ARAMCO WORLD magazine

NOVEMBER–DECEMBER 1983

THE BONFILS STORY: A SPECIAL SECTION

ARAMCO WORLD
magazine

P.O. BOX 2106
HOUSTON, TEXAS 77252
(PRINTED IN ENGLAND)
ADDRESS CORRECTION REQUESTED

ARAMCO WORLD magazine

VOL 34 NO. 6 PUBLISHED BI-MONTHLY NOVEMBER–DECEMBER 1983

Published by Aramco, a Corporation, 340 Shoreham Building, 15th and H Street, N.W. Washington, D.C. 20005; John J. Kelberer, Chairman of the Board and Chief Executive Officer; Hugh H. Goerner, President; Fahad M. Ghaslaan, Treasurer; Paul F. Hoye, Editor. Designed and produced by Brian Smith Associates. Printed in England by Ben Johnson & Co. Ltd. Distributed without charge to a limited number of readers with an interest in Aramco, the oil industry, or the history, culture, geography and economy of the Middle East. Editorial correspondence concerning Aramco World Magazine should be addressed to The Editor, 55 Laan van Meerdervoort, 2517AG The Hague, The Netherlands. Requests for subscriptions and changes of address should be sent to Aramco Services Company, attention S.W. Kombargi, Director, Public Affairs Department, 1800 Augusta Drive, Suite 300, Houston, Texas 77057.

ISSN 0003-7567

Cover: A montage of memorabilia of Felix, Adrien and Lydie Bonfils – a remarkable family of photographers, whose recently rediscovered collection of 19th century photographs are shedding new light on the history and civilization of the Middle East. Composed and photographed by Will H. Rockett, it shows portraits of the three photographers, a camera like the one they used, and some of their photos – first forgotten, then lost, and finally found again when an anti-war protestors' bomb blew out a skylight in the attic of the Harvard Semitic Museum. Back cover: Cairo by Bonfils.

◄ Bonfils photographs, like the one, left, of the interior of the house of the British Consul in Damascus, promise help in the restoration of old Damascene homes.

"I'll scratch your back, if you scratch mine."

Strange Bedfellows

WRITTEN BY TORBEN B. LARSEN
ILLUSTRATION BY KIKI LARSEN. PHOTOGRAPHED BY TORBEN B. LARSEN.

If you were to see a small, fragile butterfly-caterpillar being carried off between the sharp jaws of a ferocious ant, you would probably conclude that the caterpillar was about to be dismembered and eaten by the ant – or its hungry offspring. But if that butterfly happened to belong to what is called the "Blues" family *(Lycaenidae)*, you would be wrong.

All butterflies have a complex life cycle. The female, for example, lays up to 300 eggs, from each of which emerges a tiny caterpillar. This caterpillar does little more than eat and grow, changing its skin five or six times – as it becomes too tight – before turning into a pupa. Though this pupa is unable to move, a dramatic change immediately begins to take place inside it, and after a few weeks an adult butterfly emerges. At first its wings are tiny and limp, but within a few hours they expand to full size and harden, and the new butterfly can go off in search of food and a mate, to start the whole process again.

Normally, butterfly-caterpillars feed on the fresh leaves of green plants, and – since they can only move slowly – are subject to a wide variety of predators, including ants. But members of the Blues family have developed a special relationship with ants. (Blues, incidentally, is a bit of a misnomer; while many *are* blue, others come in most colors of the rainbow).

This relationship occurs because the Blues have a special gland that simply fascinates ants; located on the caterpillar's back, this gland exudes a sort of honey which the ants cannot resist when, as is normal, they begin to feed on the seeds and pests of certain green plants that the Blues also like. As soon as the ant encounters a Blue, therefore, it gets extremely excited, caresses the capterpillar with its antennae and drinks the honeydew from the gland rather than attacking and killing it.

Do the ants spare the caterpillar in return for the bribe of honey? To an extent, the answer is yes. But the relationship is actually deeper than that – as some ingenious experiments by the American entomologist, Naomi Pierce, have shown. The ants, for example, actually *protect* their caterpillars, driving off enemies such as parasitic wasps, assassin bugs and other predators. And some caterpillars actually *need* the attention of ants: if the honey is not removed, a mildew develops which can kill the caterpillar. Thus the ants get honey, the caterpillar gets protection and both parties benefit in a perfect example of what is called "commensalism" – a scientific term for, "I'll scratch your back if you scratch mine".

While unusual, commensalism is not unique. It exists also between ants and greenflies *(aphids)*, which also provide ants with a form of honey. And in Arabia, caterpillars of the African Emigrant Butterfly *(Catopsilia florella)* forage on the same plant as ants – a species of *Cassia* , from the pea family – and also provide a sugary substance to ants in return for a truce.

What *is* unique is the way in which the Blues have gone a step further with these arrangements: some Blues actually live *inside* ants' nests, are fed *by* the ants and even eat immature ants (eggs, grubs, and pupae). A few have even specialized in living inside the nest of the particularly savage Tailor Ant *(Oecophylla)*.

Five such species live in Arabia. The two Leopard Butterflies *(Apharitis)* are the best examples. Rare creatures found in tight little colonies, their females lay eggs near the nests of the host ant, and, as soon as the eggs hatch, the ants carry the tiny caterpillars inside their nest. Sometimes the ants' nest is underground, but in some parts of Arabia the butterflies seem to prefer ants which live inside the trunks of old date palms.

Initially, the caterpillars are fed by the ants, but as they grow larger they start to use their own initiative, eating ant eggs, grubs and pupae. Curiously, the ants let them do this without attacking them – partly because the ants continue to want the honey, but also because the caterpillar can probably synthesize the very special scents by which the ants recognize each other. A sort of I.D. card, these scents (pheronomes) are unique to each ant nest, and without them ants from one nest, even of the same species, will be instantly attacked by ants from another nest.

Leopard Butterflies near an ants' nest in a palm trunk.

Similarly, if the caterpillar of the Leopard Butterfly were switched to another nest, the ants there would attack it fiercely.

Once the caterpillar is fully grown, it pupates near the exit holes of the nest and, some weeks later, crawls out, dries its wings and starts to look for a mate. Since it doesn't need to search for food at the same time – it emerges from the pupa with plenty of stored fat – the Leopard Butterflies do not fly far from their birth place, a useful adaptation since it might be difficult to find another suitable nest.

The ability to live underground with ants and to carry food reserves is very useful; as one result, these butterflies do not have to seek flowers to sip nectar from – as most other kinds do – and this allows one species to live permanently in the deserts of the Empty Quarter (Rub' al-Khali) – where they were found by both Harry St. John Philby and Bertram Thomas in the 1930's. No other butterflies, in fact, can survive under such conditions.

The Giant Cupids *(Lepidochrysops)* of southwestern Arabia have a somewhat different relationship with ants. Their females lay eggs on plants of the mint family and the newly emerged caterpillars eat the tender leaves and flower buds of their host plant, like normal butterfly-caterpillars. At first they are wonderfully camouflaged, but at the third change of skin white caterpillars with hunched shoulders emerge and immediately drop to the ground where they are picked up by ants and taken off to a nest.

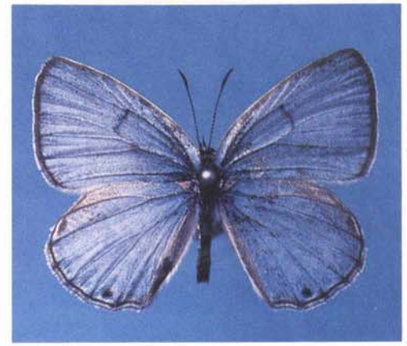
From then on the Cupids are set for life. They will, thereafter, feed on the immature stages of their host, giving honey in return, just like the Leopard Butterflies.

Altogether, there are three species of Giant Cupids in Arabia (two of them recently discovered by the author), and several hundred in Africa (where the three Arabian species are *not* found); the reason Cupids are so prolific is that by the time they find the right ants – ants that will protect them and not devour them – they will also have found the right food supply and the right ecological conditions. There *is* a penalty, however; the right combination of circumstances is rare and, as a result, most Cupids live in small, widely dispersed colonies.

A Leopard Butterfly, sitting uncharacteristically on a leaf.

The well-camouflaged caterpillar of the Fig Blue type.

Catmint, on which the Giant Cupid caterpillars feed.



Forsskaal's Giant Cupid, one of the largest of the Blues.

An Arabian Giant Cupid resting on a desert rock.

To observers, the ants may seem to be getting an unfair deal from Giant Cupids and Leopard Butterflies – since the butterflies, which live off young ants, can't exist without the ant, while the ants can live perfectly well without the butterflies. All the ants get, it seems, is some honey. But then observers, perhaps, have never tried caterpillar honey.

Torben B. Larsen writes regularly for Aramco World *on the entomology of the Arabian Peninsula.*

Rivers of Sand

WRITTEN BY SYBIL THURMAN
PHOTOGRAPHED BY CAROL S. BREED, JOHN McCAULEY, GERALD G. SCHABER AND C.V. HAYNES.

In the old Persian tale, "The Three Princes of Serendip," three young princes make several unexpected discoveries while searching for totally different things. From this story, 18th-century English author Horace Walpole coined the word "serendipity," adding that an intrinsic element of serendipity is the sagacity to recognize the *significance* of the unexpected.

This was certainly true of the scientists at the United States Geological Survey (USGS) who recently made a serendipitous discovery in the Sahara Desert that they are calling "astonishing." It resulted from the combination of a shortened space mission, a remarkable radar sensor, some good luck – and scientists alert to the sigificance of the unexpected.

Oddly enough, this modern story of discovery began with yet another Persian tale, this one dating back to the Persian occupation of Egypt about 500 B.C., when legends began to circulate about a "waterless river" hidden under the impassive face of the desert. These legends persisted and much later, in the 19th century, prompted a European expedition to Egypt's hostile Western Desert to search for this waterless river.

Not surprisingly, that expedition failed to find any rivers, with or without water. The Sahara's Selima Sand Sheet, after all, is an unlikely place to look for water; straddling the Egyptian-Sudanese border, it gets rain no more than two or three times in a *century*. This hyper-arid core of the Great Sahara Desert rates 200 on a geological "aridity index," meaning it would need 200 times the present rainfall to even have runoff. In contrast, the driest spot in the United States – near Death Valley, California – rates no more than *seven* on the same index.

The Sahara, however, has not always been dry. About 50 million years ago the sea flooded most of it and later large mammals roamed its lush savannahs, swamps and grasslands, indicating, scientists say, that rivers once flowed through the region. Evidence of wadis, or dry valleys, carved in western Egypt's Gilf Kebir Plateau support this hypothesis, as do the positions of small "conical hills" marking ancient divides on the surrounding planes. And three scientists who have spent considerable time there – USGS geologists Carol Breed, John McCauley and Maurice Grolier – have concluded that the wadis of the Gilf Kebir are upstream remnants of a large ancient watershed.

Though scientists have been aware of the Gilf Kebir Plateau for some time – it was discovered by Egyptian Prince Kemal al-Din in 1926 – geologists who later explored the region could come to no definitive conclusions because the wadis disappear without a trace beneath the sand at the foot of the plateau.

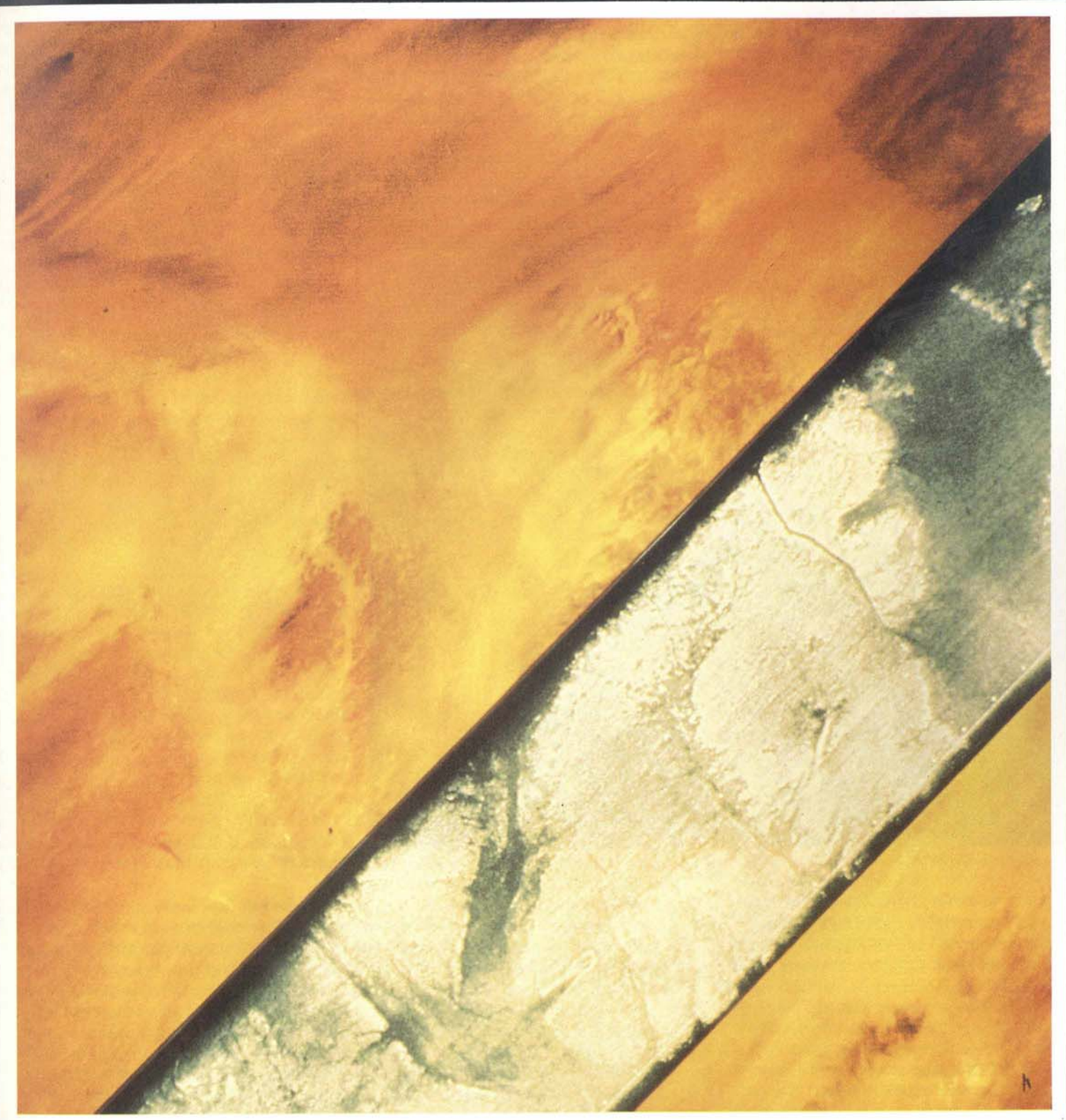
In November 1981, however, the Space Shuttle *Columbia* was launched on its second flight, carrying equipment for several scientific experiments. Included was the Shuttle Imaging Radar system (SIR-A), which scientists hoped would prove useful as a geological exploration tool. Scientists with SIR-A, in fact, had carefully targeted those regions of the Earth's surface that might be of significant geological or economic interest. Then, the first phase in this example of serendipity, a faulty fuel cell forced the scientists to shorten the 154-hour flight to 54 hours. That meant that instead of recording the targeted regions, astronauts had to settle for radar images of whatever land surfaces happened to come into view during the abbreviated mission.

After the flight, Charles Elachi of the Jet Propulsion Lab in Pasadena, California, SIR-A's principal investigator, met with other scientists – among them Gerald G. Schaber, chief of the USGS Astro-geology Branch in Flagstaff, Arizona – to examine the radar images and distribute them for preliminary analysis. Instantly noticing that the SIR-A had picked up the hyper-arid regions of the Sahara that Breed, McCauley and Grolier had explored, Schaber turned the images over to them.

Looking back now, Breed remembers exclaiming, when she took the first look at the images, "Hey! Where's the sand sheet?" because, she said, it looked as if the sand cover had been peeled off the surface of the desert to disclose an astounding geological sight: long-vanished networks of rivers, with valley floors that measured many kilometers across, and might extend for thousands of kilometers in length.

And that was but the first surprise. Despite their earlier speculation, none of the geologists who had worked in the Gilf Kebir region had come even close to guessing the enormous proportions of the ancient watershed revealed by SIR-A. Nor had they expected such dramatic results from radar imaging technology. Though

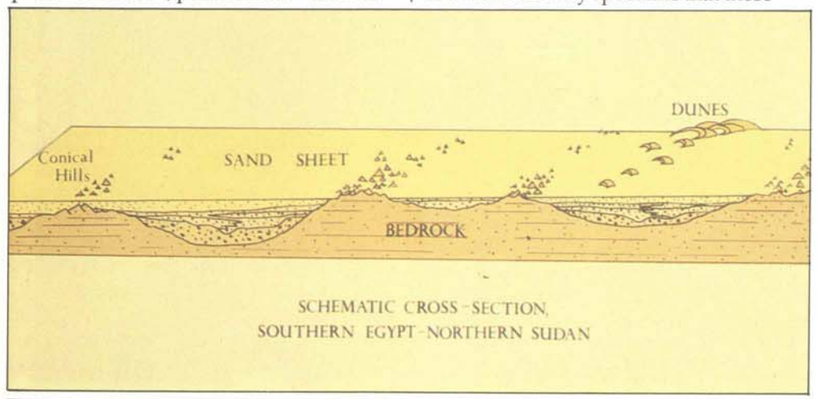
From high in space - radar as a time machine

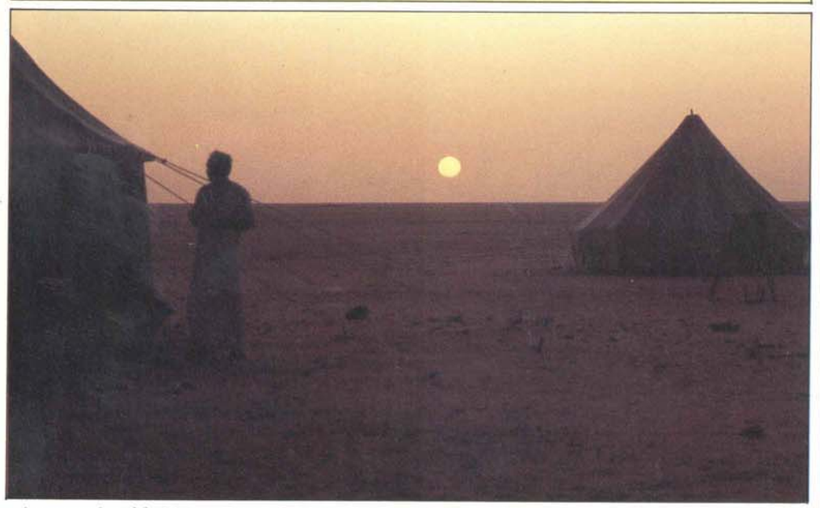


Two views of the same desert area: satellite image (left) showing only surface sands, and radar image (above) revealing underground river valleys, in green, and ancient channels.

radar penetration to depths of five meters (16 feet) was theoretically possible, few thought it likely, because on natural terrain near-surface moisture usually limits radar penetration to a few inches. "Nobody," said Schaber, "dreamed that there could be places on Earth dry enough for radar to penetrate the surface to these depths."

In the hyper-arid core of the Sahara, however, virtual total aridity – plus the presence of loose, porous sand – allowed





A cross section of the Western Desert showing valleys buried beneath sand (top), and (bottom) the scientists' camp.

the radar to perform to its limits: the radar signals bouncing back from underlying dense rock, gravel and alluvium, and outlining the river valleys with remarkable clarity. Thanks to a happy – if fortuitous – pairing of the instrument's capabilities with an ideal subject, McCauley says, "we were able to look beneath the face of the desert and use radar as a time machine."

The era to which they returned is the mid-Tertiary period – some 17 to 50 million years ago – when this part of North Africa enjoyed a moist, subtropical climate, and when rainfall on the Gilf Kebir Plateau and other highlands fed a network of large rivers flowing across grassy plains. Since then, the region has fluctuated between dry and less dry, culminating in the present extreme aridity.

In geological terms, man entered the scene rather recently – 200,000 years ago. They were probably hunters preying on zebra, rhinoceros, elephant and hippopotamus – judging by stone tools that have been discovered – but because no skeletal remains have been found, scientists can only speculate that these people were akin to *Homo erectus,* one of man's early ancestors. Remains of *Homo erectus* have been unearthed elsewhere in Africa and date to this period.

Then as now, the climate of the area determined who and what could live there – and for how long; as philosopher-historian Will Durant wrote, "Civilization exists by geological consent, subject to change without notice." These early ancestors of man apparently died out, or were driven away, when the climate changed and were succeeded later presumably by Neanderthal Man, some 30- to 50,000 years ago. Hunters and gatherers, whose stone tools can now be found lying on the desert floor, these people too eventually surrendered to the desert.

The last and most successful occupation of the region began less than 10,000 years ago when Neolithic Man entered the scene. Nomads, who herded cattle and hunted ostrich, giraffe, elephant and other animals – as vivid desert rock paintings and carvings reveal (See *Aramco World*, January-February 1983) – these people enjoyed a climate that nourished lush vegetation as far south as The Sudan. It was the Sahara's finest hour, but it was cut short some 5,000 years ago when the surface water dried up and man, together with virtually all other forms of life, was driven out. Since then, the desert has ruled supreme, not only concealing the clues to its past, but sometimes even altering them.

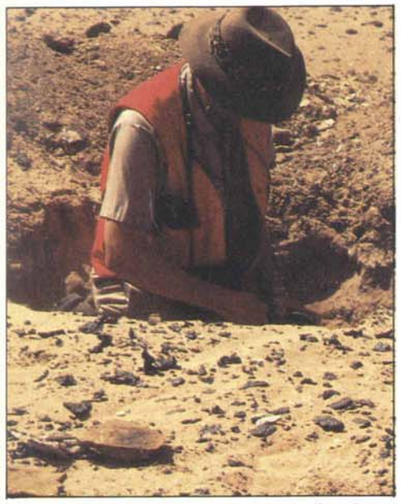
"The desert has been so modified by wind erosion," Breed says, "that many tools are no longer on the surface the people walked on." Many scientists who have worked there report artifacts from several periods of human occupation lying on the same surface. Thus, no piece of evidence can be taken at face value. For example, until the discovery of the "radar rivers," geologists had attributed the extraordinary flatness of the desert surface to wind erosion and sand deposition. But now they believe that the vanished rivers were probably responsible, carving out plains filled in by sand only much, much later.

Another case of serendipity: less than a month before the USGS scientists first reported the rivers of sand, a small expedition led by University of Arizona geologist Vance Haynes had crossed the same swath of Egypt and The Sudan swept by SIR-A. In pits they dug in the sand sheet, this expedition unearthed river sediments – some containing fossil snail shells – in localities later recognized as ancient river valleys. These deposits are now thought to be the youngest legacy of river systems that many millions of years ago may have been as extensive as the Nile.

But despite the clarity of the SIR-A images, they pose more questions than they answer. For example, McCauley says that the "trends of the ancient rivers are to the south and west, the opposite of known present-day ground water movement." Questions, therefore, arise as to whether these rivers were ever connected to the Nile and, if they were, where and when? Although he has no evidence yet, McCauley says that "it is possible they all flowed to one large basin of interior drainage as large as the Caspian Sea is now." Perhaps more intriguing was whether these rivers drained areas from which they might have carried gold, tin, and other minerals.

While such questions raised exciting possibilities, it was still no more than educated speculation – and would be – until the physical presence of these river channels was verified by digging pits. In September 1982, therefore, Dr. Bahay Issawi, director of the Egyptian Geological Survey and Mining Authority (EGSMA), led an expedition to southern Egypt to locate and examine the "radar rivers." With him went several geologists from EGSMA; Schaber, McCauley and Grolier of the USGS; Elachi and Ron Blom of the Jet Propulsion Lab; archeologist Bill McHugh of Pittsburgh's GAI Consultants; and a number of Egyptian fieldworkers.

Locating the river beds beneath the featureless Selima Sand Sheet was something of a scientific achievement in itself. In a area larger than Belgium, with virtually no landmarks, getting from one point to another is not only difficult, but also potentially dangerous, since the traditional method of navigation across the desert is by "dead-reckoning," using a



A scientist sampling sediment to test soil moisture.

compass and odometer. According to Breed, a veteran of five Sahara expeditions, the most common error travelers make is to mistake tracks in the desert for your own. "There are very few of us who have not gotten lost this way".

At the site, field workers began to dig pits into the sand sheet where the SIR-A radar images had indicated underlying valleys, and soon began to turn up their evidence. Their labors exposed river sands and rounded stream gravels – some containing Stone Age tools that had been tumbled by running water. In other areas, buried bedrock surfaces, bright on the radar pictures, were uncovered by the diggers a meter or so (three feet) beneath the sand – "confirming without doubt," says Schaber, "that we were achieving radar penetration to that depth. We also verified penetration of several meters through small sand dunes, which are essentially invisible to the radar."

This first expedition having succeeded, another was organized and carried out by many of the same scientists in March 1983, sponsored jointly by EGSMA and the U.S. Agency for International Development (USAID) in Egypt. They once again set out in four-wheel-drive vehicles from EGSMA's field headquarters at the Kharga Oasis on the Western Desert's eastern edge. But this time, instead of navigating by simple dead-reckoning, they navigated by means of an electronic device that calculated the position of their vehicles relative to signals from six orbiting U.S. Navy "Transit" satellites.

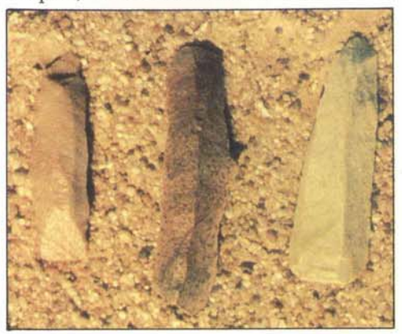
Since this was the first use of the satellite transit system for navigation in the desert, Breed recalled, no one knew how it would work when, on the second day out, they got lost. "Our magnetic compass headings and elapsed mileage indicated that we should be approaching camp a few miles from the Egyptian border," she said. "But the lights of camp were nowhere to be seen, and the Jeeps were very low on fuel. So rather than continue by dead-reckoning we decided to stay put and wait for a satellite fix. Then, as darkness fell, we heard the welcome 'beep-beep' of our satellite navigator as it displayed our actual position – 30 degrees off course to the east, some 20 miles away from camp. Thirty minutes later, after following the satellite navigator's directions, we reached camp safely."

The purpose of this second expedition was to define, sample and map individual channels within the 10- to 15-kilometer-wide (6.2- to 9.3-mile-wide) river valleys located on the previous expedition. With the help of the new navigation device, the scientists were able to locate many of these channels, in which they again found Stone Age tools and – to their surprise and excitement – sand that was *still wet.*

Breed says they were at first surprised to find damp sand because "the area is well away from the oases," and then excited because the moisture suggests the presence of "shallow water aquifers here and there that might be capable of supplying wells."

In fact, surprise and excitement characterize quite well the last two years at the USGS Astro-geology Branch and EGSMA. As McCauley points out, most large river systems of the world have been explored rather thoroughly. So naturally, he says, "it's intriguing to find one that was hitherto unknown. We have a whole new set of geological phenomena to examine."

The discovery has potential applications in several disciplines. Geologists are interested not only because they can "see the past," but also because the "radar rivers" may help locate sources of groundwater or mineral deposits. Archeologists are excited at the prospect of having a "roadmap" to use in locating ancient human occupation sites. And the U.S. National Aeronautics and Space Adminstration is so encouraged by the findings in the Sahara that they not only are planning to extend the radar imaging to more of the Earth's desert regions on an August 1984 Shuttle flight, but also are considering applying similar technology to Mars, in hopes of unlocking the secrets of how the surface of that desert planet has evolved.

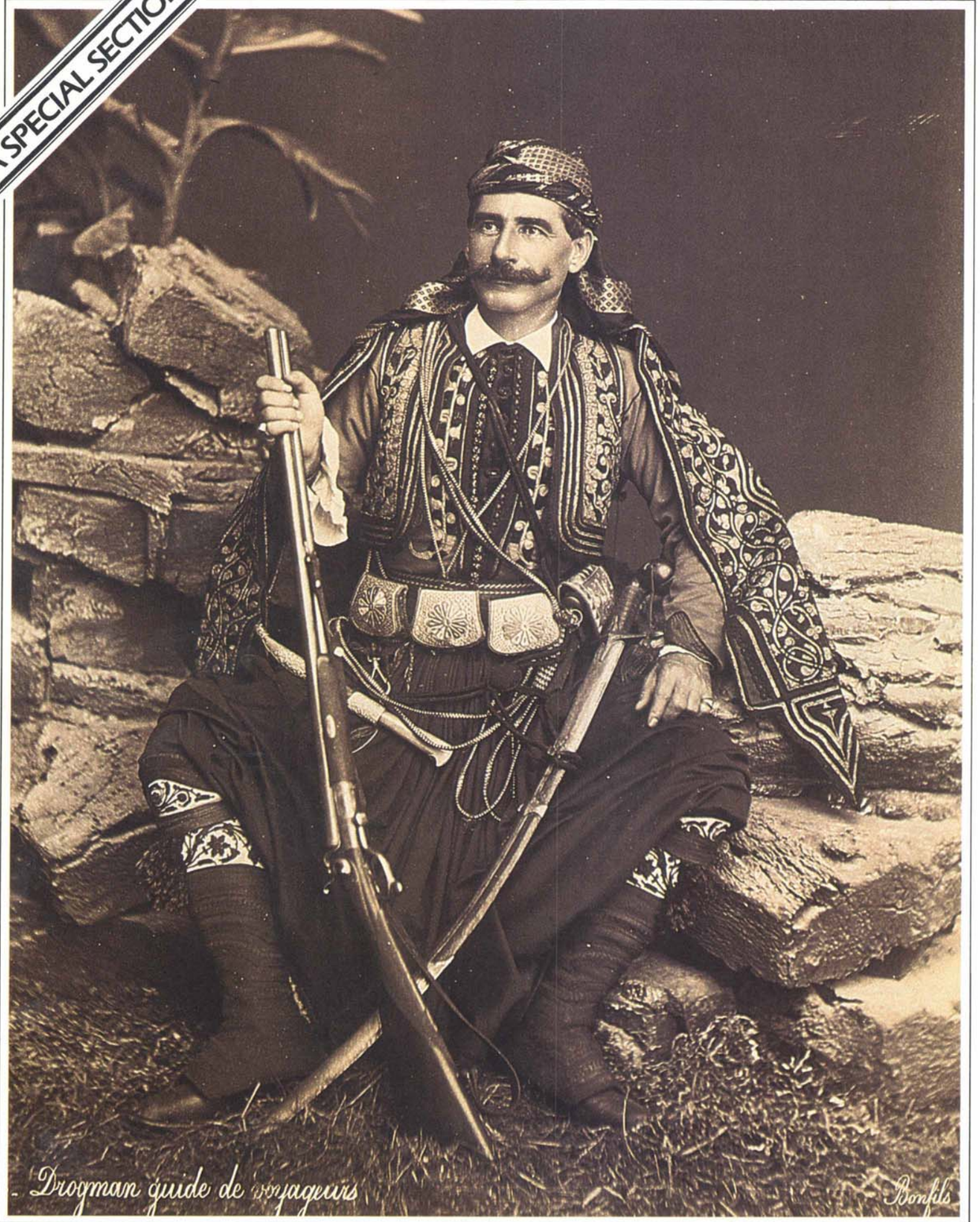


Stone Age tools and rock carvings found in the Sahara.

In the fifth century B.C., the Greek historian Herodotus wrote that "Egypt is the Nile and the Nile is Egypt." Now, almost 2,500 years later, another river's legacy has risen to claim her share of the Nile's ancient honors.

Sybil Thurman is an editor with the Tennessee Valley Authority (TVA) and a free-lance writer.

A SPECIAL SECTION



THE BONFILS STORY:

IN THE RUBBLE OF AN EXPLOSION - AN INCREDIBLE DISCOVERY

A LEGACY OF LIGHT

WRITTEN BY WILL H. ROCKETT
PHOTOGRAPHED BY FELIX, ADRIEN, AND LYDIE BONFILS

PHOTOGRAPHS COURTESY HARVARD SEMITIC MUSEUM

The Arabic phrase *musawwir shamsi* – one who makes pictures by the sun – is probably the earliest Arabic term for photographer, and tradition has it that scholars, in considering Islamic prohibitions against graven images, decided photographs merely recorded the shadows cast by God's sunlight.

There was, nevertheless, opposition to photography among most religious groups in the Middle East, and, as a result, visual records of peoples, monuments and scenes of the region have been usually made and preserved throughout history by foreigners.

Among the best examples of this are the famous Roberts Prints, by 19th-century British artist David Roberts (See *Aramco World*, March-April 1970). Another earlier example is the encyclopedic record made by some 2,000 European artists, draftsmen and skilled engravers who accompanied Napoleon Bonaparte's army on its 1798 Egyptian campaign and helped to produce the 20-volume *Description de l'Egypte* (See *Aramco World*, March-April 1976). A monumental work, *Description* incorporated generally excellent drawings of the ruins and monuments of Egypt.

Such illustrations, unfortunately, were not always as accurate as they might have been, since they were subject to change as they went from the artists on the spot to engravers and publishers; engravers of that period tended to "translate" illustrations as they made plates for publication. Until rotogravure printing came along, this was a process that would affect all such illustrations – as Dr. Carney Gavin, curator of the Harvard Semitic Museum (HSM), made clear in this example of 19th-century illustrations: "An Irish nobleman made a sketch of Beirut harbor in 1836. He then gave it to an artist at the Royal Academy, who prettied it up. It was then passed on to a German engraver, who in turn gave it to John Murray of Albemarle Street, a publisher. In the end, what the public saw wasn't at all bad; but it was really a drawing-by-committee."

Then, in 1839, Louis-Jacques Mande Daguerre ushered in the age of photography with a public announcement of the first practical photographic process – the daguerreotype – and within weeks, reportedly, so-called "Excursions Daguerriennes" began recording the sights of the East for an avid European audience.

For years before that, Western interest in the Middle East had been whetted by the then – widespread knowledge of the Bible, and by such travel literature as Alexander William Kinglake's *Eothen,* and William Makepeace Thackeray's *Notes of a Journey from Cornhill to Grand Cairo,* published under the pseudonym "Titmarsh." As a result, hardy – and wealthy – souls had begun to add Egypt and the Holy Land to their "Grand Tour" itineraries, and they in turn began to publish reminiscences and sketches that stimulated still more interest.

Now, with photography, travelers could begin to capture such exotica with greater fidelity than was possible with pen and ink – though even the daguerreotype had limitations. A one-shot affair, the daguerreotype image was fixed forever upon a metal plate, and could not be readily reproduced. Engravers, therefore, still had to be brought in – initially to copy the work on a separate printing plate, later to engrave lines directly onto the photographic plate itself.

In 1841, the invention of the paper negative, or "calotype," by William Fox Talbot permitted the reproduction of multiple images from one original, but Daguerre's method which offered a sharper, more durable image, held sway among photographers until Frederick Scott Archer introduced a process using glass negatives in 1851. Prints could be made from these negatives, and then "tipped" onto the pages of travel books – i.e. pasted in by hand, in effect making each copy an album of original photographs.

Most of the earliest European photographers of the Middle East – Horace Vernet, Joly de Lotbiniere and others – were daguerreotypists, but Maxime Du Camp, who accompanied Flaubert on the poet's 1849-51 excursion to the Middle East, got excellent results with paper negatives, and Francis Frith, photographer and publisher, secured a firm place in the history of photography using glass negatives. As an *Athenaeum* critic wrote in 1858, "Mr. Frith, who makes light of everything, brings us the Sun's opinion of Egypt, which is better than Champollion's… Eothen's or Titmarsh's."

As for Frith, he deemed himself an artist in league with the sun, writing, "The Sun himself condescends to pigmify (the image), and pop it bodily into the box which your artist provided." And at one point he gleefully recounted the envy of a French artist he encountered at Medinet Habu:

> When, in a few minutes, I had possessed myself of more accuracy than his labor of perhaps days would yield, he exclaimed with politeness – and (let us hope) with no dash of bitterness, nor scornfulness, nor envy – *'Ah, Monsieur! que vous etes vite, vite!'*

Rug merchants in Cairo, photographed by Bonfils in the late 19th century.

Acceptance of photography as a fine art was erratic, but it did catch on as a popular art. *The Times* of London proclaimed that Frith's photographs "carry us far beyond anything that is in the power of the most accomplished artist to transfer to his canvas," and Queen Victoria compiled 110 albums of photographs. Frith, meanwhile, had turned book publisher, and in addition to various portfolios and volumes of his pictures, brought out a special *Queen's Bible* in 1862-3. It featured 20 photographic views from his collection, and sold in a limited edition for 50 guineas, a very considerable sum at that time. *The British Journal of Photography* said Frith's books were "got up in a style that renders them fit ornament for any drawing room," and, since the public agreed, Frith's enterprises prospered.

At the root of this popularity was the "awe and wonder with which Victorian viewers greeted Frith's startlingly truthful photographs of the most ancient and historic lands known to them," as historian Julia van Haaften wrote in an edition of Frith's Egyptian photographs. But there was another element too: the need for travelers to bring back souvenirs.

Toward the end of the 19th century, middle class Europeans were beginning to travel in such great numbers that some observers had begun to object. Journalist William Howard Russell, for example, protested in *The Times* that tourists "…crowd the sites which ought to be approached in reverential silence…"

Like their counterparts today, these travelers also demanded keepsakes – and thought that they had a right to them. A Father Geramb, for example, reportedly told Muhammad Ali, the ruler of Egypt in 1833, that "it would hardly be respectable, on one's return from Egypt, to present oneself in Europe without a mummy in one hand and a crocodile in the other." Thus, when some governments in the Middle East began to crack down on such looting, daguerreotypes and other forms of photography offered travelers an attractive alternative – particularly when they were made and marketed by "Bonfils".

Bonfils was by no means the only good photographer of the period; between the time Daguerre introduced his process and the time Bonfils began to take and market photographs, some 200 known photographers were in business – some of them quite good. In Luxor, for example, prints by a man named Beato were on sale, and in Istanbul prints by a photographer named Sebah could be sent home rolled up in

metal tubes. But few of them compared to the photography produced by the Bonfils family – as Gratien Charvet, founder of the *Societe Scientifique et Litteraire* in Ales, France, would vehemently argue.

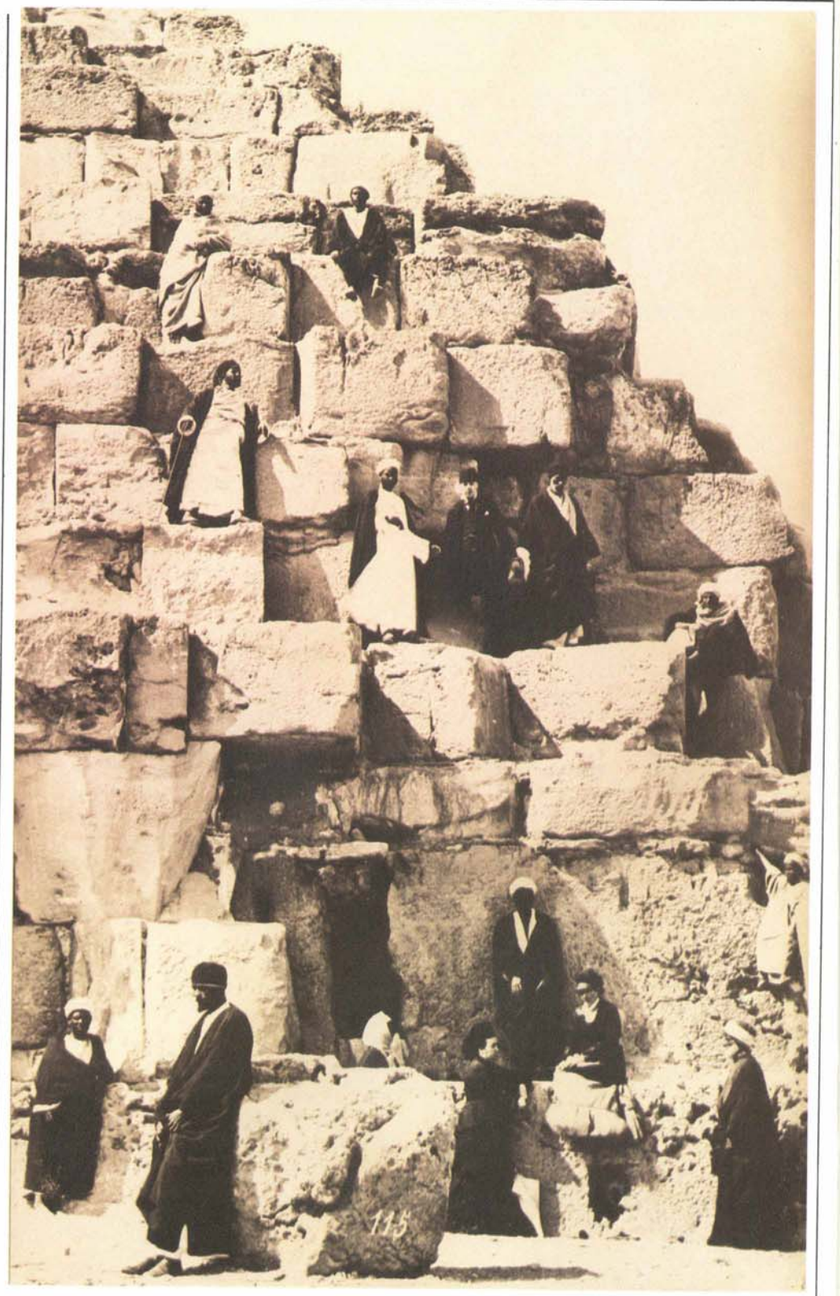
The man who wrote the introduction to the Bonfils' 1878 collection of photographs, *Souvenirs d'Orient,* Charvet said enthusiastically that the "collection of photographs of the Orient's principal sites – initiated, executed and completed by Monsieur F. Bonfils with unequaled perseverance – should be regarded as one of the most considerable achievements – picturesque, artistic and scientific – of our epoch."

Despite this, the Bonfils family had virtually vanished from history by the time that Father Gavin and his staff began to dig into the family history. "All we know of Bonfils," said photographic historian Beaumont Newhall, in answer to Gavin's inquiries, "is that he was a genius."

As recently as two years ago, Gavin wrote in the journal *Nineteenth Century*: "No one remembers the photographers Bonfils – not even the Sub-Prefect M. Maurice Bonfils – not even the staff of the Evangelical Library in nearby Saint Hippolyte dedicated to collecting biographies of local sons – not even the region's oldest printers and photographers. And at the time of Felix Bonfils', death in 1885, no obituary nor even notice was published in local journals."

Since then, however, Dr. Gavin and his staff have learned a lot about the Bonfils family. In fact, it was two of Dr. Gavin's volunteers – Al and Phyllis Weisman – who first turned up evidence that there was more than one Bonfils photographer: in a New Hampshire barn, they came across the effects of a missionary who had photographic prints signed, "A. Bonfils." "Until then," Dr. Gavin said, "we had found only 'F. Bonfils'."

"They were an incredible family," said Dr. Gavin. They were descendants of Theodore, the emperor of Abysinia, and are related through marriage to the actor Peter Ustinov. One of them, Adrien, was alternately a sergeant brigadier of the *Chasseurs d'Afrique,* a photographer in his father's studio and a Beirut hotelier. The father, Felix, was the son of a wood-lathe worker, but built up a photographic business with connections in Cairo, Alexandria, Paris and London, as well as Beirut and Ales, the Bonfils home in France. And when Lydie Bonfils, the third photographer, left Beirut in 1916, it was as an evacuee on the deck of



Lydie Bonfils — third from right at the Giza pyramids — continued the family business after her son abandoned it.

the *U.S.S. Des Moines.*

Little of that was known at first, but bit by bit over the last 12 years, research by Dr. Gavin and his staff has pieced the story together. It is a story of affection, piety and devotion – to each other and to their adopted homeland, Lebanon – and it begins in the small French town of Ales about 1860 when the family Bonfils set off for Beirut one after the other.

The first to go was Felix Bonfils. Born in 1831, Felix took up the trade of bookbinder, but in 1860 joined General d'Hautpoul's expedition to the Levant to end an outbreak of factional fighting. Evidence suggests that Felix became a photographer sometime after his return from Lebanon, possibly as an amateur. Then, however, when his son Adrien fell ill, Felix remembered the cool green hills around Beirut and sent him there to recover. With him went Felix's wife Lydie Bonfils, and when she returned, apparently as enthusiastic about the Middle East as Felix had been, they decided to return *en famille.*

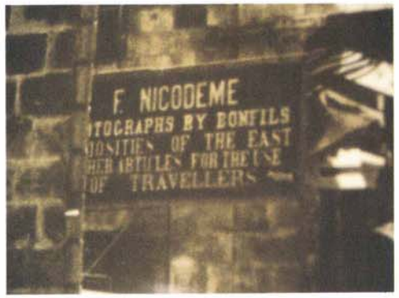
Since Felix was by then working in Ales as a printer, producing heliogravures – a photographic process invented by Abel Niepce de St. Victor, cousin of the man frequently called "the father of photography," Joseph Nicephore Niepce – he decided to try and support himself in Lebanon by taking up the trade of *la photographie.* Though it may seem like an odd decision, it turned out well; in 1867, the Bonfils family arrived in Beirut and four years later Felix reported the results of what must have been staggering labor: 15,000 prints of Egypt, Palestine, Syria, and Greece, and 9,000 stereoscopic views.

Those negatives were made on glass plates, coated with a collodion solution sensitized with silver nitrate. The plates had to be prepared on the spot – usually in a tent in the Middle East, although Francis Frith occasionally used cool tombs and temples as well. Then they were exposed and developed immediately afterwards. Prints could be made later, quite literally by sunlight: paper impregnated with a silver salt solution was stretched against the glass plate in a frame, and then exposed out of doors under direct sunlight.

Though the prints, golden in tone, were beautiful, the photographers had to use eggwhite, or albumen, as a binding agent on the paper and this eventually became unpleasant since the Bonfils family apparently prepared the egg-white themselves. Lydie Bonfils in 1917 was heard to mutter, "I never want to smell another egg again," and supposedly forbade them at her breakfast table thereafter.

The process could also be dangerous – particularly in the hot climate of the Middle East. As Frith wrote, "When (at the Second Cataract, one thousand miles from the mouth of the Nile, with the thermometer at 110 degrees in my tent) the collodion actually boiled when poured upon the glass plate, I almost despaired of success."

The *second* Bonfils photographer was Felix's son, Adrien. Born at Ales in 1861, Adrien was six when the family moved permanently to Beirut. Like his father he did military service – as a brigadier in a cavalry regiment in Algeria – but on the death of Felix in 1885, he returned to Beirut to take over the family business, and was soon setting off on new photographic



From the unique Bonfils collection — an early tourist guide.

expeditions and launching publishing projects that easily matched Frith's in quality and quantity.

It was Adrien to whom a London agent named Mansell was referring when he wrote, in 1892, to a certain David Gordon Lyon, "I hear from Bonfils that he has made an addition of 150 views to his Egyptian series – shall send these to you when I receive them."

Jacob Henry Schiff of the New York banking house of Kuhn, Loeb & Company – HSM, according to its charter, was intended to provide "a thorough study and a better knowledge of Semitic history and civilization, so that the world shall better understand and acknowledge the debt it owes to the Semitic people."

To that end, Lyon began to collect artifacts from the Middle East, particularly the Bonfils photographs. It is not known whether he realized how valuable they would be in archeology, but it's unlikely. It is only now, Gavin says, that researchers are coming to realize the value of photographs. "Librarians have learned to pay careful attention to handwritten notes and diaries, as well as to books and manuscripts. Curators carefully tend sketch pads and old engravings as 'works of art.' But photographs… have until recently remained forgotten."

Nevertheless, Dr. Gavin says, Lyon did work hard at collecting Bonfils photographs. "Lyon's interest was encyclopedic; one can infer from the Mansell note that he's told the agent he wants *all* the photographs." Furthermore, he nearly succeeded; despite occasional difficulties with U.S. Customs, he secured nearly half of what was available and went on to catalog

Adrien Bonfils outside the family's Beirut studio, from which flowered a prolific output of meticulously processed prints.

This, says Dr. Gavin's staff, seems to be the first reference to what was becoming the Bonfils collection and to the man who took it upon himself to acquire the photographs: Professor Lyon, the first curator of a new museum in Cambridge, Massachusetts: the Harvard Semitic Museum. Founded in 1899 – with donations from them, giving them English titles and museum code numbers.

This is known, because Adrien himself had issued three catalogs, organizing 1,684 photographs into nine groups covering Lower and Upper Egypt, Palestine, Syria, Anatolia and Greece. In addition, there was a series of 25 "panoramas" consisting of two

Bonfils' records of historic ruins — such as the one, above, of the Arch of Triumph and colonnades at the ancient caravan city of Palmyra, in the Syrian desert — are helping modern archeologists restore and reconstruct important Middle East monuments.

or more separate pictures which, when placed side by side, showed broad city-scapes of such Eastern centers as Cairo, Jaffa, Jerusalem, Bethlehem, Damascus and, of course, Beirut. The series was rounded out by a selection of Egyptian views and costumes – including desert scenes and a wedding and a collection of scenes and costumes of Palestine and Syria.

As these catalogs suggest, Adrien's output was prolific. But in addition to this expansion of his father's business, he was also experimenting with mechanically colored prints – they were done in Zurich, by the *photochromie* process – and made four trips to Philadelphia to explore publication opportunities, including a proposed *New Testament Illustrated with Photographs,* and a book on the journeys of St. Paul.

Meanwhile, the Bonfils family had added a *third* photographer to its roster: Lydie Bonfils, a fact that emerged when the HSM staff found a reference by an English clergyman named Manning, in his 1874 volume, *Palestine Illustrated by Pen and Pencil,* to photographers whose prints he used in preparing his own sketches. Among them was "Madame Bonfils of Beyrout."

Lydie, it seems, had decided that mixing albumen for her husband and son was not enough, and apparently got involved in portraits and costume studies in the Beirut studios; descendants, in fact, have confirmed that she worked in the family's Beirut studio for some time after her son abandoned the trade in the early 1900s. There is evidence too that she ranged more widely. In Brummana, a member of the Maksad family told of "Lady Bonfils" stopping a Druze shaikh to pose for her one morning, just after the outbreak of the First World War. And her own photo, according to Nitza Rosovsky, an historian of old Jerusalem, appears in one of the prints in the Harvard cache; she is standing on the pyramid at Giza.

Thus Lydie, despite a growing distaste for eggs, apparently continued the business after Adrien had begun to turn his attention to a proposed medical spa in the mountains of Lebanon – even issuing her own catalog until the First World War forced her removal from Beirut and brought an end to the prolific photographic output of this remarkable family.

By then, however, the work of the Bonfils family was not only extensive, but of an unparalleled quality. It is, in fact, an incom-

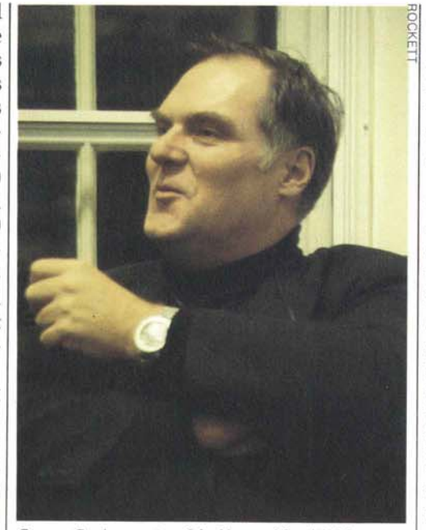
THE BONFILS STORY:
A MOMENT OF LIGHT

To Carney Gavin, curator of Harvard University's Semitic Museum, the bomb that exploded in Harvard's Center for International Affairs in 1970 was "a moment of light." For although it was undoubtedly an act of violence, the explosion unearthed one of the great photographic collections of all time: some 28,000 photographs of the Middle East in the 19th and early 20th centuries, including 800 lovely – and historically valuable – photographic prints by a family of photographers called Bonfils. Acquired by the Harvard Semitic Museum (HSM) starting about 1892, the photographs had first been forgotten and then lost.

The bombers – thought to be two young women – apparently wanted to protest the alleged involvement of Henry Kissinger and his Harvard think tank, the Center for International Affairs, in plans to defoliate the jungles of Vietnam. Though Kissinger by then had left Harvard to become President Nixon's Special Advisor on National Security, the center, reportedly, was still working with him on defoliation and was still renting space in the HSM building on Divinity Avenue, a quiet corner of Cambridge, Massachusetts.

A venerable Harvard institution – it was founded in 1889 to provide "a better knowledge of Semitic history and civilization" – HSM had fallen on hard times during and after World War II. First commandeered as a school for U.S. Army chaplains, it was later turned into a U.S. Navy Japanese language instruction center and then taken over by Kissinger's group. By the time Dr. Gavin came as assistant to the curator in 1970, most of the museum's collections – including cuneiform tablets, Sumerian glass, Palestinian costumes and other artifacts from digs in Cyprus and North Africa – had been relegated to basement and attic store rooms or lent to other museums.

But then, on October 14, 1970, the bomb exploded and things began to change. Planted in the center's third-floor library and apparently timed to go off at midnight so no one would get hurt, the bomb, according to Dr. Gavin, blew out a skylight, charred a few beams and scattered plaster all over the fourth-floor attic. Dr. Gavin, assessing the damage, noticed, for the first time, "hundreds of crimson boxes, covered in dust and tucked under the roof's eaves."



ROCKETT

Carney Gavin, curator of the Harvard Semitic Museum.

In the boxes were more than 28,000 photographs, slides and stereoscopic views – among them 800 golden-hued prints made by the amazing Bonfils photographers.

For Middle East archeologists, these photographs were to be important; astonishingly clear and detailed, they handed archeology a new tool to study Semitic history and civilization – and to an extent revitalized HSM just as Dr. Gavin came aboard.

Before he accepted the post of assistant to the curator, Carney Gavin had already worked as a "dirt archeologist" on digs as far afield as Germany, Austria, Britain and Jordan – some of them sponsored by HSM. He knew, therefore, the value of HSM's collection and was delighted to find among the photographs a tin box containing records of the museum's treasures.

But it was the Bonfils photographs that began to engage the attention of Dr. Gavin and his staff of dedicated professionals and volunteers who burrowed into the crimson boxes found under the attic's eaves.

"The realization of what we had was a gradual one," Dr. Gavin said. "I recall bringing Adnan Abou Odeh, Jordan's Minister of Information, down to Boston City Hall in January, 1976, for Arab-American Ethnic Heritage Month – we had lent portraits of people of the Levant for the exhibit – and as he stood before the images he began to get excited, saying things like, 'that lace comes from a village in the foothills near Damascus.' He really began to dig into each picture."

In Jordan that same year, while Dr. Gavin was attending an international conference on the restoration of Jerash, something similar happened. Various experts had presented their carefully researched findings, Dr. Gavin said, including reports on probes and soundings and speculations on whether there had been a wall here or there and whether this find was part of a temple or a colonnade. Then Dr. Gavin produced photographs of Jerash more than 100 years ago – when it was still relatively intact – and suddenly all the experts realized that they had a new and highly effective archeological tool to use in answering just such questions.

That was just the beginning. As the conference went on, leaders of the Circassian community of Amman came forward to inspect the photographs and pointed at a group of men standing in the middle of the Roman stadium. "See their Astrakhan caps, their Cossack-like dress? "they said excitedly, "they are the Circassian scouts to Jerash to see if the water was drinkable."

The Circassians, the leaders explained, had been granted the land around Jerash by the Ottoman sultan – Jordan was then part of the Ottoman Empire – as they fled a massacre in Russia. And when their scouts found that the water *was* drinkable the Circassians moved there in 1879.

As this information came pouring out, elicited by the sight of the photograph, Dr. Gavin and the other experts at the conference saw that something very important was happening. "We suddenly realized we were into something that was the other side of history – something not found in any written report."

It was about then too that Dr. Gavin and his staff began to think more kindly of the two women suspected of planting the bomb in the museum building. "They were never caught," he said, "and who could wish for that today in light of their inadvertent gift? In fact, some people around here think we ought to put up a little plaque to them." □

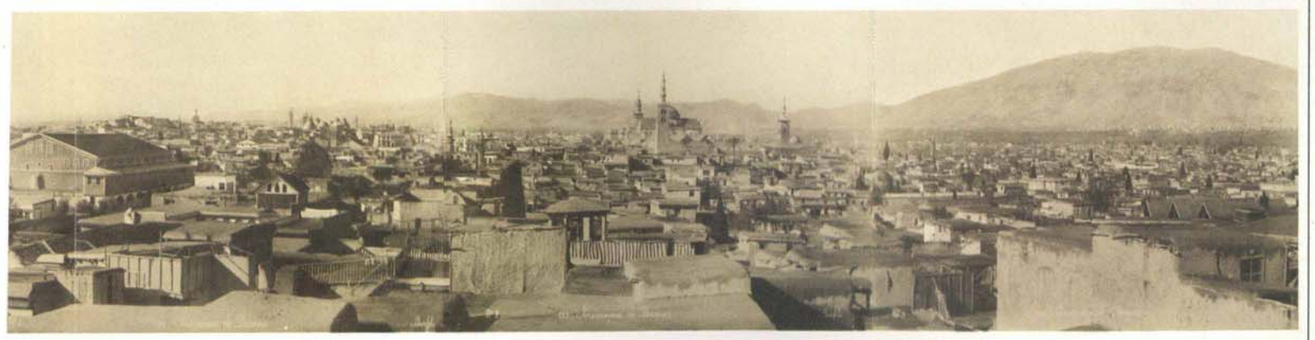
This portrait of Dr. Mikhail Mishaqah, a former American vice-consul in Beirut, was identified by his great-grandson from a photograph in the family picture album.

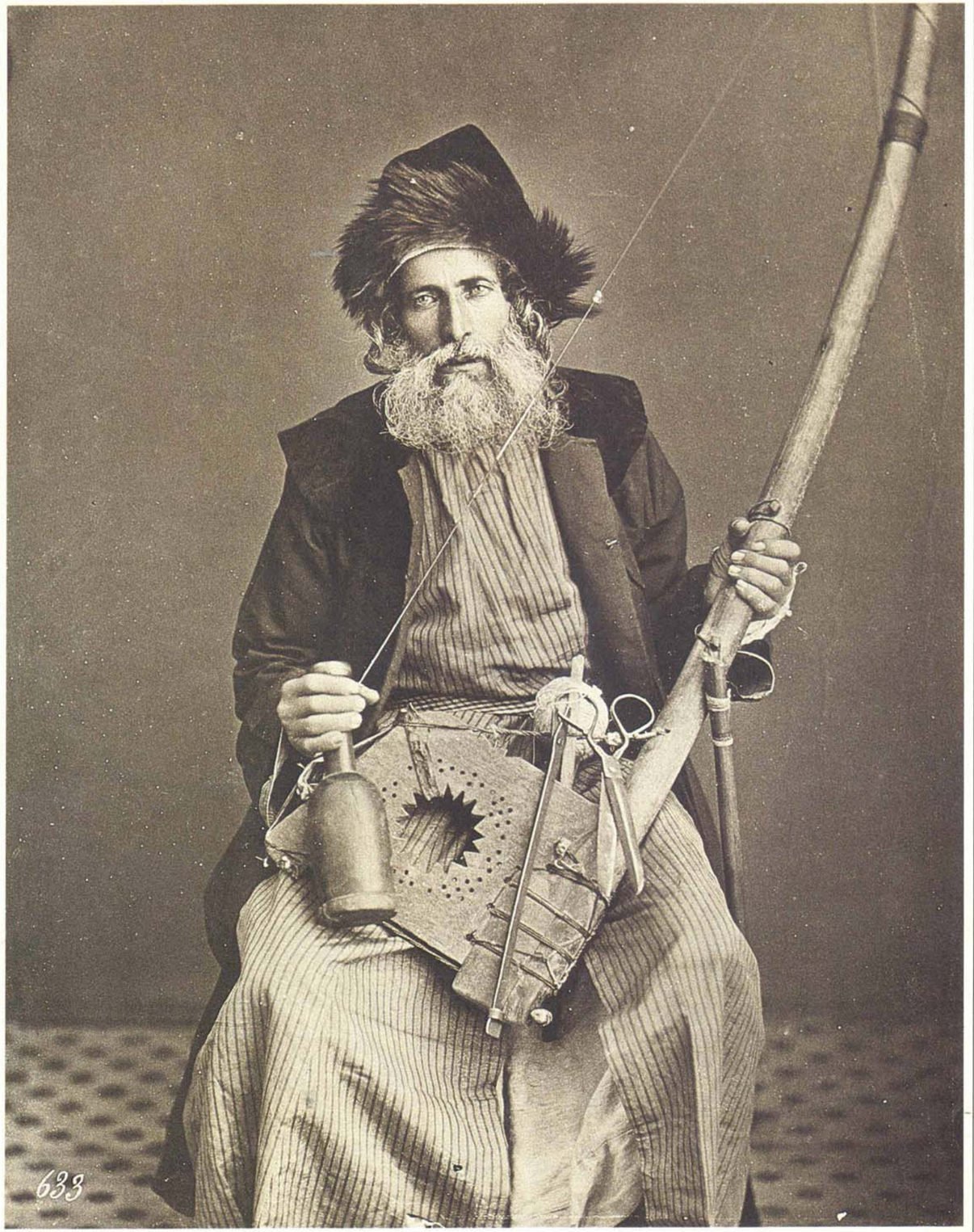
Stairway to the Church of the Holy Sepulcher, Jerusalem.

A young Lebanese woman in her best finery.

An incomparable legacy to both history and art, the Bonfils collection includes over 25 magnificent "panoramas" consisting of two or more separate pictures which, when placed side by side, show broad cityscapes of such Middle Eastern centers as Jerusalem (above), Beirut (right) and Damascus (far right).

To take "panoramas" — without a panoramic camera — was a painstaking performance, requiring early photographers to move their camera from place to place and carefully line up the different views that combined to make the final photo.





An old man with tools for fluffing up mattress stuffing.

parable legacy to both history and art – for reasons that Dr. Gavin explains in detail in *The Images of the East*.

For one thing, writes Gavin, "Bonfils prints were meticulously processed originally." Although only 18 glass negatives are known to have survived (the rest were washed clean to make fresh negatives, lost in troubled Beirut, even smashed to provide lensmakers with fresh "ground glass" during a shortage in the 1950s), the original prints are virtually grain-free, thanks to the albumen emulsion and the fact that they were made directly from contact with the plates. Consequently, writes Dr. Gavin, the prints "can often yield invaluable visual data to modern image enhancement techniques."

In addition, the Bonfils subjects "were selected in a consciously encyclopedic spirit that has preserved a vast range of data for the geographical, ethnographic, biblical, archeological, architectural and historical studies that Bonfils intended to promote."

This was certainly true of Adrien – as his introduction of the unpublished, photographically illustrated Bible proves:

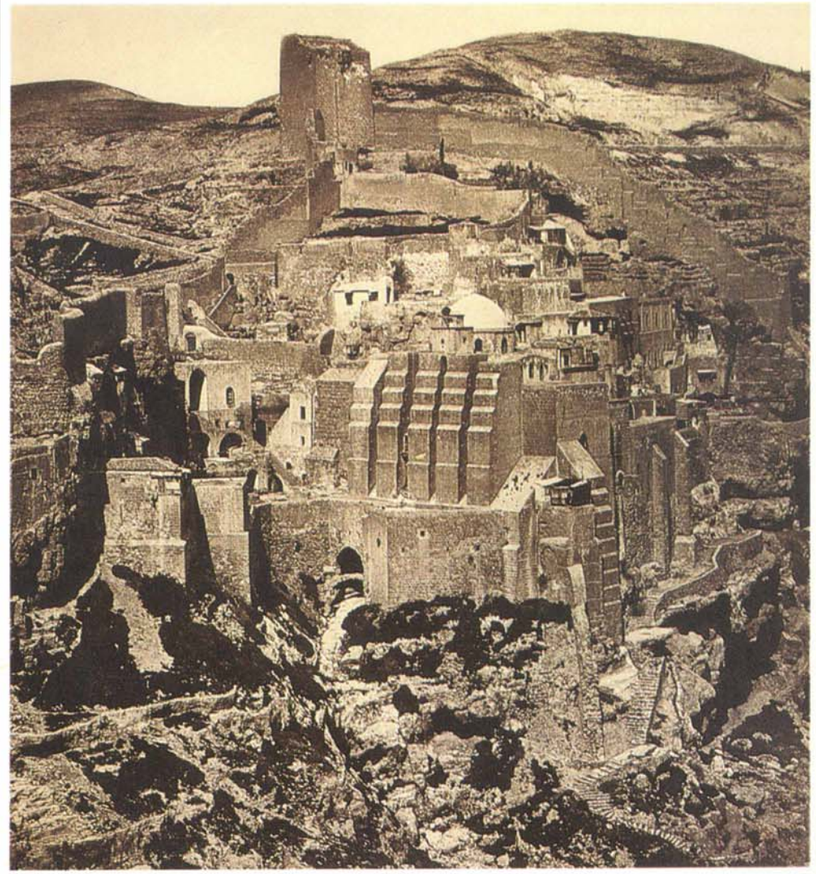
> Twenty centuries have passed without changing the decor and physiognomy of this land unique among all; but let us hasten if we wish to enjoy the sight. Progress, the great trifler, will have swiftly brought about the destruction of what time itself has respected... Already in the ancient Plain of Sharon... The immortal road to Damascus has become no more than a... railway!

To Adrien, his family's duty was quite clear:

> ...before progress has completely done its destructive job, before this present which is still the past has forever disappeared, we have tried to speak, to fix and immobilize it in a series of photographic views.

Such foresight at that time is amazing since very few of the photographers of that period nor their subjects were conservators. Mardik Berberian of Amman, son of one of the first Armenian photographers in Damascus, told Dr. Gavin that many pictures were lost because no one cared for them:

> "We loved those pictures... but no one was interested then. Those who had sat for portraits had died; Amman was shown as a mere village; all the places



Shops,(top), near the Jaffa Gate, Jerusalem, and Mar Saba monastery, bottom, between Jerusalem and the Dead Sea.

THE BONFILS STORY:

CARNEY AND HIS CURATORS

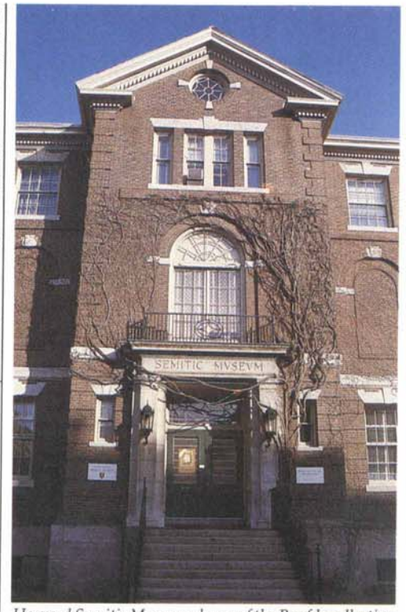
WRITTEN AND PHOTOGRAPHED BY WILL H. ROCKETT

In the famous Flea Market of Paris some years back, Fouad Debbas of Lebanon bought an old wooden box that the dealer said would hold cigars nicely if Debbas would just throw away the "bits of glass" in the bottom. Debbas, however, decided not to throw the "bits of glass" away. A collector of old photographic postcards, he had recognized that they were rare "Magic Lantern" slides and delightedly added them to his collection of old photographs, some 1,200 of which were taken by the Bonfils family.

In assembling that collection, Debbas got a lot of help from the curators and other experts of the Harvard Semitic Museum (HSM) – what Curator Carney Gavin alternately and affectionately calls his "moles" and his "commandos". A mix of six full-time photographic experts and five or so knowledgeable, part-time volunteers, they work at the museum in Cambridge, Massachusetts, mount and accompany exhibits in the United States, Europe and the Middle East and roam the world on photographic "digs" for HSM. Last summer, for example, Dr. Gavin flew his key people to The Netherlands to work on a "dig" at the University of Leiden. Among them were William J. Corsetti, associate curator for exhibit design and educational projects, the man who established HSM's photo-laboratory, and assistant curators Ingeborg O'Reilly and Elizabeth Carella. In early 1983, the same team mounted an exhibit of Bonfils photos in Cambridge, Paris and Beirut.

In addition to his "commandos," Dr. Gavin has also developed a network of what he describes as "good people concerned with the preservation of the past, people with an eye beyond today and tomorrow." Among them, he says, are people like Debbas, experts at such collaborating institutions as St. Anthony's College in Oxford, private collectors and small institutions.

Today, says Dr. Gavin, HSM is zeroing in on smaller institutions. "We don't concentrate on stuff in the British Museum or the Louvre, collections already well established and protected. We work largely with individuals – archeologists, perhaps, or workers returned from the oil fields."



Harvard Semitic Museum, home of the Bonfils collection.

From such institutions, as well as individuals, come tips that lead HSM specialists to the odd places where, for some reason, important collections seem to turn up. One such place was a tower room in the castle of the Prince of Liechtenstein. "Prince Johannes the Good took a pilgrimage to the East," said Gavin. "He was granted a pasha's escort by the Sultan, so he got into a great many places the normal tourist of the time would never see. And he brought with him this little aristocratic toy, the camera."

To enable HSM's staff to track down and assess such collections, Dr. Gavin – with a grant of $600,000 from King Fahd of Saudi Arabia – has set up an informal organization that he calls "FOCUS" – for "finding, organizing, copying, using and sharing" photographs of historic import in the Middle East. FOCUS has also garnered support from Royal Jordanian and Middle East Airlines, Eastman Kodak and Polaroid, Aramco, Exxon, Raytheon and other corporations.

In their search, Carney's commandos have come up with many amusing stories. One concerned a photographer who, said Gavin, "may have been a spy for the Kaiser. But he then turned up as a British colonial officer after the First World War. He was very good at taking pictures of things like dhows under British and French flags of protection or of coaling stations."

Another good photographer in those early days was the Armenian Patriarch of Jerusalem. He established a studio on the roof of his city manse, where he trained his nephews in the photographic art (Armenians have long dominated photography in the Middle East, because – Mardik Berberian, son of an early photographer in Damascus, said – "skills cannot be robbed and we could always get new lenses and paper wherever we fled.")

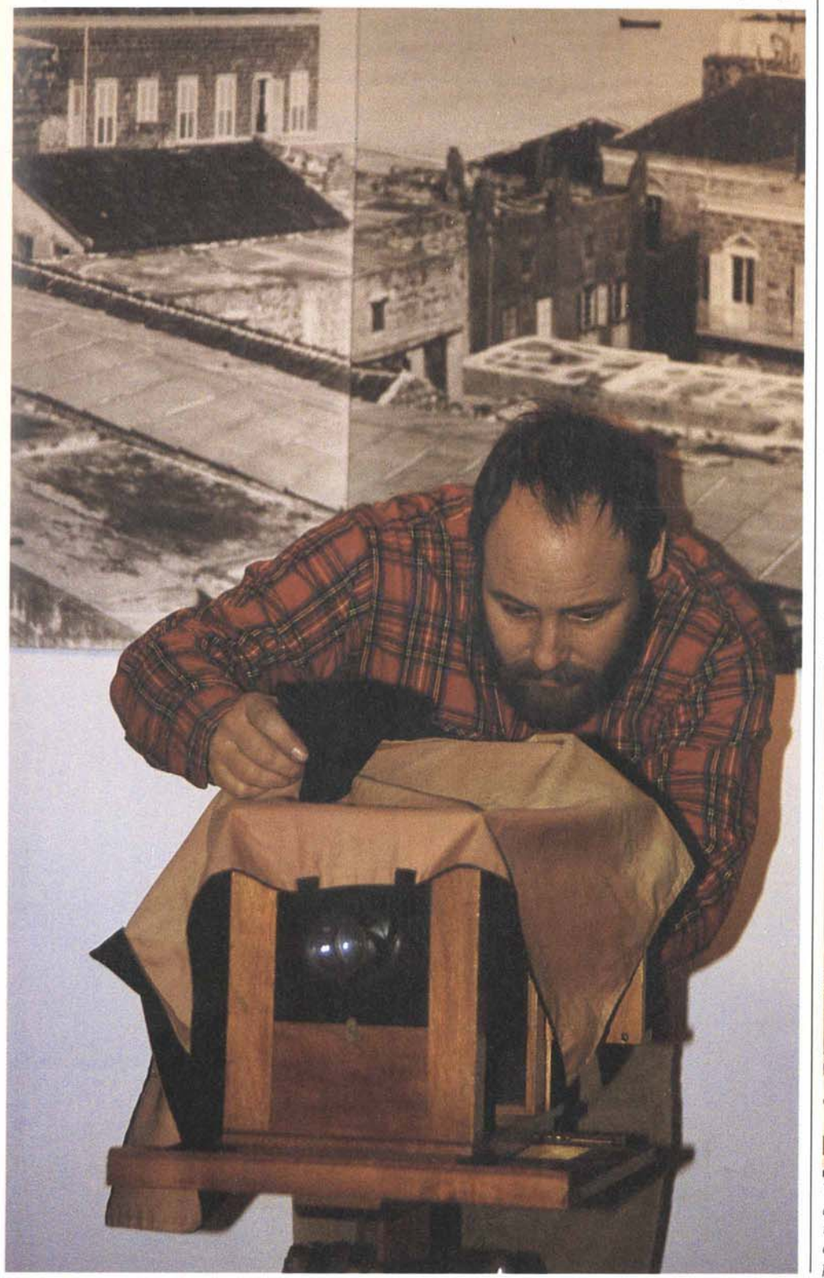
In assessing such collections when they turn up, HSM teams are often able to advise the owners of the historical value of what they've got, or find out its significance from someone linked through the project to the HSM. Those slides that Debbas purchased for the cost of the box – two francs – turned out to be the oldest photographs known of the Al Khalifas, currently celebrating their 200th anniversary as the rulers of Bahrain.

"Finding these things is often a matter of serendipity," said team-member Ingeborg O'Reilly, assistant curator for archives, and coordinator of international duplication services. "We put notices in certain journals, but often it's word of mouth that brings them to our attention – or us, to theirs".

The first step, she explained, is to "go in and help them catalog." She is devising a computerized cataloging system in which data sheets will be prepared on each photograph and collection, using the same descriptive language and nomenclature of identification. Libraries and institutions using the system will then be able to quickly identify a photograph in other collections they may need for research, and obtain copies.

"Copies" is a key word here, since HSM is not interested in acquiring originals for the sake of owning "originals." HSM, in fact, has long since stopped buying collections of artifacts. As this article was being researched, for example, HSM staff were photographing and packing some 600 cuneiform tablets being returned to Iraq. Under an agreement with the National Museum of Iraq in the 1930's HSM had agreed to give the tablets back when studies of them were complete. HSM, says Dr. Gavin, simply wants to share the photographs. "When we find an 'orphan collection'," he said, "we try first to encourage the appropriate national repository to buy it – if it has adequate facilities to preserve such collections. Descendants of the first Arab photographer in the Middle East, for example, approached us to buy his collection, then in Switzerland. But since we're not interested in buying these things ourselves and perhaps helping drive their price up, we informed the Institute of Palestine Studies about the collection, and it eventually acquired them."

When this is impossible, members of the team go in to "assess the situation." Wherever possible, Dr. Gavin said, "we try to get the local experts interested, and to look at them." But the staff members themselves often wind up putting their expertise to work. For example, Elizabeth Carella, assistant curator for photographic history, writes a photographic historian's commentary, and, in her basement photo lab on Divinity Avenue, turns out superb duplicate negatives, prints and even murals.



Spectacular collections are not the only concern of HSM's staff. Indeed, they believe that every tourist who ever took a holiday in the Middle East, camera in hand, may have caught something in his lens which could prove to be of inestimable value. The photo-archeologist, after all, is trained to look beyond Aunt Maude in the foreground and perhaps see an inscription on a temple wall long since lost in windblown sands.

Nor do they limit their interest to very old photographs. "We're even interested in photos taken in the 1930s and 1940s," said Gavin. "So much has happened in the last decade alone – especially in places like Saudi Arabia – that even 40-year-old photographs could be valuable. We're also poking into archives and libraries, and we're particularly interested in aerial survey flights and photographs." Those last could be of great assistance to geologists and agronomists involved in the new science of geomorphology: the evolution of land forms and their application to problems in agriculture.

Finding photographs, of course, is just the beginning. After they found the Bonfils photos in the HSM attic, for example, Dr.

William J. Corsetti, HSM's associate curator for exhibit design, inspects an early camera, left, similar to the one used by Bonfils, and, above, Elizabeth Carella, assistant curator for photographic history, duplicates a Bonfils print in HSM's modern photo lab.

Exhibits of period paraphernalia complement old photographs on display at the Harvard Semitic Museum.

Gavin's experts also had to dig up the history of the Bonfils family, and then dig into – in the archeological sense – the 800 spectacularly lovely prints.

"In digging into such a project," said Gavin, "the first thing we learn is not merely to look, but to *see*. We were looking at a photograph of Istanbul, for example, and I commented on how busy everybody must have been in this imperial capital; there were no people in the picture. But a man named Clark Worswick, who has written on the early photography of China, countered that there were indeed people – the beggars, under the shadows of the trees in front of the Great Mosque, gathered in little groups of two and threes. And there were. We just hadn't seen them."

It may have been, Dr. Gavin went on, that everyone with a place to go to was already inside. Under the hot noonday sun favored by mad dogs, Englishmen and photographers – because it shortened their exposure times – the beggars would have only the trees for shelter. But on the other hand, close inspection of the Bonfils photographs shows that there are *always* hidden touches: two boys reflected in mirrors, peering at their mother having her portrait taken; a solid little building by one of Jerusalem's gates that wasn't there a decade earlier, and was gone again a decade later; scars on a Bedouin woman's face.

Seen through a simple magnifying lens, such details are not only interesting, but revealing. The Bedouin woman, for example, had scars, but not the tattoos common among many groups, and Gavin theorizes that the coming of gypsies to the region years later introduced tattooing to the tribes.

Such "seeing" is important. One Damascene professor of architecture dismissed a palace interior as "very western, very Versailles Hall of Mirrors" – and so it seemed. "But then," said Dr. Gavin, "you look through the magnifying glass at the furniture, and you see the wonderful mother-of-pearl inlays on the arms and legs and backs of the Louis Seize furniture."

The next step is to enlarge the photographs, producing extremely clear, virtually grain-free images of inscriptions on walls, details on jewelry, even cargo on the decks of ships in the harbor of Beirut in one of the panoramas. In the background of one photograph by Adrien Bonfils, for example, an enlargement picked out some fake hieroglyphs an entrepreneur had painted over the entrance to his restaurant, inside one of the temples.

"There's a limit, of course," said Dr. Gavin, "but we can go into a window, and if somebody was not too far away inside, we can turn up the brightness controls and catch them. Or we can read the labels on the tins of goods inside a Jerusalem shop." And by turning to today's new technology – video and motion picture lenses, and TV's easy control of image contrast and bright-

Curator Carney Gavin and Assistant Curator for Archives

ness, which makes it possible to almost literally enter these images – photo-archeologists are able to find things that the Bonfils probably didn't notice.

Thus far the museum's work has been fairly simple in technical terms. "We've an eye on sophisticated image-enhancing techniques," said Gavin, "particularly on the work of Dean Robert Johnston of the Rochester Institute of Technology, where they've been doing that kind of thing for a decade." He thinks it will be particularly useful in dealing with photographs that have been badly damaged or have faded, producing "foxing" – dark and light patches across the print.

But for the moment, these techniques – familiar to anyone who has seen photographs of the planets from NASA's Voyager satellites – must wait while the museum gets on with its job of getting some of its recent images out to the public.

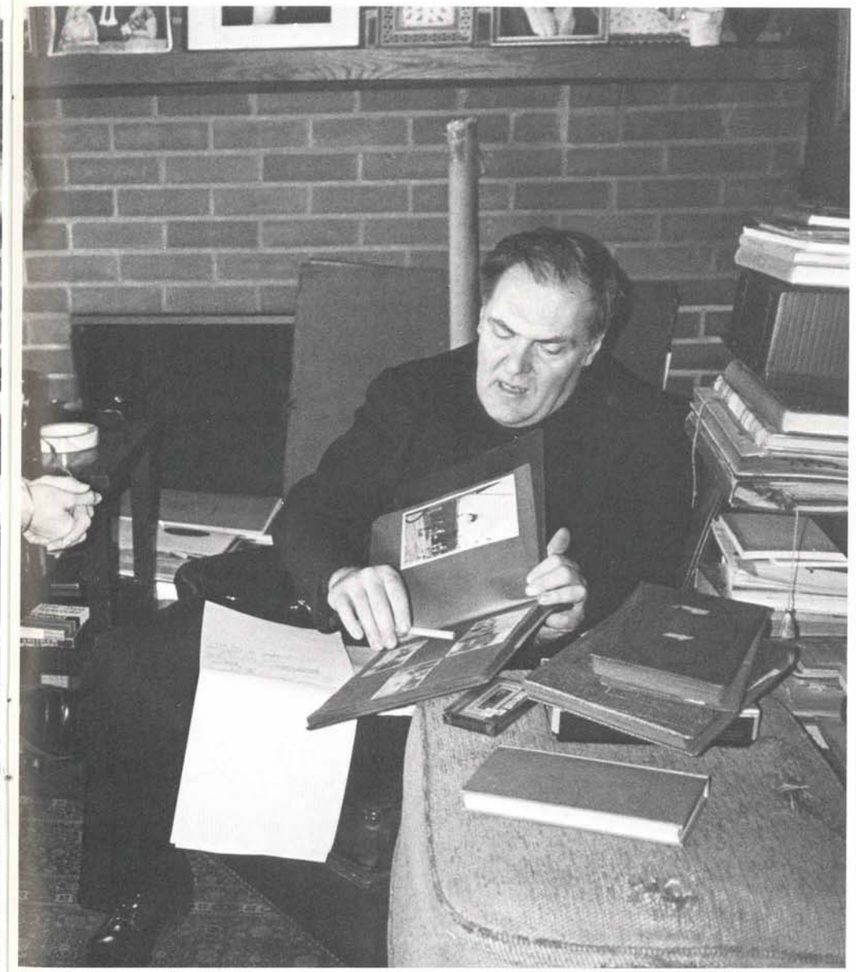
So far, for example, HSM has put the Bonfils collection on microfiche, and Dr. Gavin has written an accompanying text: *The Image of the East: Nineteenth-Century Near Eastern Photographs by Bonfils,* University of Chicago Press. And HSM and UNESCO are joining forces to produce a series of 12 posters, including one of a Bonfils panorama of Beirut, based on early photographs. These will make use of laser-scanning printing techniques to produce highly detailed duo-tone prints in large format.

Perhaps the most exciting way of getting the pictures out to the public is their use in television programs. Two of these, one on Jerusalem, the other on the Holy Land in general, have been prepared.

Dr. Gavin and his staff have also combined old photographs with the original words of the photographers in brief shows used to introduce the museum's work to other scholars.

Because Bonfils photographed the Jaffa Gate both from outside Jerusalem and from inside the city, the camera lens can carry viewers with it inside the one image, and out of the other; motion picture film's great advantage over the still photograph has always been its ability to move into and out of the physical space. Thus, treating the Bonfils photographs with the panning, tilting, zooming of the video or motion picture lens brings the people in these images to life, and brings us into the same street they walked upon – 120 years ago.

From the above, it would seem that HSM is primarily a "photographic" museum. But that, said Carella and O'Reilly, would be misleading. First of all, they said, Dr. Gavin is a classical archeologist himself; he



Ingeborg O'Reilly "dig" into old pictures at HSM, where a bomb, in 1970, launched a new phase in photo-archeology.

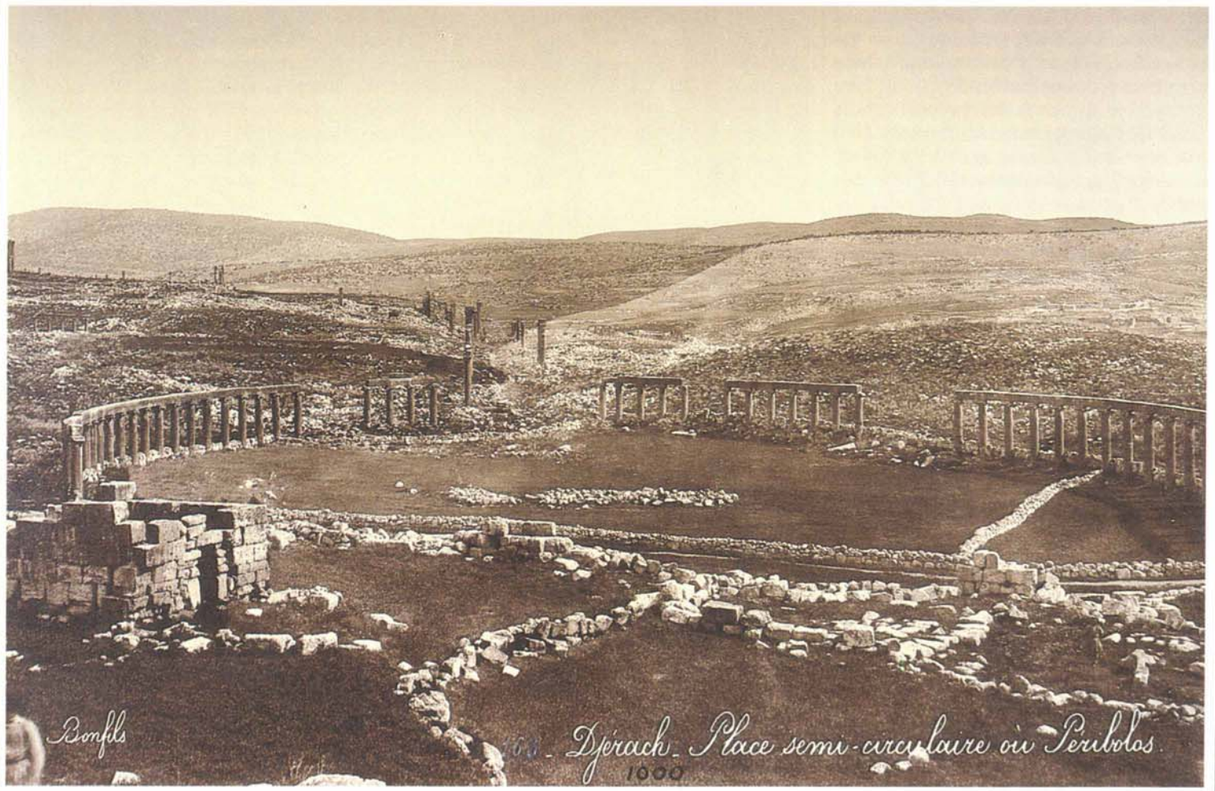
O'Reilly sorting collections in her HSM basement nook.

studied at Oxford and Harvard and has a Ph.D. from Harvard's own Department of Near Eastern Languages and Civilizations. (In between he was ordained a Roman Catholic priest after studying in Innsbruck.) He also went out on digs himself and in the 1960's worked with HSM Curator G. Ernest Wright on cuneiform tablets found in Nuzi in Iraq.

While there is a lot of excitement now about the value and possibilities of photo-archeology, HSM still maintains links with Harvard's Department of Near Eastern Language and Civilizations – and with the Harvard Divinity School, which is also involved in archeology and Middle East languages. For example, they said, Dr. Frank Moore Cross, director of HSM, also is a professor of Hebrew and other Oriental languages.

"Moreover," they went on, "HSM is still backing traditional digs." One is underway near the Dead Sea and there are plans to open another soon near the recent discoveries at Ebla (See *Aramco World,* March-April 1978).

"On the other hand", Gavin says, "photo-archeology is an excellent medium to pursue the goals outlined in the HSM charter. The museum was founded to promote sound knowledge of Semitic languages and history, and it seems to me there are so many crazy stereotypes in this country about the people of the East, that sharing the worthiness of these images and the people in them would be a wonderful thing." □



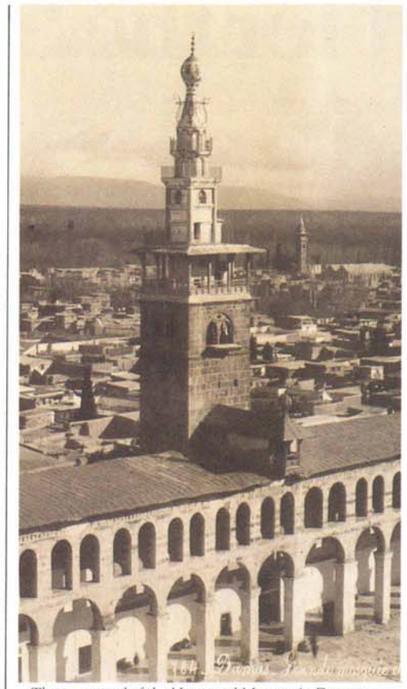
Bonfils' photos of landscapes and ancient ruins — like the one, above, of the 2,000-year-old Roman city of Jerash, in Jordan — provide a valuable historic record, but it is the human face — like those of the Syrian bedouins, below — that sets this remarkable family of photographers apart from their contemporaries.

we had photographed have changed so much we couldn't imagine anyone ordering a new print from those old negatives."

Even today such attitudes are not uncommon. "Everywhere in the world people are unaware they have such photographs," said Gavin. "Most people don't realize that they've captured that moment... that will never come again."

The Bonfils family, fortunately, did realize what they had – and kept them. Thus their photographs include shots taken decades apart, another reason why the Bonfils collection is incomparable. Indeed, Dr. Gavin wrote, "Bonfils' activity spanned the period when the most profound changes began to alter Eastern landscapes and ways of life irretrievably, so that the family was consciously able to record scenes unchanged for millennia as well as (towards the end of Adrien's activity) the advent of occidental technology and mores."

The Bonfils' records have practical as well as historical value. Some years ago, for instance, at an Oxford conference, Subhe Qassem, Dean of Science at the University of Jordan, told Dr. Gavin he could "identify virtually every tree in the pictures taken around Jaffa. That means I can tell you how these people are living and how the agricultural year is going for them." Such are the things we can learn today about our past from photographs that might have been scrapped in the normal course of the photographers' career.



The courtyard of the Umayyad Mosque in Damascus.

The waterfront of the Lebanese port of Tripoli.

At that same conference, a geologist named Finzi, said that archeologists could make more of a contribution to modern science if they could "tell us how man has lived with the soil through the centuries." Dr. Gavin showed his photographs of Jordan in the last century to Finzi, and Finzi said such a photographic record could revolutionize geology and agronomy. "I can see where the topsoil is in the picture, and if we can tell how it's moving, then we can plan for the nutrition of the future." This approach – geomorphology – may still be highly theoretical, but the work of the new photo-archeologists like Dr. Gavin may well make it a reality.

No one is making greater use of the photographs than the archeologists themselves. Experts have used Bonfils photographs to help preserve facades and an arch at Petra. "The arch," noted HSM's photographic historian Elizabeth Carella, "had collapsed long ago. Our photographs show the arch with such clarity, stone by stone, that it is possible to reconstruct it."

Another example had to do with a Bonfils panorama of the Roman forum of Philadelphia, now engulfed by Amman's business district, but still remarkably well preserved when Bonfils took the photograph. Still other photos promise help in restoring the interiors of stately old Damascene palaces, long forgotten by Damascenes themselves.

American Indians used to call photographers "soul-catchers," because they believed a part of their spirit was lost when they were photographed. But today the reverse is true: archeological photography is helping the Middle East to *recover* the spirit of the past.

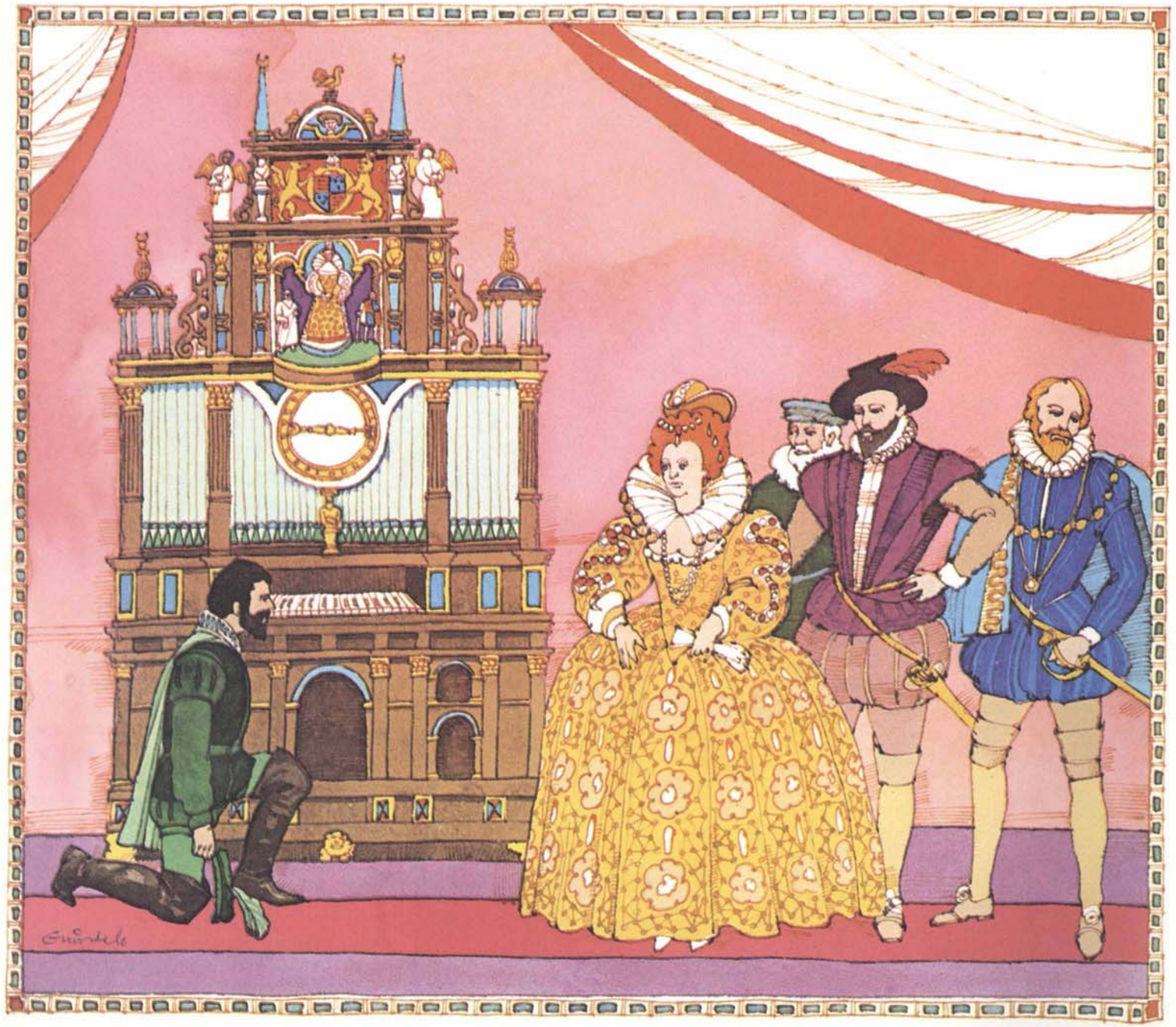
This is particularly true regarding the men and women of the past whose lives, skills, and character the Bonfils photographs capture with love and respect. "The Bonfils enjoyed a very special rapport with their sitters," says Dr. Gavin – and the photographs do seem to suggest a close relationship between photographer and subject, one reason, perhaps, why the portraits have a special power.

In the Bonfils photos, the landscapes, the cityscapes and the ancient ruins, are bathed in the golden light good memories bring to bear on places still dear to us in dreams. But it is the human face that most clearly speaks to us in these photographs – faces of dignity, of grace, of serenity. Such portraits – an old man with a *mandaf,* for beating mattress stuffing into freshness, a woman posed with a cigarette; a man with great mustachioes, bedecked in the full gear of the tourist-guiding *Dragoman,* a girl of Bethlehem, dressed in her best embroidery – are, along with the landscapes and cityscapes, indeed a legacy of light.

Will H. Rockett, is an associate professor at Seton Hall University, New Jersey, and editor of its journal Endeavors.

A Gift for the Sultan

WRITTEN BY PETER ENGLISH
ILLUSTRATED BY MICHAEL GRIMSDALE



"A great and curious present is going to the Grand Turk which will scandalize other nations..."

"Whoever commands the sea, commands the trade of the world, and whoever commands the trade, commands the riches of the world, and consequently the world itself."
— Henry VIII.

In the mid-16th century, Queen Elizabeth's tenacious grip on her homogenous subjects promised stability and ambition. With French and Spanish belligerence crushed, England was free to pursue scientific thought and mercantile success – and did. By a combination of naval power and maritime excellence and the formation of great monopoly trading companies, England edged ahead of her rivals. In 1556, the Muscovy Company penetrated Archangel waters; in 1581 Mediterranean commerce expanded with the formation of the Levant Company; in 1599 the East India Company also received Royal approval.

In this effort, Elizabeth I – "Good Queen Bess" – had excellent support: a host of cartographers who mapped routes and trade winds, and advised her where to pursue commerce most profitably – specifically the Levant, the Arabian Peninsula, Persia and Turkey. To Elizabeth the lure of "Eastern promise" was irresistible.

There was, however, one formidable obstacle blocking mercantile expansion toward India: the Ottoman Empire, too big to ignore, too powerful to attack. Thus Elizabeth, needing access to Ottoman overland caravan routes, prudently decided on a conciliatory course, and to this end chose a man named Thomas Dallam to construct and deliver to the Ottoman sultan a unique gift: an organ.

During the 17th century, the Dallams were famous organ builders in England. Thomas Dallam is thought to have built the organ in King's College, Cambridge, and in 1613 erected an organ in Worcester Cathedral. Other Dallams installed organs in St. Paul's Cathedral, York Minster, Canterbury Cathedral, St. George Chapel, Windsor and in Hereford Cathedral.

The Turkish project got underway, apparently, in 1598, according to a State Paper dated 31 January 1599 – just a month before Dallam set out. "A great and curious present is going to the Grand Turk, which will scandalize other nations, especially the Germans." This "great and curious present" was the organ which Thomas Dallam had already built, and was now about to take out in person to Istanbul.

According to a voluminous diary – now in the British Museum – that he kept of his trip, Dallam prepared carefully for the journey – drawing up a list of "Nessecaries for my voyage into Turkie, the which I bought upon a verrie short warninge, having no friend to advise me in any thing." Included as "Nessecaries" were:

	Pounds	Shillings	Pence
One suit of sackcloth to wear at sea	1.	2.	0.
Two waistcoats of flannel	0.	8.	0.
One armed sword	0.	6.	0.
One chest		9.	8.
Three shirts		18.	6.
Dozen handkerchiefs		10.	0.
Pair of garters		4.	0.
Pair of linen britches		1.	4.
Pair of fustion britches		2.	6.
Hat band		4.	2.
Oil and vinegar		2.	0.
Sun dried raisins		1.	4.
Gloves		3.	0.
Knives		5.	0.
Gross of spoons		9.	0.
Oatmeal			10.
Pair of virginals	1.	15.	0.

At first there were problems. "The ship wherein I was to make my voyage to Constantinople lying at Gravesend, I departed from London with my chest on February 9, 1599. But the ship being very unready and no cabins appointed for passengers, I went into lodgings. It was the thirteenth day before anchor was weighed."

Eventually, though, they got underway and by April 1 Dallam was ashore in Algiers:

> The town or city is very full of people for it is a place of great trade and merchandise. They have two market days weekly unto which great numbers of people descend from the mountains. They bring huge quantities of corn, fruit, fowl – both wild and tame. There be great store of partridge and quale very cheap: a partridge for less than a penny and three quale for the same price. Hens and chickens abound, for they are hatched by artificial means in stoves or hot houses without the means of a hen. The manner of it I cannot at this time plainly describe but hereafter I may if God permits.

That, obviously, was Dallam's first view of an incubator, but it wasn't the end of surprises for him; at Alexandretta, on the Syrian coast, Dallam and others engaged in sport with near dire consequences, for "we were chased by huge animals which I think are called buffalos."

At the next stop, Rhodes, they played their "virginals," a kind of harpsichord, charming Turkish bystanders, and found "a huge galleon of the great Turks, the biggest ship they hath, about 1,000 tons, yet a ship of no strength although richly laden and arrived from Syria."

After a six-month voyage, Dallam finally arrived at Istanbul, by which time "all the glewing work of the organ was clean decayed." Still, he had arrived, so he saw to it that the organ was "carried ... to our ambassordor's house in the city of Gallata" and on the 11th September, hauled it to "The Grand Signor" (the sultan) and "began to set it up."

While he worked, Dallam seems to have taken particular note of the Sultan's household: "... he has a thousand gardens and a captain to manage who assures me there are none kept so well in the world. There are also many courts and pavements each delicately constructed with marble and such like stone. Excellent fruit trees abound and a great abundance of grapes which a man may gather every day of the year. In November as I sat at dinner they gathered grapes especially for me."

By November 18, Dallam was able to try out the organ. Everyone was pleased, but he received a warning from Elizabeth's Ambassador to the Sublime porte. "You have come with a present from your gracious Queen, not to an ordinary prince or king but to a mighty monarch of the world... He will give you nothing in return for your trouble of journey or our great preparations. Complete your work lest he pulls it down to trample under his feet."

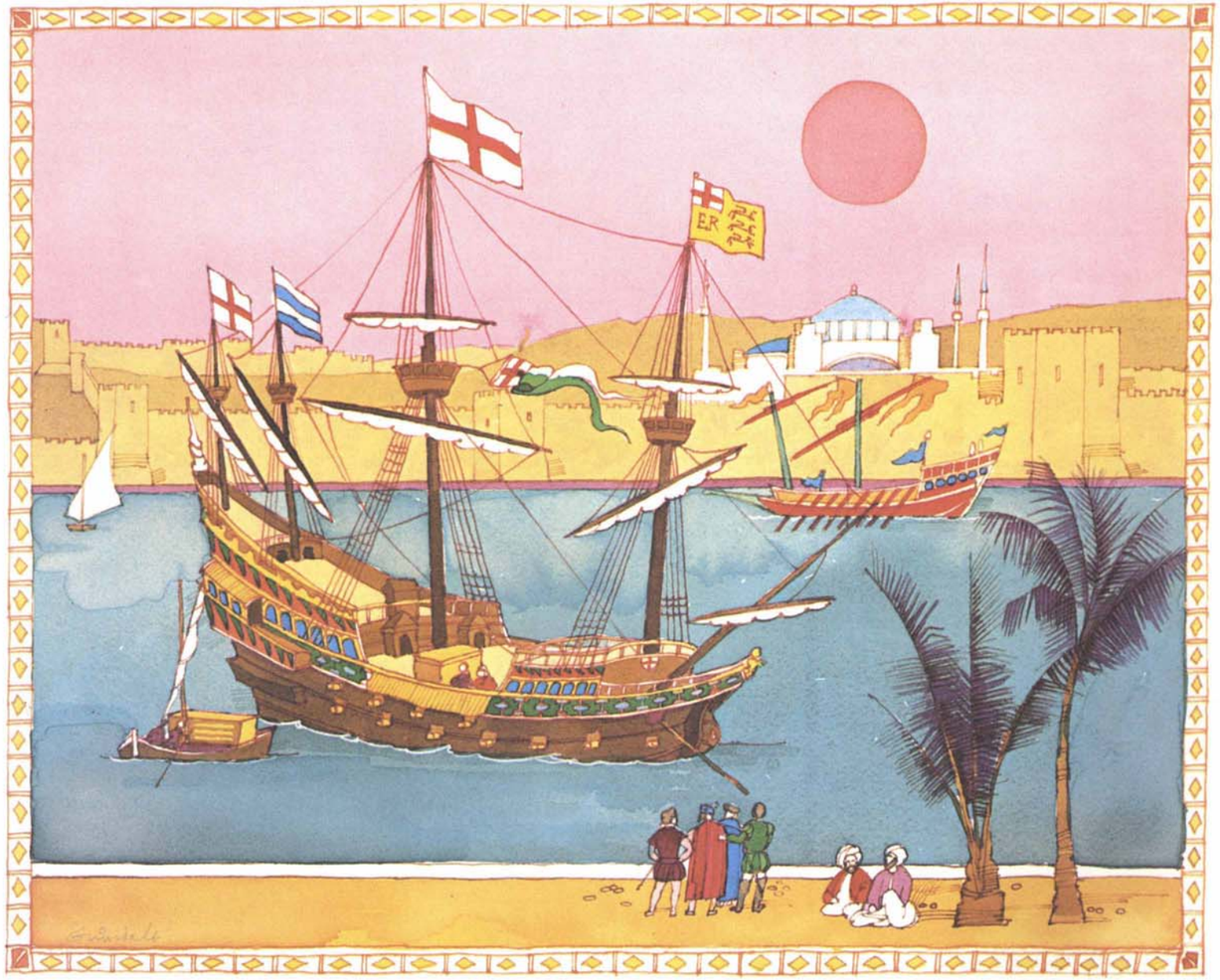
Dallam did complete his work and at last the Sultan, consenting to look at the organ, ordered a "festive occasion... with amnesty for over three hundred prisoners, and upon sight of the musical masterpiece his great admiration was transposed into a joyous commotion..."

> The Grand Signor then commanded for silence. All being quiet, the clock struck twenty-two hours followed by a chiming of sixteen bells and a four-party song. That over, two persons stood on the second storey holding silver trumpets sticking out a tantarra. Such revelry continued for an hour. Then the Grand Signor sat near to me before the (organ) keys where a man should play upon the instrument ... There were some four hundred at the gathering of which half were young, apparelled in rich gold (laced) cloth made into gowns; upon their heads little caps of gold; great pieces of silk about their waists instead of girdles, and upon their legs Cordivan buskins. All heads were shaven, saving that behind their ears did hand a lock of hair like a squirrel's tail. Their beards were shaven excepting upper lips parts...

At last it was time to play the organ and a spokeman for the sultan approached Dallam and told him to play. "I refused to because the Grand Signor sat so near that I

would embarrass him by having to turn my back to his presence and touch his knee with my britches…"

He then sat in a very rich chair of estate; upon his thumb I noticed a ring with a diamond half an inch square. He stood up whereby… he might see my hands. He then gave me a thrust forward in such a way I thought he might be drawing his scimitar … So I stood and played the organ until the next chime of the clock. I bowed my head as low as I could and went from him in this crawling position…



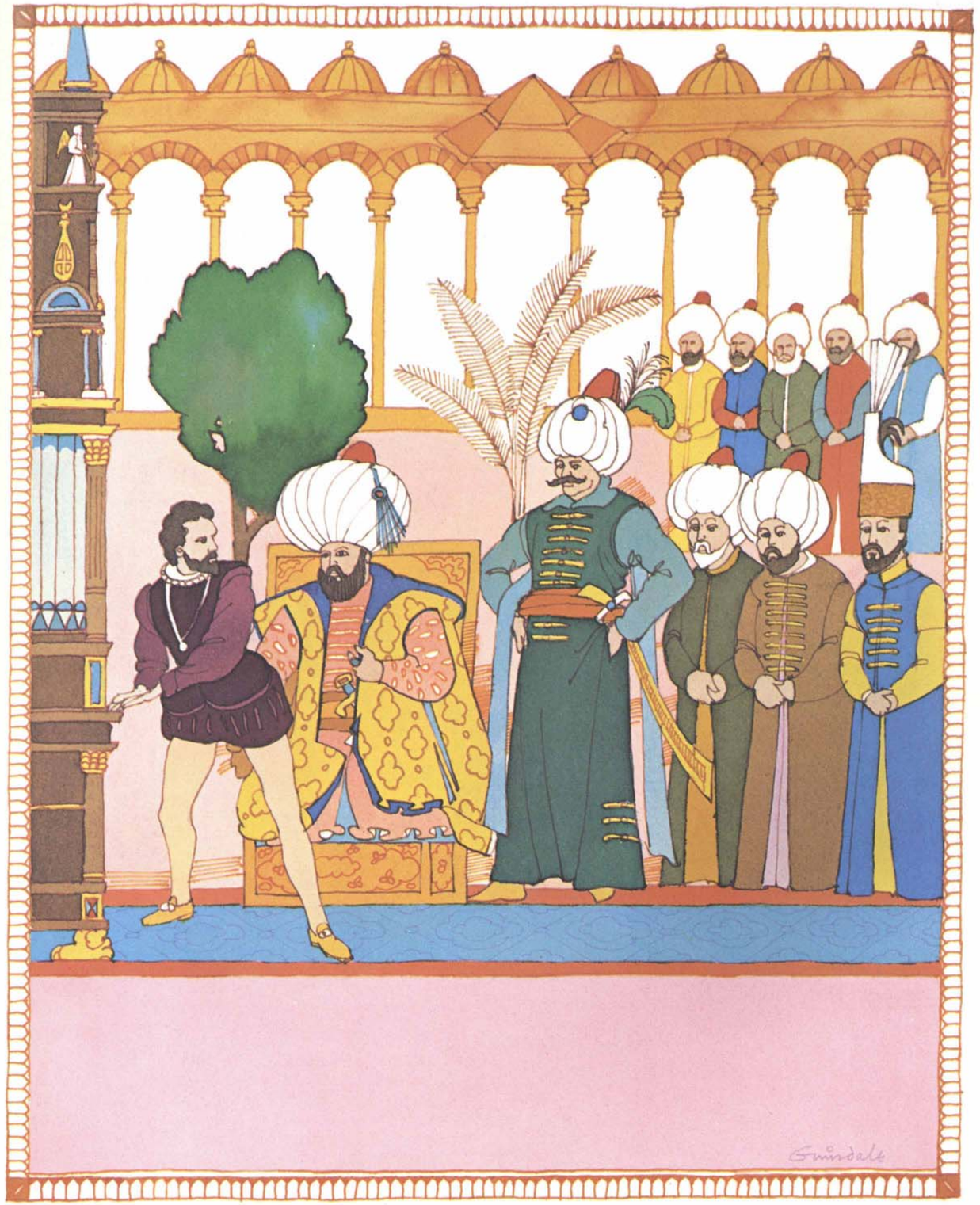
At that point, despite the British Ambassador's concern, the sultan gave an order and Dallam received a gift. "It consisted of forty and five pieces of gold… I was indeed joyful over my success."

One can scarcely wonder at Sultan Murat III's delight, for the organ could sound a fanfare, chime the hours, simulate a drum roll and on a full supply of controlled wind release, play several tunes by itself. Dallam too seems to have made a favorable impression upon the Turks he had met – from the Sultan downwards. Indeed, they offered him all kinds of Oriental delights in order to induce him to stay in Istanbul. "The last day of September," Dallam wrote in his diary, "I was sent for again by the Sultan's chief servant, and noticed the house had been rearranged, though it was still in good order. Their kindly welcome was followed by a request that I should answer if I was contented (in Istanbul), and if I stayed all my desires would be realized. I answered that I had a wife and children in England who expected my return. They asked how long I had been married etc., and, though without these responsibilities, I made them once more that same answer."

That same night, at supper Dallam told the chief servant what they had offered him to stay and "he bid me that by no means should I flatly turn them down. He then said it was up to me, but I would not be held by force."

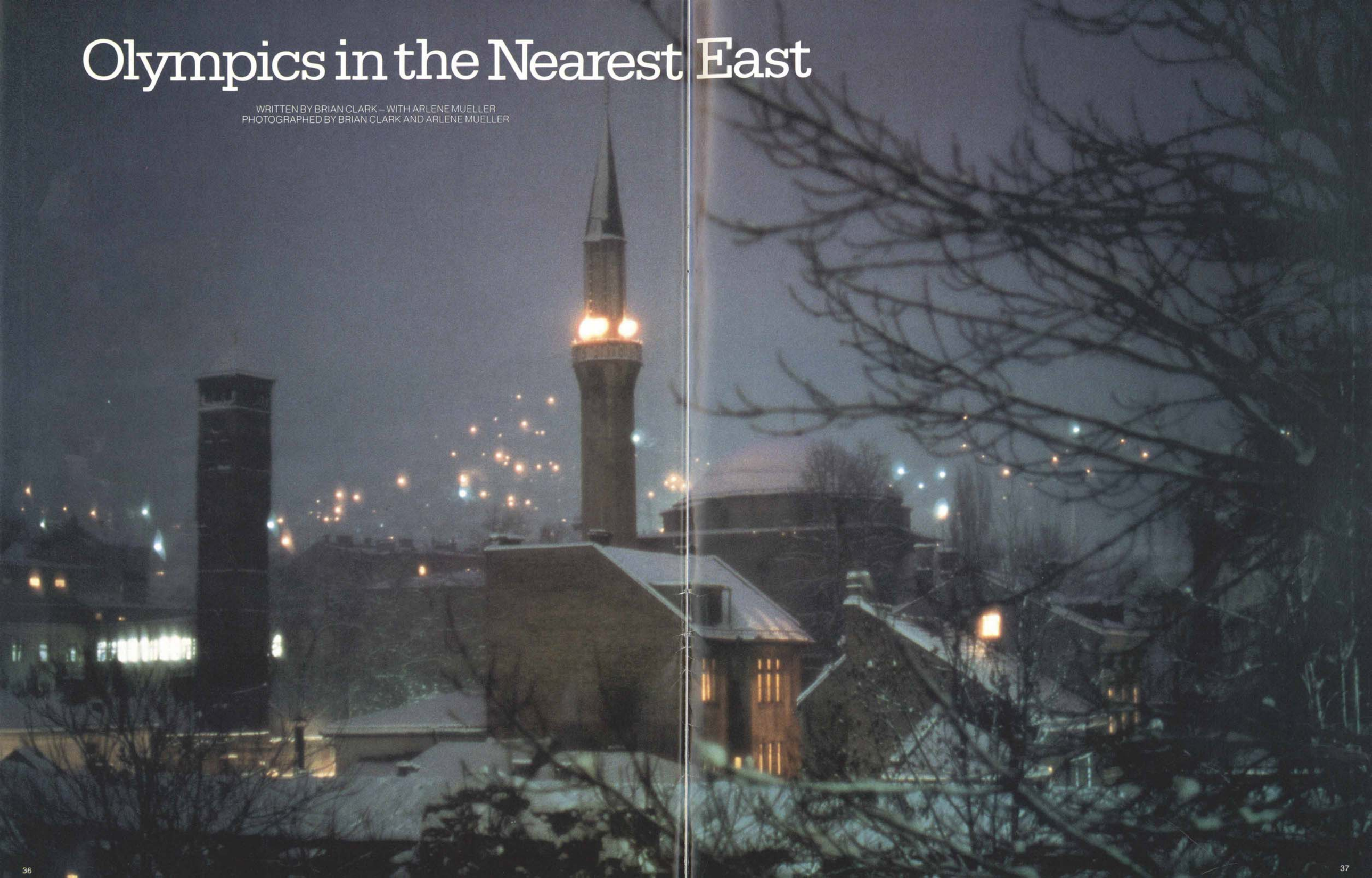
He wasn't. Having honorably discharged his duties, he departed from Istanbul and, after being absent from England for some 15 months, he went ashore at Dover, then by stagecoach to London via Canterbury and Rochester, where Queen Elizabeth expressed her pleasure – and gratitude. From then on Dallam's future was assured. And the long-term outcome? Well, British merchants subsequently enjoyed a relatively unhindered traverse across Turkey to India, and when the Crimean War broke out Turkey and Britain fought shoulder to shoulder – 400 years of harmony thanks to the foresight of Queen Elizabeth I and Thomas Dallam, whose great organ has a small but justifiable niche in history.

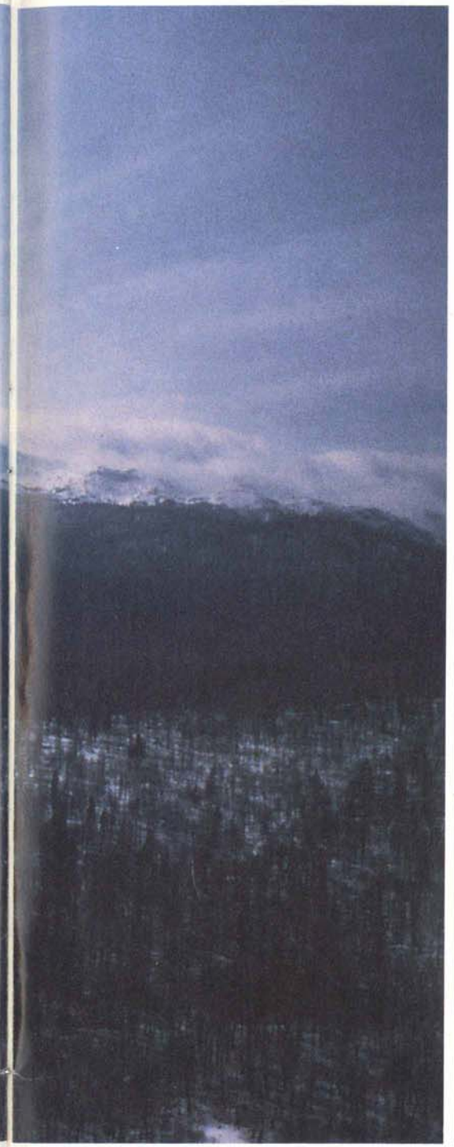
Peter English, a British engineer and engineering writer, is the author of "Islamic Influence in European Classical Music."



Olympics in the Nearest East

WRITTEN BY BRIAN CLARK – WITH ARLENE MUELLER
PHOTOGRAPHED BY BRIAN CLARK AND ARLENE MUELLER





For nearly 70 years, Sarajevo, in today's Yugoslavia, has been trying to live down its reputation as the powder keg of the First World War. But in February, finally, the city may succeed – by hosting the 1984 Winter Olympics.

To many skiers and skaters, as well as bob-sledders and other winter sports competitors, Sarajevo may seem an odd place to hold the Winter Olympics. Set between two low hills amid the central Yugoslavian province of Bosnia – Herzegovina, Sarajevo, an industrial city of 400,000 people, doesn't bear comparison with such posh ski areas as, say, San Moritz, Chamonix or Sun Valley. The area, in fact, its skyline broken by the shapes of nearly 80 historic mosques, looks as if it should be the Arab East rather than the Dinaric Alps.

Actually, the Sarajevo area is a splendid setting for winter events. Though Sarajevo itself is no ski area, Mount Jahorina, site of the women's alpine events, Mount Bjelasnica, site of the men's events, and Mount Trebevic, where bob-sledding will be held, are no more than 20 to 30 kilometers away (13 to 20 miles). Furthermore, the region can almost always guarantee earlier and deeper snow than winter resorts in, say, the Mont Blanc massif or the Jura, thanks to an odd quirk in weather patterns: warm moist air sweeping eastward from the Adriatic Sea

Ready for the 1984 Winter Olympics: the ski runs of Mount Bjelasnica (above and left), the old Muslim quarter of Sarajevo (above right), and a modern ski lodge at Jahorina (right).

is trapped behind the Dinaric Alps and meets icy currents of air from Siberia. The result is a blanket of snow in Bosnia.

Yugolsavia, moreover, is working hard – and spending close to $200 million – to ensure success. Its Olympic Committee has already carved new ski trails onto the flanks of Mount Bjelasnica, restored a 90-year old observatory on the summit – for use as a restaurant, and as a command center for the men's downhill ski events – and built bob-sled runs, ski lifts and jumps. Work is also proceeding on slopes,

trails and runs for slalom, cross-country and bob-sledding races as well as an event called the "biathlon" – a contest in which skiers with rifles shoot at targets along a 20-kilometer cross-country ski course (12.5 miles). Other projects include a $10 million communications tower to transmit instant press coverage to the world – and provide televised and photographic side glances at the mosques, palaces, bridges, shops and inns that so clearly suggest Sarajevo's rich Muslim past.

Few in the West recall that the "Near East" once included what used to be called "the Balkans," a region that took in most of today's Yugoslavia, Romania, Greece, Bulgaria and Albania (See *Aramco World*, May-June 1973), or that large areas of the Balkans were dominated by Islam for 400 years. To numerous contestants, visitors, readers and viewers, therefore, the Islamic character of the Sarajevo area will probably come as a distinct surprise.

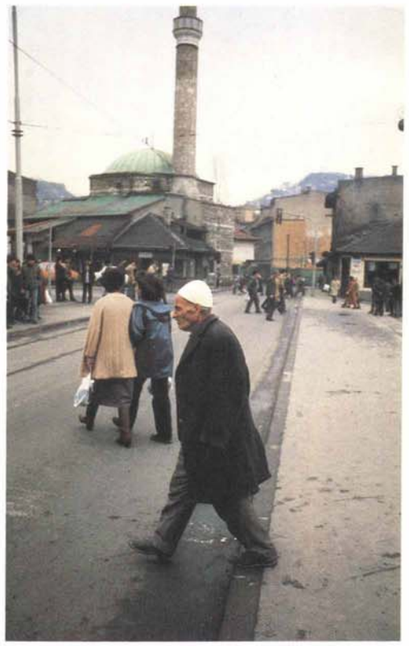
Islam came to the Balkans in the early 15th century when the Ottoman Turks completed their conquest of Bosnia, and began to occupy the valley under Mount Trebevic, settle along the lovely Miljacka River and, as a sign of permanence, contructed a great palace for the sultan's deputy. They also renamed the city "Sarajevo" – "palace in the fields" – built mosques, bridges, mills, inns, shops and government quarters as, bit by bit, they settled in for what would eventually be a long stay. The Ottomans also transformed Sarajevo into the biggest and most beautiful capital of the Turkish-ruled Balkans – second, it was said, only to Istanbul. Today, as a result, Bosnia – Herzegovinia has some 1,800,000 Muslims, and Yugoslavia as a whole close to 3,800,000. (The size of this Muslim minority, as well as recent efforts to reassert its Islamic identity, has aroused displeasure – and opposition – from the government, according to the magazine *Arabia*.)

Traces of Yugoslavia's Muslim past are easy to find. Even the casual tourist cannot miss Arabic calligraphy on Sarajevo buildings, the sound of the *adhan*, the call to prayer, or – an example of distinctly Muslim architecture – the 16-century, 11-arched, 180-meter (590 feet) Visegrad Bridge built by the famous Ottoman architect, Sinan.

There are also shops and restaurants like the Morica Han, one of the best in the Muslim quarter, and coffee houses like the 300-year old Musina Kafana, high on a hillside overlooking Sarajevo. The Musina Kafana serves rich dark *Turska kafa* in tiny white porcelain cups called *fildzans* and at least once a week patrons are sure to repeat the well worn story of Muso, a former owner, who refused to accept payment from two customers who annoyed him by drinking their coffee too quickly. Instead, he ordered them to get out and never come back. "If you drink coffee in a hurry, and without enjoyment, I do not want you in my coffee house," he said. To Muso, time was as important as sugar in the enjoyment of coffee – and today's habitués agree.

The popularity of that story reflects the fact that coffee, discovered in Yemen and introduced to the Ottoman Empire about the middle of the 16th century, has been an important element in Near East diets for centuries – and in Sarajevan diets almost from the time the first Ottoman coffee shop was opened in Istanbul in 1554. Unlike Istanbul, however, where officialdom sporadically banned coffee and closed down coffee shops, Sarajevo was free to enjoy the new beverage and it was soon accepted as an agreeable addition to the city's life.

For a city expecting an influx of people and vehicles, such manifestations of an ancient past are not necessarily a boon; communities trying to cope with crowds and traffic usually find narrow streets, old houses and traditional architecture a problem rather than an advantage. But to Ahmed Karabegovic, secretary general of the Sarajevo Olympics Organizing Committee, and a Muslim, the Muslim ambience is a definite plus. Though the rest of Sarajevo has been spruced up and modernized, the Muslim quarter has been left alone. This, says the secretary general, is the heart of Sarajevo and should remain just the way it has been since the 16th century, Olympics or no Olympics.



From left to right: the 300-year-old Musina coffee house, the giant slalom course, Jahorina, the Muslim section of Sarajevo and (opposite page) the downhill run, Bjelasnica.

Brian Clark, a staff writer for the Modesto Bee *in California, toured Yugoslavia as preparations for the Winter Olympics were getting underway.*