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JULY – AUGUST 1978

Life in the Gulf

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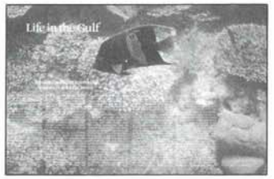
WILLIAMS

WILSON

OBOJSKI



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JENKINS

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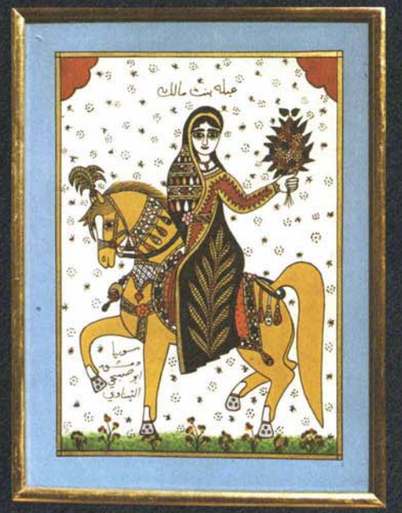
Cover: The bright orange starfish *Pentaceraster mammillatus*, eight to 10 inches across, is one of the most conspicuous inhabitants of the sandy-seafloor biotope of the Arabian Gulf. This starfish was brought up from a 48-foot depth and photographed on Jana Island by John Burchard. Back cover: Luminous colors distinguish one of Abu Subhi's glass paintings of the hero Antar. Photograph by Penny Williams.

◀ A relief from the newly-discovered temple of Thutmosis III at al-Dair al-Bahri shows the god Amun in a funerary mask.

Through a glass brightly



In the noisy suqs, local tea-houses and comfortable homes of many Middle Eastern cities, fortunate visitors can still find examples of a centuries-old folk art that may now be undergoing a revival: painting on glass.

In these fragile and little-known works of art, well-loved legends and tales – of, for example, Harun al-Rashid, a caliph of the Golden Age, 'Antar, a Syrian warrior, and others – come alive in vivid colors and vigorous naive renderings painted in reverse on the backs of panes of glass. They testify clearly to the hold these stories from the romantic past still have on the imaginations of all who know them.

The technique of reverse glass painting was developed at least 600 years ago in Europe. The Murano glassmakers of Venice, for example, turned out inexpensive copies of great-master paintings in the 15th century, and the glassmakers of Bohemia later simplified the designs, brightened the colors and turned glass paintings into an art form of unsophisticated appeal that spread through Bavaria and the Balkans. From there, the technique passed to the Turks and then to the Arab East.

As the name suggests, reverse glass painting reverses the artist's normal procedure. Instead of applying paint to the front surface the artist works on the back of the glass and, since every stroke is seen from the front, must adjust himself to a looking-glass world. The final details of the picture, for example, are painted first, so that such elements as shading and highlights – normally painted *over* the central colors – will not be obscured when the completed work is seen through the pane.

WRITTEN AND PHOTOGRAPHED BY PENNY WILLIAMS

In folk art in the Arab East, stories in vivid colors

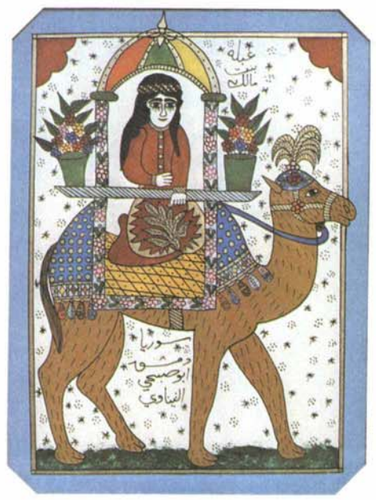
There are three basic kinds of glass painting. One includes purely decorative panels, sometimes set into cupboards or other furniture, showing, for example, a pair of birds, a garland, butterflies, or a vase of flowers. They are usually done in fresh, gay colors, and in other days were often used to decorate a bridal chamber. The second type is calligraphic, and was once in great demand for mosques as well as for homes and shops. These glass panels are more sophisticated in their execution and more sober in color – usually dark red, black, ocher, silver and gold. They frequently show a single verse from the Koran, or a phrase such as the *bismillah* – sometimes woven into the shape of a crescent moon, a bird or a flower (see *Aramco World*, July-August 1977).

But these religious quotations are much more than instructive or decorative. Whether hung high at a tilt over the proprietor's desk in a sweet shop or set into rondels in a Damascus home, they suggest the power and presence of God.

The third kind of glass painting – and today the most popular – is figurative and naive, a folk art depicting heroes and heroines, battles and events both legendary and historical, all made larger than life by popular imagination and affection. As befits such stories, the painters use bright colors – filling in the black outlines flatly, as a child does in his coloring book – and the subject matter is very graphic, allowing the viewer to see his hero at the height of his heroic and usually bloody battles.

In the Arab world, these glass paintings originally developed as spontaneous illustrations of the tales told by the professional story tellers or *hakawatis*. Each evening the men would gather in their local coffee house to sip coffee, or tea, smoke and listen to the installments of a story which would continue for as long as six months. As time progressed, both the *hakawati* and the listeners would become very involved with the stories – sometimes to the extent of taking sides in the battles and occasionally even coming to blows. And when at last the hero won his battle and married the heroine, a glass painting, it is said, would be commissioned to commemorate the event. It would usually hang in the coffee house where the story had been told. Or according to another version a well-to-do client would invite the entire group of habitués to his home, where he would underwrite a celebration of the story's conclusion and then order a glass painting made to hang in his salon.

Thus arose a new craft – in answer to a demand from people who loved the legendary heroes it pictured. Most of the painters were involved in some form of popular entertainment – the itinerant puppeteers, or the shadow-puppetmen – and occasionally the story tellers themselves would do the paintings. But the craft, nevertheless, flourished for centuries, particularly in Syria.



There the most popular of these stories was that of 'Antar ibn Shaddad, a slave who, through courage and prowess as a warrior, won emancipation and the hand of his cousin, 'Abla. Historically, 'Antar was a renowned pre-Islamic poet and warrior, but during the age of the Crusaders his legend was so expanded that today's version of this epic is 32 volumes long and the *hakawatis* who specialized in relating his exploits came to have a title of their own: *anatirah*, roughly "the tellers of Antar stories."

Antar has come to personify the most courageous of Arab warriors, whose most precious conquest was Abla. Before allowing this marriage, Abla's father set Antar many dangerous tasks – ten volumes' worth. One of the tasks was to secure for his bride-to-be a gift of Asafir camels, bred only by Mundhir, King of Hira, in Iraq, and a glass painting of this event shows Antar in triumph, herding the Asafir camels before him.

Other characters commemorated in Damascus glass paintings include Harun al-Rashid and his prime minister Jafar; Nasreddin Hoja – sometimes Goha or Juha – the wise simpleton of international fame (see *Aramco World*, May-June 1971); Sultan Baybars, the Mamluk ruler who finished off the last of the Crusaders *and* drove back the Mongols; and many others.

As the centuries passed, the popularity of glass paintings both waxed and waned, but at one point they were shown at a successful art show in Paris. This occurred after the curator of the Azem Palace Museum in Damascus commissioned a few examples of popular glass painting, and, recognizing their importance as a folk tradition, collected and displayed a representative sampling. Among them

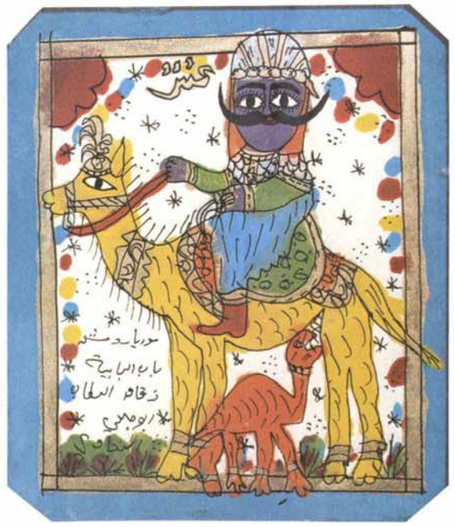
were some works by a man named Abu Subhi Tanawi who ran a small housewares shop in Damascus and did a few glass paintings as a not very important sideline.

As the Museum's exhibit attracted some attention, however, Abu Subhi began to turn out a steady stream of glass paintings and gradually won a reputation in Syria and abroad. Eventually, in fact, art dealers from Beirut began to buy large numbers of them – one bought 50 at one time – and one Swedish woman regularly sold 20 or so glass paintings a year in her Stockholm art gallery, thereby earning herself an annual vacation on the Lebanese beaches. Finally, Abu Subhi himself had a successful show in Paris.

Unfortunately, not many of the older glass paintings survive today. Although the artists used durable natural colors – colored earths, plant dyes, ground malachite and lapis lazuli in an eggwhite or gum arabic medium – the glass broke easily. And Abu Subhi's works, although done more recently, were painted in cheap household enamel kept in open cans and continually thinned with turpentine; as a result the paint tended to flake off and eventually adhere to the cardboard backing. There are some private collections and examples do hang in museums in North Africa and Iran. But they are far from numerous.

The future, however, may be as bright as the paintings themselves. Although some glass paintings sell cheaply in tourist shops, the prices for good antique paintings are rising and young painters, interested in the possibilities of the medium, are consciously experimenting with glass-painting techniques. This in turn has led amateurs who want cheap decorations for their shops or cafés to try their hand. If the trend continues glass painting at least in a limited area – North Africa, Lebanon and Syria – might revive.

Indeed, in Damascus, one can already talk of the "school" of Abu Subhi. Since the old man's death, his sons and daughters – some of them in their 50's – have continued to paint, always signing their



father's name. Their painting style appears much more controlled and their colors more vivid than his, but to some observers those changes are just one more step in the evolution of a folk art still popular after centuries.

Penny Williams, an artist herself, has long loved and studied the folk art of the Arab world, particularly Bedouin jewelry and glass painting.

Above: SYRIAN SKETCH OF A MAN,
Opposite: RUINED TEMPLE, *The Metropolitan Museum of Art, Gift of Mrs. Francis Ormond*

Deep in the vaults of New York's Brooklyn and Metropolitan Museums, the curators have carefully stored two small collections of fragile watercolors that the public rarely sees and that many people have never heard of: John Singer Sargent's sketches and paintings of the Middle East.

The reason, of course, is that the fame of this expatriate American artist rests on his fashionable portraits of British nobility, Boston Brahmins, American financiers and other luminaries of the late 19th and early 20th centuries. Yet Sargent, despite his phenomenal success as a portrait painter, also produced an astonishing number of sketches and paintings of the Middle East: Egypt, Palestine, today's Syria and Lebanon and the nearby deserts.

THE UNKNOWN SARGENTS

WRITTEN BY JOY WILSON

PAINTINGS FROM THE BROOKLYN MUSEUM, THE METROPOLITAN MUSEUM OF ART AND THE FITZWILLIAM MUSEUM

Curiously, that aspect of Sargent's career developed out of his success as a portrait painter. Restless and discontented despite his fame, he began to seek more creative styles and subjects and, in 1890, accepted a commission to paint decorative murals for the Boston Public Library; like many of his contemporaries he saw murals as the highest form of art. It was, in any case, a new artistic challenge, one that engaged his attention for the next 26 years. It also led him to Egypt in 1890, to the Holy Land in 1905 and, eventually, to a series of works that trace the development of western religious thought from paganism through Judaism, to Christianity.

John Singer Sargent was born in 1856 in Florence, Italy, to an expatriate American family that wandered through Europe on a perpetual grand tour. As the family moved from country to country, young John, already exhibiting a natural talent, began to record their travels in sketches and to study, on his own, the works of the great masters in Europe's museums. As Sargent's mother dabbled in art and music herself, she encouraged the apparently talented boy in such endeavors. Later he studied art informally in Rome and Florence and then, at 18, enrolled at the Ecole des Beaux Arts in Paris and in the studio of the noted academic portraitist Carolus-Duran.

The year was 1874 – the very year that the Impressionists banded together to display their avant-garde paintings in Paris. Sargent, as it happened, was unaware of the Impressionists and of the upheaval their rebellion was causing. But impressionism, nevertheless, was to affect his painting. After a quarter of a century of shifting between the two opposing approaches to art, he eventually and unmistakably began to incorporate the Impressionists' treatment of light in his own work.

In the meantime, however, Sargent's own conventional talents had catapulted him into the top ranks of conventional art. When Sargent was only 21, his first picture was accepted at the Salon and the following year his *Oyster Gatherers of Cancale* won a second class medal. Although he suffered a serious setback almost immediately – when Paris art critics assailed what was then considered shocking decolletage in his *Madame Gautreau* – he recovered quickly too. Within a year he had moved to London, where the American novelist Henry James and the flamboyant patron of the arts, Mrs. Isabella Stewart Gardner, opened the doors to London's more fashionable circles. By 1888 his reputation as a portrait painter was firmly established both in England and in the United States.

In that period, Sargent travelled frequently to the United States but, as he found England and the Continent more artistically stimulating, continued to reside in London where, during the winters, he concentrated on portraits. These, the works that made him famous, were painted in his own traditional style – developed partly from his work with Duran and from a close study of atmosphere and brush work of Frans Hals and Velasquez. In the summer months, however, Sargent travelled to southern Europe, the Alps, or North Africa. And there, stimulated by the intense sunlight playing upon church facades, fountains, Moorish courtyards and jagged mountains, he experimented with bold strokes in a fluid bravura style and, eventually, began to incorporate some impressionist techniques. Despite his conventional background, Sargent was drawn to the Impressionists' treatment of light, particularly as handled by his friend Claude Monet. These summer travels, which provided new scenes and exotic faces, were apparently a welcome relief from the constraints of commissioned portraits. But they were also, as it turned out, preparation for Sargent's commission in 1890 to do the murals for the Boston Public Library.

Receiving that commission delighted Sargent, and he threw himself into the project with enthusiasm. Immediately upon accepting the commission, he set off for Egypt to study the ancient pharaonic world of temples, tombs and sculpture. During a busy month there, he sketched figures and designs from the monuments in Cairo, Luxor, Philae and Fayyum. These sketches were incorporated later in the library's north-wall mural, actually a huge canvas symbolizing the Israelite captivity in Egypt. In addition, Sargent, during his Egyptian travels, painted landscapes and portraits: *Indigo Dyers, Sunset Over Cairo, Water Carriers on the Nile* and *Temple of Denerah*, few of which are, unfortunately, readily available to the public today. Some are unaccounted for, others are privately owned and a few, from the Metropolitan's collection of 11 paintings, are on loan to government agencies. One portrait, for example, *Egyptian Women*, is currently part of an exhibition of American painting in Moscow.

Between 1890 and 1905, Sargent worked diligently on the Boston murals. But by 1905 he was seeking "new fuel for the murals" and so embarked for the Holy Land. Because few of his letters survive, many details of the trip are unknown, but his sketch books, now owned by the Metropolitan Museum, provide a fine record. He disembarked in Palestine, visited Tiberius on the shores of Galilee and such other famous sites as Jericho and Jerusalem, and went as far north as Tripoli and Baalbek in today's Lebanon. During this time he worked on watercolors as well as sketches for the Boston murals, turning out a series of charming, fluid watercolors such as *Ruined Temple*, the Roman temple of Jupiter at Baalbek.

From some of the letters that have survived, it is clear that Sargent was disappointed with the biblical and historical monuments. As he wrote to a friend in England: "Some new material I have secured but it is different from what I had in view and not abundant – no miraculous drought but I shall fish here for a while and try to bring back some weightier stuff than lots of impossible sketches and perhaps useless studies."

As he did. Turning to the desert, he joined a Bedouin tribe, travelled and lived with the tribe and produced a series of watercolors that record in a bold, vibrant and fluid style vignettes of desert life: meals over the open fire, black tents with mysterious interiors, fiery desert sunsets, handsome Arabian horses and barren parched lands. By juxtaposing large patches of colored wash with bold colors and combining them with selected details, often abstracted at the edges of the painting, Sargent offered convincing scenes executed with consummate skill and bravura. He captured, moreover, the immutable quality of desert life and

Top Left: IN A LEVANTINE PORT, *Top right:* HILLS OF GALILEE
Lower left: ARAB STABLE, *Lower right:* BEDOUIN CAMP
The Brooklyn Museum

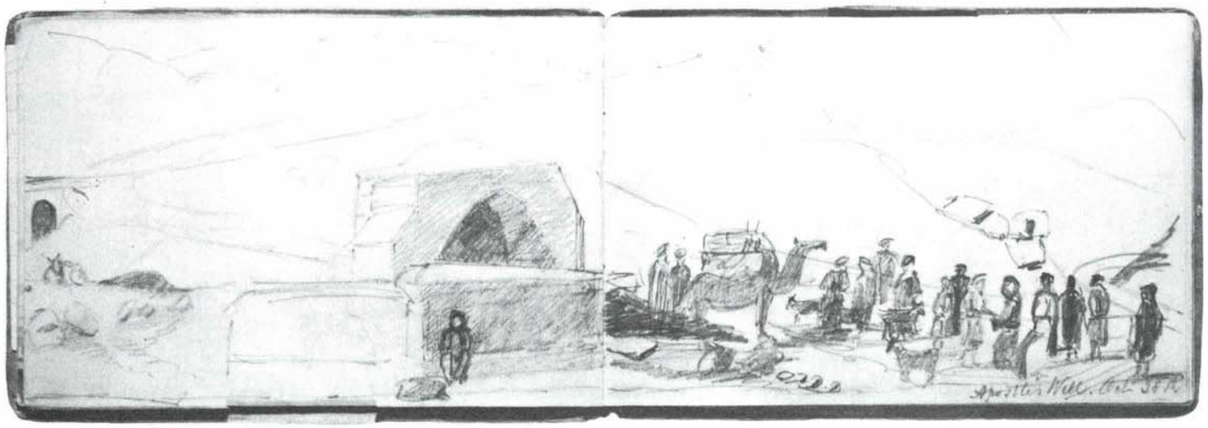
Above: EGYPTIANS RAISING WATER FROM THE NILE,
The Metropolitan Museum of Art, Gift of Mrs Francis Ormond.
Left: BEDOUINS,
The Brooklyn Museum

the personal strength that develops from coping with a harsh environment.

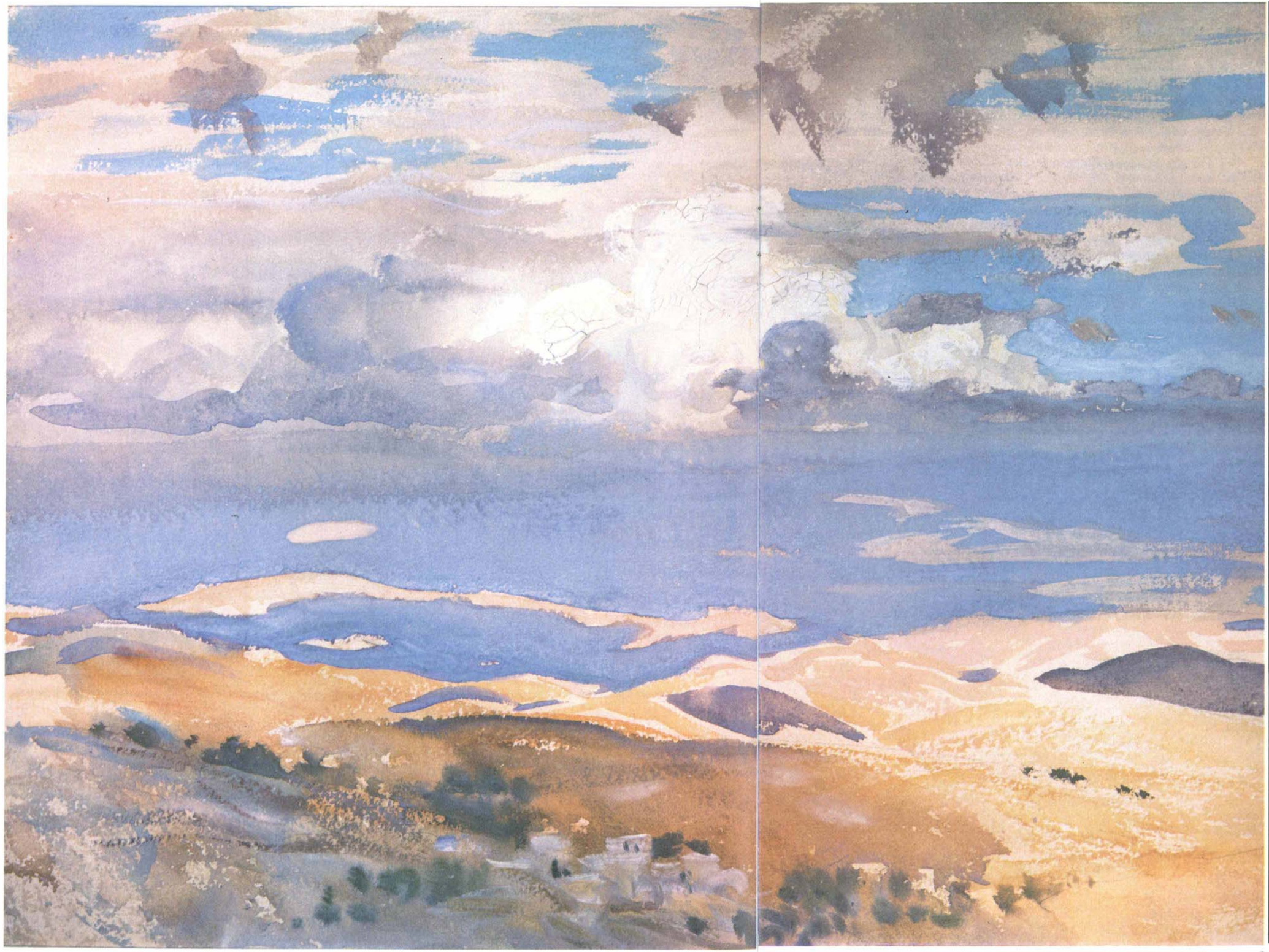
The striking portrait *Bedouins* is a good example. A vivid watercolor of two desert men dressed in *thobes* and wearing bandoliers, this painting, like all his desert watercolors, explores the optical transformation of the actual colors into very intense colors under the angled desert sun. He paints, for example, the normally somber, monochromatic *thobes* in the brightest cobalt blue – a form of impressionism – but renders the faces in detail to achieve, finally, a realistic portrait with poetic overtones.

Another painting from this trip is the *Hills of Galilee,* with distant hills in orange and lavender, recently tilled farmland in a bright, burnt red and a misty farmer and his ox, at once impressionistic and realistic. And a third is the *Arab Stable,* a unique work which led Sargent, in a letter to Mrs. Gardner, to explain the unrealistic touch of cobalt blue on the hindquarters of a horse: "They ought to have blue ribands plaited into their tails and manes, like Herod's horses in Flaubert's beautiful Herodiade." Since there are areas in the painting left undefined which disintegrate into abstraction, Sargent called this "a watercolor sketch."

To those paintings Sargent also added hundreds of small sketches, charming snapshot pieces sometimes done with quick minimal lines, other times in surprising detail; the sketch called *Syrian Arab* is a good example. He also, enroute to London after he learned of his mother's death, added two charming watercolors: *Melon Boats* and *In a Levantine Port.* Altogether these Middle Eastern works display Sargent's finest moments and talents.



APOSTLE'S WELL, *The Metropolitan Museum of Art, Gift of Mrs. Francis Ormond*



Above: THE MOUNT OF OLIVES
The Fitzwilliam Museum
Left: FROM JERUSALEM
The Metropolitan Museum of Art, Gift of Mrs Francis Ormond.

In retrospect, Sargent's search for "new fuel" for his murals was unsuccessful. As, eventually, were the murals themselves. Sargent himself saw those murals – and others commissioned for the Boston Museum of Fine Arts and the Widener Library at Harvard University – as the culmination of his training and background. But after his death, public interest in murals waned as tastes changed and more impressionistic art forms came into vogue. On the other hand, the second Middle East trip also marked, and possibly brought about, a turning point in Sargent's career. Not long after his return, he began to devote most of his time, when not working on the murals, to freer, more impressionist watercolors. And in 1908 he sold 83 watercolors to the Brooklyn Museum, the largest body of his watercolors ever sold until then. He still did an occasional portrait, such as those of John D. Rockefeller and President Wilson, but generally, in his last years, he tended to paint only close friends or, to keep his fashionable clientele happy, dash off a quick charcoal sketch. And when he died, in 1925, his studio was filled not only with portraits, but with watercolors, many of them of the Middle East and its endlessly fascinating people.

Joy Wilson studied at Radcliffe, taught science in a high school and later lived in Saudi Arabia for 11 years. She is now studying for her M.A. degree at the University of Connecticut.

From mints across the Muslim World...

Coins of History

WRITTEN BY ROBERT OBOJSKI

Coins, like stamps and flags, can tell both historians and collectors a great deal about the history of the world. Collectors of Arab coins, in fact, must delve deeply into Arab history just to identify a coin, let alone set a value on it. And in the 1970's many were doing just that, particularly with respect to the silver coinage of the past: the dinars and dirhams, piastres and qirsh, liras and riyals that have, for centuries, been circulating throughout the Arab East and beyond, and are now popular items in the world of the numismatist.

Behind this new surge of interest, says Herbert Melnick, managing director of the Numismatic and Antiquarian Service Corporation of America, are two simple facts: the new prominence of the Arabs in world affairs and, a result of that, publication of new guides to Arab coins.

"In the past, collectors in the western world generally shied away from coins of the Middle East because they felt the inscriptions were too difficult to decipher," Melnick said. "Today, however, guides are being published and widely distributed so that the average collector can rather easily translate inscriptions and numerals without having to become fluent in Persian, Turkish or Arabic . . ."

Furthermore, he went on, "the evening news programs on television deal so extensively with Near Eastern affairs day after day, that collectors have become intrigued with that part of the world and feel they can learn a great deal about the individual countries by studying their coins.

"The average person living in the Near East, moreover, is now often aware of his own nation's heritage, and it's natural for him to acquire an interest in the coins which reveal that heritage. Thus, there is now a strong worldwide demand for choice coins of the Middle East."

As in other civilizations, gold was the primary medium of exchange in the ancient Arab world. But even before regularly issued coins came into use, silver was utilized as a currency. In the Arabian Gulf, for example, a silver ingot called the Larin was introduced in the early centuries. Crafted in the form of a fish-hook, with various specimens ranging in length from about one inch to an inch and a half, Larins, which took their name from the town of Lar in southern Persia, were originally circulated in the Arabian Gulf region. Eventually they spread to the eastern seaboard of India and to the Maldive Islands and became one of the chief trading currencies in the Indian Ocean region. Larins have inscriptions in both Persian and Arabic, and to meet the requirements of change, were often cut into pieces; sometimes one Larin was divided into 12 separate sections.

With the advent of the Muslim era, in A.D. 622, silver coinage spread throughout the Middle East. Initially, Islamic coins were little more than copies of Byzantine issues, but at the close of the seventh century an 'Umayyad caliph, 'Abd al-Malik, ordered that a purely Islamic coinage be struck: a gold "dinar" and a silver "dirham," a term derived from the Greek "drachma," meaning "silver coin." These terms, "dinar" and "dirham," are the generic names of all gold and silver coins in all Muslim countries, despite numerous varieties introduced later and despite the fact that "dinar" later came to include silver coins as well as gold.

In striking the first purely Islamic coins, 'Abd al-Malik established principles in accordance with Muslim traditions: no image of any living thing appeared on the Muslim dinars and dirhams. Instead, the markings were geometric and calligraphic rather than pictorial, and frequently, as with all the Islamic decorative arts (see *Aramco World*, July-August 1977), bore the intertwined geometrical patterns called arabesque, and phrases from the Koran. The coins of 'Abd al-Malik, for example, carried the *Shahadah:* "There is no god but God; Muhammad is His messenger," and coins struck later in Arab lands carried such familiar inscriptions as: "God is One, God is Eternal; He begets not, neither is He begotten," or the *Bismillah:* "In the name of God, the Merciful, the Compassionate."

To numismatists, Muslim coins are of particular interest because of the remarkably full, continuous and dated record they provide. Some, for example, include a full record of successive rulers in various dynasties and, as almost all of these coins carry a mention of their place of mintage, supply some indication of the location and the territorial extent of these kingdoms.

One dirham, for example, minted in Damascus during 'Abd al-Malik's reign, is inscribed: "In the name of God this dirham was struck in Damascus in the year 79," that is, in A.D. 698-699.

This historical record is particularly important during the long period when the Ottomans ruled the Muslim world. For although the Ottomans, in the early years of their rule, inscribed their coins in the traditions of the 'Umayyads, the Abbasids and other dynasties of Muslim history, the Sultans, starting in the 15th century, began to add their own names, the place of mintage and, frequently, the date. As the Ottoman Empire endured nearly five centuries, the coins provide a fine record of the Sultans from the time the Ottomans first established an organized coinage throughout their expanding empire.

This organized coinage was first introduced by the Sultan Orkhan in 1328; it was a silver coin called the *akce* and it weighed approximately one third of the earlier Islamic dirhams. In 1655, the Ottomans added a smaller silver coin called the *para* and in 1687 replaced the akce with a larger coin called the *piastre* – a term possibly derived from the French word *plastre*, meaning thin metal plate. The piastre was closer in size to the coin called the thaler or taler, which was, in various versions, the standard coin of Europe's Germanic states from the 15th to the 19th centuries, but it was only two thirds the weight. The piastre was at first worth 40 paras, but increased in value when Sultan Mustafa II issued still another variety – this one approximating the size and weight of the now-standard thaler. By then the Sultans had also begun to add what is called the *tughrah,* the elaborately calligraphed signature and emblem of the Sultan. The first *tughrah* appeared on the coins of Suleiman the Magnificent in the 16th century and was a regular feature by the time of Muhammad III (1595-1603).

A typical piastre of Mustafa II had four-line inscriptions in Turkish on each side, with one side reading "Sultan of the two lands and *Khaqan* of the two seas, Sultan, son of a Sultan," and the other reading "Sultan Mustafa, son of Muhammad Khan, may his kingdom

Egypt; rare mint presentation set, *estimated value $3,100;* 1916-17

Sudan; 20 Piastres;
estimated value $400; 1888

Turkey; 1 Piastre;
estimated value $300; 1704

Iran; 5000 Dinars;
estimated value $500; 1927

Tunis; 5 Piastres;
estimated value $500; 1876

Palestine; 1 Mil,
one of the world's rarest 20th century coins;
estimated value $7,500; 1947

Yemen; 8, 15, 30, 45, and 60 Chomsihs; *estimated value $1,000;* 1925

Morocco; 5 Dirhams;
estimated value $500; 1903

Saudi Arabia; rare proof set, *estimated value $750-1,000;* 1928

Photographs courtesy of Numismatic and Antiquarian Service Corporation of America

continue." Because the location of the mint was also included, collectors know that the same coin was struck at Edirne, Izmir and Erzurum, as well as at Istanbul.

These piastres are generally inscribed with just one date, A.H. 1106 (A.D. 1695), the year of the Sultan's accession, regardless of the year in which they were actually minted. The piastres and other silver coins issued by later Sultans, however, were clearly inscribed with *two* dates: the date of the ruler's accession and the year in which the coin was actually struck.

With respect to history the method of dating is particularly interesting; it is expressed in terms of a "regnal year" – that is, the number of years the Sultan had been in power when the coin was struck. Thus, if the regnal year is 6, then that figure is added to the accession year to determine the coin's actual date. As Sultan Mustafa III, for example, reigned from 1757 to 1773, a piastre coin issued during his sixth regnal year carries the dates A.H. 1171 (A.D. 1757), when he acceded to power, and A.H. 1177 (A.D. 1763), the year the coin was struck.

For coin collectors, the regnal years on coins of the Near East are important since they help determine the current collectors' values, particularly the values of scarce varieties. The 20-piastre coins minted during the reign of Sultan Abdul Aziz (1861-1876), for example, were generally the same during the Sultan's 15-year reign and therefore are valued by collectors today at about $20. But the same 20-piastre coin minted in regnal year 4 is extremely scarce and catalogues at $70. Collectors who can read Arabic-Turkish numbers, therefore, are more likely to recognize the more elusive coins minted in regnal year 4.

Over the years, obviously, there were minor changes in Ottoman coinage: the shift from Koranic quotations to the Sultan's *tughrahs,* the introduction of the one-piastre coin and, later, the 20-piastre coin. And in the 18th century, a silver two-zolota coin was introduced. This was a coin 50 percent larger than the piastre. But the most radical change in Turkish coinage occurred when Mustafa Kemal Ataturk won power in 1922, abolished the Ottoman sultanate, and, the following year, proclaimed the Republic of Turkey. As one of his goals was to westernize Turkey, the country's coinage was westernized too; the Latin alphabet was adopted for inscriptions, western numerals replaced Arabic figures, and the dates were expressed according to the Gregorian calendar. Even more radically, portraits were permitted; the first, a representation of Ataturk himself, appeared in 1934 on a 100-kurush silver coin.

Because Ottoman rule extended to virtually all of the Muslim world, the history of silver coinage in the Arab states is very similar to that of the Ottomans. Until World War I, for example, Egyptian coins closely resembled Ottoman coins; they carried the Sultan's *tughrah,* were inscribed in Arabic and were dated according to the Muslim calendar. Indeed, even the astute collector would have difficulty in distinguishing between Egypt's 14th-century 20-piastre coin and the Ottoman coin issued under Sultan Abdul Hamid II (1876-1909). The same can be said of many coins issued in Iraq, Syria, Lebanon, and the Sudan.

With the dissolution of the Ottoman Empire, however, and the introduction of the European-dominated mandate system, silver coinage in all those countries changed rapidly and radically. In Egypt, portraits began to appear for the first time: King Fuad, in civilian clothing, on the 20-piastre coins of 1923, and in military uniform on the 20-piastre series of 1929-1933. In Lebanon, the lire, or pound, replaced the Ottoman piastre while the piastre became a component monetary unit – 100 piastres to the lire – with such illustrations as Phoenician galleys and the cedars of Lebanon replacing the *tughrah.* In Syria, also a French mandate, the French phrase *État de Syrie* ("State of Syria") was added to Arabic inscriptions. And in Iraq, first a British mandate, then, after 1932, an independent kingdom, the portrait of King Faisal appeared on the 200-fils coin, one of the first series of Iraqi coins ever issued.

Later, as the various Arab countries won their independence from Western control, coins proliferated, most of them reflecting their new status. Syria, for example, chose an eagle with three stars on its breast as its national emblem and stamped it on virtually all Syrian coinage, while Iraq introduced new coinage – in values of 25, 50 and 100 fils – bearing an elaborate coat of arms designed as the national emblem.

Egypt, on the other hand, stressed achievement. The country's 25-piastre coins of 1956 and 1957, for example, commemorate the nationalization of the Suez Canal and the inauguration of the National Assembly, while four coins issued in 1964 mark the dedication of the Aswan High Dam. On a one-pound silver coin issued in 1970, Egypt also commemorated President Nasser, and on another reminded citizens of Egypt's long ties with Islam; that coin commemorates the 1000th anniversary of al-Azhar University in Cairo, the oldest university in the world and the most famous Islamic university. (See *Aramco World,* September-October, 1973).

On the Arabian Peninsula, where the Ottoman rule was more nominal than real, the chief silver coin in circulation at the time 'Abd al-Aziz founded the Kingdom of Saudi Arabia, was one of the thalers issued by the German and Austrian states since the 15th century. This was the "Maria Theresa thaler," a large silver coin bearing a profile of Maria Theresa, the 18th-century Empress of the Holy Roman Empire and mother of the famous Marie Antoinette of France. This coin was also the most popular unit of currency in Abyssinia, Yemen and Oman, but has since been replaced by national coinages.

In the 1920's, however, King 'Abd al-Aziz began to issue a silver coin called the riyal, and coins of copper and nickel called qirsh; there were, originally, 22 qirsh to the riyal and later 20. As do the original Islamic coins and the early Ottoman coins, the Saudi riyal bears inscriptions, but since 1925 has also included the crossed swords and palm tree, the Kingdom's national emblem. This riyal, one of the most popular of the Saudi coins, was also minted in proof, but both the regular coins and the proof strikes are often found with iridescent toning – that is, the silver, with the passage of time, has taken on the colors of the rainbow.

In the Arab East, therefore, coins do more than provide a medium of exchange. Like flags (see *Aramco World,* March-April 1978), they also record in subtle, often beautiful, forms the history of the peoples who designed them and used them over the centuries.

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Life in the Gulf

WRITTEN BY ROBERT ARNDT

Tom Bobrowski

A quantum leap in knowledge - a protection for the future

In 1977 Aramco published a 285-page, superbly illustrated book entitled *Biotopes of the Western Arabian Gulf: Marine Life and Environments of Saudi Arabia.*

As the somewhat disconcerting title suggests, the book is aimed at specialists and well-informed laymen, rather than at popular book clubs. But perhaps all the more for that, it is an important book with an important goal: to summarize – for professional and amateur ecologists, marine biologists and other scientists – the findings of an intensive five-year study of the Arabian Gulf and its Saudi Arabian shores.

Behind that study – some aspects of which are still continuing – lies a far-sighted decision made several years ago by officials of the Saudi Arab Government and Aramco executives to examine the ecology of the Arabian Gulf, given the mounting tempo of petroleum production and shipping in the Gulf, along with increased industrialization (see *Aramco World,* January-February 1977) and modernization of farming and fishing methods. Concerned lest such developments affect the Gulf's delicate ecology, those men assigned a team of four marine specialists to Aramco's Loss Prevention and Environmental Affairs Department to study and assess the Gulf today. They also provided funds, equipment and laboratory space. *Biotopes* is not Saudi Arabia's only contribution to the Gulf's ecology; this April the Kingdom also participated in an eight-nation conference in Kuwait to discuss joint measures to protect it. But the Biotope study is far and away the most important to date.

Starting in 1971, the team – Philip Basson, a marine botanist, John Burchard, a marine biologist and ethologist, John Hardy, an ecologist, and Andrew Price, a marine zoologist and ecologist – set out to establish a biological "baseline," a norm against which any future ecological changes could be measured. The data they collected could also be used by planners to predict the environmental impact of proposed industrial plants, or industrial activity such as dredging, on Gulf ecology and on the other industries – like fishing – that depend on the continued good health of the Gulf. It could also be used by the Saudi Arab government to draw up environmental standards that, embodied in laws, would help protect the country's natural heritage and ensure that the Gulf remains the living sea that it is now.

The Gulf was not always a sea. Some 20,000 years ago – only yesterday, in geological terms – it was a shallow, 600-mile-long river valley through which the combined waters of the Tigris and Euphrates Rivers ran toward the Arabian Sea. Then, with the end of the latest ice age, sea levels began to rise and the valley began to change into an ocean gulf. The process required some 15,000 years and when, about 3000 B.C., the Gulf reached its present depth and configuration, it was an anomaly among the world's seas: much shallower and warmer, far saltier and more isolated than most.

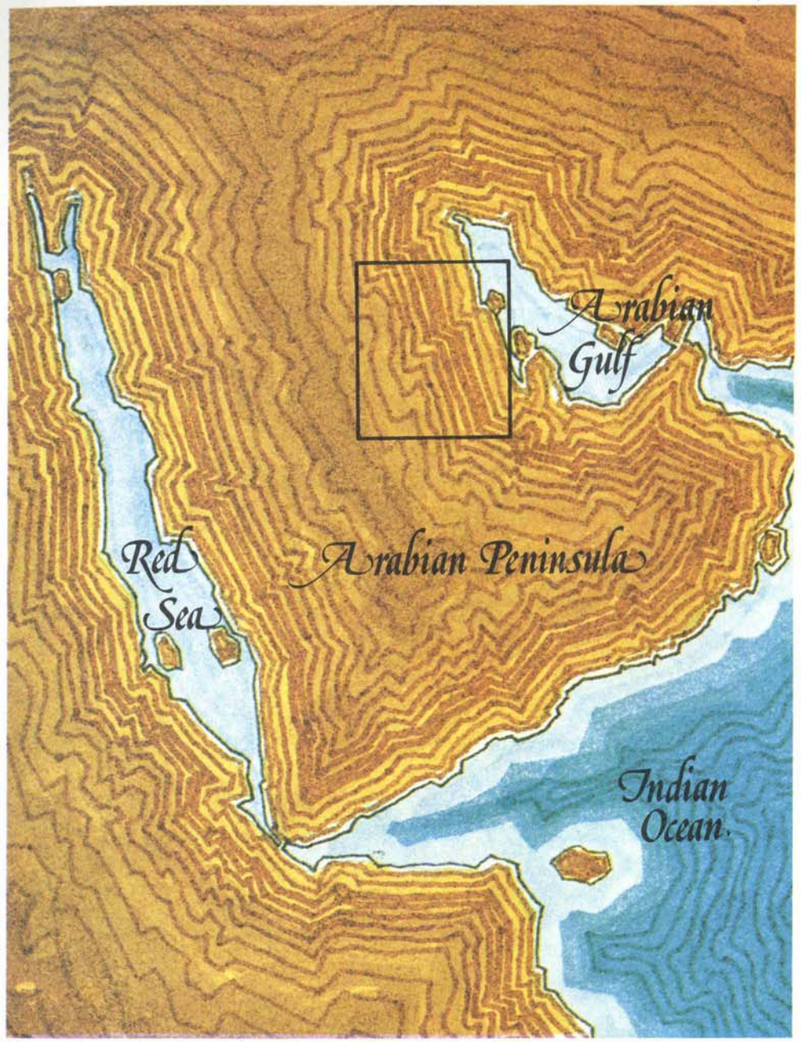
By then, of course, man was already harvesting the riches of its teeming life, particularly its fish, shrimp and pearls, and on primitive craft was criss-crossing its surface. Traders from the great Mesopotamian civilizations, for example, had begun, via Bahrain/Dilmun, to reach the Mohenjo-Daro civilization of the Indus River (see *Aramco World,* January-February 1970), the prelude to the later voyages of Arab seamen to Africa, India and China.

Despite such activity extending over thousands of years, man's knowledge of the Gulf was limited to what was obvious and essential: where fish and shrimp were plentiful, where the precious pearl oysters could be found, where the dangerous shoals threatened their craft and where, on the sea-floor, springs of fresh water made it possible to stay longer on the fishing grounds. But then, in the 20th century, oil was discovered in many countries around the Gulf, and industrialization got under way – a new scale of human activity with greater effects on the natural world – and previous ignorance could no longer be tolerated, especially in a world newly alerted to potential ecological problems. Thus the Aramco study and the publication of *Biotopes of the Western Arabian Gulf* – a quantum leap in knowledge and understanding of this strange body of water.

Aramco's study, it should be said, is by no means the first marine exploration of the Gulf. A Danish survey expedition visited the Arabian Peninsula in 1762, and its zoologist published the first scientific descriptions of many marine animals and plants later also found in the Gulf. Several other expeditions – Danish, Japanese and German – worked in the Gulf in the following 200 years, and scientific teams from the United Arab Emirates, biologists from the Kuwait Institute of Scientific Research and fishery experts from Saudi Arabia and other countries have all contributed information in specialized fields.

Yet the Aramco study is by far the most extensive. It provides charts and diagrams, methodological information, a bibliography and list of references and, above all, a 65-page species list of the animals and plants inhabiting the Gulf, – more than half of them never before reported there and some, perhaps, entirely new to science. For the non-scientist with an interest in ecology, the book also contains a glossary

PHOTOGRAPHED BY JOHN BURCHARD AND JOHN HARDY
ILLUSTRATED BY LISA BOBROWSKI



Above: This map of the Arabian Peninsula shows the area covered by the Aramco study, from Ras al-Mish'Ab to Salwah in the south.
Opposite page, top: Some of the pathways of energy flow in the grassbed biotope of Tarut Bay. The biotope is so rich that it "exports" energy – in the form of animals that migrate out of the area – to other Gulf biotopes.
Below, the relative productivity of some land and water biotopes. Grassbeds, coral reefs and tidal marshes, all abundant in the Gulf, are the most productive marine biotopes, and represent a valuable resource.

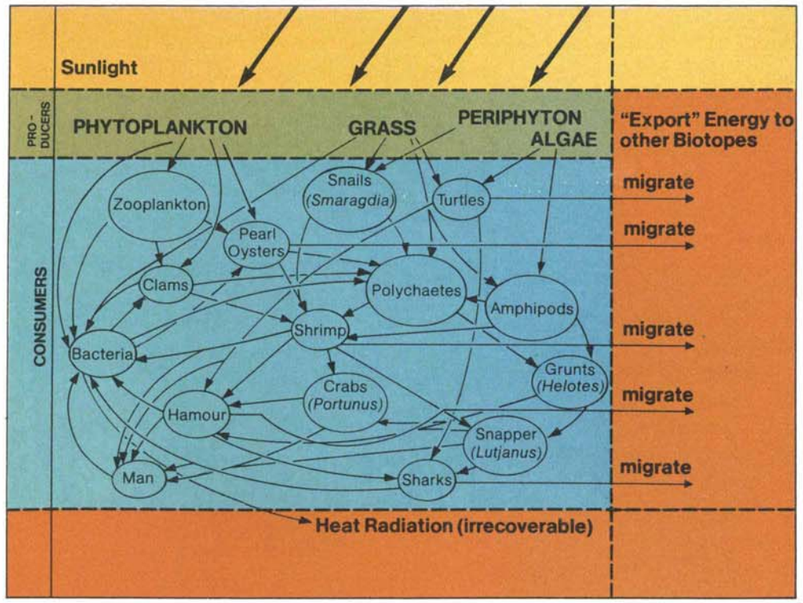
and reading list to help him explore an unfamiliar subject, plus fascinating illustrations and a lively, readable text that makes clear the web of connections that links all the Gulf's life forms – including man.

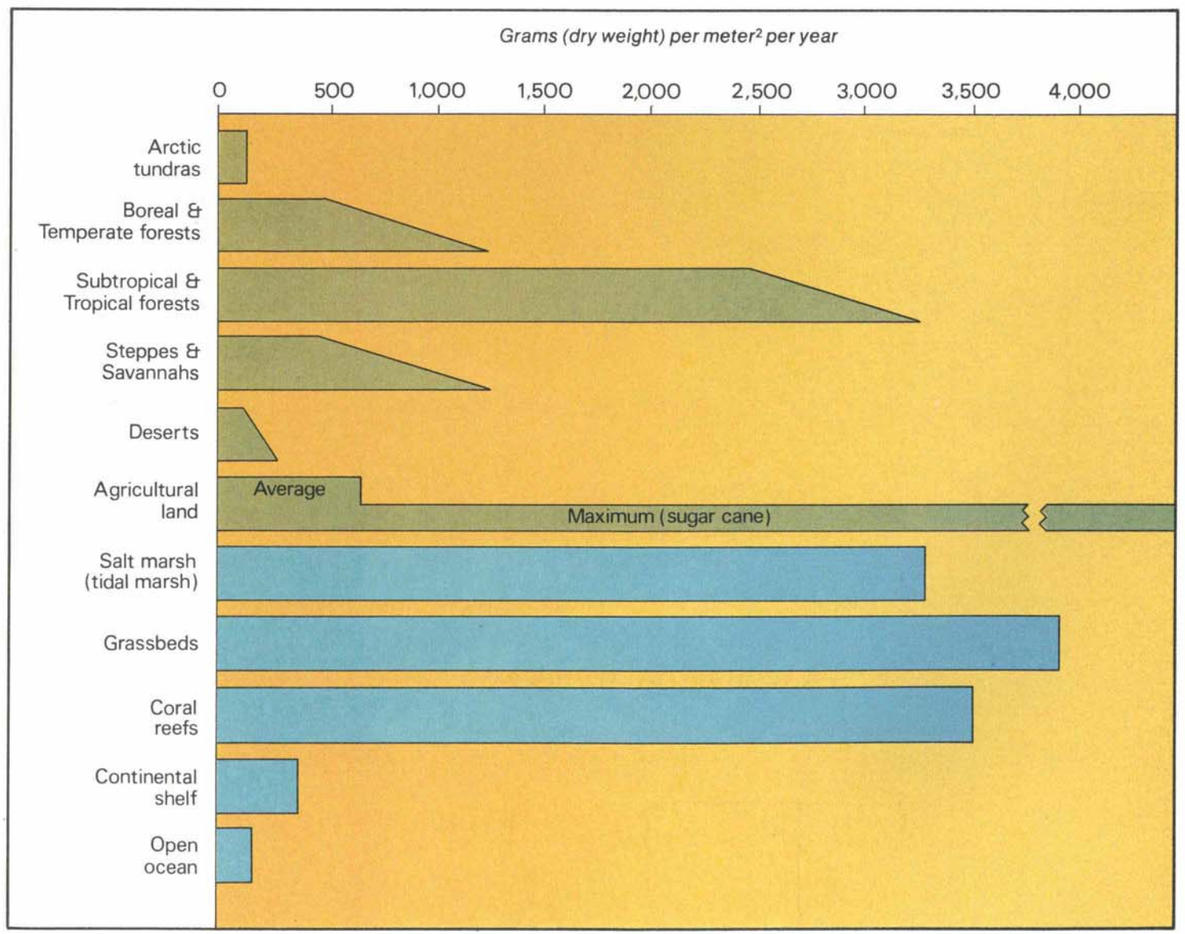
The *Biotopes* study, furthermore, differs from the previous Gulf studies in concept. Its concern is not so much with individual life forms – isopods or algae or echinoderms – or with particular processes like sedimentation or coral reef growth, as with the *connections* among the various species and habitats and conditions that exist in the Gulf. In effect, it inventoried the plant and animal communities of the Gulf and began the study of what one might call their "sociology:" their interrelations and how they are affected by those relationships.

Thus came the word "biotopes" into the title of the book. Webster's defines a biotope as a "region uniform in environmental conditions and in its populations of animals and plants for which it is the habitat." In the real world, of course, there is no such thing as a region uniform in environmental conditions; those conditions are constantly changing, and even the kind of change going on is subject to change. Nonetheless, in each major biological "province" – such as the open water, the subtidal sea floor, or the intertidal zone between the high and low tide marks – there exist certain "communities" in which the relationship between the physical place and the plants and animals that live in that place is fairly stable, and can be studied. These are "biotopes." One example is the shallow-water grassbeds of the Gulf, with their population of shellfish, snails, shrimp larvae, turtles, algae, fish, crabs and worms, their topography of flat "meadows" and tidal channels, and their input of sunlight, sediment and plankton. All these creatures, and conditions, and the connections that link them together, constitute the "grassbed biotope," a convenient subdivision of the overall ecology of the Gulf.

That ecology is shaped and made unique by the three characteristics that distinguish the Arabian Gulf from most other bodies of salt water – that have made it an anomaly among the world's seas. The Gulf is, first, an extremely shallow sea. Its maximum depth is only about 325 feet, its average depth is just over 100 feet, and large areas near the coast are less than 30 feet deep. It is the very gentle slope of the Arabian Peninsula's eastern edge – less than two feet of drop per mile of distance, continuing under the water – that accounts for the Gulf's lack of depth. And that in turn determines other ecological factors. Shallow water warms and cools faster, so Gulf life forms must be able to tolerate an annual temperature range of some 45 degrees Fahrenheit; shallow water is more easily mixed by wind and tide, so the temperature of Gulf water changes relatively little with depth; mineral nutrients recycle more efficiently in shallow water than deep, thanks to densely populated sea-floor communities that don't exist in the ocean depths.

The Gulf is also a remarkably salty sea. Less – sometimes much less – than 10 inches of rain a year falls on the surrounding land, and there are few rivers to contribute a flow of fresh water – none at all, in fact, on the Saudi coast covered by the Aramco study. And because of high





temperatures, the shallow Gulf water evaporates faster than it is replaced by the inflow from the Tigris and Euphrates Rivers and from the smaller rivers of the eastern shore. Thus, though the salinity of the world's oceans averages 35 parts per thousand, in the Gulf the study found salinities ranging from 38 to 70 in open waters, from 60 to 200 in shallow lakes and lagoons and – in one extreme case – as high as 330 parts per thousand! The high salt content of the water, like high temperatures, is a stress that Gulf creatures must be able to tolerate if they are to survive; many, in fact, have learned to thrive on it.

The third characteristic is the Gulf's relative isolation from the rest of the world's salt waters. The only connection is through the Strait of Hormuz – only 30 miles wide and not radically deeper than the rest of the Gulf – through which Gulf water flows out along the bottom, to be replaced by a current of less salty water from the Indian Ocean flowing inward on the surface. Because of the narrow passage, the volume of this water exchange is too small to have much of a damping effect on the Gulf's high salinities and wide temperature swings, and it is to those stressful conditions that the biotopes of the Aramco study are exposed – and adapted.

Despite these stresses, which generally decrease the variety and diversity of creatures exposed to them, the Aramco biologists found that Gulf marine life was far richer than they had expected, even though some of the species live at the very limits of their ability to adapt to the harsh environment. The fact that more than half of the species the scientists found living in the Gulf and on its Saudi shore had never been recorded there before gives an idea of the scope of this unexpected diversity.

Besides diversity, ecologists also look at productivity as a possible measure of the health of an ecosystem. "Primary productivity" is the rate at which organic matter – specifically, plant tissue – is produced in a biotope. Plant tissue is important because photosynthesis by green plants, and the plants' resultant growth, is the only way in which the energy that fuels all life is taken from sunlight and brought into a biotope. Once converted into plant tissue, the energy is passed on to creatures that eat the plants and then to the creatures that eat the plant-eaters – and finally, perhaps, to man. Though deep open oceans are no more productive than deserts or arctic tundra, the Aramco study found that three of the

A "bloom" of algae colors the water deep red along the shore of the Dawhat Zalum salt lake.
Inset, opposite page: Salinity in this lagoon at the end of al-'Uqayr Bay reaches 110 parts per thousand in summer, but healthy young fish are abundant.
Above, an Aramco marine biologist takes notes along the slope of a coral reef.

major biotopes of the Gulf are enormously productive: the grassbed biotope outproducing even tropical forests and growing – without human aid – more than six times as much greenery as average agricultural land.

In practical terms that statistic is significant. The grassbeds cover large parts of the inshore Gulf waters: aerial surveys showed that 66 percent of Tarut Bay, for example, is carpeted with grassbeds that make large amounts of energy available to animal species – shrimp, fish, oysters and turtles – that are of value to man, as well as to other species important in maintaining other Gulf biotopes. The annual productivity of the grassbeds of Tarut Bay alone, the study's authors calculated, comes to 140 *billion* calories at the very least: as much energy as there is in 95,000 barrels of crude oil.

But in today's world, protein is as important as oil. If those same grassbeds were "grazed" by snails and the snails were eaten by fish – a food chain that exists in that biotope – the undersea meadows could produce over five million pounds of fish a year, worth eight million dollars on the local market. If the end product of the chain were shrimp – and both fishing and shrimp trawling are important local industries (see *Aramco World*, September-October 1966) – the product would be worth nearly $12 million. And the authors carry their calculation one step further to a point that must bring a gleam to the eye of local entrepreneurs. If the Tarut Bay grassbeds were used as intensive pasturage for the green sea turtles that are common in the Gulf – and turtle ranches do exist elsewhere in the world – the annual production of turtles could be over 25,000

tons with a market value of $46 million.

The biologists call such figures "hypothetical," because their realization would require different patterns of exploitation than currently exist, and because they assume that the biotope's energies would all be channeled into one product. But the magnitude of the resource that the Gulf grassbeds represent is clear. In fact, the study has shown the grassbed biotope to be the foundation of today's Arabian Gulf shrimp industry, for it is in the grassbeds that the young shrimp shelter and feed from the spring till the summer – and during that time, thanks to the richness of the biotope, they increase their weight about 2,000 times.

Of the more than 500 animal species that the study identified in the grassbeds, few would be visible to the casual scuba-diver, for the shelter the 10-inch interlacing leaves provide to vulnerable creatures is an important factor in the variety of the grassbed population. Yet there are conspicuous and even spectacular residents: two species of sawfish, of which one reaches a length of "at least" 20 feet; several species of large sting rays, up to 13 feet long with a five-foot "wingspan"; green turtles, one of four Gulf sea turtle species, all in danger of extinction worldwide; venomous but unaggressive sea snakes that bear their young alive and afloat; two-foot-long sea cucumbers; large carnivorous snails; pen shells, a relative of the pearl oyster that shares its 15-inch shell with a pair of freeloading commensal shrimp; large edible swimming crabs; and several species of small striped fish. These animals, along with many other plant and animal species, form a diverse and abundant biotope that must be considered as one of the most important of the Gulf.

Far less important economically and biologically – but also full of surprises for the Aramco biologists – were the hypersaline (super-salty) biotopes of the Gulf. These exist especially where water circulation is even more limited than in the rest of the Gulf and where evaporation concentrates the salt content to abnormal levels: in shallow bays, lagoons and salt lakes along the coast. This hypersaline biotope is a world of its own: water temperatures range up to 92 degrees in summer, and the oxygen content of the water is so low that

some of the photosynthetic bacteria that inhabit the biotope carry out their vital function using hydrogen sulfide instead of water, and producing sulfur instead of oxygen as a byproduct.

The prize example of this very hostile environment is a salt lake at the head of the bay Dawhat Zalum, which many local western residents call Half Moon Bay. The lake is small and only 13 feet deep; its bottom contains astonishing quantities of crystals of pure salt. Summer salinity levels are as much as 330 parts per thousand: almost ten times the salt concentration of the oceans, and one and a half times as salty as the Dead Sea – which itself is supposed to be able to support only bacterial life (see *Aramco World*, November-December 1966).

Yet this lake supports a thriving community, poor in number of different species but rich in numbers of individual creatures – a distinction symptomatic of a stressed environment. One alga was counted at a peak population of 18 million individuals per *quart* of water, enough to stain the lake blood red along its shore. Besides the alga, the Aramco scientists found a score of different plankton species, five types of small crustaceans, a flatworm species, and several varieties of nematode worms – all living and reproducing successfully in water far saltier than scientists had previously believed could support *any* kind of multicelled life.

Other algae found on the shore of this lake and on other hypersaline beaches in the Gulf play, oddly enough, an important role in the traditional architecture of Saudi Arabia's Eastern Province. The algae precipitate magnesium carbonate in the shallow water that cements sand, gravel and silt together into a stone called *faroush*. In the past, the stone was gathered from the shallows in chunks and plates and was widely used as a building material; it is strong enough so that a few buildings made of it 40 years ago can still be seen today.

Even where salinity was less extreme than in the Dawhat Zalum salt lake, the Aramco study found a large number of species thriving at higher salt levels than had ever been recorded for those creatures before. Some of the species are economically important, such as sea grasses, shrimp and *hamour*, a grouper that is one of the most highly prized eating fish of the Gulf; as a result, the study's salinity data will have to be taken into account in any future projects involving food from the sea.

Besides the grassbeds and the hypersaline shallows, *Biotopes of the Western Arabian Gulf* also records the Aramco biologists' examination of a number of other communities, some of them even richer and more remarkable in their population and diversity – and beauty. Sandy beaches and rocky ones, mud flats, sand flats, rock flats and tidal creeks, rocky sea-floor and soft sea-floor, coral reefs and artificial structures such as oilwell platforms, and the open water itself all support their own distinct and complex communities of living things. And all those plants and animals, from the single-celled plankton to the shrimp to the shark, grow, eat, reproduce their kind and are eaten, interacting with their environment, with each other and with man in the ecological web that ties the world together.

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The 6-inch striped fish is an inhabitant of the grassbed biotope *(opposite)* and of tidal creeks on the margins of the Gulf. The hamour is found in all the water biotopes of the Gulf, and commonly reaches a weight of 45lbs there.

Hatshepsut:

The Female Pharaoh

WRITTEN BY NANCY JENKINS
PHOTOGRAPHED BY JOHN G. ROSS

On the west bank of the river Nile, opposite Luxor, the great honey-colored sandstone cliffs that rim the length of the western desert form a huge, if somewhat shallow, amphitheater, a concavity in stone that is called al-Dair al-Bahri, "the northern convent." At dawn, from across the river on the eastern bank, the distant cliffs are mauve-pink and gold in the early light, and in the mist off the river, if you look carefully, you can make out a march of white columns, rising in terraces beneath the protective overhang of the bluffs.

This is the site of an ancient mortuary temple, built, like so many others, to assure a dead pharaoh "life, health, prosperity" in the hereafter, but built so well that the distinguished Egyptologist Sir Alan Gardiner said of it: "There is no nobler architectural achievement to be seen in the whole of Egypt."

Al-Dair al-Bahri was built for one of the most extraordinary women in history: Ma'atkare Hatshepsut, daughter of a pharaoh, wife of a pharaoh, step-mother of a pharaoh and, for 20 years or more as pharaoh herself, the sole ruler of the mightiest nation in the ancient world, and the first documented female head of state in human history.

Unfortunately, and probably unfairly, Hatshepsut was also history's first example of a wicked step-mother – at least if traditional historians are to be believed. According to them Hatshepsut was a usurper who, when her husband Thutmosis II died, seized his throne, claimed the Pharaoh's divine attributes and grimly clung to power until her step-son, Thutmosis III, reaching manhood, dramatically reappeared 20 years later and wherever possible destroyed all references to her and her regime.

History's first documented female head of state and-possibly-its first example of the wicked stepmother

That account, according to today's scholars, is highly questionable. New evidence suggests that Thutmosis III made no attempt to erase his step-mother's name from her monuments until some 30 years after he assumed the throne – an improbably long time to nurse a grievance. In any case, the attempt failed. Today Hatshepsut's portraits in stone, often heavily restored, often with her name erased, but immediately recognizable nonetheless, still adorn the world's great and less great collections of Egyptian art – and they show her, though 35 centuries old, as fresh as yesterday. Her eyes are large, shrewd and thoughtful, her lips always on the verge of a smile and her features handsome. More importantly, they suggest a cool, somewhat amused and appraising intelligence, crafty, feline and elegant.

This impression is borne out by her heritage. Hatshepsut came from a long and glorious line, a direct royal descendant of the warrior

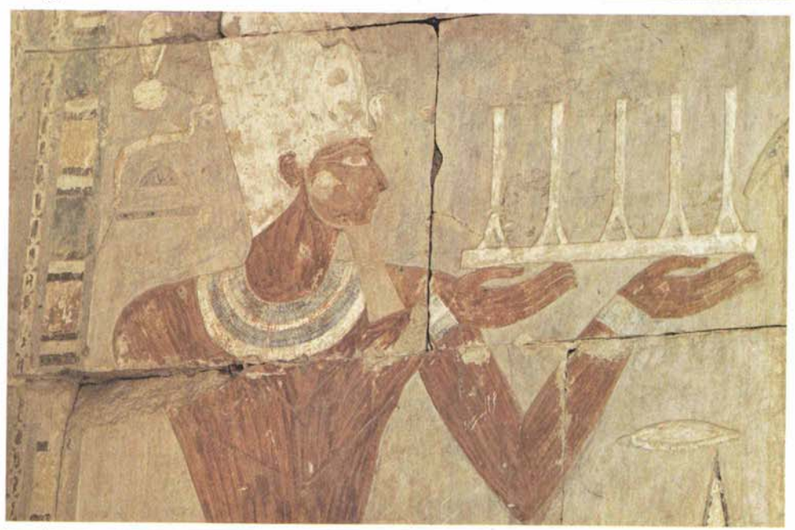
kings of Thebes who had shaken off the yoke of the hated Hyksos, the Semitic tribe which had dominated northern Egypt before Hatshepsut's forebears drove them out. According to tradition, it was her grandfather, Ahmose I, who established the 18th Dynasty in the early 16th century B.C., arguably the most brilliant period in Egypt's long history and, at least in its early years, one of those high-water marks in human cultural development when anything seemed possible and in fact probably was. Later, under Thutmosis III, the Egyptian empire would dominate Africa and the Middle East from the Sudan to the Euphrates. Later still, imperial grandeur would give way to the bombastic decadence of the Ramesside period. But at that point, early in the 18th Dynasty, Egypt stood poised on the brink, a confident, creative and expansive society, economically and militarily secure, brilliant and strong.

Hatshepsut herself always claimed that her father, Thutmosis I, had *chosen* her to succeed him. In her "autobiography," beautifully carved in the low painted reliefs that adorn the walls at al-Dair al-Bahri, and in inscriptions on a pylon of the great Amun temple across the river at Karnak, she described a coronation ceremony of sorts, with Thutmosis I presenting her to the

Opposite page, top: Hatshepsut's mother, Queen Ames, in a relief at al-Dair al-Bahri. *Below,* Hatshepsut herself in pharaonic regalia.
Below, a dual portrait of Senmut and the young Princess Neferure. *At right,* Hatshepsut brings an offering to the gods. *Below left,* a portrait of Senmut at the entrance to his own tomb and, *far right,* painted reliefs.

gods and the nobles of Egypt, especially to the great god Amun, whom the king addresses directly at Karnak: "In return for what I have done for thee, do thou bestow Egypt and the Red Land on my daughter, Ma'atkare, living eternally, as thou hast done for me . . . Thou choosest her as king."

The Karnak and al-Dair al-Bahri inscriptions, of course, were carved during the reign of Hatshepsut and not that of her father, so there is perhaps reason to doubt the authenticity of the events they describe. But whether she really believed herself to be the rightful king or not, she did pass the brief reign of Thutmosis II apparently content as his wife and consort. And if she was the power behind the throne she certainly was not the power *on* the throne, even though her husband's claim to the throne came solely from his marriage to Hatshepsut. It was she, not he, who was of royal descent. She was, moreover, the last of her great line of kings, who had driven out the Hyksos and established the dynasty. Thus when Thutmosis II died, leaving only a daughter and an illegitimate son as heirs, Hatshepsut's subsequent claim to the throne seemed to be validated by blood as well as by logic.



At first, it seems, Hatshepsut planned that Thutmosis III, the illegitimate son, would eventually succeed Thutmosis II as pharaoh and that his rights to the throne would be secured through marriage to the little princess Neferure. Meanwhile Hatshepsut, drawing on her background and experience, would preserve, at all costs, what had been achieved so recently and with such difficulty: the reunification of Egypt and the security of its traditional boundaries, from Nubia to the borders of Palestine.

In pursuit of this goal, fortunately, she did not have to work alone; indeed, she seems to have attracted some of the wisest heads in the realm as councillors. Chief among them was Senmut, architect of the al-Dair al-Bahri temple, tutor to the princess Neferure and a distinguished elder statesman who held some 80 offices and titles and exerted an incalculable influence on the queen. Traditionally historians have seen Senmut as a Rasputin-like figure, controlling the mother through the daughter and holding both in his evil thrall. But again art seems to dispute history; in portraits in the Cairo Museum he is usually shown, in a pose of great tenderness, holding the little princess on his knee, his features serene and intelligent.

On the other hand, it seems clear that Senmut was one of Hatshepsut's most trusted advisors from early on, perhaps even from her father's day. He must have been consulted when she took her momentous decision to assume not just the political powers of the pharaoh, but, more significantly, the symbolic role of the king as godhead itself. And it was Senmut who conceived and constructed the remarkable mortuary temple at al-Dair al-Bahri – a temple which was clearly intended for a divine pharaoh.

Egypt had never had a female "king". Although the early queens of the dynasty, Hatshepsut's immediate forebears, had all been strong and dynamic women who played forceful roles in the dramatic events of the time, they had not aspired to more. It was one thing to exercise a queenly influence and quite another to adopt the titles and prerogatives of the god-king. This, nevertheless, was what Hatshepsut did. As this occurred perhaps as much as seven years after the death of Thutmosis II – hardly an impulsive grab for power – it may have come about simply because, as regent, Hatshepsut began to accept the royal titles, clothe herself in ceremonial royal garb and think of herself, like those glorious ancestors of hers, as King of Upper and Lower Egypt. In any case she did eventually claim to be the pharaoh, rather than the pharaoh's regent, and affirmed her claim by building a mortuary temple fit for a king, where the prayers and offerings could be made that would insure her royal continuity in the afterlife.

Al-Dair al-Bahri had always been an inspiring place. Even today, despite the buses that wheeze up the ancient causeway past Cook's Rest House, despite the hawkers of scarabs, amulets and mummy beads crowding around each new flock of tourists, despite the tourists themselves, there is something magical about al-Dair al-Bahri. It may be only the sheer physical beauty of the setting – pale, towering cliffs, tawny against the immense blue of the desert sky, hawks soaring and tumbling on updrafts of air, the daily drama of sunlight and shadow across the terraced colonnades of the temple – but whatever the cause, even the most loquacious tourist seems to fall silent before its majestic impact. And the setting is but a part of the magic. The temple that Senmut built there for his sovereign is, quite simply, unique, and some observers feel that it was the architectural genius of this remarkable man that made it so. For although inspired in part by an 11th Dynasty temple constructed on the same site some 500 years earlier, Senmut added a breadth and majesty to the original concept that makes the earlier building, even in its present ruined state, look rather ordinary by comparison.

Hatshepsut's temple is centered in the shallow amphitheater of the cliffs in such a way that it gives coherence and integrity to the natural phenomenon of the escarpment – with the sunlight falling across the columned terraces exactly as it falls across the vertical crags of the bluff. It is a monument that has been constructed not just to enclose space, but to define and interpret the space that surrounds it. In this way, although it is an entirely different design, it is most like the Old Kingdom pyramids: their impact was not in the space they enclosed, but in the way they gave meaning to the space around them.

Hatshepsut's temple was unique too in that it had no precedents. While the 11th Dynasty temple served as an inspiration for the motif, Senmut's concept of the whole was something entirely new. And, what is more surprising, the building seems to have had no influence on anything that came after. It exists *sui generis*, an artifact in space but not in time. Once Senmut was gone, apparently, there was no one else with the imaginative genius, the creative energy, to produce or to reproduce what he had done.

Called *Djeser-djeserou* – roughly, sanctum sanctorum – by Senmut, the temple was intended primarily as a mortuary temple for Hatshepsut and her father, Thutmosis I, at which a permanent priesthood would make daily offerings and prayers to supply the needs of the dead kings in the afterlife. But there were also important shrines there: those of Anubis, the jackal-headed god of the dead; of Hathor, the ancient cow goddess; and, the supreme god at al-Dair al-Bahri, Amun-Re, then beginning to develop as a chief god of all Egypt. Indeed, the sanctuary to Amun-Re, carved in the shale of the mountainside on the uppermost terrace, was the central point of the whole structure; on the morning of the new moon in the 10th month of the year, during the Nile's annual spate, it was the scene of elaborate religious ceremonies during which the image of the god was moved into the dark, innermost sanctuary of the temple, accompanied only by the chief priest and the pharaoh herself – as intercessor between the Egyptian people and their gods, and, in a mystical sense, as the great god in person.

In addition, however, the temple served an autobiographical purpose, a public statement of what Hatshepsut herself felt to be the major achievements of her reign, all carved into the limestone walls of the temple in a series of reliefs that are among the highlights of what was, by any criterion, a golden age of stone sculpture.

Unlike other pharaohs, Hatshepsut chose not to dwell on her military achievements. Instead she told of such peaceful events as a trading expedition that she dispatched to the Land of Punt to bring back gold, ivory, incense and incense-bearing trees, leopard skins, and other exotica for the adornment of the court and the temple of Amun. The carvings include too the story of an expedition sent to Aswan to quarry a pair of red granite obelisks and bring them downstream to Karnak. Other panels tell of Hatshepsut's divine conception.

As well as providing an invaluable record of the lives and beliefs of the period, the carvings at al-Dair al-Bahri are extraordinary works of art. Although many of the stones making up the panels have been moved to museums and replaced with inadequate copies, the originals retain the charm, humor and detail originally carved by master craftsmen. One panel, for example, clearly shows the Land of Punt as an African town with thatched huts on stilts. And some even retain the original colours with which all these reliefs were painted – brick red, yellow ochre, blue and green, the same bright shades still used to decorate houses in Upper Egyptian villages today.

Sadly, the figure of Hatshepsut herself is missing from all of this – or rather, it is there, but as a ghost, a shadow, a haunting trace of an outline, identified only by the cartouche that originally enclosed her name and now usually surrounds the name of her father or her husband. The same is true of other monuments she had erected: at Buhen on the Nubian border, at Ombos, at Medinet Habu and in the desert south of Baeni Hasan. Wherever they could be reached, her names were obliterated and her portraits were hammered out.

Who ordered this wholesale defacement, and why, is a mystery. Thutmosis III was clearly responsible for some of it – possibly because without royal blood, and without even marriage to the princess Neferure, who died young, he was either not secure on his throne, or was beginning to worry about the claims of *his* son. But in fact the destruction ordered by Thutmosis III seems to have been less than that effected by a later pharaoh, who tried to eliminate the worship of Amun some 50 years later; or by still later Coptic monks who were no less vehement in their attempts to stamp out an older religion.

Since 1961, under the auspices of the Polish Center for Mediterranean Archeology in Cairo and the overall supervision of Kazimierz Michalowski, efforts to restore and reconstruct the temple have been under way. Part of the work has been devoted to structural reinforcement in places like the north colonnade; and the uppermost colonnade, which defined the entrance to the most sacred level, has been completely restored. In addition, some of the statues of Hatshepsut have been returned to their original positions. But the most important aspect of the Polish work was the discovery of a hitherto unknown temple of Thutmosis III, which, the archeologists say, may help to solve some of the puzzles of Hatshepsut's period.

One of those puzzles is what exactly happened to Hatshepsut in the end.

A mummy found in a Valley of the Kings cache a few years ago and thought to be that of Hatshepsut has now been fairly certainly identified as belonging to another, later, 18th Dynasty queen. Two burial chambers have been located: one, high up in the precipitous wall of a valley to the south of al-Dair al-Bahri, was prepared when she was still a queen; the second, and more interesting, tomb is in the Valley of the Kings. Deep into the mountainside the tomb's architect, presumably Senmut, had sunk a 700-foot shaft which, if it had been continued, would have passed under the escarpment and ended up in a burial chamber right beneath the al-Dair al-Bahri temple. Work was halted, however, when the attenuated corridor threatened to collapse. In the undecorated tomb chamber were found two empty sarcophagi, one intended for Hatshepsut, now in the Cairo Museum, and one intended for her father Thutmosis I, now in Boston.

It is certainly possible that Hatshepsut, if she was not defeated in a bitter succession struggle with Thutmosis III, died a natural death. But it is by no means certain either. All that archeology can say surely today is that about 20 years after she assumed the regency and then became pharaoh, all references to her ceased, and that when, two centuries later, Seti I compiled his list of the 18th Dynasty kings, he did not include the name of Hatshepsut. Although the daughter of a pharaoh, the wife of a pharaoh and, for 20 years, a pharaoh herself, she had disappeared from history. Were it not for al-Dair al-Bahri and the great temple built for her there, no one would ever have known she existed.

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