartographic Judaization process, declared: "…the whole question of Arabic place-names in the Negev has become irrelevant since there are almost no Bedouin there."[73] The Naqab has turned into the Negev (in this text I refer to the territory in its Hebrew Negev—rather than the Arabic Naqab—to mark its colonial reality). Between and sometimes within settlements, fields, and forests some traces of Bedouin life did remain. Such remnants, of which the cemetery in al-ʿAraqīb is but one example, were the anchors to which Bedouin tribes would return some 60 years later. There are five tribal cemeteries in the al-ʿAraqīb area.

Pages 38–39:

MEITAR FOREST, >200 MM RPA

Fazal Sheikh, October 9, 2011

The Meitar Forest is an extension of the forest of Yatir—the largest forest in Israel planted since 1966—although non-contiguous with it. The forest is meant to create a barrier between the affluent Jewish suburb of Meitar and the Bedouin township of Ḥūra. North of the aridity line the species of tree used is the Aleppo pine, the most commonly planted tree in Israel.

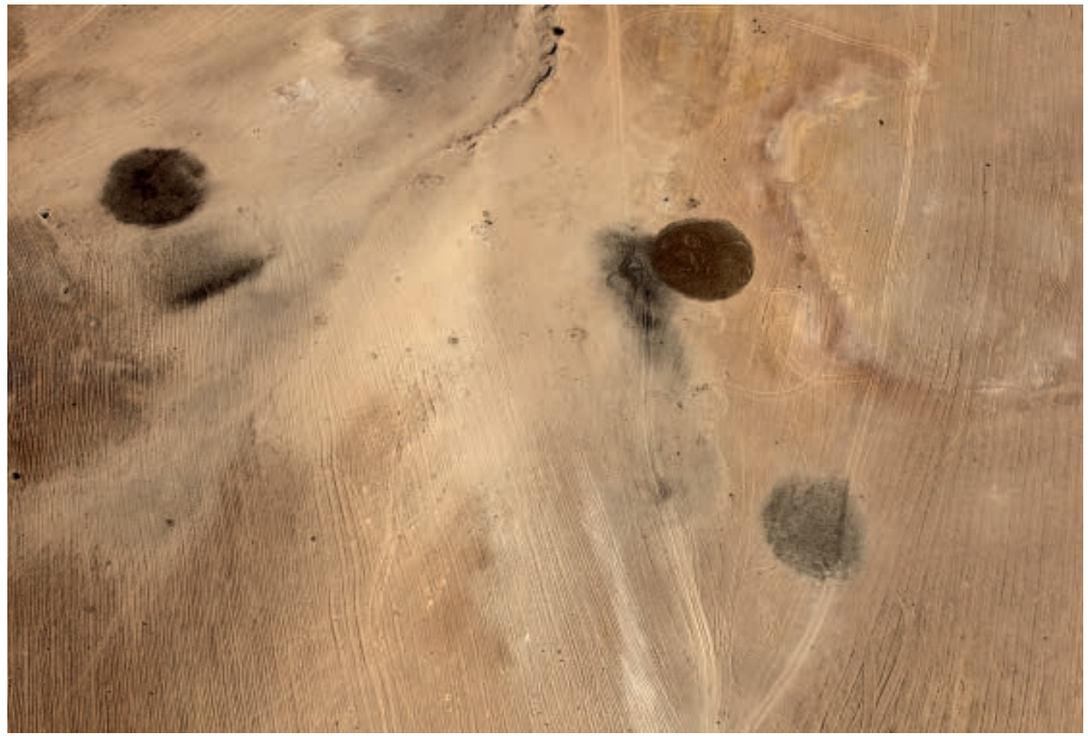
REMNANTS OF BEDOUIN HOMESTEADS IN A MILITARY LIVE-FIRE TRAINING ZONE, >100 MM RPA

Fazal Sheikh, October 4, 2011

These remains of Bedouin homesteads are located south of Arad, near the unrecognized villages of al-Qurʾān and Qabbūʿa. A current plan to establish a phosphate quarry on the site is facing opposition from both Bedouins in the nearby villages and Jewish residents from Arad, stating health concerns. The Bedouin settlement was evacuated when the Israeli military established a live-fire zone on the site. The earthwork enclosures all look similar but those below the dirt road that crosses from left to right have been built by Bedouins around places where their tents used to stand. Within the "gun-shaped" enclosure on the left is a concrete floor over which a tent was erected. In winter, people and livestock stayed within the lower enclosures on the slope, and in summer they moved to the higher area. The earthworks above the dirt road show traces of heavy mechanical equipment, which indicates that they are military enclosures for live-fire training. The reshaping of the land with earthworks is a common feature of many programs at the threshold of the desert. At the top right a train of camels can be seen, led by one person.

The emptied lands of the northern Negev were handed over to Israeli agrarian settlements and military bases and for the construction of several "development towns"–Arad, Dimona, Yeruḥam, and Mitzpe Ramōn–in which the state settled mainly North African Jews in public housing built around state subsidized industry (the ruling European elite patronizingly believed that they would be better accustomed to the high temperature and aridity of the desert than those migrants arriving from central and eastern Europe).[74]

One of the largest of the "state factories" constructed in 1958 just outside the borders of the *Siyāj* on lands confiscated from the Tiyāha tribe was the Negev Nuclear Research Center near Dimona, where international monitoring groups believe Israel produced its nuclear warheads. The airspace over the site is closed and Bedouin tribes are kept 15–20 kilometers away from the fence. For secrecy reasons, the reactor buries all its radioactive waste, including spent uranium rods with high-intensity radioactivity, on site. In 2004, after independent researchers found radioactivity in areas beyond and around the site, and in recognition of the danger of life next to it, Israeli authorities distributed potassium iodide anti-radiation tablets to



REMNANTS OF AN EXTENSION TO THE BEDOUIN VILLAGE OF RAKHMA NEAR DIMONA, AL-ʿAZĀZME TRIBE, <100 MM RPA

Fazal Sheikh, November 14, 2011

The circular stains indicate the earlier presence of livestock pens (*sire*). The gradient of saturation indicates how many rainy seasons, or years, have washed away at the stains. The multiple circles are typical of the Bedouin communities and signal that the pens were removed and reconstructed several times. Such corrals are generally moved on a seasonal/yearly basis. The faded circle in the lower right indicates that it is older, while the darker one in the upper left is more recent, and the most recent is the one at the center, where the fertilization blankets the soil, not yet melding with the desert. A very faint fourth circle may be seen just to the left of the lower one. The light plowing (scratching) of the ground is indicative of ongoing Bedouin cultivation. The site is now officially within a closed military live-fire zone. Despite this restriction, the Bedouins maintain a presence on the land.

thousands of residents living in Dimona and in the Bedouin settlements in the vicinity of the reactor.[75]

CONCENTRATION TOWNS

In 1966, after the termination of the military rule, the *Siyāj* was replaced by another well-tested colonial strategy: concentration townships. Seven such townships were built between 1968 and 1989, and are now home to 135,000 people. Of these people, more than a third now live in Rahat, the oldest and largest of these concentration towns—now having crossed the 50,000 inhabitants threshold considered a city. Forced urbanization severed Bedouins from the land and from their pastoral and agrarian lives and facilitated their proletarianization in industrial and agricultural projects–or even their incorporation as salaried soldiers into the military, where they were employed mainly as trackers or as an interface with the civilian populations of Gaza and the West Bank, after their occupation in 1967.

Israel's attempt to deal with the Bedouins through a combination of displacement and concentration was similar to other such attempts that took place in the Middle East along the aridity line. Starting in the late nineteenth

EVAPORATION PONDS AT THE ARAD PHOSPHATE MINE, >100 MM RPA

Fazal Sheikh, November 22, 2011

Resources in the Negev include copper, iron, manganese, phosphates, and uranium. The Arad facility mines the highest grade phosphates, with estimates of between thirty and sixty thousand tons of uranium contained in low-level phosphate ores, much of which is extracted in the three mines of the parent company, Rotem Amfert Negev Ltd. Established in 1952, initially as Negev Phosphates, the company's Arad site is adjacent to the Dimona Nuclear Research Center. The state acknowledges the existence of the site, but maintains a policy of nuclear ambiguity, neither confirming nor denying that it contains nuclear weapons. Constructed in secret (beginning in 1958) with French assistance, outside the International Atomic Energy Agency (IAEA) inspection regime, the airspace over the nuclear research center is closed, and the area around it is heavily guarded and fenced off. Bedouin tribes are kept 15–20 kilometers from the fence.

century, the Ottomans, seeking to regain control of the peripheral areas of their empire, built a string of towns along the edge of the desert. One of them, Beersheba, was built as an administrative center and a garrison town at the turn of the twentieth century, and was intended to keep the Bedouins in check. Similar towns were also built in Transjordan and along the edge of the Syrian Desert. Many are now abandoned. The Arab states that were formed in the first part of the twentieth century continued the policy of concentrating and settling the Bedouins within their borders.[76]

Similar to Palestinian refugees, the Bedouins pushed into the *Siyāj* demonstrated their desire to return by refusing to treat their new settlements as permanent.[77] Nūri al-ʿUqbi described how his father, Al-Sheikh Suleimān Muḥammad al-ʿUqbi, had been until his death in 1993 unwilling to pave the floor of their house in the town of Ḥūra.

Today, about 80,000 Bedouins have refused resettlement in the townships. As their population increased so did pressure for land and the need to expand beyond the area allocated by the State of Israel. Since the time of their displacement, Bedouin families attempted to return to the lands from which they had been expelled. These are effectively the only de-facto enactments of "the right of return" undertaken by Palestinians displaced in 1948. The state treated those who returned to their lands, as well as those

forced to build without permits (permits were given only in the concentration towns), as invaders or trespassers. It did not mark their villages on maps, nor did it provide them with even the most basic infrastructure, nor with municipal services, not even medical ones. The intention was that by making the lives of these inhabitants harder, they would be forced into the concentration towns prepared for them.[78]

If the fate of those living in these unrecognized villages was to be compared to that of other Palestinian refugees, the condition of the Negev Bedouins was, according to al-ʿUqbi, much worse: "Refugee camps are supported by the UN, we are supported by no one. We have no electricity, no roads, no water, no schools, and no one to provide us with the medical aid and food that we need… Our Nakba," he added, "was not to be expelled outside the country, our catastrophe was to be concentrated."[79]

In the same way that Native American reservations became dumping grounds for toxic materials, the state located its most polluting (and, as we have seen, radioactive) sites around the concentrations of Bedouin habitation. When in 1979 the only toxic disposal facility–the Ramat Ḥovav Industrial Zone–was constructed south of Beersheba, its planners argued that its location was suitable because "no-one lived there," disregarding the Bedouin settlements in the vicinity.[80]

The official understanding that areas where unrecognized Bedouin villages are located are considered "open areas" has recently had tragic consequences. "Iron Dome," the air-interception system installed by Israel to protect Israelis from rockets fired from Gaza and elsewhere, is designed to calculate the rockets' approximate landing spot. If they are predicted to fall in an "open area" the system holds back from firing one of its $20,000 interceptors. On July 19, 2014, a rocket fired from Gaza, aimed most likely at the nuclear reactor, was projected to land in an "open area." It indeed did so, except that in this open area marked on maps was the unrecognized village of al-Jubarāt. Thirty-two-year-old ʿOde al-Wajj was killed and four of his family members wounded.[81] Still, the state has not installed shelters in these villages, as it does in all other civilian communities; it advised the Bedouins to simply lie on the ground when they hear a rocket about to land with their hands protecting their heads.[82]

Considered illegal and without ownership of the land, Bedouin settlements were continuously uprooted as state priorities in the Negev shifted. In the early 1980s, many Bedouin settlements were displaced when the military transferred its major air force bases to the Negev following Israel's withdrawal from the Sinai as part of the peace agreement with Egypt. Nevatim, one of the busiest of Israeli military air force bases, has been expanded in the very middle of the former *Siyāj*, still the most densely populated Bedouin area. More recently, Bedouins were displaced because the Israeli military decided to move its training schools into the Negev. The Ariel Sharon "city of training schools"—with accommodation for 100,000 military personnel and their families—is projected to be the largest city south of Beersheba when it opens in 2015. The irony is that while the state claims it is trying to "settle" the Bedouins by changing their traditional "nomadic" life (which has not been the case for more than a hundred years) to an "urban" one (the concentration towns might be dense but they have none of the qualities that make them urban), it has continuously kicked them about the desert, leading to what Palestinian legal activist and planner Hanna Hamdan calls "a condition of forced nomadism."[83] Recent government plans sought to contain the escalating conflict with new proposals. But these plans, which failed to gain the trust of the Bedouins like all their predecessors, tried to solve the problem with more of the very thing–concentration towns–that had already aggravated it.[84]

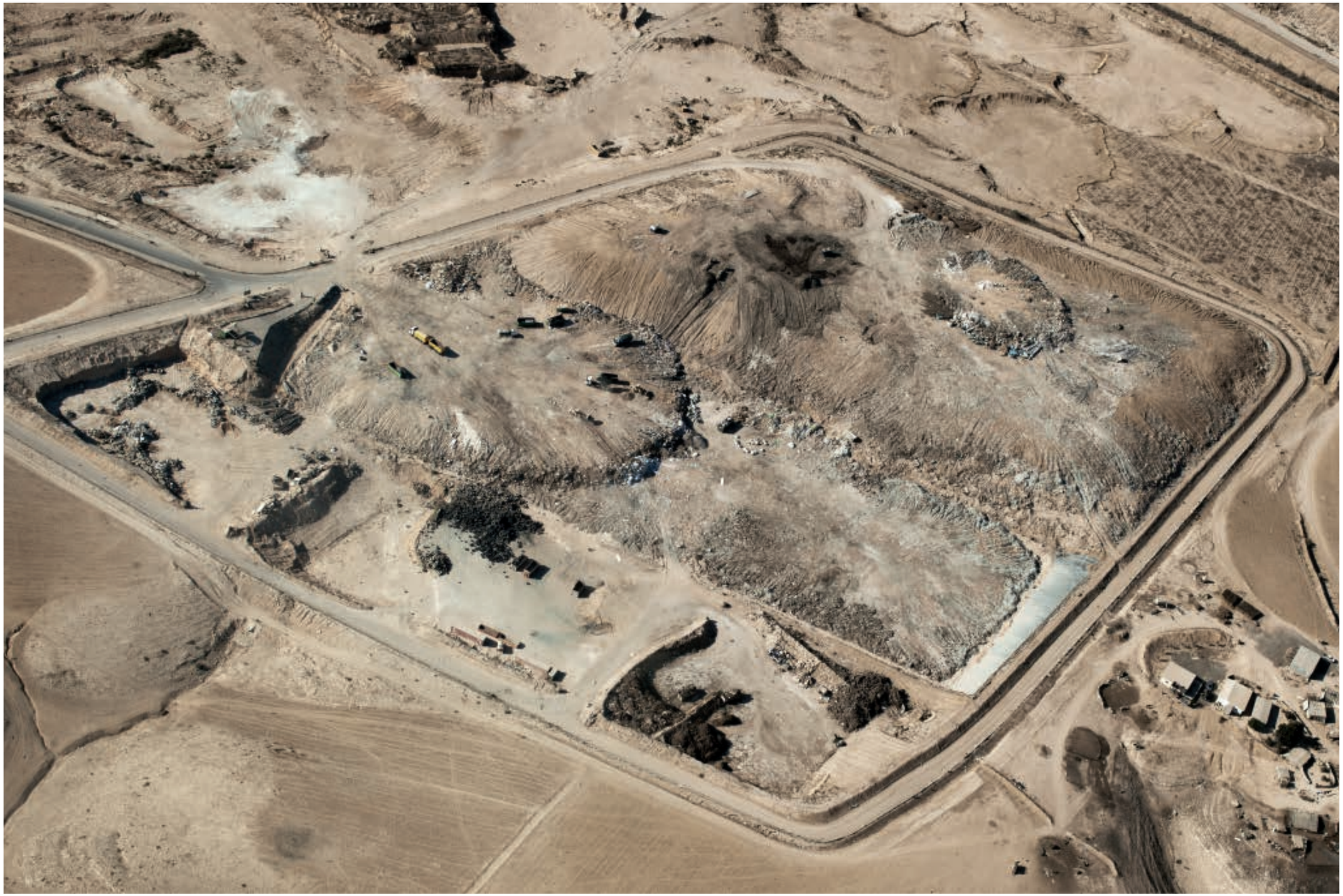
Further south, roughly past the 100 mm annual precipitation marker, Bedouin settlement points thin out and this part of the Negev serves as the dumping ground for everything Israel's economy needs but the state wants kept far away out of sight: polluting industries, garbage dumps, radioactive storage sites, military live-fire training zones, as well as a remote archipelago of prisons and detention camps. The latter exist in an arid part of the desert close to the Egyptian border in an area that could be understood as Israel's "desert Siberia." In it the military runs a number of little-regulated, out-of-sight (and oversight) detention camps for Palestinian prisoners from the West Bank and Gaza in conditions defined by human rights groups as "illegal and inhuman."[85] It is here that this archipelago of incarceration has recently been expanded into the world's largest constellation of detention centers for sub-Saharan asylum seekers–mainly Sudanese and Eritrean refugees escaping war and famine.[86]

Pages 44–45:

BEDOUIN SETTLEMENT OF ABU HADDŪBE, NEXT TO THE ASAF DUDAʾIM WASTE PROCESSING SITE, 200 MM RPA

Fazal Sheikh, October 4, 2011

The Dudaʾim waste site receives and recycles 1,300 tons of domestic and construction waste per day, mainly from the metropolitan center of Tel Aviv. The land was formerly part of the villages of Karkūr and ʿArab al-Ntūsh, south of al-ʿAraqīb. On the right, just by the fence enclosing one of the dumping facilities, are homesteads of the Bedouin settlement of Abu Haddūbe. The fields next to the homes are cultivated by the Bedouins.



EARTHWORKS FOR ʻIR HABAHADIM (CITY OF MILITARY TRAINING BASES), <100 MM RPA

Fazal Sheikh, November 22, 2011

This military mega-base is currently under construction between the development towns of Dimona and Yeruḥam. Planned for 30,000 army personnel, it is scheduled to open in 2015 and to be named after Ariel Sharon. The base will house the Israeli Defense Force's Armaments School, Logistics Training School, Military Police School, and other military training centers. The base will include training facilities, sports areas, a shopping mall, synagogues, hotels, cinemas, and entertainment facilities. There are illegalized Bedouin villages east of the site and also a Jewish-owned ranch. The site is bounded by a closed military zone with some families of the unrecognized Bedouin village of al-Mshash contained within it. The government plans to move the residents to Segev Shalom/Shgēb al-Salām, one of the Bedouin townships.

A TRIBE AGAINST THE STATE

In 1951, the Israeli military governor ordered the al-ʻUqbi tribe to evacuate their land for six months for a military training exercise, promising that they would be able to return. They were taken to the village (now town) of Ḥūra on the northwestern part of the *Siyāj* close to the border with the West Bank, then under Jordanian rule. Six months later, Nūri's father, Sheikh Suleiman Muhammad al-ʻUqbi, asked for permission to return, but the state authorities refused. In 1954, he took his family back without permission, but was swiftly evicted, and was later relieved of his duties as a tribal sheikh, by then a state position. Since then, the al-ʻUqbis have tried to return time and time again without success. At the end of September 1973 (shortly before the Arab–Israeli October War) the return was led by Nūri himself, who also planted fruit trees. The people were evicted and the trees uprooted.

In the wake of the 1973 return, Nūri al-ʻUqbi founded the Association for the Defense of Bedouin Rights, the first NGO of its kind. The association has dealt with a host of different matters beyond those of land rights, including—after the Israeli technician Mordechai Vanunu's exposure of Israel's nuclear program in 1986—anti-nuclear activism. Al-ʻUqbi has in the meantime lived in different places including Lod in the Tel Aviv metropolitan area,

TARGETS SIMULATING ENEMY INSTALLATIONS IN A LIVE-FIRE TRAINING ZONE, <100 MM RPA

Fazal Sheikh, November 13, 2011

The targets simulate Egyptian and Syrian military circular fortification systems (known as *pitas*). Created by piling up earth mounds, they are reminiscent of the ancient archaeological remains that are also scattered throughout this part of the desert. The live-fire zone, established on former pasturelands of the al-ʻAzāzme tribe, is not far from the border with Egypt and is also meant to close off the border zone to Bedouins.

where he ran a car repair workshop. In 2001, seeing JNF savanna-type afforestation being prepared on his family land, al-ʻUqbi returned to plant a few fruit trees, but again they were uprooted. Each time he returned to the site he was served with an indictment; throughout his life he has accumulated more than 70 of them.

In October 2006, al-ʻUqbi set up a protest tent in al-ʻAraqīb, a kilometer or so downstream, west of the al-Tūri cemetery. The area he returned to did not resemble the one he had left as a small boy. Al-ʻAraqīb has become a landlocked "island" surrounded by Jewish agricultural settlements, JNF forests, a highway, a railway, and a major waste facility. Time and again the Green Patrol raided the place and confiscated his tent and belongings. But for three years the tent was immediately re-erected. In 2009, the al-ʻUqbi case was heard in court, and Nūri heeded his lawyers' advice to honor the restraining orders prohibiting his presence on the site. He returned to Ḥūra and directed the struggle from his small living room there, which remains the headquarters of his one-man NGO.

Members of the al-Tūri tribe had bought land in the eastern part of al-ʻAraqīb from the al-ʻUqbis in 1905 and had begun to use it as a cemetery in 1914. Since their displacement in the 1950s, members of the tribe came to the area near the cemetery many times each year, bringing their herds with them. Unlike the al-ʻUqbis, they feel as if they never left. When the JNF started planting forests on the land in 1998, the al-Tūris established a permanent foothold. Their numbers on site steadily grew. In 2002 when the demolitions began, there were 400 people living in a small semi-agrarian village next to the cemetery.

DEMOLITION IN AL-ʿARAQĪB, 200 MM RPA

Fazal Sheikh, April 7, 2014

At about 2 p.m., a bulldozer, two police cars, and a green off-road vehicle of the Green Patrol arrived at al-ʿAraqīb to demolish several light structures erected by the community to mark their claim on the land.

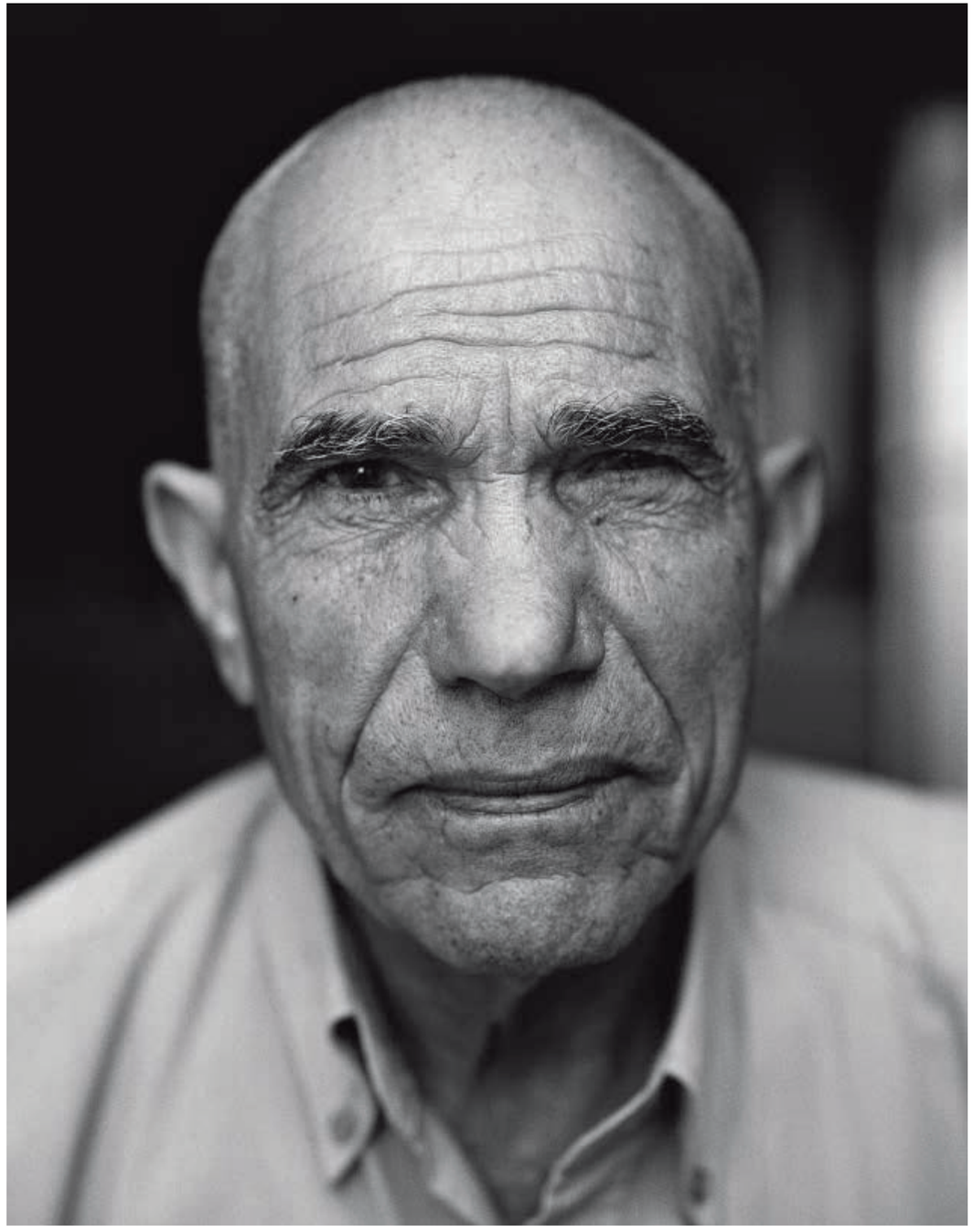
ECOLOGICAL PARAMILITARIES

Barely an hour after Fazal Sheikh and I arrived in al-ʿAraqīb on April 7, 2014, to visit al-ʿUqbi's lands and to meet Sheikh Sayāh al-Tūri and activist Haia Noach, founder of the NGO Dukium (Negev Coexistence Forum for Civil Equality), two police cars, an off-road Green Patrol vehicle, and a bulldozer arrived looking for things to demolish. All they could find outside the cemetery (they had not yet obtained a demolition order for the structures inside the cemetery fences) were a few light structures erected by the community to mark their claim on the land. On this occasion the empty structures functioned like decoys, diverting enemy fire away from the cemetery. It was the sixty-second time in twelve years that the village had been demolished, but no one seemed too bothered; they were used to much worse.

The very existence of an organization such as the Green Patrol is a testimony to the national-strategic importance of ecology in this area. It was established in 1977 by a coalition of national environmental agencies—the Nature Reserves Authority, the JNF, and the Ministry of Agriculture—with a seemingly benign task: the ecological preservation of the desert's threshold. In its early days its members were referred to as "rangers" or "nature activists," acting to protect the "ecological balance of Israel's green spaces and agricultural lands."[87] But after the political turnabout that saw the rise of the conservative Likud party to power in the late 1970s, the patrol was repurposed and expanded by Ariel Sharon, then Minister for Agriculture, into a paramilitary force policing the threshold of the desert, the "environmental protection" equivalent, perhaps, of his notorious vigilante commando Unit 101. In its early days under Sharon, the Green Patrol numbered between 20 and 30 men, including a few Arabic-speaking Jews and some Hebrew-speaking Druze. The composition demonstrates how the state aimed to turn its non-Jewish subjects against each other—using Druze citizens against Bedouins and recruiting the impoverished Bedouins to the Israeli military to act against the Palestinians in the Occupied Territories.

Indeed, the quest for "nature preservation" was thrown into direct conflict with indigenous culture and Bedouin land ownership claims. In the northern Negev the Green Patrol engaged in a Sharon-style campaign specializing in "locating and rapidly evacuating" Bedouins still living on, or returning to, land seized by the state. "They would attach a jeep to a tent and just drive off. They would poke holes in our jerry cans so that we'd run out of water," a former Bedouin soldier in the Israeli military recounted. "Imagine how a man felt when he returned from the army to find his tent destroyed and his wife beaten. They shot our dogs even when they knew there wasn't any rabies involved."[88]

It was in the early 2000s, during the period when Sharon was prime minister, that the Green Patrol was given the green light to escalate. It happened under the smoke screen of the Second Intifada, when all eyes were turned to Israel's re-occupation of Palestinian cities in the West Bank and to the construction of the Wall. Like an orchestrated military operation, attacks on the Bedouins returning and holding on to the threshold of the desert came from both the air and the ground. In February 2002, crop dusters, everywhere to be seen spraying pesticides over the intensely irrigated fields of the Jewish settlements of the northern threshold of the desert, started spraying toxic herbicides on the small sustenance fields of illegalized Bedouin settlements that the state wanted to evict, acting now, literally, as agents of desertification.[89] On March 4, 2003, almost 400 acres of cultivation were destroyed by crop dusters flying over the unrecognized village of ʿAbda. The matter was debated in the Knesset, where it was defended by Avigdor Lieberman, then Minister for National Infrastructure and responsible for land management. Other state representatives explained that because "the act of invasion is manifesting itself in the seeding of state lands," the state was justified in acting directly against these "invaders."[90] The session, reported the academic and activist Gadi Algazi, turned to a discussion of measure: "What is the right dose of herbicides to be used to minimize health risks?"[91] The villagers and rights groups appealed to the



NŪRI AL-ʿUQBI, ḤŪRA

Fazal Sheikh, April 12, 2014

A CROP-DUSTER SPRAYING HERBICIDES ON THE LAND OF ABU KAFF, NEXT TO ḤŪRA, ʿALI ABU SHKHĒTA, MARCH 10, 2004

The writing on the photograph reads: "Yet, we will stay despite what you have burnt."

Supreme Court, demonstrating the effects of the chemical Roundup, produced by the multinational agrochemical corporation Monsanto, on a person's skin.[92] Even the otherwise acquiescent court had to forbid the practice, but by then more than 7,500 acres had already been destroyed. After that, old habits returned, and the crops were simply crushed under the wheels of the Green Patrol's road vehicles, or uprooted by the blades of their bulldozers.

THE DEAD NEGEV DOCTRINE

In 2006, at the same time as he erected his protest tent in al-ʿAraqīb, Nūri al-ʿUqbi brought together sixteen other members of his family and filed six separate land claims with the Beersheba District Court. The trial *al-Uqbi vs. the State of Israel* began in 2009. Al-ʿUqbi had in his possession piles of evidence for his family's ownership of these plots. They included aerial photographs, land sale documents, tax receipts, correspondence with Ottoman, British, and Israeli officials, and military orders testifying to Bedouin settlement and cultivation practices in the northern threshold of the Negev over the past 150 years. The trial has become the catalyst for a further process of research and evidence-gathering in which hundreds more pieces of documentary, literary, and archaeological evidence were found, prepared, and presented.

Al-ʿUqbi was aware that he was petitioning a court that had enacted laws whose very purpose was to dispossess the Bedouins, and that allowing it to arbitrate over his petition might give these dispossessions an aura of justifiability. However, having marshaled so much evidence, he believed he would be able to reverse not only the dispossession of his family, but to confront the legal regime employed to enable the dispossession in the first place.[93] Through the court al-ʿUqbi was seeking to address the Israeli public domain, which he believed, naively perhaps, would be able to see and reverse the injustice done to him. The legal campaign went hand in hand with a set of public campaigns and demonstrations. Solidarity activists were involved in preparing the legal files, hundreds attended the hearings, and dozens of news articles were published on the issue. In 2010, al-ʿUqbi's petition was predictably dismissed, but with the appeal still unfolding, and with public campaigns, occupations, and demolitions ongoing, al-ʿAraqīb remains the center and the symbol of Bedouin struggles for land rights in Israel.[94] Nūri al-ʿUqbi summed up the struggle as being that of "a tribe against a state,"[95] but this tribe was not only of blood relations, it has become a small political community that has formed around this issue.

In 1975, reacting to Bedouin land claims submitted in 1972–73, a team of experts at the Ministry of Justice headed by Plia Albek developed a legal mechanism for declaring the land from which Bedouins had been forcefully and temporarily displaced in 1948–53 as "state land." The principle, articulated in a document entitled *Report of the Expert Committee on the Northern Negev and the Siyag Area,* combined mid-nineteenth-century Ottoman land laws (to which Israel claims itself to be committed by the power of historical continuity) together with anthropological and meteorological data. The logic implied was tautological and went against all contrary evidence. There was no permanent Bedouin settlement and cultivation in the Negev prior to the advent of the State of Israel, because, being a "desert," there simply couldn't have been.[96] In this vast zone, more than a half of Israel's total land area, no Bedouin property rights were acknowledged. The Bedouins dispossessed in and after 1948 had been transferred from land, the logic of the law sought to demonstrate, that did not belong to them in the first place.

When a legal doctrine is exercised on a designated territory, such as "the Negev Desert," the crucial question is: what is its border? As the zone of dispossession was to be co-extensive with the meteorological definition of the "desert," the border has necessarily become the 200 mm isohyet. It is in this way that the aridity line has become the sharp edge of a legal apparatus of dispossession. South of it, property rights were not recognized.

In a number of pathbreaking critical essays, the Israeli geographer Oren Yiftachel, who has done more than anyone else to unpack and confront the perverse logic of this argument, called it the "dead Negev doctrine."[97] The "dead Negev doctrine," Yiftachel explained in an essay written with scholars Ahmad Amara and Sandi Kedar, is a local Israeli version of the colonial principle of *terra nullius* ("empty land" void of sovereignty or ownership)—a legal principle originating at the 1884–85 Berlin Conference that disregarded native forms of government, cultivation, and settlement, and dispossessed indigenous people in Africa, Australia, and other places throughout the colonial world. The principle of *terra nullius* infamously defined natives as "part of the natural environment."[98] By considering the Bedouins who settled and cultivated the Negev as nomads, Israel has followed a similar legal route.[99] The "dead Negev doctrine" was not only a tool of dispossession but, as Amara, Kedar, and Yiftachel argued, an act of denial that dispossession had taken place.[100]

It is beyond the scope of this essay to discuss all aspects of the 1858 Ottoman land law on which the "dead Negev doctrine" rests; its matrix of land title classification is extensive and exhausting. The relevant principle is to do with a distinction between cultivated and uncultivated land.

The 1858 land reform followed the Crimean War and a cycle of devastating droughts that bankrupted the Ottoman Empire in the mid-nineteenth century. In response the Ottomans sought to expand cultivation, which was both a means of feeding their subjects and raising taxes. To encourage cultivation, they granted a form of private ownership to those who "revived" barren land through cultivation. Inversely, ownership was lost when cultivation ceased for three consecutive years. Cultivated land was classified as *mīri* and was taxed. Uncultivated land was referred to as *mawāt*, literally "dead," and came under the ownership and responsibility of the sovereign. *Mawāt* was thus a rocky, arid, or barren landscape "as provided by nature." As such the land reform operated by generating a clear conceptual and spatial distinction between nature and culture, barren and cultivated lands. Unless continuously cultivated or "revived," all land located beyond half-an-hour's walking distance from the edge of an inhabited place, or a mile and a half away, or where "the loudest noise made by a person in the closest place of settlement will not be heard," was also considered as *mawāt*.[101] Settlements (or inhabited spaces) were thus uniquely necessary as anchors from which to start mapping the extent of private land ownership around them. But the state regarded Bedouins as nomads and their form of settlement as temporary even when it was fixed and permanent.

Complicating Bedouin land claims was the fact that the calls by the Ottomans and later the British on the Bedouins to register their tribal lands and agricultural fields were ignored by them. That reason was that the Bedouins perceived this initiative, correctly perhaps, as a ruse for collecting taxes.[102] Although they surveyed and registered private land in the north of Palestine, the Ottomans never ventured to register lands beyond the threshold of the Negev, except around Beersheba. Nor did they seize the Negev's land by declaring it *mawāt*. On the contrary, they granted de facto autonomy to the Bedouin tribes to conduct their own customary land law and recognized their indigenous property system.[103] The British who came to rule the Negev after the Ottomans also granted the Bedouins de facto autonomy to run their traditional land system and did not venture to register land there. The few acts of land registration that did happen took place at the requests of Zionists and Arab non-Bedouin landowners who asked to register the land they had purchased from the Bedouins. In 1921, as the new Secretary of State for the Colonies, Winston Churchill promised the Bedouins that the British would respect traditional Bedouin law, in effect granting them an autonomy which included a recognition of land transfer documents.[104]

Both the Ottomans and the British did not effectively govern beyond the aridity line. In this sense the threshold of the Negev, like the thresholds of other deserts throughout the colonial world, was, to a certain extent, the threshold of imperial rule and, most importantly, the limit of its law.

For the purpose of seizing land in the Negev, Israel employed the principles of the imperial land system that suited it–declaring the Negev *mawāt*/dead land–but not the principles of imperial rule that didn't suit it, i.e., granting autonomy to its inhabitants. Although before the establishment of the state Jewish settlers had bought land from Bedouins (thus in effect recognizing their ownership), after 1948 it was convenient for the new Israelis to categorize the Bedouins as nomads and ignore the multiple ways in which they managed to make use of available rainwater in order

NŪRI AL-ʿUQBI POINTING TO A MARKING OF AL-ʿARAQĪB ON JOSEPH BRASLAVSKY'S 1946 MAP OF THE NORTHERN NEGEV. ALONG THE SAME STREAM THE MARKING READS "ARAB BNEI OKBA" (WHICH REFERS TO THE TRIBAL DOMAIN OF THE AL-ʿUQBIS)

Fazal Sheikh, April 18, 2014

to cultivate and settle the northern Negev. Designating the entire Negev as "dead land" meant it could be transferred in its entirety to Jewish hands for "revival."

Over the years, during a number of land rights trials heard at the Beersheba District Court, the "dead Negev doctrine" continuously revolved around the same elliptical groove it had carved within the law: if the aridity line marks the limit beyond which no cereal cultivation can take place, there can be no permanent cultivation and no permanent settlements beyond it. The Bedouin settlements and cultivation, in as much as they existed, were only temporary encampments and their inhabitants nothing but nomads, and nomads possess no land rights. *Quod erat demonstrandum.*

The logic of the "dead Negev doctrine" can be understood in a context in which Israel's land laws have been turned into ideological tools of dispossession. A legal strategy is effective because it simultaneously naturalizes dispossession and obfuscates its effects. But the complexity of this legal discourse does not imply fragility. If the meteorological–juridical logic were to be undone, other mechanisms would be found to dispossess those marginal to Israeli hegemony. Dispossession, after all, continuously affects all Palestinian citizens of Israel throughout the country.

The narrative promoted by the law reflected the core of Zionist ideology—one that imagined Jews as having returned to a desolate, neglected, "dead land," belonging to no one, and having revived it. There is, of course, no aridity line to be seen on the ground; nothing that clearly divides dead from settled land. Throughout centuries there has been only a gradient of climatic, meteorological, and environmental conditions that has given rise to slowly shifting agricultural practices. However, when this elusive threshold drawn on meteorological maps was reified as a legal and political "object" marking the border of an area of dispossession, it began to induce physical transformations that were visible on the territory. Without collective and individual rights, the state could do in the Negev as it pleased, treating it as if it were an empty terrain to be freely rearranged with fields, forests, military bases, prisons, and polluting mines and industries. It is therefore the consequences of the "dead Negev doctrine" beyond the aridity line that are captured in Fazal Sheikh's photographs.

TESTIMONY OF CLIMATE

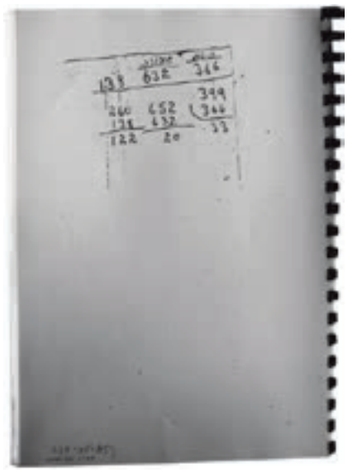
On December 7, 2009, Nūri al-ʿUqbi was called to the stand to deliver his testimony. His first attorney Shay Gabso led the examination, which aimed to establish that the al-ʿUqbi settlement in al-ʿAraqīb was permanent and that it engaged in agricultural processes of cultivation. Al-ʿUqbi testified that he was born in 1942 in al-ʿAraqīb. His father and grandfathers were born there, too. The al-ʿUqbi tribe had arrived in the Negev in the eighteenth century and settled on these lands. Gradually they learned to cultivate them. In later generations they repaired the dams (*asada*), traces of which they found within the seasonal streams, and planted small orchards of figs, pomegranates, vines, melons, watermelon, and prickly pears. The British and the Ottomans collected taxes and later the Israeli authorities did the same. Al-ʿUqbi's family did not register this land because neither the Ottomans nor the British had ever threatened to take it from them.[105]

> Gabso: I want to bring you back to your childhood, before 1948, how did the area look like in this period as far as you remember?
>
> Al-ʿUqbi: There were houses dispersed through the area, each family had a house on its plot. Each family plowed and seeded its land. There were stone houses but also tents. And there were fences around each plot. There were also enclosures for sheep and goats. There were cows, but very few because cows need much water. Camels were used for plowing. There was a large distance between the houses. My father's house was 400 meters away from the next houses on both sides—his brothers' houses, my uncles.
>
> Sarah Dovrat [the presiding judge]: What else can you remember?
>
> Al-ʿUqbi: My father cultivated the land. Sometimes he hired people to help him. They plowed with camels. My grandfather had twelve camels that were used in plowing and seeding. This took three months: October, November, December. We finished around January 5th. In 1948 my father bought a tractor. I remember it well. It was red […]. We cultivated chili pepper, Arab cucumbers, pumpkins, those with a neck, pumpkins of the kind you can empty and dry.
>
> Gabso: There were stone houses? What kind of stone?
>
> Al-ʿUqbi: Yes, we wetted the loess earth [a kind of sandy clay] and dried it in the sun, you can make very good thick walls […]. The house was not only residential, it was also a court house, the tribal court. Until 1948 the tribal court was in Beersheba. In 1948 they transferred it into my father's house. The house had the Israeli flag and the sign with the menorah and Herzl's photograph [Theodor Herzl, founder of the World Zionist Organization]. I remember that as a child I was impressed with his beard. The trials were on Mondays and Thursdays and they raised the flag on these days.

LAND USE AGREEMENT FOR A PLOT AROUND KARKŪR BETWEEN THREE TRIBES, 1883, AL-ʿUQBI FAMILY ARCHIVE

Fazal Sheikh, April 18, 2014

The first paragraph reads: "All the owners signed in the bottom declare that the entire part of Karkūr is owned by Khoud al Wihadi." The second paragraph identifies the boundaries of the land, a few kilometers south of al-ʿAraqīb, with the signatures of seventeen sheikhs, owners of the surrounding land, confirming the boundaries. Yiftachel's handwriting, translating elements of the text for the benefit of the court, is seen in Hebrew on the document.



CALCULATION OF QUANTITIES OF WHEAT AND BARLEY FOR TAXATION, THE MILITARY GOVERNMENT, 1953, AL-ʿUQBI FAMILY ARCHIVE

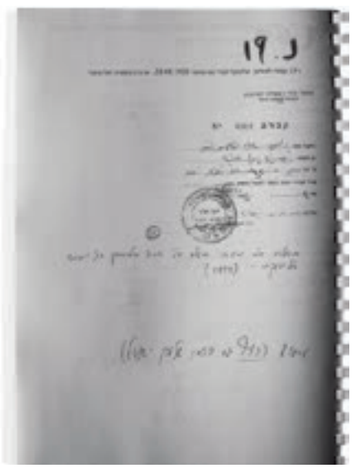
Fazal Sheikh, April 14, 2014

Wheat 366: 399 – 366 = 33; Barley 632: 652 – 632 = 20; Undisclosed produce: 138: 260 – 138 = 122

INVITATION TO VOTE FOR THE ISRAELI PARLIAMENT, 1949, AL-ʿUQBI FAMILY ARCHIVE

Fazal Sheikh, April 14, 2014

The invitation to vote for the Israeli parliament is addressed to Suleiman al-ʿUqbi, Nūri al-ʿUqbi's father. The voting station is marked as "al-ʿAraqīb." The elections were held on January 25, 1949. The top note reads (regular is for print, *italics for handwriting*): The State of Israel / Ministry of the Interior / Notice to the Voter / Dear Mr. *Muhammad Ibn Salam al-ʿUqbi* / City or Village: *Al-Arakib* / Tribe: *al Al-ʿUqbi* / ID. No. 5120675.



TITHE TAX, 1950, AL-ʿUQBI FAMILY ARCHIVE

Fazal Sheikh, April 14, 2014

A receipt addressed to Suleiman Al-Ḥajj Muḥammad ʿUqbi for the payment of tithe tax on August 28, 1950. The Hebrew notes explain what is written and that the purpose of submitting this file to court is to demonstrate there was Israeli recognition of continuous cultivation even after the transition to Israeli rule.

LAND SALES CONTRACT FOR A PLOT IN AL-ʿARAQĪB, PURCHASED BY MOHAMMAD BEN SALEM AL-KARSHI AL-ʿUQBI, 1913, AL-ʿUQBI FAMILY ARCHIVE

Fazal Sheikh, April 14, 2014

The contract describes the location of the land according to the surrounding land owners, and its size in feddan (an Egyptian measuring unit in practice in Gaza), the amount of money, the procedure of payment (cash in hand from the seller to the new owner), as well as the rights to use it in the way the new owner deems proper. The document is signed by witnesses and dated Hijri 26 Ramadan 1331 (Friday, August 29, 1913).

Above:

PORTRAIT OF HAJ MUHAMMAD SALEM AL-ʿUQBI (NŪRI AL-ʿUQBI'S GRANDFATHER), AL-ʿUQBI FAMILY ARCHIVE

Fazal Sheikh, April 18, 2014

Right:

BRITISH IDENTITY CARD OF HAJ AHMED AL-ʿUQBI (NŪRI AL-ʿUQBI'S UNCLE), DATED 1948; THE PLACE OF BUSINESS IS NOTED AS AL-ʿARAQĪB, AL-ʿUQBI FAMILY ARCHIVE

Fazal Sheikh, April 18, 2014

This is the same house that the state later destroyed, after we were driven away. Before the expulsion I still studied a few classes in the Al-Arakib school.

I request permission to show my end of year grades from third class, the last class I took [in al-Arakib].

Dovrat: [looking at the report, teasing] I see you were weak in math…

Al-ʿUqbi: I would have become rich otherwise.

[…]

Gabso: What were the means of cultivation?

Al-ʿUqbi: After seeding we protected the field from the sheep so that they would not eat the seeds. In the winter we seeded wheat and barley. In the summer sorghum and watermelons. The Bedouins work year round. Except in January and two thirds of February there is no rest. My father used the entire land. He did not leave any part uncultivated. We harvested at the end of September. To store the produce we dug holes 20 centimeters [this is probably a transcription error, two meters likely]. We put inside a layer of straw, then the harvest—the barley or the wheat or the sorghum—after which we laid another layer of straw, and then a layer of earth to protect […]. Sometimes we were digging very deep holes six meters deep in which we could hold tons of produce.

Gabso: What were the water sources?

Al-ʿUqbi: There were two types: wells that reach the underground waters, and water holes [cisterns] for collecting rainwater. Every family had a cistern, or sometimes two families were using one. Water was precious.[106]

Al-ʿUqbi's testimony was corroborated by seven other witnesses who testified in Arabic via an interpreter on October 26, 2009. They confirmed that there were settlements and agriculture in the area (*dira*) of the al-ʿUqbis and that the al-ʿUqbi tribe's ownership was known and respected among the inhabitants of the surrounding area.[107]

Throughout the trial, the state lawyers and Dovrat appeared distrustful of the Bedouins' testimonies and continually raised objections to "hearsay" whenever stories, passed on orally through the family, were presented as evidence. Asked time and again how they knew the things they testified about, the Bedouin witnesses often answered, "I was always told about it," and "I remember," suggesting that in a society where the oral tradition is the means of retaining the cultural memory, this memory, particularly when it is about ongoing habits and the conditions of life (rather than events), was also a collective matter.

Dovrat: What you tell us, you tell us because you remember or because you were told?

Inour al-ʿUqbi [one of the other witnesses]: No, I remember. And they told [us]. My late father told me, he used to tell me.

Dovrat: You were five years old.

Inour al-ʿUqbi: Seven.

Dovrat: Being seven, you remember all this that you are telling us now?

Inour al-ʿUqbi: Yes. I remember.[108]

Dovrat did not consider these testimonies in her verdict against al-ʿUqbi since, as she repeatedly reminded the witnesses in court, they could only testify for what they had experienced firsthand. To her mind, much of the legal question turned on whether or not the land was settled and cultivated *mīri* land or dead *mawāt* land in the time before the establishment of the state, going back to 1928, when the British Mandate of Palestine began its process of land registry, and even back to 1858, when the Ottoman land law was instituted. The childhood memories of witnesses almost 60 years after they were displaced she considered as "hearsay." With this Dovrat dismissed not only the specific witnesses and their memories, but also an entire tradition of oral history. The oral history of indigenous people, it must be noted, is now accepted as evidence in former colonial states such as Canada and Australia.[109]

Al-ʿUqbi's new representative, the human rights lawyer Michael Sfard, who took over from Gabso in early 2010 in an attempt to turn the tide, responded to this allegation by stating that by hearing land claims for the first time almost 60 years after dispossession, a period within which the village elders who could have personally testified had passed away, the state had generated "evidentiary damage."[110] This argument made no impression on Dovrat.

For processes and events not experienced first hand, the judge was willing to allow only the testimony of scientific experts. The trial thereafter pitted the expert for the state, Ruth Kark, a professor in the geography department of the Hebrew University, against Oren Yiftachel, acting for the al-ʿUqbis. While the oral tradition of those native to the land was largely discredited, the written accounts, often in narrative form, of occasional European travelers, cartographers, priests, spies, and amateur biblical archaeologists who had passed through the Negev in the nineteenth and early twentieth century were admitted. Ruth Kark, whose earlier work on the Negev was scientifically sound and made mention of Bedouin agriculture and their process of sedentarization,[111] provided the court with an expert report

that was unequivocal in its negation of Bedouin rights. Her report included only documents, maps, and quotes in which the Negev was described as desolate, without permanent settlement or agriculture.

The reason that some texts and maps did not record agriculture and settlements, Yiftachel responded in his cross-examination, was due to "cognitive and cultural filters" that made western travelers see this area through a specifically European and Christian perspective. "Sparse tent settlements with few stone houses," Sfard noted, following Yiftachel, "did not seem to these travellers to be settlements as they knew them to be from Europe."[113] Explaining why accounts that did not mention Bedouin settlements could not be considered as evidence, Sfard explained that not mentioning something is not proof that it was not seen, and certainly not proof that it was not there. The absence of evidence is not evidence of absence, of course. There are many reasons for not noting a fact: a person might not notice it, not understand what he or she was looking at, or decide it was not important enough to note. However, for those who were willing to look, there was plenty of evidence for Bedouin settlement and cultivation in the Negev to be found. On May 13, 2010, Sfard cross-examined Professor Kark on her report.

> Sfard: On page four of your report, in the middle of the page, you refer to the American missionary Dr. William Thompson. [Thompson traveled through the Negev in 1856, two years before the enactment of the Ottoman land law, and passed fifteen kilometers north of Al-Arakib.]
>
> Kark: Yes.
>
> Sfard: Now pay attention. In the third line of your quote you put three dots. Now, the following is what is written within these three dots: "neither is the country what we refer to in the US as virgin land, it was plowed throughout thousands of years in the same way that it is plowed at present." This is what you turned into three dots.

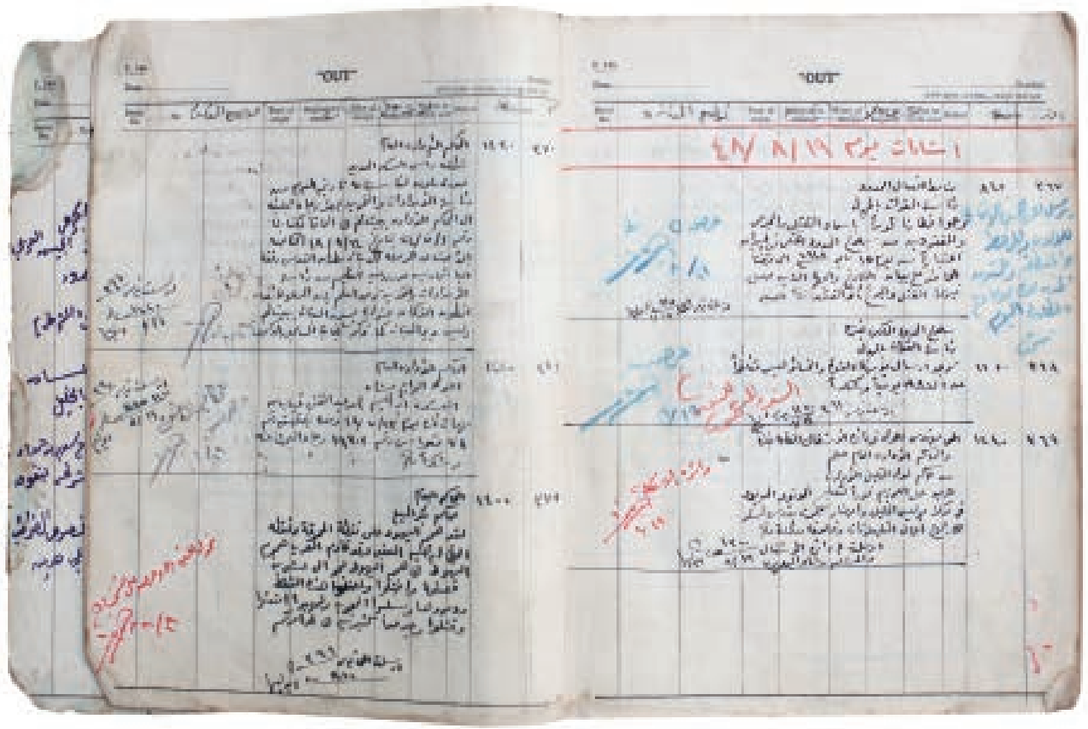
Sfard kept up the pressure, going on to present Kark with her previous academic work where she did mention Bedouin cultivation. Kark tried to evade the line of questioning by reverting to the meteorological logic of the "dead Negev doctrine."

> Kark: So let me put it to you this way: there is very limited possibility to cultivate in the Negev because of the natural conditions. I brought here maps from the Altas of Israel that shows the isohyets, that is the rain lines… It is clear that agricultural cultivation is dependent on the level of rainfall, so it's clear that there is a very limited possibility to cultivate there.[114]

Nevertheless, description of cultivation exists in almost all the surveys of the Negev.[115] Different travelers' accounts described the same hills alternately as arid or fertile, desert or sown, dead or alive, depending on the year and season they traveled. The state favored the summer travelers, of course. To make his point, Yiftachel presented quotes from some winter travelers. One, from the famous priest, botanist, and ornithologist Henry Baker Tristram, described the threshold of the desert near Beersheba in late January–early February 1858 in this way: "cultivation of large portions of unfenced land for corn by the Arabs … The rich low-lying flats by the Wadi Seba are plowed, or rather scratched, for wheat and barley." Similarly, Edward Hull, head of a British geological expedition, who traveled through the Negev in the winter of 1883–84, reported on what he saw fifteen kilometers west of al-ʿAraqīb, writing that "the district is extensively cultivated by the Tarabīn Arabs … The extent of the ground which is cultivated, as well as all the way to Gaza, is immense, and the crops are wheat, barley, and maize [that] must vastly exceed the requirements of the population." To Hull, the area looked like southern Italy.[116]

Confronted with these quotes, Kark responded that the fields could have belonged to farmers from Gaza or that, if they were Bedouin fields, they couldn't have been permanent.

One of the accounts that the Israeli courts liked to rely on, and repeatedly did when contesting Bedouin land claims with descriptions of aridity, was that of Edward Palmer—the most celebrated of the orientalist travelers in the Negev, and a reference for many of those who traveled after him. Palmer must have struck a bizarre figure when he crossed the area in 1869–70 wearing Bedouin dress and presenting himself as "Abdallah Effendi." In *Orientalism*, Edward Said described Palmer's biblical-archaeological-military survey of the Negev as suffering from the same romantic attitude that haunted most contemporary travelers to the Orient, one that masked all differences, pluralities, internal dynamics, and historical complexities of the Arab people they saw, but didn't notice. Said was kind. Palmer was possessed by a genocidal hatred of the Bedouins, and proposed all sorts of ways to destroy them by unleashing regional wars or starving them out of existence so that "this terrible scourge might be removed." Then, trying to moderate what he has just written, he embarked on a fantasy by negation: "I do not advocate a war of extermination against the Bedawin … and I have still, even in the days of *mitrailleuses* [an early machine gun] some old-fashioned notions about the sacredness of human life, but I would put an



A LOGBOOK KEPT BY THE AL-ʿUQBIS LISTING THE VARIOUS COMMUNICATIONS SENT DURING THE NAKBA OF 1948, AS WELL AS OTHER VIOLATIONS COMMITTED BY THE ISRAELI AUTHORITIES ON THE TRIBE THROUGHOUT THE YEARS, AL-ʿUQBI FAMILY ARCHIVE

Fazal Sheikh, April 18, 2014

The pages reproduced here, from August 19, 1948 (second page, section 6), include the following communications to the General Governor from the Governor of Bir Assabi' informing him of the fall of the al-ʿUqbi defenses: "The Jews have attacked the Mahraqqah area and Al-Haj Ibrahim al-ʿUqbi's defense position. The Arab resisted the Jewish attacks. They attacked with twenty tanks and they occupied this defensive position. They destroyed, stole the ammunition and equipment, killed and injured many. May you live long."

---

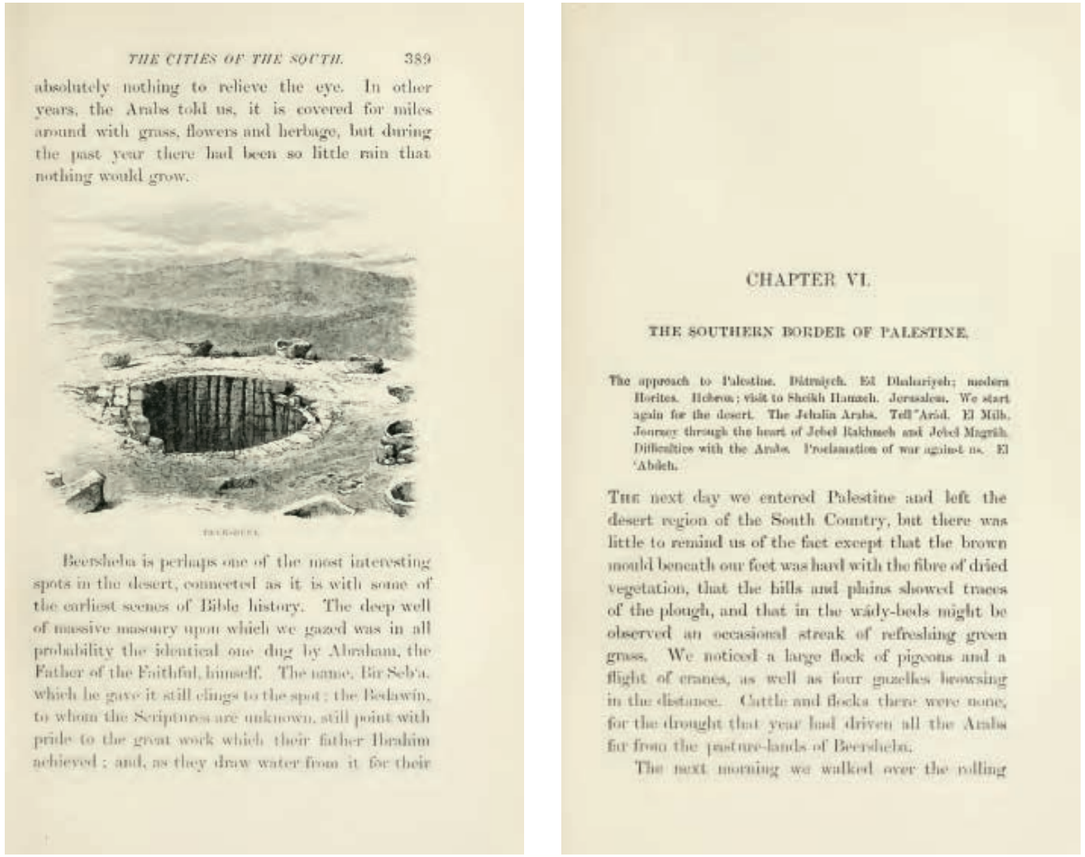
end to their existence qua Bedawin."[117] Palmer's diary was published in 1871 as *Desert of the Exodus: Journeys on Foot in the Wilderness of the Forty Years' Wanderings*. He was killed by Bedouins ten years later, "the most unsuccessful of the many who performed similar services for the Empire," Said curtly summed up.[118]

Despite, and perhaps because of, his blinding hatred of the Bedouins, Palmer has become, for the Israeli legal system, an authority on them and on the state of the Negev in the nineteenth century. In a previous ruling handed down by the Israeli Supreme Court against a Bedouin tribe that in 1974 claimed legal ownership of the land they had settled for centuries, Judge Avraham Halima decidedly confirmed:

> The condition of the Negev in 1870 was researched by the scholar Palmer who traveled in that area and closely studied the Negev. He found wilderness, ancient ruins and nomad Bedouins, who did not particularly cultivate the land, did not plow the land and did not engage in agriculture at all. […] This, in conjunction with [his] observation regarding the nomadic characteristics of the Bedouin tribes, and the fact that the region is usually dry and without rain most days of the year…[119]

Dovrat relied upon this part of Halima's ruling and reproduced it in her own verdict.[120]

In the al-ʿUqbi trial the squabbling about Palmer's account of the Negev continued:



THE CITIES OF THE SOUTH. 389

absolutely nothing to relieve the eye. In other years, the Arabs told us, it is covered for miles around with grass, flowers and herbage, but during the past year there had been so little rain that nothing would grow.

Beersheba is perhaps one of the most interesting spots in the desert, connected as it is with some of the earliest scenes of Bible history. The deep well of massive masonry upon which we gazed was in all probability the identical one dug by Abraham, the Father of the Faithful, himself. The name, Bir Seb'a, which he gave it still clings to the spot; the Bedawin, to whom the Scriptures are unknown, still point with pride to the great work which their father Ibrahim achieved; and, as they draw water from it for their

CHAPTER VI.

THE SOUTHERN BORDER OF PALESTINE.

The approach to Palestine. Bîtrnîych. El Dhahariyeh; modern Horites. Hebron; visit to Sheikh Hamach. Jerusalem. We start again for the desert. The Jehalin Arabs. Tell 'Arâd. El Milh. Journey through the heart of Jebel Rakhmeh and Jebel Magrâh. Difficulties with the Arabs. Proclamation of war against us. El 'Abdeh.

The next day we entered Palestine and left the desert region of the South Country, but there was little to remind us of the fact except that the brown mould beneath our feet was hard with the fibre of dried vegetation, that the hills and plains showed traces of the plough, and that in the wâdy-beds might be observed an occasional streak of refreshing green grass. We noticed a large flock of pigeons and a flight of cranes, as well as four gazelles browsing in the distance. Cattle and flocks there were none, for the drought that year had driven all the Arabs far from the pasture-lands of Beersheba.

The next morning we walked over the rolling

THE DESERT OF THE EXODUS: JOURNEYS ON FOOT IN THE WILDERNESS OF THE FORTY YEARS' WANDERINGS

Edward Henry Palmer (Cambridge: Deighton, Bell and Co., 1871), pp. 389, 393

Sfard: So let's take Palmer…

Kark: You are talking about the 1860s, right?

Sfard: Yes.

Kark: So I say he is writing it very clearly [that the Negev is desolate].

Sfard: What page are you on?

Kark: I am on page seven of the first expert report [where I wrote] "On the way back towards mount Hebron north east of Beersheba, Palmer walked in the area of the Wadi Khalil and there he describes ruins, and remnants from ancient settlements," and he says it in clear terms.

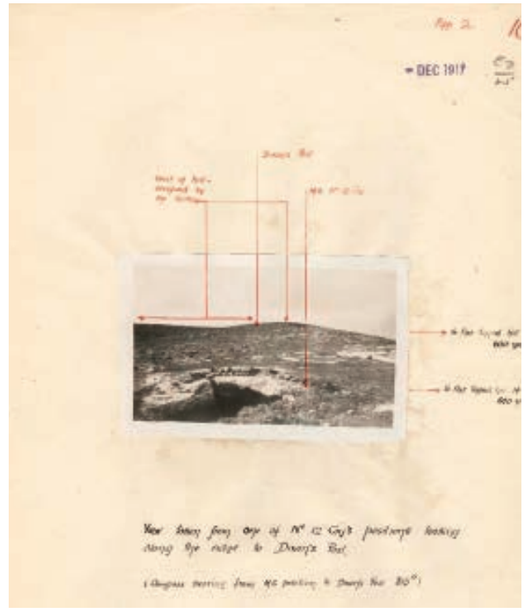
There are several quotes from Palmer describing desolation and ruins in the Negev. The following quote is likely to be what Kark refers to because it is attributed to a site along the Wadi Khalil and is, incidentally, the closest Palmer got to al-'Araqīb. In it, after a day of wandering and some danger, Palmer lets loose a biblical fantasy:

> Long ages ago, the Word of God had declared that the land of the Canaanites, and the Amalekites, and the Amorites should become a desolate waste; that "The cities of the Negev shall be shut up, and none shall open them" (Jeremiah xiii. 19)—and here around us we saw the literal fulfillment of the dreadful curse. Wells of solid masonry, fields and gardens compassed round about with goodly walls, every sign of human industry, was there; but only the empty names and stony skeleton of civilization remained to tell of what the country once had been.[121]

The observations sound conclusive, and, as Kark said, Palmer "describes ruins, and remnants from ancient settlements." However, two pages on, it seems that it wasn't *only* the fulfillment of a biblical curse that made the area arid and desolate, but rather a severe drought in the year of his visit that pushed desert conditions northwards.

Going back to Palmer's book, we can reconstruct his whereabouts. On page 390 we read that Palmer started the previous day in Beersheba rather late: "At one o'clock we left Beersheba, and … proceeded towards the ruins of El Haura, where we were to have encamped."[122] His expedition proceeded northeast, up Wadi Khalil, along today's Highway 60, a route that follows the ancient "Way of the Patriarchs," and leads, in its southern section, from Beersheba to Hebron (and in its northern section from Jerusalem to Nazareth). After a three-hour camel ride from Beersheba and a short errand, Palmer's expedition reached "Haura" at sunset and set camp near some ancient ruins. It is there that he had his biblical vision regarding the cities of the Negev. On today's map he was probably a few hundred meters west of the Bedouin town of Ḥūra (to which the al-'Uqbis were displaced in 1951), where in 2014, an archaeological excavation over a site with some visible ruins discovered a sixth-century Byzantine monastery with wells, a church, and small gardens (this is likely what Palmer mistook for "biblical" ruins) three kilometers south of the West Bank and twelve kilometers east of al-'Araqīb.[123] A couple of pages on we read: "The next day we entered Palestine and left the desert region of the South Country."[124] Palmer was crossing what he identified as the threshold of the desert—then understood as the southern border of Palestine. Walking north of Ḥūra, along the ancient route, Palmer must have been close to or already past the location of today's Wall separating the northern Negev and the West Bank. In meteorological terms, Palmer's route moved along the 200 mm isohyet, which curves up the Hebron hills around there. On the same page he notes: "the brown mould beneath our feet was hard with the fibre of dried vegetation," and, "the hills and plains showed traces of the plough."[125] And on the following page: "We passed upon our way many wells, cisterns and other indications of former fertility and habitation, which even then, notwithstanding the drought, were sufficiently marked to present a striking contrast to the desert we had just left."[126]

Checking historical archives, one can see that in 1869 and 1870, the years in which Palmer traveled through the Negev, there was a tenfold increase in grain price, an



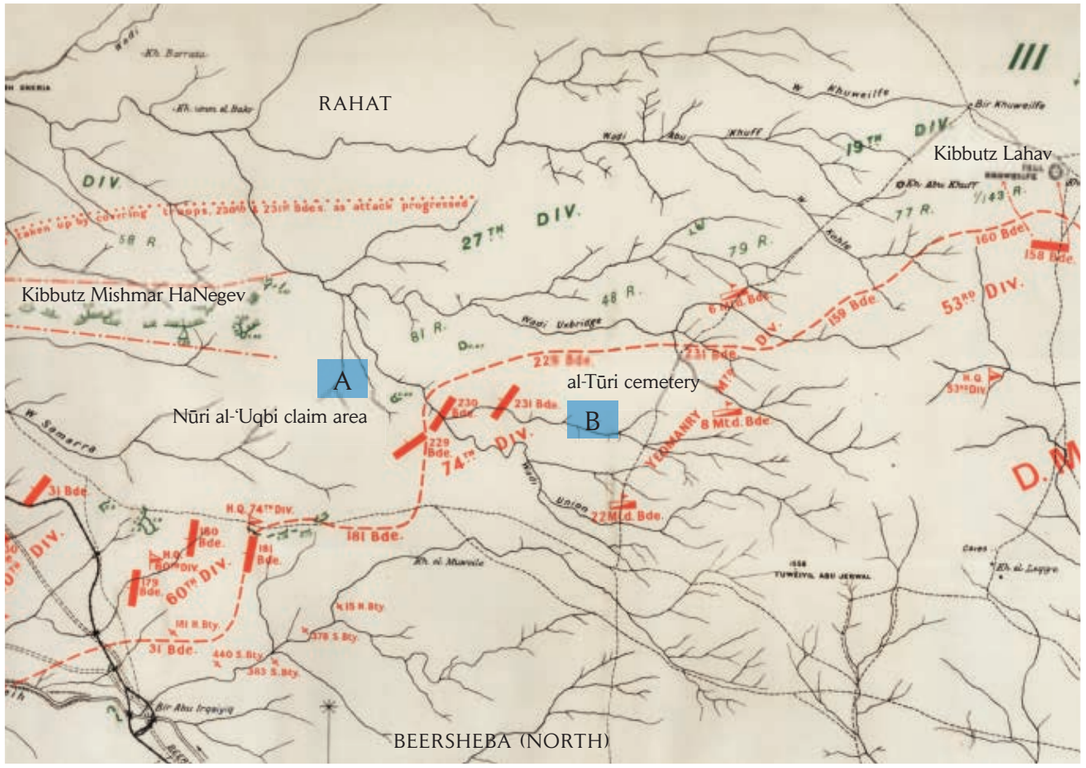
VIEW OF TALL AL-KHUWĒLFA (TODAY THE KIBBUTZ LAHAV), DECEMBER 1917

Courtesy Australian state archives

This page is organized around a photograph of the hilltop of Tall al-Khuwēlfa, where a battle took place between the Egypt Expeditionary Force (EEF) and the Ottoman Army in early November 1917. Officers drew battle plans directly onto the photographic prints. Military photographers tried to include objects in the foreground of their photographs for orientation purposes. In one such image the photographer has positioned a large cistern, of the kind used by Bedouins in the area, in the foreground.

indication of failed crops, and the export of grain throughout Palestine and Syria was prohibited, another indication of shortage.[127] The barren desert on which Palmer reported, and which the Israeli court took for a permanent fact, was no doubt the result of a drought. Rather than describing timeless desolation, Palmer's book, Israel's golden benchmark for the state of the Negev, has in fact confirmed Nūri al-'Uqbi's testimony about the presence of agriculture in this area close to al-'Araqīb. It has furthermore captured the pulsating nature of the desert threshold in which in a good year one could see "miles around with grass, flowers, and herbage" and in another the "brown mould … of dried vegetation."[128]

"In having to choose between the testimony of the two experts," Dovrat concluded in her verdict, "I prefer that of Prof. Kark. Prof. Kark presented historical testimonies that showed that there was no settlement in the Negev between 1840 and 1917." Dovrat criticized Yiftachel's report and



MAP OF THE FRONT LINE BETWEEN THE EGYPT EXPEDITIONARY FORCE (EEF) AND OTTOMAN FORCES IN AL-ʿARAQĪB, BEFORE THE EEF ATTACK ON NOVEMBER 6, 1917

Drawn by Cyril Falls and A. F. Beck, 1930

This map is a reconstruction of the November 6, 1917 battle lines drawn by British officers in 1930 for the purpose of historical research. It shows the EEF positions in red and the Ottoman positions in green on land around al-ʿAraqīb. The blue frames mark the location of the al-Araqīb cemetery and the areas claimed by al-ʿUqbi on both sides of the front line. Kibbutz Mishmar HaNegev, Rahat, the northern part of Beersheba, and Kibbutz Lahav are also marked for orientation. The frame marked A is the al-ʿUqbi's claim area and the one marked B is the location of the al-Tūri cemetery (in 1917 in existence for three years). These locations are on opposite sides of the front line as it crossed al-ʿAraqīb on November 6, 1917.

testimony. The claimants, she said, were not able to show that "the area was used for agriculture or residence."[129] "At most," she continued, they "proved that the tribe used the area for pasture and camped there sometimes, and that is all."[130] She went on to quote Kark: "There was no agriculture and no remnants until the end of WWI, none, none, none,"[131] as if shouting Bedouin agriculture away would make it go as a historical fact. Al-ʿUqbi's case was rejected. On June 2, 2014, an appeal was heard at the Supreme Court in Jerusalem, where it is still ongoing as this text is being prepared. In the unlikely case that the appeal is won, more cases would come in and more evidence would need to be marshaled and defended. If it is lost, the mountains of evidence gathered for the trial will have to be mobilized in other international forums to fight for Bedouin land rights.

AERIAL COLONIZATION

Important pieces of evidence that the court admitted in similar contexts were aerial images from both world wars. The Bavarian state archive in Munich contains 2,872 glass plates of aerial photographs of Palestine dating from the end of WWI. They were taken by the Bavarian Squadron 304 (*Königlich Bayerisches Fliegerbataillon 304*) which, together with five other German squadrons (about 85 aircraft in total), was part of the army of imperial Germany that operated in support of the Ottoman–Turkish military in areas that are today the states of Syria, Lebanon, Israel, and Jordan. These were the early days of aerial reconnaissance, which only became operational towards the end of the war. It was these German aviators, as well as the British aviators they confronted, who took the first photographs of the Negev from above.

The context was the British invasion of the Negev. In 1917, as the British imperial Egypt Expeditionary Force (EEF) progressed north from Sinai, the Ottoman armies fortified along the threshold of the desert from Gaza through Beersheba to Hebron. Their calculation was that attrition along this line would keep the European soldiers in the arid part of the desert with little water and pasture for their tens of thousands of horses and mules. After being bogged down in fighting south of Gaza, the Australian Cavalry, under British command, finally broke through in Beersheba, which they took in a surprise charge on the last day of October 1917. Some of the Ottoman units managed to escape and retreated a few kilometers north, stabilizing a second line of defense, part of which passed through the hills of al-ʿAraqīb. From November 1 to 6, the armies fought "several sharp little actions" and the EEF managed to withstand an Ottoman counter-attack along the al-ʿAraqīb stream.[132] The duration of this battle–a sideshow to the main effort that took place in Tall al-Khuwēlfa, some four kilometers to the northeast (where Kibbutz Lahav is now located), coincided with another major political development. The Balfour Declaration–promising a national home for the Jews in Palestine–was signed on November 2 and published on November 9, while the imperial armies were clashing between the site of the al-Tūri cemetery and the land claim plots of al-ʿUqbi in al-ʿAraqīb.[133]

The Bavarian aviators of Squadron 304 were continually in retreat. They had arrived in Beersheba in early October 1917–their planes packed in parts on freight trains–just in time to see the British storm through the town on October 31. The squadron managed to fly out and to land in a Gaza airfield, but a few days later the city fell, too. The aviators managed to escape again, relocating this time to the north of Palestine. Some pilots, amongst them several Jews, were shot down and are buried in the German military cemetery in Nazareth.

Understanding that they were fighting a lost war, the Bavarian pilots took also to photographing archaeological and religious sites with no strategic importance for the campaign. This made them among the first to use aerial imagery for archaeological purposes.[134] Their last task in the summer of 1918, a year of constant defeats and retreats, was to return and overfly British military positions in the Negev. On September 20, 1918, a few days after the last documented photograph was taken, they surrendered to the British in the Afula airstrip in the northern valley. Surprisingly–perhaps because the significance of aerial imagery was not fully understood by all ranks of the British military at the time–they were allowed to keep their glass prints and brought them back with them to Munich, where they are now archived.[135] Some of them are vertical shots, taken from a special installation fastened to the underside of the airplane, but most are oblique shots taken from handheld cameras.

The images captured some of the northern threshold of the desert, although, despite exhausting the archive and its archivists, the closest photographs to the al-ʿAraqīb hills I could find were about one kilometer away in each direction. Because the surface of the desert appears barren in these photographs, they have sometimes been presented by experts for the State of Israel seeking to demonstrate that Bedouins never settled in these parts.[136] Like Palmer's testimony from the drought year of 1869, this, too, is misleading. The photographs were taken in the summer months at the end of the war. Bedouin tribes had temporarily left the area, hurried out because, after the fall of Aqaba to Bedouin forces led by Auda ibu Tayi and T. E. Lawrence "of Arabia" in July 1917, the Ottomans believed, not without a reason, that the Negev Bedouins harbored animosity toward their empire and sympathies toward the British. However, a close look at the highest possible magnification of these photographs reveals what are very likely traces of Bedouin life: some structures and ruins, possible signs of cultivation and livestock pens.

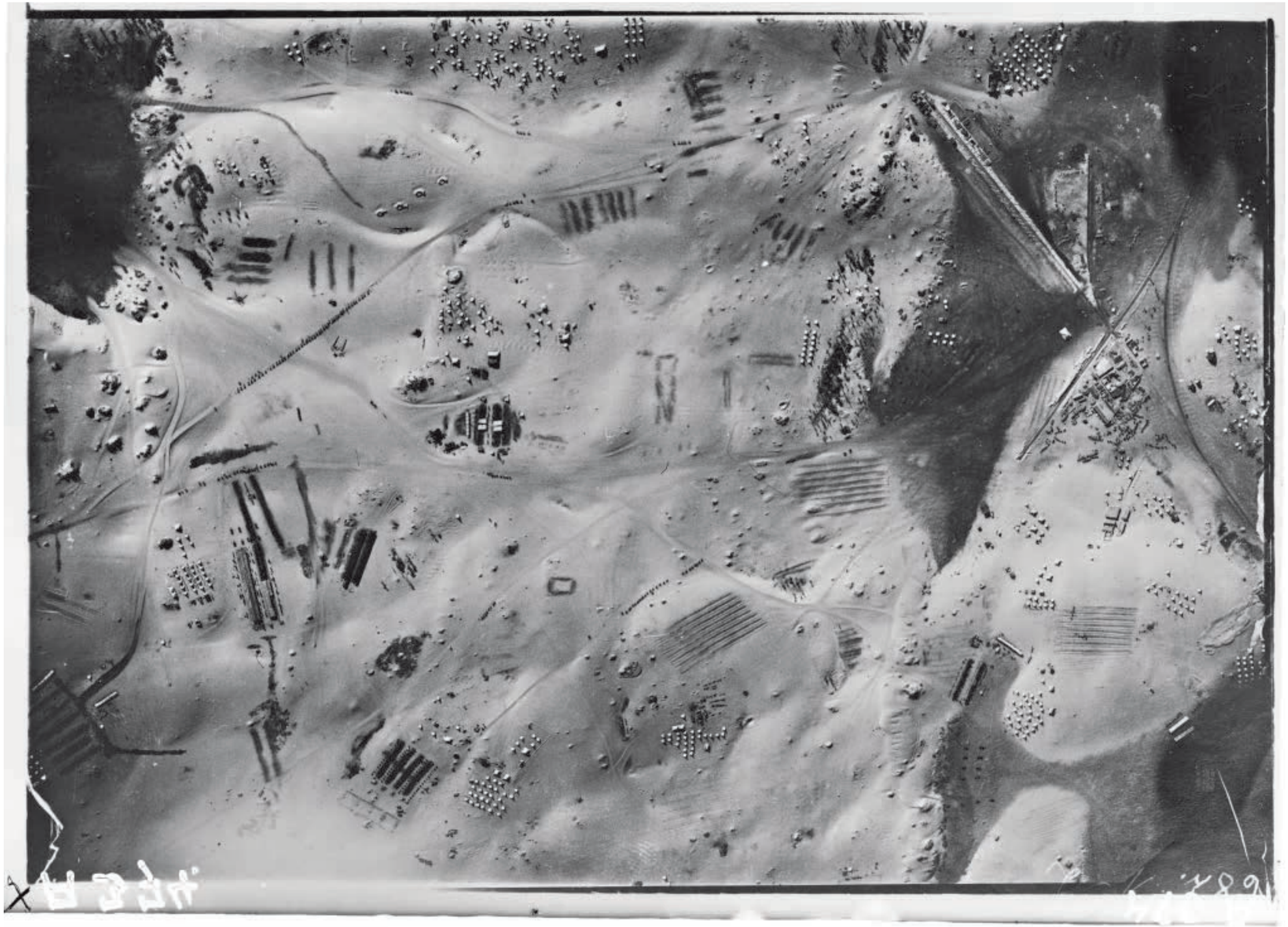
After the end of WWI the history of the aircraft and that of the desert became further entangled. The British in Iraq, Afghanistan, Egypt, Somalia, Darfur, and Palestine, as well as the French in Algiers, and the Italians in Libya and Ethiopia, preferred not to send their cartographers, tax collectors, and troops beyond the threshold of the deserts. Rather, they left this task to their nascent air forces.[137]

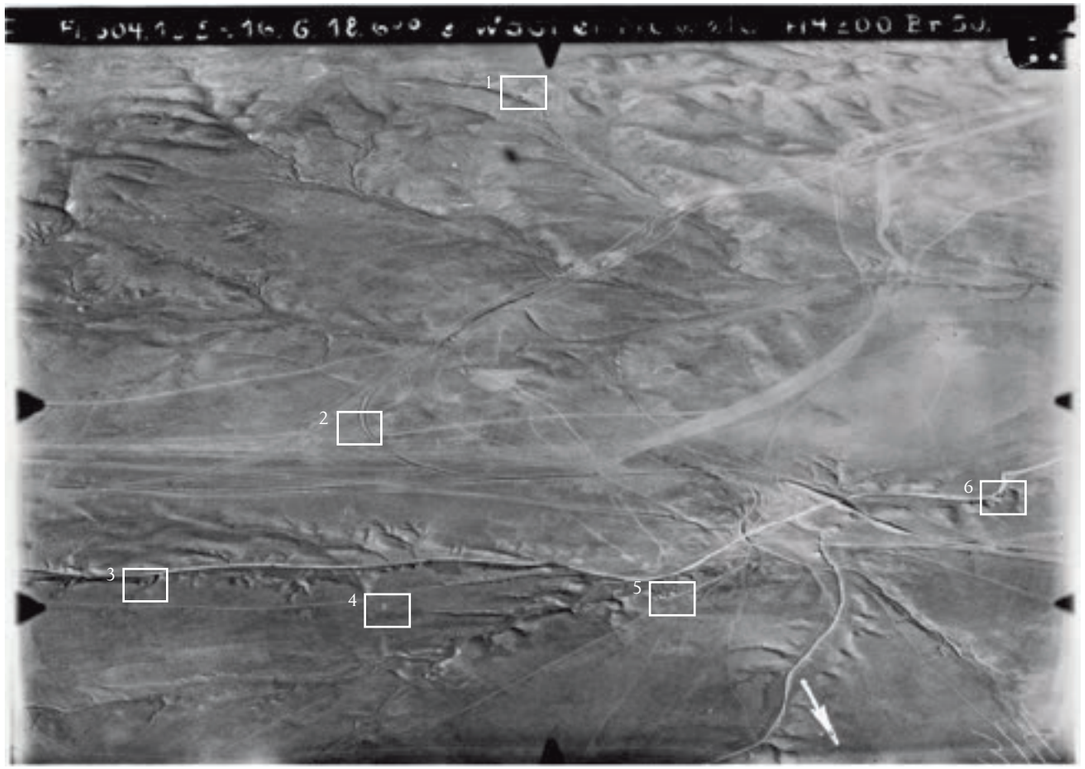
Pages 62–63:

ENGLISH CAMP NEAR AL-ʿARĪSH, BAVARIAN SQUADRON 304 (KÖNIGLICH BAYERISCHES FLIEGERBATAILLON 304)

Day and month not given, 1918

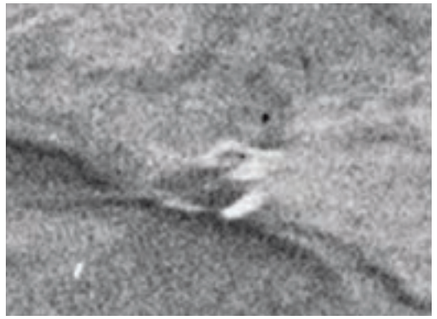
Al-ʿArīsh was occupied by the British-led Egypt Expeditionary Force (EEF) in December 1916 and became a garrison town and a supply station for the advancing troops. Images of military installation at the threshold of the desert were the main focus of the Bavarian aviators. This image shows the EEF's installations, tents, artillery, livestock pens, and even marching troops, over a site that was likely an overrun Ottoman military stronghold.



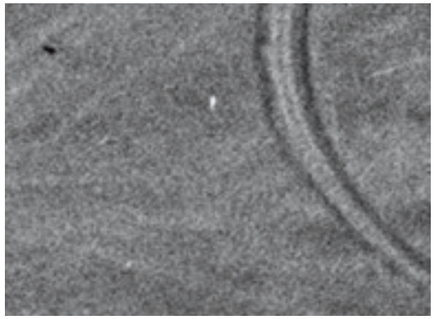


WĀDI MWĒLE, BAVARIAN SQUADRON 304, JUNE 16, 1918

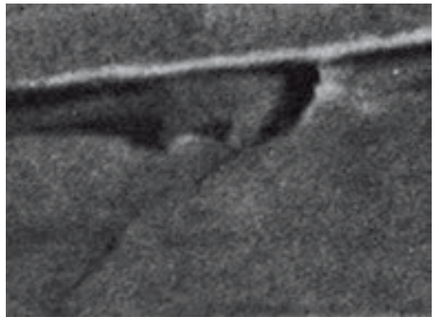
This site is 1,500 meters southwest of the al-ʿAraqīb stream, within the tribal area of the al-ʿUqbis. Today, within the area of the photograph's frame, are parts of the Dudaʾim waste disposal facility (see pp. 44–45), a military base (see p. 69), and the Bedouin settlement of Abu Haddūbe. In 1918, abandoned military fortifications and destroyed buildings are visible throughout. Marked within the white frames, and reproduced in the enlargements opposite, are possible traces of Bedouin settlements. These possible traces, identified on the image in the highest magnification possible, seem consistent with Bedouin land use at the threshold of the desert, but could not be verified.



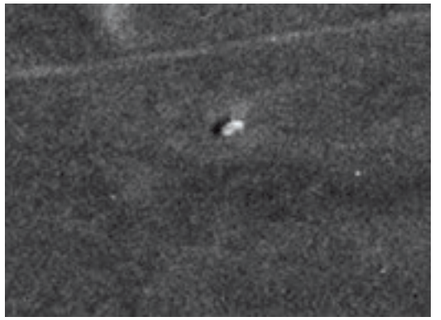
Detail 1



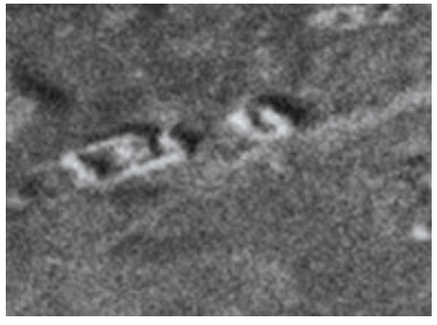
Detail 2



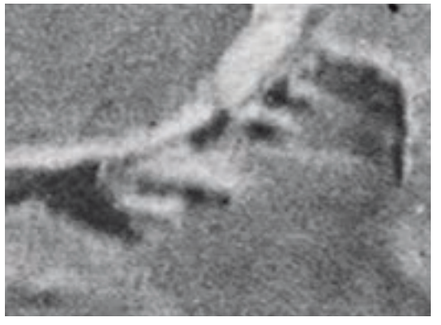
Detail 3



Detail 4



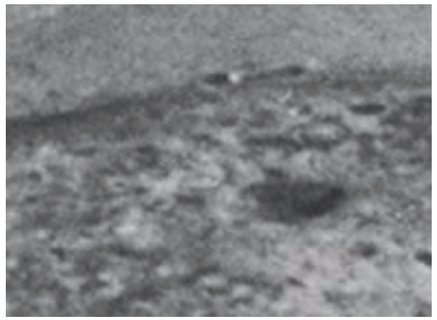
Detail 5



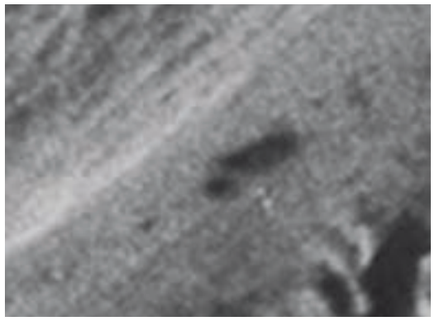
Detail 6

TALL AL-SHARĪʿA, BAVARIAN SQUADRON 304, AUGUST 24, 1918

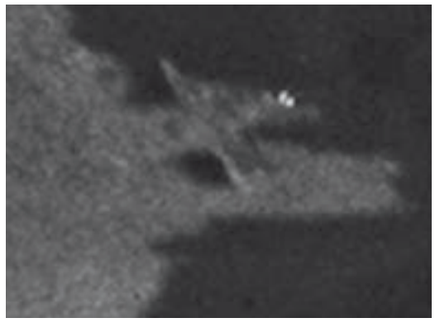
This site is about 1,000 meters northwest of al-ʿAraqīb. Although identified as Tall al-Sharīʿa in the German title, the site photographed is a few kilometers to the east, along Wādi al-Sharīʿa. Today, within the area of the photograph's frame, is the Bedouin city of Rahat, established 1972, and Kibbutz Mishmar Hanagev, established in 1946. In 1918 there are many abandoned military fortifications on the site. Marked within the white frames, and reproduced in the enlargements opposite, are possible traces of Bedouin settlements. As on the preceding pages, these possible traces, identified on the image in the highest magnification possible, seem consistent with Bedouin land use at the threshold of the desert, but could not be verified.



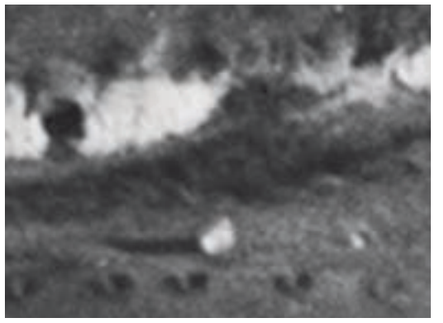
Detail 1



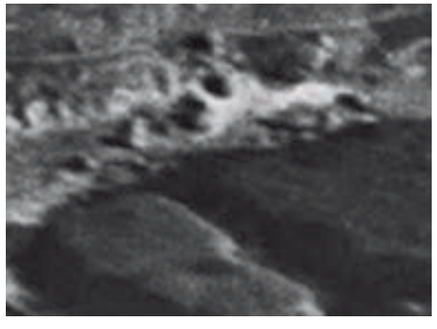
Detail 2



Detail 3



Detail 4



Detail 5

Detail 6

SOWN AND IRRIGATED WHEAT FIELDS NEAR RAHAT, BETWEEN KIBBUTZ SHOVAL AND MISHMAR HANEGEV, >200 MM

Fazal Sheikh, October 10, 2011

This image represents the upper right-hand side (over the stream) of the image of Tall al-Sharī'a (p. 66) taken in August 1918 by Bavarian Squadron 304. The fields belong to two Kibbutz settlements that were established simultaneously on October 5–6, 1946, as part of the "11 points in the Negev" plan. The fields at their disposal grew markedly after 1948 when the former Bedouin settlement of Al-Huzayyil/Ḥkūk was displaced. The villagers, who belonged to the Tiyāha tribe, asked for permission to stay, swearing loyalty to the state, but in the first months of 1949 were deported to the *Siyāj*, a closed area in the more arid parts of the Negev. In the 1950s they were further displaced to the West Bank. Rahat was established in 1972 to concentrate Bedouins who lived in the surrounding area and, with more than 50,000 inhabitants, is now the largest Bedouin city in Israel. The western part of Rahat would have appeared on the right side of the 1918 aerial photograph.

ABANDONED AMMUNITIONS STORAGE FACILITY, OUTSIDE BEERSHEBA, ≈200 MM

Fazal Sheikh, November 22, 2011

This image represents an area that is on the right side (just beyond the railway lines) within the image of Wādi Mwēle (p. 64) taken in June 1918 by Bavarian Squadron 304. Shown are remnants of a British military base later used by the Israeli Defense Force as an ammunition storage facility. The earthworks were used to enclose built structures and were meant to isolate each structure in case of detonation. The facility was abandoned in 2004 when Beersheba's growth brought it too close to inhabited areas.

The form of control that the British called "aerially enforced colonization" was based on the ability of aircraft to produce cartographic material and when necessary to bomb rebels. In 1920, Winston Churchill, as Secretary of State for Air, promoted what he perceived to be the economically efficient alternatives that air power could provide to the otherwise onerous and expensive tasks of colonial control in the sparsely populated and arid frontiers of the empire.[138] To that extent, the threshold of deserts became the end of a certain form of imperial control and the beginning of another. It is a testimony to the colonial origins of contemporary conflicts that the "aerial colonization" took place in the very same desert thresholds where drones now police the territory from the air.

THE THRESHOLD OF DETECTABILITY

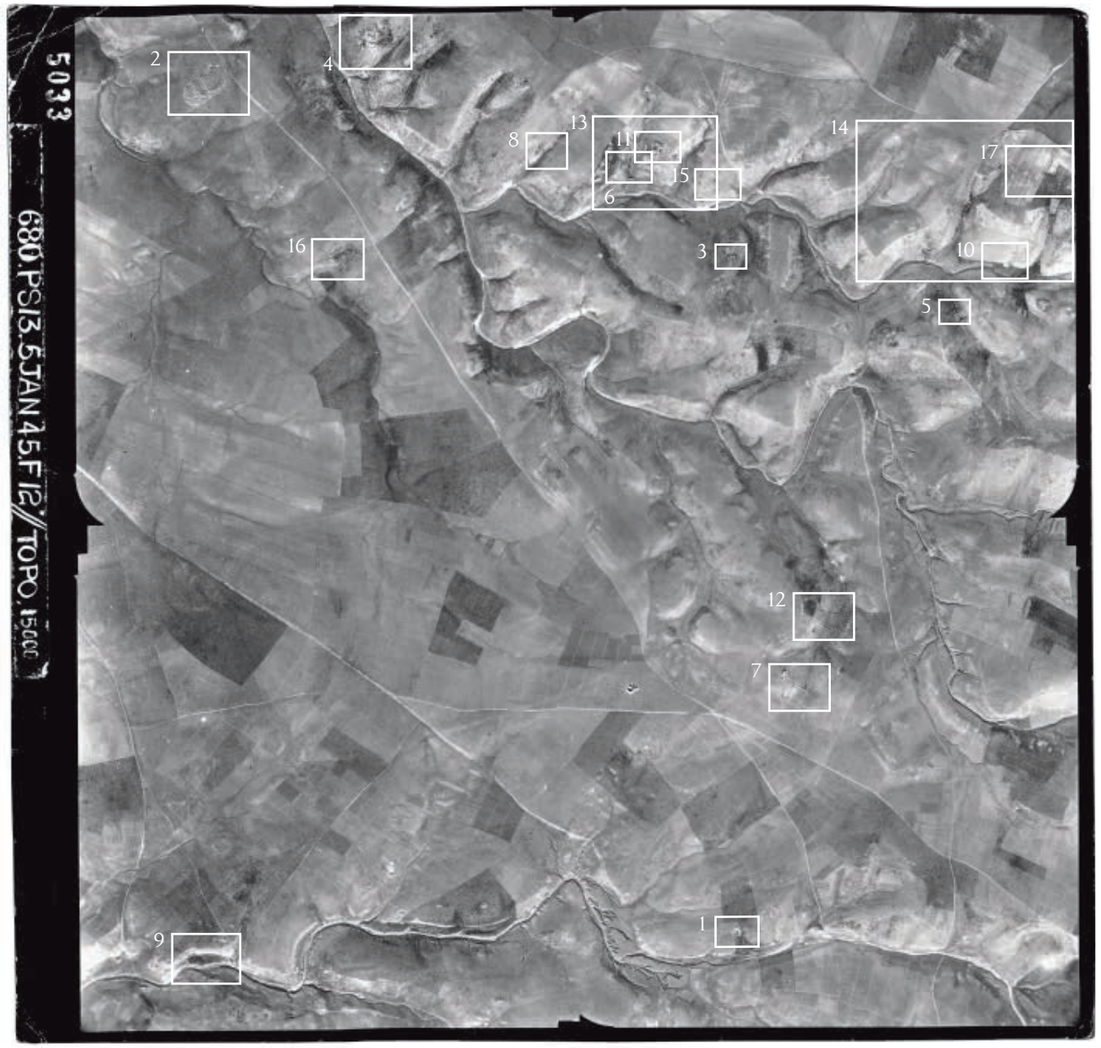
During the Arab Revolt of 1936–39, the British Royal Air Force (RAF) was employed in bombing Palestinian villages suspected of harboring rebels, and also undertook spot aerial photography of many Palestinian and Jewish villages and towns. However, a systematic air survey of Palestine was conducted only toward the end of WWII, when the techniques and technology for producing photographic series that could be tiled into a cartographic grid were developed as part of the war effort. The Palestine Survey (PS) series was prepared over a five-month period between December 1944 and May 1945 by RAF squadrons transferred from the front.[139] The photographic mission progressed from south to north. The reconnaissance pilots overflew al-ʿAraqīb on January 5, 1945–at the same time as the Allies were preparing to charge across the borders of Germany.[140] After the survey was completed, the Haganah, the largest Zionist paramilitary force, managed to convince some sympathetic archivists to smuggle some of the negatives of the aerial photographs out of RAF archives, print them, and return the originals. A number of these reproductions were included in "the Arab Village Files" (intelligence documents on Arab localities used by the Haganah in 1948 to occupy and depopulate them),[141] and are the same ones that are now available in the Survey of Israel (Israel's cadastral center in Tel Aviv), providing a benchmark record for the condition of Palestine before the establishment of Israel and, ironically, possible evidence for the existence of these villages to be mobilized against the state.

January marks the peak of the rainy season and 1945 was a plentiful year. The black-and-white photographs capture the northern threshold of the Negev in a state of full cultivation, completely covered with a patchwork of small agricultural fields. The photographs were submitted to the court in Beersheba on September 15, 2009, as a part of an expert report prepared by Shlomo Ben Yosef, who was hired by the al-ʿUqbi legal team. The report was prefaced by Ben Yosef's credentials: he had been an expert interpreter of aerial photography for the Israeli military since 1969. Between 1984 and 1987 he was the commander of the military aerial interpretation unit. He now works as an aerial photography analyst in the private sector.[142] On August 17, 2009, carrying with him a set of 1945 aerial images, Ben Yosef traveled with al-ʿUqbi to conduct a ground survey of the plots under dispute. Together they tried to find on the ground what they could identify in the photographs, while on the photographs they marked out the ruins, wells, and cisterns they could spot on the ground.

Ben Yosef began his report to the court with a general description of the al-ʿAraqīb area:

> In 1945, in the area of the photographs, there was an extensive and continuous Bedouin agricultural settlement. The area is almost entirely cultivated, save for a small percentage of the land where the slopes of the streams are too steep. About one half of the agricultural plots photographed are yielding, the other half is in various stages of preparation: plowed, cropped, or in respite. Along the streams I identified wells and cisterns. The area is criss-crossed with an extensive network of routes connecting small settlement points. Single stone houses or clusters of houses exist all throughout this area. Next to the stone houses there is often a small Bedouin tent encampment, farmyards, small gardens, livestock pens and shelters. Next to many living clusters I can identify storage for agricultural produce, piles of hay and piles of other produce.[143]

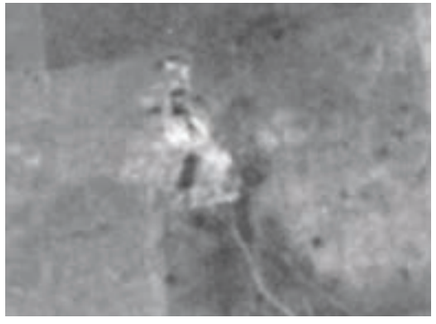
From a cruising altitude of 15,000 feet, each of the square-format nine-inch (22.86 centimeter) films used by the RAF captures an area of about 3.5 by 3.5 kilometers. The resolution of aerial photographs is measured by a unit called "line-pairs a millimeter" (lp/mm). It designates the number of pairs of white and black lines that would fit within a millimeter of film. The 1945 photographs have a resolution of 35 lp/mm—which means that there would be at least 70 lines (half black half white, alternating) within every millimeter. The size of a grain—the narrowest a line could possibly be—would thus be approximately 1/70 millimeters on the film, which in the existing scale would be 214 millimeters (8.43 inches) on the ground.[144] However, because there is 15,000 feet of humid and dusty atmosphere between the ground surface and the film surface, the effective resolution of the film is considered by aerial image analysts to be 50 centimeters, which means that the average size of the grain on the film represents an area of about half a meter in diameter.[145]



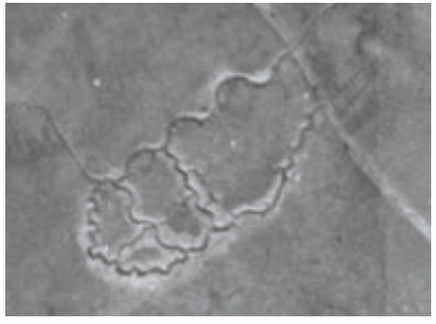
THE AREA OF AL-ʿARAQĪB, IMAGE 5033, RAF PALESTINE SURVEY SERIES

January 5, 1945

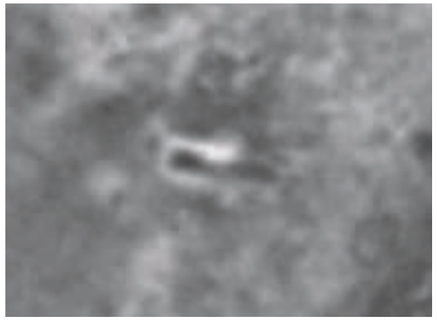
The image size is a x 0.7 reduction of the nine-inch (22.86-centimeters) negative. White frames mark the plots detailed in the following images. (Source: Survey of Israel)



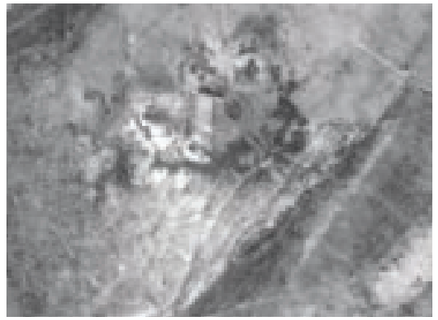
Detail 1
BĀYKA (STONE HOUSE)
x7 enlargement from negative



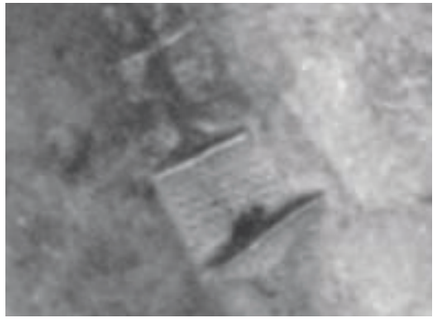
Detail 2
BRITISH FORTIFICATIONS
x4 enlargement



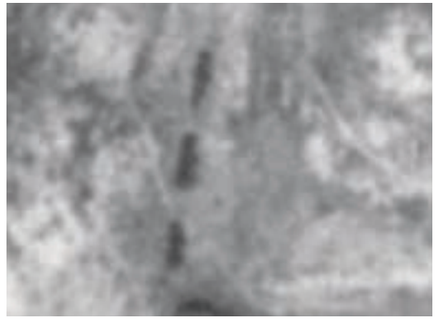
Detail 3
DESTROYED *BĀYKA*
x10 enlargement



Detail 4
HOUSE OF SULEIMAN MUHAMMAD
AL-'UQBAH (NŪRI AL-UQBI'S FATHER)
x4 enlargement

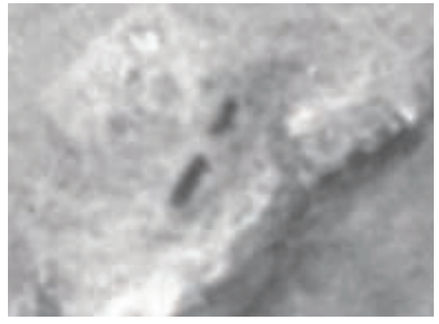


Detail 5
RUNOFF FIELDS
x10 enlargement

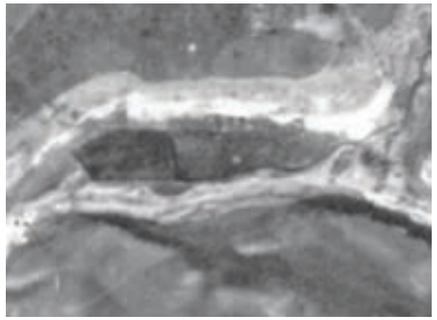


Detail 6
TENTS
x7 enlargement

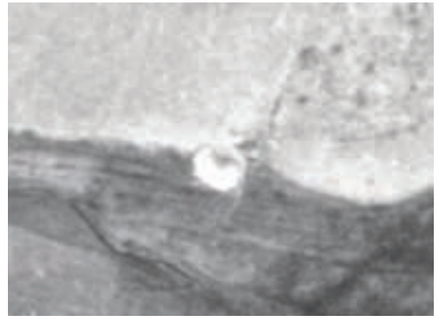
Detail 7
BĀYKA AND GARDENS
x5 enlargement



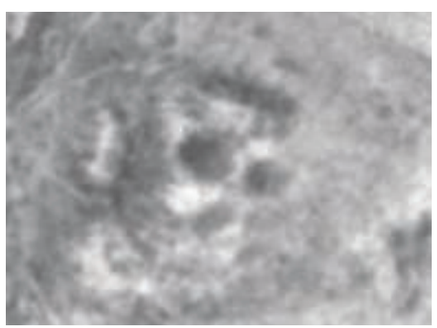
Detail 8
TENTS
x7 enlargement



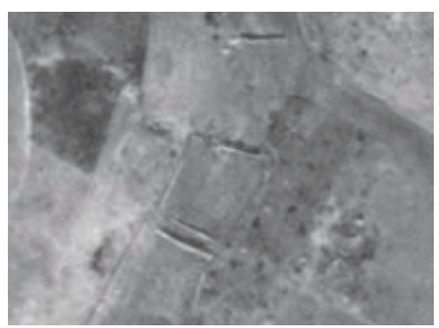
Detail 9
RUNOFF FIELDS
x5 enlargement



Detail 10
HARABA (CISTERN)
x7 enlargement



Detail 11
SIRE (LIVESTOCK PENS)
x7 enlargement



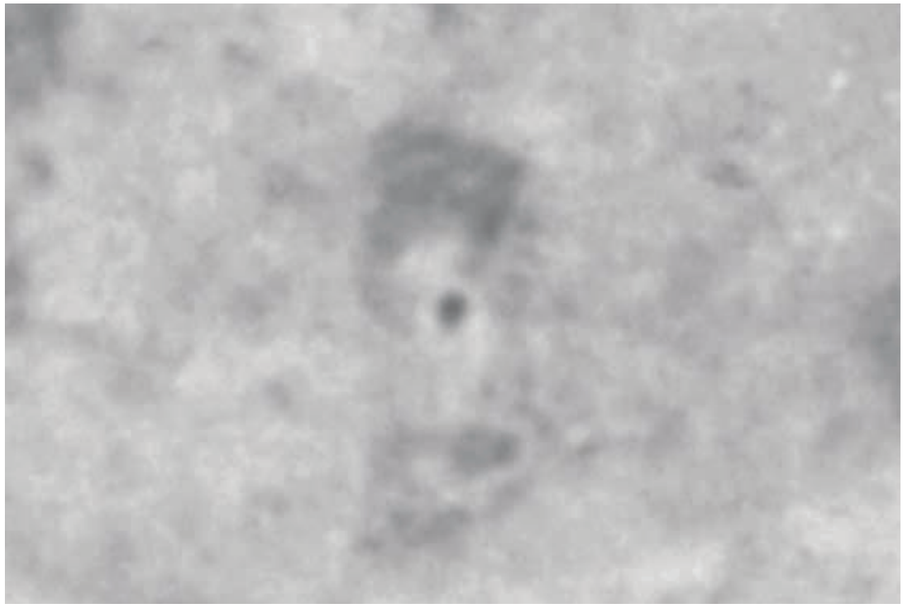
Detail 12
DAMS
x5 enlargement

THE HOUSE OF NŪRI AL-ʿUQBI'S MATERNAL GRANDFATHER
(BEIT SALAM SALIM AL-SBIHAT AL-ʿUQBAH), IMAGE 5033

RAF Palestine Survey series, January 5, 1945 (detail 13 of image on p. 71, x6 enlargement)

THE AL-TŪRI AREA INCLUDING THE AL-TŪRI CEMETERY, IMAGE 5033

RAF Palestine Survey series, January 5, 1945 (detail 14 of image on p. 71, x4 enlargement)



HUSEIN SALEM ABU MDĒGHEM FAMILY WELL, AL-ʿARAQĪB

Above:
image 5033, RAF Palestine Survey series, January 5, 1945
(detail 15 of image on p. 71, x12 enlargement)

Below:
Fazal Sheikh, April 14, 2014

This makes a close reading of the elements in the photographs challenging because, while tents, for example, are several square meters in size, and would render on the image, a well—at about half a square meter—is precisely the size of a single grain. While objects larger than half a square meter could potentially be visible and identifiable, objects at a similar size to the grain are at a photographic condition that I have elsewhere referred to as "the threshold of detectability."[146] At this threshold the object and the grain match. The size and form of the photographic rendering of an object depends more on the material shape of the grain than on the form of the object represented. However obfuscating, this threshold is an important condition in forensic terms. In this condition the materiality of the objects represented—a small structure or a well—and the materiality of the surface representing it—the photographic negative—must simultaneously both be examined. Just like a film, the surface of the earth is a recording device. Just like the terrain, the image has a distinct material topography. Photographs are not an unmediated copy of the world, they are a relation between material objects—one of celluloid (plastic coated with gelatin emulsion containing silver halide crystals) and the other of stone, earth, and vegetation—mediated by the climate between them. If looking for traces of Bedouin life is as an act of archaeology, it is not an archaeology that involves material excavation only. It involves the excavation of the materiality of the photograph in which ground traces are captured, and of that of the air, the weather, between them. Objects at the limit of resolution could only be verified by studying both the surface of the film and the surface of the terrain, as Ben Yosef explained in court, and as he has done on site.[147]

The photographic sequence captured by the RAF in January 1945 contains traces of Bedouin lives on both sides of the threshold of detectability. A person standing upright—about 50 centimeters wide as seen from above—would disappear within a grain, although the presence of a person would affect the tone of a single grain and make it darker.[148]

The questioning of Ben Yosef included the following exchange:

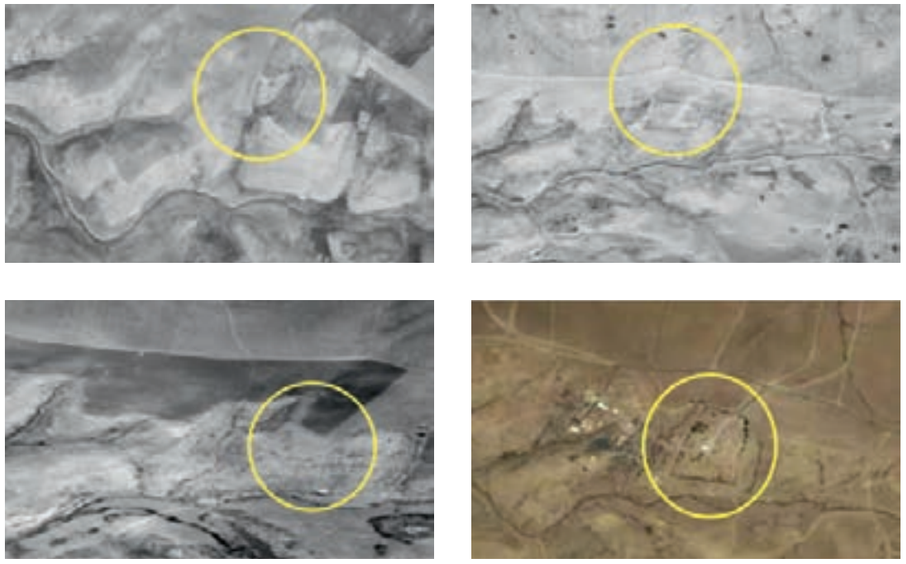
> Shay Gabso: The houses that you saw today as ruins, what condition were they in in 1945?
>
> Shlomo Ben Yosef: Inhabited houses, well maintained with a roof and with traces of activity all around, with chicken enclosures, fences, cultivations, garden…
>
> Sarah Dovrat: How do you know that they were inhabited? Can you see people?
>
> Ben Yosef: You cannot see people in this aerial photograph but you can see the yard, and you see that the ground is in use.
>
> […]
>
> Ya'ari Roash [lawyer for the state]: You will agree with me that there are a number of things you cannot see.
>
> Ben Yosef: The wells. If I wouldn't have seen them on the ground, only from the aerial photograph, I wouldn't have found them. If you gave me photographs of [the whole of] Kazakhstan and asked me to find all the wells, I might have found only 50. This is the reason that we visit the ground. This is why we look, and compare. Walking on the ground with the image in hand, and with all sorts of magnifying equipment on the image. At home it is even more important. It's a must. A must.
>
> […]
>
> Roash: Is it fair to say you identified only four wells?
>
> Ben Yosef: No, many more, many more…
>
> Roash: In the aerial photographs I mean.
>
> Ben Yosef: In the aerial photographs I found many more…
>
> Roash: I tell you that these wells could be from the ancient period, do you deny this?
>
> Ben Yosef: Well, people have been drinking water since millions of years…[149]

First it was the ability of the film to confirm the presence of elements that was contested. Then, when the presence of some of these elements could be agreed upon, their meaning was contested. Are the houses an indication of permanent settlement or the temporary accommodation of nomads? And the wells?

In her March 15, 2012 verdict against the plaintiffs, Judge Dovrat accepted the state's claims that the photographs were inconclusive in proving the existence of a permanent Bedouin settlement. "Although the expert claimed that there was a continuous agricultural settlement on site, it became apparent that it was of very low density."[150] Mobilized against the claimants was the fact that Bedouin life leaves only gentle marks on the territory, and the inability of the film to render these marks clearly.

WHITING OUT

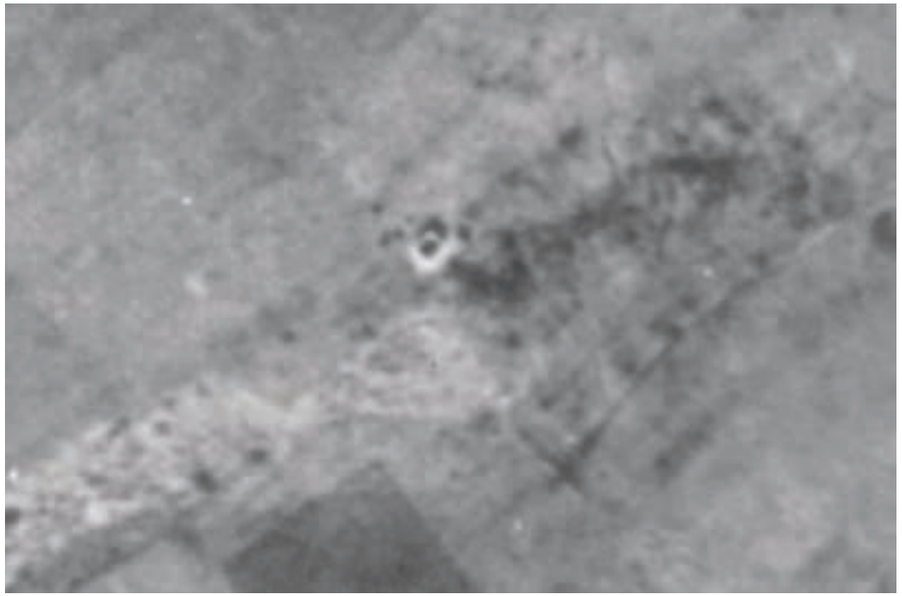
The aerial photographs from 1945 have since emerged in a different context. They were presented as justification for the attempts to evict the al-Tūris from the cemetery in



AERIAL AND SATELLITE IMAGES OF AL-ʿARAQĪB (1945, 1965, 1989, 2010), MARKED AND ANNOTATED BY THE ISRAELI ORGANIZATION REGAVIM

Regavim, 2013

Regavim's caption to this image reads: "1945: no cemetery and no village; 1965: indication of a new cemetery, no village; 1989: a cemetery but no village; 2010: a village and a cemetery." It is only in the 1965 photograph, and from that date on, the Regavim report claims, "that it is possible to notice the cemetery in its early stages and a single tent next to it." The "tent" is in fact a structure built around the cistern; it is visible, just like the cemetery—as we shall see in what follows—at the same place already in the 1945 image. (Source: Regavim, *The Truth about the Bedouins in the Negev*, December 2013, online publication)



HOUSE OF SULEIMAN MUHAMMAD AL-ʿUQBAH (NŪRI AL-UQBI'S FATHER) IN AL-ʿARAQĪB

Above: image 5033, RAF Palestine Survey series, January 5, 1945
(detail 16 of image on p. 71, x10 enlargement); Below: Fazal Sheikh, April 12, 2014

The stone in the image below reads: "This is the house of Suleiman Muhammad al-ʿUqbah (1914–1993). The house was built in 1936, and demolished after he and his clan were expelled in 1951. The house had hosted the tribal court in the first years of the Israeli state until the expulsion." In the background of the image is the recently planted God TV Forest.

AL-TŪRI CEMETERY, AL-ʿARAQĪB, 2014

Left: Sayāh al-Tūri in the al-Tūri Cemetery, al-ʿAraqīb (Eyal Weizman, September 27, 2014). Al-Tūri is showing the area of the cemetery where the graves date from before 1945. The graves are marked by small piles of stones. Right: the grave of Al Jāber Sabḥa in the al-Tūri cemetery, al-ʿAraqīb (Fazal Sheikh, April 12, 2014). The concrete sign reads Al Jāber. It is, according to Sayāh al-Tūri, the first grave on site, dating to 1914.

Pages 80–81:
AL-TŪRI CEMETERY, AL-ʿARAQĪB,
Fazal Sheikh, October 9, 2011

The graves at the center of the cemetery are the earliest, dating to before the establishment of the State of Israel and the subsequent displacement of the al-Tūris. After the displacement the community still used the cemetery to bury their dead, and started erecting hard grave stones.

al-ʿAraqīb. The claim that the al-Tūri cemetery did not exist on the 1945 photographs was made in a detailed report by an Israeli "NGO" called Regavim. I use quotation marks around the acronym because, as scholars Nicola Perugini and Neve Gordon have shown, unlike other non-governmental human rights organizations, Regavim does not act to limit state power, but was rather set up to defend and reinforce state sovereignty and government control over state land, and is supported by parties within the present governing coalition.[151] In December 2013, Regavim published a report that used a series of aerial photographs from 2010, 1989, 1965, and—the oldest—January 5, 1945, to claim that the al-Tūri cemetery was not on site before the establishment of the state in 1948, and that it only becomes visible in the 1965 photograph (see p. 78). Therefore, they concluded, it was invasively established on "state land." They wrote that in "the area where al-ʿAraqīb is today, in 1945, no village or cemetery [existed] whatsoever" and demanded that the state immediately evict the families living there.[152]

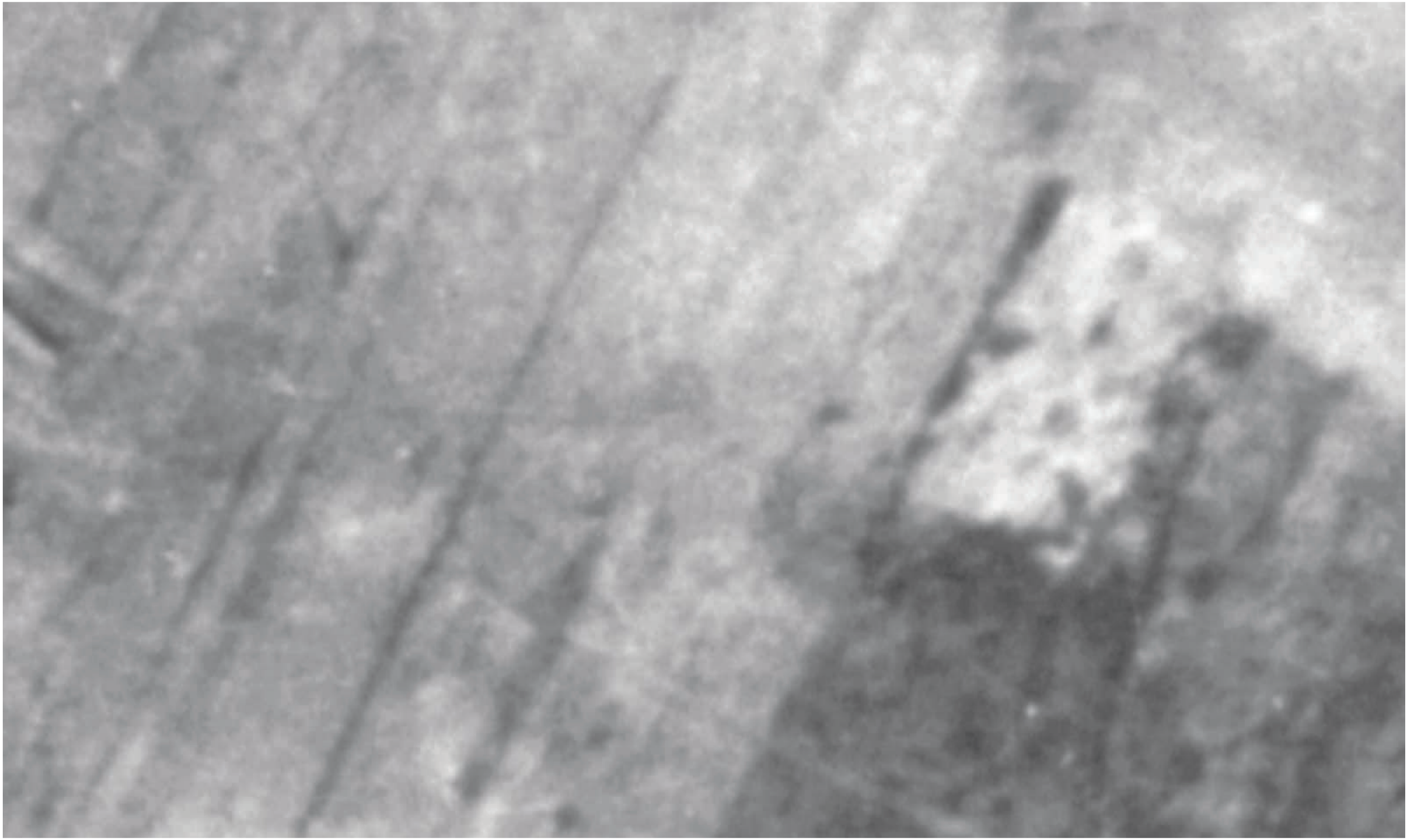
I ordered the relevant 1945 photographs from the Israeli cadastral center and received them as high resolution scans. Comparing the twists and turns of the al-ʿAraqīb stream—the only identifiable feature on a site after almost 70 years of development and transformation—I was able to locate the present extent of the cemetery within the 1945 photograph. In the northeastern corner of the area where today's cemetery is, the 1945 film, at maximum optical magnification, displays a pattern of lighter and darker shades in higher contrast than its surroundings. The area is smaller than the contemporary extent of the cemetery, but it is of course likely that in 1945 the cemetery was smaller. Most graves at present are made of horizontal and vertical stone slabs. But in a meeting on site in September 2014, Sheikh Sayāh al-Tūri led me to an area of the cemetery in which the graves are marked by small piles of stones. One of these piles, al-Tūri said, dates to 1914 and was the first grave on site. The remaining graves in this part of the cemetery are unmarked. "This is how we used to bury [our people] then. We didn't use tombstones until later."[153]

By the time the 1945 photograph was taken, he explained, there were already about 15 or 20 graves similarly marked with piles of stones. The stone markings on site are between 1 and 1.5 meters long and about half a meter wide. On the 1945 photograph none should be wider than a grain. The fact that the graves attributed to the period before the establishment of the state were unmarked and undated was used by all those who tried to deny the al-Tūri claims. But the equivalent place on the image does show a distinctly bounded area, different from the fields around it. Within this area, in 1945, there certainly were a number of objects, regularly arranged, each about the size of the grain. It does not seem to be a small field or a garden because the surface is lighter than the dark gray patches of vegetation and fields around it on the photograph and could be consistent with bare stones. The authors of the Regavim report committed—like many colonial travelers and cartographers, and indeed the State of Israel now—to "not seeing"; they either ignored or actively read these signs out of the image.

When colonial cartographers left white spots on their maps, they acted as means of erasure: "whiting outs" that led to the wiping out of entire native cultures. But supposedly objective and neutral aerial photographs do not undo the potential for erasure. They could also be used, as we have seen, to remove, white out, or read people and things out of representation. This is because aerial photographs need to be carefully read and decoded. When relevant traces are at the limit of indexability, interpreting them requires an understanding of the material relation between the photographs and the objects photographed. Evidence of "whiting out" reflects not only on the presence of Bedouins on site, but on a state struggling not to see—indeed to deny—what exists in front of its eyes.

The 1945 photographs, like all the other photographs in this book, are only still frames in a process of continuous transformation and dispossession. With every tidal cycle of the desert's ebb and flow another image is created. When the green rolls south we can measure the extent to which the line of afforestation and cultivation has been expanded; when the yellow crawls back, the bare surface of the earth reveals new traces of eviction. Sixty-five cycles of eviction have torn down all structures, fields, orchards, and the fence around the cemetery. The site is now surrounded by forests closing in from all sides. In September 2014, a few pieces of cloth fastened to the two remaining trees left on the site, and a couple of mattresses thrown under them, were the only things with which the al-Tūris were clinging on to the threshold of the desert.

Pages 84–85:
AL-TŪRI CEMETERY, IMAGE 5033,
RAF PALESTINE SURVEY SERIES
January 5, 1945 (detail 17 of image on p. 71, x26 enlargement)



NOTES

All URLs last accessed August 2014.

1 Adalah – The Legal Centre for Arab Minority Rights in Israel, "From Al-Araqib to Susiya," uploaded May 14, 2013, http://youtu.be/HtF3rOdSbr4.

2 Numbers always vary greatly with regard to al-ʿAraqīb, and in the press. In this essay I use the tally of Dukium (The Negev Coexistence Forum), http://www.dukium.org/eng/.

3 In 1918, it was Russian–German scientist Wladimir Köppen who, after undertaking calculations that factored in temperature and evaporation, set the threshold of aridity at 200 mm annual precipitation. Danny M. Vaughn, "Arid Climates," in *Encyclopedia of World Climatology*, ed. John E. Oliver (Dordrecht: Springer, 2005), 85–89.

4 There are various other methods of establishing the border of aridity based on different modes of calculating average levels of rainfall and distribution of temperature and evaporation (or evapotranspiration—water lost in the atmosphere from plants). Almost all maps of Palestine from the nineteenth century mark, in one way or another, the threshold of the desert. Most often the map of Palestine is framed in such a way as to leave the desert, south of Beersheba, out. One of the first attempts at annotating the threshold of the desert was on Heinrich Kiepert's 1891 *Map of Palestine* (*Neue Handkarte von Palaestina*), where the desert is colored in yellow in contrast with the green colors above it. Here this takes place roughly around the 300 mm aridity line. Some other maps drew a thick red line around the location of the same isohyet.

5 The international border between Israel (Negev) and Egypt (Sinai) was demarcated in 1906 between Britain (which ruled in Egypt) and the Ottoman Empire. The borders between the Israeli-controlled Negev and the Kingdom of Jordan were drawn up by Britain in 1923.

6 Eliahu Stern, Yehuda Gradus, Avinoam Meir, Shaul Krakover, and Haim Tsoar, eds., *Atlas of the Negev* (Sde Boker: Ben-Gurion University of the Negev, 1986).

7 Noam Levin, Ruth Kark, and Emir Galilee, "Maps and the Settlement of Southern Palestine, 1799–1948: an historical/GIS analysis," *Journal of Historical Geography*, vol. 36, no. 1 (January 2010): 11.

8 The fluctuations are between 31°25′N and 31°10′N. See *Atlas of Israel: Cartography, Physical and Human Geography*, 3rd ed. (New York: Macmillan, 1985), 18; see especially Map 3—Fluctuations of the Annual 200 mm Isohyet, 1931/31-1975/76.

9 Eyal Weizman, *Hollow Land: Israel's Architecture of Occupation* (London: Verso, 2007), Chapter 8, "Evacuations: Decolonizing Architecture," 221–36.

10 See B'tselem's survey of the situation in Hebron, http://www.btselem.org/topic/hebron.

11 Gideon Levy, "The Sewage of Maʿale Edummim," *Haʾaretz*, February 22, 1998.

12 United Nations Office for the Coordination of Humanitarian Affairs, "Humanitarian Fact Sheet on the Jordan Valley and Dead Sea Area," February 2012, http://www.europarl.europa.eu/meetdocs/2009_2014/documents/dplc/dv/dead_sea_/dead_sea_en.pdf.

13 Amira Hass, "Israeli Government Plans to Forcibly Relocate 12,500 Bedouin," *Haʾaretz*, September 16, 2014.

14 For the Egyptian example see "Making the Desert Bloom: Away from the Crowded Nile," *The Economist*, March 18, 1999.

15 Francesco Femia and Caitlin Werrell, "Climate Change Before and After the Arab Awakening: The Cases of Syria and Libya," in *The Arab Spring and Climate Change*, eds. Caitlin E. Werrell and Francesco Femia (Washington, D.C.: Center for American Progress, Stimson, and The Center for Climate and Security, 2013), 25–27.

16 The cycle of droughts, starting in 2006, led to the movement of two million impoverished farmers into the outskirts of cities. Syrian water reservoirs, which could have alleviated the situation, were depleted by half between 2002 and 2008, following Assad's policy of cultivating water-costly cotton and cereals. See a report by IRIN (a service of the UN Office for the Coordination of Humanitarian Affairs), *Syria: Drought Driving Farmers to the Cities*, September 2, 2009, http://www.irinnews.org/report/85963/syria-drought-driving-farmers-to-the-cities. See also The Centre for Climate and Security, "One-stop list of Resources on Syria, Drought, Climate Change and Unrest," updated, January 23, 2014, http://climateandsecurity.org/2014/01/23/updated-one-stop-list-of-resources-on-syria-drought-climate-change-and-unrest/.

17 Forensic Architecture, Drone Strikes Investigation, http://www.forensic-architecture.org/case/drone-strikes/; Femia and Werrell, "Climate Change Before and After the Arab Awakening"; Russell Sticklor, "Syria: Beyond the Euphrates," *New Security Beat*, September 28, 2010, http://www.newsecuritybeat.org/2010/09/syria-at-the-crossroads-beyond-the-euphrates/; Robert F. Worth, "Earth Is Parched Where Syrian Farms Thrived," *New York Times*, October 13, 2010; Wadid Erian, Bassem Katlan, and Ouldbdey Babah, *Drought Vulnerability in the Arab Region: Special Case Study: Syria* (2010), United Nations Global Assessment Report on Disaster Risk Reduction, 2011, http://www.preventionweb.net/english/hyogo/gar/2011/en/home/index.html.

18 See http://wherethedronesstrike.com/, a platform produced by Forensic Architecture in collaboration with SITU Research and the Bureau of Investigative Journalism in 2014.

19 Ellsworth Huntington, one of the most visible proponents of "geographical determinism," proposed that the fall of the Roman Empire was precipitated by reductions in agriculture output caused by shifts in the aridity line. Ellsworth Huntington, *World Power and Evolution* (New Haven: Yale University Press, 1919).

20 Fernand Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II: Vol. 1* (Berkeley: University of California Press, 1996), 20. Cited in Dipesh Chakrabarty, "The Climate of History: Four Theses," *Critical Inquiry*, vol. 35 (Winter 2009): 204 (quotation modified as per original).

21 See the "Ecologies" section in *Forensis: The Architecture of Public Truth*, ed. Forensic Architecture (Berlin: Sternberg Press, 2014), 483–633.

22 In 1913, Frederick Laws was the first to develop the practice of aerial reconnaissance for the British military. Looking from a light aircraft at a moist patch of grass in the air force base in southeast England from which his light aircraft took off, Laws could make out the imprint of "a dog, following a parade of soldiers, being chased off by the Sergeant" shortly after they had all moved on. F. C. V. Laws, "Looking Back," paper read at the Remote Sensing and Programmetry Society's Meeting on November 18, 1958, published in *The Photogrammetric Record*, vol. 3, no. 13 (April 1959): 28–29.

23 C. Donald Ahrens, *Meteorology Today: An Introduction to Weather, Climate, and the Environment*, 8th ed. (Belmont, CA: Thomson Higher Education, 2007), 110. A similar phenomenon is observed by Patricio Guzmán in his film *Nostalgia for the Light* (*Nostalgia de la*

Luz) (France, 2010), 90 mins. The relation between humidity and resolution is captured by a photographic term known as "dimensional stability" which measures the size changes of objects caused by small deflections generated by different levels of humidity and temperature. For information on Kodak Aerocon High Altitude Film see http://www.kodak.com/ek/uploadedFiles/Content/Manufacturing_Services/Aerial_Products/Literature_and_Publications/ti2344.pdf.

24 Jeremia 13:19, http://biblehub.com/jeremiah/13-19.htm.

25 Isaiah 35:7, http://biblehub.com/isaiah/35-7.htm.

26 Arie S. Issar and Mattanyah Zohar, *Climate Change—Environment and Civilization in the Middle East* (Berlin: Springer, 2004), 23. Issar and Zohar reconstruct the paleo-climatic scenario for the post Roman-Byzantine Period as follows: "a series of dry years with an annual average precipitation of less than 40 mm over the surface drainage basin caused the olive crop to diminish to a level where it was no longer economical to cultivate. A few consecutive years of drought may even have caused many trees to dry up and die. Thus, the olive plantations on the terraces were abandoned and the natural vegetation of dwarf oak, pistachios, etc., returned to dominate the landscape. With the return of the natural *maqui* type vegetation, the permanent inhabitants could shift to an economy of raising goats and sheep, and in good years to sow the terraces for grain and fodder" (26). See also H. J. Bruins, "Ancient Desert Agriculture in the Negev and Climate-Zone Boundary Changes During Average, Wet and Drought Years," *Journal of Arid Environments*, vol. 86 (2012): 26; Rehav Rubin, "The Romanization of the Negev, Israel: Geographical and Cultural Changes in the Desert Frontier in Late Antiquity," *Journal of Historical Geography*, vol. 23, issue 3 (July 1997): 267–83.

27 Michael Evenari, Leslie Shanan, and Naphtali Tadmor, *The Negev: The Challenge of a Desert* (Cambridge, Mass.: Harvard University Press, 1971). "In those days field trips were made in convoy style, with about one fifth of the party acting as security guards in case of an attack by marauders. […] Many of us grew beards [and] would look like gun packing frontiersman in the Wild West" (1).

28 Edward Henry Palmer, *The Desert of the Exodus: Journeys on Foot in the Wilderness of the Forty Years' Wanderings* (Cambridge: Deighton, Bell and Co, 1871), 287. Cited in Evenari et al., *The Negev*, 27.

29 This sarcastic quote is attributed to the British Governor of Sinai, Major C. S. Jarvis. See Meron Benvenisti, *Sacred Landscape: Buried History of the Holy Land Since 1948* (Berkeley, Los Angeles: University of California Press, 2002), 60.

30 Gideon Avni, "Early Mosques in the Negev Highlands: New Archaeological Evidence on Islamic Penetration of Southern Palestine," *Bulletin of the American Schools of Oriental Research*, no. 294 (May, 1994): 83–100. For a more recent interdisciplinary approach, reading the military, agrarian, economic (human), and climate (desertification) history against each other, see the Ancient Deserts Agricultural Sites Revisited (ADASR) project at the Earth Data Analysis Center at the University of New Mexico, Albuquerque, http://edac.unm.edu/.

31 "We asked a neighboring Bedouin sheikh to assist us. He promised to send 7 of his Bedouins with their camels. On the morning of December 4 twenty-one Bedouins appeared with their camels and plows! Soon the farm which had been abandoned for many centuries, came to life as the camels began to drag their antiquated wooden plows. […] Soon the whole field was green and we felt that we had made the first step on the road to our goal." Evenari et al., *The Negev*, 4.

32 Alon Tal, *Pollution in a Promised Land: An Environmental History of Israel* (Berkeley, Los Angeles: University of California Press, 2002), 205.

33 "Israel Inaugurates Yarkon-Negev Pipeline Amid Great Festivities," *Jewish Telegraphic Agency (JTA)*, July 20, 1955.

34 Tal, *Pollution*, 53–54, 206–09.

35 In one of the most embarrassing quotes for Zionist history Abba Ahimeir, a right wing Jewish writer in pre-state Palestine, called upon Zionists to learn from "Fascist praxis and its psycho-politics." In fact, at least in the pre-World War II years, the visual culture, energy, and enthusiasm of both Fascists and Zionists were very similar. Ahimeir also called Ze'ev Jabotinsky "our Duce," but later retracted. See Tom Segev, "Words that Can't be Retracted," *Ha'aretz*, April 20, 2012 (Hebrew).

36 By the time the camps were dismantled in 1933, the Italians had killed about 60 percent of the local population. See Christopher Duggan, *The Force of Destiny: A History of Italy Since 1796* (New York: Houghton Mifflin, 2007), 496; Simonetta Falasca Zamponi, "Storytellers and Master Narratives," in *States of Memory: Continuities, Conflicts, and Transformations in National Retrospection*, ed. Jeffrey K. Olick (Chapel Hill: Duke University Press, 2003), 43–71.

37 *Milwaukee Journal*, January 8, 1932. The article is signed J. R. W. See also "Making the Libyan Desert Bloom," *Milwaukee Journal*, December 20, 1938.

38 The designation of the zone of operation as the "land of Israel" marks the fact that this organization predates the state, but the persistence of this designation after the establishment of Israel and the occupation of the West Bank became also a code name to include afforestation in areas in which state law did not apply. Furthermore, not being a state agency allowed the JNF to act on behalf of "world Jewry," rather than citizens of the state, which would also include Arabs. Shaul Ephraim Cohen, *The Politics of Planting* (Berkeley, Los Angeles: University of California Press, 1993).

39 Tal, *Pollution*, 69.

40 Ibid., 75.

41 Ibid., 92.

42 Climate historians claim that Carthage, Greece, and the Roman Empire might have collapsed due to desertification. Walter G. Whitford, *Ecology of Desert Systems* (Waltham, Mass.: Academic Press, 2002), 277; Huntington, *World Power*; Walter Clay Lowdermilk, *Conquest of the Land Through Seven Thousand Years* (U.S. Department of Agriculture, Soil Conservation Service, 1939).

43 United States Geological Survey, "Desertification," http://pubs.usgs.gov/gip/deserts/desertification/.

44 Adrian Lahoud, "Floating Bodies," in Forensic Architecture, *Forensis*, 495–518, at 501; Eyal Weizman, *The Least of All Possible Evils* (London: Verso, 2011), Chapter 2: "Arendt in Ethiopia," 27–64.

45 Kim Sengupta and Brian Brady, "West Turns Sights on Threat in the Desert," *Independent*, January 20, 2013.

46 Mark Sexton and Shafi Saiduddin, "Desertification and Insurgency: A Global Crisis," *Army (Association of the US Army)* (July 2014): 50.

47 Adrian Lahoud provides a strong counter narrative: "For decades, it was assumed that desertification in the Sahel was primarily caused by poor farming practices—that unsophisticated local farmers could not adapt to changing environmental conditions as quickly as they needed to, leading to overgrazing, deforestation, and erosion. […] More recently, however, anthropogenic climate change has forced a reexamination of these alleged causes." Lahoud, "Floating Bodies," 504.

48 Miles Amoore, "Kew's Great Green Wall to Hold Back Saharan Terror," *Sunday Times*, July 20, 2014.

49 Ron Ben-Yishai, "Sinai Panic Creates Terror," *Ynet*, June 18, 2012, http://www.ynetnews.com/articles/0,7340,L-4244057,00.html.

50 A recent UN report estimated that by 2020 south-to-north migration between the drying Sahel and Europe will affect more than 60 million people. *Desertification: The Invisible Frontline*, report by The United Nations Convention to Combat Desertification, 2014, http://www.unccd.int/Lists/SiteDocumentLibrary/Publications/Desertification_The%20invisible_frontline.pdf. For the consequences of migration through the Mediterranean see Charles Heller, Lorenzo Pezzani, and SITU Research, "The Left-to-Die Boat: The Deadly Drift of a Migrants' Boat in the Central Mediterranean," Forensic Architecture, 2012, http://www.forensic-architecture.org/case/left-die-boat/. See also Heller, Pezzani, and SITU Research, "Left-to-Die Boat," and Heller and Pezzani, "Liquid Traces: Investigating the Deaths of Migrants at the EU's Maritime Frontier," in Forensic Architecture, *Forensis*, 637–56, 657–84.

51 Gilead Natan, "The Treatment of Infiltrators from the Egyptian Border," the Knesset Research and Information Centre, May 26, 2010, http://www.knesset.gov.il/mmm/data/pdf/m02524.pdf (Hebrew). See also Catrina Stewart, "Israelis Build the World's Biggest Detention Centre," *Independent*, March 10, 2012; Bill Van Esveld and Arthur Helton, *Sinai Perils: Risks to Migrants, Refugees, and Asylum Seekers in Egypt and Israel*, report by Human Rights Watch, November 12, 2008, http://www.hrw.org/reports/2008/11/12/sinai-perils-0. In the "open detention centers" migrants can be held in indefinite detention without judicial review. Deger, "African Asylum Seekers in Israel Reject 'Invitation' to Desert Prison," *Mondoweiss*, March 28, 2014, http://mondoweiss.net/2014/03/african-seekers-invitation.html.

52 Many of the people that cannot make the journey are held in refugee camps—"waiting rooms" on the threshold of the desert—paid for by the very European states that want to keep them away. Michel Agier, *On the Margins of the World: The Refugee Experience Today*, trans. David Fernbach (London: Polity, 2008).

53 Many desert thresholds are being fenced up at present. This process takes place not only in the Negev, Gaza, and the West Bank but also along other aridity lines in such places as Saudi Arabia, the Western Sahara, and the US–Mexico border (an aridity line separates the American Southwest from Mexico through the notorious frontiers of El Paso/Ciudad Juarez and San Diego/Tijuana). Guatemalan architect Teddy Cruz has called these bends of conflict zones "the political equator." See http://www.politicalequator.org/.

54 JNF (Jewish National Fund), "Desertification—A Global Issue," http://www.kkl.org.il/eng/forestry-and-ecology/combating-desertification/desertification-a-global-issue/; JNF, "Combating Desertification," http://www.kkl.org.il/eng/forestry-and-ecology/combating-desertification/; JNF, "Turning the Desert Green," http://www.kkl.org.il/eng/forestry-and-ecology/afforestation-in-israel/turning-the-desert-green/.

55 Contemporary environmental research recognizes that grazing, now excluded from most of the desert for ecological reasons, increases soil productivity by breaking through the saline crust of the soil and allowing seeds to take hold and germinate, while droppings act as fertilizers. Tal, *Pollution*, 351.

56 JNF, "Afforestation in Israel," http://www.kkl.org.il/eng/forestry-and-ecology/afforestation-in-israel/; and JNF, "Turning the Desert Green.

57 Former South African Ambassador to Israel, Ismail Coovadia, explained: "I have supported the struggle against apartheid in South Africa and now I cannot be a proponent of what I have witnessed in Israel, and that is, a replication of apartheid." "South African Diplomat Rejects Gift from Israeli Ministry of Foreign Affairs," *Middle East Monitor*, June 18, 2013, https://www.middleeastmonitor.com/news/middle-east/6323-south-african-diplomat-rejects-gift-from-israeli-ministry-of-foreign-affairs.

58 Amir Ben-David, *Report: Planting by JNF causes ecological damage*, *Ynet*, March 28, 2013 (Hebrew).

59 Guy Rotem, Amos Bouskila, and Alon Rothschild, *Ecological Effects of Afforestation in the Northern Negev*, report by the Society for the Protection of Nature in Israel, May 2014, http://www.teva.org.il/_Uploads/dbsAttachedFiles/forestration_northern_NegevSPNI_Eng_finalMay2014.pdf, at 47. The authors refer to Eyal Rotenberg and Dan Yakir, "Contribution of Semi-Arid Forests to the Climate System," *Science*, vol. 327, no. 5964 (January 2010): 451–54.

60 The complete quote is: "The trees at Sde Boker speak to me differently than do the trees planted elsewhere. Not only because I participated in their planting and in their maintenance, but also because they are a gift of man to nature and a gift of the Jews to the compost of their culture." David Ben-Gurion, *Memoirs* (Cleveland, OH: World Publishing Company, 1970), 150.

61 Human-induced climate change, caused to a large extent from intense agricultural farming and water use policies, was a major factor in the more frequent droughts that have been afflicting the wider Mediterranean region. Katy Human, "Human-Caused Climate Change A Major Factor In More Frequent Mediterranean Droughts," National Oceanic & Atmospheric Administration, October 27, 2011, http://www.boulder.noaa.gov/?q=node/16; Sonja J. Vermeulen, Bruce M. Campbell, and John S. I. Ingram, "Climate Change and Food Systems," *Annual Review of Environment and Resources*, vol. 37 (November 2012): 195–222. In 2005, agriculture covered 37 percent of the earth's terrestrial surface. Land-cover change is a major source of CO_2 to the atmosphere, contributing to 12–17 percent of global emissions. Large agribusiness cattle ranching, soybean farming, and plantation agriculture have become more important as drivers of climate change. R. Lal, "Soil Carbon Sequestration Impacts on Global Climate Change and Food Security," *Science*, vol. 304, no. 5677 (June 2004): 1623–27; Zafrir Rinat, "Experts Discuss Middle East Climate Change at JNF Workshop," *Ha'aretz*, July 3, 2014. See also D. J. Eldridge, Eli Zaady, and Moshe Shachak, "Infiltration Through Three Contrasting Biological Soil Crusts in Patterned Landscapes in the Negev, Israel," *Catena*, vol. 40, no. 3 (July 2000): 323–36.

62 Rinat, "Experts Discuss Middle East Climate Change."

63 Erle Ellis, "Anthropocene," *Encyclopedia of the Earth*, September 3, 2013, http://www.eoearth.org/view/article/150125/. The term Anthropocene was proposed by Paul Crutzen in 2000. Since 2008, geologists have proposed the formal adoption of the Anthropocene epoch (still pending).

64 Chakrabarty, "The Climate of History."

65 In 1911, a Zionist organization purchased 6,000 dunams (roughly 1,500 acres) from the Bedouins in Jammama (Ruchama). By 1947, the JNF and Jewish individuals had purchased about 60,000 dunams (roughly15,000 acres) of Negev land from Bedouin tribes. Chanina Porat, *The Negev: From a Desert to Cultivable Land, Negev Development and Settlement 1949–1956* (Beersheba: Ben-Gurion Heritage Institute, Ben-Gurion University of the Negev, 1996), 3 (Hebrew).

66 Benvenisti, *Sacred Landscape*, 59–62.

67 Ibid., 61.

68 D. H. K. Amiran, "The Pattern of Settlements in Palestine," *Israel Exploration Journal*, vol. 2, no. 2 (1953): 67–71.

69 Ibid., 78.

70 Walid Khalidi, *All That Remains: The Palestinian Villages Occupied and Depopulated by Israel in 1948* (Washington D.C.: Institute for Palestine Studies, 1992), 127.

71 Nūri al-'Uqbi's testimony in *Remembering Al-'Araqib*, ed. Aamar Abaria (Tel Aviv: Zochrot, 2009), 12–13 (Hebrew).

72 Neve Gordon, "In the Negev," *London Review of Books*, March 2012.

73 Benvenisti, *Sacred Landscape*, 19.

74 These cities were an economical and social failure, and are now home to the highest unemployment levels in Jewish cities in Israel. Zvi Efrat, *The Israeli Project: Building and Architecture 1948–1973* (Tel Aviv: Tel Aviv Museum of Art, 2004) (Hebrew).

75 "Israel Distributes Radiation Pills to Residents Near Nuclear Reactor," AFP, August 8, 2004.

76 Dawn Chatty, "The Bedouin in Contemporary Syria: The Persistence of Tribal Authority and Control," *Middle East Journal*, vol. 64, no. 1 (Winter 2010): 29–49.

77 See Alessandro Petti, Sandi Hilal, and Eyal Weizman, *Architecture After Revolution* (Berlin: Sternberg Press, 2014), Chapter 1, "Returns," 38–67.

78 A recent UN report expressed its grave concern about the situation of these displaced: "The number of Bedouins living below the poverty line, their living and housing conditions, their levels of malnutrition, unemployment and infant mortality are all significantly higher than the national averages. They have no access to water, electricity and sanitation and are subjected on a regular basis to land confiscations, house demolitions, fines for building 'illegally', destruction of agricultural fields and trees, and systematic harassment and persecution." "Israel, Additional Information" (2001), in "Concluding Observations of the UN Committee on Economic, Social and Cultural Rights," ed. Leif Holmström, *Kluwer Law International* (2003), 317–20.

79 Nūri al-'Uqbi, telephone interview, July 20, 2014.

80 Tal, *Pollution*, 266.

81 Chaim Levinson, Ido Efrati, Jack Khoury, and Revital Hovel, "Man Killed in Rocket Strike on Negev Bedouin Community," *Ha'aretz*, July 19, 2014.

82 "State: Providing Protection for Bedouin Villages in the Negev is not a Priority," The Association for Civil Rights in Israel (ACRI), July 17, 2014, http://www.acri.org.il/en/2014/07/17/bedouin-protection-priority/.

83 Hanna Hamdan, "The Settlement Policy and the 'Judiazation' of Space in the Negev," Adalah electronic sheet no. 11.3.2005 (Hebrew); Gadi Algazi, "The State of Israel vs. Citizens of Israel," *Tarabut*, July 28, 2010, http://www.tarabut.info/en/articles/article/al-arakib-demolished/.

84 Gordon, "In the Negev."

85 Human Rights Watch, *Prison Conditions in Israel and the Occupied Territories*, A Middle East Watch Report (1991), 18, 64. Because by international law Israel is forbidden to remove the occupied population from the occupied territories, the prisons have been defined, for operational and legal purposes, as extraterritorial islands of occupied territory inside Israel.

86 Stewart, "World's Biggest Detention Centre", Bill Van Esveld and Arthur Helton, *Sinai Perils: Risks to Migrants, Refugees, and Asylum Seekers in Egypt and Israel*, report by Human Rights Watch, November 12, 2008. Israel's laws were changed to enable it to imprison migrants arriving after December 2013 for up to one year without trial. Those who arrived before that date now receive an "invitation to attend a residence facility," otherwise known as "open detention centers," where migrants can be held in indefinite detention without judicial review. Deger, "African Asylum Seekers in Israel." The story of Ktzi'ot manifests much of the history of Zionist colonization in the Negev. It was established in 1953 as a military agrarian (Naḥal) settlement point after the military expelled 3,500 members of the Bedouin al-'Azāzme tribe. The settlement was abandoned in the 1960s. In the late 1980s its infrastructure was converted to serve as a detention camp for Palestinian prisoners arriving in large numbers during the First Intifada. In recent years Ktzi'ot has gradually been converted into the world's largest migrant detention center.

87 Tal, *Pollution*, 347.

88 Farkhan Shlebe, cited in Tal, *Pollution*, 349.

89 Jonathan Cook, "Bedouins Defiant Despite Israel Eviction Plan," *Al Jazeera*, June 14, 2014.

90 HCJ 2887/04, *Abu-Madigam v. Israel Land Authority* (Hebrew). Al-'Araqīb was sprayed with herbicide on February 14, 2002; April 2, 2003; June 17, 2003; January 15, 2004; and February 10, 2004. Fields of wheat, barley, corn, and watermelon were destroyed. Dukium, http://www.dukium.org.

91 Algazi, "The State of Israel vs. Citizens of Israel."

92 The decisive moment in the trial happened when the plaintiffs' lawyer read out the producer's own label: "Precaution … wear gloves, avoid breathing in the fumes … wash with water and soap any part of the body that came into contact with the chemical. Avoid animal feeding over an area sprayed by the chemical or their entry for seven days from the time of the spraying." HCJ 2887/04, *Abu-Madigam v. Israel Land Authority* (Hebrew).

93 Nūri al-'Uqbi, telephone interview, July 20, 2014.

94 HCJ Civil Case (Beer Sheva) 7161/06, *Al-Uqbi vs. The State of Israel* (Hebrew).

95 Nūri al-'Uqbi, telephone interview, July 20, 2014.

96 Plia Albek, "Summary of Report of the Expert Committee on the Northern Negev and the Siyag Area," Ministry of Justice, the State of Israel, October 20, 1975 (unpublished).

97 Oren Yiftachel, Sandi Kedar, and Ahmad Amara, "Challenging a Legal Doctrine: Rethinking the Dead Negev Ruling, Law and Government," *Mishpat U-Mimshal*, vol. 20, no.1 (2012) (Hebrew).

98 The *terra nullius* law was revoked in a milestone judgment handed down on June 3, 1992 in the landmark case of *Mabo vs. Queensland* in the Australian High Court. The court determined that under certain circumstances indigenous land rights (native title) had not been extinguished by white European settlement and indeed, under common law, still existed in some parts of what is now called Australia in the latter years of the twentieth century. On *terra nullius* see Sven Lindqvist, *Terra Nullius: A Journey Through No One's Land* (New York: The New Press, 2007).

99 The legal battles of the Bedouins are thus related, Yiftachel explains, to those of indigenous peoples in countries such as Australia, Canada, South Africa, India, and Brazil. For comparison see also Patrick Wolfe, "Settler Colonialism and the Elimination of the Native," *Journal of Genocide Research*, vol. 8, no. 4 (December 2006): 387–409.

100 Yiftachel et al., "Challenging a Legal Doctrine," 27. The "dead Negev doctrine," Yiftachel explains, is based upon a number of principles, both territorial and temporal. The territorial/environmental principle is unpacked above. The temporal principle turns on the year 1921. In 1921, the British Mandate government issued an order (Land Ordinance/*mawāt*) calling for residents of the Negev to register their land. The Bedouin did not do so because they trusted their own land system. The British, realizing the impracticality of the order, never enforced it and in 1934 effectively canceled it. In 1921 Churchill, as the newly appointed secretary of state for the colonies, reaffirmed "the assurances already given in Beersheba by the High Commissioner to the Sheikhs that the special rights and customs of the Bedouin tribes of Beersheba will not be interfered with." Public Records Office, C.O.733/2/21/21698/folio77. In 1975, Plia Albek selectively revived the British command claiming that any Bedouin who ignored or missed the opportunity

to register *mawāt* land in 1921 cannot regain ownership even by later cultivation. Yiftachel et al., "Challenging a Legal Doctrine," 23–37.

101 Yehezkel Lein and Eyal Weizman, *Land Grab*, B'Tselem, 2002. We wrote that land collectively owned by several villagers was often registered to the one villager that could read and write. Land merchants and local Ottoman administrators took the opportunity to register large areas of land to their own names. Fallahs and Bedouin farmers who cultivated lands for generations became tenants of absentee owners. It was from the absentee owners that the first wave of Zionist land purchase took place, and farmers were "legally" displaced from their lands.

102 Tal, *Pollution*, 346.

103 In an implicit recognition of Bedouin land ownership, the Ottomans purchased land from the al-'Azāzme tribe in order to build the city of Beersheba. See Ismael Abu-Saad and Cosette Creamer, "Socio-Political Upheaval and Current Conditions of the Naqab Bedouin Arabs," in *Indigenous (In)Justice: Human Rights Law and Bedouin Arabs in the Naqab/Negev*, ed. Ahmad Amara, Ismael Abu-Saad, and Oren Yiftachel, International Human Rights Clinic, Human Rights Program Series, Harvard Law School (Harvard: Harvard University Press, 2012), 19. On Zionist land purchases see Chanina Porat, *From Wasteland to Inhabited Land: Land Purchase and Settlement in the Negev 1930–1947* (Jerusalem: Yad Izhak Ben-Zvi Press, 1996) (Hebrew).

104 Yiftachel et al., "Challenging a Legal Doctrine," 182.

105 Civil Case 7161/06 *Al-Uqbi vs. The State of Israel*, December 7, 2009 (my summary of some of the contents of the testimony).

106 Ibid. (my translation from Hebrew).

107 See also the summary of the case in Noa Kram, *Clashes over Recognition: The Struggle of Indigenous Bedouins for Land Ownership Rights Under Israeli Law*, Ph.D. Dissertation, California Institute of Integral Studies, 2013.

108 *Al-Uqbi vs. The State of Israel*, October 26, 2009 (my translation from Hebrew).

109 Bruce Granville Mille, *Oral History on Trial: Recognizing Aboriginal Narratives in the Courts* (Vancouver: UBC Press, 2011).

110 Interview with Michael Sfard, Tel Aviv, April 9, 2014.

111 Roy S. Fischel and Ruth Kark, "Sultan Abdülhamid II and Palestine: Private Lands and Imperial Policy," *New Perspectives on Turkey*, no. 39 (2008); Ruth Kark, "The Agricultural Character of Jewish Settlement in the Negev: 1939–1947," *Jewish Social Studies*, vol. 45, no. 2 (Spring, 1983): 157–74.

112 Yiftachel et al., "Challenging a Legal Doctrine," 176.

113 Interview with Michael Sfard, Tel Aviv, April 9, 2014.

114 *Al-Uqbi vs. The State of Israel*, May 13, 2010 (my translation from Hebrew).

115 In 1807 the German explorer Jasper Seetzen reported on Bedouin agriculture and, remarkably, specifically on that of the al-'Uqbis. Ulrich Jasper Seetzen, *Reisen durch Syrien, Palästina, Phönicien, die Transjordan-Länder, Arabia Petraea und Unter-Aegypten* (Berlin: G. Reimer, 1855).

116 The original sources are: Henry Baker Tristram, *The Land of Israel: A Journal of Travels in Palestine (Undertaken with special reference to its physical character)* (London: Clay and Taylor; Society for Promoting Christian Knowledge, 1865), 372; Edward Hull, *Mount Seir, Sinai and Western Palestine* (London: Richard Bentley and Son, 1885), 138–39; William M. Thomson, *The Land And The Book* (New York: Harper and Brothers, 1910), 556. All quotes are in Yiftachel et al., "Challenging a Legal Doctrine," 76–80.

117 Palmer, *The Desert of the Exodus*, 298–99.

118 Edward Said, *Orientalism* (London: Penguin Books, 2003 [1977]), 286.

119 Civil Appeal 218/74, *Salim Al-Hawashleh vs. State of Israel*, P.D. 38(3): 141 (1984) (Hebrew), final verdict, August 2, 1984.

120 Sarah Dovrat, final verdict in *Al-Uqbi vs. The State of Israel*, March 15, 2012.

121 Palmer, *The Desert of the Exodus*, 392.

122 Ibid., 390.

123 Yifa Yaakov, "6th-century Byzantine Monastery Excavated in Negev," *Times of Israel*, April 1, 2014.

124 Palmer, *The Desert of the Exodus*, 393.

125 Ibid.

126 *Al-Uqbi vs. The State of Israel*, May 13, 2010; Palmer, *The Desert of the Exodus*, 394.

127 It was only in April 1870 that the British Consulate General to "Beyrout" was pleased to report to the Queen that the prohibition on the export of grain from Syria and Palestine had finally been removed. Report by Her Majesty's Consulate General in Beyrout, published in the *London Gazette*, April 25, 1870, issue 23610, 2302. Another account describes the situation thus: "Between 1869 and 1871 Hebron was plagued with a severe drought. Food was so scarce that the little available sold for ten times the normal value. Although the rains came in 1871, there was no easing of the famine, for the farmers had no seed to sow. The [Jewish] community was obliged to borrow money from non-Jews at exorbitant interest rates in order to buy wheat for their fold. Their leaders finally decided to send their eminent Chief Rabbi Eliau [Soliman] Mani to Egypt to obtain relief." Isaac Samuel Emmanuel, Suzanne A. Emmanuel, *History of the Jews of the Netherlands Antilles*, Vol. 2 (Cincinnati: American Jewish Archives, 1970), 754.

128 Palmer, *The Desert of the Exodus*, 389, 392.

129 In its summation of the al-'Araqīb case the state added: "It is not enough to have a tent encampment, temporary accommodation, a few dwellings, or scattered buildings that are not continuous and contiguous in order to qualify as a settlement." Dovrat, final verdict in *Al-Uqbi vs. The State of Israel*. However, as Yiftachel et al. explain, nowhere did the Ottoman law say a village but rather used the term "inhabited location" and they therefore did not define what a settlement is. Yiftachel et al., "Challenging a Legal Doctrine," 92.

130 Dovrat, final verdict in *Al-Uqbi vs. The State of Israel*.

131 Ibid.

132 A. G. Macmunn and Cyril Falls, *Military Operations Egypt & Palestine*, vol. 2, part 2 (London: HM Stationary Office: 1930), 84–85. Military reports of this battle included here note the water shortage and the problem of obtaining drinking water for the 30,000 horses, mules, and camels employed by the EEF. Some charges were delayed for the horses to be taken back to Beersheba for watering. In other occasions horses were thrown into battle without drinking for three days.

133 Ibid.

134 Squadron 304 was one of the first to systematically record archaeological sites from the air. Sites included Christian churches in Jerusalem, Bethlehem, and Nazareth, as well as older ruins in Jericho, Caesarea, Acre, and the Dead Sea. The sorties were also part of the Heritage Commando (*Denkmalschutzcommando*), which undertook numerous scientific surveys of ancient monuments. The organization was led by Theodor Wiegand, who also employed aerial photographs obtained from specially equipped kites. The images became important for aerial archaeology as many places in Lebanon, Syria, Israel, and the Palestinian territories have since been built over. See Lothar Saupe, ed.,

Image Collection Palestine (Munich: Bavarian State Archives, 2010), photographs of Palestine recorded 1917/1918 by the Bavarian Flying Section 304.

135 Nada Atrash, "Mapping Palestine: The Bavarian Air Force WWI Aerial Photography," *Jerusalem Quarterly*, vol. 56 (Winter/Spring 2014), 95.

136 Tal, *Pollution*, 350. The photographs were presented by Aviva Rabinovich, a JNF botanist.

137 David J. Dean, "Air Power in Small Wars: The British Air Control Experience," *Air University Review* (July–August 1983); David Omissi, *Air Power and Colonial Control: The Royal Air Force 1919–1939* (Manchester: Manchester University Press, 1990); David MacIsaac, "Voices from the Central Blue: The Air Power Theorists," in *Makers of Modern Strategy, From Machiavelli to the Nuclear Age*, ed. Peter Paret (Oxford: Oxford University Press, 1986), 624–47, esp. 633.

138 In 1922 Churchill asked the British Royal Air Force (RAF) to take over from the army in control of Mesopotamia's (Iraq's) Shia areas. Sven Linqvist, *A History of Bombing,* trans. Linda Haverty Rugg (New York: The New Press, 2000), entry 101. Sir Percy Cox, the High Commissioner in Baghdad, reported that by the end of 1922, "on [at least] three occasions demonstrations by aircraft [have been sufficient to bring] tribal feuds to an end. On another occasion planes [...] dropped bombs on a sheik and his followers who refused to pay taxes, held up travellers and attacked a police station." Philip Anthony Towle, *Pilots and Rebels: The Use of Aircraft in Unconventional Warfare, 1918–1988* (London: Brassey's, Defence Publishers, 1989), 17. See also David Willard Parsons, "British Air Control: A Model for the Application of Air Power in Low-Intensity Conflict?" *Airpower Journal*, vol. 8, no. 2 (Summer 1994).

139 The survey had a crucial part to play in the history of the area: less than a year after the photographs were taken, the Anglo–American Committee of Inquiry used these aerial images to calculate population numbers and levels of cultivation in order to draft one of the proposed lines of partition. In the Beersheba district alone, they identified 8,722 tents and 3,389 stone houses (*bāykat*) belonging to the Bedouin tribes of the area. Yiftachel et al., "Challenging a Legal Doctrine," 100. "Distribution of the Nomad Population of the Beersheba Sub-district" was compiled from information that included the aerial photographs of 1945. Background information on the compilation of this map can be found in Appendices 3 and 4 of United Nations, General Assembly, *Ad Hoc Committee on the Palestinian Question, Report of Sub-Committee 2* (1947), Document A/AC.14/32.

140 Dov Gavish, *A Survey of Palestine under the British Mandate 1920–1948* (London: Routledge, 2005), 245–48.

141 Ian Black and Benny Morris, *Israel's Secret Wars: A History of Israel's Intelligence Services* (London: Hamish Hamilton, 1991), 129; Gil Eyal, *The Disenchantment of the Orient—Expertise in Arab Affairs and the Israeli State* (Stanford: Stanford University Press, 2006), 85. For a good, accessible introduction to aerial photography and resolution in WWII see Denis Cosgrove and William L. Fox, *Photography and Flight* (London: Reaktion Books, 2010).

142 Yosef Ben Shlomo, *Expert Report for the Analysis of Aerial Imagery*, September 15, 2009 (sent to Nūri al-ʿUqbi).

143 Ibid.

144 The following is a more detailed technical explanation: For the making of the Palestine Survey series the RAF reconnaissance airplanes were photographing at an altitude of 15,000 feet. The focal length of the lens was 12 inches or 1 foot. The scale of the film is obtained by dividing the altitude by focal length. The scale of the negative-film is thus 1:15,000 which means that every millimeter on the film represents 15 meters on the ground. As the size of the negative-film is 9 inches or 228.6 millimeters, the area captured on each separate negative film is about 3.4 x 3.4 kilometers, or 11.5 square kilometers. The resolution of the film used by the RAF is 35 line-pairs per millimeter. This unit, lp/mm, comes to measure how many pairs of alternating black and white lines would fit within a millimeter on a negative. If there are 35 line pairs, made each of the width of at least a single grain, then in a single millimeter on the film there are 70 grains. The size of a silver salt grain is 0.014 millimeters. In a scale of 1:15,000 the size of the grain represents 214 millimeters of ground. However, given the atmosphere, the effective resolution is 50 centimeters a grain.

145 Eli Atzmon, telephone interview, April 29, 2014.

146 Eyal Weizman, "Matter against Memory," in Forensic Architecture, *Forensis*, 361–378, especially 365.

147 Answering the state lawyer Yaʾari Roash about why he could not read everything from the image and felt he had to visit the site, Ben Yosef answered: "After 41 years experience, an aerial analyst who does not visit a place is not a professional; unless you analyze a dangerous place like Iran or places where you can not parachute the analyst there, an integral part of the analyst work is to take the aerial images and visit the ground." *Al-Uqbi vs. The State of Israel*, February 24, 2010 (my translation from Hebrew).

148 Incidentally, the effective resolution of these aerial images—about 50 centimeters—is similar to the size of a pixel in publically available satellite imagery. However, as I have written elsewhere, "[t]he pixelation of publicly available satellite images is not the result of visual or optical constraints. Rather they are degraded following legal regulations and directives. The resolution of 50 cm^2/pixel […] is aligned with the dimension of the human body. […] Half a meter square is the frame within which the human body fits when seen from above. The size of the pixel is designed to mask the body. This is a useful resolution for satellite image providers because they can avoid the risk of privacy infringement lawsuits […]. But the regulation also has a security rationale. Not only do important details of strategic sites get camouflaged in the 50 cm^2/pixel resolution, but the consequences of violence and violations orchestrated by states are likewise veiled." Weizman, "Matter against Memory," 371. US regulations have since lifted this restriction and limit the resolution of publicly available satellite imagery to 31 cm per pixel only. "US Lifts Restrictions on More Detailed Satellite Images," BBC, June 16, 2014, http://www.bbc.co.uk/news/technology-27868703.

149 *Al-Uqbi vs. The State of Israel*, February 24, 2010 (my translation from Hebrew).

150 Dovrat, final verdict in *Al-Uqbi vs. The State of Israel*.

151 Regavim, "Bedouin Myth #2—Are The Bedouin Villages Historical?" December 16, 2013, http://regavim.org.il/en/bedouin-myth-2-are-the-bedouin-villages-historical/; also in Regavim, "The Negev Bedouins: The Real Story," November 2013, http://174.137.191.60/~regavimo/wp-content/uploads/2013/11/5balloons.pdf. In their forthcoming book, political theorists Nicola Perugini and Neve Gordon explain that, "according to the organization's human rights narrative, Jewish settlers are victims of discrimination and the colonized Palestinians are the 'invaders' and 'silent conquerors' of Israeli national lands as well as the perpetrators of human rights violations against Jewish citizens of Israel." Nicola Perugini and Neve Gordon, *The Human Right to Dominate* (Oxford: Oxford University Press, 2015). A good resource for thinking the politics of NGOs can be found in Michel Feher, ed., *Nongovernmental Politics* (New York City: Zone, 2007).

152 Regavim, "The Negev Bedouins." Regavim's conclusion is that "the 'historic' village al-ʿAraqīb, which the Bedouin claimed was established during the Ottoman period, was built in the end of the 1990s and thereafter."

153 Interview with Sheikh Sayāh al-Tūri in the cemetery of al-ʿAraqīb, September 27, 2014.

NOTES ON TRANSLITERATION

The transliteration system used in *The Conflict Shoreline* gives preference to the phonetic pronunciation of words, and favors common parlance over historical or literary usage (for example: Bisān and not Baysān), so as to better indicate the essence of the language as it is used today. The system does not distinguish between letters that have similar pronunciation as far as the foreign speaker is concerned (for example the letter S stands for both س and ص). As the Bedouins of the Negev pronounce the letter ق as G, the letter G has been used in relation to places that are strictly Bedouin to represent the letter ڤ. The accenting of long vowels for Hebrew was done only when necessary for the pronunciation of a certain word for a non-Hebrew speaker and not as a convention. When an official spelling of the name of a person, place, or institution contradicts this system, deference has been made to that which is in common usage, and therefore most accessible.

CONSONANTS

H	T	Ḥ	GH	KH	Q	TZ	S	DH	ʿ	ʾ	SH
ه	ط ت	ح	غ	خ	ق	—	ص س	ذ	ع	و ى إ أ	ش
ה	ט ת	ח	—	כ	ק	צ	ש ס	—	ע	א	ש

NAQAB BEDOUIN PRONUNCIATION

G
ق
ג

VOWELS

A	Ī	Ū	Ā	Ē	Ō
ة ى ا	ي	و	ا	colloquial (يX)	colloquial (وX)
ה	י	ו	—	—	ו

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ACKNOWLEDGMENTS

Thanks are due to Nūri al-ʿUqbi, Sayāh and Salim al-Tūri, Oren Yiftachel, Haia Noach, Neve Gordon, Brenna Bhandar, Alberto Toscano, Jamon Van Den Hoek, Eduardo Cadava, Thomas Keenan, Shela Sheikh, Liz Jobey, and Adrian Lahoud for their contribution to this volume. Jacob Burns has acted as an excellent research assistant to Eyal Weizman and provided good insight throughout. Francesco Sebregondi researched and drew the maps. Several of the captions incorporate material that appears in Fazal Sheikh's book *Desert Bloom*, within *The Erasure Trilogy*. For help in interpreting the aerial images thanks to the aerial photography analysts Eli Atzmon and another prominent analyst who prefers to remain anonymous. Thanks also to Eidan Zilberstein for his help locating images and researching their history. Michael Komem and his team at Orientation in Jerusalem provided the transliteration. Additional thanks to Gerhard Steidl, Duncan Whyte, and the team at Steidl publishers.

Additional support for the research and development of *The Conflict Shoreline* has been provided by Forensic Architecture (forensic-architecture.org).

For more information about *The Erasure Trilogy*, see fazalsheikh.org.

First edition published in 2015

Book design: Fazal Sheikh with Duncan Whyte/Steidl Design
Consulting Editor: Liz Jobey
Text Editors: Liz Jobey and Shela Sheikh
Proofreading: Bill Molesky
Transliteration: Michael Komem, Ayman Fawaqa, Tawfiq Gazal, Tareq Rajab, at Orientation
Separations: Judith Lange and Reiner Motz, Steidl's digital darkroom
Production and printing: Steidl, Göttingen

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ISBN 978-3-86930-805-0
Printed in Germany by Steidl