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Daily Life in Ancient Egypt

With 34 Illustrations and Map

WILLIAM C. HAYES

Life, Culture, and History of the Egyptians

32 Paintings

H. M. HERGET

Peaks and Parks of Western Canada

11 Illustrations

Rural Britain Carries On

With 37 Illustrations

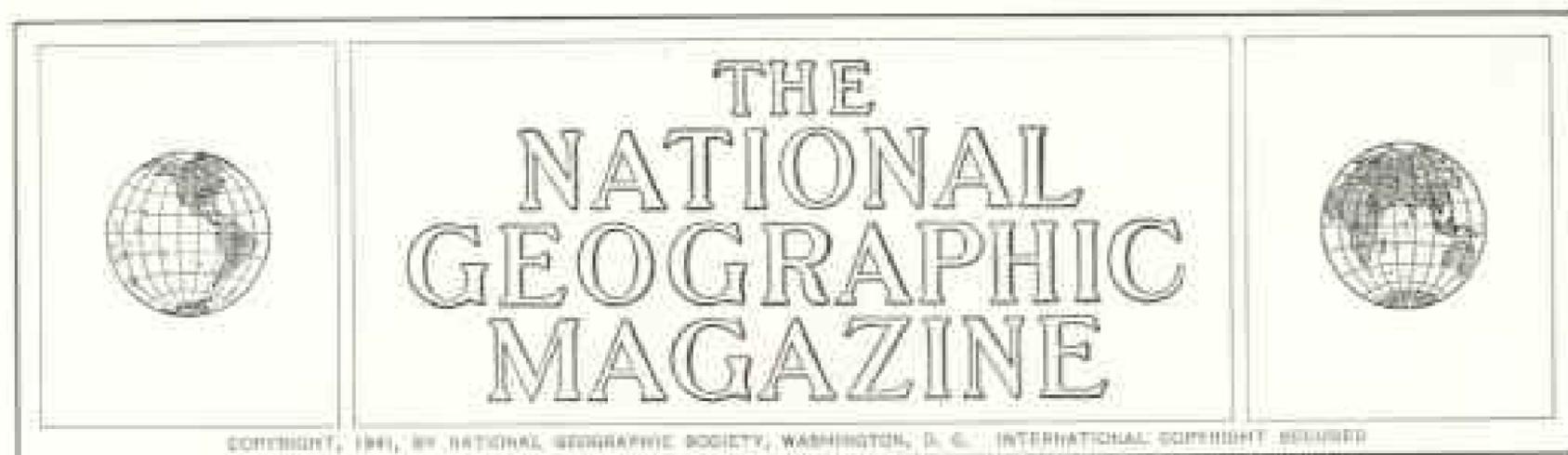
HARVEY KLEMMER

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Daily Life in Ancient Egypt

BY WILLIAM C. HAYES

Department of Egyptian Art, the Metropolitan Museum of Art, New York

With 32 Paintings Illustrating the Life, Culture, and History of the Egyptians by H. M. Herget, in Cooperation with the Author

IN THE last century and a half millions of cubic yards of the soil of Egypt have been moved and sifted, thousands of its native population have worked their lifetimes in its multitude of "digs," and hundreds of ships have sailed from its harbors, laden with antiquities for the museums and private collections of the five continents.

Yet today "the old mine" shows not the slightest sign of being exhausted. The records of the last 20 years of excavation are brighter than those of any previous period in the annals of Egyptian exploration.

On November 4, 1922, one of the Earl of Carnarvon's workmen, under the direction of Howard Carter, uncovered in the Valley of the Tombs of the Kings at Thebes the uppermost of a flight of rock-cut steps leading down into the intact and fabulously rich tomb of King Tût-'ankh-Amûn.*

Eight years were required to clear the tomb of its magnificent contents. During this time as many as 400 persons a day—well-to-do Europeans and Americans—stood in line in the broiling heat of the royal valley for the privilege of peeping for two minutes into the half-empty sarcophagus chamber.

"King Tut" became a name familiar from Bering Strait to Timbuktu. To this day his much publicized "curse" is resurrected whenever one of the several thousand visitors to his tomb dies of old age or similarly suspicious causes.

Tût-'ankh-Amûn's treasures were still pouring out of his tomb when, in February, 1925, Dr. George A. Reisner, head of the Harvard-

Boston Museum expedition at El Giza (page 430), uncovered beside the Great Pyramid the tomb of the mother of its builder, Queen Hetep-heres, wife of the great Snefru, founder of the Fourth Dynasty (2680-2560 B. C., pages 433 and 443).

Though the queen's beautiful alabaster sarcophagus was empty, her gold-mounted carrying chair and her canopy, bed, armchair, and jewel caskets, covered with finely chased gold, must be classed among the handsomest objects the valley of the Nile has ever yielded.

Meanwhile, at Saqqâreh (Saqqâra), 20 miles south, Cecil M. Firth, working for the Egyptian government, had begun to clear the huge and amazing architectural complex surrounding the step pyramid of King Djoser of the Third Dynasty. Here the visitor, wandering about the enclosure of this earliest of free-standing stone structures, may see the graceful wood and reed architecture of primæval times immortalized in glistening white limestone (pages 420, 422, and 440).

Entering the subterranean passages of the pyramid itself, one is hemmed in by tile-covered walls of a gorgeous turquoise blue. From these passages in 1936 James E. Quibell, Mr.

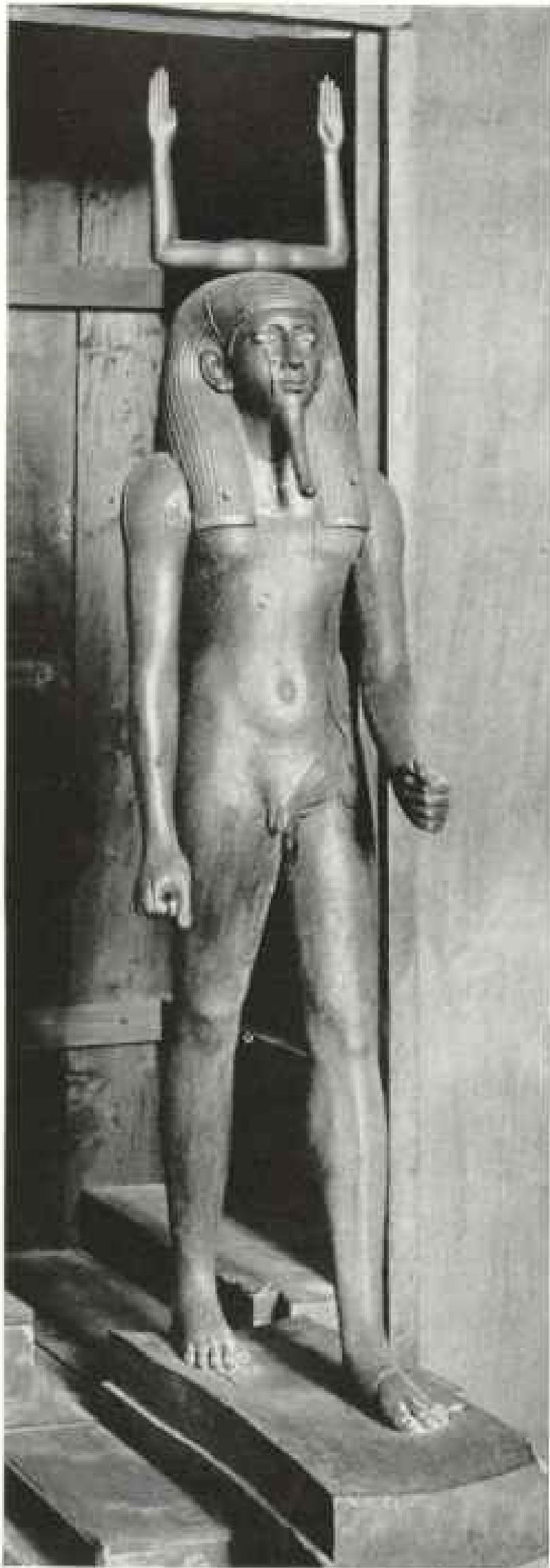
* Notes on Symbols and Diacritical Marks

' (example R[']) a guttural sound unknown to English (corresponds to Hebrew 'ayin, Arabic 'ain).

h (example hotep) emphatic h (corresponds to Arabic hâ).

k (example Saqqâreh) backward k; rather like our q in "queen" (corresponds to Hebrew qôph, Arabic kâf); hence the map spelling Saqqâra.

‡ (example maṣṣabeh) a thick t, halfway between sharp t and th, spoken with the tongue pressed against the back of the front teeth.



Metropolitan Museum of Art

Raised Arms Mean Ka, Spirit Double

They form a hieroglyph signifying the vital force the Egyptian believed was born as a counterpart with his body, lived with it, and accompanied it into the next world. This wooden statue of the *ka* of King Hor, co-regent of Amen-em-hêt III, was found in a pit tomb near the latter's pyramid at Dahshûr.

Firth's successor at Saqqâreh, extracted more than thirty thousand jars and bowls of alabaster and other fine stones—a small portion of the original contents of the plundered royal tomb.

For years the stupendous task of clearing and restoring the great temple of Amûn at El Karnak had been in progress, when in 1914 Monsieur Legrain of the Egyptian antiquities service began to investigate the internal filling of the temple's third huge pair of gateway towers. These towers, built under King Amen-hotpe III of the Eighteenth Dynasty, were found to be filled with hundreds of carved stone blocks from earlier structures.

In recent years Henri Chevrier, engineer of the antiquities service, has extracted from them the major parts of several magnificent buildings of the Middle Kingdom and early New Kingdom. The walls of these edifices are covered with yards of fine relief sculpture.

A few years ago the headlines told of a new Egyptian treasure found near Tôd, a little village in Upper Egypt. Here in the foundations of a little known temple Bisson de la Roque, of the Louvre, uncovered a set of copper caskets deposited four thousand years earlier by King Amen-em-hêt II of the Twelfth Dynasty. They contained Babylonian cylinder seals, silver cups, and ingots of gold, silver, and lead.

At Saqqâreh in 1930, Walter B. Emery, of the Egyptian government staff, began a truly epoch-making discovery—the enormous brick tombs of the kings and nobles of Egypt's First and Second historic Dynasties. From the chambers of these great structures Mr. Emery has already recovered more fine objects and more inscriptions of this little known period than had been found during the whole previous history of Egyptian excavation.

Latest News from Ancient Egypt

The most recent important news from Egypt comes from Tanis (modern Sâh el Hagar) in the Delta, where Professor Pierre Montet of the University of Strasbourg has run into a perfect nest of intact royal tombs of the Twenty-first and Twenty-second Dynasties, about a thousand years before Christ. Coming from these tombs, the solid silver coffin of King Sheshonk, who captured Jerusalem about 930 B. C.; the granite sarcophagus, gold mask, and gold vases of King Pa-sebka'nu I; and the gold statuettes of King Amen-em-opet have graced the picture sections of our newspapers within the last two years.

Readers of the Bible—First Kings and Second Chronicles—know Sheshonk as Shishak. Less sensational, but quite as important are

the hitherto unknown prehistoric civilizations which have been brought to light in the west Delta, in the Fayyūm (Faiyūm), and in Middle Egypt by Professor Hermann Junker of Vienna, Miss Caton-Thompson of London, and Guy Brunton of the British School of Archaeology in Egypt.

For eight years, 1926 to 1933, an expedition, sent out by the University of Chicago, under the leadership of Messrs. Sandford and Arkell, has been scouring the desert regions adjacent to the Nile Valley, and has given us for the first time a clear picture of the Egyptians of the Old Stone Age and of the conditions amid which they lived.

These few highlights of the last two decades of exploration in Egypt explain why public interest in the ancient dwellers along the Nile is as keen today as it was when James Henry Breasted was gathering the material for his *History of Egypt*.

Those Who Drink of the Nile Are Egyptians

Fourteen thousand years ago the rains which for centuries had made lush the tableland of northeast Africa were failing, and as a result game was becoming scarce on the plains on either side of the Nile.

This failure of Nature's bounty forced the prehistoric ancestors of the Egyptians to desert the plains and descend into the lower valley and rapidly forming delta of the great river. There they abandoned of necessity the nomadic life of the hunter and settled down to farming.

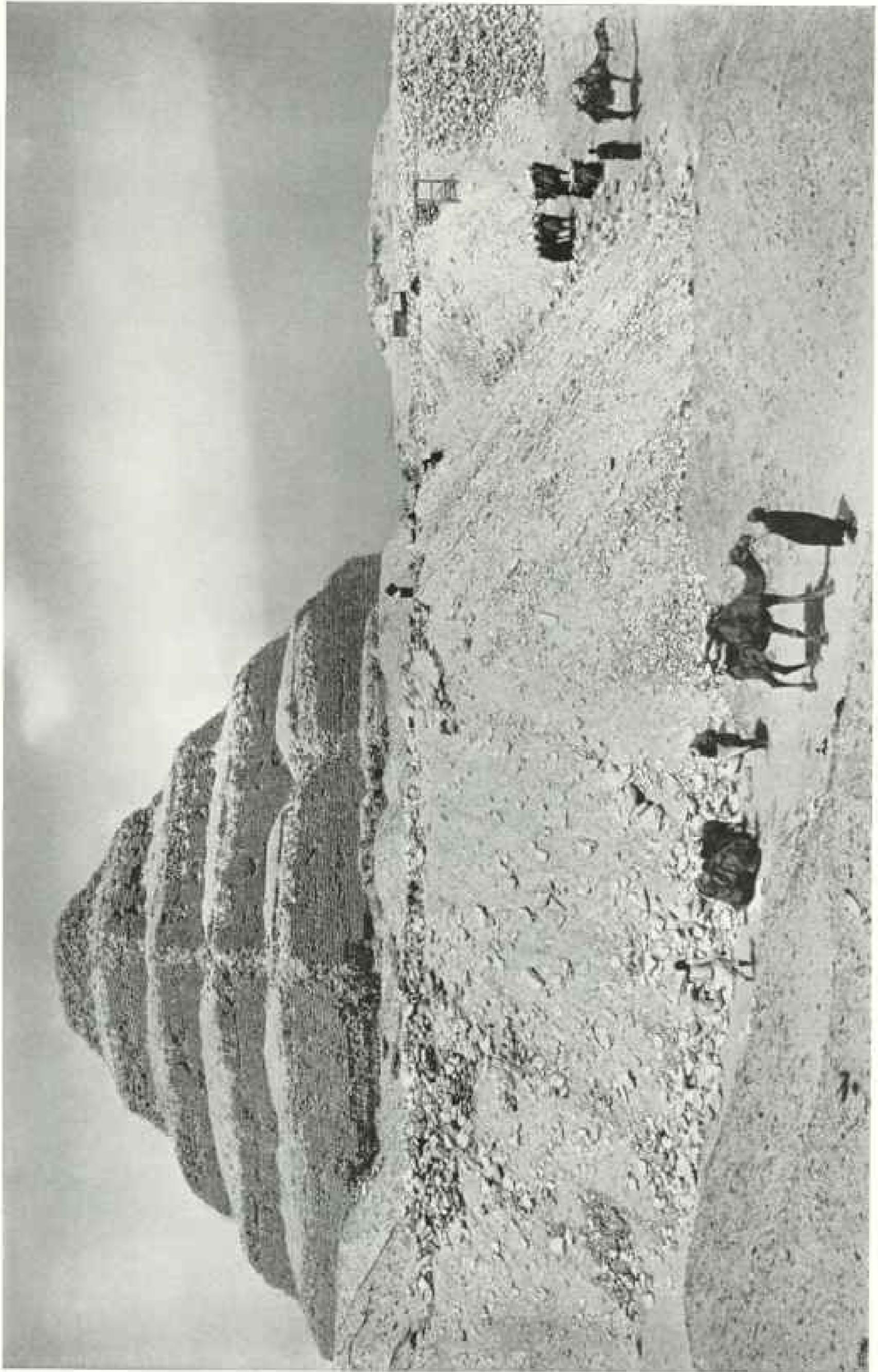
Ever since that time the distinctive national character of the Egyptian has been dominated by the 750 miles of broad, placid river which links the Nubian frontier with the Mediterranean Sea.



Boston Museum of Fine Arts

Men-kau-Rē's Queen Adds a Homely Touch to Royal Dignity

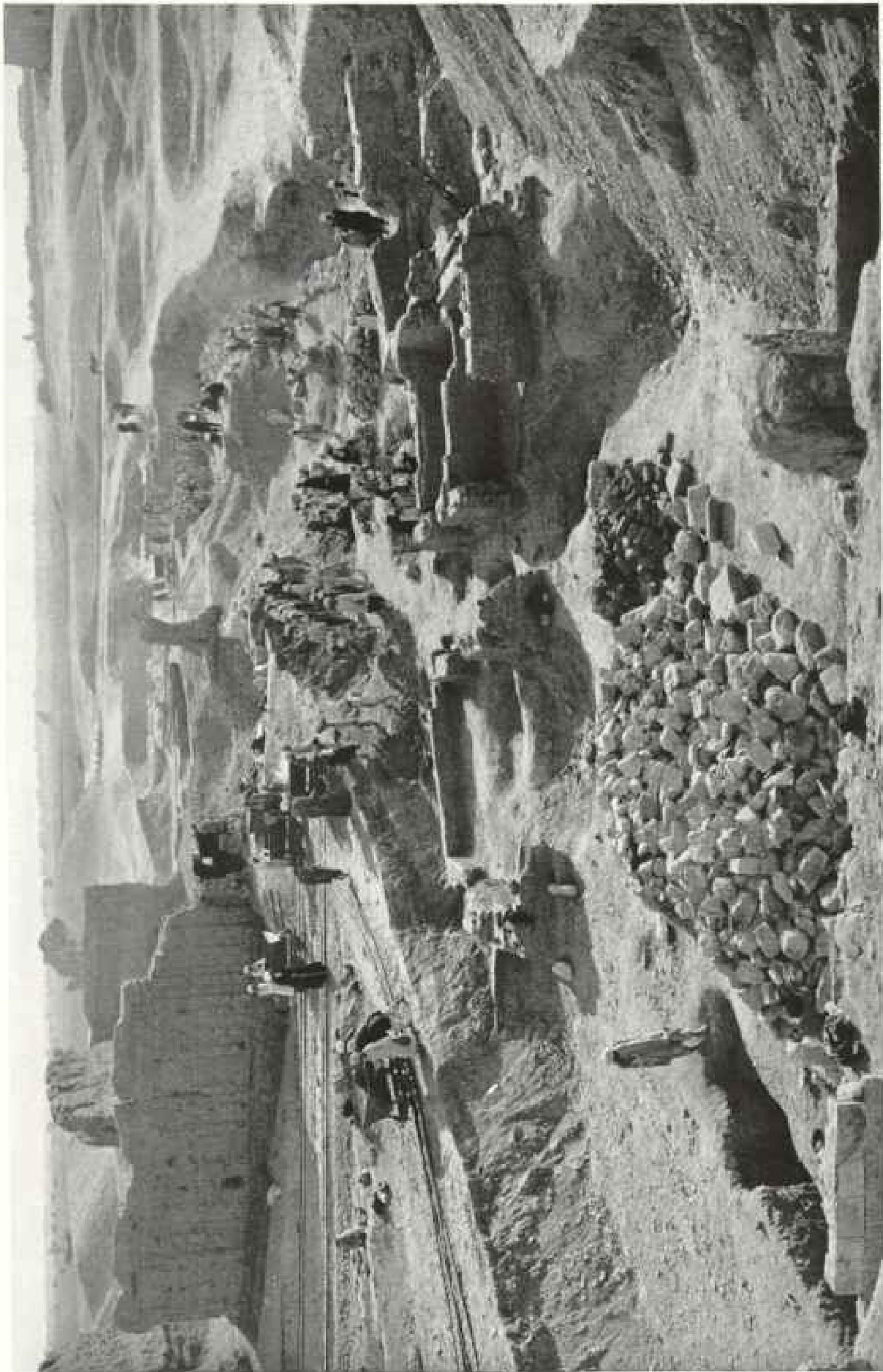
In the Museum of Fine Arts at Boston is this almost-life-size statue. It represents the builder of the Third Pyramid with his wife standing by his side. His tomb is the smallest of the three great pyramids at El Giza. Sun-dried brick was substituted for granite in his mortuary temple. His handsome limestone sarcophagus was lost by shipwreck.



Staff Photographer B. Anthony Stewart

This Is the Oldest Free-standing Stone Structure in the World

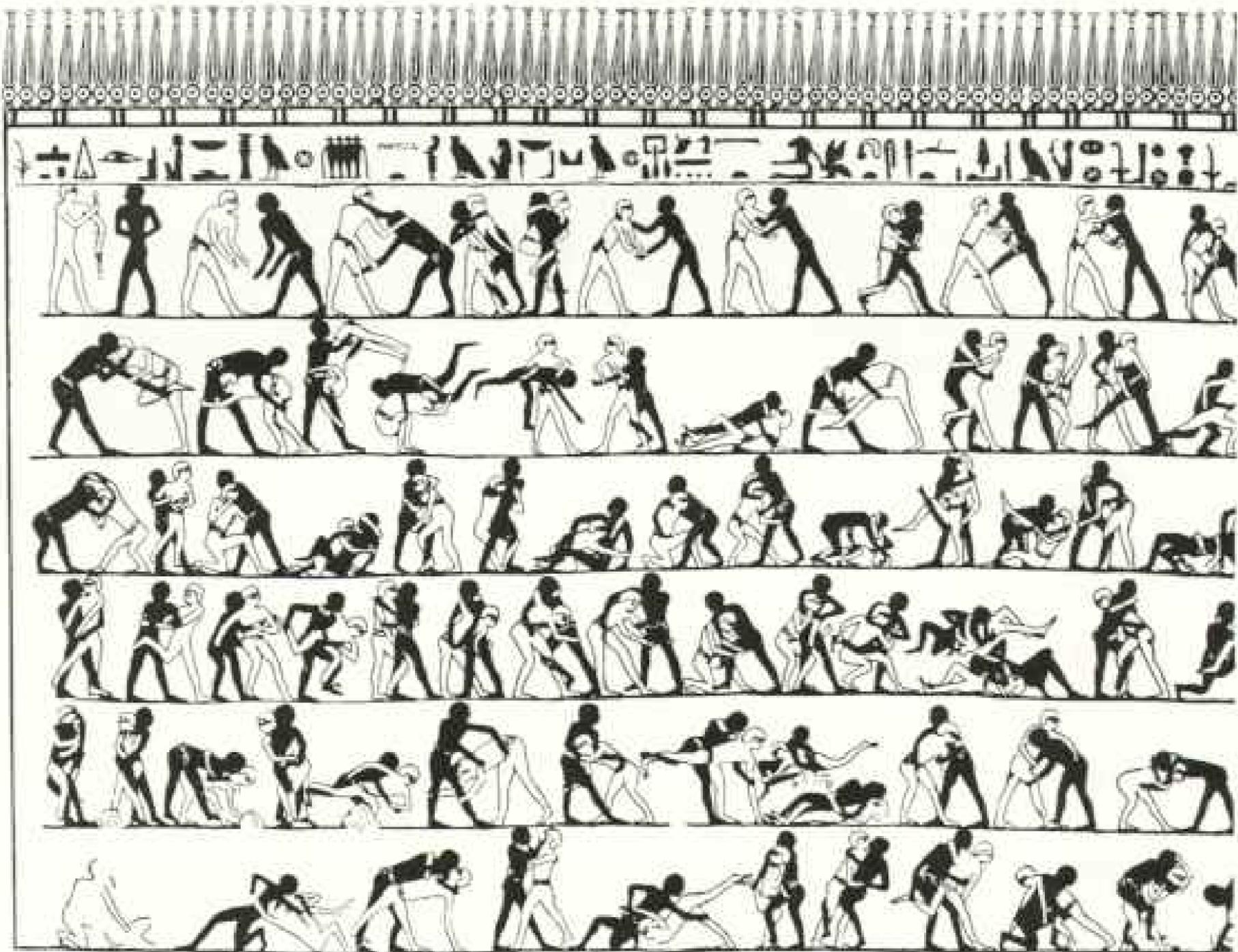
Across the Nile from Cairo's fashionable suburban spa at Helwán, this 200-foot step-pyramid rises above the pebble-dotted sands of Saqqárah. It started as a flat maştabáh tomb (page 447), and passed through a series of developments to pyramidal form, thus marking the transition from the simpler to the more elaborate styles.



Metropolitan Museum of Art

More Than a Thousand Years of History Are Embraced in This One View at Thebes

In the foreground are tombs of the Ptolemaic period (page 215), from the time of Alexander to the day of Antony and Cleopatra. The site is that of a Ramessid temple, dating from the 20th Dynasty. The excavations are those of the Metropolitan Museum of Art during its 1935-36 season.



Here Are "Motion Pictures" Nearly 4,000 Years Old

This wrestling mural, found in the funerary chapel of Baket at Beni Hasan, could almost be cut into strips and mounted in a Zoetrope, the device which first showed the persistence of shifting images in the human eye.

"Egypt," declared the ancient oracle of the god Amūn, "is the land watered by the Nile in its course; and those who dwell below the city Elephantine and drink that river's water are Egyptians."

Egypt's prehistory, revealed by excavations of the last 45 years, began before 13,000 B. C. This date marks a point late in the North African Palaeolithic, or Old Stone Age.

From a primitive hunting people, equipped with a single crude flint implement, the Palaeolithic fist-axe, the early Nile dwellers required more than five thousand years to settle down into permanent encampments and to develop bone, shell, and flint implements of refined and diversified types.

The dawn of the Neolithic period, or New Stone Age, about 5000 B. C., brought with it, in addition to new types of stone tools and weapons, the manufacture of pottery vessels, the erection of light wood, reed, and mud houses, the cultivation and storage of cereal grains, the domestication of useful animals,

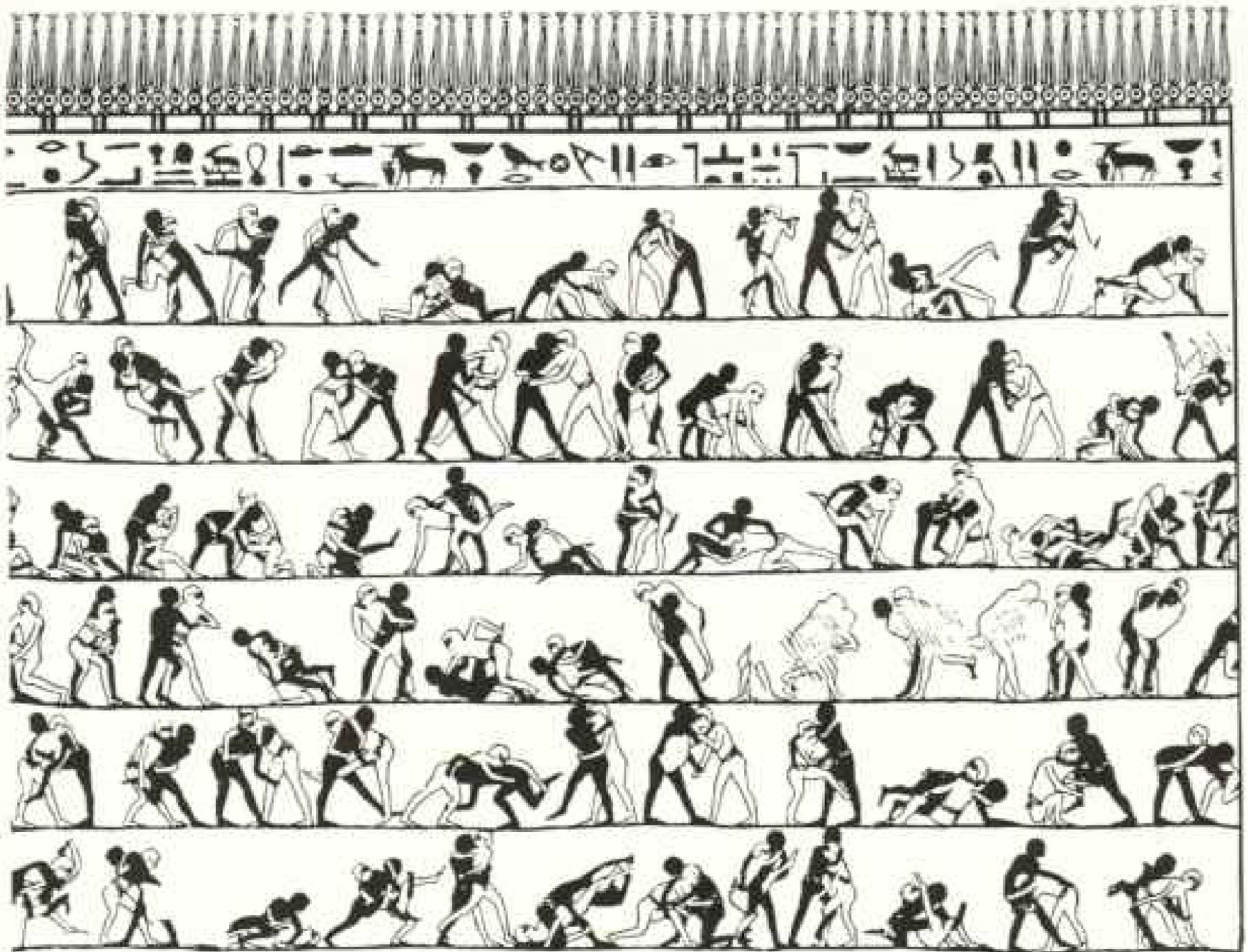
and the establishment of fixed burial customs and funerary beliefs.

From here on the tempo was increased. By 3800 B. C. the Egyptian was producing decorated pottery, stone vessels and mace heads, bone and ivory utensils of many varieties, slate palettes for grinding cosmetics, beads and other items of personal adornment, and crude statuettes modeled in clay or carved in bone or ivory. He had even mastered the art of spinning and weaving linen cloth.

In the succeeding six hundred years metal tools and weapons, heretofore very rare, began to come into widespread use.

It was during this last period that the people of Egypt, hitherto divided politically into some twoscore small, independent districts, or "nomes," ruled by "nomarchs," united themselves into two clearly defined states—the Kingdom of Upper Egypt (the Nile Valley) and the Kingdom of Lower Egypt (the Delta).

Cultural and political differences had always existed between the people of the Delta and



From "Real Harem" by N. de G. Davies

They Decorate Tomb Walls of the Nomarch of the Oryx Province

By contrasting body colors of the Egyptian athlete and his negro opponent the ancient sports artist made clear the holds, many of which are identical with those used today. A similar match is depicted in color on page 464.

their hardier, but more backward, neighbors to the south; and by 3200 B. C. (the time represented in our first plate, page 436) the two kingdoms were locked in a long and bitter war for the control of the country—a war which, with the ultimate victory of Upper Egypt, about 3000 B. C., led to the birth of Egypt as a united nation and the inauguration—under Menes, the first true Pharaoh—of its 27 centuries of dynastic history.

Egyptians Are Africans

Like their neighbors and kinsmen, the Libyans, the Bedjas, the Somali, and the Galla, the Egyptians are, and always have been, Africans, members of the African or "Hamitic" branch of the brown, "Mediterranean" race. This long-headed, lightly built, brunet people, medium of stature and sparse of beard, are found throughout the whole of the Mediterranean area.

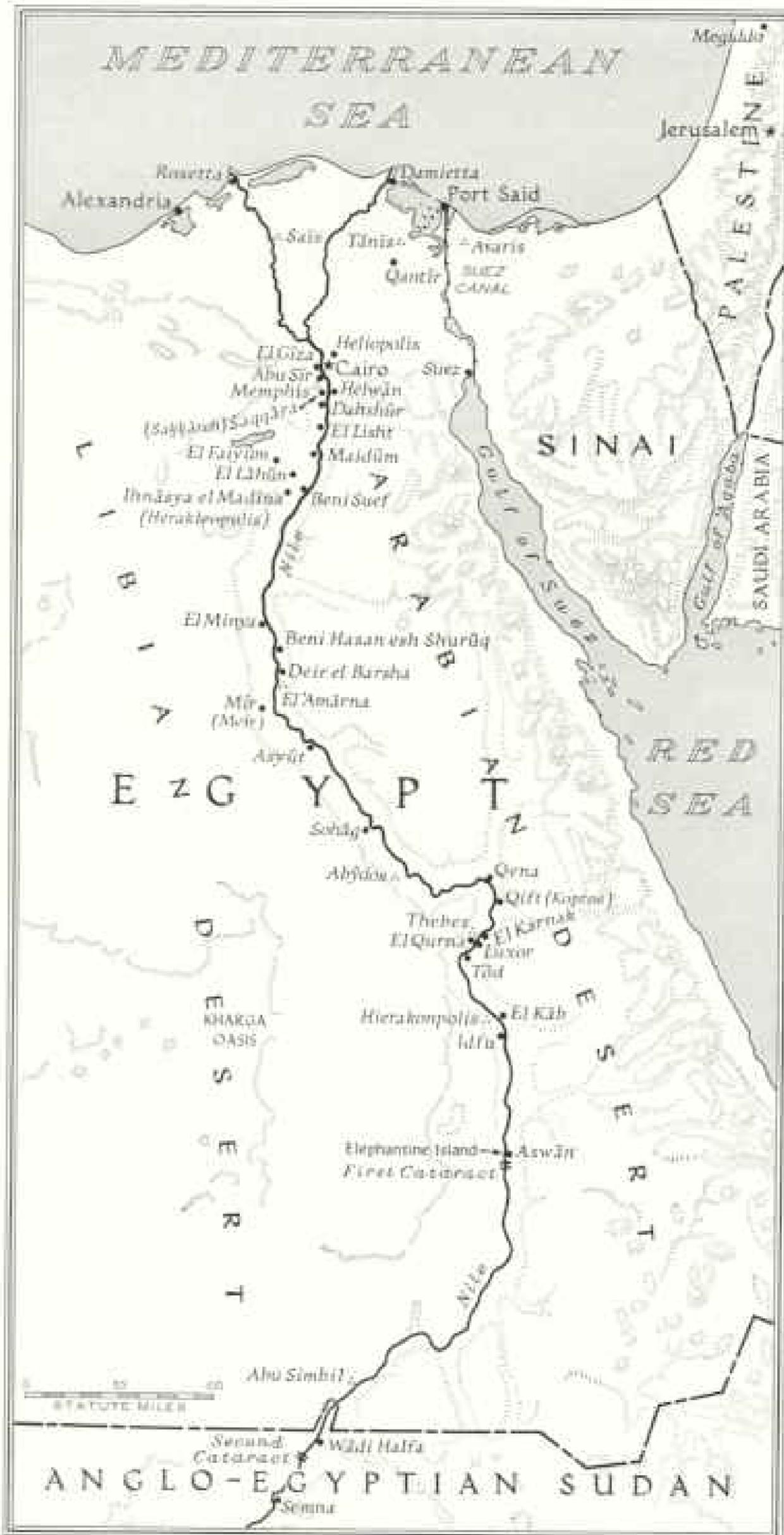
Toward the end of the Fourth Millennium B. C., just before the rise of the historic or

"dynastic" period, there began to filter into Egypt, apparently from Asia, a broad-headed, "Armenoid" people, who did much to improve the native Nilotic stock physically and intellectually, but failed to alter to any appreciable extent its fundamental character.

Since this most important of all the influxes of outsiders, Egypt has been invaded by the representatives of a score of different peoples and nations: negroes, Asiatics, and Aegeans, Assyrians, Persians, Greeks, Romans, Byzantines, Arabs, and Turks.

Yet the native type, entrenched in its long, narrow river valley, has held out so tenaciously against all intruders that the Egyptian of A. D. 1941 is to all intents and purposes the same man as the Egyptian of 1941 B. C.

Contrary to the picture drawn of him by insufficiently informed and sensational writers of the last two thousand years, the ancient Egyptian was, like his modern descendant, a simple, cheerful, and thoroughly likable fellow. Though intelligent and quick to learn,



World's Greatest Mine of History Is the Valley of the Nile

Relics from "digs" in this area recapitulate events of 13 millenniums. The country was divided into two clearly defined states, the Kingdom of Upper Egypt (the Nile Valley) and the Kingdom of Lower Egypt (the Delta).

he had a mind of the practical, unimaginative type.

He was a materialist, not given to deep speculative thought, and was unable either to evolve or to express a purely abstract idea. His profession and his natural talent for hard work made him perhaps the most industrious of all the peoples the earth has known.

Although he invented virtually nothing, the uses to which he applied the inventions of others permitted him to maintain a dominant position among the nations of the ancient world for more than three thousand consecutive years, and to achieve a civilization which in many respects has remained unequaled until modern times.

His outstanding practical asset was his amazing talent for organization, a talent exhibited primarily in the orderly and efficient marshaling of manpower and materials, and in the careful administration of the affairs of the home, the town, and the state.

The pyramids are the result of this talent—and not of the Egyptian's mechanical genius. Actually, his mechanical devices were very few and very crude, and remained so during the whole of his dynastic history. The dynastic Egyptian, for example, never knew the pulley or the block and tackle, and never developed them, although he employed ropes extensively.

The Egyptian's chief personal virtues have always been his essential gentleness; his devotion to family, friends, king, and gods; his tolerance; his utter lack of snobbishness; and his hearty sense of humor.

He has been, to be sure, at times illogical and inconsistent in his beliefs and thought processes, uninquisitive, ridiculously conservative, highly superstitious, frequently petty, and, when threatened by danger, likely to become panicky and vindictive and to indulge in outbursts of childish cruelty.

Ancient Egyptian Not Weird but Human

On the whole, however, his good qualities have outweighed his faults. If not the most brilliant, he was certainly the most human, the most understandable, and the most pleasant of the peoples of his time.

His greatest contribution to the world's culture was his art—the naïve and honest product of great technical skill used primarily to represent and record all that the Egyptian regarded as fine, interesting, or enjoyable in himself, his life, his deeds, his possessions, and his natural environment. The whole was governed and characterized by the sense of dignity, the charm, and the impeccable taste, which seem to have been inbred in the Nilotic artist.

The social and political organization of ancient Egypt presented something of a paradox. Outwardly an absolute, hereditary monarchy ruled by a king, who even during his lifetime was regarded as a god, it was actually a country in which personal merit and personal ability, almost unaided, could determine a man's social and political status.



Metropolitan Museum of Art

To Modern Egyptian Diggers This Resembled Their Mayor

In 1860, when Auguste Mariette was combing Egypt for specimens for his new museum, archeology was largely treasure-hunting, and this superb wooden statue was a rich prize. It was recognized as a portrait figure of Ka Aper, a priest-reader, of the VIIth Dynasty, 2560-2420 B. C. (page 451). When the quartz eyes, set in copper lids, appeared from the earth, the workers cried "Sheikh el Beled" (Chief of the Village) and thus the statue is popularly known today.

Family in the modern social sense counted for little or nothing. Only during certain limited periods was there a true hereditary aristocracy.

Men born peasants could and frequently did raise themselves by their own efforts to the highest offices in the land, and on several occasions to the kingship itself.

Though intensely devout, the ancient Egyptian had neither the mental nor the spiritual equipment necessary to the creation or even the adaptation of a great religion.

An analysis of the Egyptian religion shows it consisted of at least four unrelated cults



© International News

Queen Farida Bows to Her National Anthem

With a thin veil framing, but not hiding, her face, Egypt's beautiful young queen is here pictured attending a police fête in Cairo. Her ancestry is partly Egyptian, but her husband, King Faruk, is of Albanian descent in the line of Mohammed Ali.

or phases, no one of which ever passed beyond what we should regard as a primitive stage.

The Egyptian's conceptions of resurrection and life after death were as many and as various as his religious cults and their accompanying mythologies. He had, however, two all-important convictions: (1) that he was immortal and that not only his spirit but his whole ego would continue to live on after his mundane existence was ended; and (2) that his life beyond the grave was to be a somewhat exalted version of his life on earth.

The first conviction, eliminating, as it did, much of his natural fear of death, combined with his innately sunny disposition to make him one of the most cheerful peoples in the world's history.

The second led him to provide his spirit not only with a home in which to dwell but also with all the material possessions and surroundings which it had needed and loved during its earthly existence.

The line of great royal pyramids, stretching from Cairo some 60 miles up the Nile, is the most striking expression of this idea and at the same time a poignant witness to the futility of it all. Built to preserve the dead, at enormous cost to the living, these tombs have without exception fallen prey to the ever-present grave robber.

Both the pharaohs and their treasures have been dragged from their resting places and only the empty stone monuments remain as memorials to man's belief. To this simple faith, however, the museums of the world owe their Egyptian treasures.

The dry climate of the valley of the Nile made Egypt a perfect storehouse for preserving the innumerable records which its people loved to collect and put away. Filmy linen, delicate furniture of reed and wood, textiles, papyrus, paintings, which would have perished in the damp climates of Greece and Italy, have survived 3,000 to 4,000 years in Egypt, with texture and color undimmed by time.

The language of the ancient Egyptians is related not only to those of the other Hamitic peoples of North and East Africa but also to the Semitic languages of western Asia. Its principal characteristics are its realism and nicety of expression, its large and very rich vocabulary, its insistence on strict word order, and its tendency to be formal, rigid, and conventional.

Writing first appears in Egypt at the time of the first historic dynasty, about 3000 B. C.

Already at a fairly advanced stage when we first encounter it, the written language developed rapidly during the Early Dynastic Period, and by the Old Kingdom had achieved



© International News

King Faruk of Egypt Leaves a Mosque at Woking, near London

His visit to this center of Oriental cultures has brought out a cosmopolitan crowd, including two dark-eyed Parsi women in their graceful saris. Inside the doorway is the pointed turban of a visitor from India.

the form to which it adhered, with surprisingly few changes, for the ensuing two and a half millenniums (page 483).

Carved or painted in monumental hieroglyphs or written cursively in the "hieratic" script, it was the ancient Egyptian's most highly valued asset. It was used constantly, extensively, and for every conceivable purpose: tomb and temple inscriptions, funerary, religious, and mythological texts, literary compositions, stories and songs, mathematical exercises and medical prescriptions, didactic treatises, letters, deeds, wills, work reports, court records, inventories, lists, memoranda, and labels of all kinds.

They Know Their Calendar Was Wrong

Most of the picture signs with which this language was written were used also with straight phonetic value. When so employed, each stood for one or a group of the 24 consonantal and vocalic sounds in the language, the quality and number of the sounds represented depending on the individual sign. Vowels were not written. Hence a diversity of spelling Egyptian proper names in modern languages.

During the dynastic period the Egyptian dated events by the reigns and regnal years

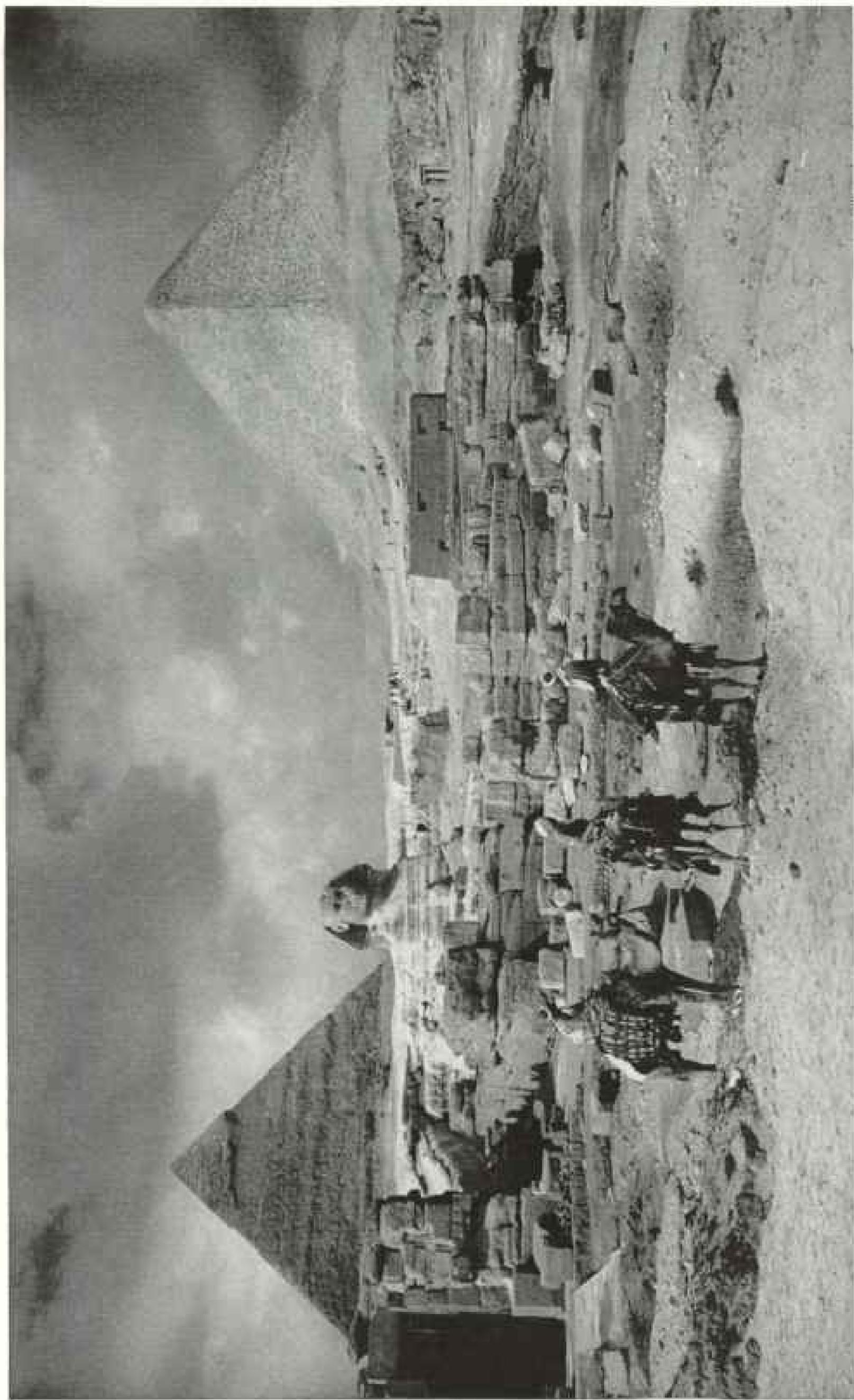
of his kings. He had, in addition, a civil year of 365 days—three seasons of four 30-day months each, with five intercalary days tacked on at the end to fill out what he conceived to be a true solar year.

This calendar, standardized about 2780 B. C., the ancient Egyptian maintained throughout the whole of his history. He was aware of the error resulting from his omission of the extra day every fourth year but was unable to correct it and apparently indifferent to it.

The Graeco-Egyptian historian, Manetho of Sebennytos (280 B. C.) grouped the historic kings of Egypt into 30 dynasties. His record seems to have been based on reliable sources, and is still employed as a convenient method of dating. The word *dynasty* means simply a family.

Our first painting (page 436) pictures the time shortly before the first historic dynasty, the so-called "Protodynastic Period" (3200-3000 B. C.).

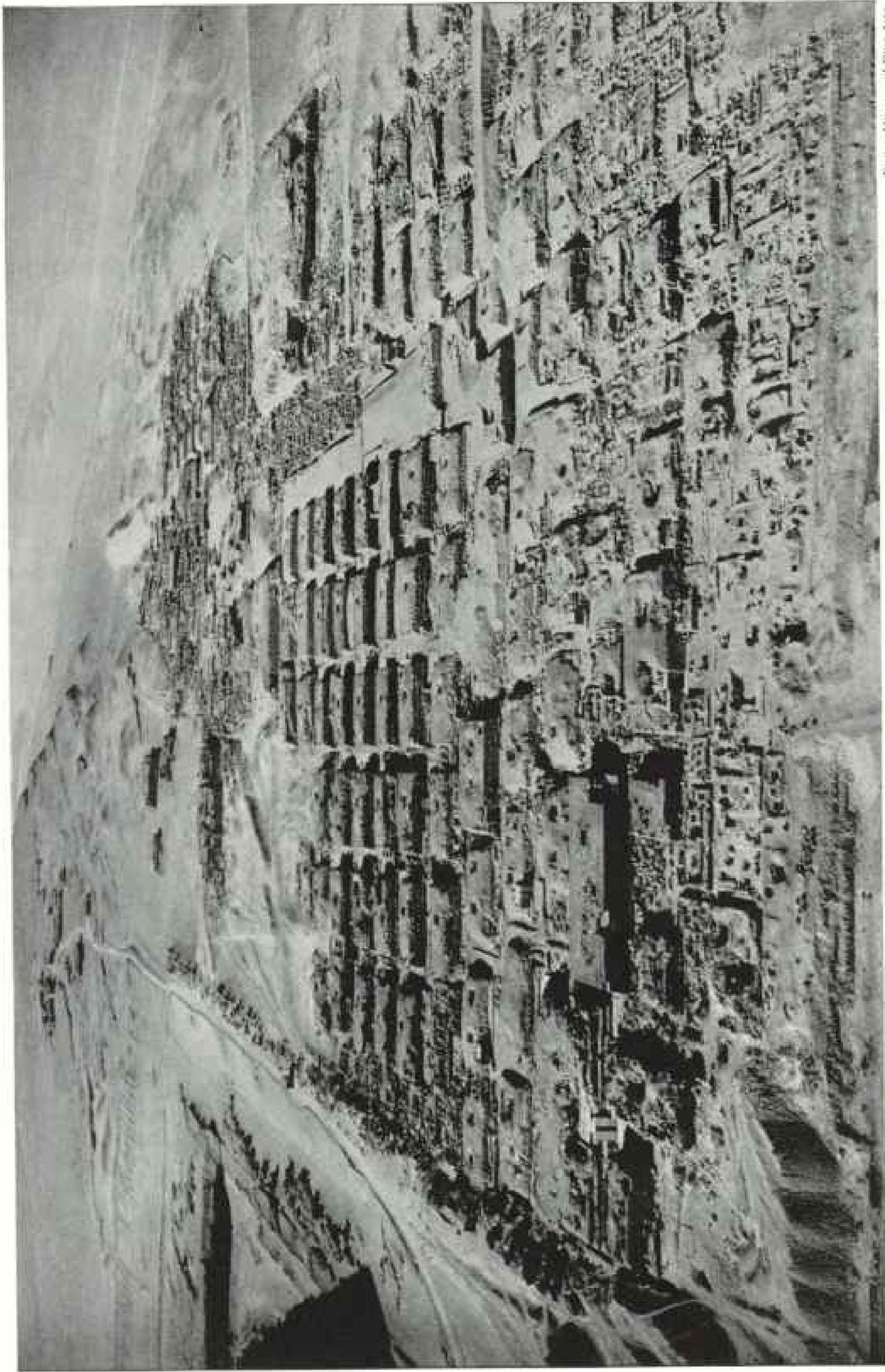
Succeeding paintings portray a number of reconstructed scenes and incidents from the 1st Dynasty (Early Dynastic Period, 3000-2780 B. C.), the IIIrd, IVth, Vth, and VIth Dynasties (Old Kingdom, 2780-2270 B. C.), and the XIth and XIIth Dynasties (Middle Kingdom, 2160-1788 B. C.).



Prof. Flinders Petrie

Near Man's Hugest Monuments a Silent Sphinx Stands Guard after Forty-five Centuries

At the right is the Great Pyramid of Khufu; at the left the Second Pyramid, built by the king Khar-ef-Rif. Carved from living rock in the shape of a lion with the head of the king, the Sphinx looks down on stonework which has been freed repeatedly from sand drifts. To insure the safety of their bones and hence their grasp on eternal life, and to perpetuate their memories, the Pharaohs made the building of mighty pyramids Public Works Project Number One. Yet sacrilegious grave robbers soon emptied these vaults, and builders of Cairo found the casings of them handy quarries from which to obtain ready-cut stone.



British Museum of Fine Arts

Close-packed Mastabeh Tombs Are Seen from the Summit of the Great Pyramid

When the kings and queens began constructing pyramids, the nobles and lesser members of the royal families took over the older style of sepulture. These houses of the dead were laid out in rows to form streets like those of a village.



Metropolitan Museum of Art

About 1490 B.C. a Horse Was Given an Elaborate Burial

It was found near an XVIIIth Dynasty tomb wrapped in bandages and enclosed in a huge coffin. Soon after being introduced into Egypt by the Hyksos, these animals were considered so precious as to merit the highest honors. This one, of Arab type, was interred with its saddle. Note girths on neck and shoulders.



Metropolitan Museum of Art

In a Chariot with Rawhide Tires, Priest Yuua Rode Out to Watch His Son-in-law's Stupendous Building Operations at Luxor

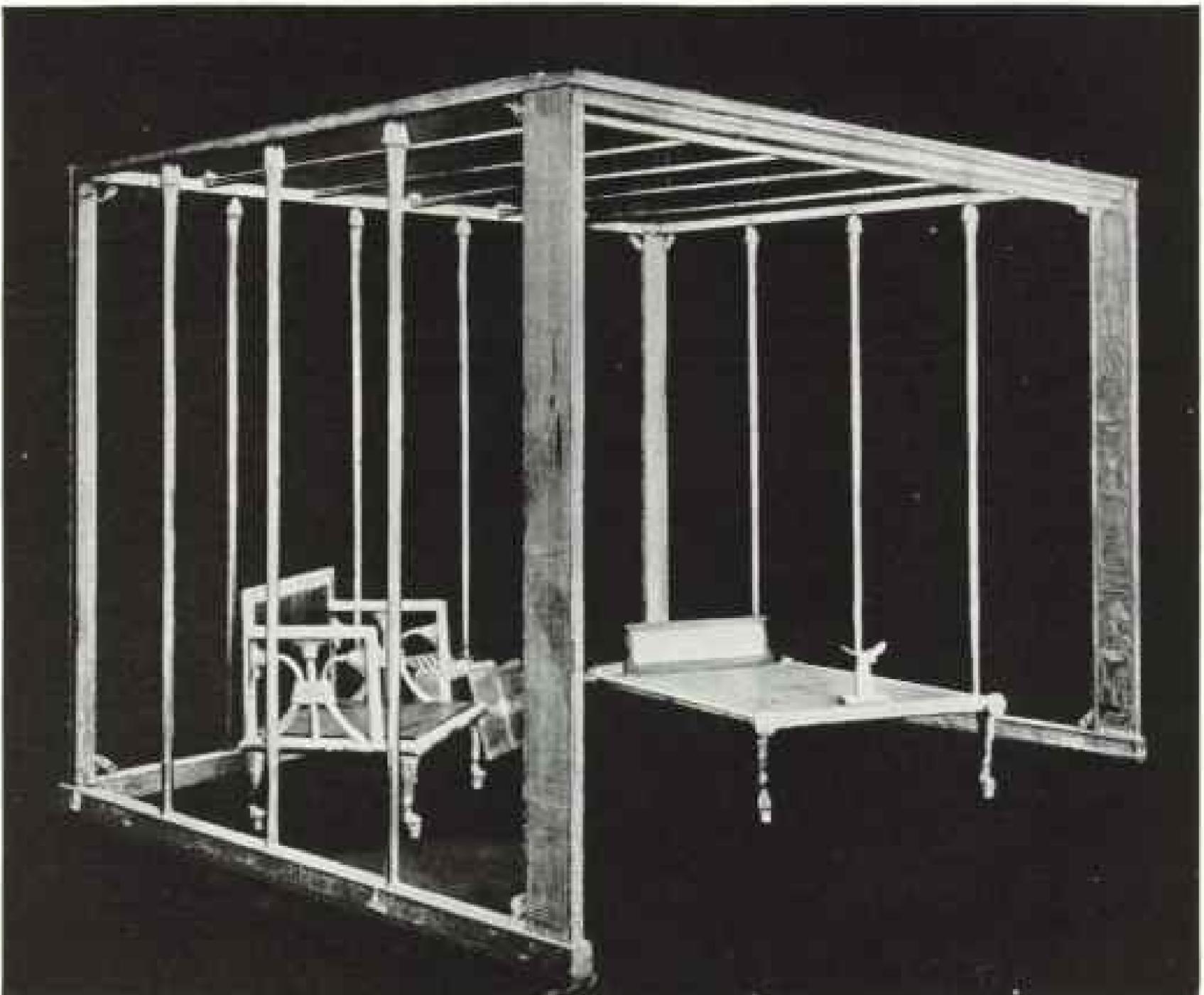
The horse had only recently been introduced into Egypt. Yet this light, graceful car with its body sheathed with embossed leather, is a masterpiece of refinement. Although the animal shown in the burial above was interred with its saddle, the Egyptians were not riding enthusiasts. They preferred to travel by carriage. The owner's daughter was the wife of Amen-hotpe III.



Metropolitan Museum of Art

Ancient Egyptians Enjoyed Mechanical Toys

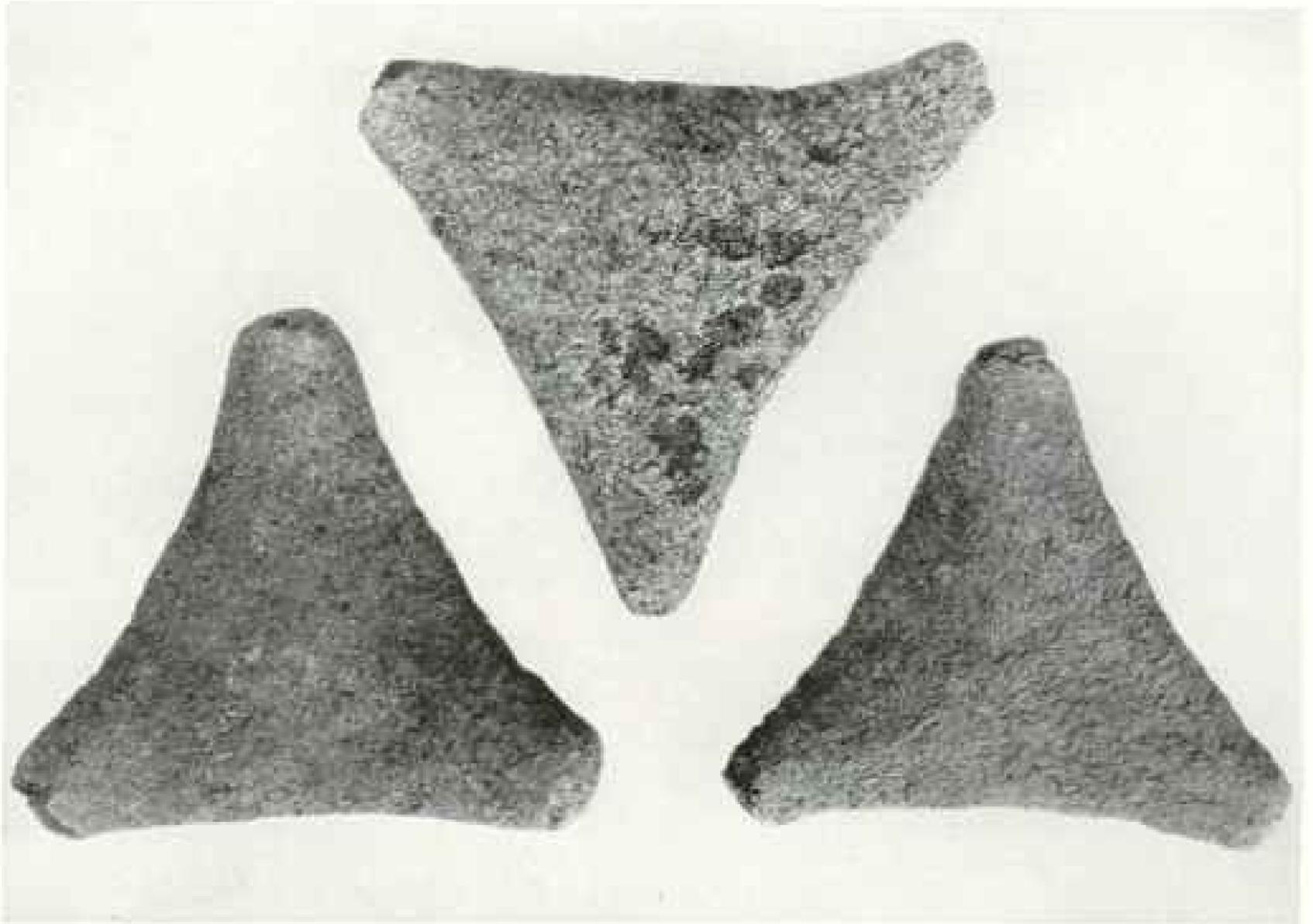
These ivory dancing dwarfs were spun by strings passing through the holes in the base. They were found in 1934 in a magtabeh northeast of the Pyramid of King Se'n-Wosret I at El Lisht.



Boston Museum of Fine Arts

While Khufu Built His Pyramid, His Mother Slept under This Gold-plated Canopy

The names of her royal husband, Snefru, decorate the gold-covered wooden uprights of Hetep-heres' bedroom. On an alabaster head rest padded with fine linen, she laid her head. Papyrus plants curve in graceful patterns on her armchair. The Harvard-Boston Museum Expedition found this fragile furniture east of the Great Pyramid at El Giza in 1925.



Metropolitan Museum of Art

These Loaves of Bread Are 3500 Years Old

They were found in "digs" at Thebes and are now in the Metropolitan Museum of Art, New York. Made of coarse barley flour with the husks left in, they resemble in texture some of the "health" bakery products of today. Three and a half millenniums have rendered them exceedingly dry and hard, but they are not petrified. Aside from age-long staleness, they remain exactly as they were when they were baked. There is no truth, however, in widely circulated stories of seeds of grain recovered from the pyramids sprouting and producing plants when placed in watered soil. Numerous experiments have proved that the germs are dead.



Metropolitan Museum of Art

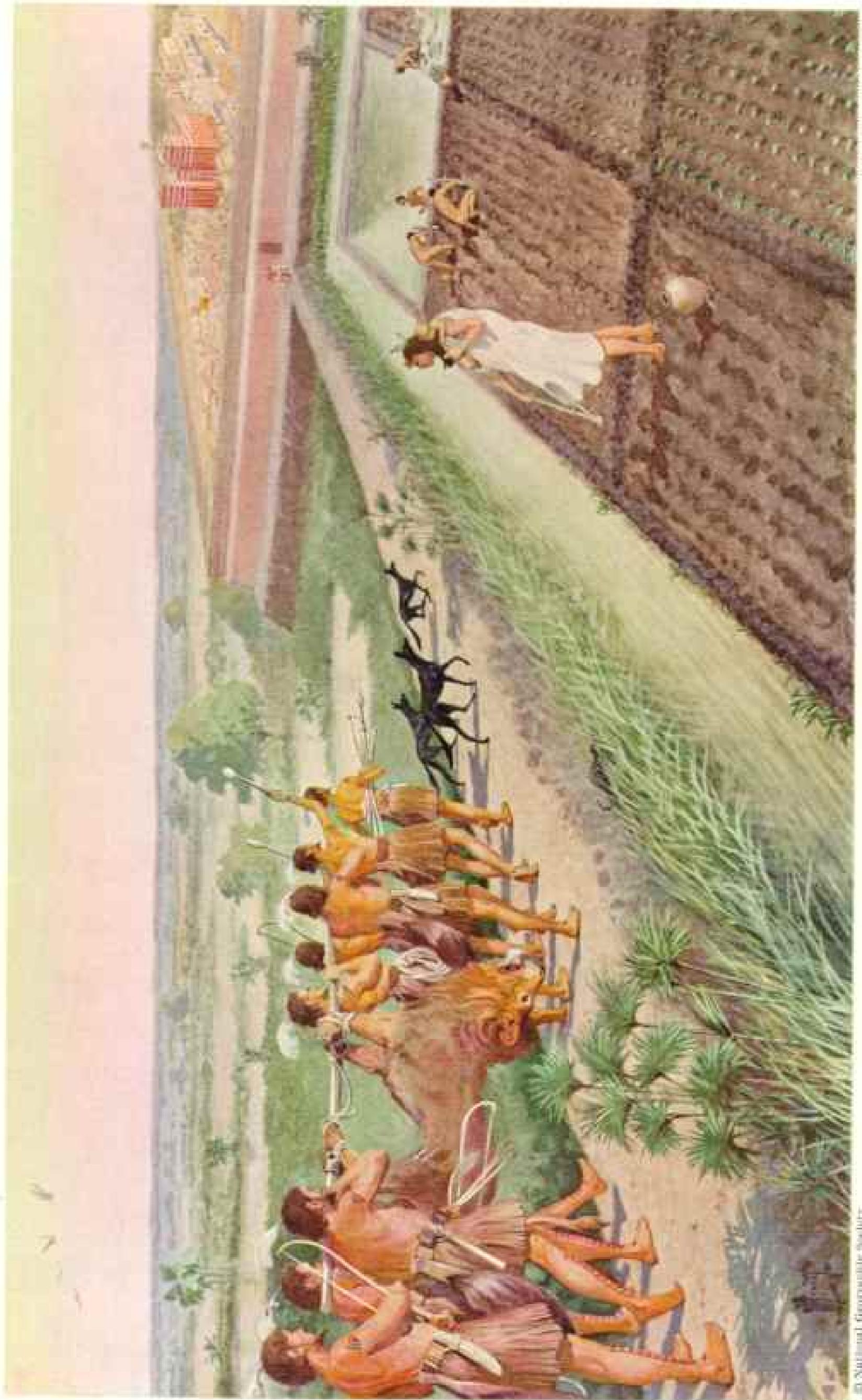
Three Pieces of This Ancient "Vanity" Are Treasured in Paris and London

Around the circular space in which cosmetics were prepared in prehistoric times, a spirited lion hunt has been going on for 5,000 years. The sculptured fragments were found by modern Egyptians and sold. One reached the Louvre, two the British Museum. In making the painting reproduced in color on page 436 the artist used for models the figures depicted on the ancient palette and thus obtained details which render the scene entirely accurate.



Bedouin Boosters Help the Visitor up the Great Pyramid's Jagged Slope

Many of the 2,300,000 blocks of this mightiest of monuments were quarried out and barged across the Nile from the Mokattam (Mûqattam) Hills. The ascent has been enjoyed or tolerated by generations of visitors. "Bakshish (tipping) is optional," says Baedeker, but the Arab helpers take up the option along with the climber.



© National Geographic Society

“ . . . In the Time of the Primeval Kings”

Painting by H. M. Bergel

Hunters of the prehistoric kingdom of Lower Egypt return to their town in the northwest Delta, bearing a slain lion. Their passing attracts the attention of a woman who has been working in an irrigated field and she gazes admiringly at them. (Protodynastic Period, 3200-1000 B. C.)

Life in Lower Egypt Before the Dawn of History

A band of protodynastic Egyptians, fresh from a successful lion hunt along the desert's edge, are returning to the town of Saïs, capital of an important nome, or district, in the northwest Delta.

The town, raised on its earth embankment above the partly inundated swampland which comprised most of the Kingdom of Lower Egypt, is surrounded by a stout mud wall, topped by a high reed parapet. In the center of the town stands the towered palace of the "nomarch" (prince of the district), and, behind this, the fenced enclosure and hooped-roofed shrine of the local goddess, Neit.

The standard of the goddess—a pair of arrows crossed behind an 8-shaped shield, the whole mounted on a tall pole—stands before the shrine. Emblem of the district as well as the divinity, the device surmounts a palace tower also.

Like the shrine, the houses of the town, ranged in regular streets around the central buildings, are of the typical Lower Egyptian form, with the curved roof and prominent corner posts, seen in stone buildings, coffins, and reliefs and paintings of the historic period. All the buildings are of light wood and wickerwork construction, their elaborately recessed door and window openings closed by strips of brightly colored grass matting.

In the cultivated field, water, dipped by hand from the irrigation canal, is being transferred in slow stages from one square compartment, or basin, to another by the breach-

ing of the small dikes which separate the squares; men are furrowing the rich black soil with wooden mattocks; and a woman with an infant on her back is pausing from similar toil to view the hunters and their quarry. She is clad in a woven linen mantle and wears in her hair a curved ivory comb and hairpin.

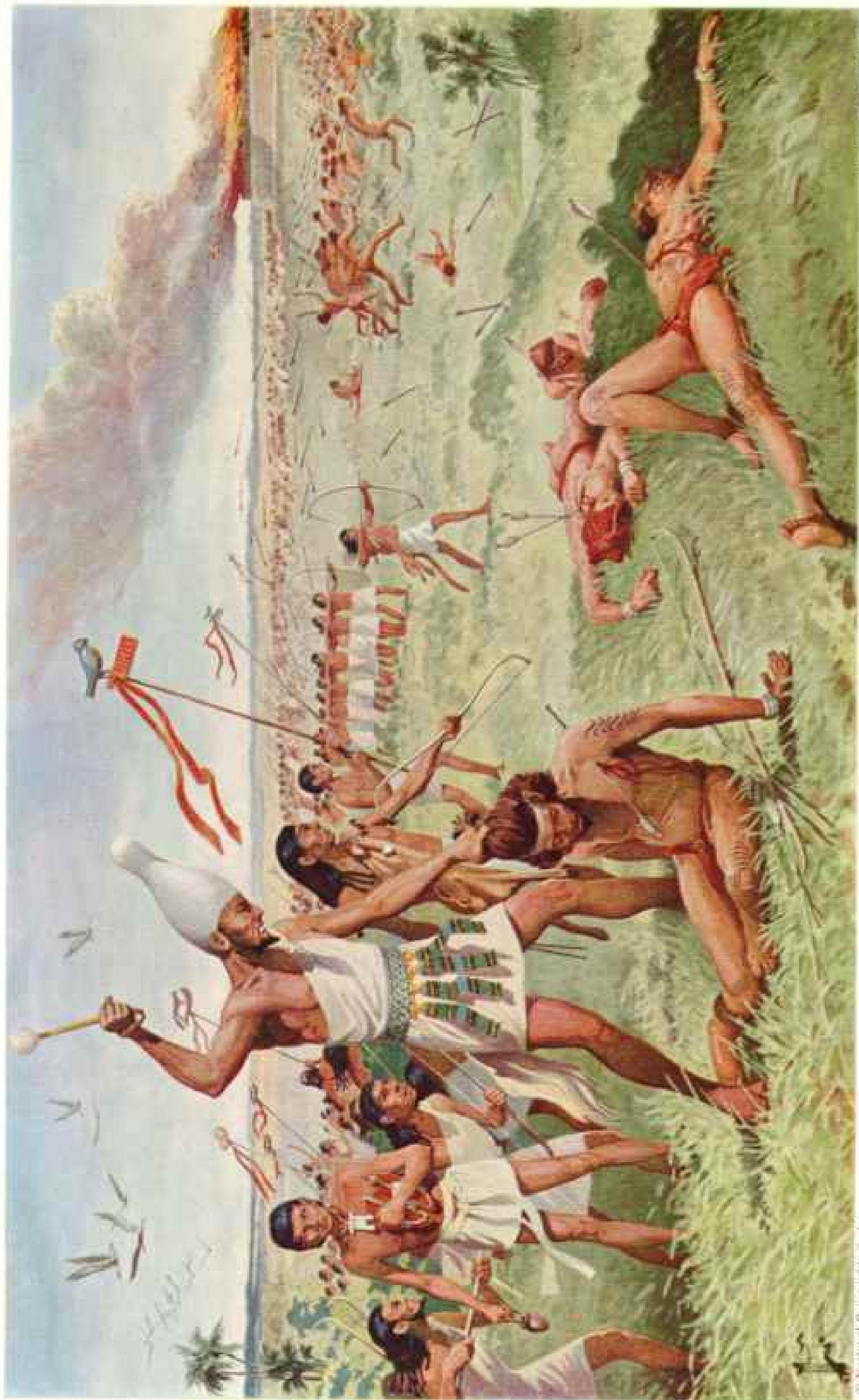
The hunters, like their neighbors and kinsmen, the Libyans, are tattooed on their arms and legs and wear ostrich feathers stuck into their thick, wavy hair. The wolf tails, swinging from the backs of their short grass hunting kilts, were believed to endow them with the strength, fleetness, and ferocity of that animal. Their bows are of the long, recurved, African type, their arrows of reed with chisel-shaped, hard stone tips.

Their other weapons include the remarkably fine, curved flint knife produced at this period, the double axe, also of hard stone, the wooden throw-stick, or boomerang, the mace with the pear-shaped stone head, the flint-tipped lance, and the lasso of palm-fibre rope.

Their strange black dogs are of an extinct breed, the appearance of which is preserved to us in later representations of the animal of the god Anubis, the watchdog of the tomb.

In making this painting and those which follow, the artist has sought verisimilitude. With the aid of the author he has selected wherever possible and used as models authentic objects unearthed in the Egyptologists' "digs."

NOTE: The quoted caption accompanying each painting is in every case an excerpt from the writings of the ancient Egyptians themselves, as preserved either in their papyri or in the monumental inscriptions in their tombs and temples.



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Painting by W. M. Bennett

"A Smasher of Foreheads Is He . . . He Spares Not and There Is No Remnant"

The "Horus" Na'f, King of Upper Egypt, "mops up" in one of his most notable victories over the peoples of the Delta—victories which led to his complete conquest of Lower Egypt and his welding together of the Two Kingdoms into one united nation. (Beginning of the 1st. historic Dynasty, 3000 B. C.)

A King of Upper Egypt Conquers the Delta and Unites the Two Kingdoms

ABOUT 3000 B. C. the long war between the Two Kingdoms, or, as the Egyptians called them, "the Two Lands," was brought to an abrupt and permanent end. An Upper Egyptian king, whose official name as the earthly representative of the god Horus was *Na'r*, finally led the armies of the federated nomes of the south to a series of decisive victories over the north.

He invaded and subdued the whole of the Delta, and proclaimed himself "King of Upper and Lower Egypt," uniting the two parts of his country under one central rule and founding the long line of its prehistoric kings.

It is highly probable that this *Na'r*, whose personal name is unknown, is Egypt's great legendary hero, King Menes the Thinite, reputed founder of the 1st Dynasty.

In our plate we see *Na'r* and his Upper Egyptian army, already near the end of their successful campaign, routing in battle the hosts of the *Waf-shi*, a west Delta folk, apparently of considerable importance. The right of dispatching the wounded enemy chief has been reserved for the king himself, and his heavy mace, with its alabaster head and gold-plated handle, is about to descend on the skull of the helpless man.

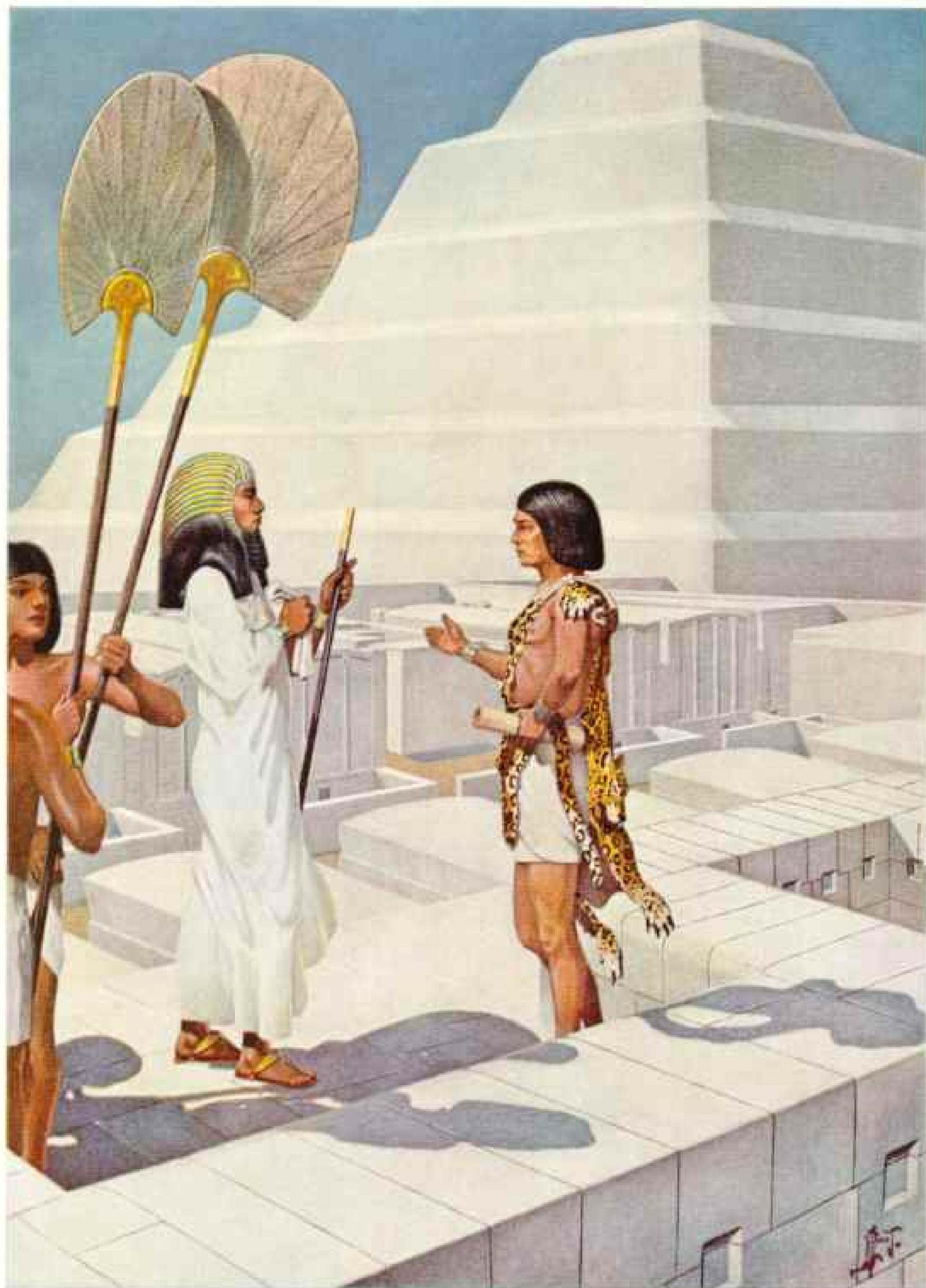
Na'r's short linen garment is girdled at the waist by an elaborate beadwork belt, supporting a bead sash, each

pendant of which is topped by the gold cow head of the goddess *Hat-Hor*. From the back of the belt hangs an animal's tail, from now on one of the regular attributes of Egyptian kingship. *Na'r* wears on his head the tall, white, helmet-like crown of Upper Egypt, which he is soon to unite with its counterpart, the red, wicker-work crown of Lower Egypt.

On the king's left is his vizier, or prime minister, clad in a panther skin, and behind him stands his orderly with his sandals and oil jar.

Outlined against the sky, above the companies of archers and spearmen, appear the standards of the more important nomes of Upper Egypt, among which we may recognize the hawks of Hierakonpolis and Idfu and the wolf of Asyût.

The more effectively to govern his newly subjugated northern domain King *Na'r* Menes moved his capital and residence from the south to a site a few miles above the apex of the Delta. There, according to ancient tradition, he founded the great city of "White Wall," more familiar to us under its Greek name, "Memphis." The hoary antiquity of the city of Memphis has recently been attested by the discovery nearby of a royal cemetery dating from the First Dynasty and containing, among others, the tomb of *Na'r*'s immediate successor, the Horus 'Aha.



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Painting by H. M. Herzog

"It Will Be Thy Counsel That Causeth the Work to Be Accomplished . . . My Majesty Desired"

King Djoser and his architect, the great I-m-hotep, survey the royal pyramid at Saqqârah (Saqqâra) from the east wall of its enclosure. (IIIrd Dynasty, reign of Djoser, 2780-2762 B. C.) The buildings in the court are replicas in stone of the primitive dwellings and shrine appearing on page 436.

King Djoser and the Wise I-em-hotep Usher in the Old Kingdom

DURING the reigns of the 18 kings of the 1st and 2nd Dynasties the development of the newly united nation was rapid. When, about 2780 B. C., Djoser, the Memphite, came to the throne as the first king of the 3rd Dynasty, the Egyptians already possessed the political and administrative organization, the material equipment, and the cultural background requisite to the inauguration of that great era which we know as the Old Kingdom.

It was Djoser's chief counselor, the sage I-em-hotep, who, by his grandiose achievements in architecture and the allied arts and sciences, reaped the fruits of the preceding centuries of development; and, in doing so, established the standards and conventions which from now on governed Egyptian life, culture, and art.

Though the king was evidently a strong and able ruler, his fame has been almost completely overshadowed by that of I-em-hotep, a man renowned from his own day to this as an architect, a physician, a priest, a magician, a writer, and a maker of proverbs. Twenty-five hundred years after his death "he had become a god of medicine, in whom the Greeks who called him Imouthes, recognized their own Asklepios."

I-em-hotep's outstanding accomplishment as an architect is the step pyramid and extensive funerary complex which he built for Djoser at Saqqāreh (Saqqāra) south of mod-

ern Cairo and near the ancient capital city of Memphis. The pyramid, the earliest free-standing stone structure known, towers 190 feet above the desert plateau and is surrounded on all four sides by a vast walled enclosure, containing an elaborate group of shrines, storehouses, altars, courts, gateways, and secondary tombs—a veritable city in itself, planned and executed as a single unit and built throughout of fine white limestone from the nearby Muqattam Hills.

These remarkable buildings, excavated in recent years by the Egyptian government's expedition at Saqqāreh, are replicas in stone of the light wood, reed, and brick structures of earlier times, their columns, roofs, cornices, and walls preserving every structural and ornamental detail of the primitive and traditional house and temple forms.

On page 440 we stand with the king and his architect on the east girdle wall at Saqqāreh and gaze across the court of the *heb sed*, or royal jubilee festival, at the pyramid (page 422).

The striped linen cover of Djoser's massive wig, is one of numerous henceforth traditional forms of headdress worn by the kings of Egypt. His artificial beard, another of the common insignia of kingship, derives from the smaller but genuine chin beards affected by the earliest Pharaohs (page 438). I-em-hotep wears the leopard-skin uniform proper to one of his many offices—that of priest.



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"Mother of the King of Upper and Lower Egypt, Follower of Horus, Guide of the Ruler, Favorite Lady"

The Dowager Queen "whose every word is done for her, daughter of the god of his body, Hetep-heres," pays a call on her son, King Khufu, builder of the Great Pyramid. These quotations are inscribed on the back of the queen's carrying chair, now in the Cairo Museum. (Vth Dynasty, reign of Khufu, 2656-2633 B. C.)

Painting by H. M. Street

The Builder of the Great Pyramid Receives a Visit from His Mother

THIS time is the early IVth Dynasty, about 2650 B. C.; the place, a corridor leading into the throne room, or audience hall, in the king's palace at El Giza.

On the throne dais at the rear of the hall sits the King of Upper and Lower Egypt, Khufu, the builder of the largest and most enduring tomb monument in history: a pyramid 767 feet at the base, 479 feet high, and containing 3,277,000 cubic yards of solid masonry—some 2,300,000 blocks of stone, each weighing on the average of two and a half tons.

Khufu, or, as the Greeks called him, Cheops, wears the Red Crown of Lower Egypt and is attended by his two fan-bearers and his master of ceremonies, the Overseer of the Audience Hall, seen advancing to meet the cortège.

The queen-mother, Hetep-heres, widow of the great Snefru, founder of the IVth Dynasty, is borne into the presence of her son in her gold-mounted carrying chair, raised high on the shoulders of four courtiers and followed by a group of fashionably dressed ladies of the royal harim. Her pet dwarf waddles along under the chair, a picture of licensed impudence—ancient Egyptian counterpart of a medieval European court jester.

The student of ancient Egypt will immediately recognize the composite quality of this picture. The queen's carry-

ing chair and silver anklets we know to have been the property of Hetep-heres: for they were found in February, 1925, by the Harvard-Boston Expedition in her tomb on the east side of the Great Pyramid, together with a quantity of other splendid items of her personal property—all now in the Egyptian Museum in Cairo.

The gold tiara which the queen wears, on the other hand, is borrowed from another IVth Dynasty woman, whose tomb was recently discovered at El Giza. Her wig is from the well-known and nearly contemporary statue of the Princess Nofret.

The falence "matting" tiles in the corridor and the doorway into the audience hall are taken from the tomb of King Djoser of the preceding dynasty. The diorite stand to the right of the doorway—now in the Metropolitan Museum in New York—belonged to Khufu's son, King Kha'ef-Ré (Chephren).

The palm columns in the hall (here of wood) are from the mortuary temple of King Sahu-Ré of the Vth Dynasty, the throne dais from a relief in the mortuary temple of Queen Néit of the VIth Dynasty. The types, clothing, coiffures, and jewelry of the figures have been faithfully copied from IVth and Vth Dynasty tomb reliefs.

The Egyptian Farmer—Winter Sowing in the Pyramid Age

THE receding waters of the yearly Nile flood have left the damp fields at El Giza ready for the planting of the winter crop of barley or wheat, and the steward of a large Old Kingdom estate has drawn the baskets of seed from the granary and rounded up his lord's serfs for the task of sowing. The steward himself may be seen in the middle distance, accompanied by the ever-present scribe, checking the distribution of the baskets of seed.

The sowers walk slowly across the muddy fields, turning to drop the seed as they go. The plows, drawn by teams of long-horned African cows, are used to turn the seed under, their shallow wooden shares being admirably suited to the purpose.

The heavy hooves of the draft animals are as important in this operation as are the plows themselves. Both are assisted in the task by the herd of goats, which bring up the rear of the procession, lured from in front by a handful of grain and driven from behind by the twisted rope whips of their herdsmen.

In the background appear, to the right, a temporary reed windbreak, used as a camp by the farmers during their weeks in the fields, and, to the left, a cluster of adobe houses and domed grain bins.

On the desert plateau beyond—remote as were their owners from the dirty, sweaty world in the foreground—rise the

pyramid tombs of three great kings of the IVth Dynasty, Khufu (or Cheops), Kha'ef-Ré, and Men-kau-Ré, father, son, and grandson.

Although the farming group is all drawn from a well-known Vth Dynasty tomb relief, it is characteristic of Egypt during most of its history, and, except for the garments of the men, might pass for a present-day scene. Certainly, the agricultural methods and equipment—notably the plow and the baskets—have changed very little in the last 4500 years.

The ancient farmer would feel at home in modern fields. The conservatism and lack of inventiveness of the ancient Egyptian is nowhere else so well illustrated as in his continued use of the crude agricultural implements and irrigation machinery of his remote ancestors. In view of the fact that farming (with the accompanying problem of artificial irrigation) was his principal occupation and livelihood, it is surprising to note that such essential aids to agriculture as the well-sweep, the water-wheel, the Archimedes screw, and the disk thresher did not come into use in Egypt until relatively late times and then only as importations from abroad.

The well-sweep is shown in the color plate on page 495; but the water-wheel—a Graeco-Roman importation—was unknown to the dynastic people of Egypt and is therefore not portrayed in the paintings accompanying this article.



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Painting by H. M. Hermit

"I Was One That Produced Barley and Loved the Grain God"

Peasant-farmers of the Old Kingdom sow seed in the fields near El Giza within sight of the three great pyramids. The Nile floods have receded, leaving the fertile soil ready for the planting of the crops which made Egypt a prosperous land. (Vth Dynasty, 2560-2470 B. C.)

Supplies of Food for a Resident of the City of the Dead—an Old Kingdom Maṣṭabeh Field Near Memphis

WHEN, early in the IIIrd Dynasty, the kings (and, subsequently, the queens) of Egypt adopted the pyramidal form for their tomb monuments, the earlier "maṣṭabeh" type was taken over by less important members of the royal family, nobles of the court, and well-to-do officials of the kingdom, remaining popular until the end of the Middle Kingdom.

The rectangular, flat-topped mass of masonry with steeply sloping sides is a direct development from the crude mound of sand or mud heaped over the prehistoric grave. The one or more pits to the subterranean burial chambers pass vertically down through the body of the maṣṭabeh, which is usually solid except for a small chapel, a smaller statue chamber, and one or two other tiny rooms built into its stone or brick core.

Like the homes of the living, these abodes of the dead were laid out in regular streets and form extensive "towns" grouped about the pyramids of the kings.

In the plate opposite there spreads out before us part of such a maṣṭabeh town. Several types of maṣṭabeh appear in the group, but the one in the center, with the two "false

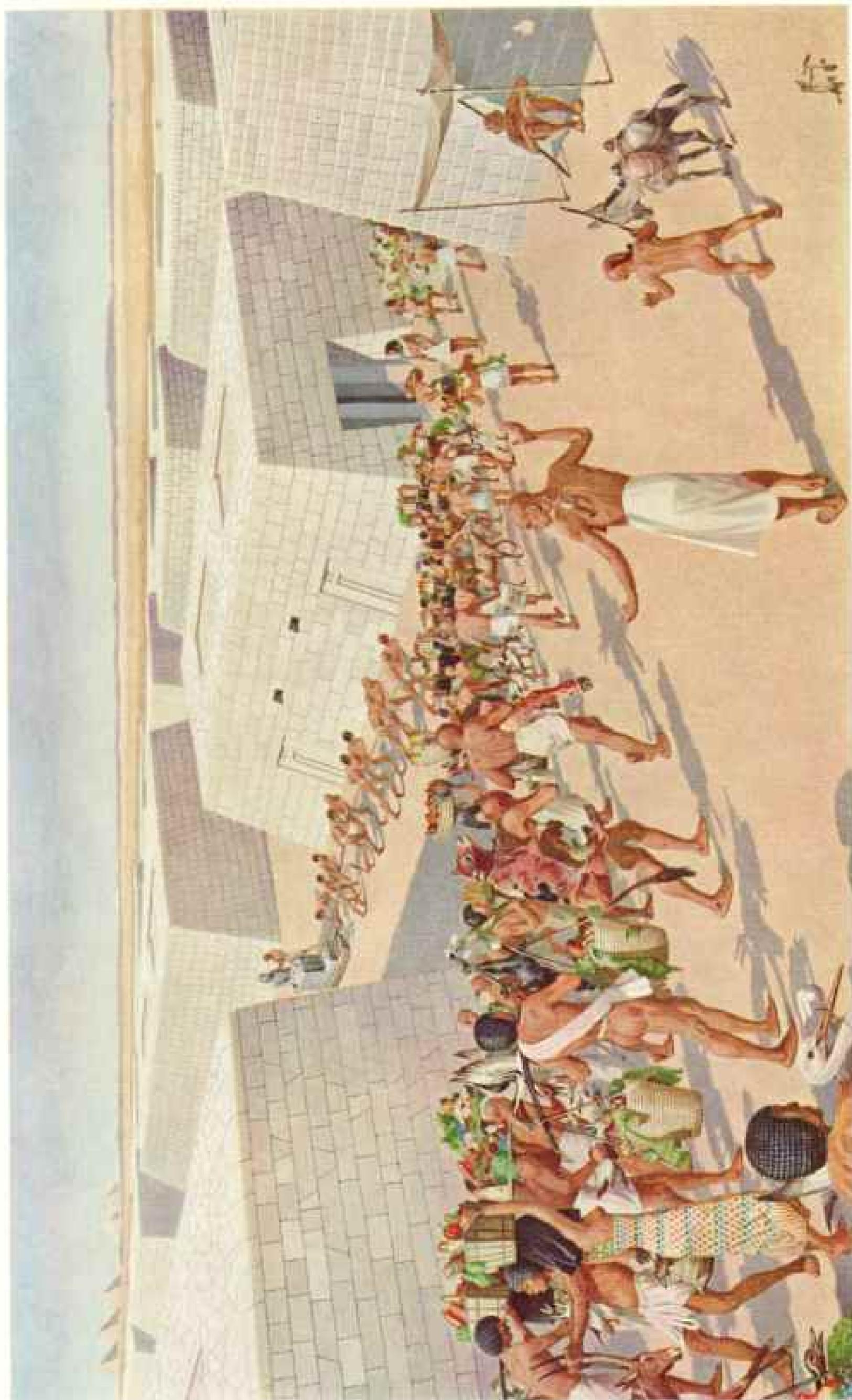
doors" in its east façade and the chapel portico in its northern end naturally draws our attention.

To this tomb comes a long and motley procession of servants of its deceased owner, bringing the "raw materials" for his periodical funerary banquet: beef, butchered, and on the hoof, game, fowls of every description, vegetables, fruits, bread, beer, wine, and flowers for garnishing the tables. A scribe, with his pen-case and water jar slung over one shoulder, herds the bearers along, and at the entrance to the maṣṭabeh chapel the mortuary priest receives and disposes of the offerings.

Along the street in front of the maṣṭabeh a funerary statue of the dead noble is being dragged upon a sledge over a track liberally "sloshed down" with water.

At the right of the scene a cemetery guard sleeps peacefully beneath his awning, while his small son brings up his daily supply of water on donkeyback.

In the distance stand the three Vth Dynasty pyramids at Abusir (Abū Sir) and, farther to the south, the pyramid of Snefru and that of Hani of the IIIrd Dynasty at Dahshūr.



© National Geographic Society

Painting by H. H. B. H.

... And Homage Done to This Excellent Noble's Lordly Soul, Now That He Is a God That Liveth Forever, Magnified in the West"
 Food offerings are here brought to a "mastabeh" tomb in the Memphite necropolis. This was a scene often enacted in ancient Egypt. The people believed that after death they would continue to use and enjoy all the comforts they had known in life. (Xth Dynasty, 2560-2430 B. C.)

Netting Wildfowl in the Marshes

FOWLING with the ancient Egyptians was both a sport and a means of livelihood, entered into with equal zest by the rich man out for a few hours' amusement, by the peasant in search of a succulent meal, and by the professional fowler, whose whole time was devoted to supplying the larders and stocking the poultry yards of his employers or clients.

Small land birds were caught in little spring traps of ingenious design; but the chief victims of this combined pastime and business were the wild goose, the pintail duck, and the widgeon, which during the migratory seasons swarmed over the pools and waterways of Egypt in apparently countless thousands.

Of the several devices used for catching these birds alive one of the most common and certainly the most spectacular was the large "clap-net" of the type shown in our painting. It appears to have been operated somewhat on this order:

A small pool, known to be frequented by wildfowl, having been selected and baited, the two halves of the net were spread out flat on either side of it, their inner edges "hinged" on staked cords, their outer edges provided with securely anchored draw-ropes, as shown.

The five fowlers manning the draw-rope squatted low in the tall grass of the marsh, leaving only the look-out, his

cranium camouflaged by a cap shaped to resemble a duck's head, peering over the top of his blind. When enough birds had alighted on the pool to satisfy the watcher that a good catch would be made, this man sprang up suddenly, throwing his arms wide and spreading his white sash across the back of his shoulders.

His companions, taking the signal, straightened up and, with a mighty heave which landed them all on their backs, swung the wings of the net up, over, and down on the already rising birds, flattening them against the surface of the pool and snaring many in the meshes of the trap.

At this point the small boys, waiting in the background with the empty crates, went into action and captured a dozen or so live ducks for the roasting spit or the poultry farm. The clap-net is frequently represented in tomb reliefs and paintings, especially those of the Old Kingdom. Because of the often puzzling conventions of drawing used by the Egyptian artists, the exact form and the exact method of manipulation of the net has presented something of a problem to the modern student. The reconstruction shown is one of the several accepted ones. It is, however, not unlikely that the netting extended, in triangles below the draw-ropes, beyond the limits of the rectangular frames.



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"It Is Good, However, When the Net Is Drawn and the Birds Are Made Fast"

Fowling is a favorite pastime of the ancient Egyptians. The painting shows a fowler operating a clap-net in the marshes near Abusir (Abu Sir). The flora of this characteristic Egyptian swampland includes clumps of palm trees; long swamp rushes, the tall papyrus, and the Egyptian lotus, or water lily. In the left background appears the great solar obelisk and sun temple built by King Ne-Woser-Ré of the Vth Dynasty. (2515-2486 B. C.)

Painting by H. M. Dutou

The Egyptian Scribe and His Equipment

THE career of "scribe" in ancient Egypt was as exacting in its requirements as it was honorable and profitable in its rewards. A young man fortunate enough to have passed through the great school of scribes at Memphis or, later, at Thebes was expected not only to be able to read, write, and draw with a skill approaching perfection but also to have a thorough knowledge of the language, literature, and history of his country.

Furthermore he must be well versed in mathematics, bookkeeping, law, management and maintenance of personnel, general administrative procedure, and even such subjects as mechanics, surveying, and architectural design.

Once a man had qualified as a scribe, he automatically became a member of the educated official class. This status exempted him from menial labor of any sort, and he could rise through a series of recognized stages to the very highest offices in the land.

The scribe of page 451, seated with his fellows in the chancellery of a great estate of the Vth Dynasty, is engaged in making an inventory of his lord's linen supply. He is assisted in the task by a fat under-treasurer, who is reading off to him the distinguishing marks written on a corner of each sheet.

The writer sits cross-legged, making the tightly stretched front of his linen kilt serve as a desk. He writes from right to left in a fine "hieratic" hand, using a slender brush composed of a reed with a carefully frayed and trimmed tip.

His excellent paper is made of narrow strips of the pith of the papyrus reed, crossed in two directions,

pressed together, and subsequently burnished. His writing pigments—black and red—are contained in the two bowls of an alabaster palette, or ink-stand, which may be seen lying on the floor by his right knee.

To the ring on the end of the palette is attached a pointed piece of rag or other substance, which serves as an eraser. Next to this is the hard stone slab and grinder for pulverizing the pigment.

The scribe's bronze basin, containing the water for mixing his pigments, rests on the leather trunk, in which he keeps his rolls of fresh papyrus. The small inscribed cylinder, suspended from his neck, bears his master's name, and is used for sealing documents, cases of goods, and other items pertaining to the estate.

Linen cloth, as we have seen, was woven in Egypt from remote prehistoric times. Usually of excellent quality, it varied in texture from a coarse burlap-like cloth to the finest, gossamer cambric. Ordinarily the cloth was woven in long sheets, or bolts, finished at one end with a long fringe, and having a selvage edge and short selvage fringe along the sides.

In addition to weavers' marks, woven into the fabric, the sheets were often marked at one corner with a short ink inscription, giving the name of the individual, estate, or government department to which they belonged. The latter marks are similar in appearance and, to some extent, in purpose to the modern laundry marks. Dated sheets, found on mummies, have been valuable aids to researchers who have sought to reconstruct some of the more obscure periods in Egyptian history.



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Painting by H. M. Horant

"But the Scribe Directeth the Work of the People"

"For him there are no taxes, for he payeth tribute in writing." A staff of professional scribes works in the administrative office of a large Old Kingdom estate. (Vth Dynasty, 2560-2420 B. C.) The brightly colored lotus columns—so seemingly out of place in a business office—bespeak the ancient Egyptian's love of floral ornament.

A "Dwarf of the Divine Dances from the Land of the Spirits" as a Gift to the Boy King of Egypt

IN THE second year of the reign of King Pepy II of the VIth Dynasty a caravan led by Prince Har-khūf, Lord of Elephantine and Governor of the South, reached the First Cataract of the Nile, having journeyed far to the south to the distant country of Yam. It had returned with a rich cargo of gold, ostrich feathers, ebony logs, panther skins, ivory, and, last but not least, a dancing pigmy from Central Africa as a gift to the pharaoh.

Since "the Lord of the Two Lands, the King of Upper and Lower Egypt, Nefer-ka-Rē, the Son of Rē, Pepy" was eight years old at the time, he was considerably more elated over the pigmy than he was over the material addition to the national treasury. When Har-khūf was about to board ship for the journey down the Nile to Memphis, he received a long and excited letter from his king, urging him to take every precaution to see that the little creature arrived safely.

"When he goes down with thee into the vessel," wrote Pepy, "appoint excellent people who shall be beside him on each side of the vessel . . . lest he fall into the water. When he sleeps at night, appoint excellent people who shall sleep beside him in his tent; inspect ten times a night."

Har-khūf's ship, its two-legged mast unstepped and its Nubian crew bending lustily to the oars, is seen speeding downriver against the prevailing wind. Unlike those of the freight boat, which is passing up river under sail, the steering oar of the governor's ship is equipped with the newly invented rudder post and tiller.

Har-khūf sits before his comfortable, leather covered cabin, his body-guard and traveling trunks on his right, his orchestra on his left, and

roars with laughter at the antics of his small charge. The latter is in the direct care of a full sized compatriot—presumably an "excellent person"—who, as can be seen, is taking no chances of losing the little dancer in the Nile.

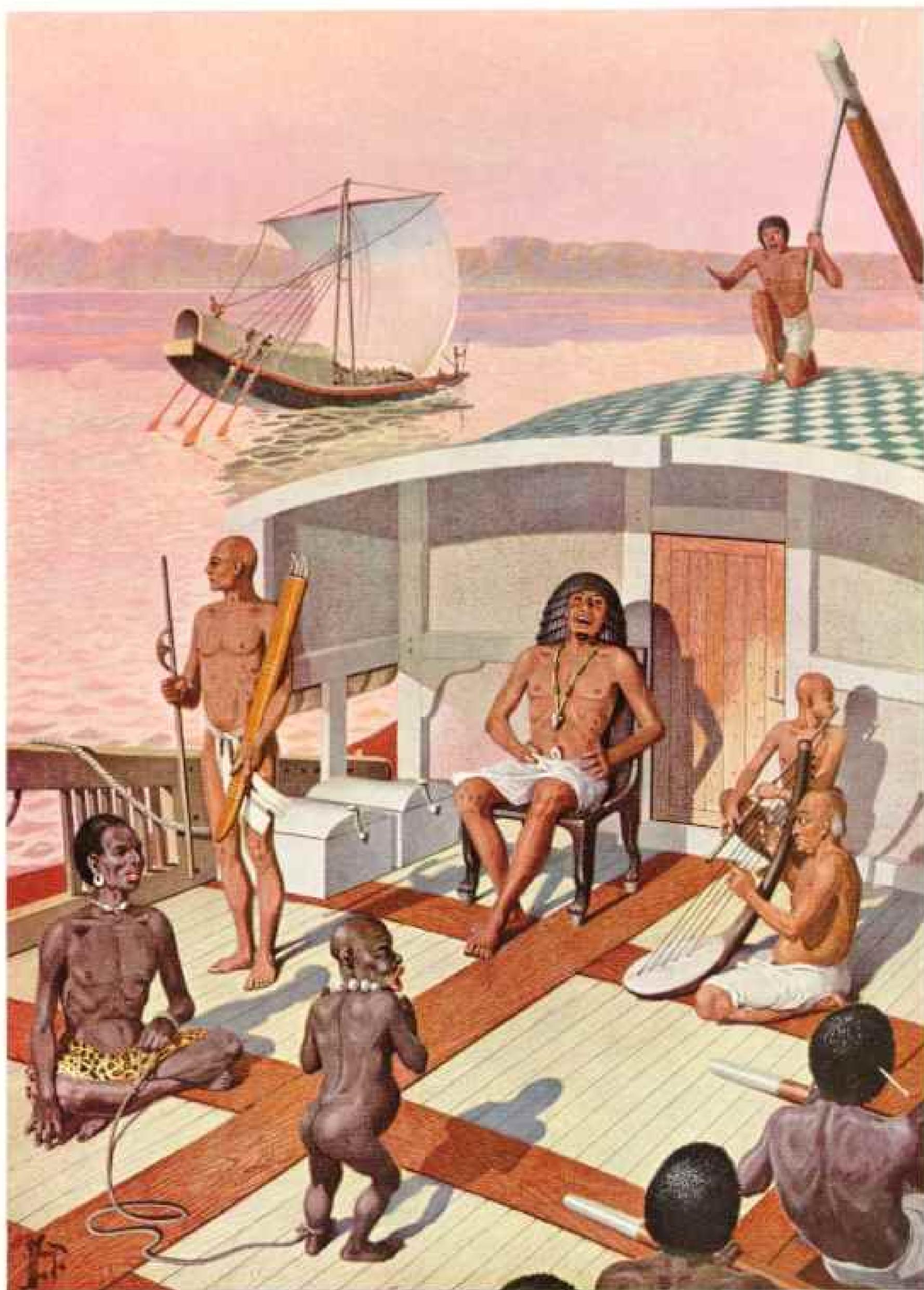
Since Har-khūf proudly inscribed the account of his trip and a copy of the now famous letter on the façade of his tomb opposite Elephantine, we may assume that both the ship and the king's present reached their destination in good condition.

The First Intermediate Period (2270-2160 B. C.) and the Middle Kingdom (2160-1788 B. C.)

Throughout the VIth and VIIth Dynasties the power of the landed nobility had risen steadily until, toward the end of the VIth Dynasty, it threatened to overshadow that of the king himself. During the short reigns of the weak rulers who succeeded Pepy II this threat became a reality. The central government was disrupted or ignored; the country broke up into a series of petty states; and the Old Kingdom came to an ignominious end in dissension, internal strife, local feuds, and general disorder.

These conditions existed for more than a century, with first one princeling and then another claiming sovereignty over the land. During this period there rose and fell in rapid succession the VII and VIIIth Dynasties of Memphis and the IXth and Xth Dynasties of Herakleopolis, now Ihnâysa el Madîna.

About 2160 B. C., the warrior nomarchs of Thebes, by defeating the Herakleopolitan confederacy, reestablished firmly the pharaonic rule, and as kings of the XIth Dynasty founded what we know as the Middle Kingdom.



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Painting by H. M. Herper

"Come Northward to the Court Immediately and Bring This Dwarf with Thee"

Prince Har-khuf, governor of Nubia, travels down the Nile with a pigmy as a gift to King Pepy II. The figure of the dancing pigmy is taken from a little ivory statuette found at El Lisht in 1933 by the Egyptian Expedition of the Metropolitan Museum in New York. (VIth Dynasty, 2nd regnal year of Pepy II, 2331 B. C.)

An Ancient Egyptian Brewery

THE Middle Kingdom has been characterized truly as Egypt's "feudal age", and, if under the XIIIth Dynasty the country rose to new heights of greatness, it was because the kings of this dynasty were strong enough and wily enough to dominate the powerful nomarchs, to gain their loyalty, and to turn their vast resources to the uses of the crown and of the nation.

Beer was the ancient Egyptian's favorite beverage, and on the estates of the great lords of the Middle Kingdom the brewery ranked next in importance to the granary and the bakery, on both of which it was dependent.

The brewery of page 455 is taken from a wooden funerary model found at Thebes in the tomb of the Chancellor Meket-Rē, a wealthy official of the XIIIth Dynasty.

In it we see the complete process of brewing the simplest and apparently the most common of the several types of beer consumed in ancient Egypt. Barley or wheat, brought in baskets from the granary, is first cracked in a stone mortar, then ground to coarse flour on the limestone mill (left). This arduous task was regularly reserved for a woman.

The flour scooped out of the catch-basin of the mill passes to the man in the left background, who works it into dough on his kneading tray, adding to the new dough the yeasty residue from the last baking of bread. The loaves of dough

are placed on the low stove next to the kneading table and heated until they have fully risen.

They are then crumbled up and thoroughly mixed with a large quantity of water in the great jars in the right background. In the mixing process a man steps into the jar and treads the mash with his feet.

After several days' fermentation the thick, lumpy liquid is strained through a sieve into the specially designed brewer's vat in the foreground. The spout of this vat is so placed that it allows the beer to be poured off, leaving the barm at the top of the vat and the dregs in its bottom. The beer is "bottled" in pottery jars stoppered with hemispheres of cones of Nile mud.

The resulting beverage, except for the absence of malt, resembled the modern Egyptian wheat beer, or "booza", a liquid with the consistency of thin gruel, averaging around 7 per cent in alcoholic content.

The hard, greenish white pottery, of which the ancient beer jars were made, is still the favorite material of the potters of the modern province of Keneh (Qena) in Upper Egypt. Here are produced from the same pale desert clay the present-day "zir," "gulleh," and "ballas"—water jars par excellence—, the last much photographed on the heads of the slender daughters of modern Egypt.



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"Beer Is Brewed for Him on the Day of His Festival"

Painting by H. M. Bennett

By the doorway of a Middle Kingdom brewery stands the portly brew-master, his sceptre of authority in his hand, and the workers bend to their tasks though there is no threat in the attitude of their overseer. The funerary model from which this group was derived is in the Metropolitan Museum in New York. It was found at Thebes by the museum's Egyptian expedition in the spring of 1920. (XIII Dynasty, reign of King Mentu-hotpe III, 2060-2015 B. C.)

An XIth Dynasty Carpenter's Shop

Lack of good native timber woods and metal fastenings combined to make the Egyptian carpenter a past master in his craft. He learned to produce sizable boards and beams by the patient and artful piecing together of the short and narrow cuttings obtainable from his scrubby local trees—sycamore fig, acacia, tamarisk, sîlder, and willow.

Using as fastenings only tapered and straight hardwood pegs, he managed by skillful joinery to construct coffins, shrines, boxes, sledges, doors, and articles of furniture, many of which remain strong and rigid to this day.

At an early period the Egyptians began importing wood, the timber fleet plying between the Delta and the Syrian coast bringing cargo after cargo of cedar, cypress, fir, and pine from the Lebanon. The caravans and boats of the upper Nile also supplied the workshops with Sudanese ebony and other tropical woods.

Good wood, however, remained a costly luxury and was always used with the utmost care, considerable labor and skill often being expended to obtain a fine, massive effect with the minimum outlay of material.

The sides and ends of the coffin under construction on page 457, for example, are tapered in thickness from top to bottom, so that the visible top edges of the finished box will

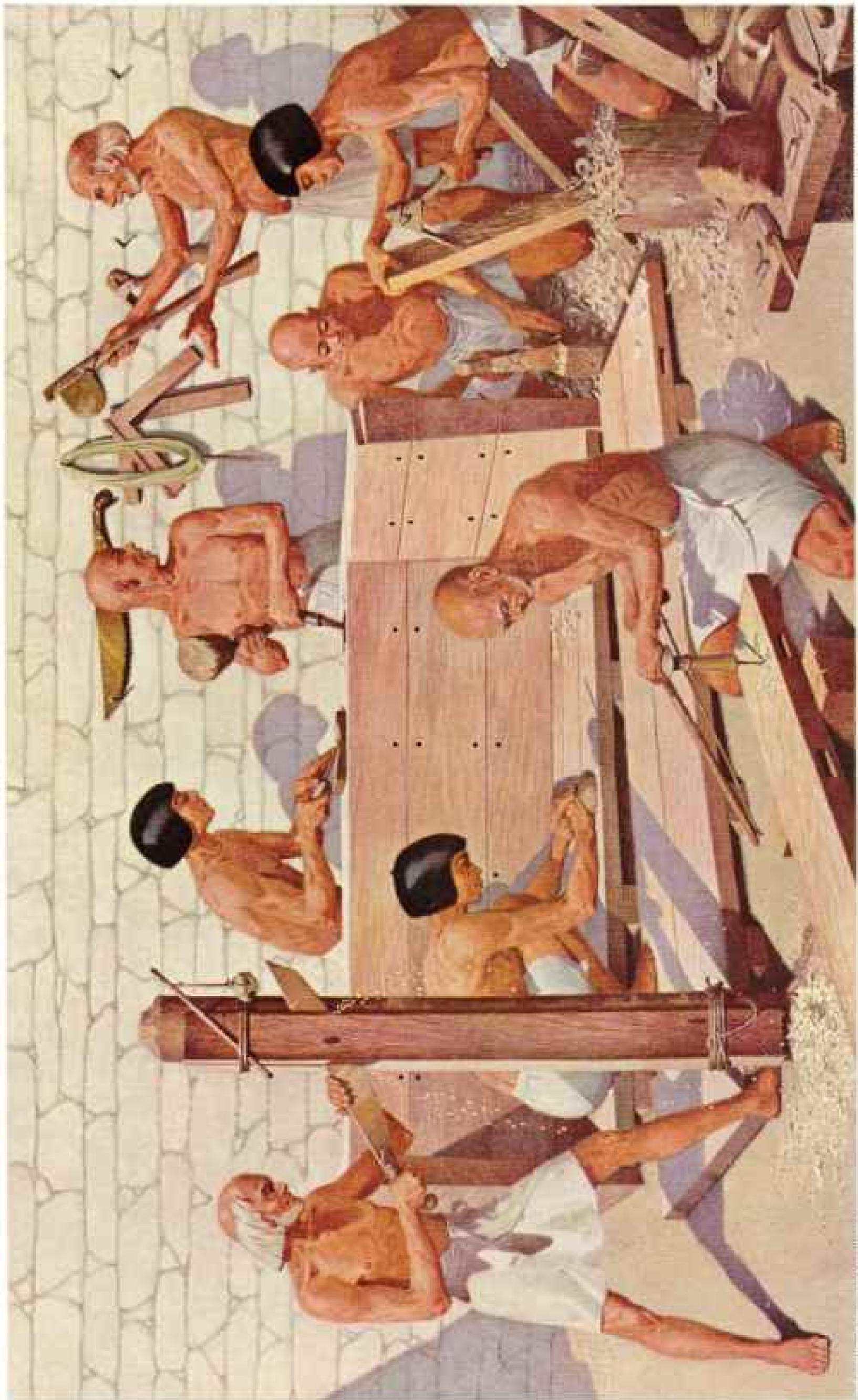
display a massiveness suggesting the presence of almost twice the amount of wood actually used.

In addition to the pegged tenon and overlapped mitre joints appearing in this coffin, the Egyptian carpenter was acquainted with most of the devices known to the modern cabinetmaker, including the various rabbet, dado, and lap joints, and the dovetail.

His bronze cutting and boring tools—saw, adze, axe, chisel, knife, scraper, and bow drill—were equipped with hardwood handles. His mallet and square were of hardwood, and his whetstone usually of quartzite.

The "plane" used by the man in the center of the picture is a lump of sandstone with a carefully flattened abrading surface. Other abrasives, such as fine sand, were employed for giving the wood surfaces a smooth, even finish. A glue, much like modern carpenters' glue, and a coarse "crack filler" were also used by the ancient Egyptian worker in wood.

When finished, the coffin and its lid will be coated inside and out with a thin layer of stucco, painted in brilliant colors, and inscribed with appropriate funerary texts. Prominent on its left side will be the great pair of painted eyes, through which its deceased occupant may gaze forth each morning toward the east and the rising sun.

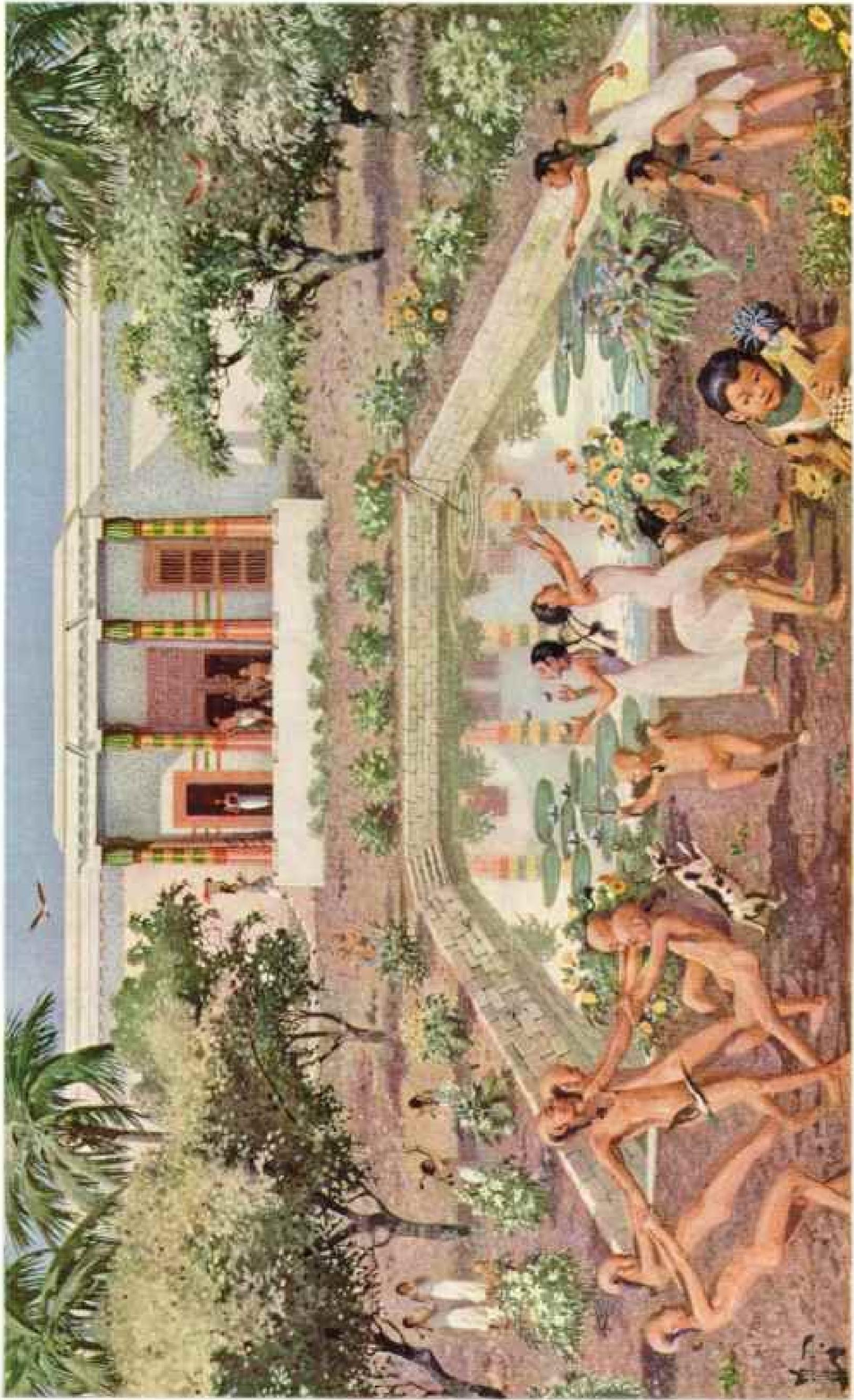


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Painting by H. M. Borge

"Many Artificers Built It, and All Its Woodwork Was New Appointed"

In a carpenter's shop of the Middle Kingdom, one of the heavy, rectangular coffins typical of this period, is in process of construction. The simple but serviceable tools are employed by the hands of master craftsmen and the pieces of lumber are joined with wooden tenons and pegs. (XIIIth Dynasty, 2160-2000 B. C.)



© National Geographic Society

Painting by H. M. Barnett

"I Would Build for Thee a New Mansion . . . Planted with Trees upon Every Side of It." "Thy Young Folk . . . Shout for Joy Over Thee"

Children at play in the garden of a country estate of the Middle Kingdom demonstrate the happy, carefree life of the early Egyptians, who were ever a human and jolly folk. . . . Represented in tomb reliefs as early as the Old Kingdom, the boys' game is usually labeled "Going round four times." (XIII-XIIIth Dynasties; 2160-1788 B. C.)

The Formal Gardens and Informal Children of Ancient Egypt

IN LAYING out and planting the walled parks surrounding their pleasant country villas, the Egyptians displayed the conventionality, orderliness, and love of symmetry which are outstanding in their art and, indeed, in their whole life.

Before any extensive orchard or garden was actually started, sketches were made and from these finished plans were drawn, showing the distribution of pools, trees, and avenues, and containing written notations of the more important distances and spacings.

The pools, all shallow, were for ornament, not for bathing. Though Egyptians could swim, there is no record of their going in for swimming as a sport. Crocodiles were too numerous in the Nile.

The installation and upkeep of the park was entrusted to a staff of professional gardeners, headed by an "Overseer of the Garden", who evidently regarded himself as a person of no small importance. The excellent taste of the ancient Egyptian and his very real love and understanding of nature invariably produced most happy results.

From his high-roofed front verandah, with its brightly painted lotus-bud columns, the country gentleman of page 458 looks out over his large rectangular lotus pool, stocked with fish and bordered by regularly spaced clumps of flowers and flowering shrubs: mandrakes, oleanders, jasmine, bind-

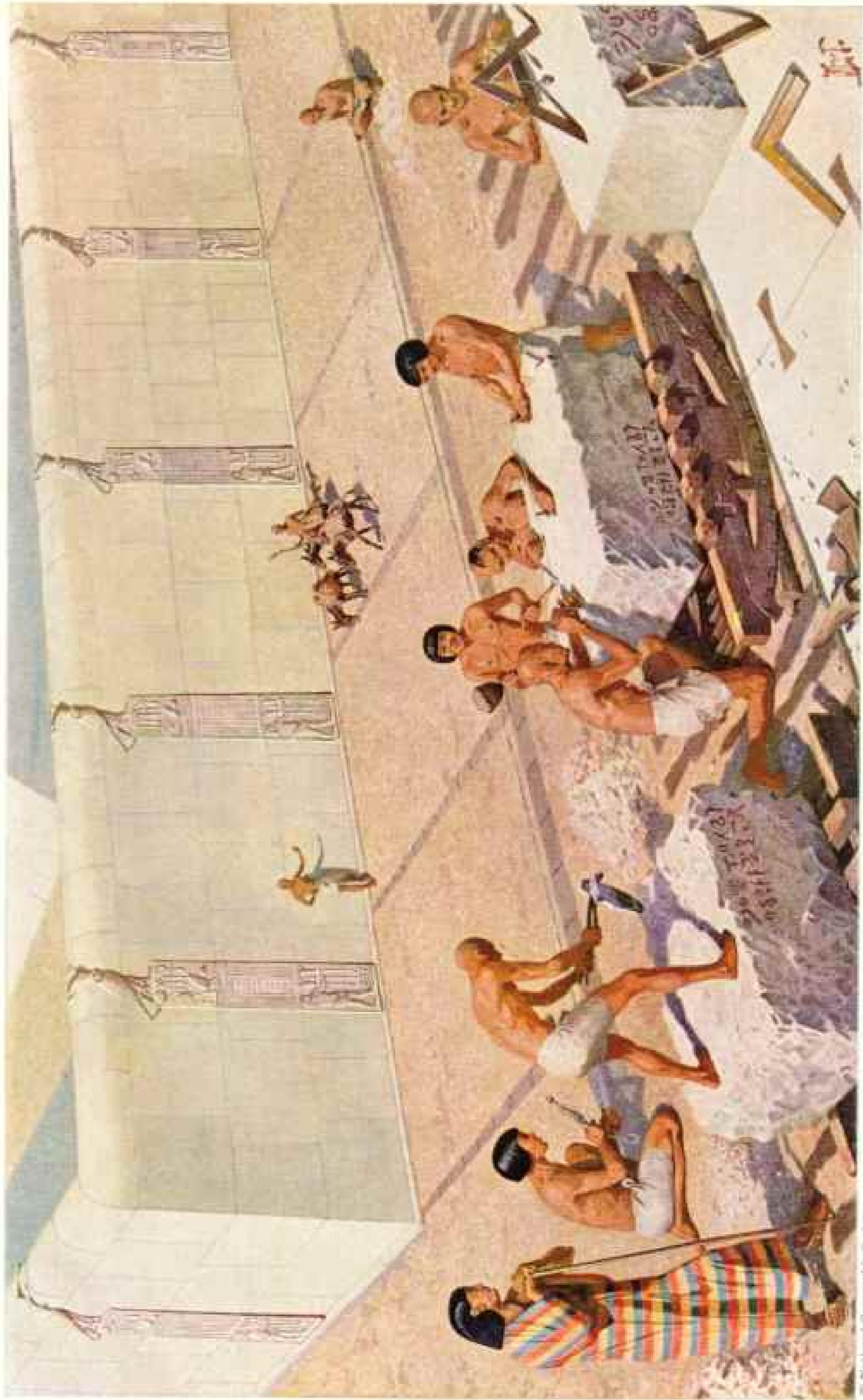
weed, cornflowers, and dwarf chrysanthemums. Around this aquatic and floral centerpiece are ranged rows of sycamore fig trees, and, behind these, the tall date and dôm palms.

The great man's children and their friends, idolized by their proud and indulgent parents, have the run of the garden. The boys, with their heads shaven except for the braided side lock of "youth", are unhampered by clothes. The girls, clad in simple one-piece dresses, wear their hair in "pigtails."

The more or less self-explanatory games in progress are chosen from a score or so of children's pastimes depicted on the walls of Middle Kingdom tombs. Even the cat and the ridiculous little dachshund-like dog are authentic XIIIth Dynasty types. The painted wooden "paddle" doll, well known in the XIth Dynasty, though not originally designed as a child's toy, could and probably did serve as such.

Most interesting are the balls, with which the girls are playing. With cores of tightly packed barley husks and stitched leather covers, they resemble the modern baseball.

The verandah, pool, and garden are from a miniature produced by an Egyptian model-maker of the Third Millennium B. C. The model, with its high wall, brightly painted little columns, and tiny wooden trees, is in the Metropolitan Museum in New York. The oxidized copper lining of its small pool shows that the latter was once filled with water.



© National Geographic, Boston

"Let Your Hands Build, Ye People. Let Us Lay the Foundation Stone"

Stone-masons work in the outer enclosure of the pyramid of King Se'n-Wosret I at El Lâhit. The heavy blocks of limestone can be turned easily by means of the wooden rockers on which they rest. (XIIIth Dynasty, reign of Se'n-Wosret I, 1980-1939 B. C.)

Painting by H. M. Bryant

The Egyptian Stonemason and His Craft—Construction Work on a XIIth Dynasty Pyramid Site

THE scene shifts from the cool shade of an Upper Egyptian garden to a section of the sun-baked desert plateau on the west side of the Nile some thirty miles south of modern Cairo; and we find ourselves, on page 460, in the outer enclosure of the pyramid of King Sē'n-Wosret I, the second pharaoh of the XIIth Dynasty, who ruled Egypt with a strong hand between the years 1980 and 1939 B. C. Across the back of the scene stretches the limestone inner enclosure wall of the pyramid, bearing the elaborately carved name panels of the king.

In the foreground construction is in progress on the girdle wall of one of the many small pyramids which surround that of the monarch. Masons are dressing and laying the rough blocks of limestone, newly brought from the quarry. The transport inscriptions, recently painted on the sides of these blocks, are dated to the 12th Day of the 1st Month of the season of Shōmu, in the 12th Regnal Year (of Sē'n-Wosret I), in other words, mid-September, 1969 B. C.

The blocks are being handled on stout wooden stone-rockers, which can be swung around with ease, tilted to any desired angle, and, by means of a series of heavy wooden hand wedges thrust under their runners, raised vertically as

much as two or three feet. To prevent them from sinking into the sand, the rockers are operated on a track of heavy timber balks.

The man on the left-hand block is rough-dressing its surfaces with a hard stone maul.

Those about the right-hand block are checking the final dressing of its joint surfaces with a set of "boning rods": three rods of equal length, over the tops of two of which a cord is stretched from edge to edge of the surface being tested. The third rod, moved back and forth with its top always under the tightly stretched cord, serves to locate "high spots" in the surface. These are then dressed away by the man with the chisel and mallet.

The chisel is of bronze, hardened by prolonged hammering.

The blocks are laid in a coarse white gypsum mortar; and those in the foundation course of the wall are held together by stout wood "cramps".

Elsewhere in the scene we see, either in the hands of the men or lying about in the foreground, the mason's reel and line—used here to check the alignment of the leveling bricks of the court—and the mason's level, plumb, and square.



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" . . . In Order to Prevent Any Negro from Passing It by Water or by Land"

(Egyptian soldiers of the Middle Kingdom question a negro merchant in the river narrows below the southern frontier fort at Semna. The ram's head standard on the fort indicates that its garrison is composed of a battalion of the Regiment of Amnûn. (XIIIth Dynasty, reign of King Se'n-Woiser III, 1887-1850 B. C.)

Painting by H. M. Herget



An Ancient Egyptian River Fort on the Sudān Frontier

For some distance below its second cataract the Nile, forcing its way through outcrops of hard, crystalline rock, forms a series of narrow rapids, which, though navigable in antiquity by light, shallow-draft boats, exposed traffic to blockades and attacks by partly subjugated savages.

To protect their own commerce with the south and to control the native traffic both by land and water, the Egyptian kings of the XIIIth Dynasty built a line of forts along these rapids on both sides of the river. The best known and best preserved of them are the pair flanking the Semna rapids, 50 miles south of Wadi Halfa.

The west fort at Semna, shown reconstructed on page 462, though founded originally by King Amen-em-hët I, was named "Powerful-is-King-Se'n-Wosret III", having been greatly enlarged and improved by the latter pharaoh (1887-1850 B. C.). Its great L-shaped plan was enclosed within massive walls of sun-dried brick, 15 to 25 feet thick and more than 30 feet high.

The walls, strengthened by longitudinal and transverse timbers and equipped with towers, buttresses, and battlements, were built on an embankment of granite rubble.

In addition to the towered north and south gates, there were, on the river side, a small postern gate and a covered

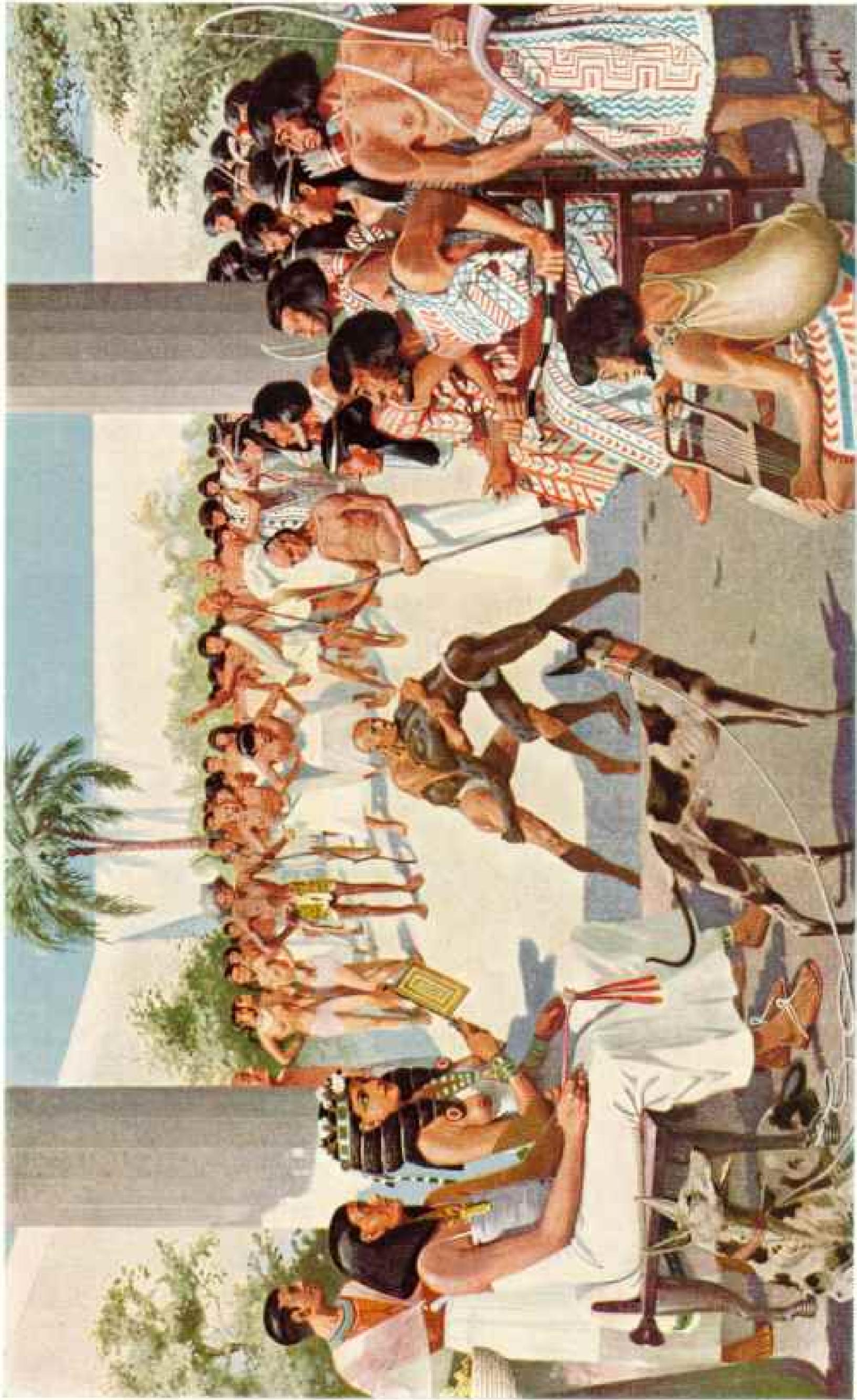
stone stairway leading down into the Nile. This well protected stairway enabled the soldiers who were defending the garrison to obtain a constant supply of water even in times of the closest siege.

The fort was a canny piece of military architecture, perfectly adapted to the rocky prominence on which it was built and so devised that all approaches to it were difficult and hazardous. Early in its history it withstood a siege of several months.

The 150 to 300 Egyptian soldiers stationed in the fort lived with their women and children in a small town, built inside the walls and including, among sundry other buildings, several little brick temples.

On page 462 a detail of typical Middle Kingdom soldiers, in charge of an officer, is halting for inspection, a negro trader, who, with his family and heavily laden papyrus canoe, is en route northward. By decree of the pharaoh, the only negroes who were permitted to pass the forts at Semna were those on "official business" or those headed for the Nubian trading post at Iken.

Besides ivory, wild animal skins, and other cargo the negroes' canoe carries a dog-headed baboon (*cynocephalus* spe) of a well known breed, evidently a pet.



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"Making Every Visitor Welcome, Forwarding Travelers North and South"

Painting by H. M. Warren

Prince Thuty-hotpe, lord of the "Hare" nome, provides entertainment for a visiting Bedawin sheikh and his family. Wrestling was an immensely popular sport among the Egyptians of the Middle Kingdom, and many hotly contested bouts are depicted in detail on the walls of the great tombs at Beni Hasan and Shurufat, Mir, and Deir el Barsba. The nomarch's dogs are Surianese greyhounds. (XVIII Dynasty, reign of King Se'n-Wosret III, 1857-1850 B.C.)

An Egyptian Nomarch Entertains a Bedawin Sheikh

ALTHOUGH the Egyptians always regarded as barbarians, the dwellers in the deserts to the east and west of the Nile and the Asiatic tribes farther to the north, they carried on a lively commerce with these peoples. More often than not during the Old and Middle Kingdoms, the trade was conducted on an entirely friendly basis.

It is therefore not surprising to find the "Prince, the Confidential Friend of the King, the Great Chief of the Hare Nome", Thûty-hotpe, extending the hospitality of his verandah to a desert prince and his family—little knowing that within a few hundred years these same people, the "Hyksos", were to invade and to subject to their warlike rule the whole of northern Egypt.

The Hyksos Abshai—for that is the sheikh's name—has just delivered a shipment of galena, used by the Egyptians as an eye cosmetic, to Prince Khnûm-hotpe, ruler of the Oryx Nome, whose domain was situated in Middle Egypt, immediately to the north of that of Thûty-hotpe. On his way home he has stopped to pay a state call on the latter.

For the amusement of his guest Thûty-hotpe has staged a series of wrestling matches such as those depicted in detail in the famous wrestling sequence found at Beni Hasan (pages 424 and 425). These contests of skill and strength will

be followed by some acrobatic dancing, performed by the girls seen standing on the left of the crowd in the courtyard.

Next to the nomarch sits his wife, Hathor-hotpe, arrayed in her best and holding a rotating fan of colored matting. Thûty-hotpe, himself, wearing the distinctive robe and pectoral of a vizier, toys with an ivory handled flywhisk.

The Bedawin, whose gaudy woollen mantles and crude possessions contrast sharply with the refined attire and accessories of their hosts, seem enthralled with the simple spectacle. Their enthusiasm is shared by the Egyptians in the courtyard, among whom are a number of local celebrities—notably the tall, scrawny herdsman, well known to students of ancient Egypt as "the thin man of Mir".

The painted tombs of the great XIIIth Dynasty lords of Middle Egypt at Mir, Deir el Barsba, and Beni Hasan esh Shurûq, are veritable treasure houses of information for students of life in the Middle Kingdom. Most familiar to travelers are those at Beni Hasan, famed for the so-called "proto-Doric" columns of their rock-cut façades.

Though these columns, the shafts of two of which appear in our painting, superficially resemble the Greek Doric column, there is no real basis for the association, some 1300 years separating these from, for example, the Parthenon.



© National Geographic Society

Painting by H. M. Borgst

"And His Majesty Loved Her Exceedingly"

The Princess Sit-Hathor-Yunet was daughter of King Se'n-Wosret II, sister of King Se'n-Wosret III, and aunt of King Amen-em-het III. The Metropolitan Museum in New York possesses the greater part of the jewelry and other possessions of this lady. (Latter part of the XIIIth Dynasty, about 1890-1840 B. C.)

A King's Daughter and Her Personal Possessions

WHEN, in 1887 B. C., King Se'n-Wosret II of the XIIth Dynasty died and was buried beneath his pyramid at El Lahûn, he left behind him, in addition to his son, Se'n-Wosret III, three daughters, the second of whom, Princess Sit-Hathor-Yûnet, outlived her brother and died in the reign of her nephew, King Amen-em-hêt III. As a favored relative of three great pharaohs, this petite and doubtless charming woman was well provided for. When, in February, 1913, the expedition of the British School of Archaeology in Egypt cleared her tomb beside the pyramid of her father at El Lahûn, they found in it a treasure of jewelry and other feminine equipment, which in beauty of design and refinement of execution has remained unsurpassed to the present day.

In our portrait we have caught the princess "making up" her eyes with black cosmetic contained in a small gold-mounted jar of polished obsidian, and applied with a slender ebony stick. Her silver mirror has a handle of obsidian, mounted with gold, electrum, carnelian, lapis lazuli, and green paste, and adorned with gold faces of the goddess Hat-Hor.

Sit-Hathor-Yûnet's jewelry is of gold, electrum, and silver, "molded and chased with microscopic accuracy" and cunningly inlaid with blue and green paste, carnelian, lapis lazuli, turquoise, amethyst, and garnet. The beads in her necklaces, girdles, and bracelets are of amethyst, turquoise, lapis, carnelian, and gold.

The pectoral, which Sit-Hathor-Yûnet wears, was a gift from her father, King Se'n-Wosret II, and bears

his cartouche in the center of its design. Her bracelets, as the inlaid inscriptions on their clasps show, were given her by her nephew, King Amen-em-hêt III.

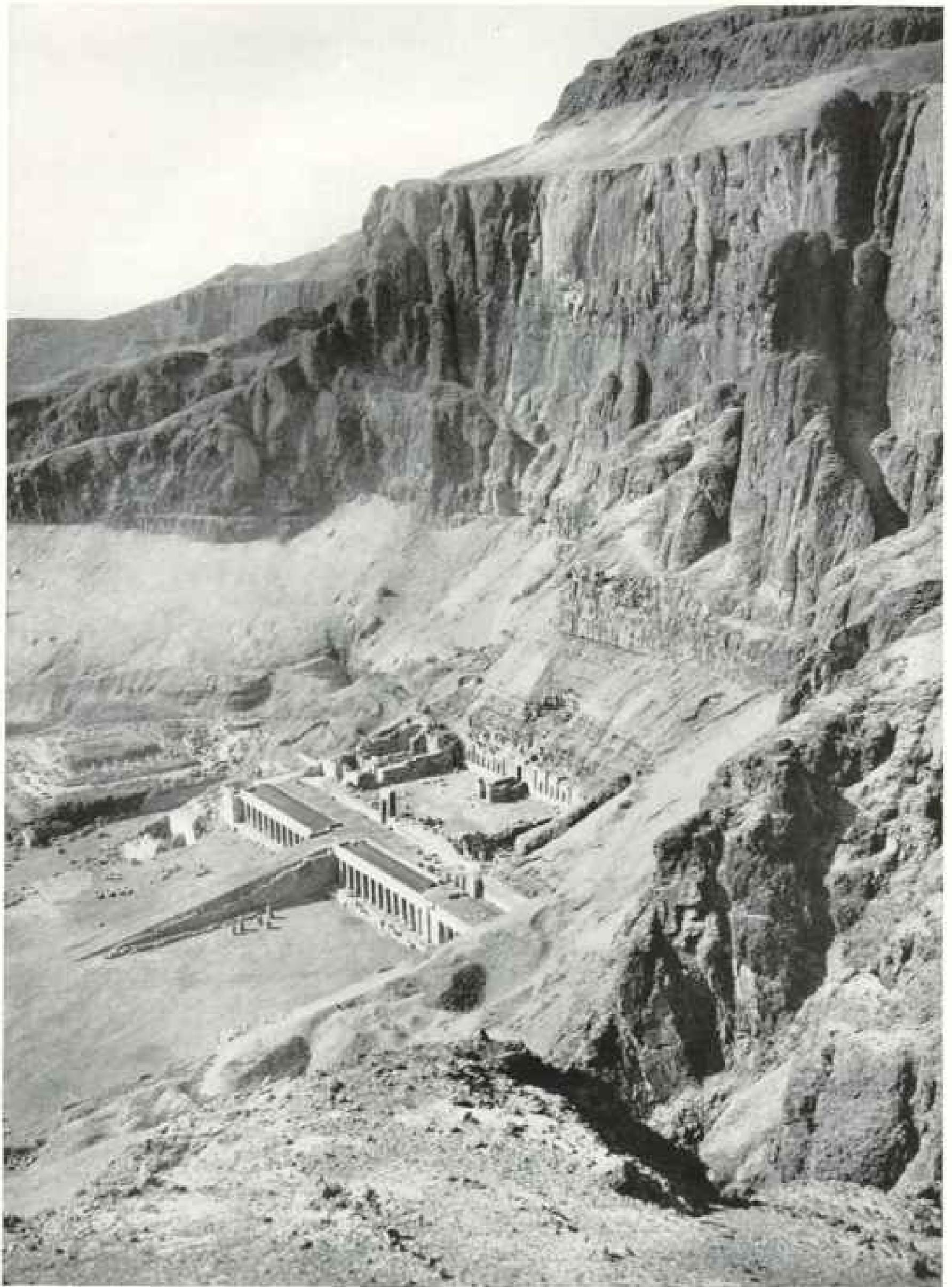
On the dressing table of the princess is the larger of her two ebony jewel caskets, paneled in ivory, gold, blue faience, and carnelian, and bound in gold and silver. Beside it lie a silver rouge dish, a bronze razor with gold handle, two bracelets of gold and semi-precious stones, an unguent jar of alabaster, and two others of obsidian, mounted with gold.

With this attractive representative of one of the greatest and most luxurious phases of Egypt's history we take our leave of "the Older Period".

Aided by our paintings, we have coursed lightly through some 11 millenniums of human development, 1,200 years of which fall within the period of recorded history. We have seen the Egyptian as a shaggy hunter of the Old Stone Age, roaming the gravel terraces of an incredibly ancient Nile. We have followed him through his long formative stage to his first high point in the Pyramid Age of the Old Kingdom.

We have seen him falter at the end of this period and rise again to new cultural and artistic heights in the Middle Kingdom. Beyond the stage represented by the ultra-sophisticated lady of El Lahûn it would seem impossible for him to go.

We have, however, not yet reached what many students regard as the full bloom of Egyptian culture—the New Kingdom. To this we turn in the second part of this article.



© Lehnert & Landrock

Mighty Cliffs Back the Temple of Hat-shepsût, Female "King" of Egypt

The ardent feminist is pictured in a more tender mood on page 486. On page 490 a priestly procession moves against the splendid background of the memorial to one of the first great women of history. But as one comes over the barren steeps from the Valley of the Tombs of the Kings at Thebes, this is the view of the columnaded structure.

Daily Life in Ancient Egypt: *The Later Period*

WITH the passing of the XIIIth Dynasty in 1788 B. C. the Middle Kingdom, the second great period of Egyptian history, came to an end.

During the reigns of the feeble kings of the XIIIth Dynasty of Thebes and those of the apparently contemporary XIVth Dynasty of Xoïs in the Delta, political, economic, and cultural conditions in the country went from bad to worse. About 1730 B. C. Egypt was subjected for the first time in its recorded history to the indignity of a foreign overlordship.

The northern part of the country was seized by the princes of an Asiatic people, or group of peoples, known to us as the Hyksos. From their fortified capital at Avaris in the north-east Delta, these foreigners ruled the whole of Lower Egypt and exacted tribute from the native rulers of the south.

The Hyksos Introduce the Horse

Since many of the important changes in the life and culture of the Egyptians of the New Kingdom, as contrasted with those of the Old and Middle Kingdoms, can be attributed, either directly or indirectly, to their contact with the Hyksos, it will be useful to summarize briefly what little we know of this intensely interesting people.

The name "Hyksos" appears to have been derived from the title *hehau khasut*, "Princes of the Uplands," applied by the Egyptians to the sheikhs, or tribal leaders, of these foreigners.

Traces of the Hyksos occur in Egypt as early as 1900 B. C., and their seizure of the country in the late 18th Century B. C. seems to have been the result of the rise to political power of a foreign element long resident in the land, rather than of a sudden invasion from without.

The origin and race of the Hyksos are still unsolved problems, but it is clear that they were basically of Semitic stock and that they filtered into Egypt from Palestine, which for several centuries was their home, or at least their base of operations. They were both warlike and highly civilized, expert metallurgists, makers of fine pottery, and builders of well planned and efficiently fortified towns.

They were the first people with whom the Egyptians came in close contact who knew and used the horse, and they were undoubtedly responsible for the introduction of this enormously important animal into Egypt.

For more than a century two successive lines of Hyksos kings, the XVth and XVIth Dynasties, exercised authority over the country, with only mild resistance from their vassals,

the Egyptian rulers of Thebes. Shortly before 1600 B. C., however, the weak XIIIth Dynasty having given place in Upper Egypt to the much more vigorous XVIIth Dynasty, these native "Princes of the Southern City" began to fight back in earnest.

In the time of the Hyksos king Apöpy III the Theban Seken-en-Rê Ta'o II was slain in a battle against the foreigners, the crushed head and mutilated body of his mummy attesting the violence of his death.

Ta'o's elder son, King Wadj-kheper-Rê Ka-mosê was more successful. Rallying his vacillating henchmen, he besieged and captured the hostile town of Neferûsi in Middle Egypt and inflicted several other serious reverses on the Hyksos armies.

Ka-mosê's younger brother and successor, King Nebpehty-Rê A'ḥ-mosê, finished the job, destroying Avaris after a long siege and driving the Hyksos back into Palestine. There for some years he continued to harry them and sack their towns.

Thus, with A'ḥ-mosê I, the founder of the XVIIIth Dynasty, Egypt in 1580 B. C. once more became an independent and powerful nation and embarked upon those centuries of glorious achievement and high civilization which we know as the New Kingdom.

Egypt Becomes a Great Empire

The considerable plunder which A'ḥ-mosê I brought back from his raids on the Hyksos cities in Palestine aroused in the Egyptians a lust for conquest. Recent years of practice in the art of war and the possession of a well armed, well trained and highly mobile army now enabled them to gratify this desire.

No longer content with simply policing their northern and southern boundaries, the kings of the XVIIIth Dynasty campaigned farther and farther into both Asia and Africa. At the death of A'ḥ-mosê's great-great-grandson, Thut-mosê III, Egypt controlled and levied tribute on an empire which stretched southward to the Fourth Cataract of the Nile and northward to the farther shore of the Euphrates.

In addition to the vast wealth in slaves, animals, raw materials, and finished articles, an immense supply of gold poured into the Nile Valley. It was drawn as tribute from provinces and vassal states and extracted in a steady stream from the rich and constantly worked royal mines in Nubia.

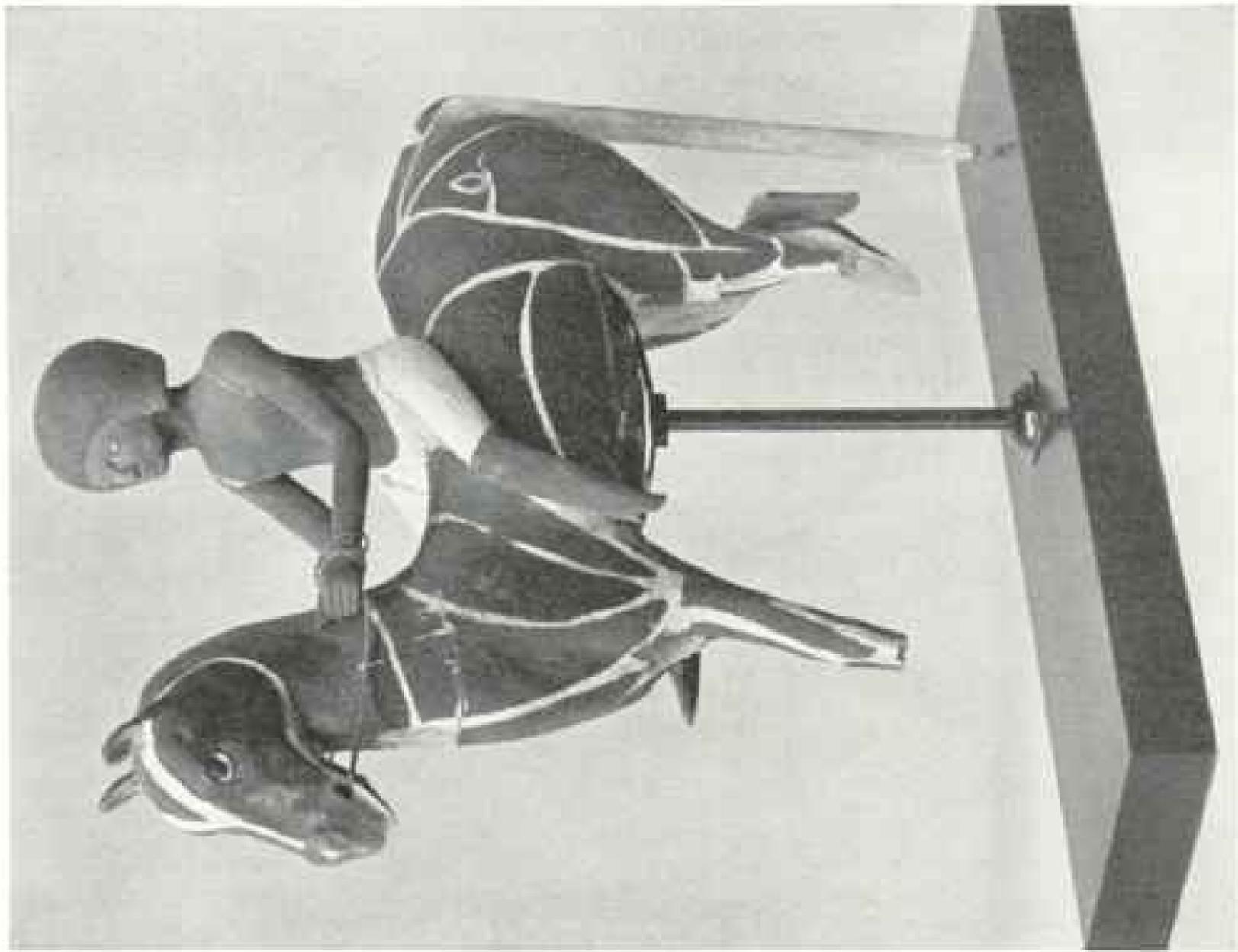
Gold now became the outstanding medium of barter. By controlling the bulk of the gold supply of the then known world, Egypt was able for centuries to hold the balance of power among the nations of the Near East and to



Metropolitan Museum of Art

Nefretiti, of Graceful Beauty, Had a Mind of Her Own

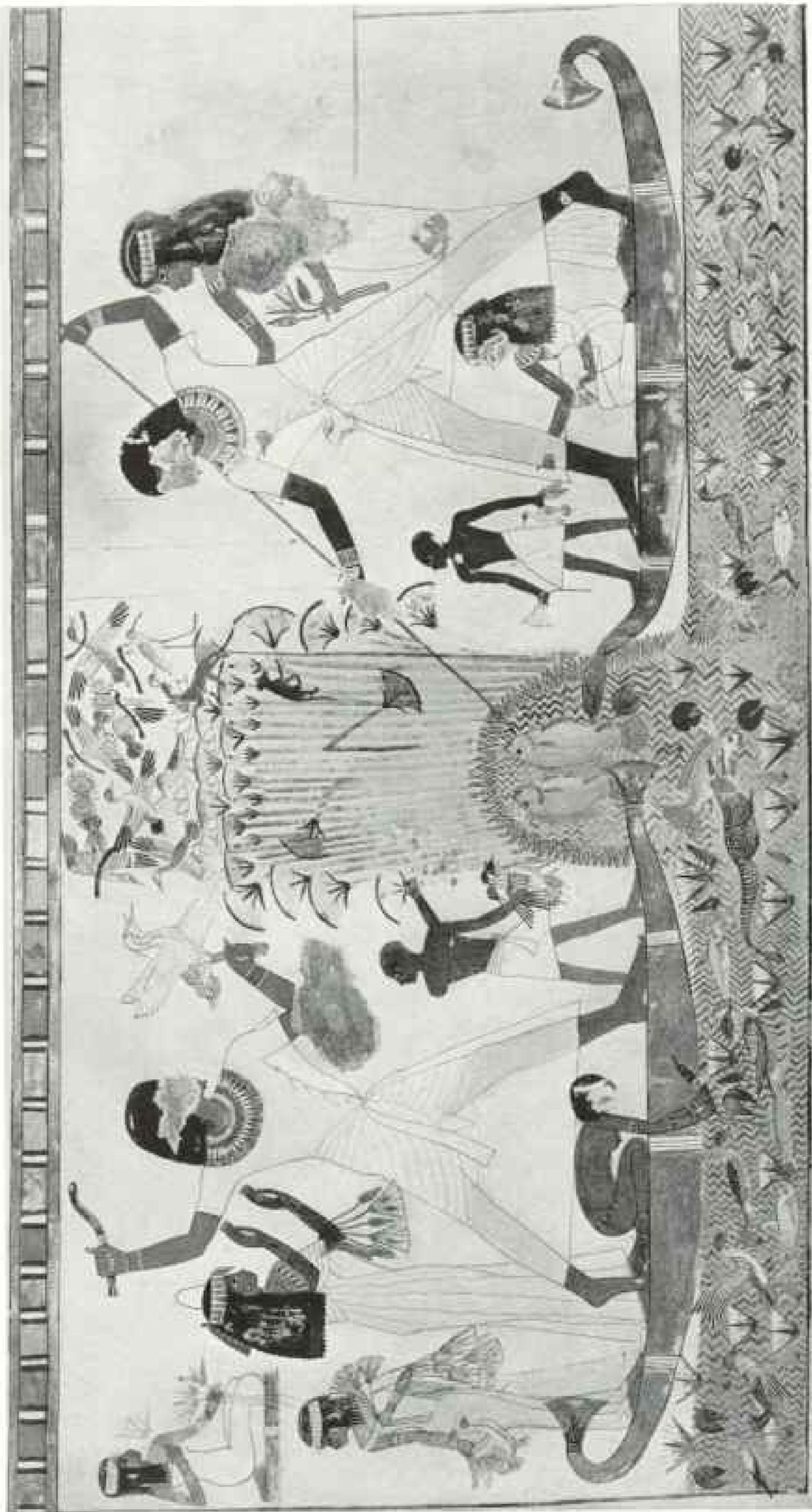
When priestly pressure caused Akhen-Aten to be false to his name, his pretty wife, here pictured, forsook her husband and remained true to "the living Aten," symbolized by the sun. The life-size limestone bust from which this cast was made was found at Tell el-Amarnah (El 'Amarna).



Metropolitan Museum of Art

Egyptians Accepted, but Seldom Rode, the Horse

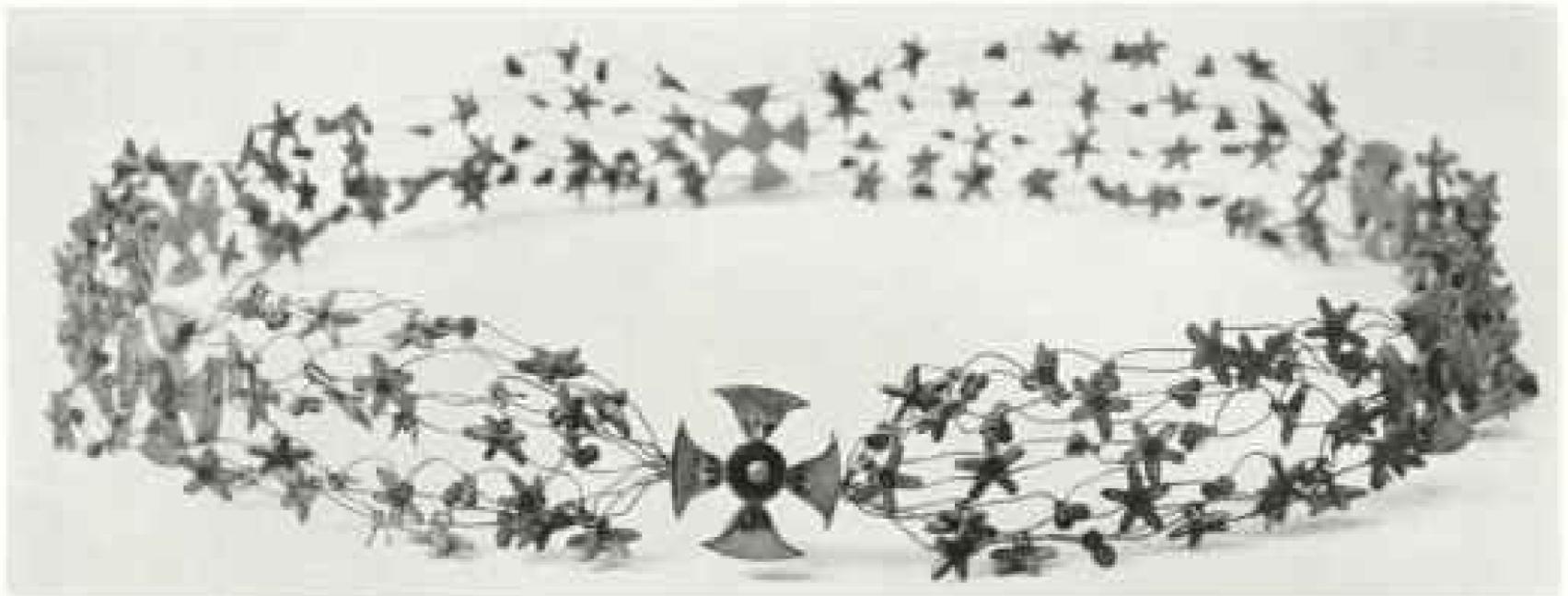
About a century after the Hyksos introduced the animal into Egypt, this painted wooden statue—now in the Metropolitan Museum of Art—was made. Pharaohs are pictured riding in chariots but this groom goes astride his mount to the royal stable (page 484).



Metropolitan Museum of Art

Menemna's Ancient Tomb at Royal Thebes Is Still a Happy Hunting Ground

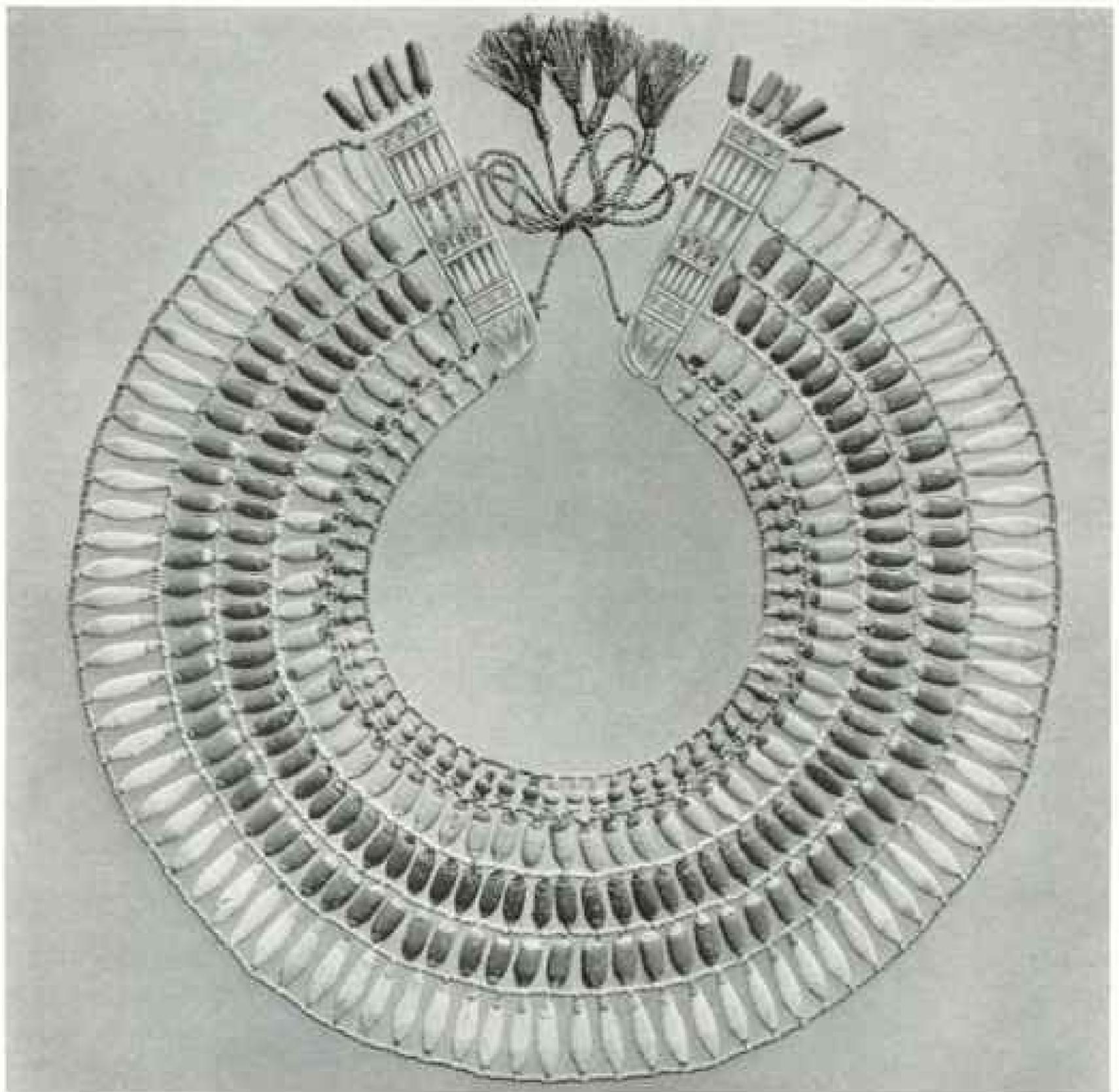
In the wall decorations which pictured his life, and so continued it beyond the grave, the "Scribe of the Fields" surveys his lord's property, prays to Osiris, and welcomes his relatives. But he is also pictured decoying ducks to his boomerang while his wife, with an armful of lotus flowers, admires his skill. Beyond the papyrus hedge the official spears fish while his daughter steadies his stance with a protecting hand. The paintings retain their perfect color after about 3,500 years.



Metropolitan Museum of Art

Princess Khenmet Wore This Circlet 3800 Years Ago

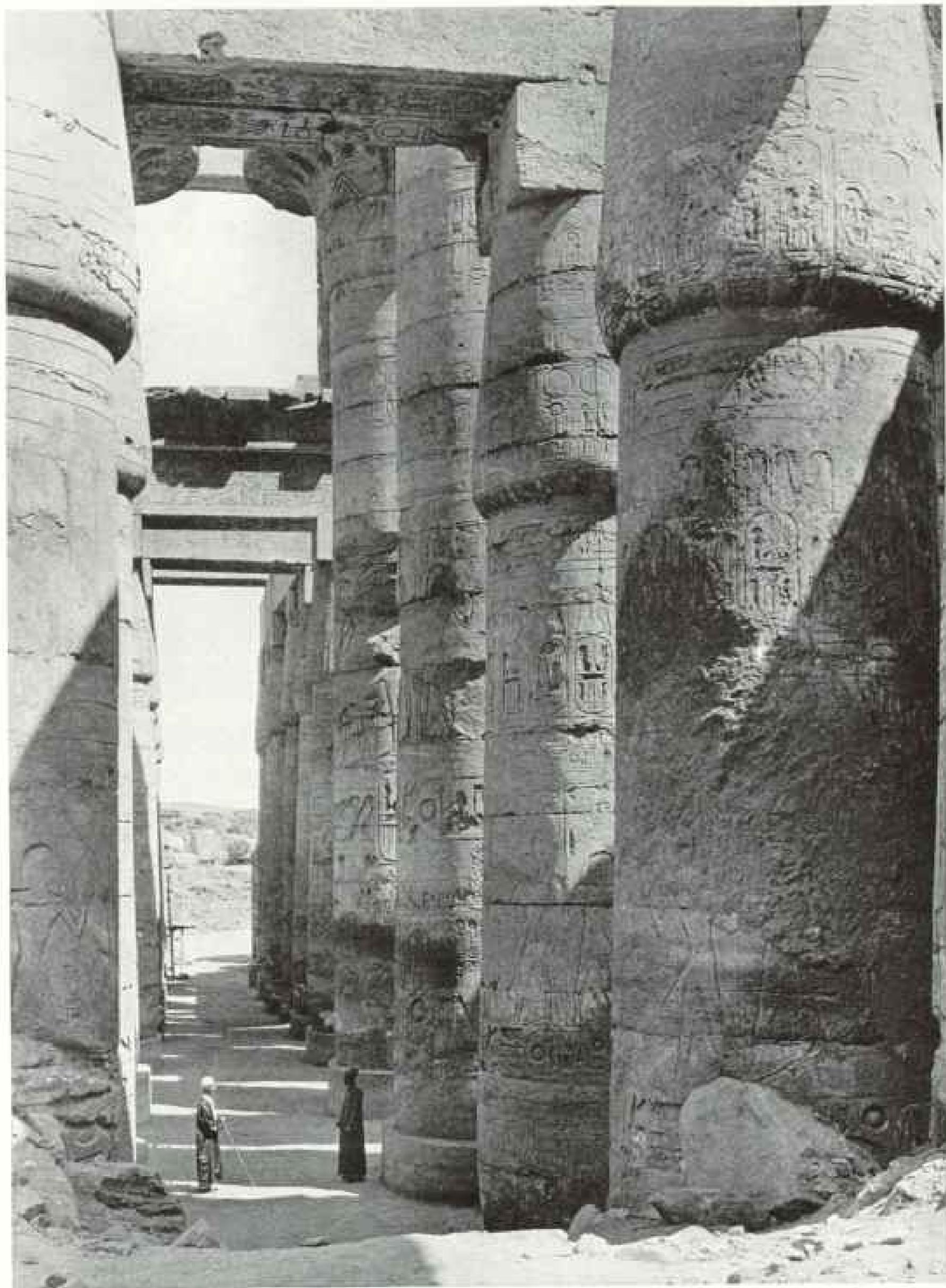
Tiny blossoms are strung on gold wire, inlaid with green feldspar and carnelian between larger lotus flowers.



Metropolitan Museum of Art

Fruits and Flowers of Glazed Frit Formed the Costume Jewelry of 1386-1356 B. C.

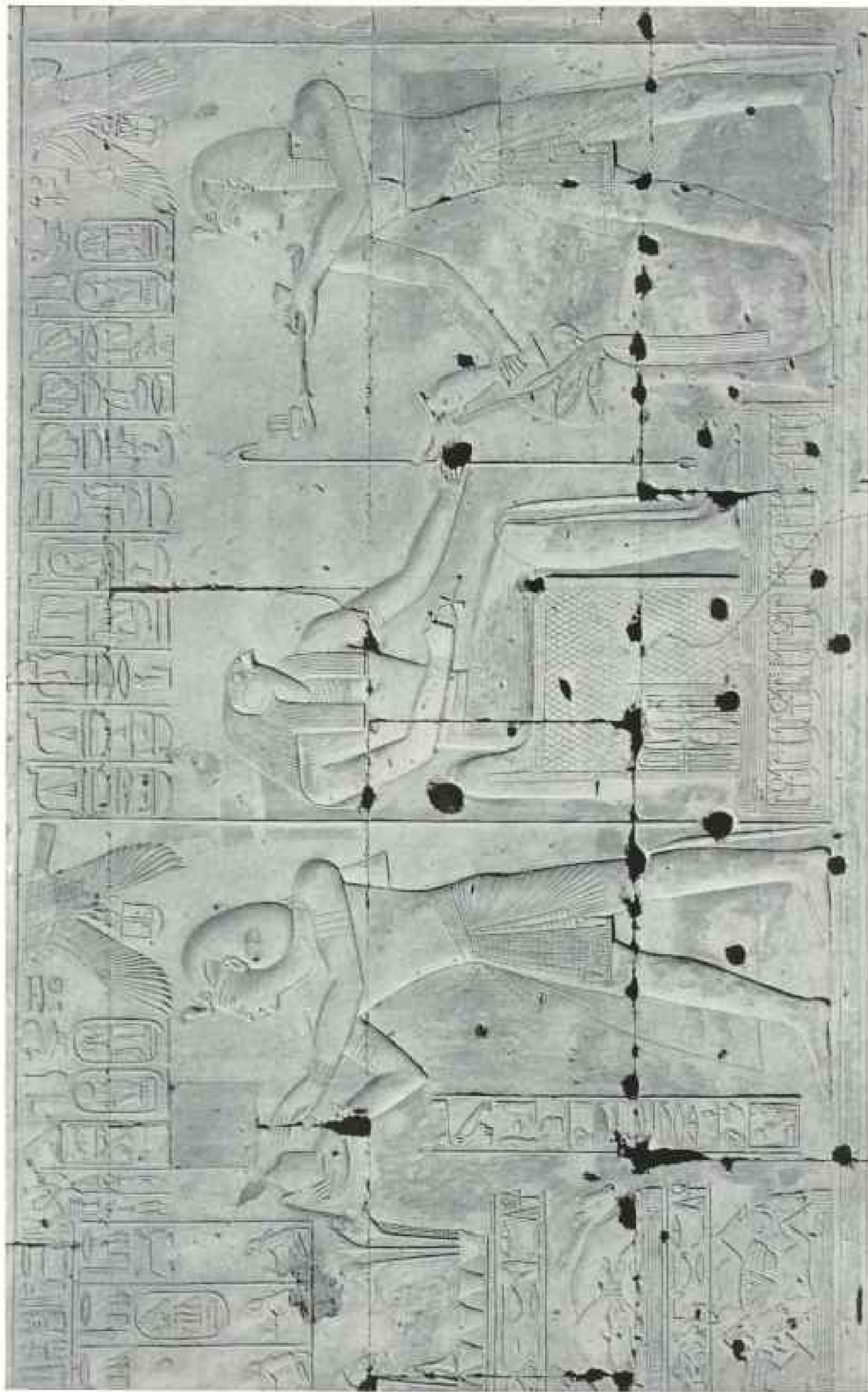
A fine example of such modest decoration is this bead broad-collar in red, yellow, blue-gray, and white.



A. W. Cutler

Beyond Lesser Pillars in the Hypostyle Hall at El Karnak Loom Huge Shafts

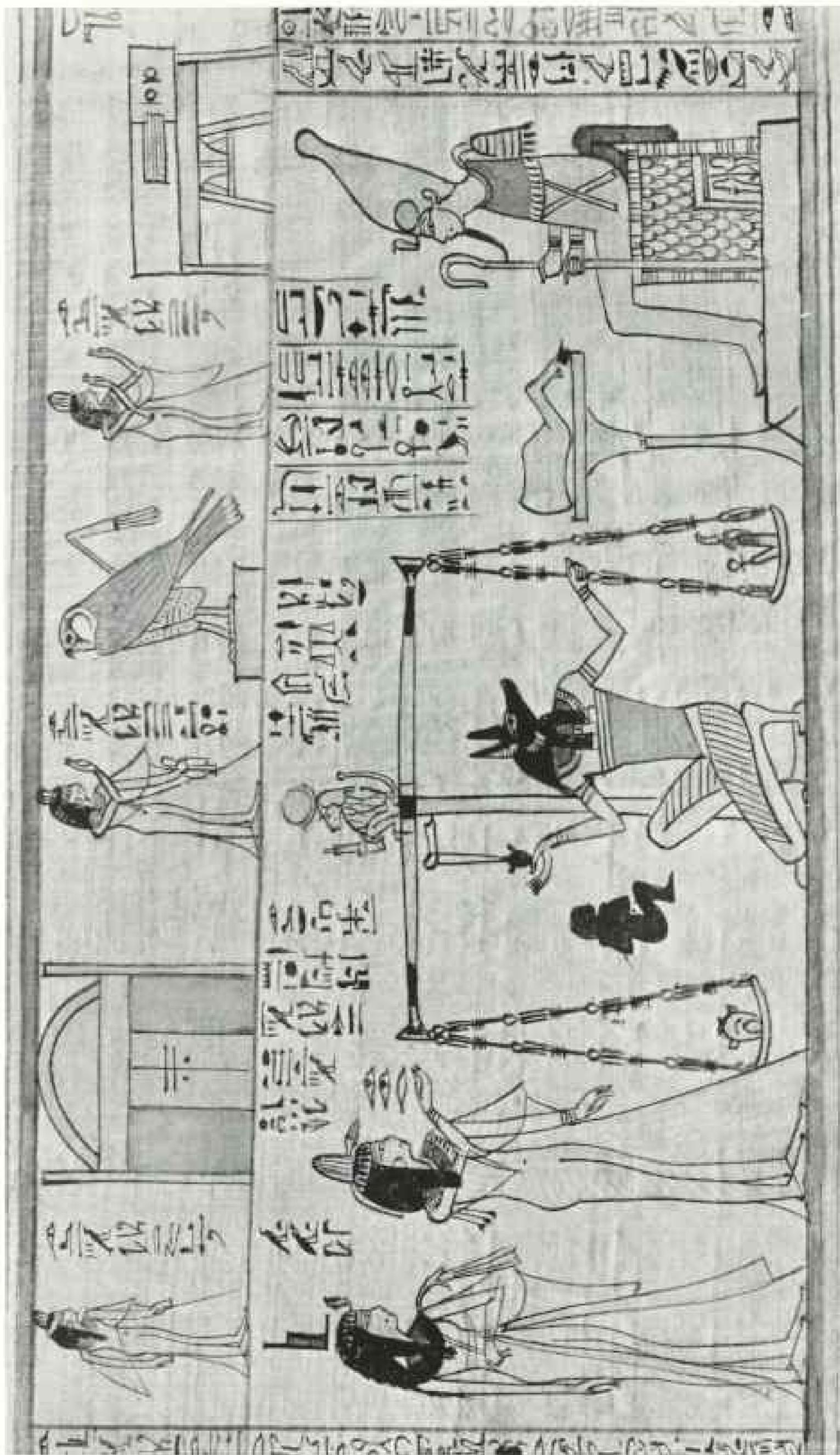
Every one of the 12 columns flanking the central aisle of Thebes' greatest temple supports an enormous open capital. Two of these are visible (upper left) just behind the crosspiece of the first arch. On the tops of these 70 feet above the ground a regiment could stand, a hundred soldiers to each platform.



Museo Egizio, Museo di Art.

With Incense and Libations, King Sethy I Wins the Favor of Falcon-headed Sokar, God of the Underworld

On the fine-grained limestone walls of the ruler's temple at Abydos, Egyptian low-relief sculpture appears at its best. Just below the double cartouche, showing his throne and personal names and with vulture-headed Nekheh protecting him with her wings, the pharaoh pays his tributes. The hieroglyphs over the head of the god mean "I give thee all strength; I give thee all power." In his right hand the deity holds the Was, or sign of life, in his left the Was, scepter of "well-being."



Metropolitan Museum of Art

Now a Museum Piece in New York, This Papyrus Was Princess Entiu-ny's Open Sesame through the Underworld

Once the spells forming the Book of the Dead were painted inside the coffin. In the New Kingdom, they were inscribed on a papyrus roll and buried with the mummy. Here before Osiris, judge of souls and god of the deceased, the dog-headed Anubis weighs the heart of the candidate against a figure symbolizing truth. Behind the slender princess in her diaphanous gown stands left, sister of Osiris.



Metropolitan Museum of Art

Sethy's Well Preserved Mummy Survived Adventures Worthy of the Living Pharaoh

Buried in 1298 B. C. in the finest of the tombs of the Kings at Thebes, it was plundered, recovered, reburied, found by peasants, and finally rescued for the Egyptian Museum at Cairo. This king invaded Asia Minor, repulsed the Bedouin, fought at Armageddon, and took Tyre. Having signed a treaty with the Hittites, he devoted himself to peace and the arts. His battle reliefs are among the most imposing of those which have survived.

maintain her dominant position long after she had lost those sturdy virtues through which she had achieved this position.

Even more influential than these material riches in molding the character of the New Kingdom was the host of new ideas with which Egypt's political expansion brought her into contact. Though conservative to the end and ever reluctant to alter its traditional mode of existence, "the land watered by the Nile" nevertheless became in the centuries following 1600 B. C. less and less an isolated African community and more and more a component

part of the eastern Mediterranean world.

Into the art of Egypt there creep those graceful and vivacious forms and concepts which we recognize as characteristic of the pre-Greek peoples of the islands and littorals of the Mediterranean. Semitic cults and the at least superficial effect of contact with Semitic modes of religious thought appear in the Egyptian religion.

It was, however, in the realm of cultural improvements of a more practical nature that Egypt's debt to her more inventive neighbors to the north and northeast was greatest.

The Pharaoh Was an Absolute Ruler

There can be no doubt that such New Kingdom innovations as defensive body armor, the compound bow, the scimitar and the long sword, the wheeled vehicle, and the well-sweep—the first and only piece of irrigation machinery used by the dynastic Egyptians—were direct importations from Asia.

Over this new, opulent, and highly cos-

mopolitan state, in which numerically the foreign population of slaves, artisans, mercenary soldiers, and merchants bulked almost as large as the native Egyptians, the pharaoh ruled in absolute power, surrounded by his bodyguard of picked troops and his coterie of royal favorites.

The landed nobility, so prominent in the Middle Kingdom, had been completely suppressed, and their place taken by an army of officials of the crown. At the head of these, directly under and responsible to the king himself, there were now two viziers, one for

Upper Egypt and one for Lower Egypt, and two chief treasurers, whose reports to the monarch were important features of the daily administrative routine.

The southern vizier, the more powerful of the two, in addition to his functions as chief magistrate and head of the judiciary branch of the government, also controlled the vast estates and personnel attached to the service of the new chief god, Amūn. Except for that granted by royal decree to the god, all land was the property of the crown, and was worked by the king's serfs or was bestowed "as a favor of the king's bounty" on his officials.

The principal government activities, in which every citizen played a part, either voluntarily or by compulsion, included, in addition to the almost yearly military campaigns, the exploitation of quarries and mines, the opening of trade routes through the deserts, the excavation of waterways and irrigation canals, and the erection of new and, as time went on, increasingly stupendous public buildings.

The chief beneficiary of the pharaohs' extensive building operations was the god Amūn of Thebes. As patron of the nation's new capital and the special divinity of Egypt's ruling family, this deity had risen to unchallenged supremacy.

The temple of Amūn at El Karnak (page 512)—to name only the principal "house of the god"—is in itself a monumental history of the New Kingdom and the Late Dynastic Period, for there was scarcely a king of Dynasties XVIII-XXX who failed to enlarge or embellish this greatest of shrines. To the service of this and the numerous other temples of the god



Staff Photographer Maynard Owen Williams

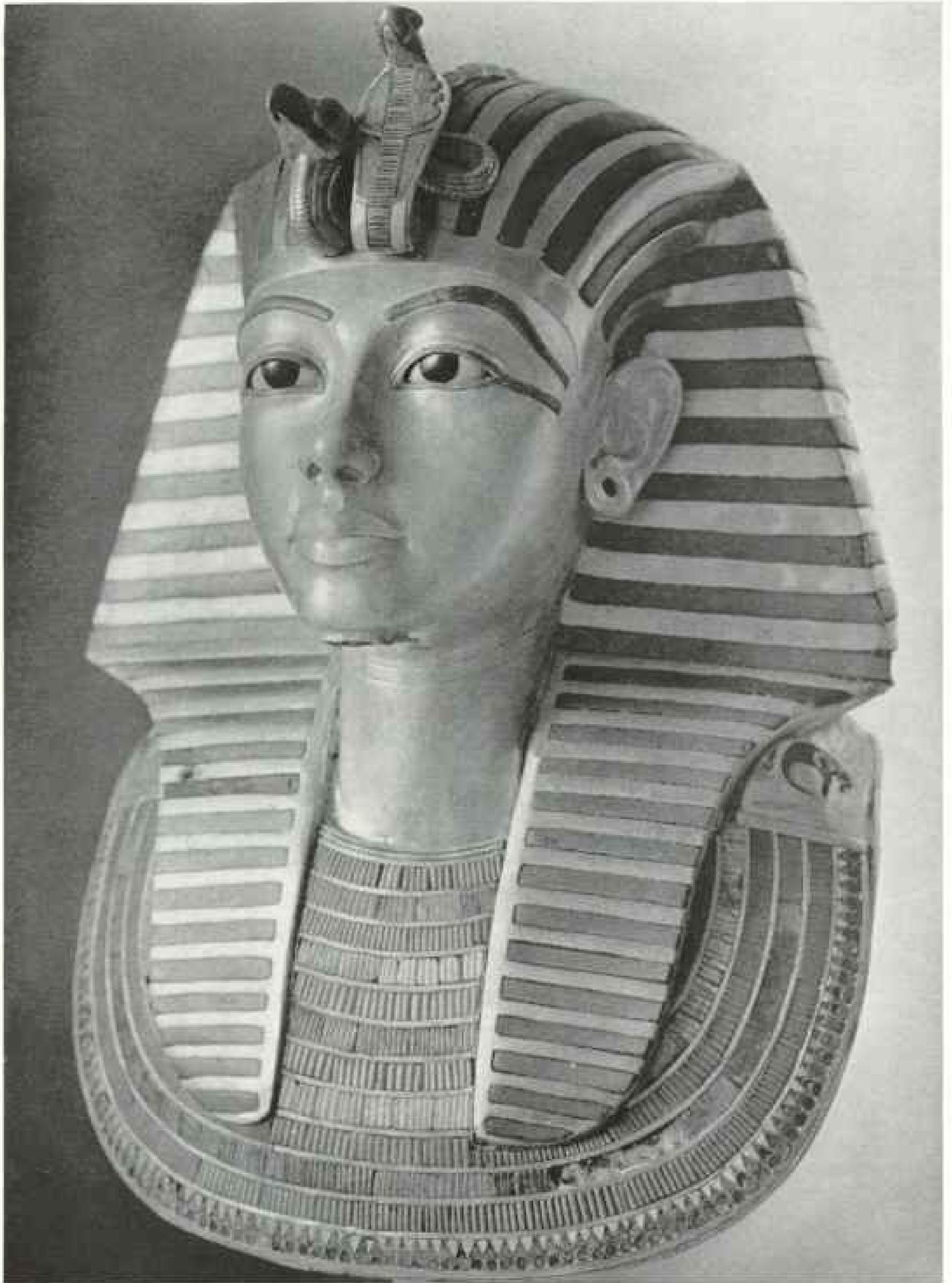
Checked against His Mummy, This Superb Statue of Thut-mosē III Proved to Be a Faithful Portrait

Though forced for twenty years to submit to the will of Hat-shepsūt, his aunt and co-regent, he came to be one of the greatest of the Pharaohs. Victor in many campaigns, he showed a streak of littleness by masking the inscribed bases of Hat-shepsūt's obelisks with brick walls and obliterating, so far as possible, her name and memory from the rolls of history.

there was diverted much of the nation's wealth in gold, lands, serfs, and cattle.

The priesthood of Amūn, as time progressed, absorbed more and more of the country's manhood, and the administration of the god's huge estates required a host of stewards, treasurers, overseers, and scribes almost as numerous as those in the employ of the king.

As was the case with the preceding periods of Egyptian history, our knowledge of life in the New Kingdom is derived largely from the contents and the decorated walls of the tombs of the dead. At Thebes, where the majority of the great personages of the New Kingdom



Metropolitan Museum of Art

Tut-ankh-Amun's Burial Mask Has Been Shorn of Its Kingly Beard

Above his forehead are the royal insignia of vulture and serpent. A solid gold coffin (page 479) one-eighth of an inch thick sheathed the masked mummy. Outside that were two wooden cases overlaid with gold, a rose-granite sarcophagus, and four shrines, the outer one 17 feet long, 11 feet wide and 9 feet high.

were buried, the tombs were rock-cut in the sides of the precipitous cliffs that border the Nile Valley throughout Upper Egypt.

The mastabeh tomb disappeared, and the pyramid, no longer the special prerogative of the royal dead, was greatly reduced in size and relative importance.

Deep into the western cliffs at Thebes winds a long and tortuous valley, its boulder-strewn way ending in a secluded natural amphitheatre. Here, far from prying eyes, King Thut-mosé I about 1520 B. C. had his architect Ineny excavate for him a secret tomb.

The job was done, as an inscription in Ineny's own tomb tells us, with "no one seeing, no one hearing"—which may possibly mean that "dead men tell no tales," for it must have required a considerable gang to excavate and clear the underground passages and chambers of the tomb. After the royal burial the small and simple entrance way, nestled against the base of the precipitous rock wall, was filled in with débris and thus obliterated from view.

The example of Thut-mosé I was followed by his successors, the kings of the XVIIIth, XIXth, and XXth Dynasties; and the deserted bay in the western cliffs became what we now know as the Valley of the Tombs of the Kings, a site familiar as the resting place of Egypt's royal dead.

Funerary beliefs were now dominated by magic, as typified by a series of spells, designed to assure the comfort and well-being of the deceased in the world beyond the tomb, and known collectively as the "Book of the Dead". Exemption from the penalties likely to be exacted for a not altogether blameless existence could be purchased, and the morality of the individual and the nation suffered accordingly.

This and the other unhealthy conditions latent in the new order of things, however, did not seriously affect the unparalleled prosperity of the country until after the fall of the second of the great dynasties discussed on pages 484-515, the XVIIIth (1580-1320 B. C.) and the XIXth (1320-1205 B. C.).*

* See other richly illustrated articles in NATIONAL GEOGRAPHIC MAGAZINE: "By Felucca Down the Nile," by Willard Price, April, 1940; "Crossing the Untraversed Libyan Desert," by A. M. Hassanein Bey, Sept., 1924; "East of Suez to the Mount of the Decalogue," by M. O. Williams, Dec., 1927; "Flying Over Egypt, Sinai, and Palestine," by Brig. Gen. P. R. C. Groves and Maj. J. R. McCrindle, Sept., 1926; "Land of Egypt: A Narrow Green Strip of Fertility Stretching for a Thousand Miles Through Walls of Desert," by Alfred Pearce Dennis, March, 1926; "Resurrection of Ancient Egypt," by James Baikie, Sept., 1913; "The Tomb of Tutankhamen," by M. O. Williams, May, 1923; "Under Egypt's Golden Sun," by B. Anthony Stewart, April, 1940.



Metropolitan Museum of Art

Tut-ankh-Amun's Mummy Lay under Wings of Gold Cloisonné

Innermost of three coffins was this golden shell. The head-dress vulture is Nekhebet, goddess of Upper Egypt; the cobra Wadjet, goddess of Lower Egypt.



THE GREAT AIRWAYS, LTD.

The Colossi of Ramesses at Abú Simbil Look Their Best from the Air

The visitor on foot, staying up at the 65-foot statues, finds the Pharaohs' knees stricken with elephantiasis, the royal heads remote. But as the plane circles north over the Nile to give left-side passengers a look, the carvings have better perspective. The figures' pose seems designed for the flyer, not the Nile sailor.



British Museum

Wife and Children, More Than Life Size, Are Calf-high-figures on the Ramesseses Colossi

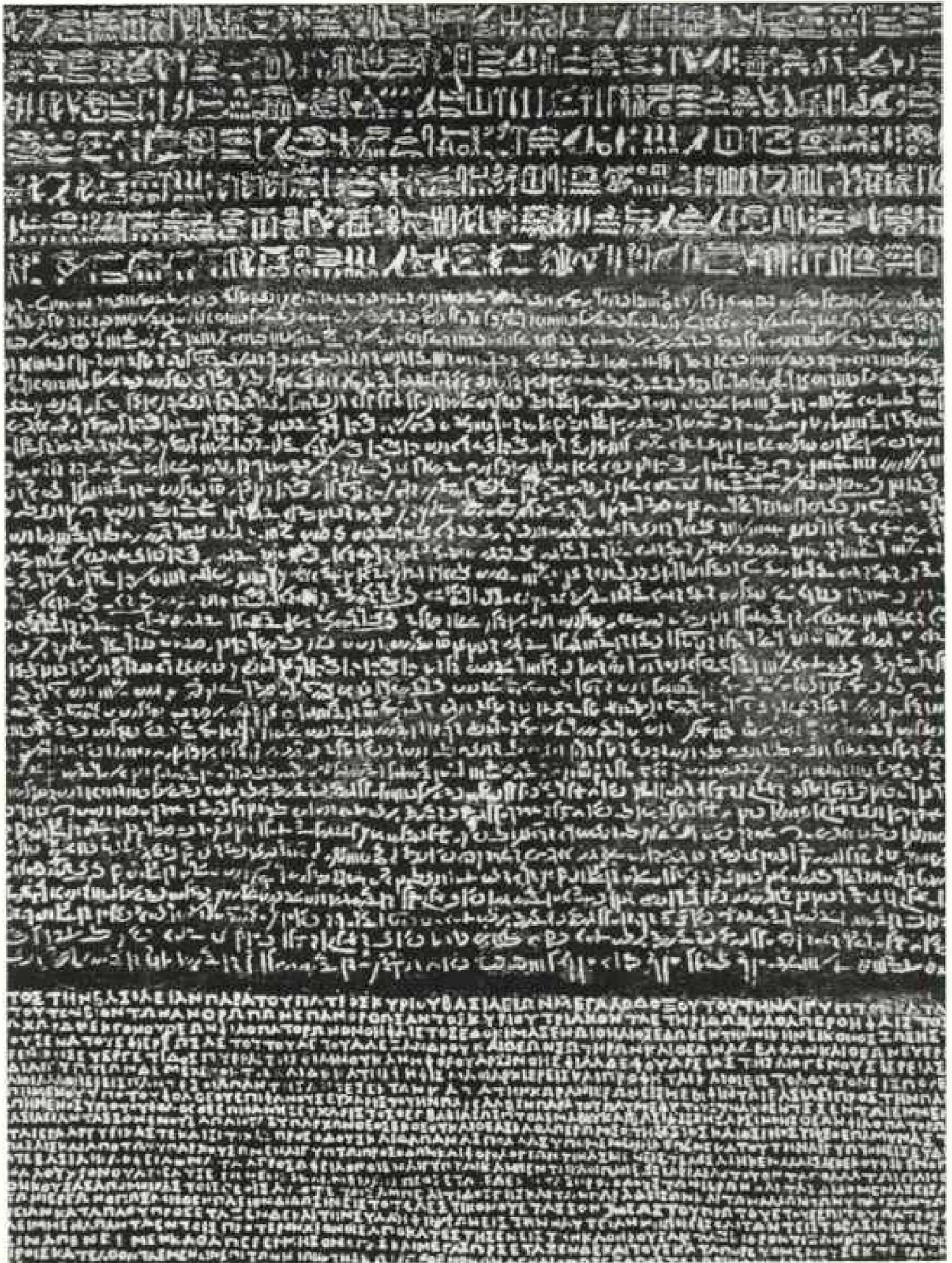
Between the ankles of the headless statue stands Prince Amun-her-khepshef. (page 482). Dwarfed though it is by the colossus, it is taller than a man. In a niche above the doorway is a statury rebus, making up the king's name. The temple chamber penetrates 150 feet into the living rock.



Metropolitan Museum of Art

A Tiny Son Clings to the Accordion-pleated Kilts of Egypt's "Great" Pharaoh, Ramesses II.

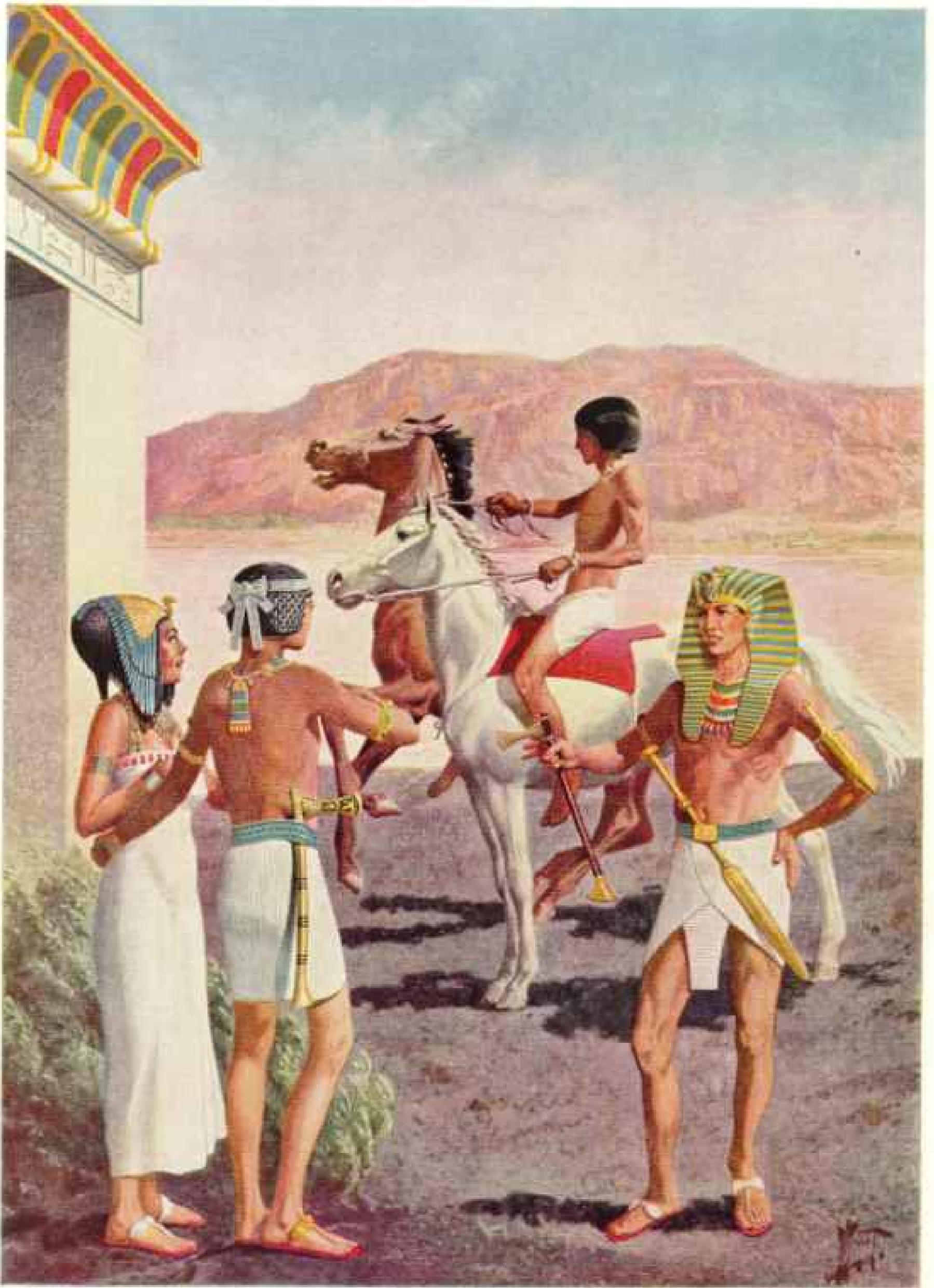
On forests of granite obelisks and acres of war-like temple carvings, the ruler boasted of his might. But in this black granite statue, now in Turin, the authority of the shepherd's crook, symbol of power, modified by a tightly gripped handkerchief, and fine linen gives a foppish touch to the war helmet.



© British Museum

Best Clue to the Language of the Ancient Egyptians Was the Rosetta Stone

About 193 b.c. a 15-year-old Pharaoh was supported by the priests of Memphis. Their decree was inscribed in three forms (top to bottom); the sacred writing or hieroglyphics of the priesthood; the demotic writing of the demos, or people; and the Greek, which was a common tongue of the eastern Mediterranean. In a.d. 1799 one of Napoleon's officers found the basalt block while digging trenches.



© National Geographic Society

Painting by H. M. Herzog

"The Entire Land Shall Acclaim Me the Victorious Ruler within Thebes"

"Ka-Mosé, who protects Egypt," the last king of the XVIIIth Dynasty, with his brother, Aby-Mosé, the founder of the XIXth Dynasty, and their grandmother, the dowager queen Teti-shefi, inspect a team of chariot horses. (Beginning of the New Kingdom, about 1550 B. C.) See page 423.

The Founders of the New Kingdom

A PAUSE in his successful campaign against the Hyksos has given the Pharaoh Ka-mosē an opportunity to return to his capital and enjoy a brief reunion with his family. Against a background formed by the Nile and, in the distance, the well known cliffs of western Thebes, we find the warrior king discussing with his younger brother, Prince A'ḥ-mosē, and his grandmother, Queen Teti-sheri, the merits of a team of horses, destined for the royal stables.

The Egyptians, thanks to the example set them by the enemy, had recently begun to import these hitherto unknown animals from Asia and to use them with epoch-making results in the newly inaugurated chariot division of the army—a branch, which through its mobility and its deadly efficiency was soon to help transform the naturally peaceable inhabitants of the Nile Valley into world conquerors.

Our portrait of King Ka-mosē is taken from his man-shaped coffin, unearthed at Thebes in 1857. The elements of the armlet which the Pharaoh wears on his right arm—a cartouche flanked by a pair of small gold lions—were found among the wrappings of his badly decayed mummy. A poniard with a silver handle of the old lenticular pommel type was tied on the left arm of the mummy in Nubian fashion.

The dagger actually shown in Mr. Herget's painting, also the property of Ka-mosē, is of Hyksos design, as is also the bronze war axe which the king holds in his right hand. The

most interesting of Ka-mosē's weapons is his two-handed sword, its bronze blade inscribed with the king's names and titles, its handle delicately inlaid in gold.

The weapons and jewelry worn by Prince A'ḥ-mosē are the most famous products of Egyptian minor art of the early New Kingdom. With the exception of the inlaid silver diadem, all are from the burial of A'ḥ-mosē's mother, Queen A'ḥ-hotpe, discovered at Thebes in February, 1859.

The axe, of copper with a cedar handle, is completely overlaid with gold and electrum, the blade adorned with designs inlaid in carnelian, turquoise enamel, and lapis lazuli.

The figure of the griffin appearing on the blade is a Helladic motif, borrowed directly from the island of Crete, with which Egypt at this time maintained close and friendly relations. There is, indeed, some evidence of a military alliance between the two nations, directed against their common enemy, the Hyksos.

Teti-sheri—"Little Teti"—we know chiefly from a statue in the British Museum, which represents her, not as we see her in the company of her distinguished grandsons, but as a fragile, charming girl, newly married to their grandfather, Prince Ta'o I.

During her long life Queen Teti-sheri played an important rôle in the varying fortunes of her husband, sons, and grandsons, and, revered and beloved, "lived to see Thebes transformed from a little provincial court into the capital of a great empire."



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"I Reared Her Eldest Daughter, the King's Daughter, Neferu-Ré', While She Was a Child"

Painted by H. M. Herget

The young princess Neferu-Ré' lies ill in her bedroom in the royal palace at Thebes, attended by her mother, Queen Hat-shepsût, her half-brother, King Thutmôsd III, and her tutor, Sen-Mût, the great Steward of Amûn. At the left, the royal physician is consulting his medical papyrus preparatory to mixing a remedy from the ingredients on the inlaid cabinet before him. Through the doorway at the right can be seen part of the bathroom with its limestone bathing slab and screen. (XVIIIth Dynasty, joint reign of Hat-shepsût and Thutmôsd III, 1501-1460 B. C.)

The Family of King Thut-mosé I

ABOUT 1520 B. C. Thut-mosé I, king of Egypt and grandson of A'ch-mosé I, died and left as his heirs his son, Thut-mosé II, born to him by one of his secondary wives, and his daughter, Hat-shepsût, the child of his queen.

To strengthen his right to the throne, Thut-mosé II was married to his brilliant and strong-willed half-sister, and for 18 years the two ruled the country as king and queen. Two daughters, Neferu-Rê and Meryet-Rê Hat-shepsût, were born to the couple.

Thut-mosé II's only son, Thut-mosé III, had the misfortune to be the offspring of a barim girl, named Isis. At his father's death in 1501 B. C. this boy, ten or twelve years old at the time, inherited the throne and the full titles and regalia of kingship.

However, as the courtier Ineny astutely observed, it was "the God's Wife, Hat-shepsût, who managed the affairs of the Two Lands according to her own devices, and Egypt was made to labor with bowed back for her."

In the seventh year of what was, technically, the reign of Thut-mosé III, Hat-shepsût, in a swift and apparently bloodless *coup d'état*, broke the age-old tradition which had held that only a male could be the ruler of Egypt, and had herself formally proclaimed "king." One of the few women

ever to hold that position, she assumed all the titles, attributes, and other paraphernalia of the pharaonic office.

In this startling gesture she was supported by a group of faithful and most able officials; foremost among whom was her special favorite, Sen-Mût, Chief Steward of the estates of Amûn and tutor of her daughter, the Princess Neferu-Rê.

For fourteen years more Thut-mosé III, who had been allowed to retain a nominal position as co-regent and had been married to his half-sister, Neferu-Rê, was forced to subject his own proud spirit to the will of his aunt (Hat-shepsût); but from the sixteenth year of his reign onward he began to come into his own.

In this year or shortly afterwards Neferu-Rê died, presumably the victim of an illness, and two or three years later Sen-Mût fell or was forced out of royal favor. In 1480 B. C., having dominated the first twenty-one years of the reign of her nephew and having stirred in the breast of that spirited young man a hatred for herself which beggars description, Hat-shepsût died or was thrust out of the way.

Thus, Thut-mosé III at last came into his birthright, and during the remaining 33 years of his long life performed those deeds of high prowess which have justly earned for him a reputation as one of Egypt's greatest pharaohs.



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Painting by H. M. Herget

"The Arrival of the King's Messenger in God's Land, Together with the Army Which Is Behind Him, Before the Rulers of Punt"
Queen Hat-shepsut's naval expedition, sent to the land of Punt on the Somali coast to procure myrrh trees for the garden of the god Amun, is greeted there by the chief of the country and his deformed wife and daughter. (XVIIIth Dynasty, 8th year of the joint reign of Hat-shepsut and Thut-mosef III, 1493 B. C.)

A Sea Voyage to a Remote Land

IN THE 8th year of the reign of Thut-mosé III a fleet of five sailing ships, each about sixty feet in length, unmoored from the bank at Thebes and stood out into the middle of the Nile, headed for the distant and half-legendary land of Pünt. Dispatched by Queen Hat-shepsût, the expedition was to bring back to Egypt living myrrh trees, to be replanted in the garden of the state god, Amûn.

Pünt, it is generally agreed, was situated somewhere along the coast of Somaliland. To reach it Hat-shepsût's ships had to sail northward almost as far as modern Suez, cross over by canal into the Red Sea, and then undertake the long and rarely attempted voyage southward.

It is greatly to the credit of the queen's unnamed admiral that the fleet returned safely to Thebes in the following year. It had brought back, in addition to the potted myrrh trees, rich cargoes of ebony, ivory, gold, electrum, aromatic woods, cosmetics, and panther skins, not to mention apes, dogs, and natives of Pünt.

The land of Pünt and the entire progress of the expedition are pictured and described in detail in a set of painted reliefs, which, most happily, are preserved in Hat-shepsût's temple at Deir el-Bahri at Thebes (page 490).

Our plate on page 488, drawn in its entirety from these reliefs, portrays the arrival of the fleet at Pünt. The flag-

ship has already touched shore, its sail is furled, and its mooring stake is being driven into the sand of the beach by two muscular members of the crew.

The Egyptian admiral, accompanied by a detachment of marines, has landed and is about to ingratiate himself with the natives by means of a modest present of Egyptian weapons and cheap trinkets. These he has laid out on the small table before him, hoping that their glittering appearance will please those who have come to meet him.

Pe'-re'-hu, the tall, thin chief of Pünt, and E'ty, his fat, sway-backed wife, were too striking a pair to have been overlooked by the Egyptian artist, who evidently accompanied the expedition, and in the temple reliefs referred to they are depicted to the life.

These reliefs have, in fact, supplied us with nearly every detail of our painting: the Egyptian ships, their rigging, and their crews; the curious domical pile-dwellings of Pünt; the local flora and fauna; the facial types, clothing, coiffures, and ornaments of the Püntites; and even the mongrel pup, which barks a welcome to the visitors from afar.

Racially and even culturally the Püntites and the Egyptians appear to have been related—a fact which seems in no way to have lessened the intense curiosity with which the two peoples regarded each other.



© National Geographic Society

Painting by H. M. Davies

"Thou Seeest Amūn in His Beautiful Festival of the Valley, Thou Accompanyest Him into the Shrines and Temples"

The procession of the barque of the god Amūn leaves the temple of Queen Hat-shepsūt at Deir el-Babri. From the upper, balustraded ramp of the temple, it has passed to the second terrace. Pillars of the third portico, above, show painted limestone statues of Hat-shepsūt in the form of the god Osiris. To the right is the shrine of Anubis and the famous "proto-Doric" colonnade. (XVIIIth Dynasty, latter part of the joint reign of Hat-shepsūt and Thut-mose III, 1485-1480 B. C.)

Amun-Rē, "King of the Gods", Pays His Yearly Visit to Queen Hat-shepsūt's Temple in Western Thebes

HAT-SHEPSŪT's mortuary temple, designed and built for her by Sen-Mût, occupies an imposing bay of the western cliffs at Thebes, three miles back from the bank of the Nile and almost immediately opposite the great temple of Amûn at El Karnak. Nestled into the base of the precipitous rock walls of the cliff and admirably adapted to its magnificent natural setting, this unusual building, even in its present ruined state, is a monument of great charm.

From the level of the desert plain the courts of the temple, each fronted by a beautifully proportioned colonnade, rise in wide, retreating steps, the upper court and the central sanctuary cut back into the living rock. Leading from the river bank to the temple there was in ancient times a walled avenue, three miles long, bordered by trees and flanked along its entire length by brightly colored sandstone sphinxes of the female "king."

Once a year, on the occasion of the "Festival of the Western Valley," the image of the god Amûn was ferried across the river from El Karnak in the great state barge "Powerful-is-the-Front-of-Amûn." It was borne up this avenue in the richly adorned portable boat of the god, and

deposited for a short time in the sanctuary of the temple, where the god would receive tribute (page 468).

After accepting the prescribed offerings from the royal patron of the temple, the god, still in his barque, was borne down the ramps to the plain, and for two days made visits to temples on the west bank before returning to El Karnak.

The barque was carried on the shoulders of thirty-two priests, who paused to rest from time to time at stations provided at regular intervals along the way. A motley procession of standard-bearers, fan-bearers, censors, soldiers, musicians, singers, and priests preceded the barque.

Outside the temple precincts the procession was joined by the townspeople of Thebes, for whom this festival, like the many others celebrated throughout the year, was a never-ending source of delight.

The details of the barque and the procession are drawn chiefly from the somewhat later reliefs which the young King Tût-ankh-Amûn caused to be carved in the temple of Amûn at Luxor. The reconstruction of Hat-shepsūt's temple we owe largely to long years of work and study by the Egyptian Expedition of New York's Metropolitan Museum.

Egyptian Chariots at Armageddon

THUT-MOSÉ III's first act, upon finding himself sole ruler of Egypt, was the attempt to erase every trace and destroy completely the memory of Hat-shepsût. Her inscriptions, wherever visible, were covered over or mutilated, her statues were smashed to pieces, and her name was stricken from the roll of the Egyptian royal family.

Having vented the accumulated rage of twenty years on the monuments of his detested co-regent, the young king immediately put into operation his plans for the re-conquest of the Egyptian empire. He directed his first blow at Syria, where the local dynasts, profiting by the two decades of Hat-shepsût's womanly rule, were in full revolt.

On the 15th of May, 1478 a. c., the Egyptian army, descending from the heights of Carmel, fell upon the Syrian allies in the plain of Esdraelon, driving them back into the strategically important and heavily fortified city of Megiddo, which was promptly invested and soon forced to surrender.

Thut-mosé III's arrogant disdain for military strategy in this and in most of his other battles was more than compensated for by the efficiency of the Egyptian war chariot as a fighting machine. Of strong, but very light construction, these vehicles were capable of attaining great speed

instantly. They could be maneuvered with the utmost ease, and, thanks to their long axles and large, springy wheels, were usable over almost any type of terrain.

Unarmored and partaking of none of the qualities of the modern "tank," the chariot was intended solely to provide a movable platform from which the crack Egyptian archer could pour a murderous rain of arrows upon a less mobile enemy force.

More often than not in the early New Kingdom each warrior managed his own chariot, as shown in our plate. Later, however, we find the chariot crews consisting of two men, a charioteer and a fighter.

During the ensuing eighteen years Thut-mosé III led no less than sixteen expeditions into Asia, setting out in the spring of each year and returning in the fall, flushed with new conquests and laden with plunder and tribute. When, in the 43rd year of his reign, the now aging monarch turned his face from the north and concentrated his always vigorous attention on his Nubian provinces and on matters at home, he had reduced hither Asia to abject servility and given the eastern Mediterranean world a beating that it did not forget for centuries to come.



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"His Majesty Went Forth in a Chariot of Electrum, Arrayed in His Weapons of War"

King Thut-mose III, leading his chariot division, charges the host of the Syrians in the plain before Har Mengido, the Biblical Armageddon. He wears the Blue Crown, or royal war helmet, and about his chest is bound a gold-overlaid leather corselet. His heavy compound bow can drive bronze-tipped arrows through a thick sheet of metal. Javelins, and extra arrows and bows are in cases strapped to the vehicle. (XVIIIth Dynasty, 23rd regnal year of Thut-mose III, 1478 B. C.)

Painting by H. M. Herbert

The Vintage of 1400 B. C.

ON PAGE 495 it is no longer spring on the blood-drenched field of Armageddon, but late summer on the Egyptian estate of the Royal Scribe, Kha'em-hêt. The purple grapes, hanging ripe from the extensive arbor of the wealthy official, are being harvested by Kha'em-hêt's farm hands. Among the laborers we can recognize, besides the native Egyptians, a negro from Central Africa, a bearded Semite from the district of the Lebanon, and a blond Caucasian from the northern shores of the Mediterranean—a rather cosmopolitan crew.

Carried in baskets to the pottery (?) wine press, the grapes are trodden by a singing group of men and boys, who, to prevent themselves from slipping in the juicy mash, are clinging to ropes suspended from a framework.

The new wine is scooped from the catch-basin and promptly "bottled" in large pottery amphorae, the interiors of which have been coated with a non-porous film of resin. The jars are capped with heavy mud stoppers, pierced with vents to prevent the fermenting liquid from bursting its containers or "blowing the cork."

The stoppers, while still damp, are stamped in several places with the name of the estate or its owner, and on the sides of the jars is written the date of bottling. The trans-

portation of each of the heavy vessels to the wine cellar is accomplished by means of an intricately netted pot-sling, carried on a stout pole by two men.

In the arbor we see a man pouring water into the trenches from which spring the roots of the vines. At the right a peasant is irrigating the near-by field with the aid of a "shadûf," or well-sweep, a Mesopotamian invention, introduced into Egypt in the XVIIIth Dynasty and still in common use.

Second in popularity only to beer, wine was manufactured and consumed on a large scale by the ancient Egyptians from at least as early as the first historic dynasty (3000 B. C.). In addition to the domestic grape, palm, date, and pomegranate wines, foreign vintages, imported in bulk from Asia, were also much in favor with the discerning drinkers of the dynastic era.

Always a farmer at heart, the wealthy Egyptian official seems never to have let his love for his country estates wane during the centuries of Egyptian history. Over and over again in their sculptured or brightly painted tomb-chapels at Thebes great men like Kha'em-hêt are shown inspecting all the activities of their farms; frequently taking their lunches with them and making a day of it.



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"Causing the Vintage to Be Pressed"

At the grape harvest and the making of wine on the estate of the Royal Scribe, Kha'em-hêt, Kha'em-hêt in person appears (left), dressed for a tour of his fields. His leather shin-guards are to protect his legs from brambles and the like. The roof of the typical New Kingdom house in the background is fitted with large ventilators to catch whatever breeze may be blowing during the scorching Egyptian summer. (XVIIIth Dynasty, return of King Amen-hotep III, 1400-1375 B. C.)

Painting by H. M. Murray

A Family Outing in the Papyrus Pools

THE courtier Menena, like most other Egyptian husbands and fathers, was an indulgent man, and, when his job as "Scribe of the Fields of the Lord of the Two Lands" permitted him a little time off for duck hunting, he took his whole family with him. His making a family outing of the hunt was perhaps because the joy of merely being out on the cool water in his skiff of bundled papyrus reeds outweighed either the desire or the necessity of bringing in a large bag of ducks.

Menena is, however, tending strictly to business, his two decoy birds—small herons—held high in his left hand above the towering papyrus, into which the skiff has been nosed, his boomerang poised in his right hand for the throw.

The boomerang, or throw stick, was a favorite sporting weapon in Egypt from the earliest times, and so expert did its users become that they were capable at close range of knocking down a bird as it was rising in flight.

The pintail ducks, seen rising to the right, will be one fewer when this expert marksman has made his cast. Promptly the stunned bird will be retrieved by the light-footed cat which stands in the bow of the skiff beside Menena's son.

The two daughters are less interested in their father's sport than in the gathering of lotus flowers for decorating either themselves or their home; but Menena's wife, in

addition to holding his spare boomerangs, is showing the proper zeal.

The family, with the exception of the younger daughter, may seem a bit over-dressed for a picnic in the papyrus thickets, but this is the way they are all represented in the famous painting in Menena's tomb at Thebes.

The papyrus plant, here shown serving as a natural blind for an amateur duck hunter, played a dominant rôle in ancient Egyptian life, art, and industry. Bound together, its sturdy seven-foot stalks formed supports for the roofs of the Egyptians' earliest houses, and from these primitive uprights developed the graceful papyrus column of the type, which, carved in stone at a colossal scale, upholds the roofs of the great temples of the New Kingdom.

From roped bundles of papyrus the Egyptian built his first boats, similar to the skiff shown here. The fibres of the pith of the reed provided him with the material for his writing paper, and from the tough outer bark he made baskets, hampers, crates, and furniture of all sorts. As the emblem of Lower Egypt, where it grows thickest, and as a constantly employed heraldic and decorative motif the plant is well known in its conventionalized form to anyone acquainted with Egyptian art. Few plants have played so outstanding a part in the life of a nation as did the papyrus in the ancient land of the Nile.



Painting by H. M. Herget

"Amuse Thyself with Field Sports; the Water Fowl Has His Moment of Death Reckoned for Him"

The courtier *Menemh*, accompanied by his family, enjoys a pleasant day fowling in the papyrus thickets. The skills and their occupants waited silently behind the natural blinds formed by the papyrus until the birds, attracted by the decoys, came within range of the throwstick. (XVIIIth Dynasty, reign of King Thutmose IV, 1420-1411 B. C.)

At Home with the Average Egyptian and His Wife

ANY general account of ancient Egypt is, of necessity, largely taken up with the splendor of its rulers, the wealth of its great officials, and, at the opposite end of the scale, the simple poverty of its peasants. Thus we are prone to forget that, as in every great country, there existed at all times in the Nile Valley a large and, for the most part, well-to-do middle class—good, solid citizens, individually of no particular importance, but, collectively, the backbone of the nation.

Two such people appear on page 499. The man is, let us say, a clerk in a branch of the royal treasury, his wife a singer in the temple choir of Amûn. Their clothes, their few articles of jewelry, and the furnishings of their home, though hardly magnificent, are of good quality.

In addition to their house and small garden they probably own a little farmland, on which they pay the required taxes. It is likely that out of their modest living expenses they have saved enough to send their son to the school of scribes at Thebes and so assure him of respectable and well paid employment when he comes of age.

Just now the couple are amusing themselves with one of their most prized possessions—a game-box of cedar, inlaid with panels of blue faience. The top and bottom of the box carry the squared lay-outs, or

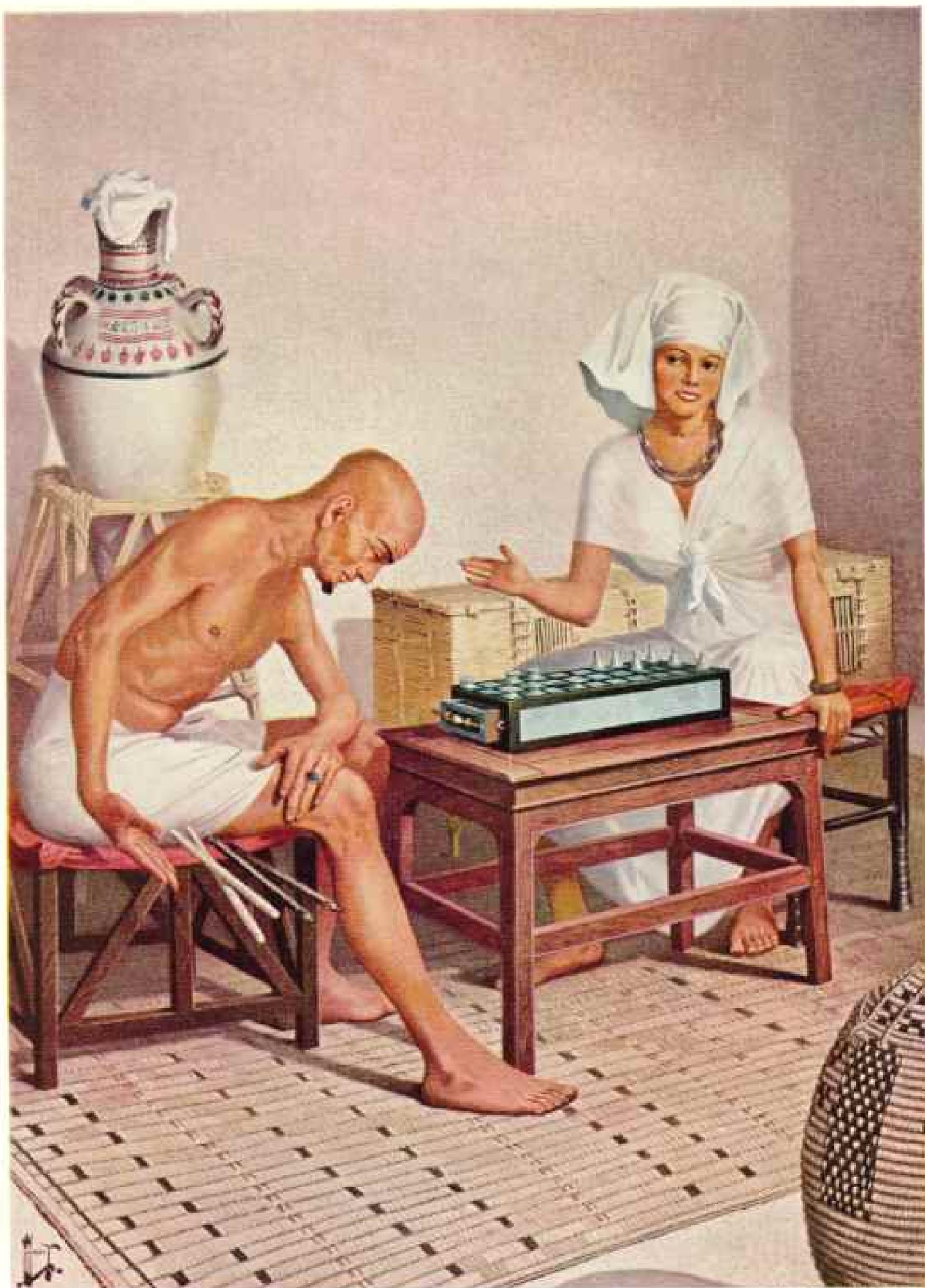
"boards," for the two most popular Egyptian draughts games, the game of Senit on the top, the game of Tshau ("Robbers") on the underside.

The faience playing pieces, which are the same for both games, were kept, when not in use, in the drawer in the end of the box. The set of four carved wands was used in place of knuckle-bones or dice, the way in which they fell, crossed, or pointed, when cast by a player, determining the moves that player was allowed to make.

The game in progress, Senit, was played on a board of thirty squares, the squares laid out in three rows of ten. Certain key squares are inscribed as being advantageous or disadvantageous to the player landing on them.

Six pieces (usually conical or spool shaped) were used by each player, the object of the game being, not to take the opponent's pieces, but, apparently, to pass through them and return to the original starting point, at the same time blocking the other fellow's moves as much as possible.

The prominent rôle played by such games in the lives of the ancient Egyptians is indicated by the fact that a picture of a draughtsboard was one of the oldest and most common signs used in their written language, and that the games played on it are mentioned repeatedly in their funerary and religious literature.



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Painting by H. M. Horner

"Sitting . . . , Playing Draughts, and Finding Twofold Contentment"

A middle-class Egyptian couple enjoy playing "Senet," one of several popular table games of the dynastic Egyptians. In play it resembled modern parchesi and backgammon. The moves were determined by the manner in which the set of four sticks, or wands, fell when cast. (Mid-XVIIIth Dynasty, 1500-1400 B. C.)

The Aten Shines, King Akh-en-Aten Dreams, and the XVIIIth Dynasty Draws to a Close

AS THE XVIIIth Dynasty passed into its third century, Egypt, imbued with Asiatic ideas and Asiatic blood, which now flowed even in the veins of the royal family, turned momentarily from its old traditions and its old gods, and set up a new religion devoted exclusively to the worship of the vital force emanating from the disk of the sun, "the living Aten."

Simpler and more general in its appeal than the old Amûn cult, which it attempted to replace, this monotheistic solar religion concerned itself not at all with morality, but placed its emphasis on "harmony," joy of living, love of nature, intellectual liberty, individualism and spontaneity. Brief as was its existence, its effect on Egyptian life, and particularly on Egyptian art, endured for many centuries after the "heresy" itself had been forgotten.

The chief exponent of the worship of the Aten was King Amen-hotpe III's effeminate son, Amen-hotpe IV, who came to the throne of Egypt in 1375 B. C. For four years this sensitive idealist ruled at Thebes, and then, accompanied by his beautiful wife, Queen Nefret-ity, and a large group of devoted courtiers, withdrew to the quiet isolation of Tell el-'Amârneh (El 'Amârna), some two hundred miles down the Nile, where he caused to be built for himself and for his god a wonderful new city, named Akhet-Aten, "Horizon-of-Aten."

Here, having changed his own name to Akh-en-Aten ("Spirit-of-Aten"), the pharaoh dreamed away the remaining fifteen years of his reign, while the empire of his fathers, ignored and forgotten, fell slowly to pieces and disorder, and lawlessness overran the land of Egypt.

Before he died, Akh-en-Aten attempted to reconcile himself with the much persecuted, but still powerful, priesthood of Amûn, and in so doing incurred the displeasure of Queen Nefret-ity, who removed herself to a palace in the extreme southern section of Akhet-Aten, and took with her thither her second daughter, 'Ankh-es-en-pa-Aten, and the latter's husband, young Tût-'ankh-Aten.

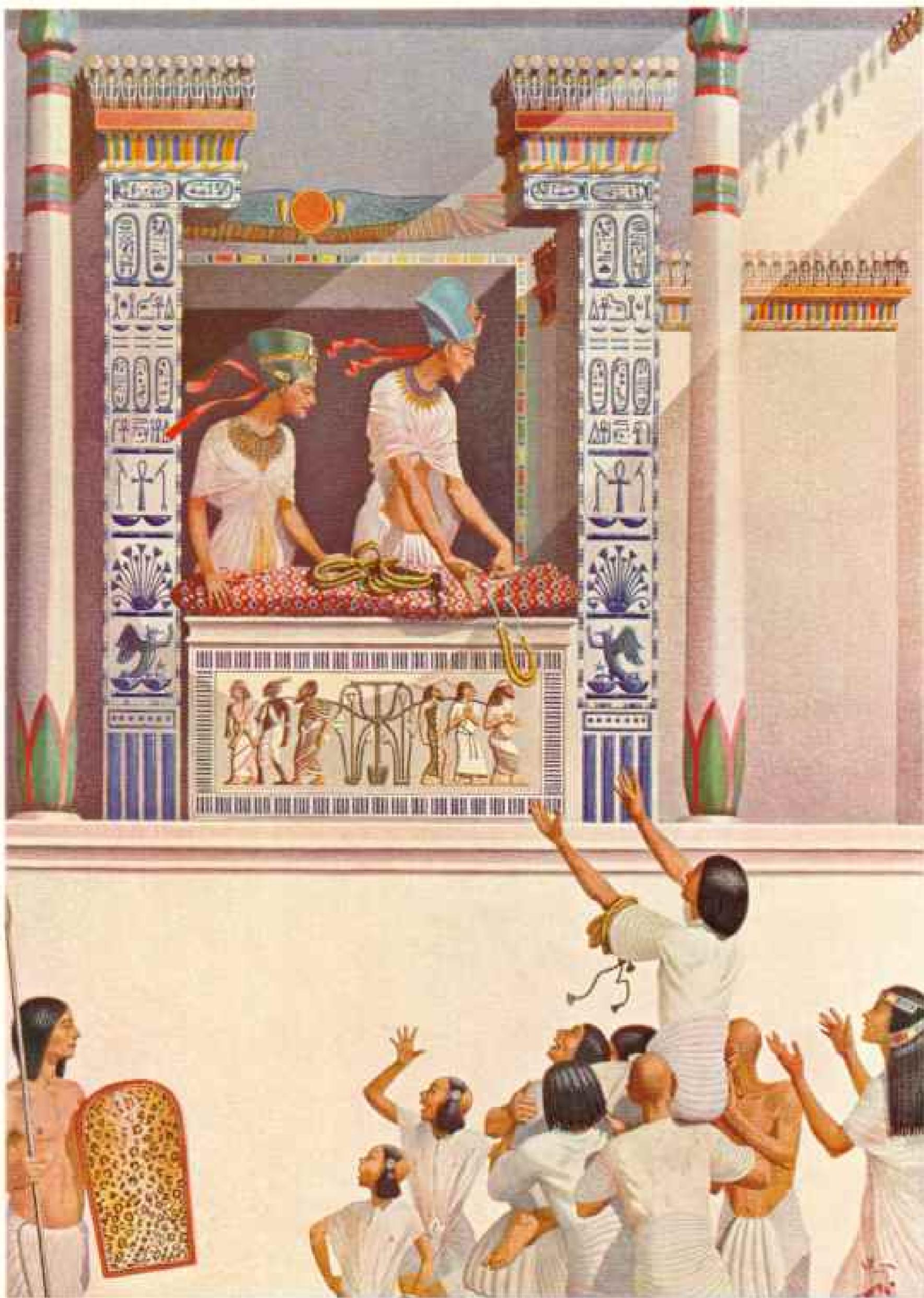
Following the brief reign of Akh-en-Aten's elder son-in-law, Semenkh-ka-Rê, Tût-'ankh-Aten came to the throne, moved the royal residence back to Thebes, altered his name to Tût-'ankh-Amûn, and permitted the old religion and the old order of things to be restored.

At the end of a short and otherwise insignificant reign, Tût-'ankh-Amûn—famous principally because his tomb miraculously remained intact until its discovery in 1922—died at the age of eighteen, and was himself succeeded by the same Ay who appears in the foreground of the plate on page 501, now a decrepit old man.

Har-em-hab and the XIXth Dynasty

Ay did not last long, and about 1340 B. C. the government was taken over by the Quartermaster-General Har-em-hab, a man of great vigor, experience, and administrative ability, who during his twenty years as pharaoh repaired most of the damage wrought during the "'Amârneh ('Amârna) Period" and died leaving Egypt and the Empire once more sound and prosperous.

At the death of Har-em-hab in 1320 B. C. the throne passed to his old companion-in-arms, General Pa-Ramessu, better known as King Ramesses I, founder of the XIXth Dynasty.



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Painting by H. M. Herbert

"Lo, His Majesty Appeared Like the Sun in His Palace" . . ."

King Akh-en-Aten and Queen Nefer-titi, standing on the "Balcony of Royal Appearances" at Tell el-Amārnā (El-Amārnā), publicly award the "gold of honor" to a favored courtier, the Priest Ay, later king of Egypt. Ay is surrounded by his wife, friends, and children. (Late XVIIIth Dynasty, reign of Akh-en-Aten, 1375-1357 B. C.)

A Wealthy Theban Is Buried in His Tomb in the Western Cliffs

IN 1318 B. C. the aged Rameses gave way to his son, the brilliant Setby I, who, after twenty-one years as king, was replaced by his son, Rameses II—probably the best known of all Egypt's pharaohs (page 482).

The kings who followed Rameses II—including Mer-en-Ptah, often identified as "the pharaoh of the Exodus"—sank into insignificance beside his titanic figure; but it was not until many years after his death that the New Kingdom came to an end and dynastic Egypt entered upon its last, long drawn out death struggle.

With this briefest of historical outlines as a background, we are now ready to resume our inspection of the existences of the people who experienced life and death under the pharaohs just named. Let us start with a death.

The funeral procession, leaving the city of the living on the east bank of the Nile, has crossed the river, wound deep into the western cliffs, where lie the "eternal dwellings" of the dead, and halted before the portico of a freshly prepared tomb. The ox-drawn hearse, reproducing in its form the barque of the sun-god Rē, stands empty at the left of the picture, and behind and past it come the bearers of the tomb furniture and other funerary equipment.

Beyond the hearse we see the "Canopic" chest, also mounted upon a sledge, and containing, in four stone jars, the four vital organs of the dead man, removed from his body during the process of mummification. At the left

end of the portico the "Mou," a pair of mummers, wearing burlesque crowns of reeds, are performing their curious funeral dance.

The body of the dead, encased in a coffin made in the form of the god Osiris, has been stood upright before the door of the tomb, supported by a masked priest, impersonating the dog-headed god Anubis, the divine embalmer.

The "Sem," or chief mortuary priest, wearing the leopard skin of his office and assisted by a group of other priests, is "opening the mouth" of (i.e., restoring speech to) the deceased by touching the lips of the coffin with a ceremonial instrument shaped like an adze.

This act of magic, one of the final rites in the burial service, is witnessed in gloomy silence by the male relatives of the dead man, who sit brooding at the right of the scene. It is greeted with wails of anguish and violent gestures of grief by the female mourners, many of whom are undoubtedly professionals hired for the occasion.

The sorrow of the woman who clings to the legs of the coffin, however, is genuine, for she is the widow of the deceased, and even her conviction, that, in dying, he has but passed to a new and better life, is small comfort.

High above on the capstone of the pyramid the spirit of the dead man is depicted singing the morning hymn to the sun-god, Rē, a song of praise repeated each dawn as the first rays of the sun warm the granite pinnacle of the tomb.



© National Geographic Society

Painting by H. M. Hagen

"A Funeral Procession Is Made for Thee on the Day of Burial"

At a New Kingdom funeral in western Thebes, the tomb chapel, its interior hewn out of the living rock, is surmounted by a small pyramid of brick, covered with stucco and capped by a granite pyramidion. In the porch may be seen the stela and two funerary statues of the deceased, and in the court before the chapel, the mouth of the secret burial shaft. "The mummy-shell is of gold, with head of lapis lazuli; the cover is (closed) over thee and thou art placed upon a sledge. Oxen drag thee and the dance of the Mau is performed for thee at the door of the tomb." (XVIIIth-XIXth Dynasties, 1300-1200 B. C.)

User-hêt Entertains

COMPLACENT in his assurance of a blessed immortality, the ancient Egyptian was unawed by the prospect of death. His hearty version of the motto, "Eat, drink, and be merry, for tomorrow we die," was said, as it has always been intended to be said, carelessly and cheerfully. His talent for enjoying the good things of this life was enormous, and his often elaborate parties were rollicking affairs indeed.

Prodigious consumption of spiced wine and beer featured these banquets, and guests were urged repeatedly to drink long and deeply. Rich and heavy perfumes filled the banquet hall, and garlands and bouquets of fresh flowers were everywhere to be seen. Brightly painted wine jars, and cups, bowls, and vases of gold, silver, and alabaster added a note of gaiety and opulence.

Music was provided by orchestras of thinly clad girls, playing the double reed pipe, the three-stringed lute, the six-stringed lyre, and the twenty-two-stringed harp, and beating out the time on big rectangular tambourines.

As the feasts, formal and decorous at the outset, gathered momentum, the tinkly rhythms increased their tempo, and the dancers passed from slow, dignified posturings to wilder

and more exciting movements, often culminating in a series of leaps, somersaults, back flips, and hand-springs.

All the while an army of butlers and serving girls circulated among the guests, plying them with food of every description, flavoring their drinks with spices poured out of little silver pitchers, supplying them with fresh garlands and fresh cones of perfume, rearranging their elaborate, but often disordered clothing, and helping them in other ways.

At the end of the party some of the participants had to be assisted, or even carried, to their homes; but this was regarded as a compliment to the hospitality of the host.

Urging his master to make the most of the fleeting hour, a harper at such an ancient Egyptian feast once sang:

Put unguent and fine oil together to thy nostrils,
And garlands and lotus flowers on the body of thy beloved,

As she sitteth beside thee,
Set singing and music before thy face.
Cast all evil behind thee and bethink thee of joy,
Until that day cometh when one reacheth port
In the land that loveth silence."

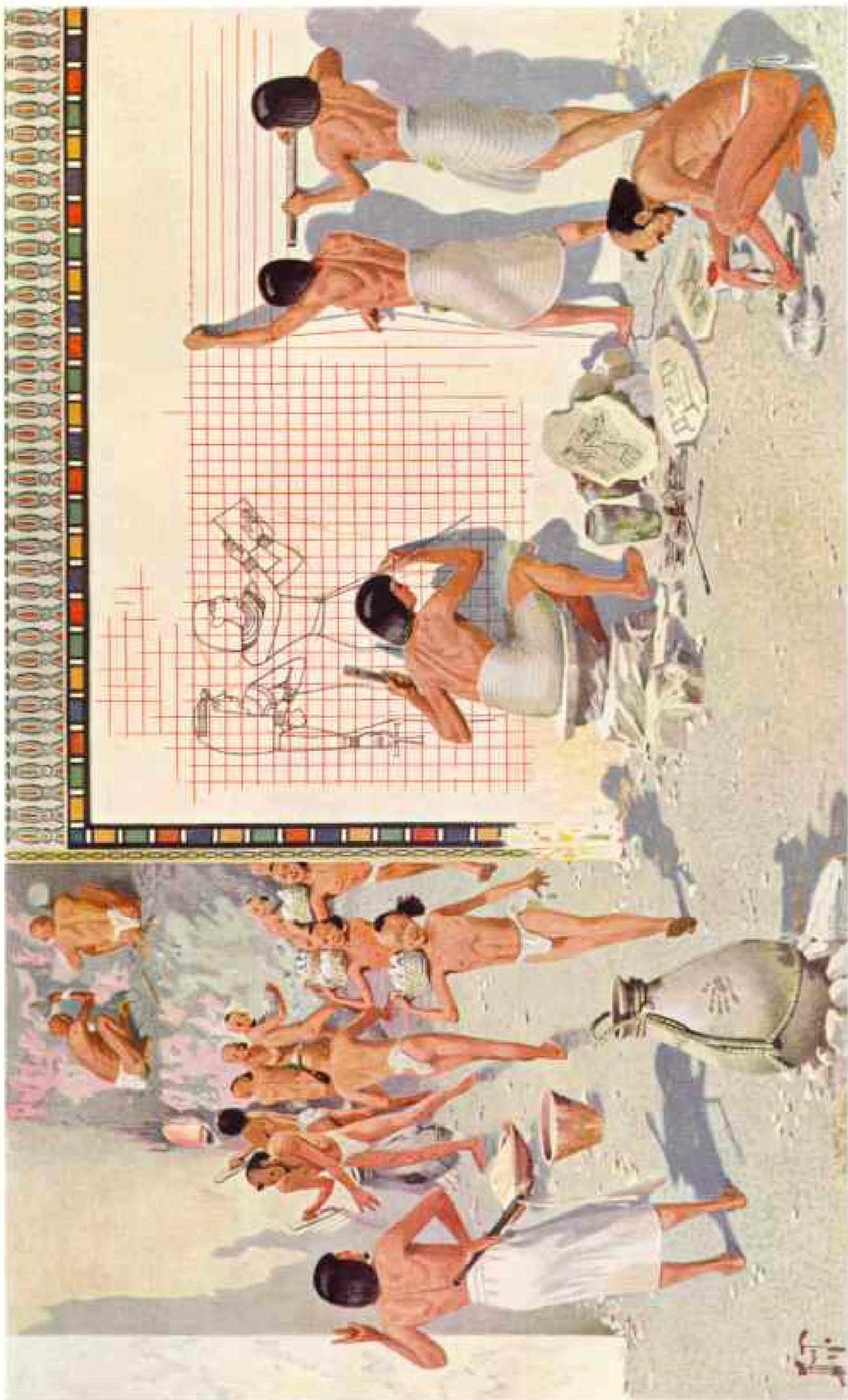


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"Spend the Day Merrily, O Priest!"

Painting by H. M. Jernig

User-hét, Chief Priest of the Royal Spirit of King Thut-mosef I, gives a formal banquet in the central hall of his town house at Thebes. The host and hostess are seated together in the right foreground. The cones of perfumed fat, perched on the heads of the banqueters, will in the course of the long, hot afternoon melt and run down over their persons. (XIXth Dynasty, reign of King Sethy I, 1348-1298 B. C.)



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"And There Was Made for Me a Tomb in the Midst of the Tombs"

Painting by H. M. Hargis

"The masons that hew tombs marked out its plan; the master-draughtsman designed in it; the master-sculptors carved in it; and the master-architects who are in the necropolis bestowed their care upon it." It was customary to plaster and paint each part of a tomb as soon as it was cut, even though the adjoining portions might be still in the process of excavation. In this scene at Thebes artists are laying out the decoration of the transverse forehall of the private tomb chapel, while masons and basket-boys are at work in the as yet unfinished longitudinal passage. (XVIIIth-XIXth Dynasties, 1500-1700 B. C.)

Preparation of a Painted Tomb-chapel—The Egyptian Artist and His Methods

A T-SHAPED tomb-chapel, hewn out of the side of a hill in the Theban necropolis, is nearing completion. The rock-cut walls of the forehall of the chapel have been given a thick coating of plaster and, being now ready to receive their decoration, have been turned over to a learned scribe and his staff of painters and draughtsmen.

The latter are engaged in transferring to the walls a series of scenes and inscriptions, already planned and drawn up at small scale on flakes of limestone. To insure accurate enlargements of the original drawings and to maintain the strict canon of proportions, under which the Egyptian artist always worked, proportion squares are laid out on both the sketches and the walls, the lines which form the squares being "snapped" on by means of a cord coated with red pigment.

The man marking off the spacing of the lines is using a measuring rod, one royal cubit (20.6 inches) in length, divided into 7 "palms" of 4 "digits" each. On the squared "grid" so prepared there is made a full-size preliminary sketch in red outline and, over this, the finished drawing in black outline, a fine reed brush being used to lay in both drawings.

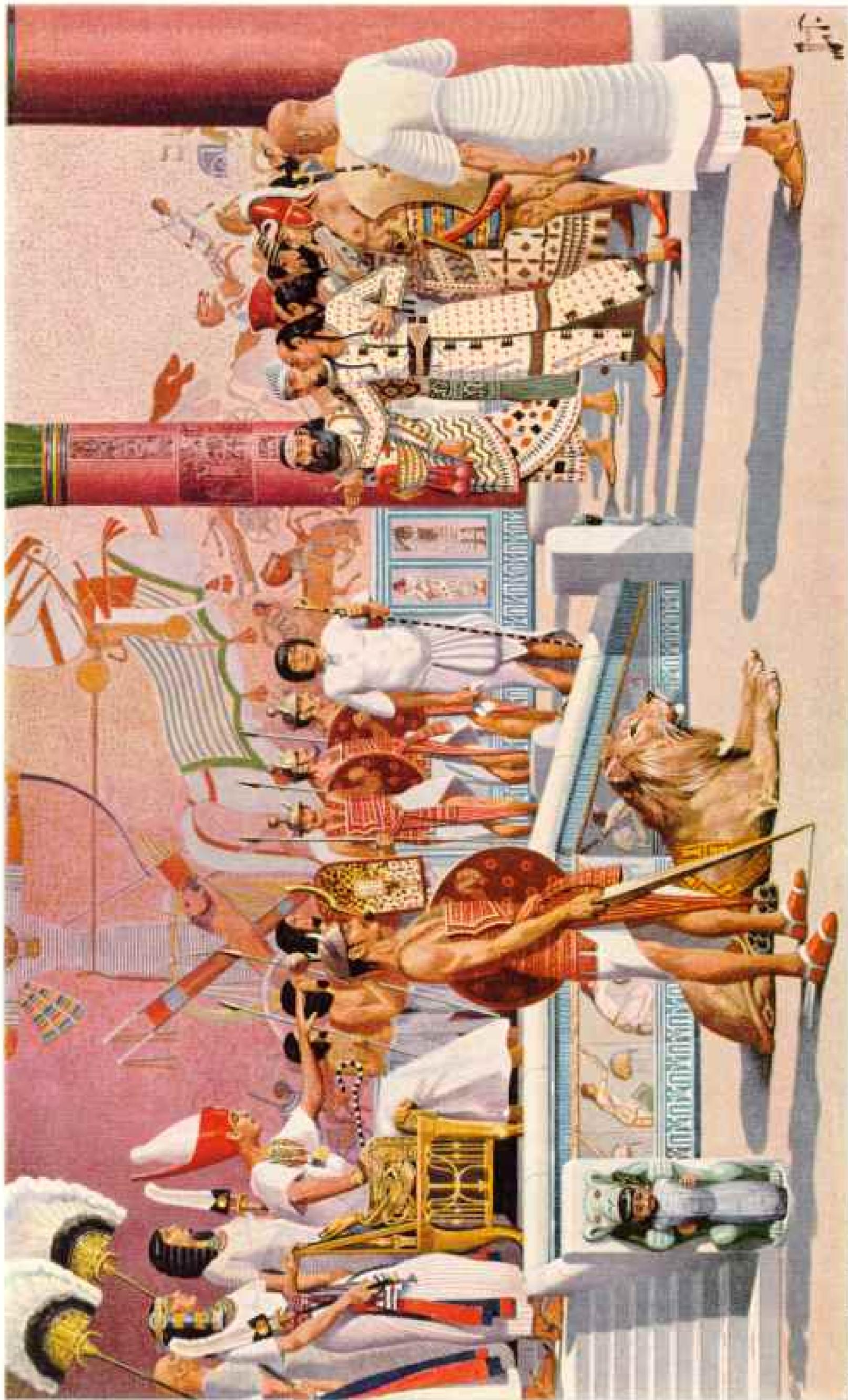
In coloring the drawings, the inscriptions, the borders, and the backgrounds, the painters will use blue, red, yellow, and green pigments, ground to powder on the spot and mixed with beeswax, albumin, gum, or a similar vehicle. Their

paint brushes are palm sticks with carefully frayed ends, or bundles of grass lashed tightly together with grass cord.

Meanwhile the excavation of the longitudinal passage of the chapel is progressing rapidly. The stream of limestone chip, falling from the heavy bronze chisels of the stone-cutters, is being run out of the tomb by an endless line of basket-boys; and already the plasterers are at work, smoothing over the walls at the forward end of the passage. Presiding over all this part of the work is the gang foreman, armed with his symbol of office—a heavy whip, impressive and formidable in appearance, but probably rarely used.

Many tombs at Thebes and elsewhere were pressed into service while their decoration and often even their excavation was in an unfinished state. Such tombs have provided the modern student with invaluable information as to the methods used. This information has been swelled by the discovery near several tombs of the work records and other memoranda, written down day by day on pottsherds and flakes of limestone by the scribes in charge of the work.

Discarded by the ancient writers as soon as they had served their purpose, these short notes give us a vivid picture of the daily progress of the work, of the number and types of artisans employed, of the materials, food, and clothing supplied to the gangs, and of the amusing small details which cropped up during the course of the job.



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"Lo, His Majesty Was at the City, Called 'House-of-Rameses-Beloved-of-Amūn' . . . There Came the King's Messenger . . . to Grave Peace"

Rameses II, enthroned in the audience hall of his Delta palace, receives a delegation of Asiatics, headed by the envoy of Khattushili, king of the Hittites, with whom he subsequently concluded a treaty of peace. On the pharaoh's right stands his eldest son, Prince Amūn-her-khopeshef, and, drawn up beside the throne dais, are members of the king's Sardinian bodyguard, as well as native Egyptian troops. The lion is a royal pet. (NINETEENTH Dynasty, 13th year of Rameses II, 1257 B. C.)

Rameses "the Great"

WHETHER or not the second of the twelve kings of Egypt named Rameses was entitled to the epithet now commonly applied to him is an open question. There can, however, be no doubt that, if not actually "great," he was one of the most remarkable—or, better, "incredible"—rulers the earth has known. A few statistics will show what is meant.

Rameses II, born in 1318 B. C., came to the throne in 1298 and reigned the amazing total of 67 years, dying in 1232 at the ripe age of 86.

The names of seven of his queens, seventy-nine of his sons, and thirty-one of his daughters have been preserved to us, but this probably does not begin to represent the total number of his wives and children.

Buildings erected, enlarged, or completed in his reign include the Ramesseum—his great mortuary temple and palace in western Thebes—, the temple of Amūn at Luxor, the hypostyle hall and other structures at El Karnak, his own and his father's temples at Abydos, his father's temple at El Qurna, the temple of Ptah at Memphis, several large buildings at Tanis, a palace at El Qantara, and the two imposing rock temples at Abu Simbīl in Nubia (pages 480-481).

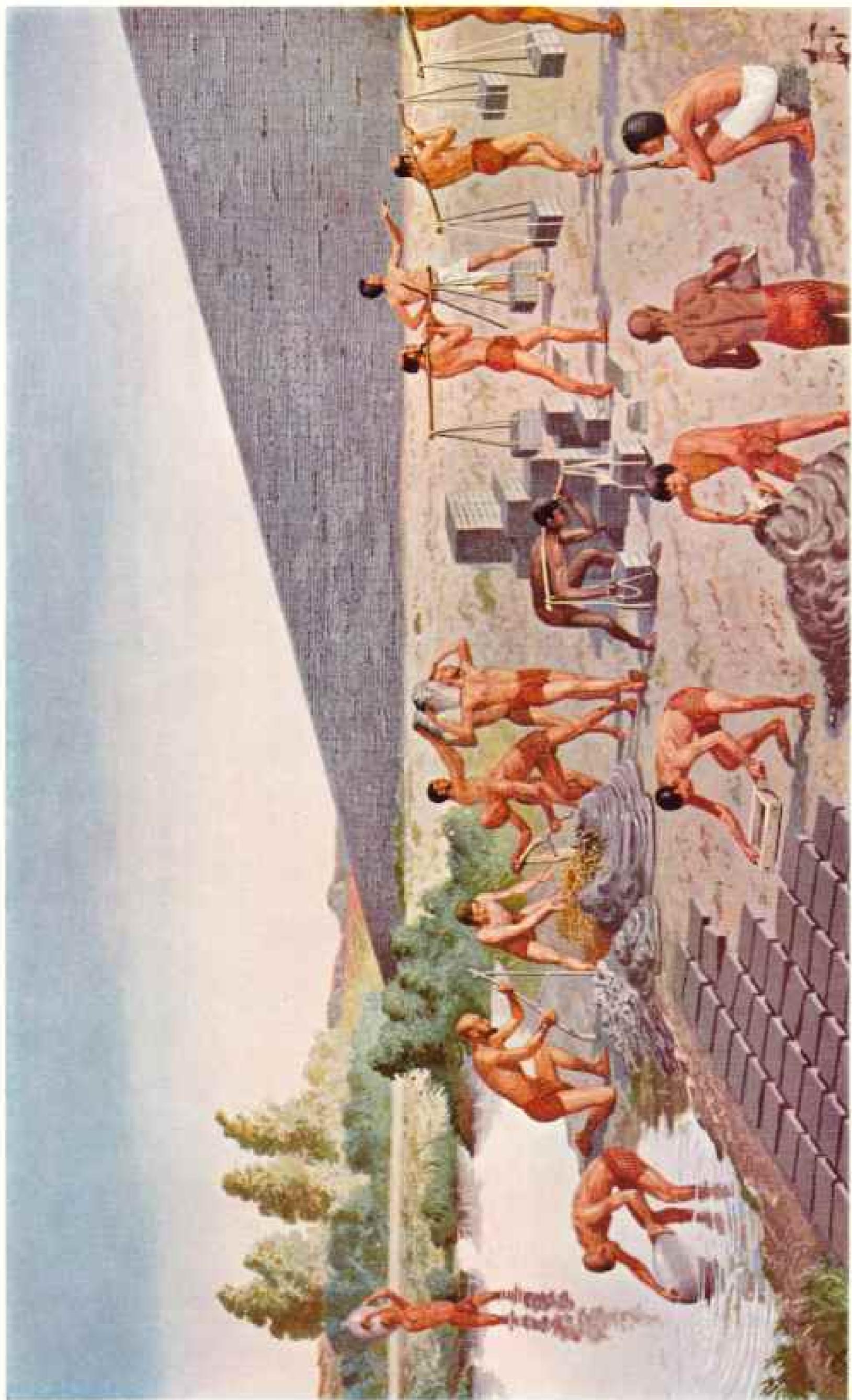
By virtue of his own gigantic building activities and his constant usurpation of the monuments of earlier kings, his

name appears on almost every ancient building in Egypt and on literally hundreds of lesser monuments.

As a warrior he was less distinguished than as a builder. He did, however, conduct allegedly successful campaigns against the Nubians, the Libyans, the Syrians, and the Mediterranean islanders; and managed to check for the time being the rising power of the Hittites of Asia Minor. His outstanding military exploit was his inconclusive victory over the Hittites and their allies in the battle of Kadesh, where, whatever else may be said of him, he did undoubtedly display great personal valor.

Personally Rameses II was every inch a king: tall, handsome, majestic in his bearing, and utterly reckless, both on the field of battle and in civil life. His vitality has probably never been surpassed, and this, coupled with his undoubted popularity, permitted him to accomplish deeds, which a nobler and more intelligent ruler might well have found impossible.

His greatest faults were his insatiable desire for publicity and his unparalleled talent for boasting—faults which have too often caused posterity, unimpressed and thoroughly bored by his endless self-eulogies, to dismiss him as an empty and pompous "blowhard," unworthy serious consideration.



U. S. National Geographic Society

Painting by H. M. Derwent

"Captivity Which His Majesty Brought, for the Works of the Temple of Amūn"

Foreign captives, among whom may be recognized several men of Semitic race, are engaged in making bricks for a construction ramp used in building the temple of Amūn at El Karnak. The scene, though taken from an XVIIIth Dynasty tomb painting, shows precisely the kind of work exacted from the Hebrews by the XIXth Dynasty "pharaoh of the oppression". The network linencloths worn by the laborers are of old leather. (XVIIIth-XIXth Dynasty, 1500-1200 B. C.)

The Manufacture and Use of Brick in Ancient Egypt

THE average dictionary or encyclopædia derives the word *adobe* from the Spanish *adobar*, "to plaster," and lets it go at that; but *adobe*, meaning "brick," was a common word in ancient Egypt fifty centuries before the Spaniards invaded the Western Hemisphere, and, as the Arabic *tuba*, survives to the present day.

Nor have the methods of making and using the Egyptian sun-dried mud brick changed one iota since the prehistoric period. The modern brickmaker uses the same simple wooden mold seen in our plate, "strikes" his bricks in the same manner as did his remote ancestor, and leaves them to dry on the same flat mud surface under the same scorching sun. Only the size of the brick itself has changed, the New Kingdom bricks (14 x 7 x 4½ inches) being larger than the modern product.

The mud used for making bricks has always been the dark gray Nile alluvium, mixed with sand or chopped barley straw, and kneaded with water into a thick paste. The straw, though helpful as a binder and a drying agent, is by no means essential, many excellent bricks having been turned out, using only sand as a binder, or, if the clay content of the mud was high, with no binder at all.

For six thousand years sun-dried brick has been the principal building material of the Egyptians, far surpassing in the extent of its use cut stone. The latter, first employed in the IIrd Dynasty, has been confined almost entirely to the construction of funerary and religious monuments, every other type of building—dwellings, city and temple walls, forts, storehouses, ramps, etc.—being of brick.

At an early period the Egyptian not only learned the secret of the arch and barrel vault, but mastered methods of laying and bonding brick, which enabled him to construct

walls and embankments of enormous thickness, as, for example, the 80-foot girdle wall of the city of Tanis.

Without construction ramps, buttresses, sand-chambers, and temporary scaffoldings of brick, the pyramids at Giza and the temple of Amūn at El Karnak could never have been built, and it is therefore to the ancient Egyptians' knowledge of the uses of the humbler material that we owe the existence of these greatest of all stone monuments.

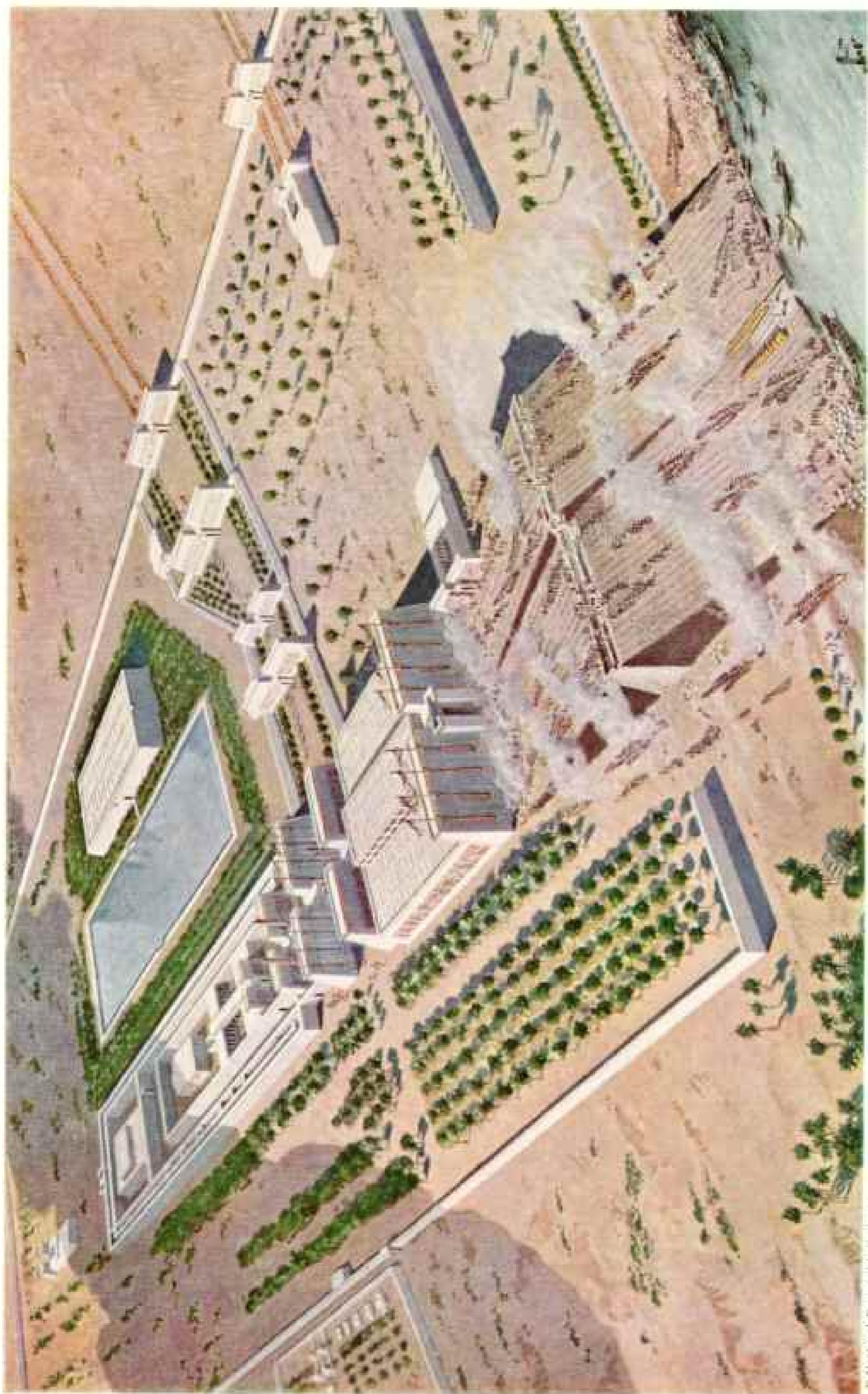
Decline of Egypt in the Late Dynastic Period

A civilization like that of ancient Egypt cannot be wiped out in a day. It required, in fact, almost nine hundred years—from the XIXth Dynasty to the Macedonian conquest in 332 B. C.—for the dynastic era to pass out of existence.

During most of this period the country appeared outwardly as sound as ever and at times seemed to have recovered much of its old splendor—notably, in the reign of Rameses III of the XXth Dynasty and during the brilliant, if fleeting, revival fostered by the Saite kings of the XXVIIth Dynasty.

Actually, however, Egypt was on its last legs: priest-ridden, economically unsound, sapped of its native vitality by centuries of luxury and self-indulgence, overrun by foreigners, and depending for its defense on an army composed almost entirely of mercenary troops.

In its weakened condition it was an easy mark for the new and powerful neighboring states, with which it now found itself surrounded; and the story of the end of dynastic Egypt is one of a long succession of foreign rulers, interrupted at intervals by the short-lived and, for the most part, local governments set up by petty, native dynasts.



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"His Majesty Gave Stipulations for Building a Very Great Pylon, in Order to Brighten Thebes"

Painting by H. M. Durant

The never finished outermost pylon of the temple of Amun at El Karnak, started in the 21st year of Sheshonk I of the XXIIIrd Dynasty (924 B. C.), is under construction. Up the temporary ramps on either side Palestinian and Nubian captives are hauling sledge loads of sandstone blocks, brought from the quarry by the stone larcers (right foreground). To the right of the rear portion of the temple is the sacred lake; to the left, the enclosure of the temple of the war-god Montu. Mid-distant on the right appears the temple of Amun's son, Khonsu, behind which the pylons and avenue of sphinxes lead to the temple of the godden Mut, Amun's wife.

The Largest Temple Ever Erected by Man—2,000 Years Building

Few of the great Egyptian temples of dynastic times were planned and executed as single units, most of them having been built, rebuilt, and added to at irregular intervals over long periods of years. Yet, nearly all of them conform to the same basic plan, which is that of the more elaborate Egyptian dwelling house or palace.

The central, or inner, portion of the temple—always the first part built—contains the *sanctuary* and the adjoining private chambers, in other words, the living quarters of the god. In front of this is the columned audience chamber, or *hypostyle hall*, corresponding to the semi-public reception room in the ordinary Egyptian house.

This, in turn, opens on to a walled and usually colonnaded *forecourt*, approached from the front of the temple through a monumental gateway, flanked by two great rectangular towers, supporting tall flag-staffs. The whole of the last named element, the *pylon*, is repeated again and again before the earlier parts of the temple, each of these parts having at one time been the front of the building.

Far and away the largest building of this type—indeed, the largest columnar structure ever erected by man—is the temple of Amûn at El Karnak, situated in the midst of a 200-acre sacred precinct, a mile and a half north of the modern town of Luxor. Founded at least as early as the Middle Kingdom, this gigantic shrine was 2,000 years building, its latest architectural addition having been made under the Ptolemies, shortly before the dawn of the Christian Era.

More than four hundred yards in length, the temple, with the exception of the now ruined Middle Kingdom struc-

tures, was built almost entirely of sandstone, surfaced with white stucco and covered with miles of painted reliefs.

The forecourt, fronted by the colossal first pylon, covers 93,000 square feet. Both court and pylon were built under the Libyan pharaohs of the XXIInd Dynasty.

Behind the court and screened by the second pylon is one of the wonders of the ancient world, the great hypostyle hall, erected, together with the pylon, by the first three kings of the XIXth Dynasty: Rameses I, Setby I, and Rameses II. The roof of this hall, into which the entire cathedral of Notre Dame in Paris could be fitted, with room to spare, is supported by 134 tremendous columns. Those of the central aisle tower 69 feet to the 7-ton stone roof beams. Six acres of painted relief sculpture decorate the interior (page 479).

Back of the hypostyle hall and surrounding the remains of the original limestone temple of the Middle Kingdom is a series of obelisks, pylons, courts, halls, and inner chambers, built by the great kings of the XVIIIth Dynasty, from Thut-mosé I to Amén-hotpe III, inclusive. Of the extant obelisks—granite monoliths, ranging in height from seventy-one to ninety-seven feet—one of Thut-mosé I and one of his daughter, Hat-shepsût, are still standing.

The "Most Select of Places," as the temple was called, is now a huge, dingy brown ruin; but in its heyday it sparkled with color and reflected light, its brightly painted cornices standing out vividly above its pure white walls, its gigantic bronze doors, its tall pennant-tipped flag-staves, encased in electrum, and the electrum caps of its towering obelisks gleaming in the fierce Egyptian sun.



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Painting by H. M. Bryant

"The Stranger People from Without Are Come into Egypt"

Queen Amun-dyck-het is questioned by her captor, King Esarhaddon of Assyria. Routed by the Assyrians before Memphis, Egypt's Ethiopian pharaoh, Taharqa, has fled southward. (XXVth Dynasty, 19th regnal year of Taharqa, 670-b. c.)

The Assyrians (and Others) Come Down Like a Wolf on the Fold

IN 945 B. C., following 145 years' rule by the high priests of Amūn who composed the XXIst Dynasty, the throne of Egypt was seized by a Libyan soldier, named Sheshonk. This pharaoh, the Biblical Shishak, was responsible for the sack of Jerusalem in 930 B. C. and the building of the first pylon and forecourt at El Karnak a few years later.

His dynasty, the XXIIrd, ruled a minimum of 200 years, but its later kings exercised only local authority in the north, the rest of the country having been taken over by the Ethiopian kings of Napata. The same conditions prevailed during the short, feeble XXIIIrd and XXIVth Dynasties.

The pharaohs of the Ethiopian XXVth Dynasty passed most of the years 712-663 B. C. trying vainly to defend Egypt against the Assyrians, who invaded and ravaged the northern part of the country almost at will.

In our plate an Ethiopian queen of Egypt, Amun-dyek-het, whose husband, the pharaoh Taharka, has abandoned her and the rest of his family, stands before her Assyrian captor. The queen's crown is surmounted by the double plume, the lunar disk, and the cow's horns of the goddess Hat-Hor. The necklace with bronze counterpoise, held in Amun-dyek-het's right hand, is her insignia as priestess of Hat-Hor.

When, at the end of this period, more important wars with Babylon and Elam had diverted the main force of the Assyrians from Egypt, Psammetik, an Egyptian prince of the Delta city of Saïs, drove out their remaining garrisons and established a new native dynasty, the XXVIth.

During the "Saïte Period," so inaugurated, Egypt took on a new lease

on life. Though its holdings in Syria and Palestine were lost to Nebuchadnezzar of Babylon, the country itself was not invaded, and for 138 years enjoyed some peace and prosperity.

Trade was re-established with the rest of the eastern Mediterranean world and mutually beneficial relations were entered into with the rising country of Greece. Art, using as its models the outstanding works of bygone eras, enjoyed a splendid revival, many of the artistic productions of the Saïte period ranking with the best that Egypt has to offer.

The final blow to Egyptian independence was, however, not long in coming. In 525 B. C. the XXVIth Dynasty fell before the onslaughts of King Cambyses of Persia, and Egypt became a Persian province. It remained so until, with the rest of the Near East, it was conquered by Alexander the Great of Macedon.

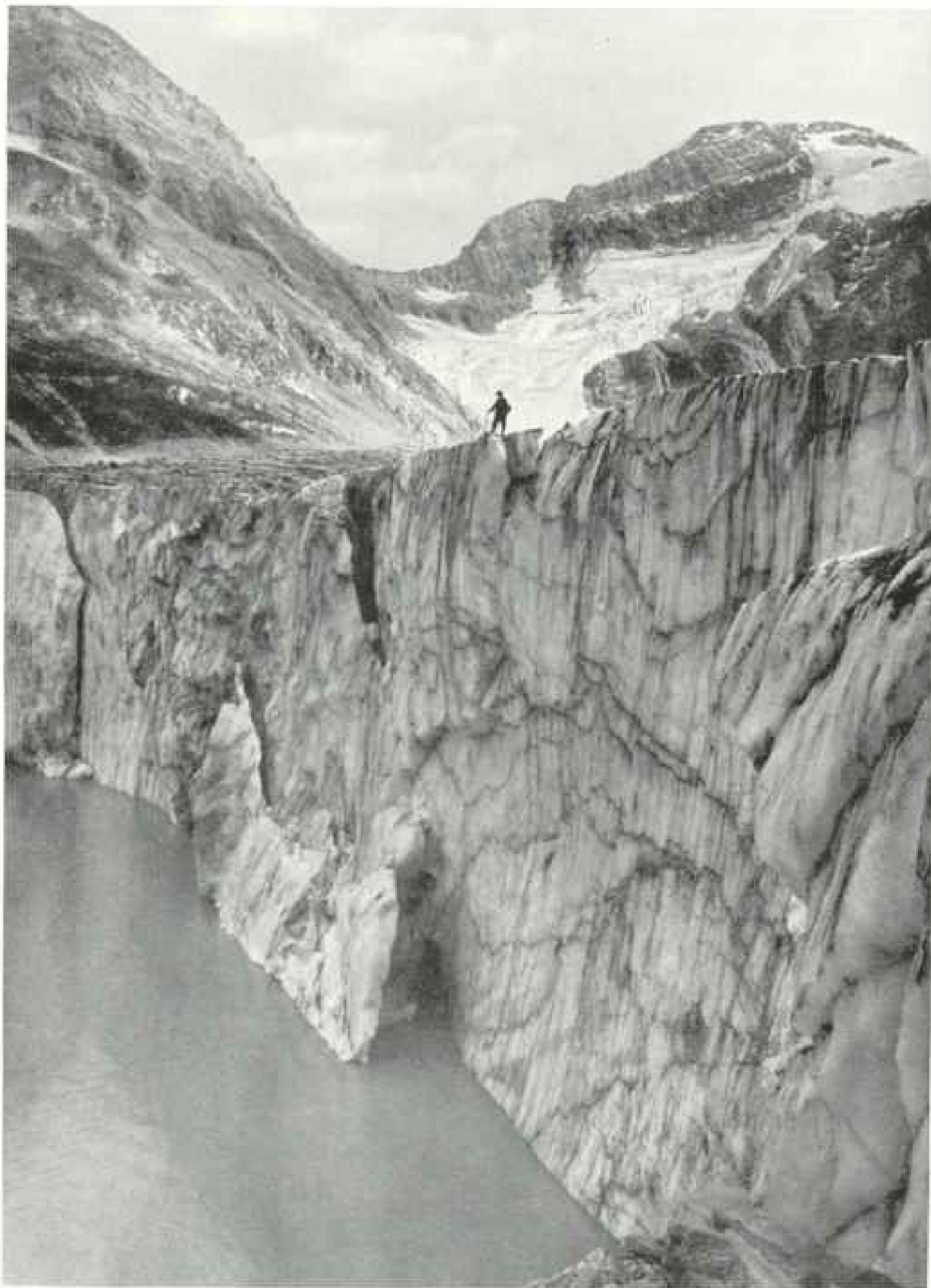
At Alexander's death in 332 B. C. a Macedonian general named Ptolemy was appointed governor of Egypt; and for almost 300 years the country was ruled by his descendants.

The last of the Ptolemies was Cleopatra VI. Ironically enough, this Greek woman has come to be the best known "Egyptian" queen in history.

After her the Romans ruled Egypt for nearly 500 years. Then the Moslems conquered it. Since A. D. 650, Egypt has been a key state in the Mohammedan world. From 1517 to 1919 Turkey held it almost continuously.

We leave the ancient Egyptians, well content if, in our pictures and in our story, we have portrayed them truly, not as a weird collection of mummy-making freaks, but as the very ordinary men and women they were—simple, hard working, cheerful, and, above all, thoroughly human.

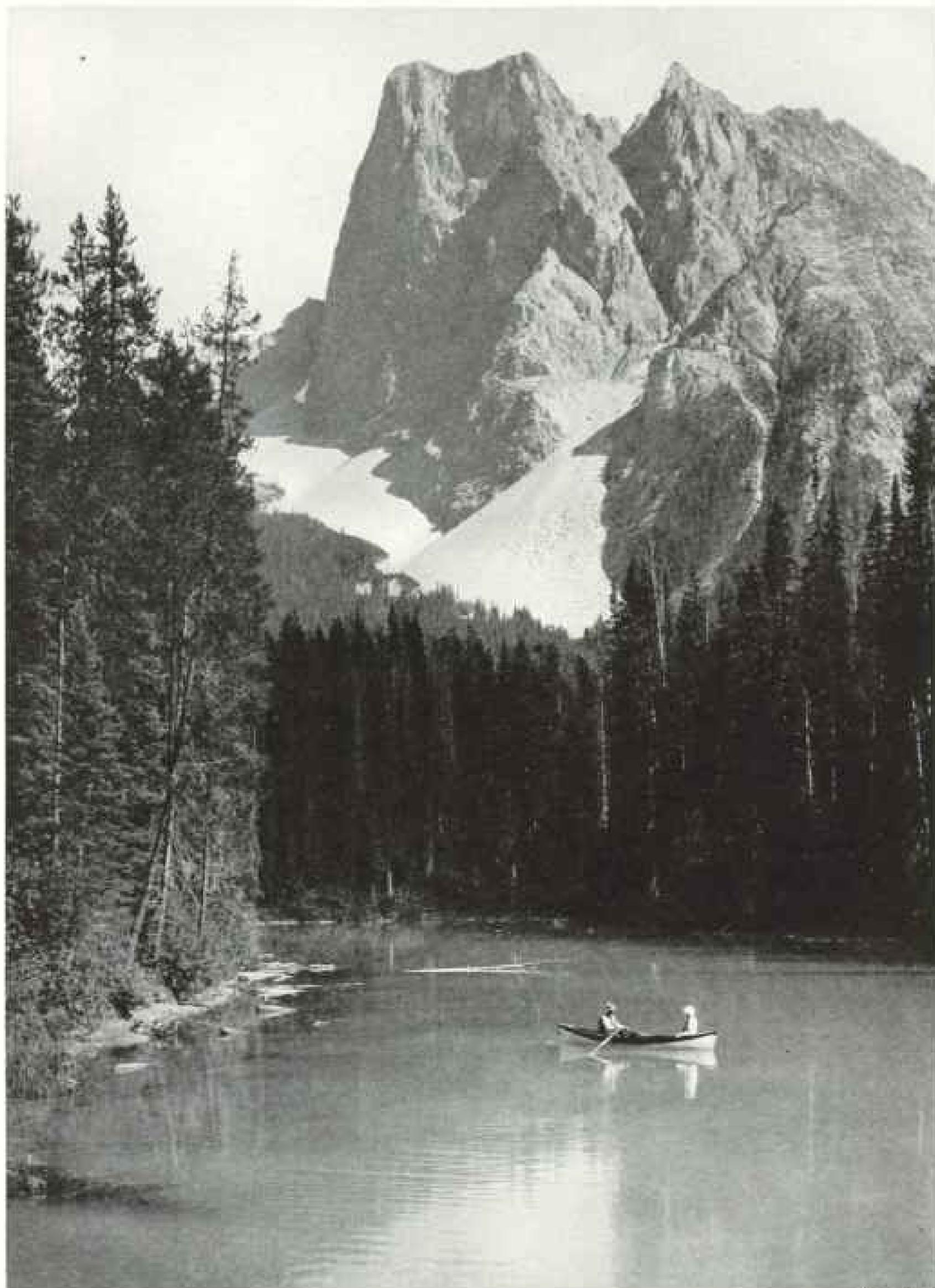
Peaks and Parks of Western Canada



Byron Harison

Sheer Walls of Ice, 90 Feet High, Lock the "Lake of the Hanging Glaciers"

Half a dozen frozen rivers flow into this flaming jewel high in the southern Selkirk Mountains of British Columbia. From the towering face of the glacier, glittering like veined marble in the sunlight, icebergs crack off during summer months and splash into Glacier Lake. They vary in size from almost submerged chunks, a few feet in diameter, to floating islands several hundred feet long. Many assume fantastic shapes.



W. J. Oliver

Throne for the Red Gods, Mount Burgess Towers above Emerald Lake in Yoho Park.

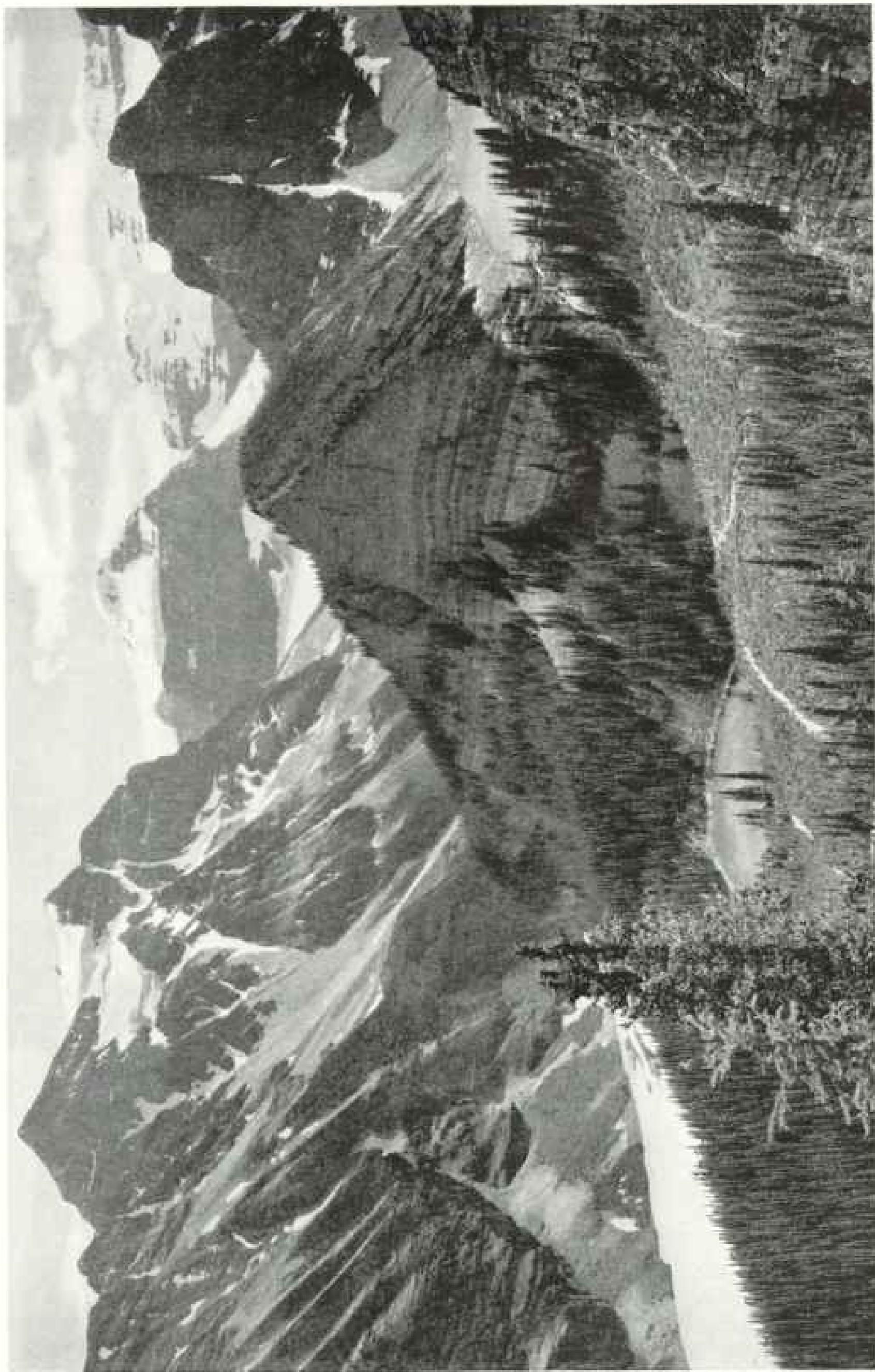
A fan-shaped gravel slide resembles a pile of sifted flour poured through the funnel-like gap. Lakes and streams of Canada's western national parks delight the angler with gamy grayling and many varieties of trout. In Lake Minnewanka, near Banff, lucky sportsmen have hooked lake trout weighing as much as 40 pounds. A Government hatchery constantly restocks the best fishing lakes.



W. J. Oliver

Canoeists Pitch Their Teepee at the Narrows in Glorious Maligne Lake, Jasper National Park

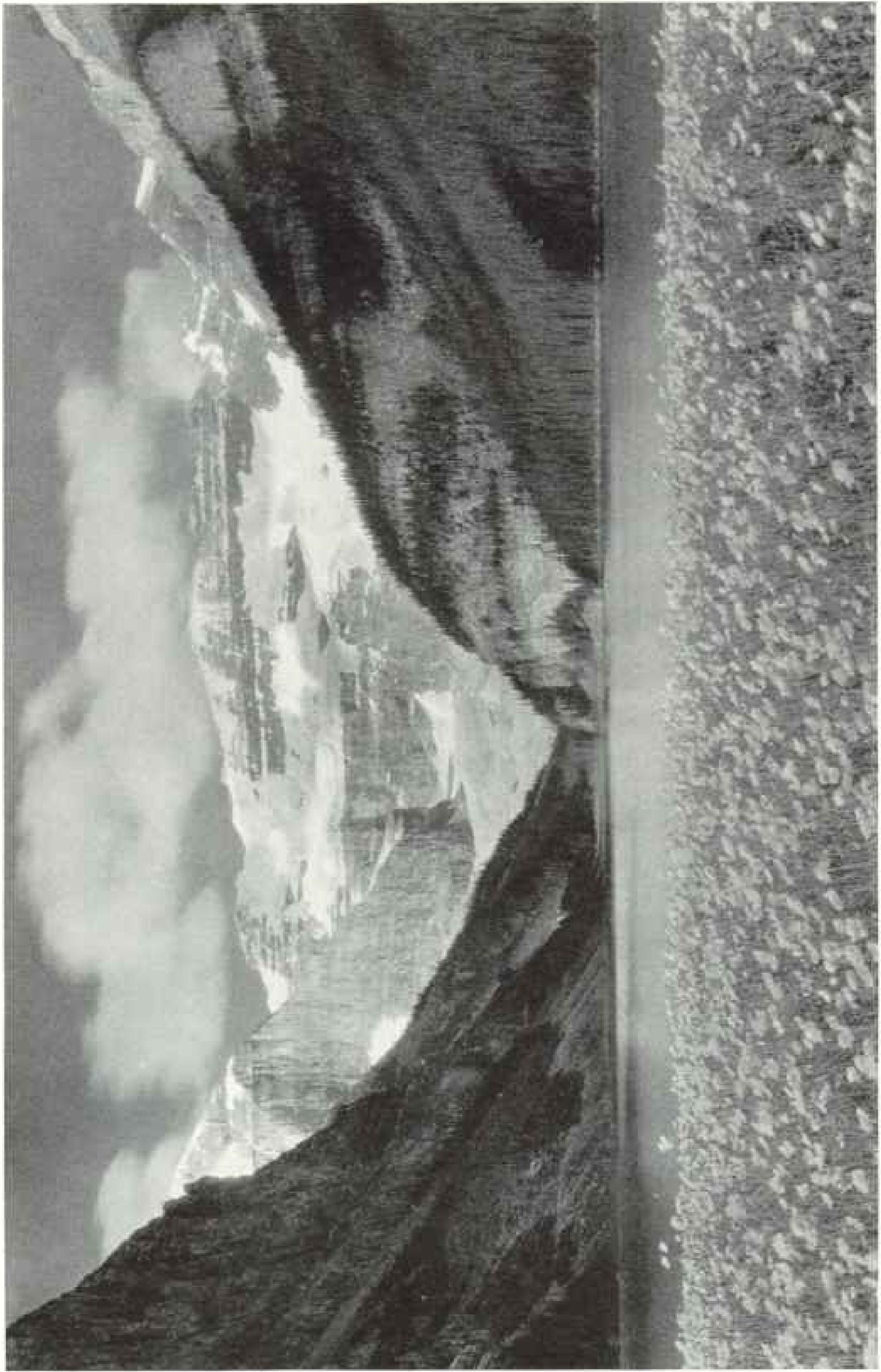
Indian fur traders once came here to trap beavers and martens. Now stocked with eastern brook trout, the lake is a favorite with anglers. Jasper, in Alberta, is Canada's largest national park; it is almost the size of the State of Connecticut.



Courtesy Canadian Pacific Railway

Gouged out by a Glacier, Twin "Lakes in the Clouds" Dot a Hanging Valley of Banff National Park

The valley was carved by another glacier, but the Boehve, small mountain in center, partially withstood its crushing force. A trail zigzags up the bare slope in foreground. Lake Louise, lower left (page 530), lies at the foot of Mount Aberdeen, with its twin summits. In the distance rises Mount Lefroy (page 526).



W. J. O'Brien

Red and Yellow Iceland Poppies Flutter in an Alpine Meadow at the Edge of Lake Louise

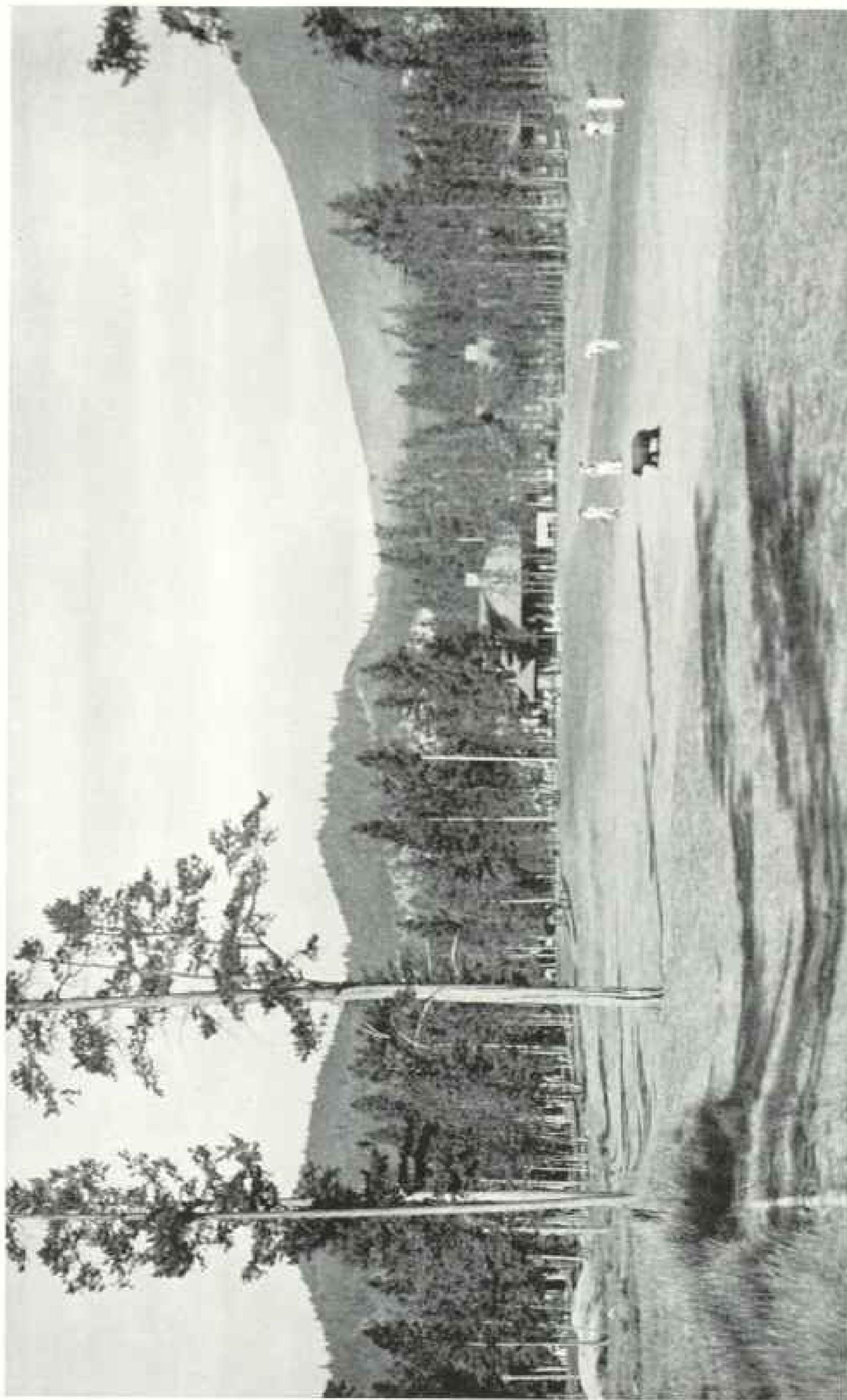
The mighty face of Victoria Glacier forms a spectacular backdrop. Not far distant, on the lake shore, are hotels and motor camps. Banff National Park is a popular resort for travelers from eastern Canada and the United States. Skiing enthusiasts find miles of uninterrupted, snow-covered slopes nearly all year round.



W. J. Miller

Wise Rocky Mountain Sheep Keep to the Side of the Road at Vermilion Lakes

Motorists along this stretch in Banff National Park also see many elk, deer, moose, and black bears roaming in the timberland, undisturbed by the presence of men. If the travelers are quiet, they may also watch beavers at work. Like a gigantic breaking wave of rock, Mount Rundle looms in the background.



Former Canadian National Building

"Fore!" Shout Golfers as Bruin Ambles across the Fairway at Jasper Park Lodge

Black and brown bears in the park are accustomed to humans. They beg for handouts of sweets and are usually friendly unless molested. A few prizzlies still inhabit this vast game refuge, but they shun man's society. Much of the reservation is as wild as it was a century ago in the days of Jasper Hawes, pioneer trapper and trader. Experienced park guards are constantly on duty to look after the comfort of the many visitors from Canada and the United States.



Courtesy Canadian National Museum

These Peaks Are Fittingly Named "The Ramparts"; at Their Base Lies Mont Lake

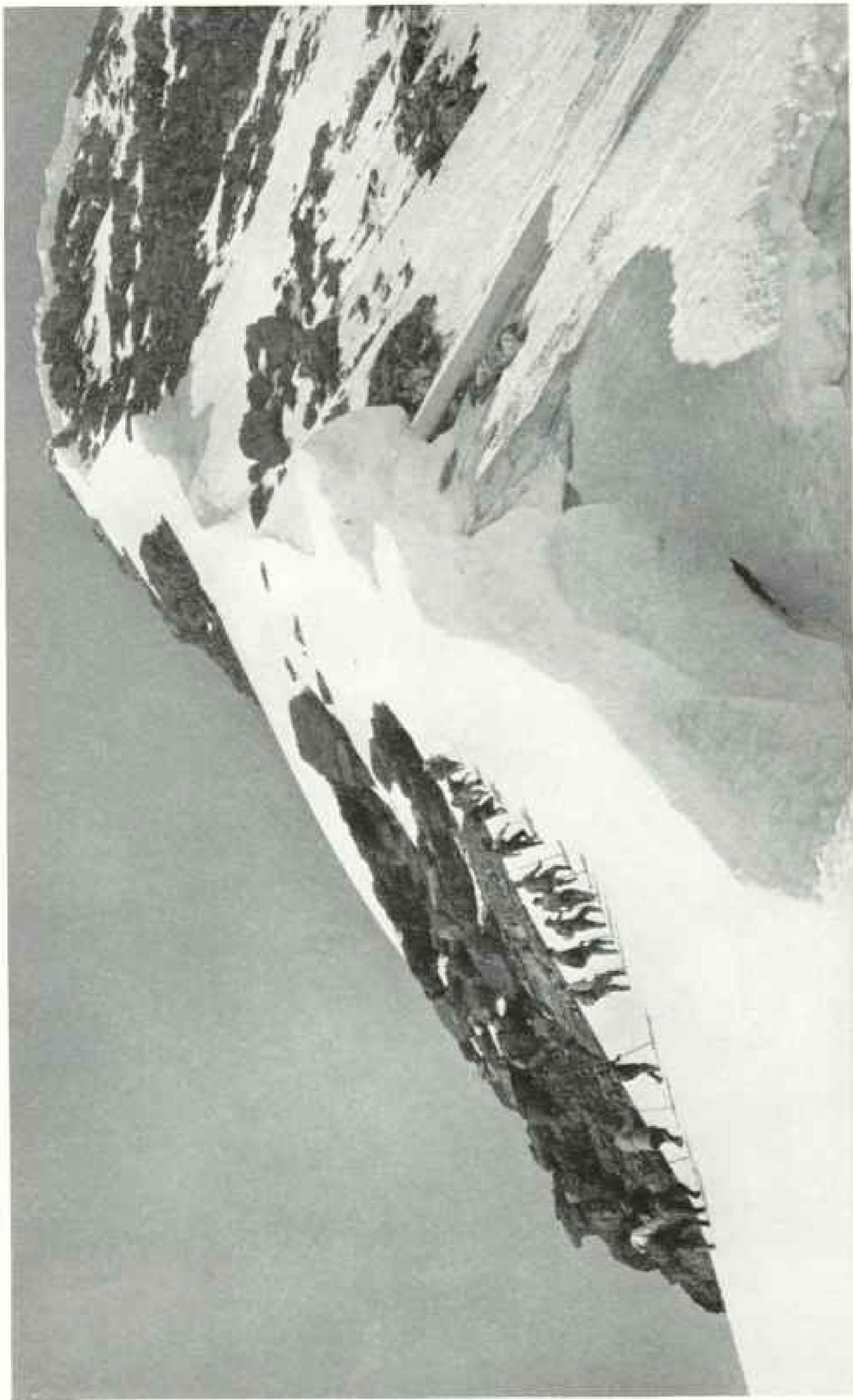
Rising abruptly from the floor of Tonquin Valley, the majestic glacier-hung range in Jasper National Park forms part of the Continental Divide. Near forests of spruce, pine, and balsam, horseback riders follow a trail through rich meadows. This valley is named after the ill-fated ship *Tonquin*, sent by John Jacob Astor to the Pacific coast in 1811. Indians killed most of the crew and an explosion of powder in the hold destroyed the ship.



Courtesy Department of the Interior (Ottawa)

Atop "The Pimple" at Waterton Lakes, Hikers Gaze South towards Neighboring Glacier National Park in the "States"

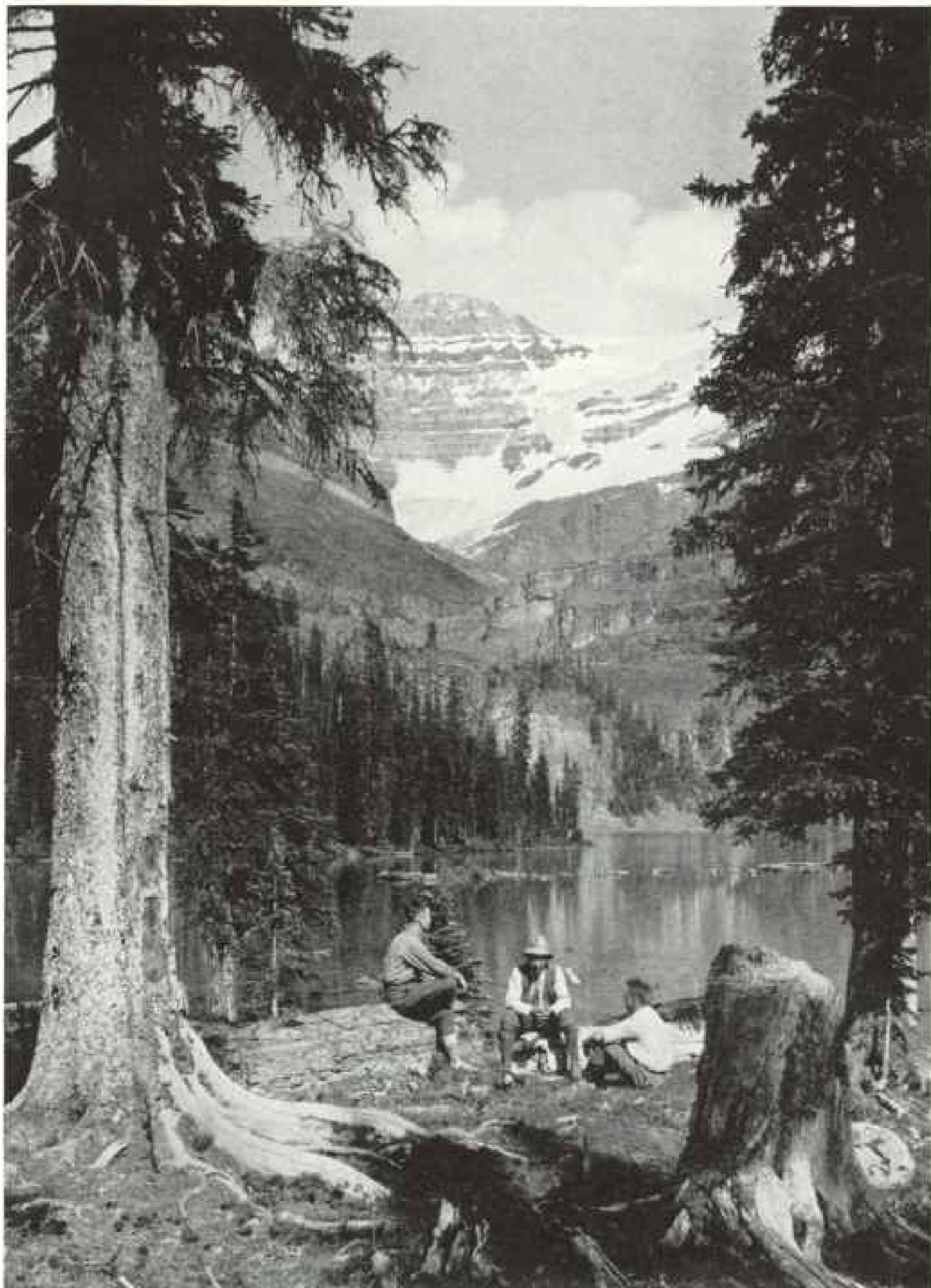
These two playgrounds form Waterton-Glacier International Peace Park—symbol of friendship between Canada and the United States. An auto camp nestles far below.



Courtesy Department of the Interior (Ottawa)

Toiling up a Boulevard of Snow, Mountaineers Approach Their Goal—the Summit of The President

A neighboring peak is called the Vice President. Climbers on this boulder-strewn ridge in Yoho National Park traverse one of the backbone in the backbone of the continent—the Rocky Mountain system—which stretches for about 2,500 miles from Texas to the Yukon. The Canadian Rockies form a straighter and more compact chain than those in the United States.



W. J. Otter

Peace and Majesty More Than a Mile above the Sea—Lake O'Hara

High in the "earthly paradise" of Yoho National Park, in the Canadian Rockies, lies this secluded mountain tarn, beloved of the American artist John Singer Sargent. Snowfields on the slopes of 11,750-foot Mount Lefroy (page 519) are a lustrous foil to somber, dark-green spruces around the lake. Near here a lodge and bungalows are headquarters for hikes and horseback trips to nearby peaks and passes.

Rural Britain Carries On

BY HARVEY KLEMMER

RURAL Britain, like urban Britain, has felt the impact of the war. Rural Britain, like urban Britain, continues to carry on.*

The cities of Britain have, of course, figured mostly in the news. That is natural. Cities are spectacular; the Germans have concentrated their attacks on the great centers of population; the news agencies are located there. Everything conspires to focus attention on the Battle of London, with an occasional reference to the Battle of Bristol, the Battle of Liverpool, the Battle of Glasgow, the Battle of Coventry.

There is another battle about which we have not heard much as yet, the Battle of the Countryside. Rural Britain has been gravely altered by the war. Yet rural Britain endures.

The countryside has not been overlooked by the Luftwaffe. Many persons, in fact, maintain that it is more dangerous to live in the country—at least, in certain areas—than it is to stay in town. Certainly bombs have fallen in large numbers in quiet sections of the country. Of all the bombs that have been thrown against Britain, I venture to say that at least half have landed in rural areas.

The bombing of the rural areas gets little publicity because the damage, when damage is done, is spread out. It is concentrated destruction that makes news. The dropping of bombs here and there over a wide area is difficult to report, and it doesn't make much of a story when it is reported. Newspapermen, naturally, report best the things that happen to them, and newspapermen and radio commentators live in cities.

I found myself doing this in writing a book about the Blitzkrieg. Yet I have seen much more of the Luftwaffe in the country than in town.

Bombs Seem More Menacing in the Countryside

One is much more conscious of the menace of enemy bombs in the country. The reason, I suppose, is that you see more of what is going on. Cities consist of little rectangles separated from each other by thousands of walls. You see only those things which go on in or near your own street.

In the country, you can see what is happening over a wide area. If you can get on a hill, so much the better. I have never been able to follow an air fight in town; I have watched many in the fields. Practically all of the sev-

eral thousand German planes shot down by the R. A. F. have fallen on open land. There is hardly a farmhouse in the east, south, or south-east which does not have its quota of souvenirs.

When you go to visit friends in the country today, they are apt to drag out a piece of parachute, a collection of bomb splinters, some incendiaries, or perhaps an instrument panel from a Junkers which crashed in the upper field (page 547).

You not only see things better in the country; you feel them more acutely. Especially bombs. The houses of a city soak up the detonation and bandy the blast back and forth until it is exhausted. Of course the buildings may suffer in the process, but they do act as a buffer. I have seen bombs fall a hundred feet away and give off nothing more violent than a dull boom. In the country the noise is deafening, and the blast may sweep over the fields like the breath of death to damage buildings a mile away.

One Crater Hole a Duck Pond

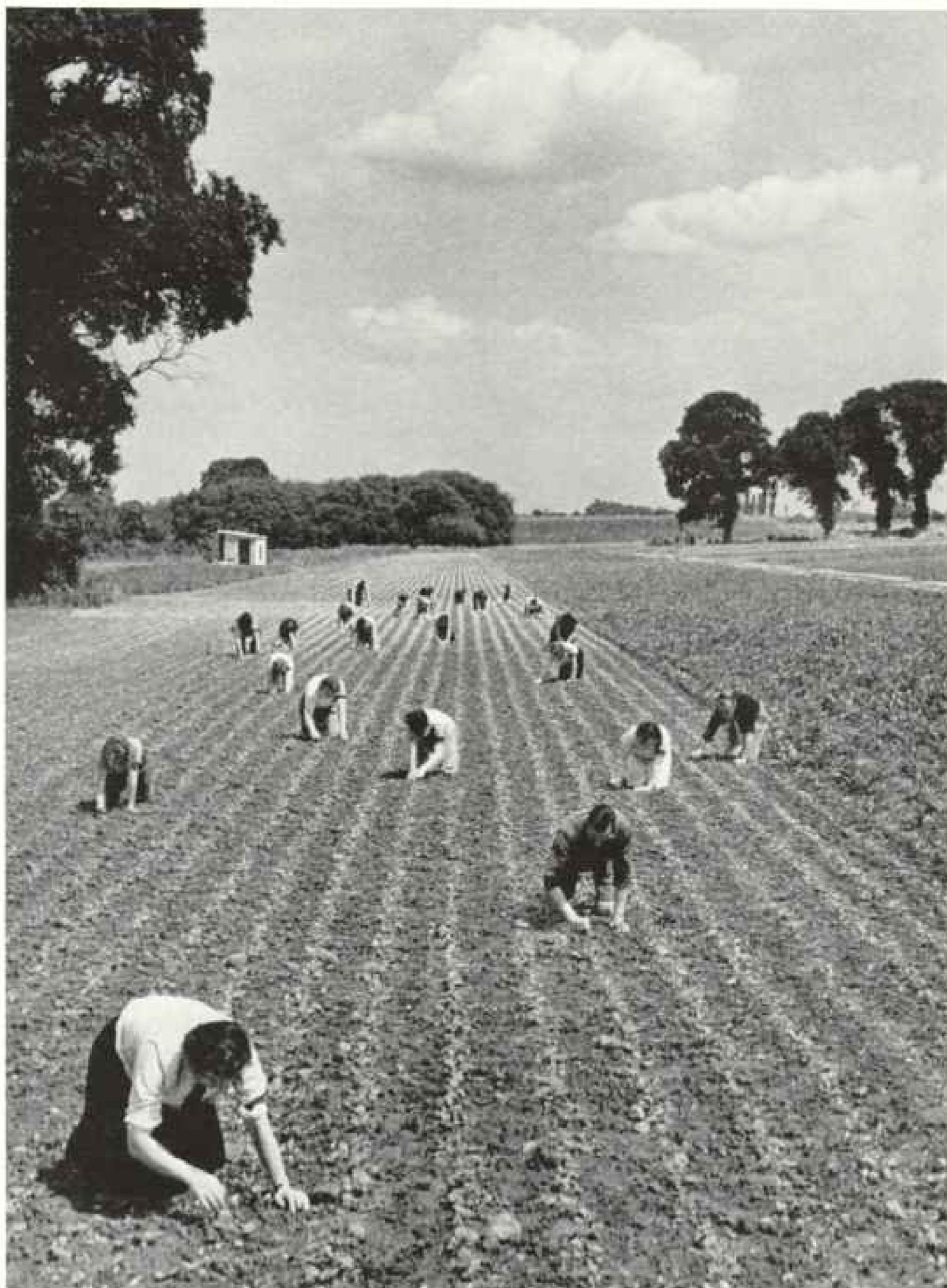
The fields of Britain today are pitted with craters. Children may play in them; farmers find them a convenient source of gravel; many are being used as dumps. There is a field, south of London, where a large-caliber bomb fell on a small stream. The crater turned into a pond. Ducks were swimming in it the last time I was there.

Most of the craters, of course, are being filled in. Land is too valuable in England now to allow any of it to be wasted on craters. The filled-in places look like huge sores. Nothing will grow on these spots. Bombs, as might be expected, are not conducive to agriculture. They blow the topsoil away, and tear from the earth literally tons of clay.

This subsoil clay may come from as far as 30 feet below the surface. It is like cement and will require much plowing and weathering before it becomes fertile. Strata of England which have never before been exposed to human gaze may be seen any day in the fields of Surrey and Kent.

Friends in Sussex recently had a bomb near the old mill which they have converted into a dwelling. They have great difficulty keeping their four-year-old boy out of the crater. He thinks it's a sandpile, and he can't understand why mamma won't let him play there. Inas-

* See "Everyday Life in Wartime England," by Harvey Klemmer, NATIONAL GEOGRAPHIC MAGAZINE, April, 1941.



Euse Linn

English Stenographers and Clerks on a Country Outing—1941 Style

The weeders form one of numerous land clubs—groups of volunteer city workers—who helped farmers raise this year's bumper crop. They supplement the efforts of the large Women's Land Army. In 1941 Great Britain cultivated about four million more acres than in 1939.



Three Lions

"Now Take These Hoes and Go down to the Potato Field—"

Volunteer city workers listen as Farmer Backer assigns them tasks. He is glad to have these willing "field hands," for regular farm help is extremely scarce. With the aid of volunteers, Britain in 1941 is harvesting her largest crop in recent years.

much as craters sometimes contain delayed-action bombs, mamma can't be blamed for shunning the locality!

Filling in craters is hard work. The clay is often blown out in chunks the size of a piano. Some of them must weigh a ton. It is difficult to break them up, and they are extremely hard to handle, even with the use of machinery. The Germans may not hit much in the English countryside, but they have been a nuisance.

The Not So Gentle Countryside

Many country places have, of course, been demolished. Many amusing, and some gruesome, tales are told about the experiences of people who go to the country to get away from the bombing and then end up by stopping something in their places of refuge (page 530).

Last fall the head of an American company decided that things were getting too hot in London, and he accordingly moved his family to the country. The place he left was not damaged: a bomb fell on the country house and killed every member of the family but one.

I lived in the country for several months. The house where I was staying was shaken by near misses: 17 windows were blown out in one night; the doors were jammed by blast;

the lights were put out; we were machine-gunned in the garden. Truly, the gentle life of the English countryside is not as gentle as it used to be.

Driving through Sussex one day, taking photographs for this article, I came upon a wrecked cottage. One corner had been blown off, and tiles were strewn helter-skelter over the roof. An old man was pattering about the wreckage. I told him that I was doing an article for the NATIONAL GEOGRAPHIC MAGAZINE and asked him if he had any objection to my photographing the cottage.

"Not at all, sir," he said. "I suggest that you take your photograph from the side. You will get a better view of the garden."

Poor man, he seemed to think I was interested in the garden.

I asked the old man if anyone had been killed.

"No," he said, "not here."

We chatted awhile. In leaving I noticed a bare spot a few feet from the damaged cottage.

"What's that?" I asked, disturbed by a horrible suspicion.

The old man replied very slowly.

"That," he said, "was another cottage. That is where the bomb landed."

From *Down Black Hat*

Nazi Bombs Wreck a Rural Haven for Crippled Children of London

Boys and girls were evacuated from the city to this country home in southeastern England. When the night air raid alarm sounded, all reached shelter and escaped harm. With daylight, attendants return to salvage bedding and other equipment.

There was not a stick left. Not a brick. Not even a piece of glass. One doesn't ask, in a case of this kind, if anyone has been killed. One asks instead if there was anyone in the house. That I did.

The old man did not reply for a moment. Then, "Yes," he said simply. "My son and his wife were there."

I did not pursue the subject further.

Bedtime Story of Droning Motors

The attitude of this man is typical of the attitude of country people generally. Night after night they go to bed with the drone of enemy motors overhead. In the villages they may go to shelters if there is much activity; farm dwellers generally stay in their own homes. They snuggle down under the quilt of the night and pray to God that no bombs will be dropped on them or on the little patch of earth they inhabit.

Thousands upon thousands of incendiaries

have been unloaded on the British countryside. I do not know whether the Germans are just poor shots or are trying to burn up the crops. The British Government apparently thinks that there may be something in the latter possibility.

The Ministry of Agriculture has advised farmers to pile their hay in smaller ricks and to spread the ricks out; to cut fire lanes through standing crops; to place "beaters" (bundles of switches) at convenient spots; to install emergency water tanks; to organize regional systems of fire watching. In some areas children have been recruited to go into the fields and watch for fire bombs (p. 541).

Districts where farming is the chief industry have been provided with additional apparatus. The British have about 4,000,000 more acres under cultivation this year than in 1939. They are harvesting the biggest crop in recent years. They can't afford to take any chances with fire.



British Postcard

Lords and Ladies from a Misty Past Gaze down on Convalescing Tommies

These wounded and ailing British soldiers, brought back to England from overseas, are recuperating in the King James Room of Hatfield House, Hertfordshire, mansion of the Marquis of Salisbury. Another ward is the famous armor-lined Long Gallery. The historic building is now a military hospital.

Farmers are always rounding up the crews of shot-down enemy planes. The Scottish plowman who captured Rudolf Hess was no exception in this respect. German airmen seemingly realize the futility of resistance and readily submit to capture. Literally hundreds of Nazis have been taken into custody at the point of a pitchfork.

Evidences of military activity are everywhere. They are, in fact, much more noticeable than in town. The highways are generously sprinkled with obstructions, grim reminders of the invasion scare of last year and the invasion threat of every year so long as the war lasts (pages 535 and 542).

Tank traps are everywhere. At strategic intersections you will come upon pillboxes, blockhouses, barricades. Trenches have been dug at many points. Here and there barrage balloons swim, like fat porpoises, over the treetops (page 548).

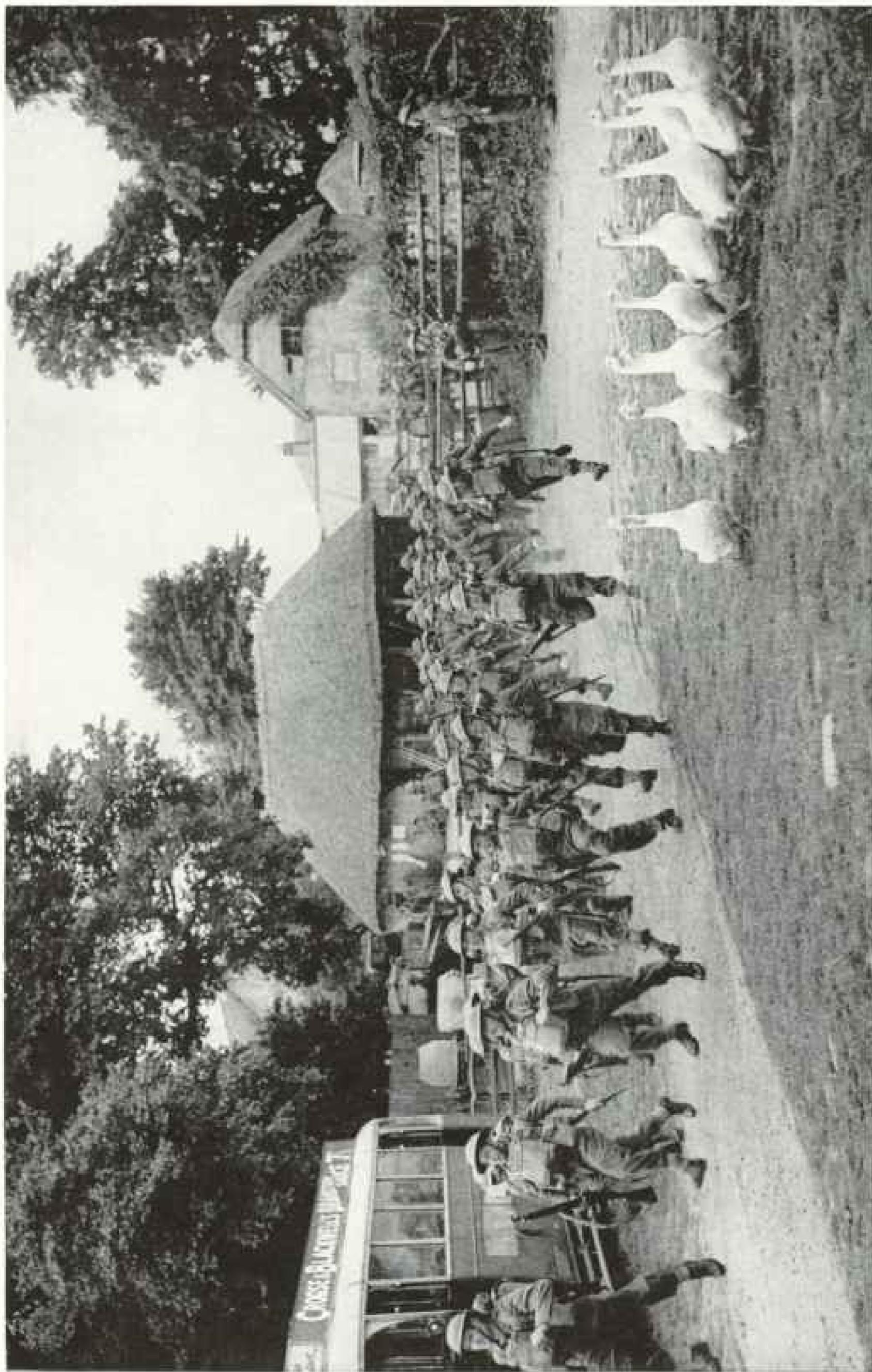
The fields—those gentle, rolling carpets of

a thousand years of literature—have been loaded with obstacles designed to prevent the landing of Nazi planes. The obstacles are of many kinds. Old automobiles are common. Sewer pipe is also used, and logs, cables, and farm machinery. Any German planes which attempt to land in the fields of Britain are going to have a rough time of it, in more ways than one.

The Great Sacrifice—Trees Cut Down

You will notice, traveling in Britain today, many places where the trees have been cut down (page 545). This is done for several reasons. One is that Britain needs wood, both for lumber and for fuel. Another is that her soldiers require a clear view for their guns. You will come upon these guns in the most unexpected places, and in the most unexpected numbers.

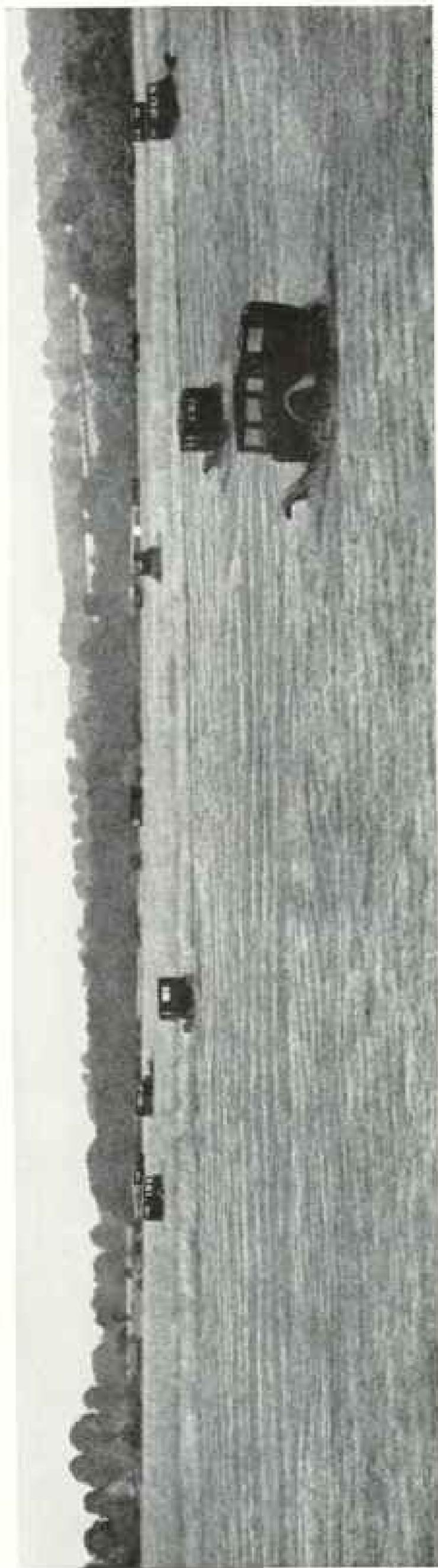
Walking, the favorite exercise of Britons, is much more of an adventure than it once



European

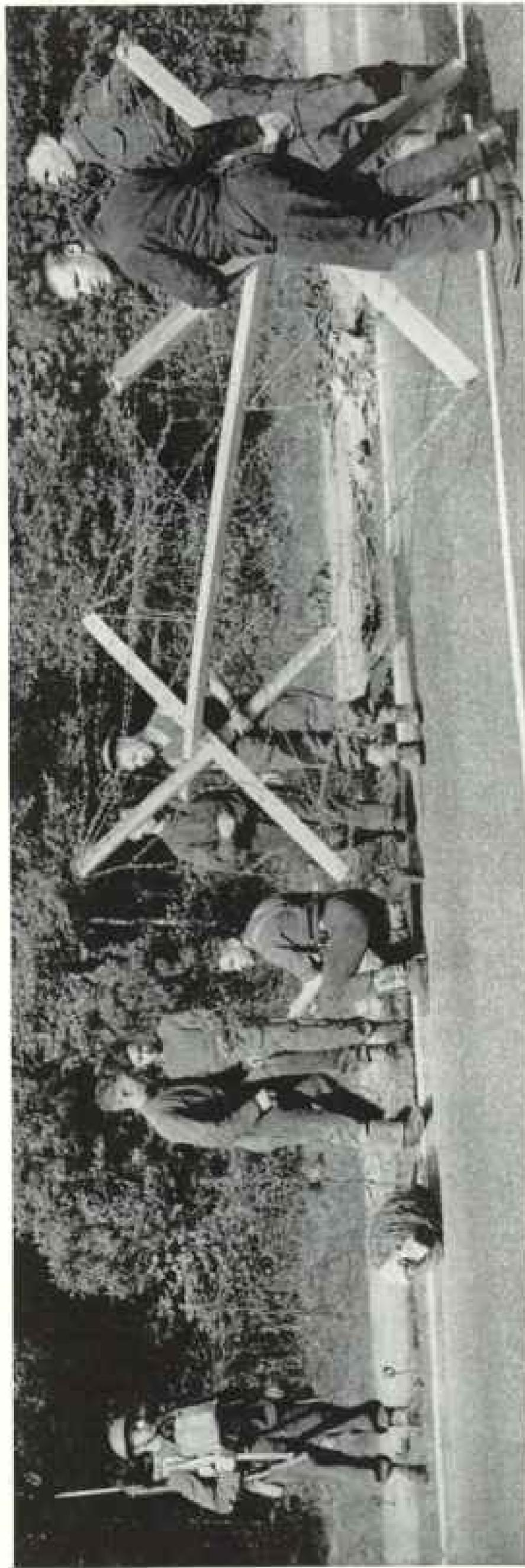
Quickstep versus Goosestep! The Black Watch Responds to an Air Alarm

The crack regiment, which fought in Belgium and now is stationed on the south coast of England, is equipped with bicycles and trained to meet possible parachute invasion. The soldiers are racing for their cycles, always near at hand, to the dismay of the retreating flock of geese.



British jeeps

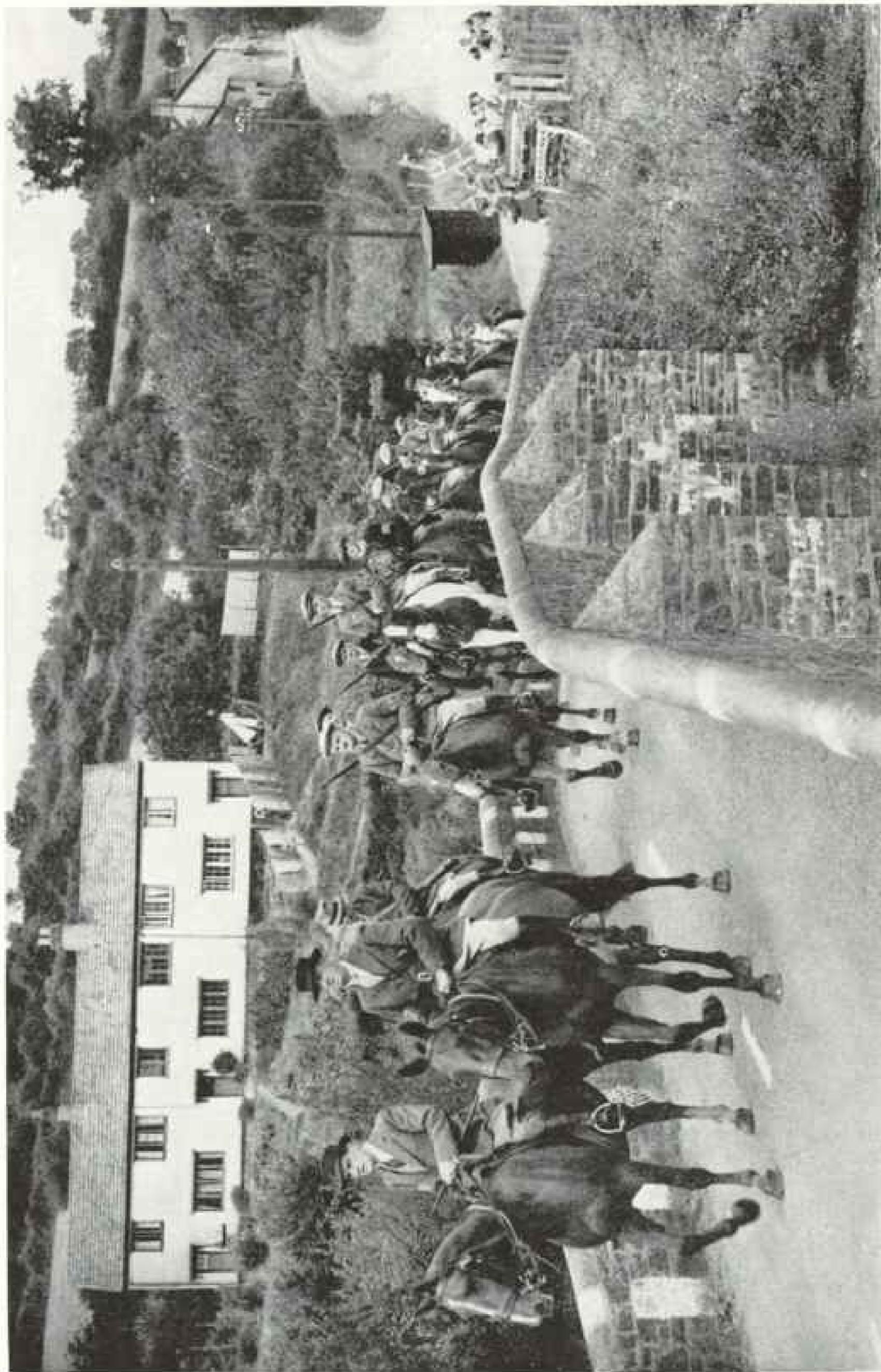
War Solves the Problem of Britain's "Jalopies"—Here They Clutter a Broad Field to Prevent Nazi Planes from Landing



British troops

Without the Barbed-wire Barrier, Enemy Planes Might Use This Smooth English Road for a Runway

Troops are putting the center of the obstruction in place. It is movable, to permit automobiles to pass. Entanglements on either side will be anchored.



Arms

Troopers of the North Molton Mounted Patrol Ride through the Land of Lorna Doone

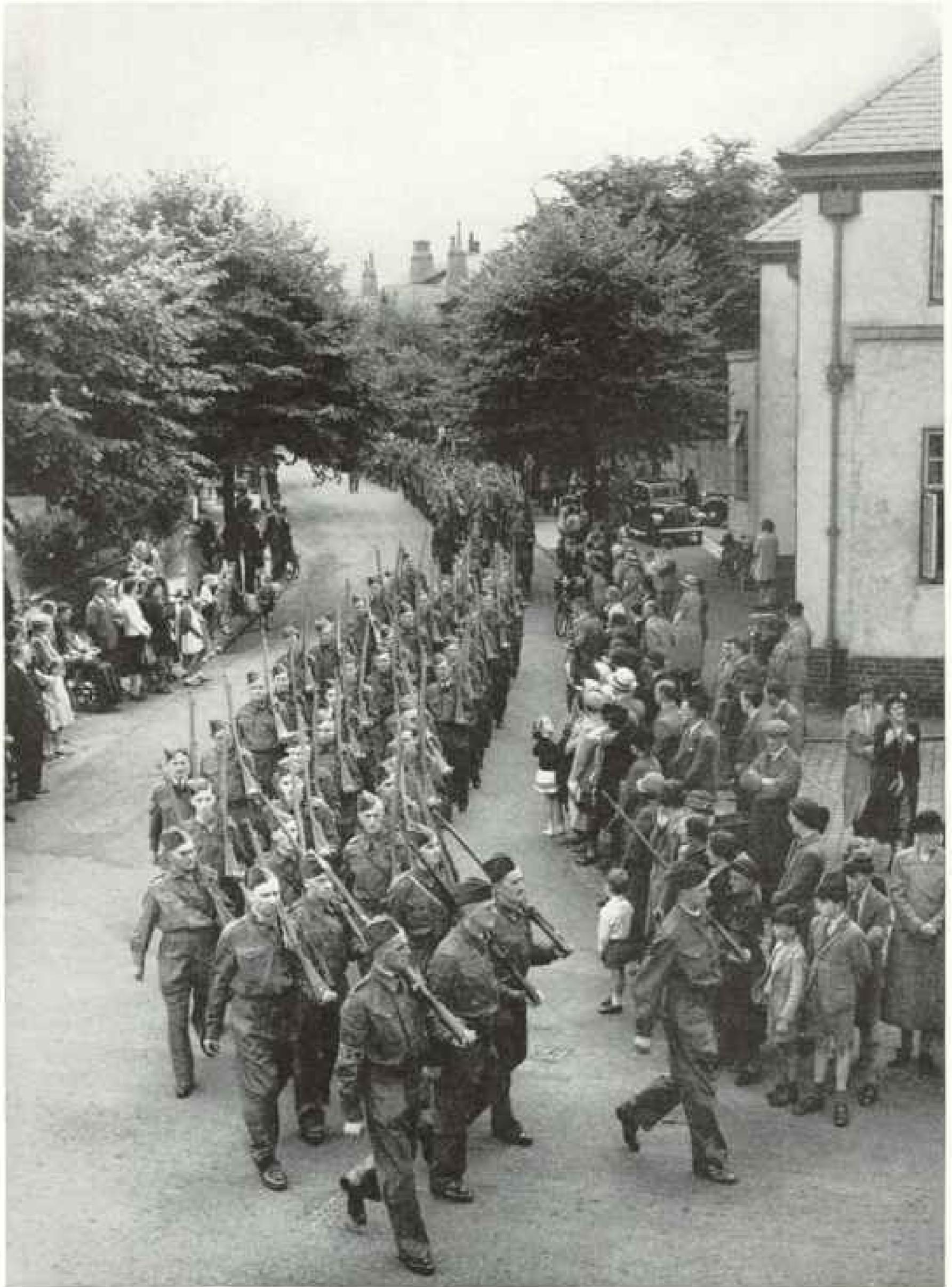
Before the war the men were members of the Dulverton Hunt. They rode to hounds over the wild stretches of Exmoor, and know the country well. Here Captain H. Sayer, D. S. O. (left), leads his men over a typical Devon stone bridge to their posts in the rugged moorland (opposite page).



Armit

Country Squires, Turned Troopers, Reconnoiter in the Bracken of Exmoor

They belong to the North Molton Mounted Patrol (opposite page), which keeps watch over the moorlands day and night. Here, at their isolated post in the wilds, one trooper keeps the horses partially concealed while the other scans the horizon with field glasses.



Local Defense Volunteers March through a Village to Gain Recruits

Formed to resist possible parachute invaders, the L. D. V. builds tank traps, barricades, and trenches, to defend inland areas. In sham battles these soldiers learn street-fighting tactics and airport defense. They have loaded England's fields with obstructions of all kinds to prevent landing of Nazi troop carriers.



APR 40

Home Guards March to Their Posts on the Cliffs Overlooking the Channel

Sections of the Dover and Folkestone areas, where invasion attempts have been anticipated since the outbreak of the war, are under their patrol. More than 1,700,000 men, most of whom have seen service but are now over military age, comprise this defense army, organized on May 14, 1940. One unit, the Westminster Battalion, mounted guard at Buckingham Palace and was inspected by the King on the first anniversary of the Home Guard's formation (page 549).

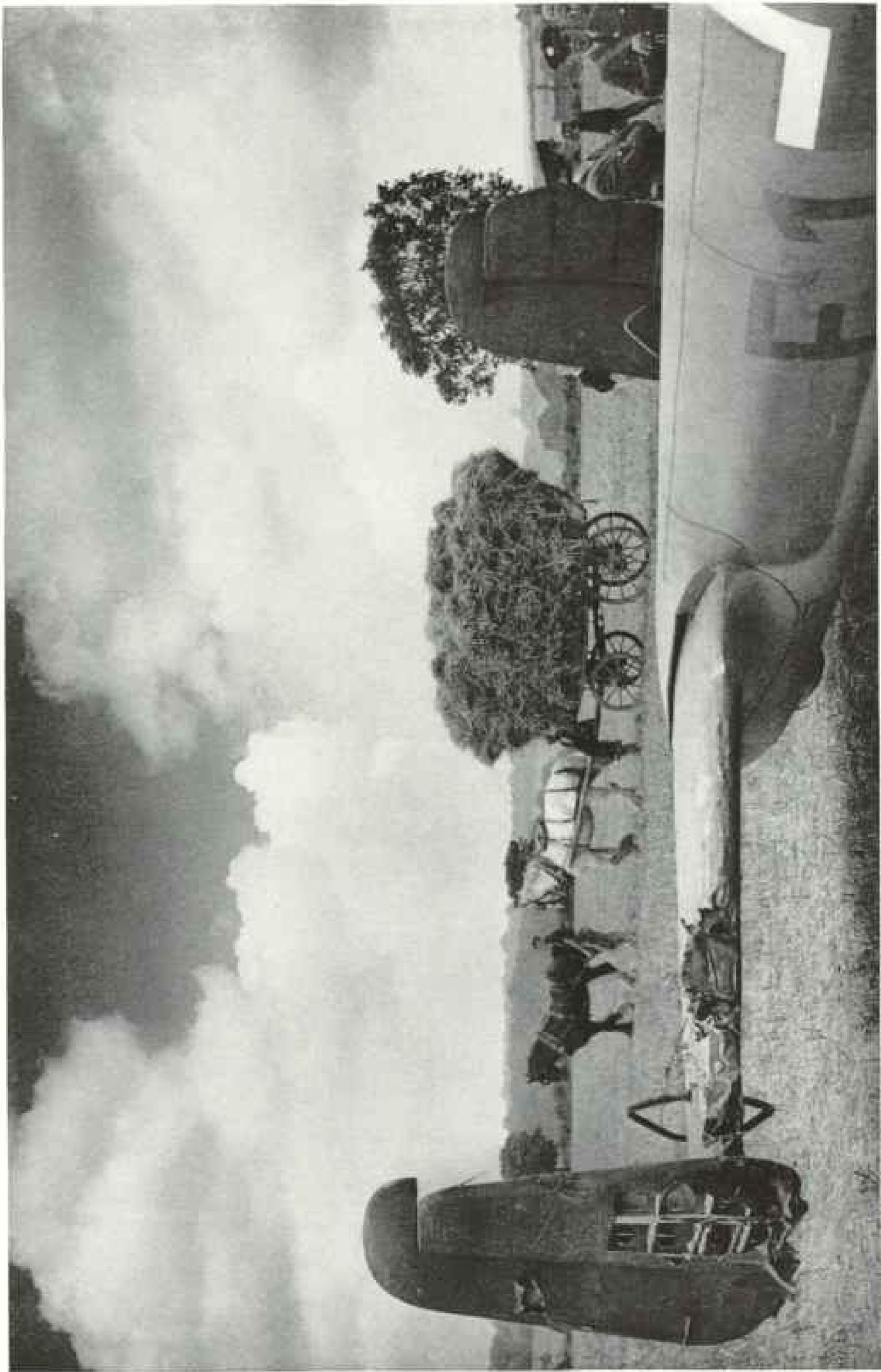
was. Now there are craters to be explored, barricades to be scaled, newly widened streams to be crossed, forbidden areas to be skirted.

Once one might, if one were observant and lucky, hope to find an arrowhead or some other relic of the prehistoric past. Today one may find shell splinters, or the fin of an incendiary.

No, life in rural England isn't what it used to be. And yet, in many respects it remains unchanged. In essentials it is unchanged and unchangeable; it is the outward forms that are different. Some of them, of course, are very different.

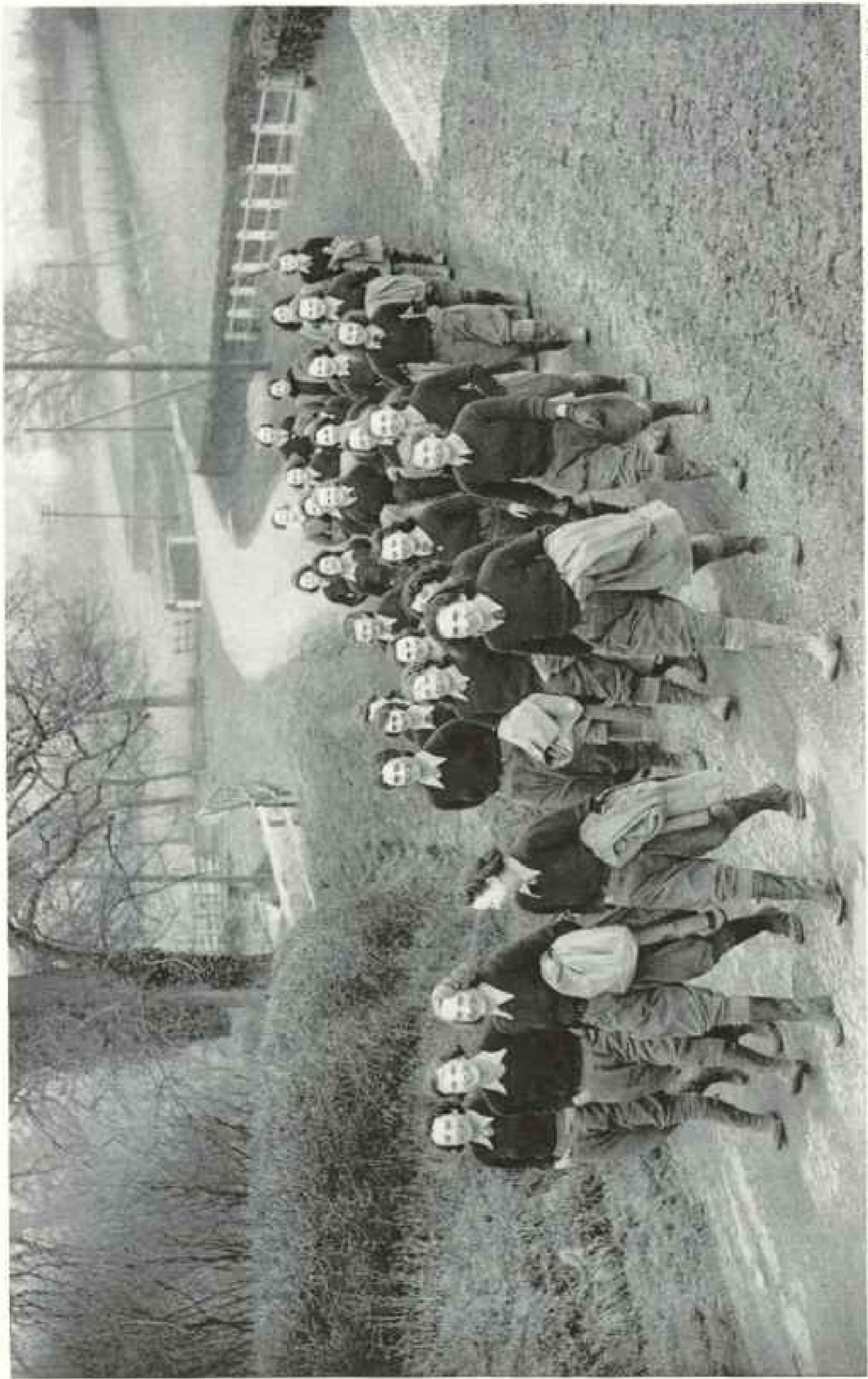
The country, for one thing, is less of a playground than it was. There are more people in the country; especially, there are more people of modest means. Several million people were evacuated from the cities during the fall and winter. Many of them had never been out of the slums. Thousands of English women and children—and some men, too—have for the first time learned the full import of that thrilling exclamation, "This England!"

There was a lot of trouble at first. The evacuees didn't like the country, and the country didn't like them. They finally got acquainted, and now both sides seem to be



British Columbia

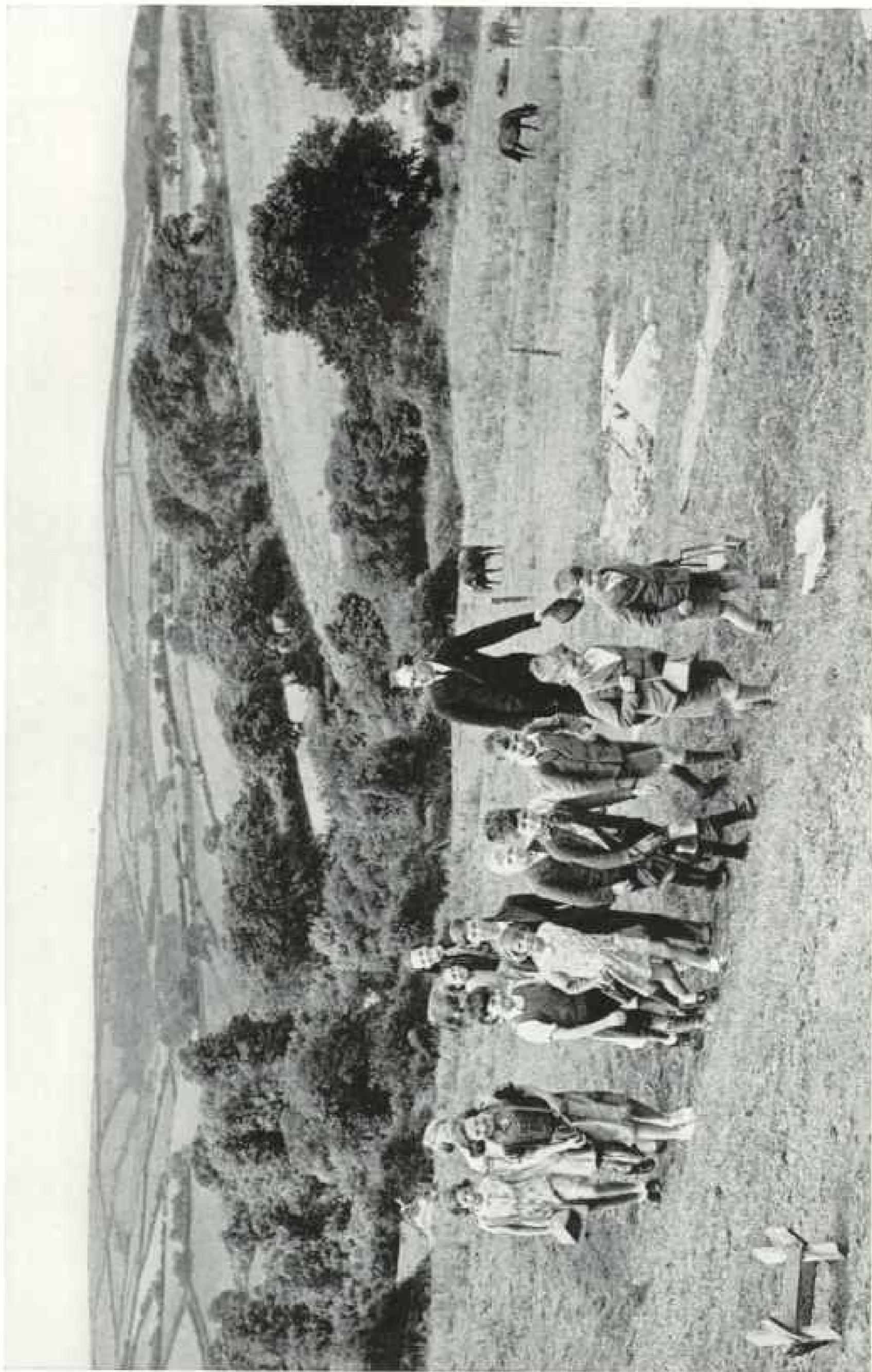
R. A. F. Flyers Add a Nazi Bomber to the Harvest in an English Hayfield



British Contingent

A Women's Land Army Contingent on Its Way to the Fields

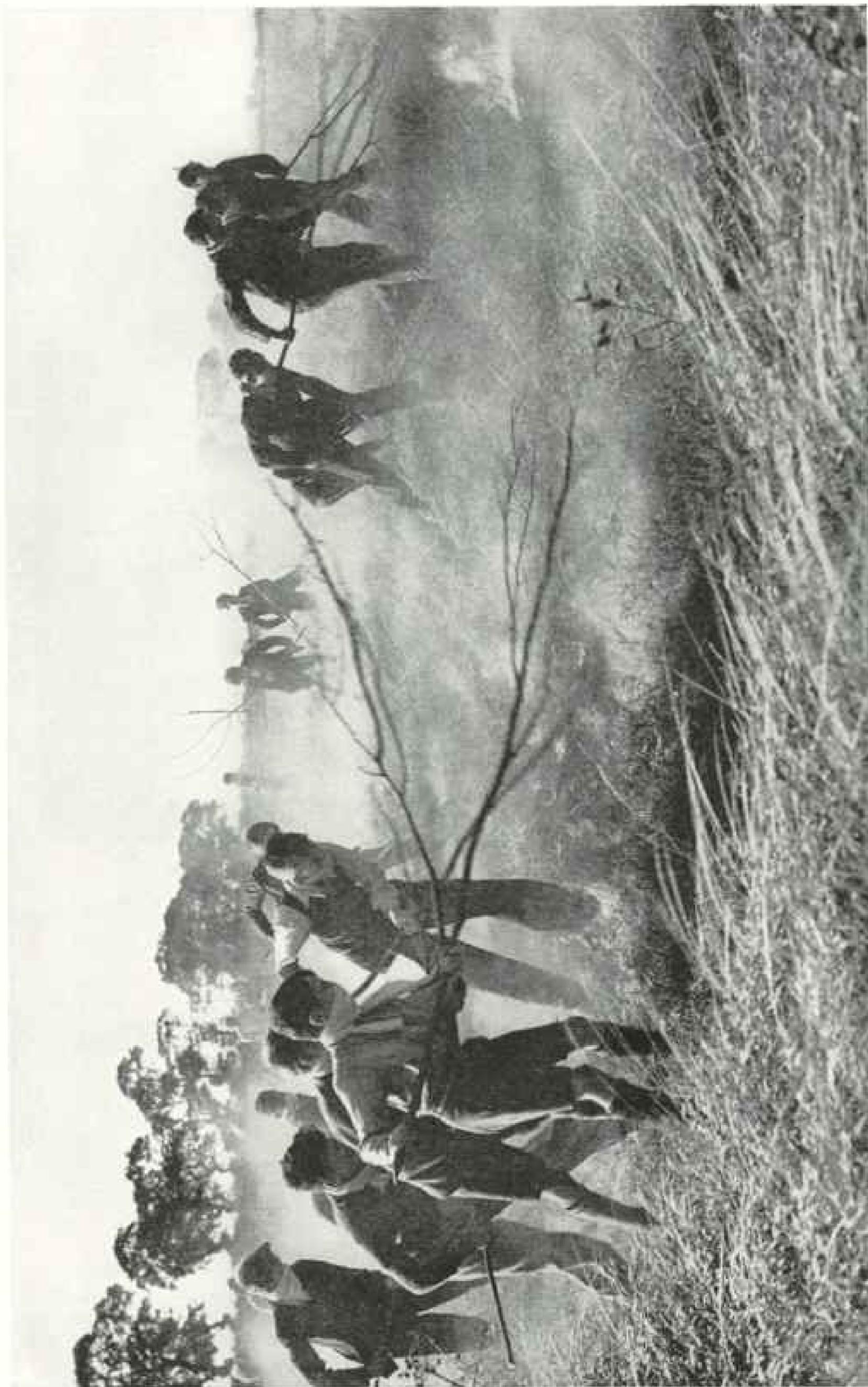
Thousands of British girls have donned the uniform of the W. L. A. to help England grow bumper crops. The only complaint of some—you guessed it!—is that they don't think the uniforms are becoming. One contingent proved its mettle in east Kent last spring, when every member kept on plowing while Nazi dive bombers aimed machine guns and bombs at them (pages 328, 329, 347, 348).



British Columbia

All These Young London Evacuees Miss in the Country Is a Steady Diet of Movies

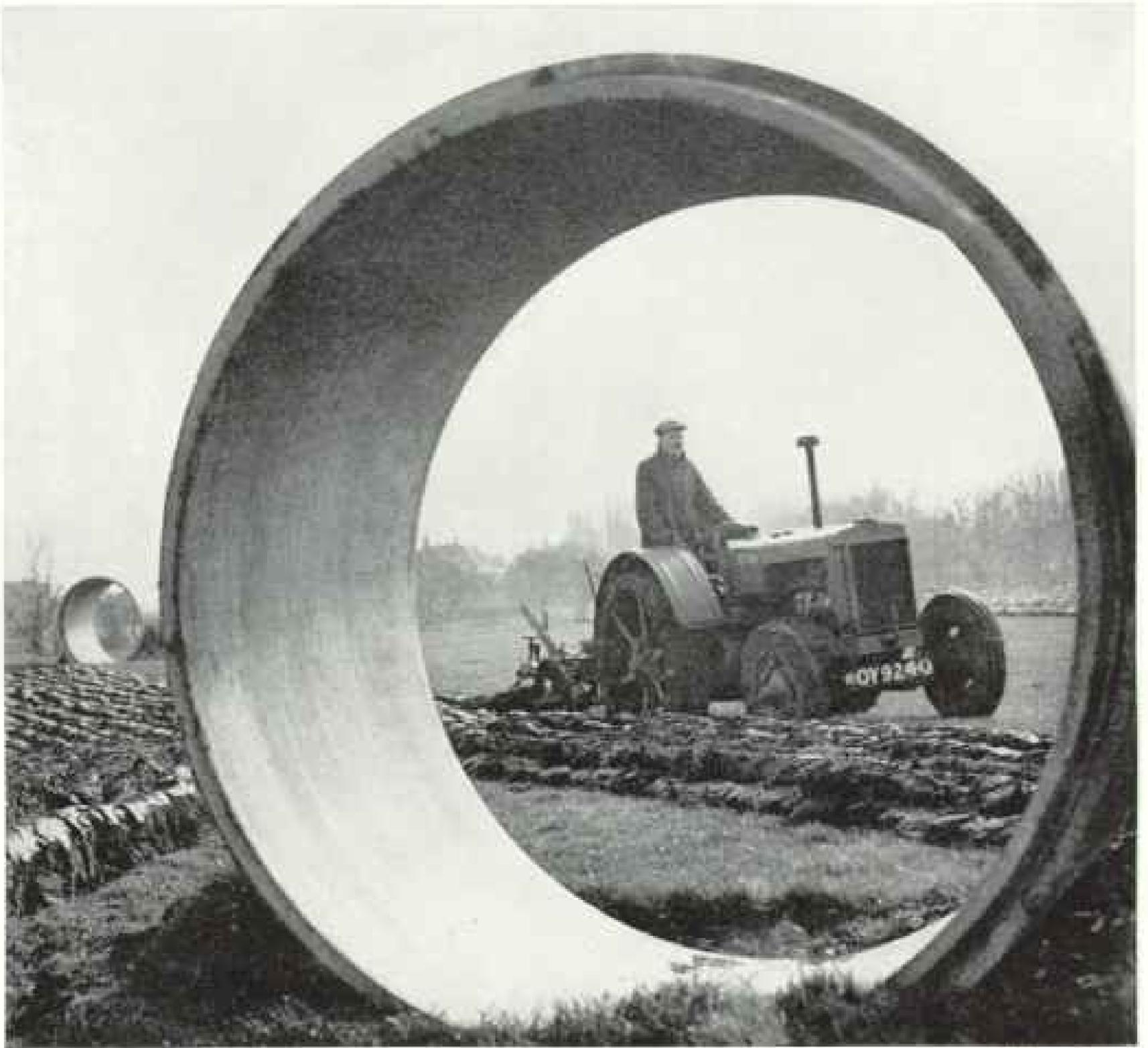
Plenty of room to play games, lots of swimming and other outdoor pleasures make up for the dearth of films (page 542). Favorite diversion for these youngsters, who know little about grass, horses, or cows before the war, is hiking across the Devon fields.



British Columbia

Heath Fires from Incendiary Bombs Soon Die Out When an East Suffolk Youth Service Brigade Goes into Action

Boys between 14 and 20 years old, who have pledged their spare time to national defense, take charge of brush blazes and small crop fires. Girls of the Service Squad cut water and render first aid to the youthful fire fighters when they are burned or overcome by smoke (page 530).



HENRY G. COOPER

Huge Drain Pipes Bar Nazi Planes from a Playground Potato Patch

The obstructions stand in the Purley Way Playing Fields, opposite Croydon Airport. Fifty acres of the tract were plowed up this year for a potato crop. Flower gardens were turned into onion beds, and cabbages and cauliflower took the place of roses, as the Croydon Parks Department concentrated on vegetable growing (pages 531, 533).

enjoying, or at least to be reconciled to the relationship.

I stopped a couple of evacuated children recently on a road in Berkshire. There was a boy of 10, a girl of 12, both from a poor district in London. I asked them if they wanted to go back to the city.

"No," said the boy, "I like it here. We have lots of fun, swimming and playing games and walking in the woods" (page 540).

"Yes," said the girl. "I have more fun in town. We can't go to the cinema here."

Rural England is making a prodigious effort to produce the food needed to win the war. There was a time when the people of Britain fed themselves. Then came the industrial age, and the growth of foreign trade. Britain became the world's wagoner, the world's banker,

a producer of manufactured goods. In return she took interest, raw materials, and food. Millions of the inhabitants of these islands must depend upon foreign producers for enough to eat.

The submarine has brought new life to British agriculture. Land which has been lying fallow for half a century is being put into cultivation. Bogs have been drained, hillsides plowed, forests felled to make way for crops. Every acre is being made to produce a maximum yield.

An army of workers has been recruited to help in the fields. Women take their places with the men. The children help. Thousands of girls who never saw the inside of a barnyard are today pitching hay, reaping grain, playing nursemaid to a herd of Herefords.



British Combatant

From Shelter Doorways, Villagers Saw the R. A. F. Down This Nazi Bomber

Air wardens and Home Guards are on the spot before the ruins quit smoldering. The battle took place in early morning. Fire spread along the entire length of the plane when it crashed, and the engine (center) half buried itself in the ground.

They are happier and healthier than they ever were in their lives. And Britain gets food as a result of their labors.

Even Food Producers Are Rationed

Food in the country, even though it is produced there, is not noticeably better than in town. Producers are expected to live on rations, and most of them do. Farmers who make butter, for example, have been put on their honor to turn in everything in excess of the present regular allowance of two ounces a week. Many persons, as a war measure, have taken to the keeping of chickens. Those who have fewer than 50 chickens may keep the eggs; otherwise, the extra eggs must be put into the Government pool.

Practically everyone, of course, has started

a vegetable garden. The flowers of Britain still bloom, but they have definitely been relegated to second place. The important thing now is *food*. If you go to play golf, you may find that your favorite course has been plowed up, or perhaps turned over to a flock of sheep. Lawns have been put into cabbages, and more than one tennis court this year turned out a fine crop of potatoes.

Many country people maintain that, despite their efforts in behalf of greater food production, they do not eat as well as their friends in town. City buyers scour the rural areas looking for delicacies and, it is claimed, get the best of everything.

The last time I went to the country my hostess asked me to bring some strawberries from London. When I reminded her that the



British Columbia

"Slow! Women at Work"—and the Flagman's a General's Daughter

She is Miss Daphne Phillips, 21-year-old daughter of Major General L. G. Phillips and Mrs. Phillips. Her co-worker, marking the road, is the wife of Flight Lieutenant Thurston Smith, who helped rescue the crew of a torpedoed merchantman and now is a prisoner of war in Italy. Both girls have taken over men's jobs in the Hartley Wintney Rural District.

best strawberries in England were grown in her neighborhood, she said: "I know, but they all go to London. The only way we can get strawberries is to invite friends down for the week end and then ask them to bring some with them. The same thing is true of eggs, tomatoes, cucumbers, and fruit."

The reason city buyers get the stuff, of course, is that they are able to pay higher prices than people who live in the country. Peaches this year sold in London for five shillings and sixpence apiece, which is \$1.10. It is no wonder the peaches went to London. Neither the people who grow them, nor their neighbors, can afford to eat peaches at a dollar apiece. The Government does not mind high prices for luxuries, as this will help to reduce consumption, but it is disturbed about the cost of any product required by masses of the people.

Whenever such products get out of line, the

Government is likely to step in with controlled prices. Tomatoes this spring sold for as high as \$2 a pound. Eventually they got down to 50 cents, where they hovered for some time. The Government finally ordained a ceiling of 25 cents.

Price-control Problems

The trouble with price control is that, whenever it is applied, the product is likely to disappear from the market. This happened to gooseberries, to tomatoes, to chicken, to new potatoes. As soon as the price of a desirable commodity is brought within reason, buyers for hotels and restaurants swarm into the market and scoop up everything in sight. This business of controlling prices, once undertaken, is a never-ending task.

Large quantities of jam were put up this year. The Government allowed extra sugar for canning.



British Camouflage

From Silks and Satins to Feeding the Cows

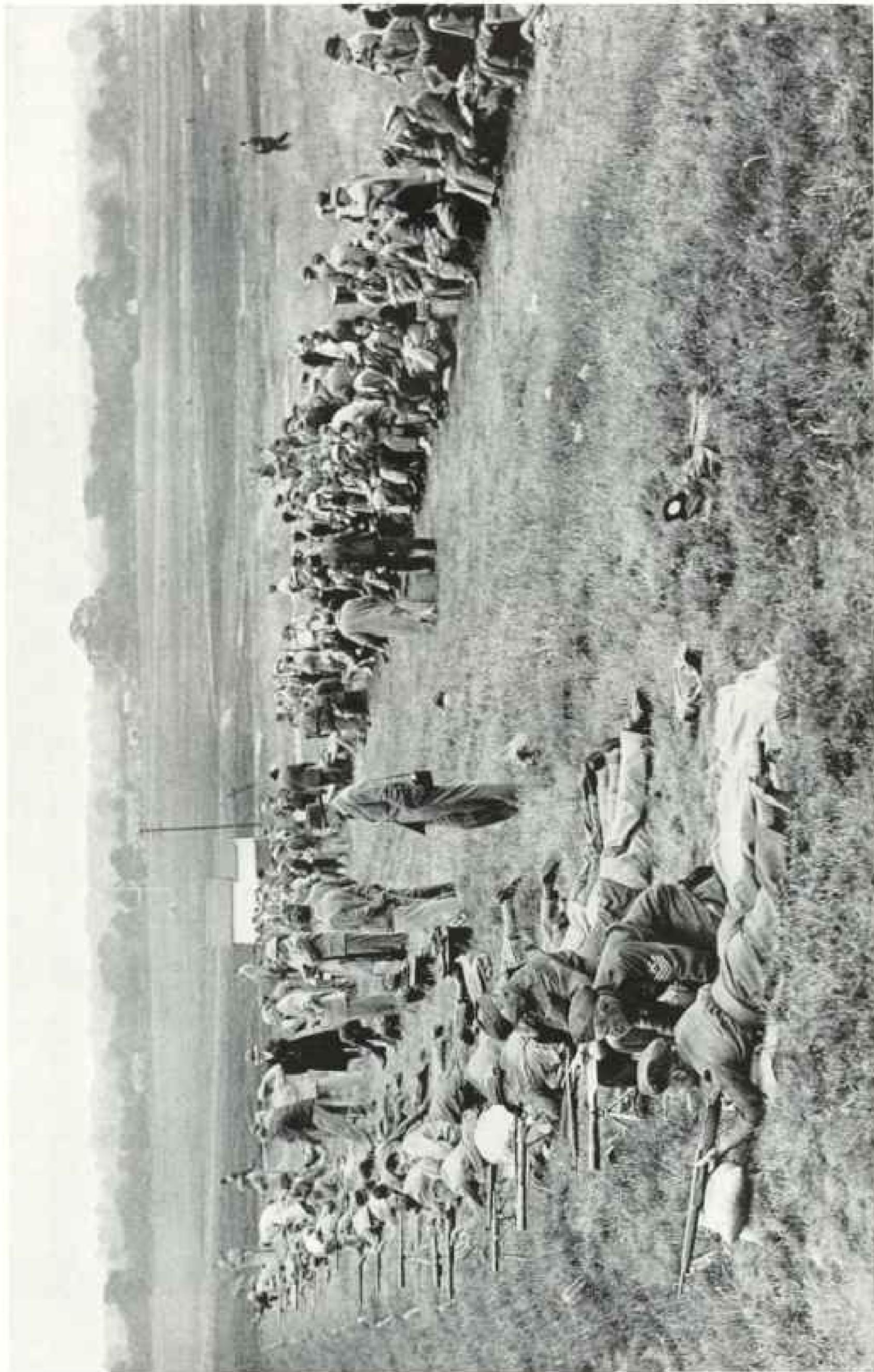
When war came, it found Jocelyn Elliott selling gowns in a London salon. She joined the Women's Land Army and now, as one of her new duties, she feeds silage to young cattle on a farm in Northamptonshire.



British Camouflage

Woodcutters Can't Spare Trees When Artillerymen Need Clear Vision

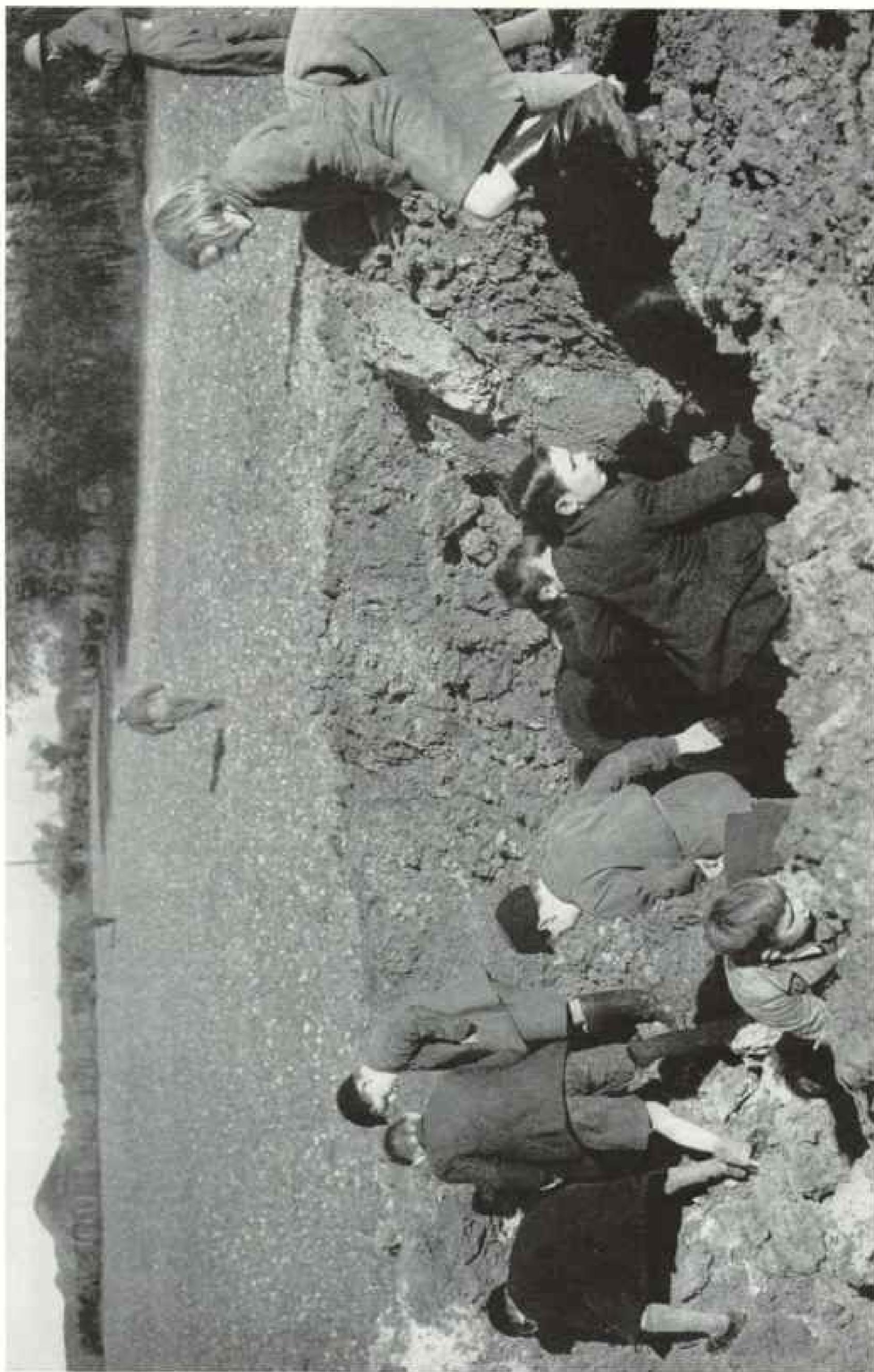
Increased need for lumber and fuel also is depleting England's forests (page 531). Here Auxiliary Territorial Service members make short work of majestic giants on wooded grounds near a historic mansion.



AP/WIDE

Local Defense Volunteers Learn Marksmanship to Cope with Possible Parachute Invaders

When war first broke out, hastily organized groups of men in cities and villages, armed with hunting rifles, were formed to resist invaders from the skies as best they could. Today, by contrast, the L. D. V. is a uniformed, highly trained military unit, drilled in tactics to combat attack from the air (page 535).



Herbich-Castelner

Children Rush to Find Souvenirs in a Crater, Blasted Out When a Luftwaffe Pilot Jettisoned His Cargo

As soon as the Nazi bomber entered southeastern England, he was engaged by an R. A. F. fighter. The German immediately dropped his entire load of bombs into a meadowland and streaked for home. Scarcely had the explosion subsided when all the youngsters in the vicinity converged on the huge hole to hunt bomb fragments.

*Wife Ward*

A Feminine Ground Crew Takes Charge of a Barrage Balloon

They anchor the big "sausage" to keep it from swaying in the wind during inspection. When the balloon is sent aloft, it sways lazily, high above the treetops, as a trap for unwary Nazi aviators. Women were assigned to this station in the Midlands to release airmen for other work.



Europa

No Straggling Here—a Porker Squad Answers Mess Call

The buck private in command belongs to an antiaircraft battery in southern England. He and his comrades operate a small farm near their battery to help augment army rations. Barbed-wire entanglements are visible through the pigpen fence.



Aman

British Home Guards Learn to Say "Hands Up" in German

Similar commands, such as "Put that pistol down," are taught in this German phrase class at the Home Guard Training School in Middlesex. Such knowledge will be useful should Nazi parachutists drop in an invasion attempt. The instructor wears a Local Defense Volunteer armband.



BRITISH COMMONS

Modern Bopeeps Shear Their Sheep While on Army Leave

The girls wear the uniform of the Auxiliary Territorials Service. The wielder of the clippers is a country girl who gives skilled help to a Cotswold farmer while on a brief furlough from her post. Her companion, a Londoner, gets the tedious job of turning the wheel to supply power. Queen Elizabeth is Commandant-in-chief of the A. T. S., which supplies cooks, clerks, telephonists, and transport workers for the British Army.

The shortage of fruit is very real at present. Fortunately—or unfortunately, as the case may be—the English never did eat much fruit and they don't seem to mind going without it. Oranges, lemons, and bananas are unobtainable. Apples are scarce. Canned fruit is disappearing as individual reserves are used up.

To make food go further, every effort is made to prevent waste. Refuse bins have been placed at convenient locations both in cities and in the country. The refuse is used for feeding pigs and chickens.

Everybody keeps chickens; there are some in Grosvenor Square, across from the Ameri-

can Embassy, in London. Many towns have started municipal piggeries (page 549).

The Government also collects bones to be used for making the glue required in certain types of airplanes. Village dumps, for the collection of iron and other metals, are a familiar sight in the country.

Tobacco is definitely harder to get in the country. Queues are common before the small-town tobacco shops. When cigarettes got scarce, men took to pipes. Now pipe tobacco is also getting scarce.

Beer is available most of the time. Farmers drink quantities of the thick brown ale beloved of rural England. To me there is nothing more interesting, or instructive, in Britain, than a country pub. Here gathers the real strength of Britain, to grouse about the war, to play darts, to push pennies along a smooth board, and to sustain the grimmest fight in the whole grim history of the great Empire.

When the beer ran low in a Sussex pub recently, the proprietor

put up this sign: "Strangers will be limited to half a gill, regulars to two pints."

This sign expresses the close bond which exists between a publican and his customers. It also indicates the drinking capacity of an English rustic.

Social life continues to flourish in the country; in fact, it flourishes better now than in time of peace. Evacuees have brought new life to the countryside. Moreover, participation in war work has tended to bring regular residents into closer contact than they were before. The Englishman is by nature a reserved individual. He is more social, and

more social-minded, to-day than he has ever been in the past.

The graceful life of the stately homes of England has been altered, but not abolished, by the war. The art of making the guest feel at home, of ministering to his every comfort and at the same time leaving him alone, has not been greatly impaired. The staff will be smaller; the food will not be what it was; there may be an officer or two billeted in the house; the place may be overrun with evacuees. But the hospitality is still genuine, the view from the terrace lovely, and the climate conducive to rest.

Everyone in the house will have a job of some sort. The lord of the manor, if he hasn't gone on active service, is head of the local Home Guard. The lady of the manor probably organizes first-aid parties, serves as a district nurse, or looks after refugees. Between times she knits ponderous socks for soldiers. One son is certain to be in the R. A. F., another in the Navy; and if there isn't a daughter in the W. A. A. F. (Women's Auxiliary Air Force), there is bound to be one in the A. T. S. (Auxiliary Territorial Service), or the W. R. N. S. (Women's Royal Naval Service).

Everybody has a job to do in Britain today and, so far as I can see, most of the people are doing the jobs assigned to them.

The servant problem is acute. With men being called up, and girls going to work in munitions factories, there is bound to be a shortage of help.

Clothes are simpler in wartime England, and brighter. They are cut more simply to save cloth, and made brighter as an antidote



British Combines

Housemaids to a British Locomotive

Every engine must be spick-and-span before it makes each scheduled run, so these women clean its headlights and cab, wash off tanks and boilers, and remove all signs of dirt and grime. Before the war, locomotive cleaning was a man's job. Today, more than 17,000 regular employees of the London & North-Eastern Railway are in the armed services.

to the blackout. The men are experimenting with a standardized suit. The women find it difficult to get stockings. Bare legs are now common, especially in the country. Many women say they will never go back to stockings. Men have taken to shorts in increasing numbers.

The weather this summer was ideal for a country at war. Weeks of uninterrupted sunshine—a rare thing in Britain—made clothes rationing easy to take.

Sports and amusements have changed. Riding is pretty well out of the picture because most of the horses have been taken by the Army. Some have had to be shot for lack of

feed. The hunt has had to go (page 534). I suppose thousands of dogs have been killed. They used to feed them partially on horse meat, which is now too valuable to be given to dogs.

Incentives to Shooting and Fishing

Shooting (hunting in America) is becoming more popular. Those who once shot only to kill now have an added incentive. Many a hunter who used to kill rabbits for the servants is now having them served in the dining hall.

The same thing goes for fishermen. Fishing is a very real occupation in Britain today. The race which produced Izaak Walton is finding fishing useful as well as pleasurable. I asked a fisherman on the Thames if he really enjoyed catching the diminutive bream.

"Not much," he grunted. "But when you have to get along on half a pound of meat a week you can't afford to be choosy."

Landowners have to hunt; they don't have any choice in the matter. The Government has ordered them to reduce the rabbit population to save the crops from damage. If they don't hunt, the Government will do it for them and send them the bill.

Hunters are also—unthinkable thing!—shooting foxes. The foxes, not being run to earth any more, have been playing hob with chickens. They are now being smoked out with sulphur and unceremoniously executed.

The grouse season was advanced this year to aid in replenishing the national larder.

Sports go on more or less as usual in war-time England. The cricket teams still go out in white to play what is, to me, one of the slowest games on earth; football flourishes; there is still racing (the Derby was run at Newmarket this year and last, instead of at Epsom Downs); people tramp and motor.

There are half a million cars still on the highways. Car owners are allowed petrol for 200 miles a month, and most of them use it to get to the country.

Motoring, especially for the stranger, is a bit difficult these days. All road signs were removed last year to prevent the enemy, in case of invasion, from knowing where he was. The measure has also prevented a good many natives from knowing where they are.

One doesn't appreciate the importance of signposts until they are gone. Then they become very important indeed. I have wandered around for hours trying to find places which I would ordinarily reach in a few minutes. Trying to get anywhere in the blackout is maddening. The suspicion with which strangers are regarded when they ask for directions doesn't help matters any.

Bathing has been greatly restricted because most of the beaches have been mined. The youngsters, like boys everywhere, cling to the "ole swimmin' hole." Their parents are patronizing, in ever-increasing numbers, the pools which have been built all over the country.

Powerboating has suffered. Motored craft are not permitted in defense areas, because they might fall into enemy hands in case of invasion, but they are still permitted inland. The favorite sport on the rivers remains punting, which consists of poling a long, narrow craft through a small amount of water and a large amount of weeds. The men, as in America, do the work; the girls, also as in America, recline gracefully in the bottom of the boat, twirl their parasols, and give directions.

As might be expected, more people than ever before are going camping. Trailer camps have been established in many localities. Many, who formerly camped only in the summer, now stay the year round.

The war has been cruel to the people of Britain. It has also—in some respects—been kind. Thousands of people have, for the first time, discovered the beauties of Nature. Many will carry with them all the rest of their lives ecstatic memories of life in the British countryside.

The British have always been great picnickers. They still go on picnics, despite the difficulty of getting food, petrol, tobacco, and beer, and notwithstanding the fact that many of their favorite spots have been taken over by the Military.

There is also the ever-present danger of being fired on by German raiders. Last summer many picnic parties were machine-gunned. This summer air-raid wardens on the South Downs carried portable sirens on their cars to warn picnickers of enemy aircraft.

The countryside is also going industrial. The Government, as a war measure, is scattering factories throughout the rural areas. Many a once-peaceful heath, which never heard any sound more exciting than the bay of the hounds, now resounds to the clatter of machinery and the roar of pneumatic hammers. Houses spring up in the woodland, and buses rumble where no buses rumbled before.

The country people are sharing the dangers, participating in the responsibilities, co-operating in the labors of an island at war. The victory, when victory is achieved, will belong to them no less than to those who live in cities.

It is nearly a thousand years since the last invader set foot on the soil of Britain. Those who dwell close to that soil are doing their utmost to make sure that it doesn't happen again.

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ORGANIZED FOR "THE INCREASE AND DIFFUSION OF GEOGRAPHIC KNOWLEDGE"

To carry out the purposes for which it was founded fifty-three years ago, the National Geographic Society publishes this Magazine monthly. All receipts are invested in The Magazine itself or expended directly to promote geographic knowledge.

Articles and photographs are desired. For material The Magazine uses, generous remuneration is made.

In addition to the editorial and photographic surveys constantly being made, The Society has sponsored more than 100 scientific expeditions, some of which required years of field work to achieve their objectives.

The Society's notable expeditions have pushed back the historic horizons of the southwestern United States to a period nearly eight centuries before Columbus crossed the Atlantic. By dating the ruins of the vast communal dwellings in that region, The Society's researches solved secrets that had puzzled historians for three hundred years.

In Mexico, The Society and the Smithsonian Institution, January 16, 1939, discovered the oldest work of man in the Americas for which we have a date. This slab of stone is engraved in Mayan characters with a date which means November 4, 291 a. c. (Spinden Correlation). It antedates by 200 years anything heretofore dated in America, and reveals a great center of early American culture, previously unknown.

On November 11, 1935, in a flight sponsored jointly by the National Geographic Society and the U. S. Army Air Corps, the world's largest balloon, *Explorer II*, ascended to the world altitude record of 72,395 feet. Capt. Albert W. Stevens and Capt. Orvil A. Anderson took aloft in the gondola nearly a ton of scientific instruments, and obtained results of extraordinary value.

The National Geographic Society-U. S. Navy Expedition camped on desert Canton Island in mid-Pacific and successfully photographed and observed the solar eclipse of 1937. The Society has taken part in many projects to increase knowledge of the sun.

The Society cooperated with Dr. William Beebe in deep-sea explorations off Bermuda, during which a world record depth of 3,028 feet was attained.

The Society granted \$25,000, and in addition \$75,000 was given by individual members, to the Government when the congressional appropriation for the purpose was insufficient, and the finest of the giant sequoia trees in the Giant Forest of Sequoia National Park of California were thereby saved for the American people.

One of the world's largest icefields and glacial systems outside the polar regions was discovered in Alaska and Yukon by Bradford Washburn while exploring for The Society and the Harvard Institute of Exploration, 1938.



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"Honeymoon, eh?" he smiled ... (we were simply *dripping* rice!) "Looks like you came near missing it." "I should have set my watch," Bill apologized. "Or you should have a watch like mine," said the railroad man.

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FOR DEFENSE IS AHEAD OF SCHEDULE, and it's no mystery about who is responsible.

THE AIRCRAFT INDUSTRY IS RESPONSIBLE: Plane builders, engine manufacturers, parts makers. They are delivering more planes and bigger planes faster than many people in America predicted would be possible from an industry that was geared, only a few short months ago, for making planes by twos and threes.

THE AUTOMOBILE INDUSTRY IS RESPONSIBLE: This group of manufacturers is at work on military trucks and tanks, airplane engines and airplane assemblies. *Their* production, too, has amazed many Americans as coming from an industry tooled only for simple peace-time needs.

The machine-tool builder, the factory around the corner in your town, yes, even the mouse trap maker and the toy maker are performing miracles by finding ways and means to make Defense production boom.

EVERYWHERE YOU TURN, American industry is chewing up aluminum for Defense purposes with a ravenous appetite. Factories that never used a pound of aluminum before are now consuming millions of pounds a month. Factories which once had a thousand

men have had to train tens of thousands to cut and shape and join every conceivable form of aluminum in unheard of quantities.

This is a race worth running!

SO FAR, IN EVERY SINGLE MONTH, we have delivered to Defense industries millions of pounds more aluminum than could be produced or sold for civilian consumption during the Thirties. We are in high gear, our foot is on the floor board, and we intend to keep it there as long as the race may last.

However, from the way American factories are doing the impossible, it will not be surprising if some temporary pinches develop here and there, pending the time when still further capacity for making aluminum comes into production.

In achieving this remarkable record of Defense production, the willingness of civilian users to forego the use of aluminum has been of vital assistance.

Much of the enormous tonnage that is now going into Defense would still not be available had not this company begun work on a continuous expansion program as early as November, 1933—just two months after Munich.

That program is taking over \$200,000,000 of our own money and is using for the production of aluminum every last kilowatt of electrical power that we can make or could develop in time or could buy.

That's the aluminum story to date.

ALUMINUM COMPANY OF AMERICA



The Timetable of Aluminum for Defense up to Sept. 1, 1941

- 1938 Sept. Munich.
 Oct. Czechoslovakia invaded.
 Nov. Alcoa inaugurates \$26,000,000 expansion program.
 Dec. Alcoa produced 207 million pounds in 1938; had more than a year's supply on hand.
- 1939 Jan. New extraction and tube mill begins operation at Lafayette, Ind.
 Feb. Start building an excess stock pile of airplane sheet.
 Mar. Bohemia and Moravia occupied.
 Apr. Albania invaded; Congress authorizes Army to require 6,000 planes by July '41, and Navy 3,000 by '44. Aluminum for all these would take about two months 1941 production.
 Sept. Poland invaded; U. S. Neutrality proclaimed; limited National emergency proclaimed.
 Alcoa authorizes new metal-producing capacity at Alcoa, Tenn.
 Nov. Finland invaded; Cash-and-carry act signed.
 Alcoa completes \$26,000,000 expansion program, begins plant for a larger one.
 Dec. U. S. protests blockade of German exports.
 New metal-producing plant authorized at Vancouver, Wash.
 1939 production 327 million pounds; 215 million on hand.
- 1940 Jan. First request for defense appropriation in Budget Message.
 Alcoa announces \$30,000,000 more plant expansion.
 Mar. Alcoa reduces price of aluminum from 29¢ to 19¢, starts construction of Vancouver, Wash. plant.
 Apr. Denmark and Norway invaded.
 May. Low countries invaded; National Defense Advisory Commission named.
 New metal-producing unit begins operation at Alcoa, Tenn.
 June. Dunkerque; France capitulates.
 Additional metal-producing unit authorized at Alcoa, Tenn.
 July. Congress lifts previous limits on numbers of planes.
 Aug. Air offensive against England begins; 50 destroyers exchanged for island air bases.
 Alcoa reduces price of aluminum ingot from 19¢ to 18¢; capacity for making aluminum increased.
 Sept. Egypt invaded; Selective Service Bill passed.
 First metal manufactured at Vancouver, Wash. plant and new units for additional capacity authorized.
 Oct. Rumania invaded.
 Alcoa authorizes another \$150,000,000 for expansion.
 Nov. 26 bombers on contract turned over to Britain.
 Alcoa reduces ingot price from 18¢ to 17¢; additional capacity authorized at Badin.
 Dec. Alcoa 1940 production 413 million pounds; 154 million on hand.
- 1941 Jan. OPM established; NDAC says aluminum supply adequate to meet Oct. 1940 estimates of requirements.
 Alcoa authorizes additional capacity at Alcoa, Tenn.
 Feb. Aluminum put on priorities.
 Mar. Lend-lease bill signed.
 Alcoa produces 44,000,000 pounds of metal this month.
 Apr. Yugoslavia invaded; U. S. occupies Greenland.
 May. 150 million-pound-annual-capacity plant at Vancouver, Wash., completed and operating at capacity.
 June. Greece lost; Russia invaded.
 July. New Government aluminum plants authorized; U. S. occupies Ireland; Japan moves into Indo-China.
 Alcoa produces 53,000,000 pounds this month; Badin unit authorized Nov. 1940 starts operation.
 Aug. U. S. Government announces Aluminum Company of America will operate 3 Government-owned plants.
 Alcoa announces ingot price reduction to 15¢.
 Alcoa produces 54,000,000 pounds of metal this month.

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In the years that have gone, a never-ending stream of American visitors went year by year to Great Britain and Ireland; how many of them must be longing for the time when they will do so again! Even in these days of war, however, American visitors of distinction on exploratory pilgrimages, have not been lacking and although you may not be able at the moment to visit these islands the day will surely return when the American tourist can and will be welcomed as in the past. To the thrill of visiting places time-hallowed before Columbus, will be added the knowledge that they will be still more hallowed as the final outposts of Civilization which withstood the onslaught of the Barbarian.

So, when lights gleam again in hearts and hearths and homes—as they burn still in the spirit—of the Old World, these little sea-girt isles will once again open arms of welcome to their kith and kin from the New World who stood by them in their struggle for liberty and democracy.

Meantime, the British and Irish Railways continue to maintain their contact with their American friends through the General Traffic Manager in New York, C. M. Turner.

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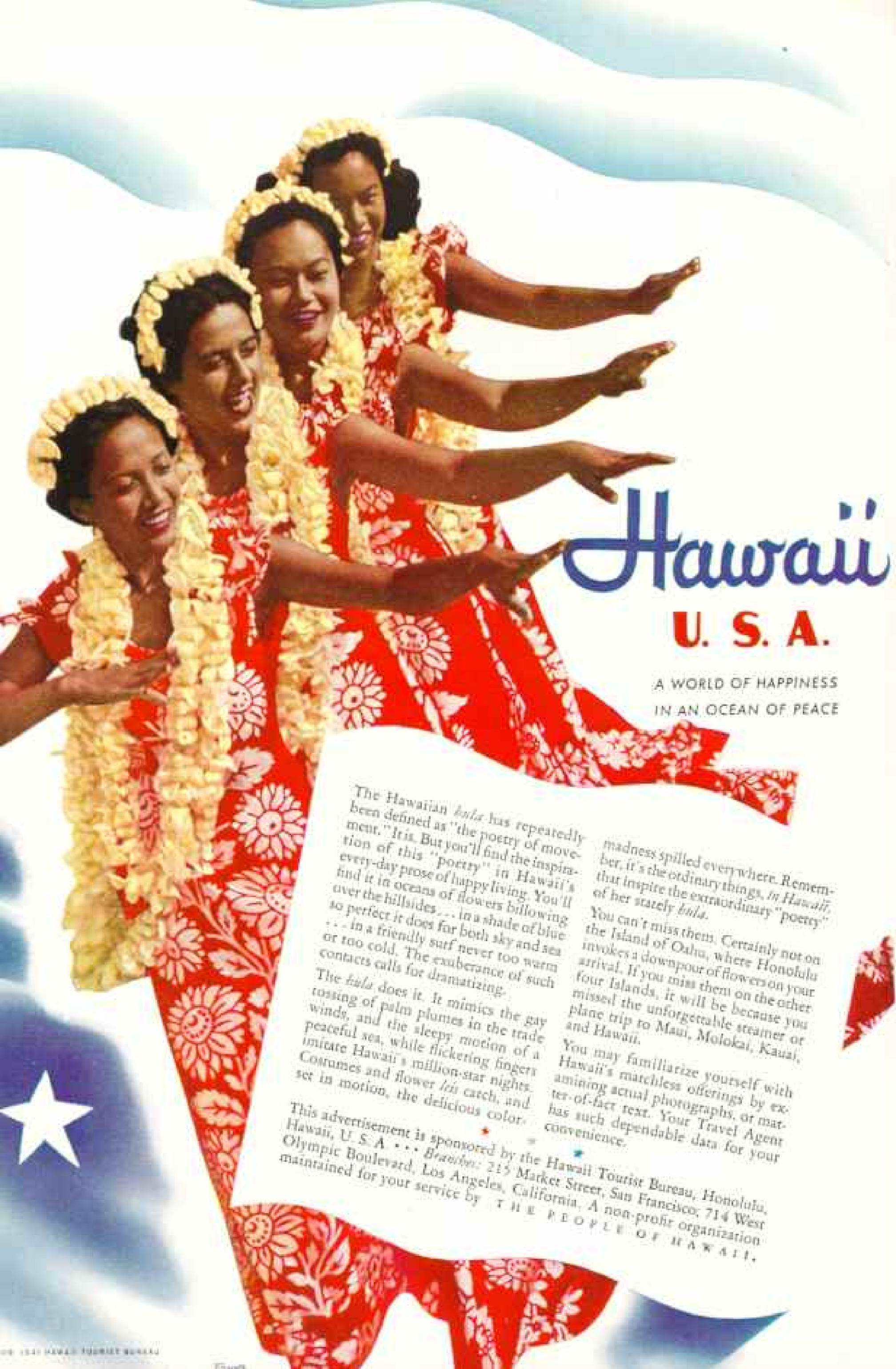
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Hawaii

U. S. A.

A WORLD OF HAPPINESS
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The Hawaiian *hula* has repeatedly been defined as "the poetry of movement." It is. But you'll find the inspiration of this "poetry" in Hawaii's every-day prose of happy living. You'll find it in oceans of flowers billowing over the hillsides . . . in a shade of blue so perfect it does for both sky and sea . . . in a friendly surf never too warm or too cold. The exuberance of such contacts calls for dramatizing.

The *hula* does it. It mimics the gay tossing of palm plumes in the trade winds, and the sleepy motion of a peaceful sea, while flickering fingers imitate Hawaii's million-star nights. Costumes and flower *lei* catch, and set in motion, the delicious color.

madness spilled everywhere. Remember, it's the ordinary things, in Hawaii, that inspire the extraordinary "poetry" of her stately *hula*.

You can't miss them. Certainly not on the Island of Oahu, where Honolulu invokes a downpour of flowers on your arrival. If you miss them on the other four Islands, it will be because you missed the unforgettable steamer or plane trip to Maui, Molokai, Kauai, and Hawaii.

You may familiarize yourself with Hawaii's matchless offerings by examining actual photographs, or matter-of-fact text. Your Travel Agent has such dependable data for your convenience.

This advertisement is sponsored by the Hawaii Tourist Bureau, Honolulu, Hawaii, U. S. A. . . . Branches: 215 Market Street, San Francisco; 714 West Olympic Boulevard, Los Angeles, California. A non-profit organization maintained for your service by THE PEOPLE OF HAWAII.

Five suggestions for a new place to go this winter



1. Southern Arizona guest ranches and resorts range from real old-time cattle ranches to luxurious establishments with golf courses and swimming pools. Main line trains to Southern Arizona are Southern Pacific's *Golden State Limited* and *Californian* from Chicago, *Sunset Limited* and *Argonaut* from New Orleans. Streamlined *Arizona Limited* (Chicago-Tucson-Phoenix) starts December 13.

P.S. Quickest way to see Carlsbad Caverns on your trip to Arizona or California is from El Paso on Southern Pacific. All-expense side trip costs only \$9.75 from El Paso, center of the sunny border vacationland.

2. Hotel Playa de Cortés, Guaymas, Mexico—"the desert resort by the sea"—is a short train trip from Tucson. Fine deep-sea fishing, riding, tennis, swimming.

3. Palm Springs, sunny oasis on the California desert, is served exclusively by Southern Pacific trains.



4. Southern California... Los Angeles, Hollywood, Santa Barbara, San Diego. Four Southern Pacific trains daily from the East to Los Angeles.

Join in Southern California's All-Winter Sun Festival.

5. San Francisco and Del Monte... cosmopolitan and fashionable fun. Southern Pacific has the finest and fastest train service to both places.

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Liberal trade-in on your present tubes, new or old—balance on easy terms . . . at Goodrich Silvertown Stores and many B. F. Goodrich Dealers.

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AGAINST FLATS AND
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GENERAL ELECTRIC X-RAY of tire and Seal-o-matic Tube that lost no air in spite of spikes, nails and screws driven all the way in! Nails were pulled out two days later—tire still stood up. The "Self-Healing" lining . . .

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A fine brochure illustrating the de luxe accommodations and recreation facilities available on these fast new liners is yours for the asking. See your Travel Agent or write direct for a copy.

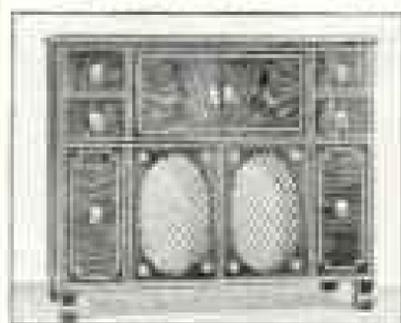

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HOW DID OUR LANGUAGE ORIGINATE?

Astonished

actually means thunderstruck

WHEN we trace our word *astonish* back through the Middle English *astunien* and Old French *astoner*, we find its original source in Latin *ex*, "out," combined with *tonare*, "to thunder." The first meaning of *astonish* was "to stun," "to render senseless," as by a thunderbolt or a blow. But it now suggests great surprise, sudden fear, or wonder. This is one of thousands of interesting word origins given in the unabridged Merriam-Webster, WEBSTER'S NEW INTERNATIONAL DICTIONARY, Second Edition. This great reference book contains 600,000 entries—122,000 more entries than any other dictionary. 12,000 terms illustrated; 3,350 pages. At your bookseller. Write for free booklet of interesting word origins. G. & C. Merriam Co., 741 Federal St., Springfield, Massachusetts.

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THE GENUINE WEBSTER



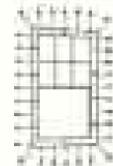
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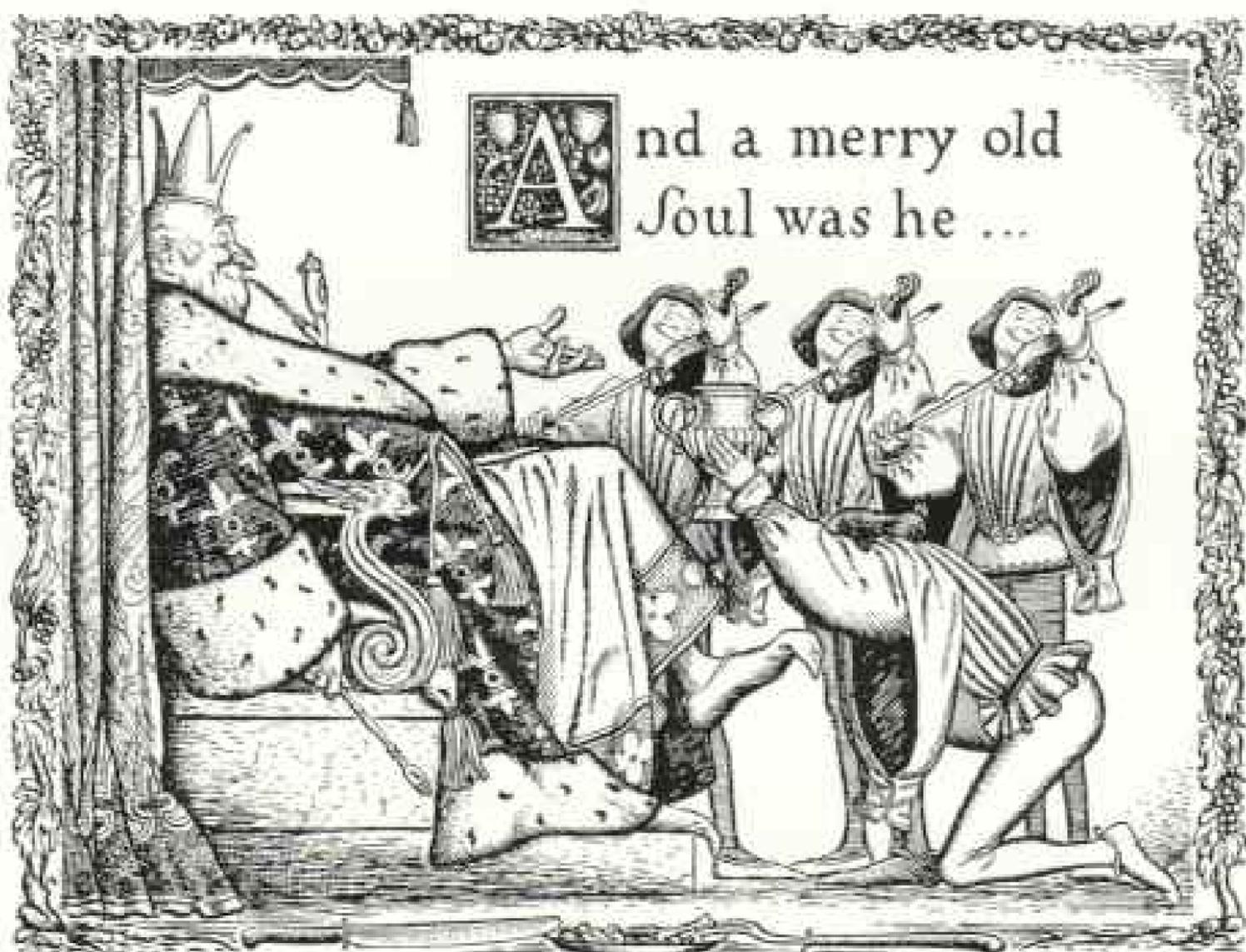
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A

nd a merry old
Soul was he ...

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OUR "MOTHER GOOSE" BOOKS usually picture Old King Cole as a *fat* old soul.

Much as we hate to question these old favorites, it isn't very likely that anyone burdened with such excess poundage would actually live to be *old*.

Overweight and long life rarely go together.

A study of men accepted for life insurance recently revealed that those moderately overweight had a death rate 20% higher than men of average weight, and that the death rate of the obese was 70% higher. Circulatory and kidney diseases took a 60% higher toll from the overweight. Mortality from diabetes averaged 150% higher among the overweight.

After you are thirty, it becomes increasingly advisable to keep your weight down to normal, even to stay a little *underweight*. Overweight then tends to increase your susceptibility to many diseases, as well as to decrease your power to recover from illnesses. By keeping your weight down, you can avoid the burden which obesity puts on your heart, kidneys, liver, and other organs.

Overweight is an insidious thing, usually creeping up on you by unnoticed ounces and inches. That is why it is so important to establish proper eating and exercising habits to control any such tendency. If you tend to put on weight, regular checkups on your weight should be made as much a habit as bathing.

Your doctor is your best guide in helping you to establish sound weight control. He will determine

what your weight should really be. He will explain the dangers of "overweight cures," of quick, drastic reducing methods—methods that frequently undermine health rather than improve it. And—unless some serious glandular or other condition requires special treatment—he will show you that in order to lose excess weight it is not necessary to go in for too strenuous exercises or too radical changes in your diet.

Write today for Metropolitan's free booklet, 101-N, "Overweight and Underweight." It gives a number of helpful low-calorie menus and offers many safe and sane suggestions to help you control your weight, subject to your doctor's approval.

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What really happens to Swallows in the Winter?

FOR HUNDREDS OF YEARS, nobody in England could figure out what happened to the common swallow, *Hirundo rustica*, in the wintertime.

Some thought that they made a hole in soft mud and went to sleep for the winter, like turtles.

Samuel Johnson had this to say about it: "Swallows certainly sleep all the winter. A number of them conglobulate together, by flying round and round, and then all in a heap throw themselves under water and lie in the bed of a river."

At last, in the nineteenth century, English naturalists found out what really happens to swallows. The birds fly south to Africa for the winter. They go in small groups of from 30 to 50 birds instead of in the large flocks in which they are seen just before migration. These small groups of small birds become indiscernible almost as soon as they start southward.

If you think about it, we believe you'll agree that money is a great deal like the swallows. It disappears a little at a time, and not one in ten of us knows what happens to it.

Since money does have this discouraging habit, it is a very safe idea for a man to set aside, each month of each year, a certain amount of his income for the purchase of insurance, in order to have money always available at moments when money is so essential.

This money from insurance can be used to pay the doctor, the butcher, the grocer, and all the others when you have an accident; to protect you if you hurt someone in a motor accident and are open to a suit for damages; to take care of you in your old age or to take care of your family if something should happen to you.

If you aren't positive that your insurance gives you all the kinds of protection you need, ask your Travelers agent or your own insurance broker to help you. He's a competent and helpful person.

Moral: Insure in The Travelers. All forms of life, casualty, and fire insurance; all forms of fidelity and surety bonds. The Travelers Insurance Company, The Travelers Indemnity Company, The Travelers Fire Insurance Company, Hartford, Conn.



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There's a stop that belongs on your daily time-table... a stop for ice-cold Coca-Cola. Whatever your schedule may be, ice-cold Coca-Cola adds the flavor of refreshment to a welcome pause. You'll enjoy it.

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You trust its quality



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THE PAUSE THAT REFRESHES



FROM A KODACHROME ORIGINAL

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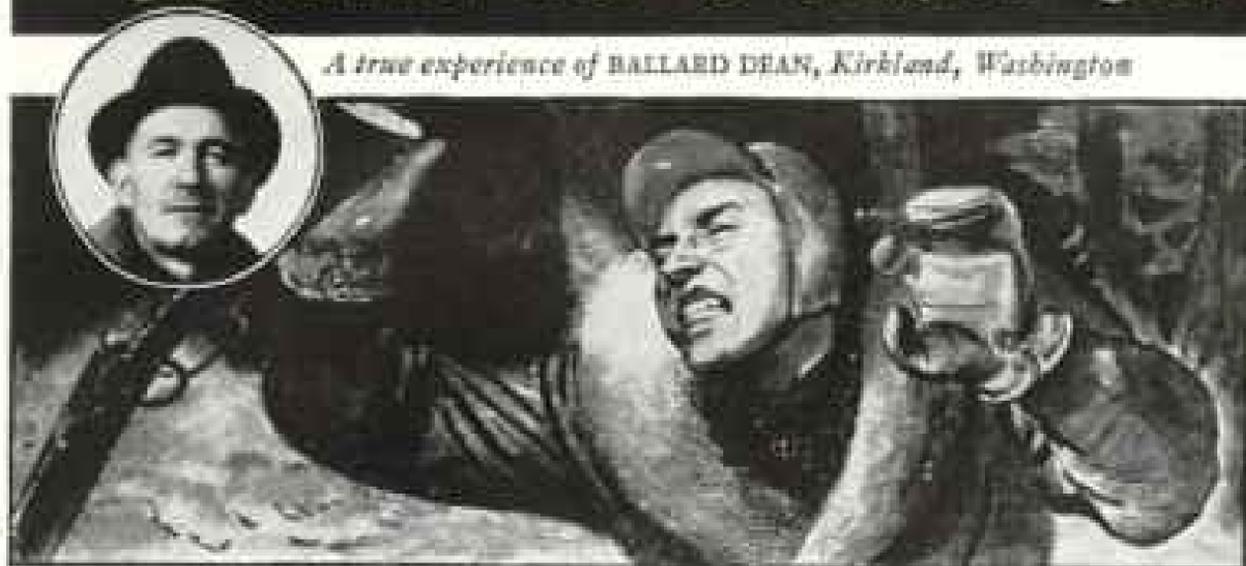
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IN THE

NATIONAL GEOGRAPHIC SOCIETY

* The Membership Dues, Which Are for the Calendar Year, Include
Subscription to the National Geographic Magazine

PLEASE FILL IN BLANK BELOW, DETACH, AND MAIL TO THE SECRETARY

1943

To the Secretary, National Geographic Society,
Sixteenth and M Streets Northwest, Washington, D. C.:

I nominate _____

Occupation _____

(This information is important for the records.)

Address _____

_____ for membership in The Society.

"Where shall we stay?"

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Nittany Lion Inn, an "Early American Inn" on Penna. State College campus. All rooms with bath. Route 222 at geographical center of state.

SOUTH CAROLINA

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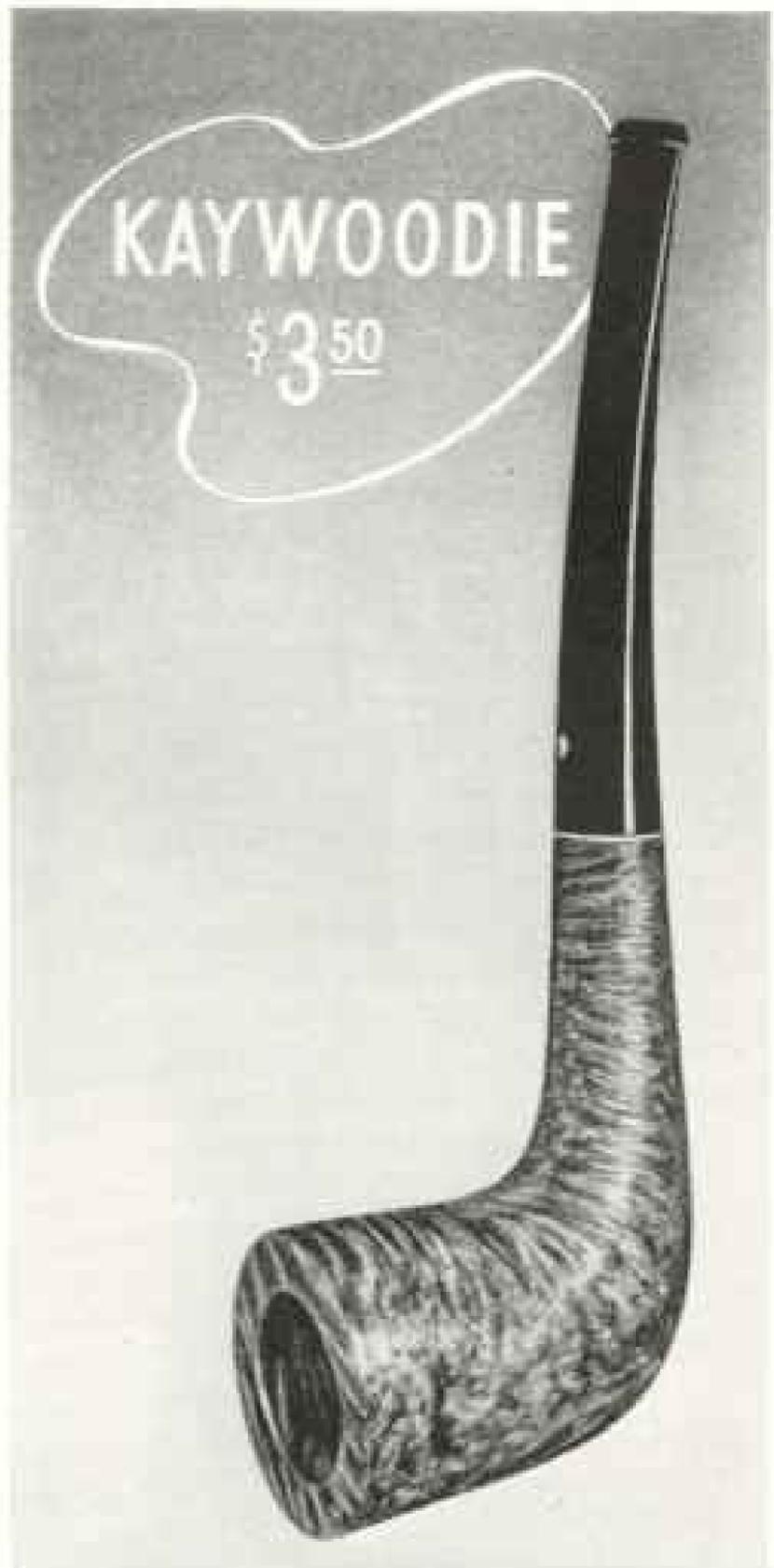
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In 1916 it was Preparedness; in 1941, National Defense. But now the scale is bigger, the pace faster. There was pressure on the telephone business then. The pressure is infinitely greater now. New training camps; new aviation fields; new munitions plants—all need telephones. Every one is moving faster and when a Nation hurries it does it by telephone.

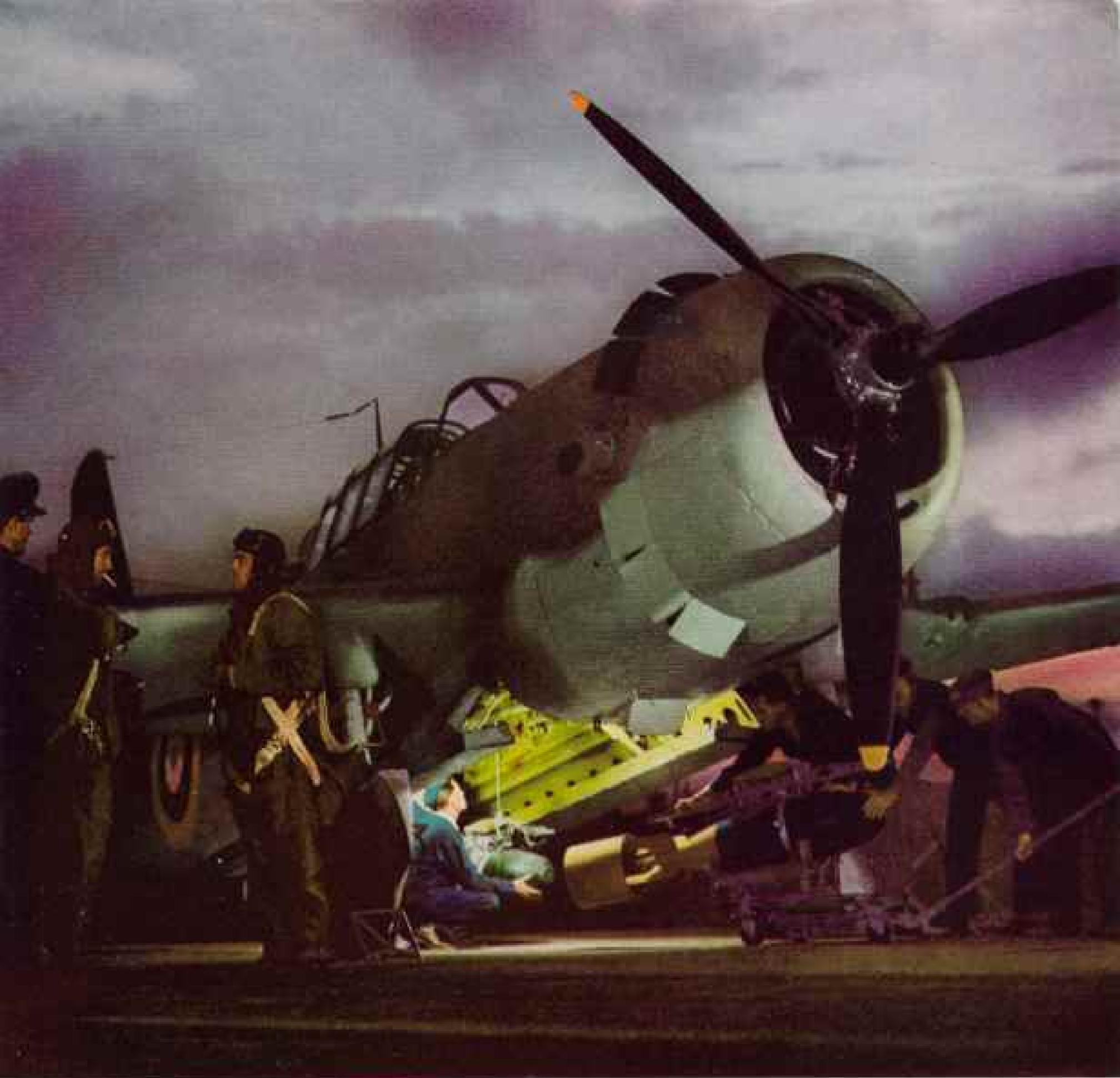
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