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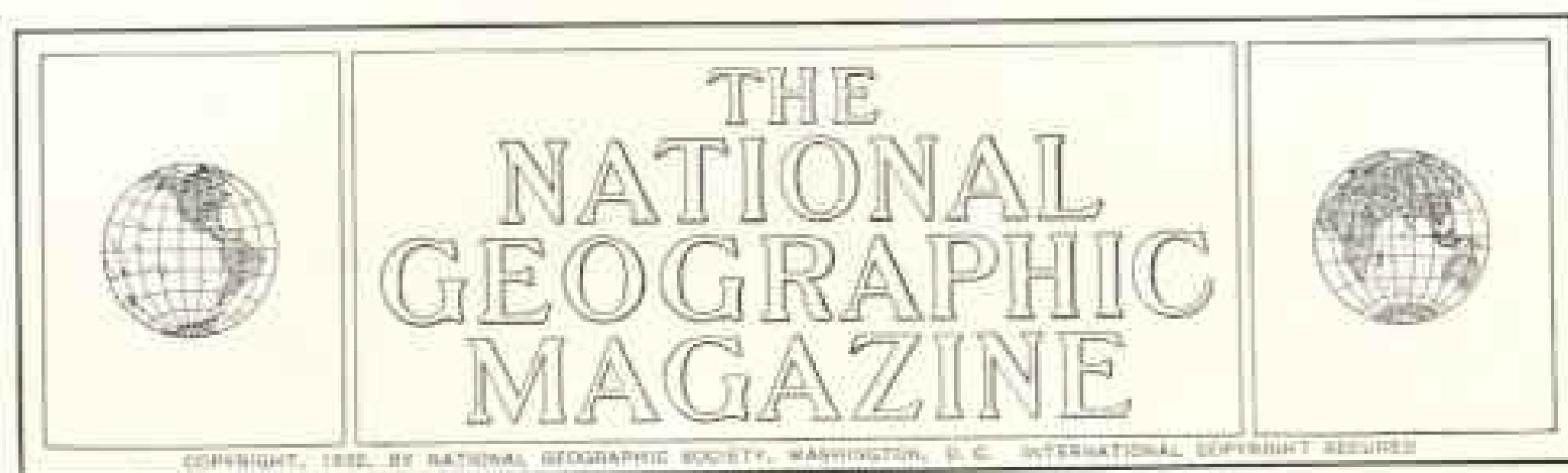
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## FLYING THE WORLD

In a Homemade Airplane the Author and Her Husband  
Enjoy 16,000 Miles of Adventurous Flight  
Across Europe, Asia, and America

BY GLADYS M. DAY

**T**O FLY the world in eight, or even in eighty, days was not our object. We believed that an airplane could give us a perspective on the far places and peoples of the earth unattainable by ordinary routine travel on the ground. And during the eight months which my husband and I leisurely circled the globe in our self-built ship, we achieved our end in full measure.

The idea of the trip originated one evening in January, 1931. We were sitting across a dinner table from one another discussing what we should do with our temporary freedom. Charles Healy Day had just terminated his duties with the airplane company for which he had been working. It seemed to me that the time had come to break away from routine life. If I could help it, we were not going to spend the year 1931 living in a three-room apartment in Ridgewood, New Jersey.

We discussed flying around the United States. "Why not the world," I said, "if we can get the plane?"

"Get the plane? Why not build it?" said Charles Healy. And that is the way our adventure began.

I could ask for no better partner for such a trip than my husband. For years he had been an airplane designer and engineer. He had known life in the open and under trying conditions—first in the Alaska gold rush, later in Death Valley. Little won-

der that his response to the idea of flying the world was immediate, definite, and practical.

We built our plane in the spring of 1931. We then shipped to England, where it was reassembled. From England we flew to France, from France to Germany; then over the Balkans to Istanbul, and from there across Palestine, Persia, and India. Shortly after hostilities broke out in Manchuria, we flew up the Chinese coast to Shanghai, in the shadow of impending war between China and Japan. From Shanghai we shipped to San Francisco and flew home across the American Continent in December.

### A PLANE DESIGNED FOR COMFORT AND SAFETY

The total trip took us a distance of about 24,000 miles, of which we flew 16,000 miles. During the flight our Martin engine consumed some 1,240 gallons of gasoline, ranging in price from as low as 22 cents a gallon on the American Continent to as high as \$1.50 per gallon at an English fort in the middle of the Syrian Desert, and averaging about 45 cents per gallon. Total expenses of the trip came close to \$6,000, which included board and lodging at hotels for nearly eight months and our passage across the Atlantic and Pacific.

The plane, which we built and christened the *Errant*, could be satisfactorily repro-



Drawn by A. H. Dumstead.

#### THE ROUTE OF THE "ERRANT" ACROSS EUROPE AND ASIA

At all European airports there is a landing fee, ranging from 30 to 75 cents, and storage at night is at practically the same rate. Gasoline costs from 35 to 40 cents a gallon in the better-known cities, but in central Europe and Asia the price goes up, occasionally as high as \$1.50.

duced for about \$4,500. Its construction took the better part of last spring and was accomplished in the rear room of an automobile paint shop of Paterson, New Jersey. In the plane my husband embodied the experience of many years of airplane designing. Two things were essential: one was safety and the other comfort.

By sharply "staggering" the wings of the *Errant*—that is, placing the upper wing well forward of the lower wing—my husband produced an extraordinarily stable plane, with a high speed of 105 miles per hour, a cruising speed of 85 miles per hour, and an unusually low landing speed of 30 miles per hour. This last characteristic was to save our lives in Burma, India.

As to comfort, the outstanding feature of the ship is the side-by-side arrangement of the seats, making it easy for us to talk to each other in flight and communicate concerning maps and routes. In addition, we could appreciate the humor of many of the events that befell us together. To fly the world in a plane with the usual tandem seating arrangement would be dull indeed by comparison.

My own equipment for the flight was strictly limited to 30 pounds weight. I wore for everyday use a made-to-order soft angora tweed suit of brown that did not show dust or dirt. A divided skirt made the dress as practical as a pair of trousers in the cockpit and as presentable as an ordinary woman's suit on the ground. In addition, I took a black evening dress for dining out in the cities which we visited—an indispensable piece of clothing, by the way, to a woman on a long flight.

I had two pairs of shoes and a pair of evening slippers. Toothbrush and paste, comb and hairbrush, and a jar of cold cream completed the outfit. My husband's personal equipment was even simpler. For the plane, we took a full set of tools and 18 pounds of spare parts, all of which we were to use.

After the *Errant* had been put through thorough flight tests and found sound, the wings were taken from the body at Teterboro Airport, New Jersey, and loaded on a truck. The rear of the fuselage was attached to the truck and towed through the Holland Tunnel to New York. Wings and

body were then carefully lowered into the hold of the *American Shipper*, the steamer on which we sailed the afternoon of May 8. We arrived in England ten days later.

Here we had to attend to many last arrangements. The plane was reassembled at Heston Airport. From the Automobile Club of Great Britain we obtained strip maps for our entire route. They cost us \$120, but were worth it, because of their accuracy and convenience. We also had to obtain a triptyque or carnet, which is an international customs pass guaranteeing that the plane would not be sold in any of the countries specified. Before leaving America we had already made arrangements for our passports and visas for each country along our route and our flying permits.

With all our papers in good order, with a folding typewriter, a small camera, and a new large compass aboard, we took off from Heston early on the morning of May 28.

The thrill of that first take-off, the feeling of the plane lifting from the ground after so many months of waiting and planning, will not soon be forgotten. The hedgerows of England dropped away below us as we headed out over the Channel toward France. We were really off, with Europe and Asia ahead of us.

## II

Fortunately we had planned our trip so as to fly from the West toward the East. Europe, with its well-developed flying fields, initiated us into the conventions of



THE FLYERS AND THE MASCOT THAT STAYED AT HOME.

On the test flights in New Jersey, before the start of the tour, the author and her husband carried with them their toy Pinscher, and it was only upon learning of the six-months quarantine for dog travelers in England that they decided to leave the pet behind.

air travel and prepared us for the really difficult flying that lay ahead in the Orient. Thus, on that first day's flight from England to Paris, we ran into a thundershower which later on would not have bothered us in the least. At the time, the storm seemed rather bad and we decided to land. We found an excellent field at Abbeville, with the French officials courteous and helpful. Here we went through our first customs inspection, which consisted of showing our log book, passports, triptyque, and flying permit.

When the storm had cleared, we flew on to Paris, catching sight of the Eiffel Tower and the Sacré Cœur and landing at Le



Photograph by Acme.

THE "ERRANT" FOLLOWED THE LINDBERGH ROUTE TO BELGIUM  
Col. Charles A. Lindbergh, in the *Spirit of St. Louis*, flying over Brussels.

Bourget, the most cosmopolitan airport in Europe.

Noteworthy at almost all European ports are the cafés. Here well-dressed men and women sit over their beer and wine watching the planes land and take off. The cafés lend a gayer touch to foreign air terminals than one finds at those in the United States.

#### LANDING IN A POTATO PATCH

After a charming week in Paris we took off, with Brussels as our destination. That second day of flight, however, showed us that even in Europe the pilot can have his difficulties. There was a light fog when we started; it became steadily thicker. We passed over former battle fields, barely distinguishable in the mist, and then when we should have been over Brussels I made out windmills. "We're over Holland," I said.

We had no permit to land in the Netherlands, and so flew on for an hour. The

fall of the gas meter made a landing imperative. We made out a town whose name we did not know, picked out a level field, and came in for a slow, careful landing. When our wheels stopped we discovered that we had landed in a potato patch!

Some peasants wearing wooden shoes came toward us. I feared the worst—that we were in the Netherlands. "Holland, oder Deutschland?" I asked.

"Deutschland," they answered with almost a cheer.

That patriotic outburst sounded good in our ears, but our troubles were not over. We discovered that we had landed on the grounds of an insane asylum. The land was being cultivated by the Department of Agriculture of the State. A long bickering arose between the representative of the asylum and the Department of Agriculture as to who should collect the damages. It ended by our paying \$12, \$4 of which was



Photograph by Donald McCreish

#### TWIN CATHEDRAL, SPIRES BECKON TO COLOGNE

At a distance of 20 miles, the flyer approaching from Cleves catches a first glimpse of the 512-foot Gothic towers of the Cathedral, which grow before the eyes as the builders intended they should to travelers coming on foot to the city in the Middle Ages. The new Hohenzollern Bridge spans the Rhine near the historic edifice.

to go to the asylum, \$8 to the Department of Agriculture.

After rigorous inspection by military officials, who at first thought our plane was French, we were declared welcome and escorted into the town. It was Cleves, associated with the legend of Wagner's "Lohengrin." We bathed, had a good dinner, and felt better. Really, we could not have landed in a more charming or picturesque place if we had tried!

After a difficult take-off from the potato patch the next day, we flew on to Cologne, catching sight of the great spire of the Cathedral in the late afternoon sunlight while still ten miles distant.

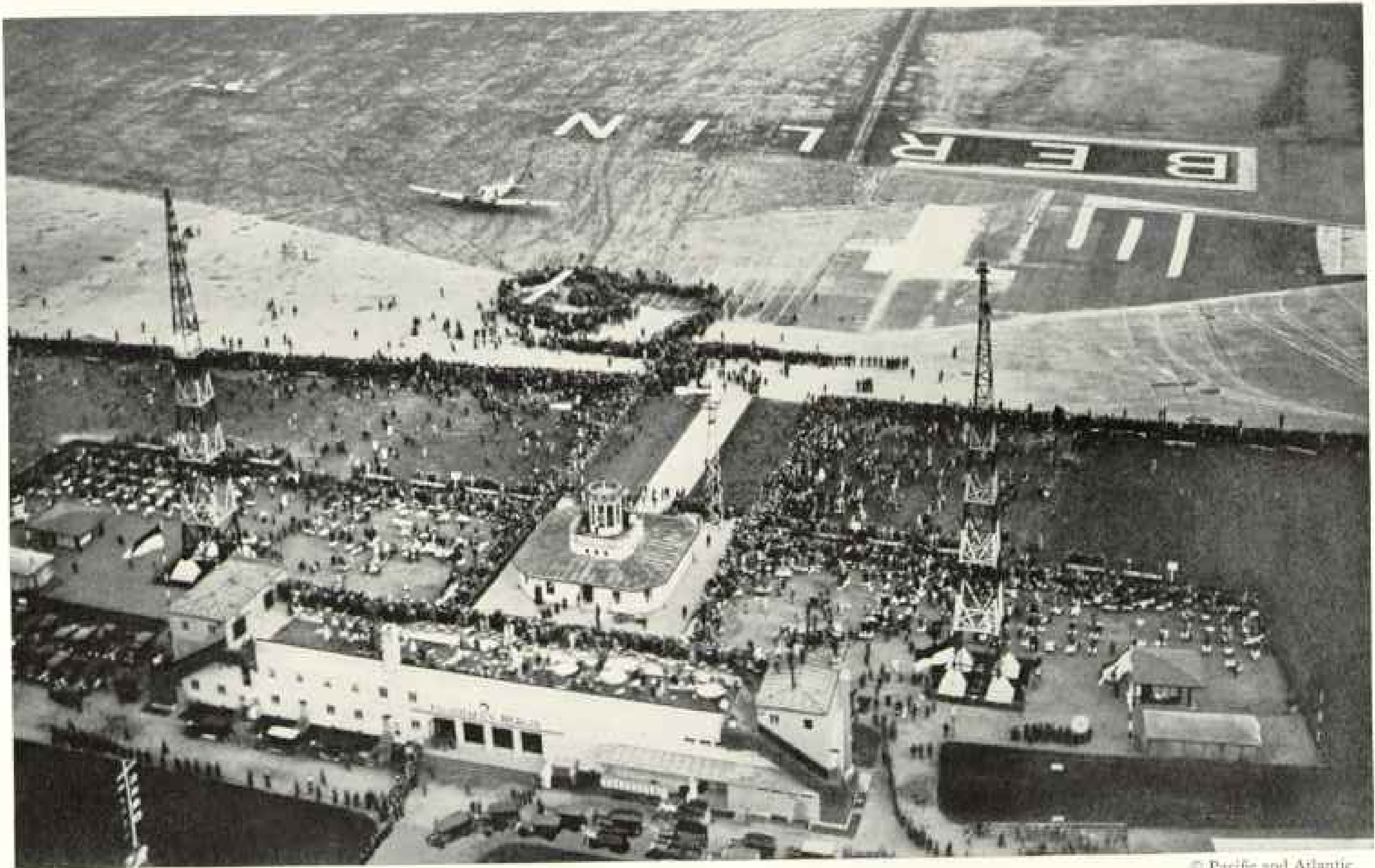
From Cologne we flew up the Rhine to Frankfort, watching the famous river country, usually seen by boat, unroll beneath us. Then we turned eastward to Berlin. We landed on Tempelhof Airport, which is located on a former parade ground



© H. Raifius

LOOKING ACROSS THE GOLDEN HORN TOWARD THE SUPERB MOSQUE OF SULEIMAN THE MAGNIFICENT

The fleet of cargo craft in the foreground is moored in the inner commercial harbor. Istanbul was known for sixteen centuries as Constantinople in honor of its founder, the Roman Emperor Constantine the Great. In 1453 it was captured by the Ottoman Turks, and remained their capital until the recent Turkish Revolution transferred the seat of government to Ankara.



© Pacific and Atlantic

GREAT THRONGS HAVE GREETED MANY FAMOUS AVIATORS AS THEY LANDED AT TEMPELHOF AIRDROME, BERLIN

And little wonder, for the field is in the midst of the German capital. To gain an idea of its accessibility, Americans have only to picture Central Park, in New York, changed into an airport. The author and her husband could readily understand, however, why the transatlantic flyer, Clarence Chamberlin, lost his way and came down first at Kottbus, 60 miles from Berlin. The countryside is dotted with lakes which look very much alike, and a network of railroads adds to the confusion, making the city difficult to locate from the air.





Photograph by Gladys M. Day

#### BUDAPEST BOASTS A BEAU BRUMMEL OF CUSTOMS OFFICERS

Faultless khaki uniform, white gloves, and a high-crowned hat adorned with a tuft of cock feathers make him an imposing figure. The field serves both commercial and military purposes, and many rules have to be observed by incoming aviators. In three languages—Hungarian, German, and French—the sign forbids smoking, loitering, and unauthorized photography.

within the city. It is so accessible that all other European fields seem poor by comparison (see page 661).

Five days' stay, and then off again for Prague, Vienna, Budapest, and Bucharest.

We left the Rumanian capital early one morning, and the Black Sea flashed into view toward noon—tranquil, blue, and shadowed by mountains. We crossed the Turkish Peninsula to the Sea of Marmara, and kept ten miles out, in obedience to Turkish military regulations. We flew on toward Istanbul. The mosques and minarets of the famous city came into view. We had reached the dividing point of East and West! (See, also, page 660.)

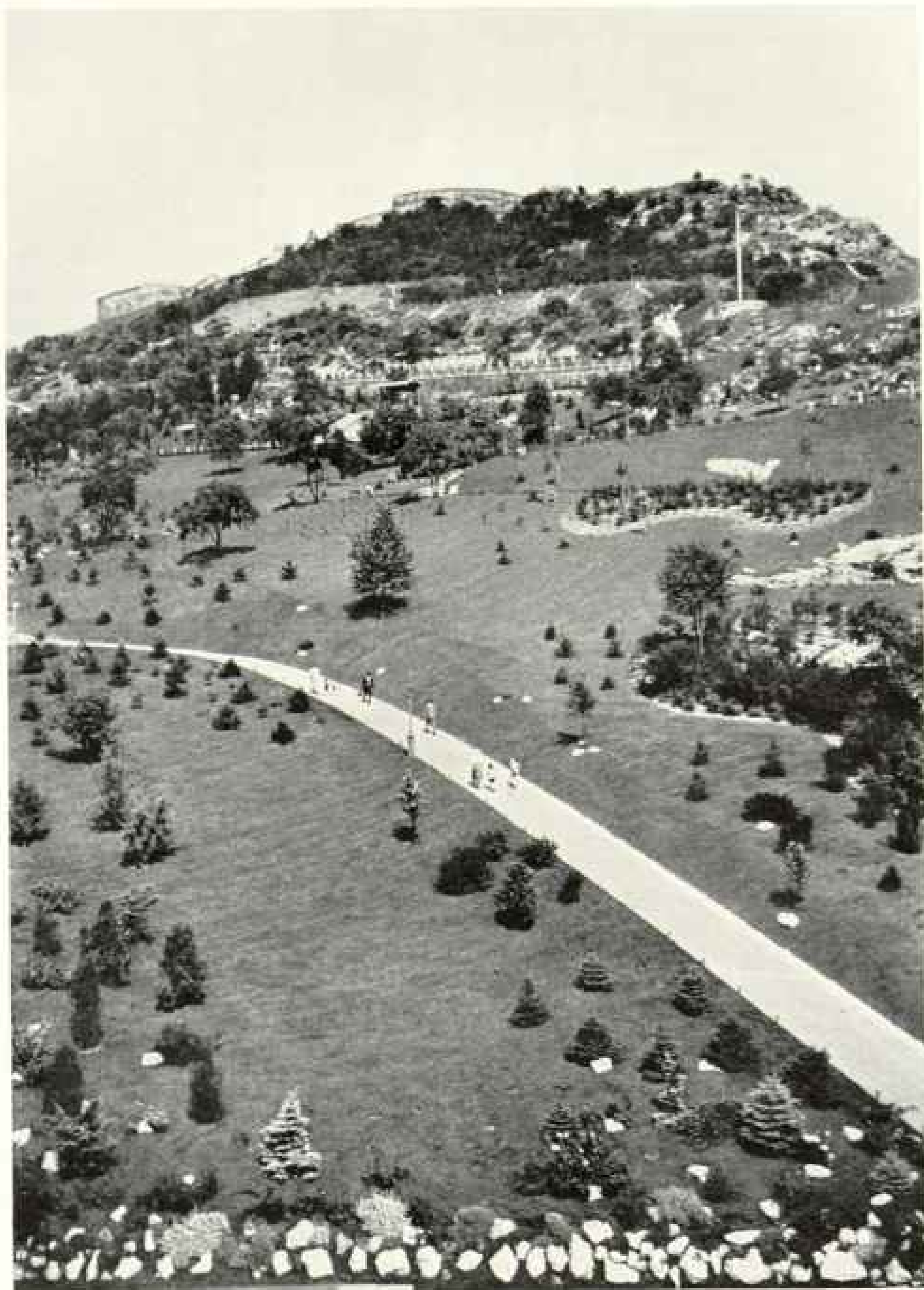
#### FLYING PROBLEMS MULTIPLY AS THE EAST IS REACHED

The difference between the East and the West is apparent to the flyer in more ways than simply the change in dress and customs of the people. Beyond Istanbul, flying accommodations were at a premium. It became difficult and often impossible to

obtain weather reports. The price of gasoline rose. Often we used emergency fields with no hangar facilities. And we became dependent not so much on the government of the country flown over as on the air interests of outside nations, notably England and France and the Netherlands.

In flying from Istanbul to Aleppo, July 9, we had to pass over the treacherous Taurus Mountains, which rise to 10,000 and 12,000 feet. Our approach to the mountains was over a volcanic region studded with high sapphire lakes which have formed in extinct craters. Then we entered a winding pass at some points only two miles broad, allowing scant leeway when you are traveling 90 miles per hour. It was one of the most difficult flights of the trip.

Aleppo was hot, and the heat increased as we flew down to Damascus and over the Holy Land to Jerusalem. We were flying this country at a bad season of the year, the summer months, when there is little or no rain. Our finest view of Jerusalem was



Photograph by Charles Healy Day

FORMAL PARKS AND ANCIENT BUILDINGS MAKE BUDAPEST DELIGHTFUL.

Here, in the author's opinion, are seen the most smartly dressed women of Europe mingling with comely peasant girls in their native costumes. The famous Citadel, crowning St. Gellért Hill, rises in the background.



Photograph by Charles Healy Day

#### MECHANICS REPAIR A LEAK THAT NEARLY CAUSED DISASTER

A cylindrical aluminum gas tank of the *Errant* had to be replaced with a flat-sided copper substitute in Cologne, the workmen there refusing to weld the old one. Vibration opened a hole in this makeshift container while the plane was in the air, and the flyers, drenched with gasoline, were lucky to reach the landing field in Budapest. A spark from the engine would have been fatal.

in approaching it from the air and in leaving it. While we were in the city it was stifling and dirty.

When we left Jerusalem we took with us some emergency rations—two cans of beef, two bars of chocolate in a soldered container, a tin of biscuits, and extra water. Our flight now took us directly over the Syrian Desert, which in that season of the year was a furnace of heat, a white, glaring expanse of sand, where to lose our way meant almost certain death.

To help us in checking our compass course were the markers, numbers painted on rocks, of the Imperial Airways, which runs planes across the desert to Baghdad, our destination, 560 miles distant.

#### DESERT ENTERTAINMENT

We made one overnight stop at the English fort of Rutbah Wells, a lone landmark in that vast tract of white, glaring sand. Here we met three Englishmen in the service of the Imperial Airways, who entertained us and were glad of our company.

It was a relief to get cold drinks, brewed by means of ice supplied by an electric refrigerator which is operated at the fort by a small power plant. The refrigerator was a strange modern convenience to find in the midst of a desert inhabited for the most part only by wandering Bedouin tribes.

With warnings and "good luck," we took off the next morning and reached Baghdad, where, during the first night of our stay at the hotel, I was awakened by an English voice saying, "Excuse me, madam, but the hotel is on fire." Jumping up, I found this to be the case.

Charles Healy, the other guests, and myself, all attired in night clothes, made our way down to the street. We were rescued by a kind Englishman, and later saved some of our belongings out of our room. But the experience confirmed our belief that the dangers of the ground are surely as great as those of the air.

From Baghdad we flew on over the ruins of Babylon, over the supposed site of the Garden of Eden—a desolate, burnt waste



Photograph by Charles Healy Day

FLASHING MINARETS OF ISTANBUL MARK WHERE THE EAST BEGINS (PAGE 660)

Forgotten were fears of Turkish military regulations, as the *Errant* soared above the mosques, with domes gleaming like enormous pearls, within the winding white walls of the city. After placing the plane in a hangar at St. Stephano, the flyers took a 55-minute train ride to cover seven miles—something of a comedown for eagles.

in summer, very different from the biblical description—and so reached the Persian Gulf. We spent the night at Bushire, Persia, and the next day rose at dawn to continue our flight down the coast. The sunlight turned the high shale peaks to orange, purple, and saffron in an indescribable motley of colors. This curious shale formation continues for some distance, changing along the Gulf of Oman to high plateaus separated by deep ravines. The plateaus are like deserted islands raised high into the clouds.

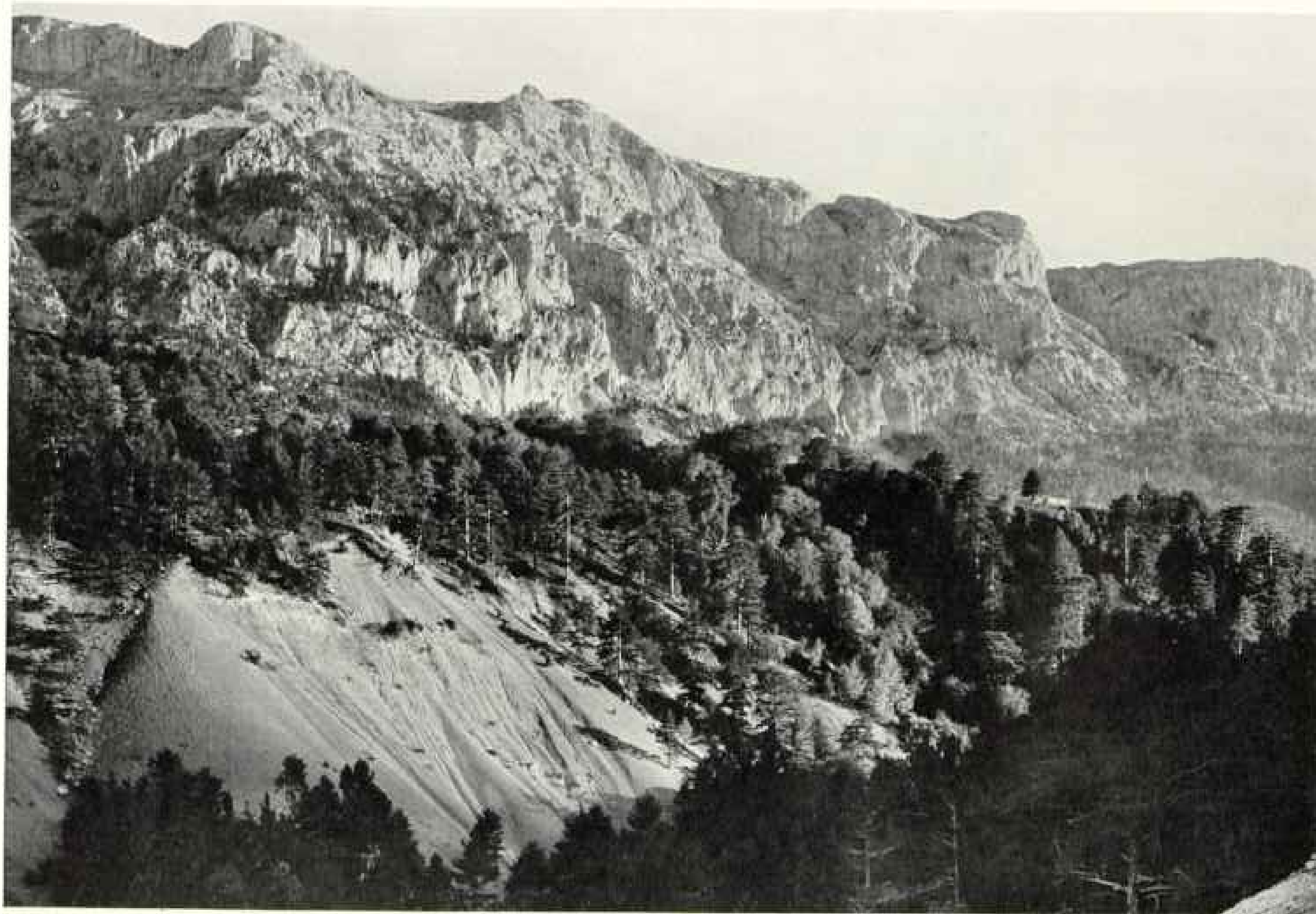
PERSIAN CUSTOMS OFFICIALS RIGIDLY  
EXAMINE FLYERS

Rigid customs inspections obtain in Persia, with airplanes especially suspect. At all of our stops—Bushire, Lingeh, Jask, and Chahbar—we had to submit to inspection, paying to bring the official out to the field from the town, and also for "overtime" in case we landed or took off outside of his working hours. The bill amounted sometimes to more than \$4 for inspection

alone. On the whole, we were glad to get out of Persia and to land at an emergency field at Gwadar, Baluchistan. Here our gasoline supply had to be brought out to the field, nine miles from the town, on the backs of lumbering camels.

On July 26 we reached Karachi, India, on the Arabian Sea. Our course now turned inland across India to Calcutta. We stopped at Jodhpur, Agra, Allahabad, and Gaya. At all of these places, as in the small towns of Persia, emergency fields have been built chiefly through the efforts of the Imperial Airways. The fields are also used by Dutch and French airmail pilots, who connect Europe by air with French Indo-China and the East Indies.

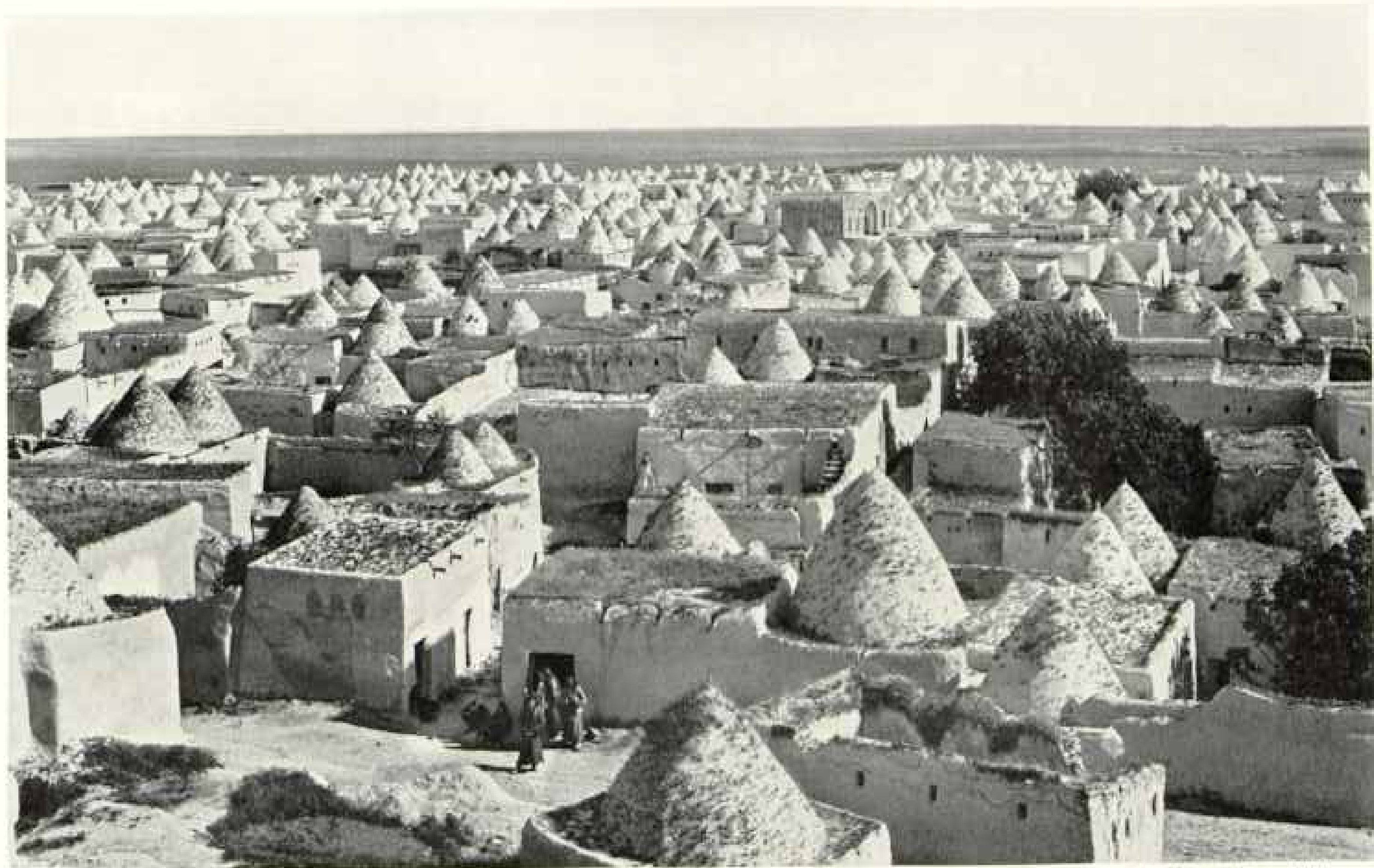
At our stops in India we encountered beauty and unbelievable squalor. At Jodhpur we went through a hospital whose wards were depressing past belief. The next day, in strange contrast, we saw the Taj Mahal grow magically before our eyes, as we flew into Agra. The white contours of the great mausoleum were defined



Photograph by Maynard Owen Williams

FLYING OVER THE TAURUS MOUNTAINS PRESENTS HAZARDS

Through a treacherously winding, cliff-walled pass not more than two miles across at its widest, the *Errant* made 90 miles an hour, *en route* to Aleppo, over the high-hunched backbone of Asia Minor.



Photograph by Maynard Owen Williams

NOT BEEHIVES, BUT HOUSES IN A VILLAGE NEAR ALEPPO, SYRIA

The queer conical roofs suggest somewhat the stone dwellings in the "heel" of Italy ("Stone Beehive Homes of the Italian Heel," by Paul Wilstach, in the NATIONAL GEOGRAPHIC MAGAZINE for February, 1930). Hot winds blew fine dust across the plains, and the flyers were glad to take off for Damascus.



Photograph by Maynard Owen Williams

#### DAMASCUS METAL WORK MAKES ONE LONG FOR A SPARE TRUNK

It would have been pleasant to obtain at least a small souvenir of this old craftsman's work, but the author had to content herself with a luck charm consisting of three interlocked rings cut out of a stick by an Armenian youth who did his whittling with a knife held in his toes.

against crystal-blue sky. Our view of it from the air was an unforgettable experience.

That night, August 3, the sky clouded for the first time since we had left Istanbul. The following day we encountered rain. We were now suddenly plunged from the driest country I had ever beheld into the wettest. It was the monsoon season of the year, when the eastern portion of India is flooded by rainstorms borne on the prevailing southeast winds. These originate in the low-pressure areas of the Bay of Bengal and bring with them the dreaded monsoon clouds, moving pillars of water. And

it was one of these dark, slow-traveling columns of water which we met on August 4, 15 miles from Gaya.

We tried to fly through the cloud. All went black. We could not even see the instruments on the dash. The weight of the water dragged us toward the ground. Slowly, Charles Healy turned the *Errant* and we flew out to comparative safety, rounded the cloud, and, after taking one hour and a half to fly 15 miles, landed at Gaya. The following day, in coming into Calcutta, we encountered another monsoon. With the wisdom of experience, we skirted it at once.

### III

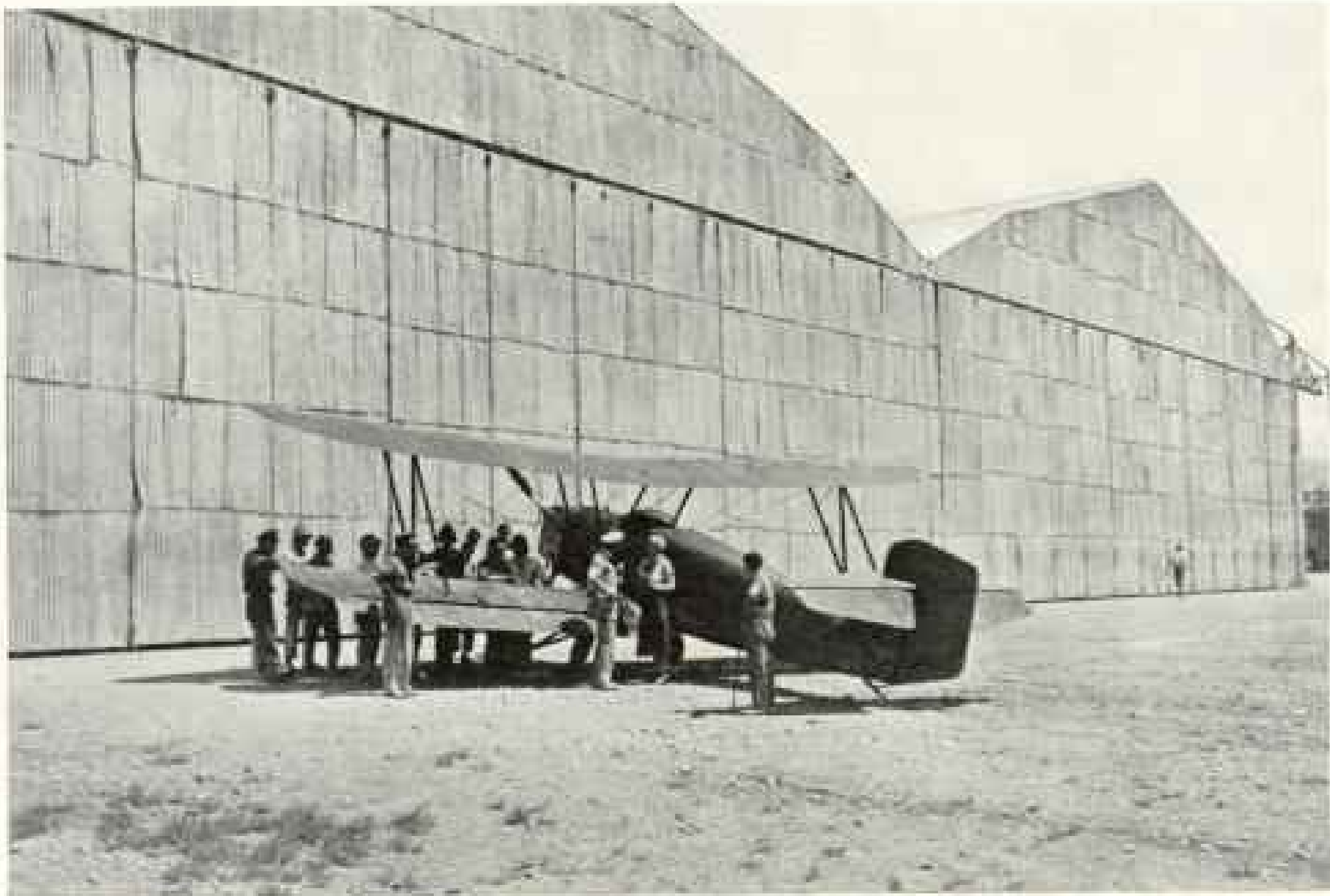
Our stay in Calcutta lengthened to a month because of bad weather and the fact that we both came down with dengue fever.

We were advised to give up the trip because of the terrific monsoon storms that were sweeping the

country. Ahead of us lay the Burma coast, an uninviting bit of country to flyers at any time of year, particularly so in the rainy season. Nevertheless, we were resolved to push on, and on September 3 found fair enough weather to take off.

Crossing the mouth of the Ganges—150 miles of meandering streams, rushing torrents of muddy water, and wide mud flats—we reached Akyab, Burma.

Here it rains 300 inches in a year, the storms chiefly falling in the summer season, and the rainfall is sometimes greater in a week than New York State's rainfall for an entire twelve months. We re-



Photograph by Charles Healy Day

#### DAMASCUS OFFICIALS FURNISH WEATHER REPORTS FOR THE FLIGHT TO PALESTINE

It was not always easy to obtain reliable information concerning air conditions, but the landing field here is under French control, as is also that at Aleppo, and the service proved excellent.

remained four days; then took off, to fly down the coast of Burma, where thick jungle comes down to the edge of the Bay of Bengal. The jungle, a riot of plant and tree life, also shelters every kind of tropical animal life.

We were some distance beyond a small settlement called Sandoway that morning of September 9 when Charles Healy suddenly began turning the *Errant* and shouted, "How far back to that settlement?"

I looked at the map: "Twenty-five miles."

Almost immediately the engine began to knock. Charles Healy pointed to the dash, and I saw that the oil pressure stood at 5 pounds instead of its normal 40; that the oil temperature had risen to over 200 degrees Fahrenheit. The knocking increased.

We were retracing our course now, but to reach Sandoway was out of the question. A few moments before we had noticed a small strip of beach. It appeared now ahead and far below us. At that moment the engine uttered an explosive grunt and stopped.

We were gliding now in a northerly direction, with the wind behind us. To land, we had to pass beyond the beach, turn into the wind, and so come down on the sand.

"Smoke bomb," Charles Healy suddenly ordered.

I produced the glass-tube bomb and awaited the next order.

"Let her go!"

I dropped the bomb. It crashed into some palms behind the beach, but did not go off.

In spite of the failure of the bomb, Charles Healy knew the general direction of the wind. When we had passed the beach, he banked the plane around and we glided back toward the sand. We were almost on top of the trees. "Look out!" I shouted.

#### A FORCED LANDING ON A DESOLATE BEACH

He knew very well what he was doing, however. Side-slipping the *Errant* sharply to the right, he skimmed the trees by inches and we shot out over the water. Then he slipped back toward the left, almost into the shadow of the palms. He straightened





Photograph by Maynard Owen Williams

LIVESTOCK IS SOLD IN THE VALLEY OF HINNOM, NEAR THE WALLS OF MOUNT ZION

The depression in which this market is held is flooded at times and is known as the Sultan's Pool. The author did considerable sight-seeing in Jerusalem before her flight across the Syrian Desert.

out, and the nose of the ship and its motionless propeller rose. We struck the sand, bounced forward, turning out toward the water. We were almost at the waves' edge when Charles Healy applied full right brake, and we made a half-ground loop, coming to a lurching halt with our nose pointing straight out toward the Bay of Bengal.

Silence settled on that beach when the rush of our wings ceased. Ahead of us was the sea, behind us the dripping, tangled undergrowth of jungle. The wash of the waves on the rocks to the north and south of us came to my ears. Due to the skill of my husband's hand on the flying stick, we had miraculously avoided a crash. We looked at each other.

Charles Healy began to grin. "Call up a garage."

We both burst out laughing and clambered out. While he inspected the engine, I walked over toward the edge of the jungle. Then I remembered stories of wild animals. I came hurrying back. Charles Healy told me that the oil radiator had broken, and that probably all of the bearings were burnt out. Just then I looked toward the jungle. A figure moved behind the foliage.

We stood in the shelter of the wing, with the sea at our backs. From the jungle came dark-brown men wearing loin cloths. We were in no position to fight and Charles Healy stepped out, raising his hand. The savages took this as a friendly gesture and swarmed about the plane.

A giant of a man, whom later we nicknamed Hercules, finally restored a semblance of order. He gesticulated to us,



Photograph by Maynard Owen Williams

MOTOR AND PLANE FOLLOW ROADS AS OLD AS THE MAGI, FROM DAMASCUS  
TO BAGHDAD

Routes on the Syrian Desert are exceedingly informal and are likely to disappear without warning. The *Errant* took one such way and had to turn back to an engineer camp for a guide.



Photograph from Charles Healy Day

AT RUTBAH WELLS, IN THE SYRIAN DESERT, THE FLYERS ENJOYED HOME COMFORTS

Englishmen here, in charge of the flying field of the Imperial Airways, have installed a power plant and have electric fans, lights, and refrigeration (see text, page 664). They apologized for their service charge of \$3, explaining that the cost of going frequently to the rescue of planes in distress made necessary the high fee. Were it not for the Government subsidy, which maintains one-trip-a-week schedule between Cairo and Baghdad, it would be much more.



Photograph by Maynard Owen Williams

#### BAGHDAD STILL REMINDS OF DAYS OF HARUN-AL-RASHID

Centuries have wrought little change in native dress and customs in this romantic capital of Iraq. Such food, legend says, was often set before guests by the famous Sultan when he wandered incognito among his subjects.

indicating that the tide would soon come in and sweep away the plane. We signified that it must be moved. With the help of the other men, we moved the *Errant* back to the jungle's edge.

#### A LONG MARCH THROUGH THE JUNGLE

Women had now joined the group. In their hair were brilliant flowers; from their ears dangled huge gold earrings. Some were bare-breasted; others wore brilliant loongees wrapped around their bodies. Women and men formed a strange, colorful group around the crippled plane—a mechanism of the West which had sud-

denly come to rest in a part of the world where machinery is unknown.

We pointed north up the coast toward Sandoway. In answer, Hercules made clear that we must follow him eastward into the jungle. Loath to leave our ship, we had nothing else to do but to place ourselves in his care.

We made our way into the trees, and after a two-mile walk came out on a clearing and a native village. The dwellings were thatched with palms and raised on high bamboo poles. We were given coconut milk to drink and pieces of coconut to eat.

After lunch, Hercules, by drawing a kind of map on the ground, made it clear that to reach Sandoway we must push farther eastward through the jungle before striking north. He looked at me and shook his head. At once one of the native girls wanted me to stay with her. I in turn shook my head.

Finally, Charles Healy and I, accompanied by Hercules and two other savages, struck out through the dense undergrowth on a winding, scarcely discernible trail.

It was terribly hot, the tangled overgrowth of branches smothering out the air. Brilliant flowers bloomed amid ferns. Tangled undergrowth tripped our feet. At the first stop I sat down, to be snatched up by Hercules, who made it clear that there were snakes in the jungle—cobras, as we found out later. Three snakes crossed our path on that day's march, and we raised two water buffaloes and countless birds.



Photograph by Eric Kenst-Burke

#### ARCHEOLOGISTS HAVE MUCH OF ANCIENT BABYLON STILL TO UNEARTH

On the northern outskirts of the main mound is the old bed of the Euphrates, together with the ruins of the quays that served the city when it was the premier mart of Asia. The water in the foreground is only the run-off of heavy rains.

The ground in many places was marshy and I sank in to my knees, to be pulled out by the natives. They carried knives and a pole to which a knife was lashed. With these they cleared the trail.

After six hours of walking, panting, exhausted, and my resolution all but gone, we came out toward sunset on a road. We now turned north and soon reached another native settlement. One of the natives informed us importantly in broken English that he was the headman. He led us behind one of the dwellings, and there, to our amazement, was a ramshackle, but nevertheless real, automobile.

In the old car, we drove the remaining 20 miles into Sandoway. There we spent the night at the house of a missionary, Mr. Bruce, and his wife. Mrs. Bruce, when I arrived, apologized for the fact that she was in old clothes. Since my clothes were mud-spattered and almost torn to pieces, I could not help laughing—the first laugh in many hours. At Sandoway we telegraphed to Calcutta and to Rangoon, our destination, that we were safe.

But, even with a roof over our heads, we were still far from out of our predicament. Our plane was miles away, crippled. The next morning Charles Healy concluded that if he could get the engine of the ship to Sandoway he could repair it, in spite of the fact that there were no facilities here—only one emergency landing field with no hangars or machine shops. So with Bruce, an interpreter, Hercules, and his two companions, my husband set off again for the beach where we had landed.

#### THE ENGINE'S TRIP THROUGH THE JUNGLE

All that day I had to wait in Sandoway and all the next. Realizing fully the difficulty of the jungle trip, I knew that the chances were against the success of the attempt to get the engine back to the settlement.

Toward afternoon of the second day, able to wait no longer, I procured the old car, which was kept for the time being in Sandoway. With the driver I returned to the spot where the party would come out of the jungle, and here I waited again.



Photograph by Alfred Henckle

SINCE THE TIME OF SINDBAD, PERSIAN COASTERS HAVE CHANGED LITTLE

Commanded and manned by sturdy Arabs, the *baggalas*, seen here in Bushire harbor, undertake long journeys along the coast and may be seen in most ports around the Arabian Peninsula. They cross the Indian Ocean to return from Bombay loaded with rice, or from Zanzibar with timbers for ship and house building.

The hours passed slowly. Night came on. The jungle became black.

Suddenly there was a flare of light and the sound of voices, shout and answering shout. The blackness parted and out from the forest came a staggering line of men, a native walking ahead bearing aloft a flaming bamboo torch. Behind him were six other natives, three walking ahead and three behind. Between them was a heavy object slung from a long bamboo pole that lay across their shoulders. The flare of the torchlight shone on their sweating backs and glittered on the metal burden they carried. It was the *Errant's* engine.

The difficulties of that trip through the jungle with the engine had been terrific, my husband told me afterward. On the first day the party had gone back to the native settlement and spent the night there. Early in the morning they had gone to the beach, where Charles Healy unbolted the engine from the plane. It was then slung with ropes from the bamboo pole and the pole raised on the backs of the natives.

With this heavy load, the march through the jungle had been all but impossible. In many places the Burmese sank deep in the mud and only were able to go on after Mr. Bruce and Charles Healy had pulled their feet out of the slime. Throughout the difficult undertaking the Burmese had shown unflinching loyalty and persistence.

It now fell to my husband to prove that the trip with the engine back to Sandoway had not been vain. His was a difficult job. The motor was deposited under Bruce's house, and he immediately set about tearing it down. He found that all the bearings were scorched, one burnt out. The molten metal had dripped into the crank case, making it necessary to clean every part.

He replaced the burnt connecting-rod bearing with a new rod and piston which we carried among our spare parts. He then set about grinding down all of the other connecting-rod and main bearings, using a piece of piston ring for a scraper and then sandpaper.



THERE IS ONLY ONE ENGLISH-SPEAKING WOMAN RESIDENT OF JASK, PERSIA.

Mrs. Norman Penfold (third from the right), wife of the British telegrapher stationed in the town, has made her home here for five years. Naturally she was delighted to see Mrs. Day, and the flyers stayed over a day to have dinner with the Penfolds. Because of present laws against importing foodstuffs, the resourceful housewife is obliged to concoct Western dishes from materials available in a decidedly oriental market.



Photographs by Charles Healy Day

THE "ERRANT" LANDED AT AN EMERGENCY FIELD NINE MILES FROM GWADAR, BALUCHISTAN

Here a plane of the Imperial Airways had cracked up, and the men in charge of it were living in temporary shacks until parts needed for repairs could come from Croydon, England. Gasoline and table supplies were brought in on camels. The place was blistering hot and offered no relief to the flyers, who had just crossed the Desert of Sind.



A HUNT ON CAMELRACK AFFORDED DIVERSION AT GWADAR

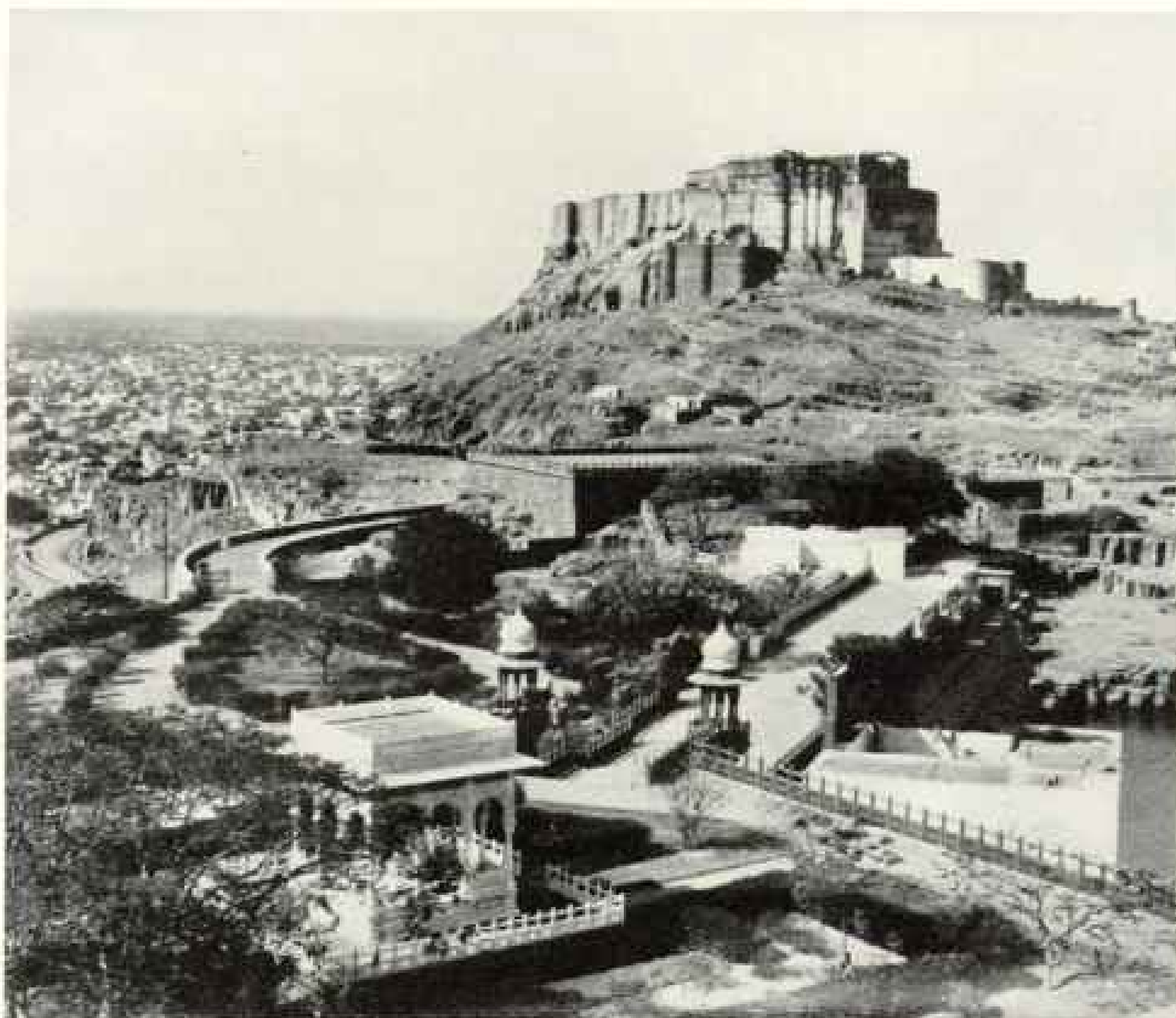
The English aviators and mechanics who were waiting to repair their broken plane were bored with the heat and sun and wind, and they welcomed Mr. and Mrs. Day most heartily and took them out for grouse shooting. Two birds, the spoils of the day's sport, made a pleasant change in the dinner menu. The author found riding a "ship of the desert" rougher than sitting in the *Errant* in bumpy air currents.



Photographs from Charles Henry Day

A BUBBLING MUD SPRING IS ONE OF THE FEW DAMP SPOTS NEAR GWADAR

The natives call this desert phenomenon the "Eye of the Sea." There is a story that an ox which fell into the bog was found a week later in the gulf, seven miles away. A more desolate, less comfortable place for setting up a landing field would be hard to find (see, also, page 675).



Photograph by Alice Schalek

#### THE OLD FORT OF JODHPUR HOLDS A GRIM RECORD OF WIDOW-BURNING

At the door-gate 42 silver hands show that 42 princesses of the house have committed suttee. The massive capital of the Marwar State, built on a perpendicular cliff 120 feet high, stands 400 feet above the city. The Maharaja is an aviation enthusiast, and the airport was clean and most efficiently operated.

It was long and arduous work. Rain fell almost continuously. Mr. Bruce meanwhile showed me through his missionary school and about the village, between showers. There were signs of unrest among the natives against English rule. It had not been so long ago that an English magistrate had been murdered farther up the coast, at Chittagong. In us, however, the chief Burmese showed much interest. Several times they came over to the Bruce home to watch my husband working.

#### REPAIRS COMPLETED IN SEVEN DAYS

On the seventh day Charles Healy rested, the job done as nearly as he could do it. There was no way of testing the motor after reassembly, because it could not be run without the propeller, which was at the

plane. The broken oil radiator could not be repaired. Charles Healy was confident, however, that the engine would work without it if given a constant supply of oil.

The trip through the jungle had been too arduous to be repeated; hence it was decided that the men should take the motor back to the plane by a water route. We drove in the car early one morning past the jungle trail to where a stream cut the road. Here the engine was loaded into a dugout, while Charles Healy and Mr. Bruce climbed into a second rude craft. Both dugouts were manned by native paddlers. I saw the party disappear downstream on a course that was supposed to lead them to the sea a little south of the beach; then I returned to Sandoway and waited again.





Photograph by Gladys M. Day

#### DUM DUM AIRDROME, CALCUTTA, SEEMED PARADISE.

In flying here from Gaya, the *Errant* struck 12 rainstorms and dodged around a monsoon. Almost out of gas, the adventurers landed, put the plane to bed in a hangar at a cost of \$2.50 a night, and before they could get away suffered a month's siege of dengue fever (see text, page 668). The Indian woman in the pilot's seat is a young wife recently released from seclusion (*purdah*) and enjoying her new freedom immensely.

Toward noon of September 17 I heard the well-known sound of an airplane engine. I ran out of the Bruce home to see the *Errant* in flight. It was a great sight. I went over to the emergency field, which was lined with natives and members of the English colony, who were waiting the return of the plane. When it landed the crowd pushed across the muddy field as if welcoming a transatlantic flyer. A dinner was given in our honor by Commissioner Scott.

The trip in the dugouts back to the plane, Charles Healy told us, had involved two

long portages. The first stream had run out onto a mud flat, and a portage was made to a second. This had turned away in the wrong direction, and again a portage was made to a third stream, which finally led down to the sea. Then followed a five-mile trek along the coast, the engine being carried, as before, on the bamboo pole. The night was spent in the native settlement. In the morning Charles Healy had reinstalled the motor.

After many tries, it started, in spite of the stiff bearings. He then accomplished a difficult take-off from the beach, found that the engine was working satisfactorily without the cooler, and landed again to pick up Mr. Bruce. With the missionary in the cockpit, he again took off, the wheels of the *Errant* barely clearing the water. A great cheer arose from the Burmese men and women who had gathered on that strip of sand to see whether this strange white-

man bird could really fly or not. They were satisfied that he could!

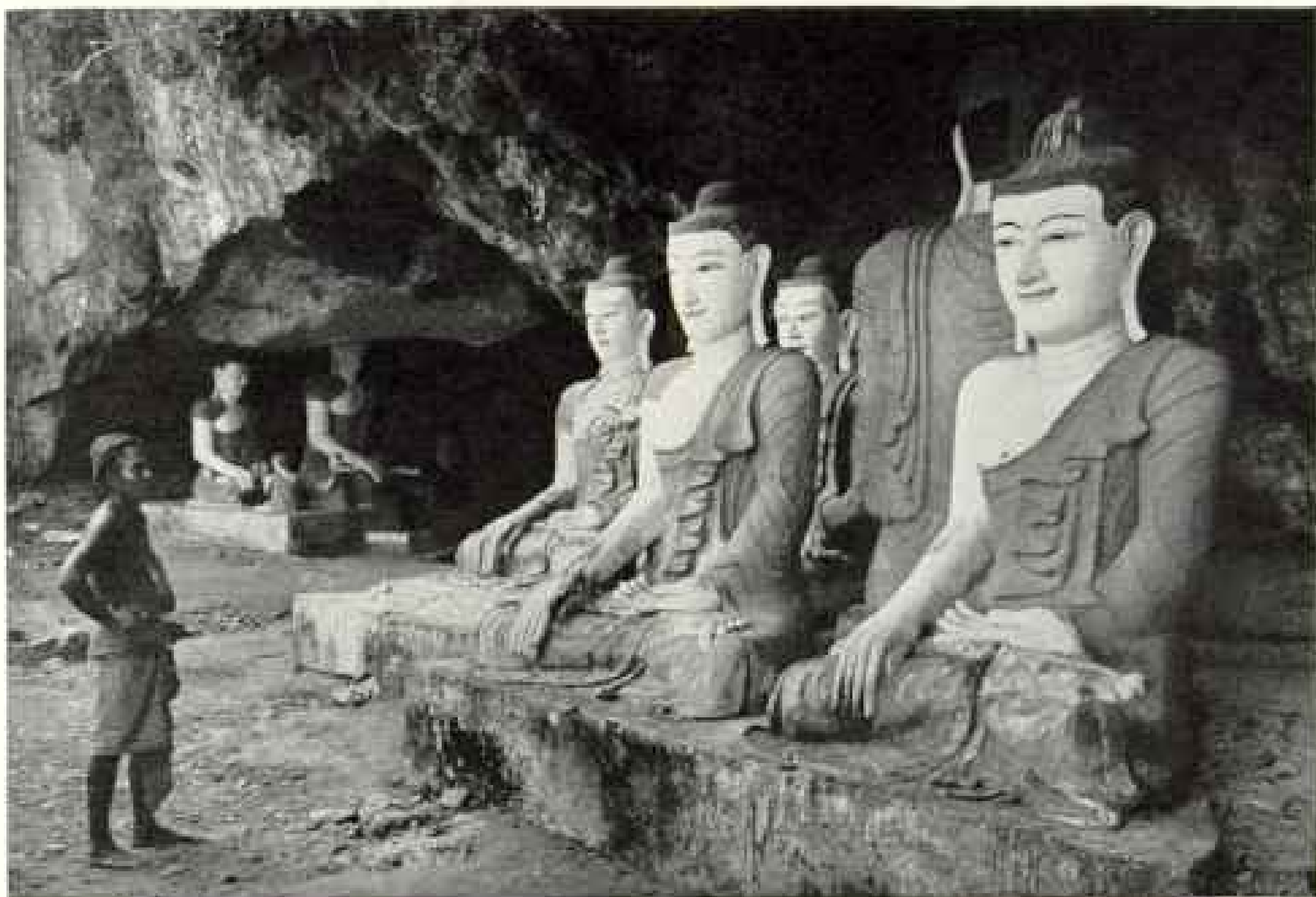
#### IV

On the same day, September 17, on which Charles Healy brought the *Errant* back to Sandoway, an event occurred, far to the north of us, of far-reaching importance. An explosion occurred along the South Manchuria Railway, which the Japanese claimed was the work of Chinese bandits and which precipitated the military outbreak in Manchuria. The hostilities, which eventually spread to Shanghai, were



Photograph by Charles Healy Day

UNCOMPLAINING NATIVES CARRIED THE HEAVY ENGINE FOR MILES THROUGH MUD  
Thus one of the outstanding products of the machine age was helpless save for the most primitive method of transportation (see text, page 674).



© Herbert G. Ponting

IN PAINGU CAVES, NEAR MOULMEIN, SIT KIPLING'S "IDOLS MADE O' MUD"

There are plenty of Buddhas here for the poet's "Burma gal" to worship. The *Errant* found satisfactory quarters at a small landing field.



FORTUNATELY FOR THE "ERRANT," SANDOWAY HAS A LANDING FIELD

On an attempted flight from Akyab to Rangoon, the engine failed 25 miles from this Burma village, and the plane came down on a jungle-bordered beach (see text, page 669).



AN AIRPLANE ENGINE IS STRANGE CARGO FOR A BURMESE NATIVE'S DUGOUT

By dint of toilsome paddling and back-breaking portages through miry jungles, the precious load, repaired at Sandoway, was returned to the plane and reinstalled (see text, page 677).

Photographs from Gladys M. Day



Photograph by David J. Martin.

NATIONAL SPIRIT WAS RUNNING HIGH IN HONG KONG

Outsiders feel like invaders here since the Manchuria dispute arose (see text, page 678). The author was particularly interested in the Chinese "flappers," who she found are disposed to adjust the length of their gowns according to occidental skirt styles. Queen's Road presents a lively panorama of the city's native life.



Photograph by Gladys M. Day

THE FLYERS WERE ROYALLY ENTERTAINED IN BANGKOK

At the field near the city the chief of the Siamese Air Force appointed a lieutenant colonel (left) as Mr. Day's personal aide during five days required to replace the *Errant's* oil radiator, which went out of commission in Burma.



© Lionel Green

BANGKOK STATE FUNCTIONS TAKE PLACE IN THE THRONE HALL



© Lionel Green

WAT ARUN, "THE TEMPLE OF DAWN," SCINTILLATES BEFORE THE AIRMAN  
APPROACHING BANGKOK

At a distance the glazed tiles with which the tower is encrusted gleam like jewels. The flyers found this capital a modern city, where they were received with extraordinary cordiality, in appreciation, it was explained, for the courtesies shown to the ruler of Siam on his recent visit to the United States. They had flown from Moulmein without an oil radiator, and here at last proper materials were available for repairs.



Photograph by Services Economiques de l'Indo-Chine

HANOI NATIVES CATCH FISH BY DRIVING THEM INTO A CLOSING CIRCLE

Strange sights greeted the flyers as they reached French Indo-China. Not far from here they swooped down and frightened to scampering flight a herd of wild elephants.



Photograph from Charles Healy Day

THE ROUGHEST FLIGHT BEGAN AT AMOY AND ENDED IN A NEAR CRASH AT FOOCHOW

Fortunately, the plane skidded over a ditch and came to rest intact save for a bent tail skid. Hours of search unearthed the only geared hand drill in town, and the damage was then repaired quickly (see text, page 686).



Photograph by Gladys M. Duy

THERE ARE MANY FLYING FIELDS IN CHINA, BUT REGULATIONS HAMPER  
THE FOREIGNER

The visiting aviator is likely to find it difficult to obtain hangar space and difficult to get away, once he has landed. In the excitement preceding the recent Manchuria dispute, a Chinese student flyer's plane bumped the *Errant* and tore a hole in the fuselage. This is the Kowloon Airport, near Hong Kong.

to throw the shadow of war across the rest of our flight up the Chinese coast, making it a risky, though interesting, gamble.

We heard nothing of the Manchurian affair, of course, in Sandoway, nor in Rangoon, which we reached September 19, after a rather nerve-wrecking flight across the jungle-covered Yama Mountains without the benefit of an oil cooler and with our oil temperature rising as high as 204 degrees Fahrenheit. From there we flew to Moumein, and thence to Bangkok, Siam, where permanent repairs on the oil radiator were made.

Here we had news of the fighting in the north, and it was considered doubtful by many whether we could get through to Shanghai before open war should break out between China and Japan. The Japanese had already seized Mukden and taken most of the important towns along the South Manchuria Railway. Prospects for our trip did not look too bright.

Nevertheless, with repairs made on the *Errant*, we pushed on, reaching Hanoi,

French Indo-China, September 27. An interesting incident occurred on this hop. While flying over jungle-covered mountains, I saw some huge shapes moving in a clearing.

"Elephants!" I shouted.

Charles Healy dipped the *Errant* toward the animals, the wind muffling the sound of our engine till we were close above them. Then they broke in fright, crashing down the mountain side.

In Hanoi we received fresh warnings about flying over China.

At Fort Bayard, which we reached October 3, after landing at a field at Taiping, we found fresh evidence of unrest. The town was plastered with boycott posters against all Japanese goods. Our host, Governor Bride, a Frenchman, was in a quandary as to what to do about them. "If I take them down I'm damned by the Chinese, and if I leave them up I'm damned by the Japanese!" he exclaimed.

Hong Kong was under British military law when we landed there, October 5, after





Photograph by R. Moulitz

OCIDENTAL ARCHITECTURE HAS CLAIMED THE WEST PRAYA IN HONG KONG

In modern setting of banks and mercantile concerns engaged in international trade, the ubiquitous rickshas give the street somewhat the appearance of the boardwalk at Atlantic City.

a beautiful flight up the coast over countless harbors and coves where fishing junks were moored. The sea was deep blue, the sky cloudless, the white houses of Hong Kong nestled in the shadow of green hills. Within the city all was not at peace, however. A Chinese a few days before had murdered an entire Japanese family. Feeling ran high.

So far we had seen little evidence of China's preparedness; but on October 9, when we landed to refuel at Swatow, we were surrounded by Chinese soldiers dressed in irregular uniforms, but equipped with bayonets which might have been all too effective if we had not been able to show that ours was not a Japanese plane. We went into the town after the plane was refueled, and here met the commandant of the field. He returned with us to the plane.

Challenged by his own soldiers, it took him a good five minutes to persuade them to let us enter the field.

We continued our flight to Amoy, spent the night, and took off for Foochow October 10. This date is called the Double Tenth in China and is the Independence Day of the Chinese Republic. Ironically enough, two sleek Japanese gunboats were in the harbor that morning, ready for any hostile demonstrations. None occurred to our knowledge, but on reaching Foochow we saw a new phase of the bitterness existing between China and Japan. Near the British Consulate a meeting of Chinese youth was in progress, despite a drizzling rain. Cheer after cheer rose from the young Chinese with every new speaker.

The field at Foochow, none too good at the best, was inundated by the tide after

our arrival, and in trying to take off the next day we were unable to lift from the mud in time to clear the buildings at the far end. We came down, breaking our tail skid as we did so. Repairs required a modern hand drill. In all of Foochow, with a population of some 400,000, there was not a modern drill to be found for many hours. All the available drills were worked with a bow by hand and were unsuited to our work. Finally an Englishman was discovered who had the tool we needed and repairs were easily made.

#### THE LAST DAY'S FLIGHT IN THE ORIENT

On the last day of our flight in the Orient, which took us to Shanghai, an ominous gray sky hung over the Pacific and the Eastern World. The clouds hung low over Shanghai itself, as we crossed the city. We distinguished the buildings of the International Settlement, grouped along the Bund and overlooking the Whangpoo River. Behind them stretched the native sections of the city, an expanse of closely crowded houses cut by a network of narrow streets. We left Chapei to the north and landed at the field at Hungjao, nine miles from the center of the town.

In reaching Shanghai we felt proud that we had safely accomplished our flight through the East. We did not realize then the difficulties of getting our plane out of the country. These developed when we went out to the field the next day to crate the wings of the *Errant* for shipment across the Pacific. We were told that before we



Photograph by Charles Healy Day

#### AFTER TROUBLED CHINA, JAPAN SEEMED DECIDEDLY QUIET

Were it not for the native costumes still worn by many farmers and villagers, there would be little in some Nipponese towns to remind of the Orient. There was less war excitement in Tokyo than in any of the Chinese cities.

could do so, we must obtain a release from the Chinese Government in Nanking.

While this was being negotiated through the American Consulate General we hoped at least to take the necessary lumber to the field and to make the crates. To our surprise, on October 17, we were not even allowed to enter the airdrome. The reason was soon apparent. A plane arrived amid great excitement among the crowd. A few minutes later a car raced out of the field carrying a man in military uniform. It was General Chiang Kai-shek, then President of China and the principal figure in China's resistance against Japan.



Official Photograph, U. S. Army Air Corps

IT WAS A JOY TO REASSEMBLE THE "ERRANT" IN SAN FRANCISCO AND SOAR OVER THE GOLDEN GATE

An inspiring sight, the shores of home after wandering all over Europe and Asia in a homemade plane. The planes in the background are making a "raid" on the city in the course of army maneuvers.

With the departure of the General for Nanking the next day and the arrival of our permit, we were allowed to enter the field. Another surprise awaited us—the sight of the *Errant* with a hole torn in the side of its fuselage. A Chinese student pilot had rammed our plane during the excitement of the General's departure. The damage, however, was not serious, and the Chinese, being great workers in wood, repaired it for us.

We were anxious to get the *Errant* out of Chinese hands and away from the field, and so trucked it into Shanghai. At the customhouse more troubles arose, how-

ever, since we were told we must have another release to ship the plane from the country. We went to the house of the Commissioner of Customs. A letter from the American Consul General, we were informed, would be necessary. The letter was obtained and we went back to the Commissioner, who this time greeted us in person. To our surprise and delight, we found him the most charming of men—well educated, efficient, and informed. He apologized for the delay and granted us the necessary permit immediately.

No official in any country could have been more courteous. Nevertheless, our



© Victor Daffin

AT LOS ANGELES THE SKYPATH TURNED TOWARD THE EAST AND HOME

Returning from a world flight, one may discover that he knows his own land least of all. The metropolis of southern California changes so rapidly that it seems fairly to emanate the spirit of American progress. Airport fees in this country are usually \$2 to \$3 a day, but gasoline for planes costs only from 22 to 35 cents a gallon. The flyers felt relief in freedom from frequent customs inspections and from the necessity of obtaining information through interpreters.

trials in getting our plane shipped had made us understand the impatience of many foreigners with the Chinese Government.

V

After stopping in Japan, we reached San Francisco in the middle of November, once again reassembled the *Errant*, and took off on a leisurely flight home across the American Continent. No one, I think, can appreciate that continent until he judges it in the light of Europe and Asia. To us it was a revelation.

We left San Francisco November 27 and swung south, over the orange country, for Fresno, Bakersfield, and Los Angeles. There we turned eastward for New York. The autumn colors of the Arizona and New Mexico desert were more brilliant than anything we had seen in Syria or the Orient. Over the Texas Panhandle we flew, on across the great green basin of the Mississippi, and over the South. Slowly the wide, open country gave place to the built-up East, with its great manufacturing centers.



© Sonic Airways, Inc.

A STEEL BRIDGE SPANS THE GRAND CANYON NEARLY 500 FEET ABOVE THE WATERS OF THE COLORADO

The highway bridge which crosses the great chasm at a point about 135 miles north of Flagstaff, Arizona, was completed in 1928. It is 834 feet long and represents an engineering feat of great difficulty.

Impressive to us as pilots was the luxury of flying over America: at every large town a flying field; at every field one or more hangars, ground crew and mechanics; the fields connected by radio communication; weather reports whenever we wanted them; and when we landed at a new place, no customs officials, no more bickering over the exchange of foreign coins. What money we had was at least as good in Georgia as in California, and, what is more, we had learned to appreciate so simple a fact! We had been away almost eight months. Now we saw America in perspective.

The famous skyline of New York did not greet us at the end of the last day of our flight. Flying does not work in such poetical fashion. The weather reminded us that no matter what country one is flying over, the air demands a peculiar discipline of its own. On the way from Baltimore to Newark on December 20, the fog closed

in on us at Camden. To keep our course, we had to fly low along the Pennsylvania tracks, barely skimming the telegraph poles. Near Elizabeth we swung off over Newark Bay, and it cleared slightly, but with Manhattan still shrouded in fog.

Through the mist we distinguished Newark Airport. We circled the field. Charles Healy cut the engine. We glided in for the last landing of the trip.

Our small plane had shown us the contours of the world; far places and foreign peoples; the splendor of the Syrian Desert and the Persian Gulf at dawn; the cathedrals of Europe and the Taj Mahal of India; Englishmen, Frenchmen, Germans, and primitive Burmese tribesmen; the Orient troubled by war, and, last of all, the stable American Continent and our own country.

It was time for the *Errant*, home from its wanderings, to rest.



# HUNGARY, A KINGDOM WITHOUT A KING

## A Tour from Central Europe's Largest Lake to the Fertile Plains of the Danube and the Tisza

BY ELIZABETH P. JACOBI

**H**UNGARY has been without a king since the Hapsburg family was dispossessed in 1918. But the country that never cared for the Hapsburgs has suddenly turned loyal, more loyal indeed than Austria, which had her emperors to thank for her wealth and luxury.\* Hungary still calls herself a kingdom and has constitutionally remained one.

Admiral Horthy, who has been at the head of the Government for the past twelve years, is styled Regent. He lives in the Royal Palace, but he has not discarded the uniform of admiral of the Austro-Hungarian Navy, which has ceased to exist. The Regent is acting temporarily in lieu of the king, though who that king may be is yet to be seen.

### THE NATION'S ULTIMATE RULER TO BE CHOSEN

King Charles IV, last Hapsburg to be crowned Emperor of Austria and King of Hungary, died ten years ago. The eldest of his eight children, Otto, is being educated abroad, an exile from the countries his forefathers ruled, and brought up in a way that he may take his place one day as king of Hungary, a country that has been reduced by the Treaty of Trianon to one-third of its former size. By another international agreement the Hapsburgs are excluded from succession to the Hungarian throne except under conditions most unlikely to take place. So the question is in abeyance, and no one knows how long it may remain so.

Thus has Hungary become that strange thing, unprecedented in history—a kingdom without a king.

Fortunately I forgot to think of all that whenever I looked out of my window

\*During 400 years the Hapsburg emperors of Austria were kings of Hungary as well. Hungarian taxpayers could spend as much as they liked, or did not like, on making the Royal Palace sumptuous. But the Hapsburg kings preferred to reside at the grim Hofburg of Vienna, where they were emperors and at home. The Hungarian nation always remained foreign to them, and Hungary suffered greatly in consequence.

across the Danube. One can't keep up a climax of patriotic depression for more than a decade and nothing would be further from the elasticity of the Hungarian character than to do so. I gazed upon the four bridges that span the Danube to unite old Buda and young Pest—as a matter of fact, there are six of them, but the two others are rather too distant to be in the picture—and reflected upon the best place to go and have supper.

### THE CAPITAL'S SUMMER APPEAL

St. Margaret Island, gay with cafés and hotels, the gray ruins of the abbey and nunnery where Princess Margaret lived and died, slumbering beneath the oaks, glittered a green gem in midstream, with little white steamers and swift rowboats scurrying around it. From the rear windows I could look out upon the roofs of Pest, sweltering in the heat. No daring skyline to Pest—houses seldom rise above five or six floors—and most of the honors of silhouette go to Buda's battlements, outlined against the setting sun.

Beyond Pest, however, where the horizon meets the outskirts of the city which houses a million inhabitants, beyond the long, straight line of Andrassy Street, lies green Town Park, waiting for us with places of amusement, restaurants, and music. There are the pleasant pavement cafés along the river, too, where one may eat ices and drink Tokay wine and watch crowds sauntering past and lights glow, reflected in the slow-moving river.

After passing in review all these summer joys of Budapest, we decided to stay at home.

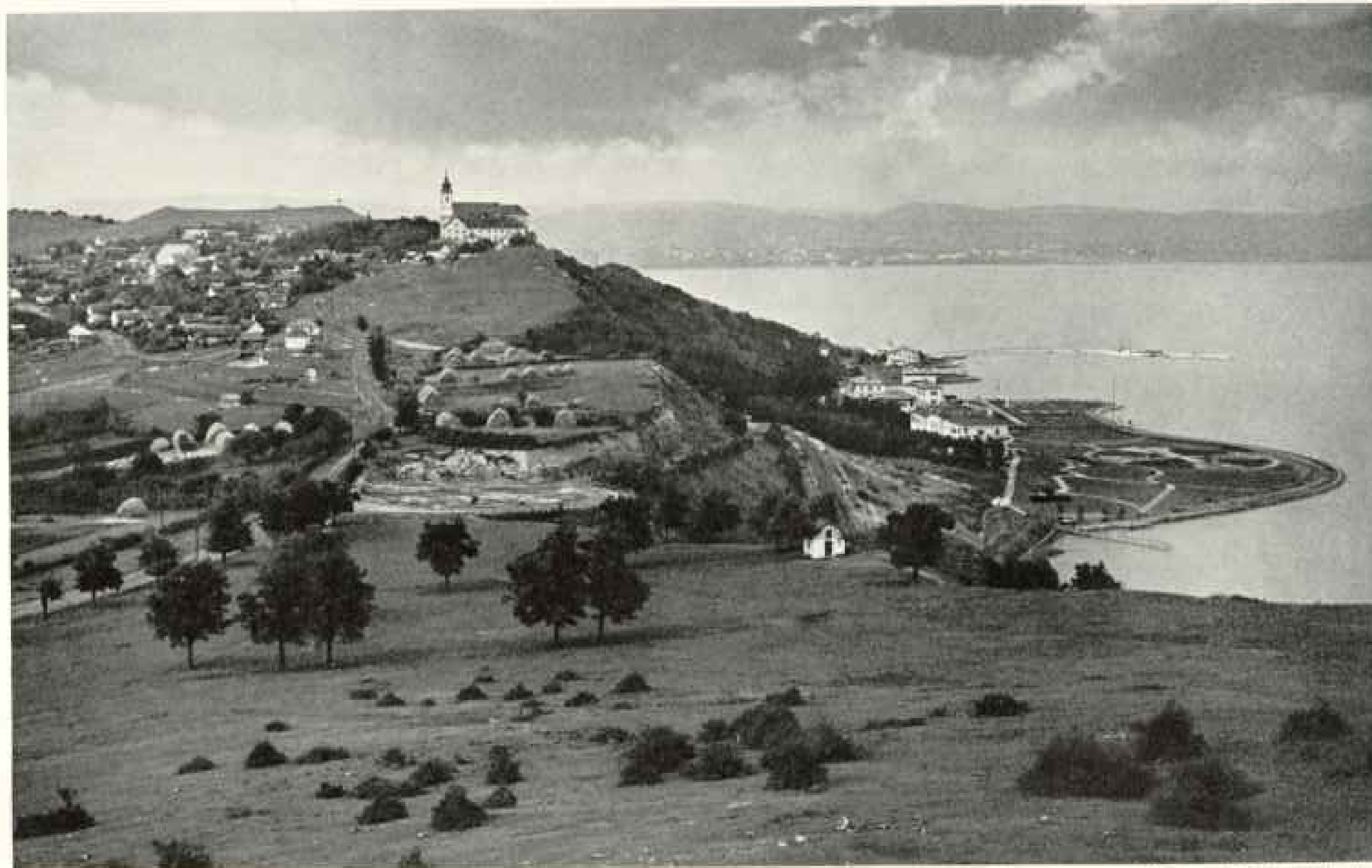
The children enjoyed it. They went marketing with cook, down below Francis Joseph Bridge, to the Central Market Hall, where flat barges discard their loads of fruit and vegetables at dawn, and mountains of melons and cabbages, of cucumbers, and, above all, of paprika, Hungary's national spice, rise on the embankment. They helped her carry home choice specimens of the screeching army of fattened



© R. Raffius

THE SQUARE OF "THE FOUR ALSACE-LORRAINES" : BUDAPEST

Each of the four monuments mourns a lost province—north, south, east, and west—which the Treaty of Trianon severed from Hungary after the World War (see text, page 742). The dome of Parliament House, framed in this vista, has an oriental aspect, though the vast pile as a whole, with its Gothic spires and pinnacles, bears a striking resemblance to the English Parliament House.

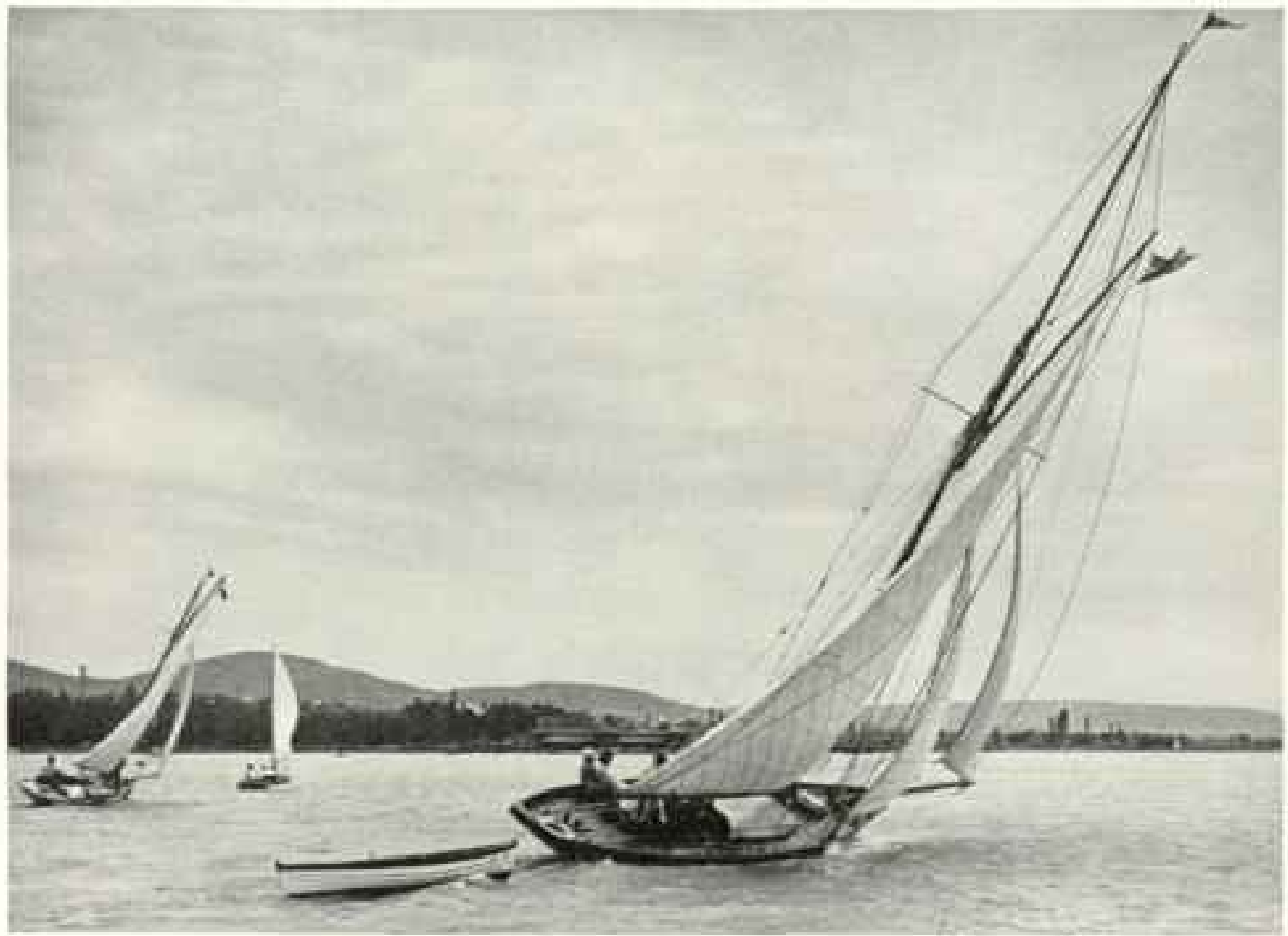


Photograph by Rudolf Balogh

## TIHANY ABBEY COMMANDS A FINE VIEW OF LAKE BALATON AND ITS ENCIRCLING HILLS

Founded by King Andreas I nearly nine centuries ago, only the crypt now remains of the original structure. To this abbey came Charles IV, last of the country's Hapsburg rulers, when in 1921 he attempted a coup d'état to regain the throne of Hungary. From here he was sent into exile (see text, page 705). The representative sent by the Government to Tihany to demand his abdication was the same prelate who had crowned him only three years before.





Photograph by Rudolf Balogh.

#### SAILING ON LAKE BALATON

Hungary has no access to the sea, but Balaton's broad expanse provides a place for yachtsmen to enjoy their sport. The great lake is a vacationer's paradise, but care must be taken to keep a watchful eye on the weather signs, for storms are sudden and violent and sometimes disastrous (see text, page 696).

geese and juvenile chickens, to be bereft of their enormous livers or fried in crisp bread crumbs and set afloat in paprika sauce, respectively, for the benefit of the family.

The daily round of summer housekeeping in Hungary went on. Midday dinner remained the feature of the day, a regular three-course meal, and preserves had to be put up. Labor-saving in Hungary is as yet a dream. Of course, there are conserve factories. The rich, mellow cherries, apricots, and peaches, with the glow that the dry, warm climate and the volcanic soil lend to Hungarian fruit, stand in canned rows on grocers' shelves here, as elsewhere, to be had for the asking; but few really self-respecting Hungarian housewives do ask for them.

When we had finished the apricot jam and the candied strawberries, there came a day when the cook, the housemaid, and I wallowed in tomato sauce. Then two bricklayers sprawled upon the bathroom floor, since summer is the time for repairs,

and a youth undertook to paint the bedroom ceiling, pacing the room, huge as a primeval giant, using his ladders for stilts and whistling melancholy tunes from morning till night. Thereupon I sat down and declared I was through.

"Very well," the head of the family acquiesced. "But you are not to start over again, tiring yourself out with getting clothes and shutting up the apartment and that sort of thing. We will spend a fortnight with the Saghys at their Balaton estate; they have asked us ever so often. We don't need clothes there. And as soon as they have a new batch of visitors coming in, we'll just take to our heels and roam about the country for a bit. The Carpathians might be cooler, but 'see Hungary first' is not a bad slogan."

#### THE FIRST BUDAPEST BRIDGE NEARLY A CENTURY OLD

The night before we started a lovely thunderstorm broke over Budapest. A fierce deluge of almost tropical rain washed



© Hungarian Press Photographic Exchange

## FLOWERS CARPET THE STREETS FOR CORPUS CHRISTI

A week previous to the celebration of this religious festival women gather flowers from the surrounding country and work day and night making the fragrant flower carpets. The custom is similar to one in the Canary Islands (see NATIONAL GEOGRAPHIC MAGAZINE for May, 1930). Budaörs, a small village near Budapest.

the trees, the hills, the houses, to a gem-like morning brilliance.

The car that was to take us to our destination sped across Chain Bridge, the first that had joined Buda to Pest a little less than a hundred years ago, taking the place of the old boat bridge that used to be put up every summer. Count Stephen Széchenyi was one of those great dreamers of Hungarian dreams whose career ended in tragic defeat, but he had realized some of his great conceptions, at least: the Chain Bridge, Danube regulation, and the Academy of Science, in front of which stands his statue.

Our son István is young enough to shudder every time we pass below the St. Gellért Memorial upon the cliffs (see page 742), supposedly on the very spot from which the martyr bishop, who first tried to convert stiff-necked pagan Magyars to Christendom, was rolled down in a barrel into the angry river.

Soon the fates of bishops and martyrs were forgotten in the delights of "real country." One can drive miles and miles

and miles in Hungary without seeing a trace of human habitations. Even in the districts west of the Danube, which are by far the most densely inhabited, villages and houses are few and far between. There is no waste land, however, in this part of the country.

The storm of the previous night had done away with the white dust that is the curse of the highways of Hungary, and the splendid Budapest-Balaton road stretched out invitingly before us. We sped along the pleasant countryside, through the occasional peaceful little one-horse towns and villages, consisting mostly of a single wide main street, no more than a double row of low whitewashed cottages. Two windows and a wide yard-gate face the street on each house and pillared porches run along the whole length of the house on the yard side.

## FOOTBALL AND HORSEBACK RIDING MOST POPULAR SPORTS

At Székesfehérvár our older boy, János, tried to rattle off all that he had learned about this ancient city, where kings of

Hungary were crowned, down to Ferdinand the First. Fortunately, however, we were passing the city playgrounds and a football match that was in progress claimed the wayward attention of my sons.

Football has become almost a national game in Hungary. Baseball and basketball are unknown, but Olympic and other international prizes speak for Hungarian prowess in football, fencing, and swimming. Horseback riding is another national sport, tennis is very popular, and athletics, which until recently had no part in any school curriculum, now play a very large part indeed. A State college for physical education has been established, and most boys under twenty-one are either scouts or "leventes"—a term perhaps best translated by the words "young knights."

Practically every village boy is a "levente," but the term signifies little save that the youths are drilled in their spare time in moral and physical discipline.

#### LAKE BALATON IS HUNGARY'S OCEAN

The first glimpse of Lake Balaton, the "Hungarian Ocean," comes at Lepsény, but nobody looks at it. The road here runs across an estate belonging to the Nádasdy family, one of the most ancient and aristocratic of the country. Countess Nádasdy had the idea of establishing a charming little roadhouse for motorists at Lepsény, where excellent food and the choicest of Hungary's famous wines are served by lackeys in knee-breeches. The Countess remains in the background, but supervises her business, and no Budapest storekeeper running down to Balaton to spend a weekend with his family can resist the temptation of stopping here to partake of a meal prepared by an aristocratic chef.

Soon Balaton spread before us, wide and calm. It is the largest lake in central Europe and one of the least known. It has the atmosphere and the moods of the sea; the loneliness, the colors, the whims, the untamed self-will of the ocean. Storms come with terrific suddenness, and only old lakewallers, boatmen, and fishermen can read their signs (see, also, page 694).

The summer vacationists who flood the little lakeside places during July and August often do not believe these old oracles of Balaton, who can discern, even on a calm sunny day, the glassy green color of the water that forebodes evil. Fatal dis-

asters to canoes and yachts claim their victims every summer.

#### LIFE ON A HUNGARIAN ESTATE IS FEUDAL

Balatondombori is a *puszta* of a thousand acres. *Puszta* is a term with a double meaning. It signifies an estate or farm and at the same time it means the barren plain, best translated with the Russian term of "steppe." There is nothing barren about Dombori, however. Wheat, corn, rye, beets, flax, even lentils, and other vegetables are grown on the *puszta*, and some of the finest cattle in Europe graze in its meadows. The fields are bordered by apple, walnut, and mulberry trees, and you can never be sure when a little boy, his skirtlike linen trousers stained with mulberry, his mouth likewise, will drop upon you from a wayside tree, where he has been picking leaves for the silkworms, which the peasants of this section tend in great numbers. Fences are practically unknown in Hungary, except for lattices and plaited twigs around yards and gardens.

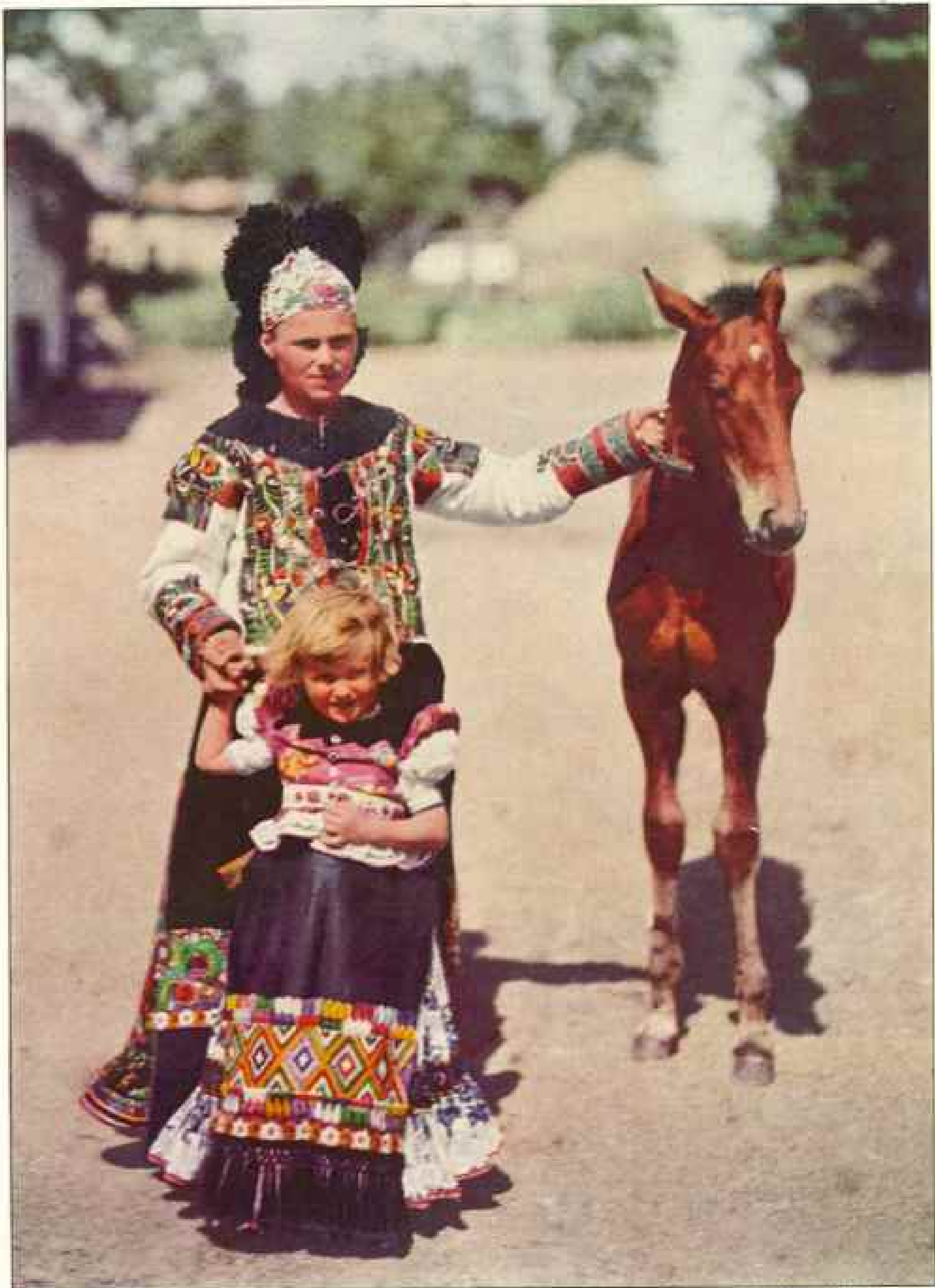
Life on a Hungarian estate is feudal and patriarchal at the same time. Our destination, the pleasant country house at Dombori to which the peasants on the farm and in the tiny adjoining village had given the grand name of "the castle," was a ground-floor, whitewashed building of nine rooms, larger but not much more imposing than the better type of peasant cottages in the village. It had all the difference of modern improvements, though, whereas the Hungarian peasant aims at improvements only as far as his agricultural work goes.

Bathrooms are an unknown quantity in a peasant cottage, and the best room, the "clean room," as it is called, is not lived in, but kept merely for show. A bed is piled as high as the ceiling with down-filled, elaborately embroidered pillows and eider-downs, but no one sleeps in it. The kitchen, the porch, and perhaps another room suffice for the needs of the family.

#### THE IDEAL GUEST IS OBLIGATED TO GET FAT

In the peasant farmer's barn, however, you may find the most modern agricultural machinery he can afford, and though Mr. Farmer has no knowledge of literature or the fine arts, he is steeped in the sane philosophy of the man of the soil, and has a profound interest in and mostly a very shrewd view of politics and the wheat

RAINBOW HUTS FROM HUNGARY



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Natural Color Photograph by Hans Hildbrand

A MEZŐKÖVESD MOTHER EXHIBITS HER PROUDEST POSSESSIONS

Comely daughter, handsome colt, and apparel ablaze with color constitute the family treasures of this mother, whose district is famous for the costumes of peasants (see also Color Plate VI).



CATTLE AND SWINE ON THE GREAT PLAIN NEAR TOKAJ

II

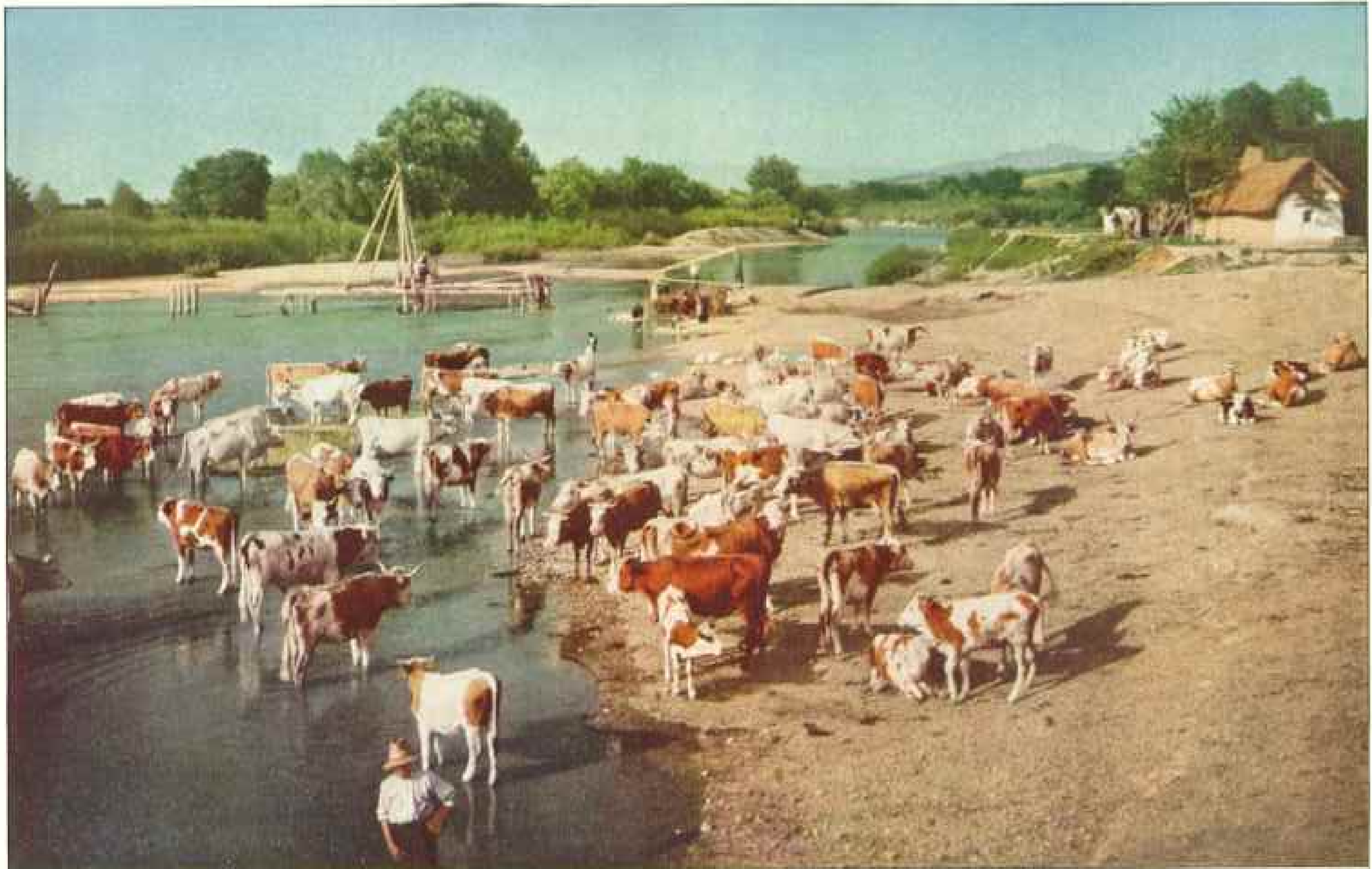


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Natural Color Photographs by Hans Hilgenbrand

HORSES OF THE PUSZTA ARE TRUE EQUINE ARISTOCRATS

Although superb horsemanship is a heritage handed down to Hungarian herders from their hard-riding Magyar ancestors, they have engaged in horse-breeding on a large scale only during the last century, employing a judicious mixture of Arab and Transylvanian breeds with the indigenous stock.



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Natural Color Photograph by Hans Hildenbrand

HUNGARIAN STOCK RAISERS ARE ATTEMPTING TO DEVELOP A GENERAL UTILITY BREED OF CATTLE

Friesian, Simmental and other blood strains have been combined with the lean, strong and healthy native cattle in the hope of achieving an animal which will serve well for draft purposes, be a fairly good meat producer, and yield a satisfactory quantity and quality of milk. A scene near Miskolcz.



WASH DAY ON A COUNTRY ESTATE NEAR GYENESDIÁS

Life on such an establishment is organized along patriarchal lines. The "great house," or "castle," as it is sometimes called, provides accommodation for the owner and his family while the servants and retainers dwell in smaller quarters apart. This serving woman is doing the family laundry at her doorstep, but more often she takes her day's work to a near-by stream.



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Natural Color Photographs by Hans Hildenbrand

HER CULINARY ART TRIUMPHS OVER A PRIMITIVE STOVE

All classes of Hungarians, from princes to peasants, are sticklers for well-prepared food. Most cooking is done over wood fires and on earthen stoves.

## RAINBOW HUES FROM HUNGARY



THE WELL IS A SOCIAL CENTER FOR COWBOYS OF THE FUSZTA

Proud, fearless, self-respecting men, they spend their days and nights tending the enormous herds of horses, cattle and sheep which graze on the wind-swept plains. Their cloaks are of unshorn sheepskin or heavy felt. Garments of the latter type are gaily decorated with embroidery and colored braids. The sleeves are sewed up at the wrist and used as pockets.



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Natural Color Photographs by Hans Hildenbrand

MAIDS OF MARKO DRESSED FOR CHURCH

Sunday services provide country folk with an opportunity to visit friends and display their fine raiment.





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Natural Color Photographs by Hans Hildebrandt

COSTUMES OF MEZÖKÖVESD RUN THE GAMUT OF THE SPECTRUM

All of the costumes worn by Hungarian peasants on festive occasions are colorful, but nowhere else in the land are they so brilliant as at the village of Mezökövesd, only a few hours distant from Budapest. Skirts, aprons, bodices and jackets, magnificently embroidered in every tint and shade, are handed down from one generation to another. Headdresses similar to those worn by the girls of this community are found to-day on the women of Central Asia.



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A YOUNG MATRON OF SOPRON, WESTERN HUNGARY

The tight-fitting red cap which she wears beneath her head shawl denotes her married state. Unmarried girls usually wear their hair in braids down their backs.



Natural Color Photographs by Hans Hildenbrand

IN BORSOD WELL-DRESSED MEN WEAR GREEN DERBIES

Their small felt hats are worn at a precarious angle and are held in place by an elastic band. Richly embroidered shirts and trousers so wide that they resemble split skirts complete the costume.



SUCH UNPRETENTIOUS PEASANT HOMES ARE SCRUPULOUSLY CLEAN

They are generally made of whitewashed earth and have three or four rooms. At the front is a large living room seldom used except for entertaining special guests. Behind this is the kitchen, center of all domestic activities. At the back of the house is a sleeping room for the family, and perhaps one reserved for guests. The attic or loft is for storage or servants' quarters.



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Natural Color Photographs by Hans Hildbrand

GIRLS HELP CULTIVATE THE TOBACCO CROP

They engage only in the lighter operations, such as weeding and loosening the surface soil. One of the girls carries a lunch pail; another a water bottle.

market. The Hungarian peasant talks little but he talks sense.

The "castle" at Dombori, however, is a home of culture and an ideal place for being delightfully lazy. The only drawback to a Hungarian estate is that you must get irrevocably fat. All the swimming in Balaton was of no avail against the detrimental effects of the cuisine of the puszta. "Pörkölt" chicken, *turós csusza* (dough boiled and garnished with cottage cheese, cream and greaves), stuffed cabbage, and, above all, the royal dish of paprika fish—a richly seasoned stew that contains all the choice produce of the lake, which prides itself on the variety of its finny tribes—cannot be withstood, especially when you are a guest and don't have to look after the cooking.

Our hostess spent the hot mornings in the kitchen ordering about her scullions, while we acquired appetites for dinner in the cool lake. I doubt, however, whether we derived more enjoyment out of our kind of sport than she did out of hers. She is a Hungarian housewife of the old school and is never happy unless she has the house full of guests.

It is the head of the family who invites the guests, who is deeply hurt and offended when they go away, who used to have carriage wheels removed just to keep his guests there longer, in the good old days when guests came in carriages, and he blames his wife if visitors leave before they have gained at least five pounds—a standard which must be kept up for the honor of the house and of which a record is kept in the Dombori guest book!

#### THE "COW-UNCLE'S" FOLK TALES

Pali *bécsi*, the "cow-uncle" (small children always call older people "aunt" and "uncle" in Hungary), was a great friend of my boys. Of the many folk tales he related to them none were more popular than those legends relating to the castle ruins that crown the volcanic basalt hills along the north shore of the lake, and the tale about the peculiarly shaped pebbles—"goats' nails"—that are found on Tihany Peninsula.

The story goes that in ancient times a beautiful golden-haired princess (Who ever heard of a dark princess?) tended her golden-fleeced goats on Tihany Hill. She had a lovely voice and was so proud of it that she guarded it jealously from all peo-

ple, thinking no one was good enough to hear it. The son of the King of Balaton chanced to hear her one day and forthwith fell so deeply in love with her voice that he sickened with longing to hear it again.

The princess tossed her head and refused to sing for him, although the youth spent his days sitting on top of a wave just to catch a glimpse of her, and ultimately died of longing. Thereupon irate King Balaton stirred up a storm in which all the golden-fleeced goats were drowned. The lake still flings up their nails on Tihany Beach when it is stormy.

As for the princess, she was imprisoned in a cave on Tihany Hill, and the penalty for her pride is that she must now answer anyone who cares to call to her. This is the origin of the famous Tihany echo. When I was a child the Princess repeated twelve or thirteen syllables, but so many villas have since been built on Tihany that soon nothing will remain of the echo but the legend, and the Princess will be well out of it.

As a worthy conclusion to our Balaton visit, we took the children on a motor-boat trip around the lake, visiting the twenty-odd small resorts and the few larger places—Balatonföldvár, patronized by the wealthy; Siófok, summer paradise of Budapest tradesmen's families; Balatonfüred, health resort whose hot springs, baths, and sanatorium are visited at all seasons of the year.

Balaton is a wonderful place in winter. The enormous frozen expanse, with its famous sunsets, is incomparably beautiful, but the dwellers of the few lakeside townships—Keszthely, Tapolca—keep the pleasures of ice sailing, ice tobogganing, and winter fishing through holes cut in the ice for themselves. Only Balatonfüred has winter comforts for visitors.

#### THE LAST HAPSBURG OCCUPIED A CELL IN TIHANY ABBEY

A kindly Benedictine monk showed us over Tihany Abbey, from the vault in which lies interred King Andreas I of Hungary to the small bare cells where the last king, Charles, and Zita, his wife, were interned in 1921.

Charles, landing in a plane that brought him from his exile in Switzerland, had made one last attempt to regain his throne. He failed and was escorted by water, across Balaton and along the Sió Canal,



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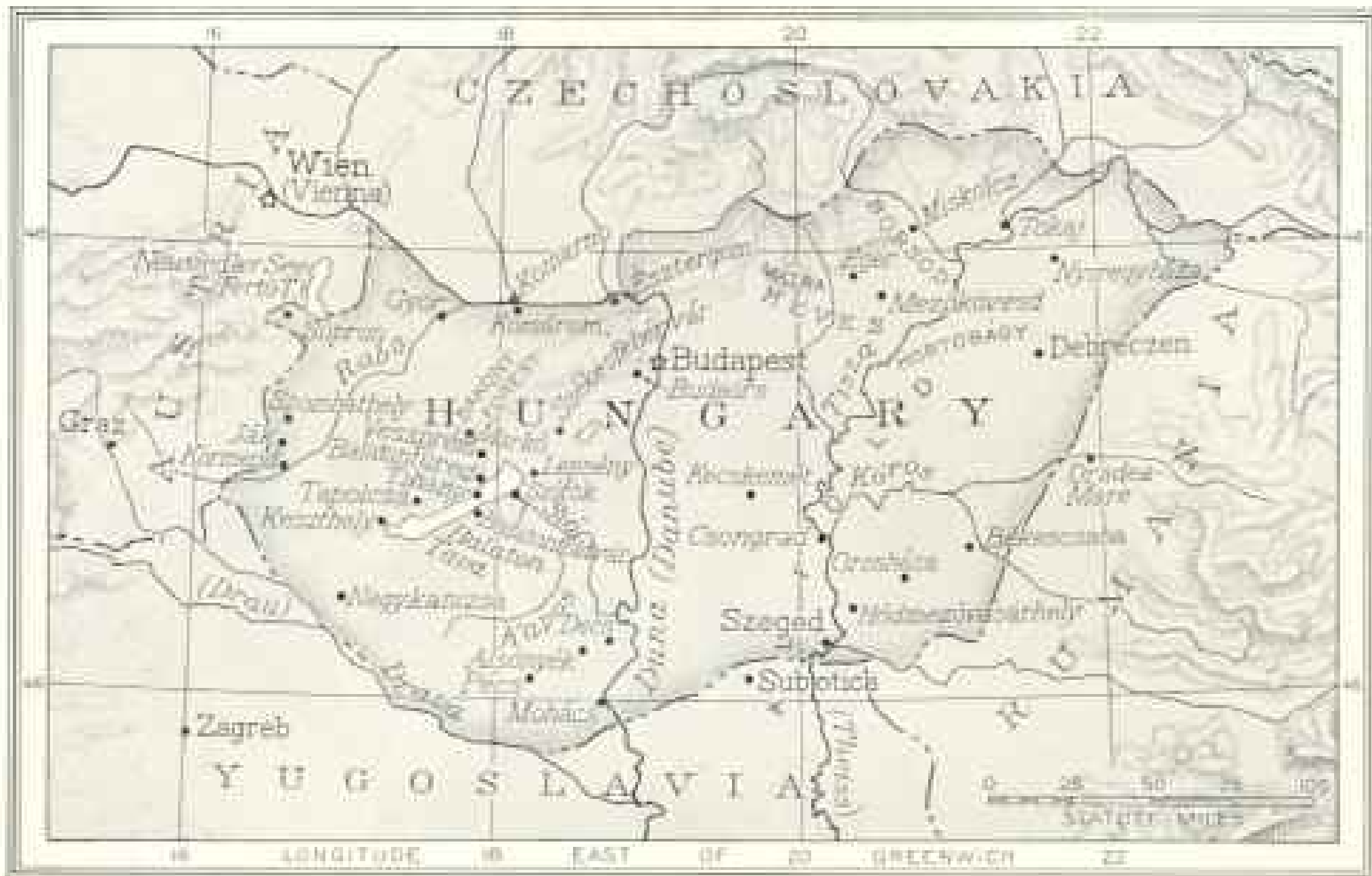
FROM LABOR TO REFRESHMENT

This Czikoa, a cowboy of the plains, is drinking from a wine jar made of foal skin (see, also, Color Plates II and V).



Photograph by Rudolf Balogh

SINGING THE FOLK SONGS OF THEIR COUNTRY WITH LUSTY GOOD WILL



Drawn by James M. Darley

#### HUNGARY LOST TWO-THIRDS OF HER AREA IN THE WORLD WAR

And only one-half as many subjects now reside in the Kingdom without a King as formerly swore allegiance to the ruler of the Magyars.

to the British cruiser *Glowworm*, which took him down the Danube, by way of the Black Sea and the Dardanelles, to Funchal, in the Madeira Islands, where he died a few months later.

Since we had contrived to gain twenty pounds among us in a fortnight, there was no offense in saying farewell to our hosts, and the "castle" at Dombori was ready to receive the next batch of visitors to be nourished.

#### BAKONY FOREST HARBORED ITS ROBIN HOODS

We motored through Bakony Forest, a region that still teems with legends about 19th-century highwaymen. "Poor fellows," the peasants called these romantic figures, who were sons of local families, and the population, though fearing them, had much sympathy with their exploits.

Our chauffeur, who had been evolved from a Bakony coachman, had learned the ins and outs of a motor, but his heart was still attached to horses. His eyes sparkled when he spoke of the horse-stealing feats of Sobri Jóska, the famous Bakony highwayman.

"This is just where Sobri Jóska shot down, single-handed, the four gendarmes who had brought three of his men to the gallows, and he got away with all the four horses, too," he added with enthusiasm.

Twilight was falling and I caught István glancing apprehensively round his shoulder once or twice, although János jeered, "Silly; that happened eighty years ago!" But none of us minded getting out of the gloomy forest.

We spent the night at Veszprém, and in the morning at Kőrmend viewed a princely mansion on one of the feudal domains of the wealthy old landed aristocracy of Hungary.

We motored into Szombathely, a busy commercial center, and to the lovely old Romanesque church at Ják. This is one of the few churches that were spared during the Tatar invasion in the 13th century and by the Turks also. The Ják church is beautifully restored and well worth seeing. But after Ják István rebelled. He would have none of the fascinating Renaissance and baroque buildings in Sopron, one of Hungary's most cultured provincial cities. He wanted his dinner and a swim in Fertő



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#### THE WHOLE MEZŐKÖVESD FAMILY LENDS A HAND AT HUSKING TIME

Neighbors often help, too, thereby making of the operation something of a social function. Indian corn is an important crop in Hungary, more than 2,000,000 acres being devoted to its production.

Lake. But when he saw the reed-grown banks and the gray, dense, shallow water of the lake that is now the boundary between Hungary and Austria, he made a face.

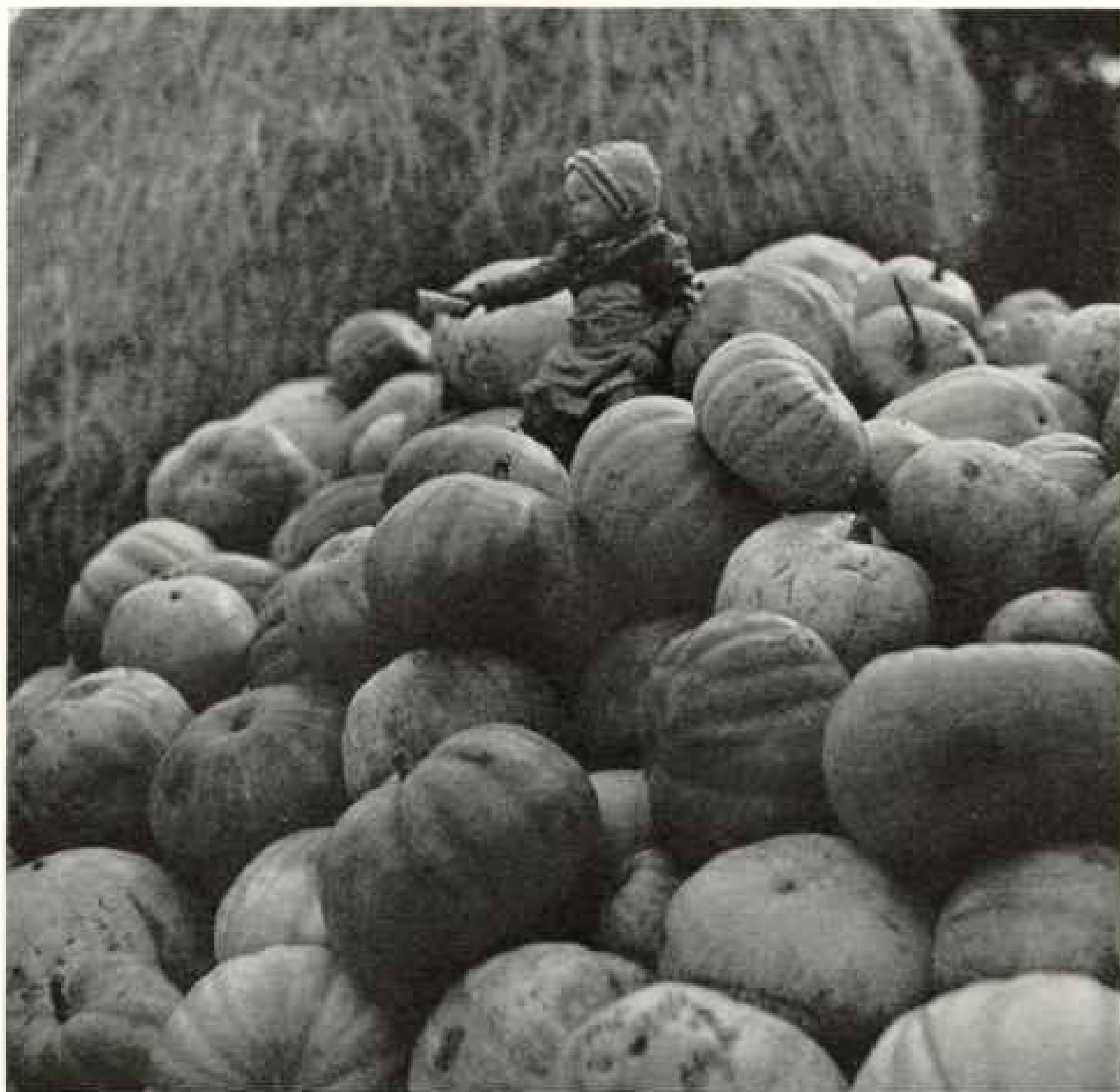
"Balaton water is quite, quite different," he declared. "Even the Danube is more blue. Why, one can't swim in that—just wade." In rainless summers it dries up entirely.

Austria, being better versed in salesmanship than Hungary, is nevertheless making much of her side of Fertő. The reeds have been cleaned out, restaurants and huts for week-end camping built on poles right into the lake, and trains and motor buses convey

many visitors from Vienna. But my son was right. We got stuck as soon as we started to swim, and even a sail in one of the shallow canoes failed to pacify him. But my mother's heart saw advantages in a lake where drowning was out of the question, although foundering seemed probable.

#### BACK IN BUDAPEST

In the afternoon we returned to Budapest by way of Győr, Komárom, and Esztergom, the seat of Hungary's highest church dignitary, the Arch Primate. The beautiful cathedral on top of the hill overlooks the Danube, far into the country that



Photograph by Rudolf Balogh

#### A MOUNTAIN OF HUNGARIAN PUMPKINS

is now Czechoslovakia. An hour later we were back in our apartment.

The lights on the Danube, the radiance of reflectors shed on the Bastion and the Citadel, looked as lovely as ever, but the apartment reeked of camphor, naphthaline, paint, and plum jam. The flowers in the window-boxes looked parched, and I realized I had missed my chance of winning a prize at the municipal competition of "Flourishing Budapest" in the fall.

If you speak to a Hungarian he is sure to tell you during the first five minutes of the conversation that there is no nation as unhappy as his own. A tragic war, a disastrous peace, economic troubles, and unsolved political problems might be expected to cast a shadow over this light-hearted city; but the casual observer can-

not discover it. We have evidently grown used to troubles and carry them well. Whenever you go to a restaurant or a play in the company of a Hungarian, he will invariably wonder how all those people can afford to be there, and he forgets that he is one of those who can't.

#### A DETOUR TO MEZŐKÖVESD, FAMOUS FOR EMBROIDERIES

On the whole, I didn't mind leaving Budapest again on the following Sunday. We had an excellent excuse for doing so. Our cook's sister was about to be married and had invited me and the boys to the ceremony. Their home is in a slightly out-of-the-way place—only two hours' walk from Eger, the nearest railway station. Not a two hours' drive—the road isn't fit for





© Keray Jotvin

A DEVOUT PEASANTRY IMPLORES DIVINE BLESSING ON THE FIELDS OF HEVES

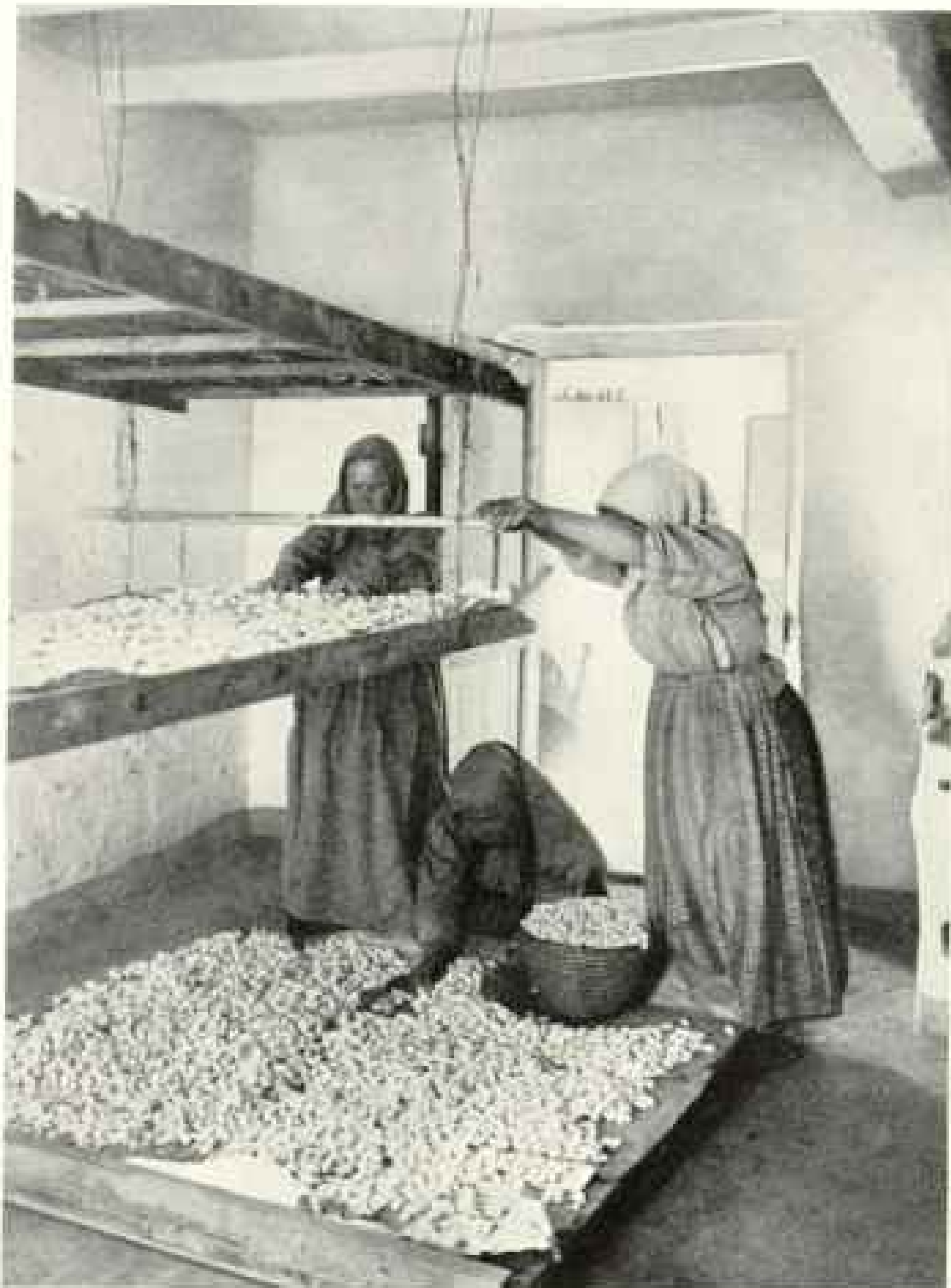
Consecration of the wheat crop is a religious ceremony widely observed in many sections of Hungary. It takes place in early summer, when the grain is still green, and assumes a particular significance in Heves County, where some of the nation's finest wheat lands are found.



© Rudolf Balogh

YOUNG MATRONS BEARING GIFTS TO ONE OF THEIR NEWLY MARRIED FRIENDS

Wedding customs vary widely in different localities. At some places, in addition to gifts of intrinsic value, willow sprigs are presented as emblems of good luck and happiness in the married state (see, also, text, page 717).



Photograph by Erdelyi

#### TENDING TRAYS OF COCOONS IN SOUTHERN HUNGARY

Nearly 25,000 people engage in raising silkworms, and fabric of a high quality is manufactured from the locally grown cocoons.

that. A tiny village in the Mátra, the highest range that is now left to Hungary.

That gave our trip somewhat the character of an excursion. The boys insisted on taking a picnic lunch with us, although I told them, knowing what a wedding feast means, that they would have all the trouble of carrying it home again in their rucksacks. Incidentally, as it developed, there was no need to get lunch or dinner for two days after. We were saturated.

I thought we might as well make a detour to Mezökövesd, the village of famous costumes and embroideries, beloved by tourists. We started at an unearthly hour, to be in time for early mass. I told the boys all about the gorgeous pageant of beautiful

peasant costumes that they were going to see—the girls in white, with intricately worked embroidery on countless petticoats, on finely pleated blouse sleeves, on kerchiefs and shawls, with glittering, bespangled head-dresses.

The women would wear shawls over their heads; they have no right to wear the *párta*, or headdress, after they are married. "To tie up a girl's head" is another way of saying "to marry her," and "a girl who has kept on her *párta*" is a polite description of an old maid.

I told them the young matrons would be as gay as peacocks in their embroidered aprons and skirts with bright ribbons, and the men would be resplendent in the apparel that is characteristic of this part of the country—richly worked aprons down to the ankles, full embroidered shirt sleeves, gay cravats and streamers to their hats.

The embroidery techniques and patterns come down from mother to daughter and belong exclusively to the various villages, like the patterns of Scotch tartans belong to a clan.

Export trade discovered Mezökövesd embroidery some years ago. Since that discovery, the patterns sometimes even come down from mother to son, for the lads are not ashamed to ply the needle in winter, when there is no work in the fields.

We drove into Mezökövesd at a high pitch of excitement, only to find the market place in front of the church deserted. A few old women in their peaked black shawls were straggling about, a few children dressed like miniatures of their elders, but no trace of the customary "church



Photograph by Rudolf Balogh

#### EGER'S GRACEFUL MINARET RECALLS THE DAYS OF TURKISH OCCUPATION

The slender spire which soars aloft 115 feet is all that remains of an old mosque. Its stones are held together with lead instead of mortar. Eger is an ancient town and played an important rôle in the heroic battle which Hungary waged to protect western Europe from the Moslem hordes (see text, page 719).



#### SILK FRINGES AND RUFFLED SKIRTS IN TOKAJ

She comes from a region famed afar for grapes from the juice of which is made the delicious Tokay wine. Her costume, like most Hungarian peasant finery, is richly embroidered.



#### MEZŐKÖVESD BRIDES WEAR THE "RAGYOGÓ"

This brilliant and elaborate headdress is worn only on the wedding day. Around the demure young bride's neck hangs a medallion on which is a portrait of her new husband.

Photographs by Rudolf Balogh



BALATON HILLSIDES CROW HUGE GRAPES AND ATTRACTIVE LITTLE  
GIRLS TO EAT THEM



A BEAUTY OF THE HARVEST FIELD IN HER GAYEST EMBROIDERIES  
AND FINEST SHAWL.

Photographs by Rudolf Balogh.



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#### COURTING UNDER DIFFICULTIES

In Hungary's Mátra Mountains aspiring swains are not permitted to enter the house of the lady of their choice, but must pay court from a discreet distance.



© Rudolf Balogh

#### DANCING THE CSÁRDÁS IN A VILLAGE STREET

The national dance takes its name from the Magyar word for a roadside inn. The gaily clad peasant dancers enact a regular drama of love, jealousy, and reconciliation to the accompaniment of the wild strains of gypsy music.



© Hungarian Press Photographic Exchange

## PLEATS AND PETTICOATS ARE POPULAR IN RURAL HUNGARY

Some peculiar customs as well as costumes survive among the mountain villagers of the north. Early on Easter Sunday morning the young people leave their houses to the accompaniment of songs and instrumental music. The girls, attired in their poorest dresses, are caught by the boys, each of whom holds his girl and pours a pail of water over her. Then the young people dress for church and the girls present their recent tormentors with painted Easter eggs.

parade." Mass was over; the ceremony evidently seemed to have been quickly disposed of.

István struck up a lightning friendship with a youngster who was munching mulberries on top of a fence, and while we were yet helplessly wandering about in quest of a bespangled *párta* or a few dozen swishing petticoats, he got information and mulberries out of his new friend.

"It's market day in the next village, the big annual fair," he called out. "That is where everybody has gone; Feri here only stayed behind to take care of his granny, who's sick!"

## A PEASANT WEDDING

But the wedding was a distinct success. I have wandered about a good deal in my country, but I had never seen this type of festivity before. Juliska, our cook's sister and our housemaid of the previous year, was not as beautifully attired as the *Mező-*

*kövesd* girls are wont to be, but she wore a dozen petticoats under her skirt, all the same, just to show that she was anything but penniless; also, to prove this fact, there was her bedding. It was piled on a cart and taken to the new home, where her fiancé's female relations had the duty—or the privilege?—of unpacking it.

Criticism would have been far from tolerant, had there been any occasion for it, but Juliska's trousseau was impeccable. Accordingly, her mother-in-law gave her the grandest wedding cake that I have ever seen—a splendid affair, hung all over with ginger-bread hearts, and swords, and husars, and babies—especially babies. Two girls carried it up to the bride's house on a stretcher.

The guests arrived with gifts of wedding cakes of their own. These had the shape of churches, stags, and hens outlined in candy; but the reason why these shapes were traditionally repeated remained a





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INTRICATE AND EXQUISITE EMBROIDERIES COME FROM MEZŐKÖVESD



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MATRA MOUNTAIN GIRLS HAVE A FONDNESS FOR ACCORDION PLEATS

Their petticoats are so numerous that they have to don them out of doors, since the doors of some of their houses are not large enough to allow passage when fully attired. The innermost skirt is starched very stiff. Such costumes are used only on special occasions.



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## A SHEPHERD'S FLOCK AND HUT ON THE HORTOBÁGY PUSZTA

Most of the inhabitants of the *puszta* (see, also, text, page 720) are herdsmen of horses, cattle, and sheep. Thousands of animals graze the year-around on the great plain.

mystery. They had always been so. Finally, one little girl presented Juliska's parents with a big rag doll, whether as a substitute for the daughter they were about to give up or in anticipation of a grandchild seemed doubtful.

The church ceremony was quite simple and soon over. Not so the dinner. When we left, the first few courses had barely disappeared; there had only been hen soup, stuffed cabbage with homemade sausages, paprika chicken, roast duck and geese, curd cakes, and pastry, so far. It was about to begin all over again and finish up with *fánk*, a kind of glorified griddle cake, and sweet pastries, the whole generously washed down with the slightly sour, light wine of the countryside.

We spent the night at Eger in an excellent hotel. The city has a Turkish minaret and on a green hilltop the ruins of the castle which a Hungarian amazon, Katica Dodó, with a little army of women, helped their weary and war-worn menfolk defend against the Turk.

While Eger has a number of beautiful baroque houses, courtyards, and gates dat-

ing from the days of Maria Theresa, the city's finest building is the Catholic seminary and library.

## THE HORTOBÁGY PLAIN EXPLAINS DEBRECZEN'S PROSPERITY

János and István were looking forward to finding historical relics in Debreczen, but they were disappointed. The War of Liberty in 1848-49 is the period that fires the romantic imagination of every Hungarian boy. To Debreczen, the big city in the heart of the great plain, fled the first independent Hungarian cabinet when the Austrian army was bearing down upon Pest, bombarding the town from the Buda Hills. In Debreczen's Big Church the dethronement of the Hapsburgs was declared 83 years ago, and here Kossuth was established Governor of Hungary.

János went to sleep that night over a volume of Petöfi's revolutionary poems, but when we climbed out of the eiderdown beds of the Golden Bull next morning we found little to gratify our curiosity.

There is the Big Church, to be sure, the old college, the little old houses in the

market place, but when all is said and done Debreczen is just a vast Hungarian village, a multiplication of endless village main streets, until you come to the handsome new university buildings in the Nagyerdő, the city's forest park.

With the memories of the wedding feast still vividly present, we spent little time over lunch and made an early start for Hortobágy in a hired carriage and pair.

Hortobágy is really what Debreczen stands for and lives on—a vast puszta that belongs to the city, an unbroken area of pasture land, where the city's famous cattle and horses are bred. It was what tempted the nomadic Asian race of Magyars to stay in the fertile valleys of the Duna (Danube) and Tisza rivers when they came across the Carpathians in search of fresh pastures a thousand years ago.

#### HERDSMEN OF HUNGARY LIVE IN HUTS OF CLAY AND REED

We spent the night at an old inn, the only stone building, far and wide, on Hortobágy. Cattle ranchers and horseherds live in reed and clay huts, alone with the sun, the stars, with infinity and their animals.\*

When I came out in the morning, István was trying to make friends with an old cowherd who was having a little morning drink by himself in front of the inn.

"Aren't you warm in that sheepskin cloak, uncle?"

The Hortobágy herdsman is very taciturn by nature, but then István is irresistible.

"It keeps me cool, son; keeps the sun off."

"Then what do you wear in winter?"

"This same cloak. Keeps the cold off."

"Have you ever been to Budapest, uncle?"

"I have, in 1896, when they had that exhibition on."

"Not since? I wasn't born then. But of course you go into Debreczen often?"

"What should I go into Debreczen for, son?"

"Oh, just to see the town and the people and buy things in the shops—go to the movies. . . ."

\* See "Hungary, a Land of Shepherd Kings," by C. Townley-Fullam, in the NATIONAL GEOGRAPHIC MAGAZINE for October, 1914.

All the contempt of the puszta dweller for the scurrying busybodies in the city lurked in the old man's smile as he sat there, unchanging, unmoved as Hortobágy itself.

"I haven't been in Debreczen these ten years; the women go in and get what we need."

What he needs is bacon, paprika, and tobacco—and a pair of boots every ten years or so. The sheepskin cloak lasts a lifetime.

#### HORTOBÁGY CATTLE ARE BRED IN THE OPEN

It took some time, but István got him round his little finger at last. He did it by singing the praises of the cows in Dombori. Our Hortobágy cowherd wouldn't stand for that. He has a pride of his own. He wanted to show us that Transdanubian cattle were just miserable cats as compared to those on Hortobágy. And he began to show off. He just stood by and watched us—a man who is sure of himself. The cattle didn't belong to him, but he belonged to them—more than to the world of human beings in the city.

Some of the best cattle in Europe graze on the Hortobágy plain, hardy from being bred in the open air summer and winter, and some of the finest horses in the world can be found in the city of Debreczen's famous stud.

Of course János wanted to ride bareback. In consequence I hurried over the preparations for departure.

"But we have really seen nothing of Hungary," my sons complained. "The cities—Pécs, Kecskemét, Szeged—the Tisza River, grape-picking at Tokaj—there's so much more to be seen."

I mentioned school, about to begin.

János retorted with something about the advantages of learning history and geography in the practical way.

Finally a telegram from home set an end to the discussion. It ran:

"Carpenters departed; fall cleaning completed; cook returned; paprika preserves in full swing. Longing for my family."

There was no resisting such a summons. The next day saw us on our way home, to tell about our experiences and to discuss what would be the best thing to do next summer.

RAINBOW HUES FROM HUNGARY



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Natural Color Photograph by Hans Hildenbrand

WOMEN HARVESTERS IN A FIELD BETWEEN MOHÁCS AND PÉCS

The ripe grain is first reaped by men with scythes; women follow with sickles, pick it up and shock it (see also Color Plate XII). Near Mohács a terrible battle was fought in 1526 between the Hungarians and Turks. The latter were victorious and as a result occupied the land for 150 years.



© National Geographic Society  
 THEIR COSTUMES REFLECT PROXIMITY OF THE  
 YUGOSLAVIAN BORDER

Styles and color combinations vary in different parts of the country and sometimes indicate a racial difference. Although residents of the south Hungarian town of Mohács, the women are Serbians.



Natural Color Photographs by Hans Hillenbrand  
 THE "NATIONAL" SEASONING FINDS  
 A READY SALE

Paprika, a powder made from the dried fruit of red peppers widely grown on the farms of Hungary, appears on almost every table. It is cheap and plentiful.



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Natural Color Photographs by Hans Hildebrandt

## FRUIT SELLERS ON THE STREETS OF MGHÁCS

Apples, pears, peaches, plums, apricots, grapes and melons of good flavor are grown in Hungary, some in such quantity and of such quality that there is considerable export demand for them. The fruit consumed locally is often sold at very low prices. Even in working clothes the women indulge their love of color.



ALONG THE WATERFRONT AT SZEGED, SECOND CITY OF HUNGARY

Situated on the Tisza River, 100 miles from Budapest, and close to the southern frontier, this community of 155,000 people is an important commercial center. As a result of the territorial adjustments that came at the close of the World War, the Hungarian University of Kolosvar (Cluj), in Transylvania, was transferred to Szeged. Towers of the new university church rise above the residences along the river bank.



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Natural Color Photographs by Hans Hildebrandt

BOTH MEN AND WOMEN WEAR APRONS AT THEIR WORK IN THE FIELDS



© National Geographic Society

Natural Color Photograph by Hans Hildebrand

REST HOUR IN A HARVEST FIELD OF SOUTHERN HUNGARY

The country is essentially an agricultural land and between three and four millions of its fertile acres are planted in wheat. Other important crops are potatoes, sugar beets, corn, rye, barley and oats. According to tradition, an ancestor of the carts from which the horses are eating gave the word "coach" to the English language. The model is said to have originated in the Middle Ages at the village of Kocs (pronounced coach). A king of Hungary sent one as a gift to a king of England who, being at a loss just how to designate it, called it "the thing from Kocs," which gradually shortened into the single word coach.





DESPITE CRUDE EQUIPMENT, PEASANT BAKERS PRODUCE GOOD BREAD.



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Natural Color Photographs by Hans Hildenbrand

GIRLS OF DECS, PROUD TO WEAR THEIR BEAUTIFUL NATIONAL COSTUME

The rural districts of Hungary have resisted the invasion of conventional, prosaic, machinemade clothes better than most other parts of central and southeastern Europe.

RAINBOW HUES FROM HUNGARY



EVEN THE MILK CANS (UPPER LEFT) WEAR BRIGHT COLORS AT ALSÓNYÉK



© National Geographic Society

Natural Color Photographs by Hans Hildentand

GESE OCCUPY AN IMPORTANT PLACE IN HUNGARIAN DOMESTIC ECONOMY

They are highly esteemed for the table and their feathers serve a variety of useful purposes. A cart load of geese on the way to market at Csongrad.



© National Geographic Society

Natural Color Photograph by Rudolf Balth

THEIR ANCESTORS HAVE LIVED IN HUNGARY FOR A THOUSAND YEARS

Magyars occupied the country in the 10th century, coming from the region of the Ural Mountains. Although there has been considerable intermarriage with other peoples, they remain to-day the dominant race. Young women of Dees (see also Color Plate XIV).

# BUDAPEST, TWIN CITY OF THE DANUBE

By J. R. HILDEBRAND

AUTHOR OF "ROYAL COPENHAGEN," "THE COLUMBUS OF THE PACIFIC," "THE PATHFINDER OF THE EAST,"  
"THE WORLD'S GREATEST OVERLAND EXPLORER," ETC., IN THE NATIONAL GEOGRAPHIC MAGAZINE

IT IS very much like going to some magic island, this journey to Budapest; for Hungary is a mid-Europe "island," sharply severed by speech, race, tradition, and a hemicycle of evergreen granite mountains from all its neighbor nations.

One may settle down in a deck chair at Vienna, listen to the boat band playing gentle Strauss waltzes or strumming the Soudalike *csárdás*, drink authentic Pilsener, watch baroque towers of thatch-roof villages, coveys of wild fowl fluttering over willow-fringed banks and flat islets, and see the ships and ferries and barges of many nations, as international as a postage-stamp collection. With the aid of the Danube's swift current the morning steamer from Vienna reaches Budapest in the early evening.

Or one may board an express, headed straight for the Orient, and whirl past acres of geese, scan the peasants, clustered at tiny stations, in broad skirts, embroidered aprons, and peaked kerchiefs. One sees an occasional *Czikos*, a Hungarian cowboy, in open-necked blouse with voluminous breeches and a split-skirt overgarment, riding a wiry pony, as he herds the wide-horned, squat-legged cattle of the Magyar pampas.

The train speeds through a plain as fertile as our prairie States, which has absorbed pioneer populations as diverse as our own. The oval basin also is a sort of inverted, land-bound Gibraltar that stopped the Tatar hordes, ultimately turned back the Turks, and now proclaims itself the last frontier against Soviet penetration of western Europe.

## THE GEOGRAPHY AND HISTORY OF A NATION EPITOMIZED IN TWO VIEWS

Budapest is a city where, from two hotel windows, provided they are on the opposite banks of the Danube, the visitor may gaze on magnificent views that epitomize the geography and the history of an entire nation.

A riverside window from the Pest bank frames a nightly illumination as brilliant as a magnified Luna Park, dignified by the background of a thousand years of vivid history.

In the immediate foreground is the famed promenade, the Francis Joseph Quay, where, from Parliament House toward the slaughterhouse—a cattle country shows no squeamishness at mentioning the latter—a nightly parade passes the scores of sidewalk cafés. No wheeled traffic obstructs the thousands of strollers, and, on the river side, clumps of trees shelter benches where, for a few *filler*, the pedestrian may sit for an hour before the feminine collector punches his ticket again.

The waters of the Danube, which are chalky or chocolate by day—never blue—have an inky shellac sheen by night, reflecting thousands of dancing lights. On the opposite banks rise ghostly cliffs to support a fairylike curtain of starry lights, with occasional splotches of gleaming flood lights etching in bold relief the headline places of ten centuries.

One white splash marks the modern Citadel, mounted on the hill beneath which Roman galleys found a port, where Christian maidens were held captive until they were needed for a pasha's harem.

Another illumined span is the imposing Royal Palace of 860 rooms, built by Maria Theresa, and scene of Hungary's last ball for the venerable Francis Joseph before his dual monarchy was sundered. The first royal residence was planted on that central Buda hill in the thirteenth century by Bela IV, whose fateful reign saw first a migration, then an invasion, of Mongol hordes. The marauders took all the grain and other food stores they could find, a plague of locusts ate the crops, and when survivors emerged from their hiding places after the retreat of both invaders, it is recorded that "the starving people, in their frenzy, killed each other, and it happened that the men would bring to market human flesh for sale."

Most beautiful high light of all, perhaps, is the Gothic spire of the Coronation Church, dating back to the great and good King Matthias, son of the renowned Hunyadi, so bold that he personally spied out the fortifications of Vienna, in disguise, and so scrupulous that when a plan was proposed to poison an enemy king he retorted, "We fight with arms, not with poi-



Photograph by Rudolf Balogh

#### HUNGARIAN HORSES CAN HOLD THEIR OWN WITH THE WORLD'S BEST

Before the days of world depression a flourishing export trade was carried on in full-blooded racing animals and they commanded high prices. However, the demand has fallen off to such an extent that they may now be had most reasonably.

son." In luxury of his court, though not in character, he was the Louis XIV of Hungary. Prosperity persisted for a time after his death; so that, in 1513, a certain Hungarian archbishop on his way to Rome had his horses loosely shod with silver shoes, so they might continually fall off and be picked up by peasants.

In no other city in the world does night let down a curtain which, electrically lighted, becomes a pageant of such amazing history.

Six ghostly bridges span the river that once split venerable, rocky Buda from modern Pest, low-lying and flat, as becomes the commercial focus of the vast plain that pours its grain and wines, its cattle and wool, into the warehouses and factories to be shipped or fabricated for the Danube trade.

It is hard to imagine the placid summer Danube raging with winter ice floes or spring floods. Less than a hundred years ago, in 1838, an ice jam flooded Pest, swept away a fourth of the 4,000 dwellings then located in the newer city, and drowned more than a thousand people.

The neat quays, extending for more than three miles along the Pest shores, prevent

another such disaster. Unloading platforms are concealed from the riverside promenade by overhanging sheds with entrances beneath the sidewalks (page 738).

In spite of the enormous volume of shipping in Budapest, shrunken now by tariff walls, there are no piles of crates or boxes, coils of tarry rope or other maritime paraphernalia along the water front.

The quays are lined with long barges, their curved, carved prows suggesting the galleys that once plied the river. Families live aboard, as do our canal-boat dwellers. Women cook dinner in the lofty pilot's shelter and tend the tiny flower gardens amidships, while stalwart men, stripped to the waist, their bodies browner than the wheat they handle, unload cargoes that are whisked away by waiting trucks.

Tariffs rise and fall, but Budapest remains a focal port of the great stream that carries the commerce of seven European countries.

#### HOTEL, SWIMMING POOL WITH ARTIFICIAL WAVES

On the Buda side curiosity is likely to lead the stranger to that amazing institution, the municipal St. Gellért Hotel.



© Elizabeth Pongracz Janosi

#### THE HEAD OF THE HUNGARIAN STATE MARCHES IN THE ST. STEPHEN'S DAY PROCESSION

On this national holiday Budapest is decorated with hunting streamers, and flowers, the bridges are hung with countless flags, and the people come from all over the country for the tournaments, fairs, pageants, fireworks, and horse races. Admiral Nicholas Horthy de Nagybánya, Regent of Hungary, walks bareheaded near the left of the line.

This new "public building" typifies ancient Buda's very active contribution to modern Budapest, for beneath it a spring pours forth nearly half a million gallons of water a day, which water gushes from the underlying rocks at a temperature of 114 degrees Fahrenheit. Nearly half the interior is devoted to baths; staff physicians prescribe a bath in a tepid glass room, or a warm glass room, or parboiling in a superheated glass room. Masseurs take you in merciless hand thereafter.

Of course, it is barely possible you may be in perfect health. Possible, but you have to prove it in a city where medicinal baths constitute a major industry. If the St. Gellért staff grudgingly concedes the point, there still awaits you an enormous outdoor swimming pool. It is flanked on three sides by rock-garden terraces; the fourth is half an acre or so of tea tables. Every 15 minutes a whistle gives the signal for artificial waves. A gypsy band plays for the bathers in the hotel surf.

All Budapest swims, and the St. Gellért pool is a favorite luncheon and tea-time

rendezvous for the Buda business man, as well as a fashion parade for chic feminine bathing suits. Should there be an important telephone call during his swimming siesta, the bather is paged by a portable blackboard with his name chalked thereon, borne silently around the edge of the pool by a "bell hop" (see page 734).

#### LITTLE SUGGESTION OF THE ORIENTAL IN BUDAPEST

The water-front view of Pest extends from the complicated Gothic pile which is the Parliament Building to the huge grain elevators, reminders that in its busiest years Budapest has ranked second only to Minneapolis as the premier milling city of the world.

By night the long portico of Parliament House is a lively outdoor café, where hundreds dine, sip their coffee, or drink beers and wines from the vast cellars under Hungary's legislative halls. The industry and the gayety of this panorama typify the normal life of modern, self-consciously modern, Budapest.

"I was in Washington many years ago," a Budapest resident said to me. "It seemed strange that you did not have an outdoor café at your Capitol; such a fine place for one on the Capitol Plaza."

Hungarians are proud that their race originated somewhere in the Altai Mountains and, led by the fierce Magyar Moses, Arpad, carved out a permanent home in one of Europe's most promising lands. But the Budapest citizen rather wearies of the implication that his city is partly oriental.

Byzantine domes and statues, spires, towers, and balustrades mingle in an architectural congeries that ranges from Gothic, through Renaissance, to modern Manhattan. But a burnoose, a fez, a veiled lady, crooked streets, dirt, and evil odors are as novel in Budapest as in Paris or Berlin.

"Your name, sir, is French," said a Magyar to a friend of mine, "but you tell me you are American. I accept that. Please believe we are Europeans; we have been here more than a thousand years."

Broad streets, tree-lined like those of Washington, are immaculate. The Hungarian believes his capital is the cleanest city in Europe. In every sidewalk café an attendant with a conspicuous towel is always at hand, ready to dart at a stray crumb. Any dish one has finished is whisked away.

"We don't think that a plate of half-finished food is a pretty sight," explained my guide. The towel-bearing functionary at your table is no mere bus boy; he is not a waiter, but he ranks with the waiter and he expects a separate tip.

#### GLASS TELEPHONE BOOTHS ON THE BOULEVARDS

Strolling down broad Kerepeser Street, the theatrical center, with a Hungarian friend one day, we purchased some confections, each piece wrapped daintily in paper. I ate one and crumpled the tiny wrapper in my hand. Most likely I would have cast it in the gutter.

My friend guided me direct to a waste receptacle, saving me the embarrassment of a civic *faux pas* and also a possible fine.

"Perhaps they might let you off, you being an alien," he said with dubious tact. "But Hungarians have been fined for tossing toothpick wrappers on the sidewalk."

Next to the waste receptacles, the most conspicuous objects on Budapest streets

are the advertising kiosks and the glass telephone booths. Pay-station calls are openly arrived at. At first one feels like the casualties that used to be displayed in glass cases in the Paris morgue so friends might identify the body.

Even from the outside, looking in, it is a strange sight to gaze down a street at a vista of pay-station patrons wrapped, not in cellophane, but in glass. So spotless and crystal clear is the glass that some citizen, some time, must have extended his hand to an acquaintance, only to jam the hard surface that guards the speaker from intrusion, but not from public view.

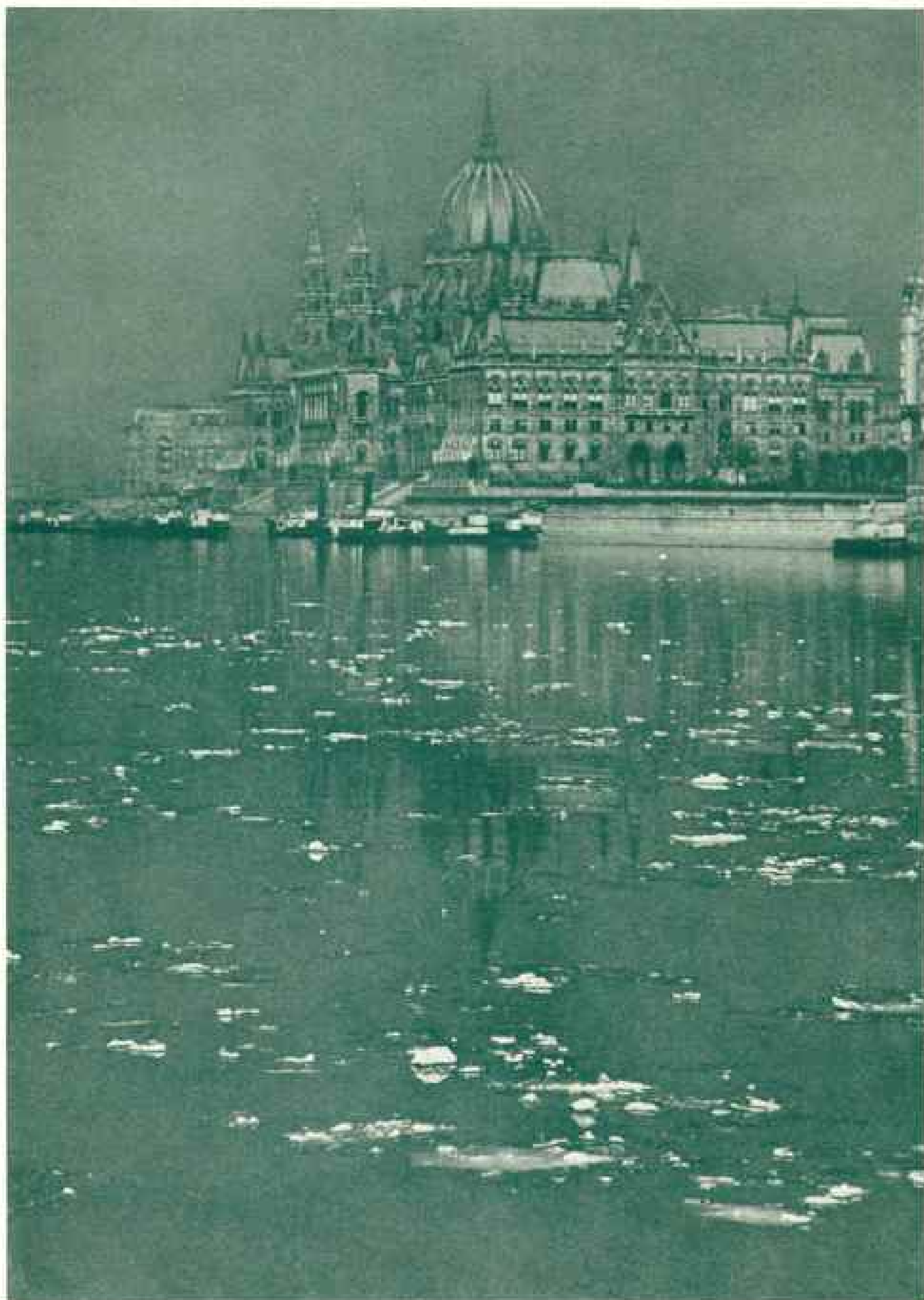
#### BUDAPEST RESPONDS TO THE CALL OF THE SUN

Like Germany, Budapest has felt the call of the sun, and it is as conscious of its fine, mild climate as California. In summer one is virtually compelled to eat in the open. A slight cold sent me searching one day for a place to dine away from even the mild breezes off the Danube. I entered café after café only to be ushered out into the "garden restaurant," which was the only place meals were being served.

A sudden shower affords a spectacle worthy of the changing of the guards at the Palace. Waiters swoop down on a hundred tables and have them set up again, with each dish in the precise place it was abandoned, almost as soon as the diner has located his position under cover.

The city has utilized its sunshine and its waters in the vast solaria and numerous baths. Medicinal baths come and go, just like other business enterprises. When I was there the count was 47 thermal springs in use, yielding some ten million gallons of water a day, in behalf of rheumatism, gout, and as wide a variety of other complaints as the old-fashioned patent-medicine man could conjure.

The sidewalk café is proportionately more prevalent in Budapest than in Paris. The interminable tiers of chairs are the coffeehouses, the clubs, the reading rooms of Budapest's population. The habitués choose their cafés by the papers they would read or the friends they wish to meet. If the patron is known, the waiter's first act is to place before him his favorite newspaper or magazine, the inner column of each usually being a loss because of the staunch stitching of the wood-rod binders.



Photograph by Rudolf Balogh

PARLIAMENT HOUSE IS A SENTINEL OF THE WINTER DANUBE

In summer the river is gay with ferries, motor boats, and the long, low barges with high cabins and graceful prows that suggest ancient galleys (see text, page 730). By night the Parliament House portico is an outdoor café, ablaze with lights and thronged with fashionable patrons. The building, covering about four acres, is embellished with nearly a hundred statues of Hungarian kings, warriors, and statesmen.





Photograph by Rudolf Balogh

#### BATHING IS THE UNIVERSAL SPORT OF BUDAPEST

Many swim in the deeper portion of this vast Széchenyi Pool at Town Park. Many more mull around in the more shallow, tepid waters, and hundreds sun themselves on the artificial beach, where tons of sand have been hauled to simulate the seashore. Refreshment tables and a promenade flank all the large Budapest pools, where, on Sundays, thousands spend the entire day in their bathing suits. Two of the unusual attractions at Town Park are the Traffic Museum, showing every device and appliance of the Hungarian State Railways, and the Agricultural Museum, displaying the history of agricultural implements from primitive times to the present, and also showing specimens of all the country's farm products.



A BYZANTINE MONUMENT TO A CHRISTIAN KING

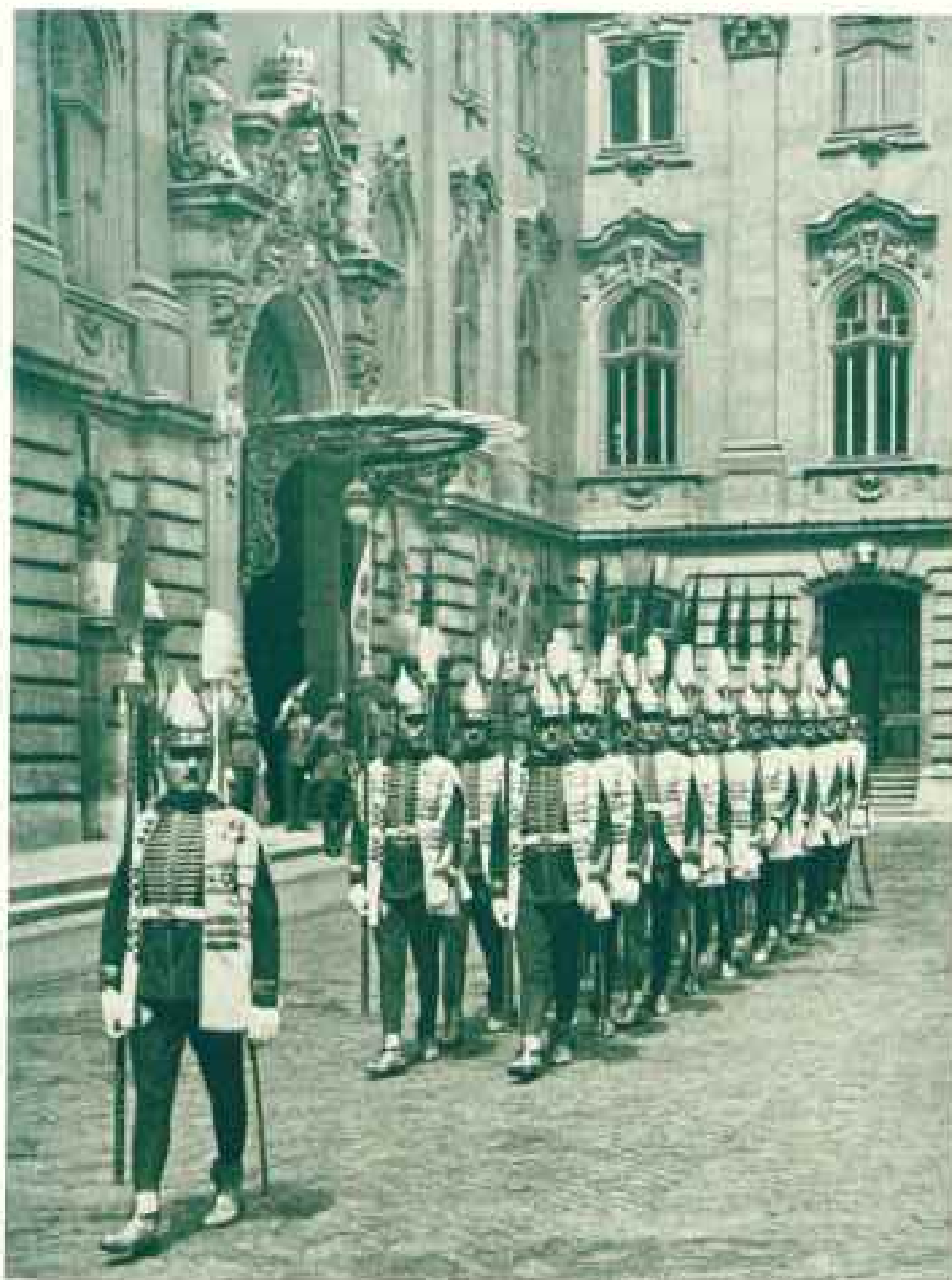
Through the ages the kings of Hungary have worn as a revered emblem the crown of St. Stephen. Their territory is known as the Crown Land of Hungary. Hungarians formerly proclaimed, "The Austrians have an Emperor and we have a King; but our King swears allegiance to his people and not the people to the King."



Photographs by Keystone View Company

THE FISHERMEN'S BASTION AFFORDS A BEAUTIFUL VIEW FROM A HILL IN BUDA

To the Fishermen's Guild was entrusted the fortress and the Coronation Church on the Buda Heights. The Remanesque towers and colonnades were constructed only about 30 years ago (see, also, illustration, page 740).



© Keystone View Company

#### GUARDS OF THE ROYAL CASTLE

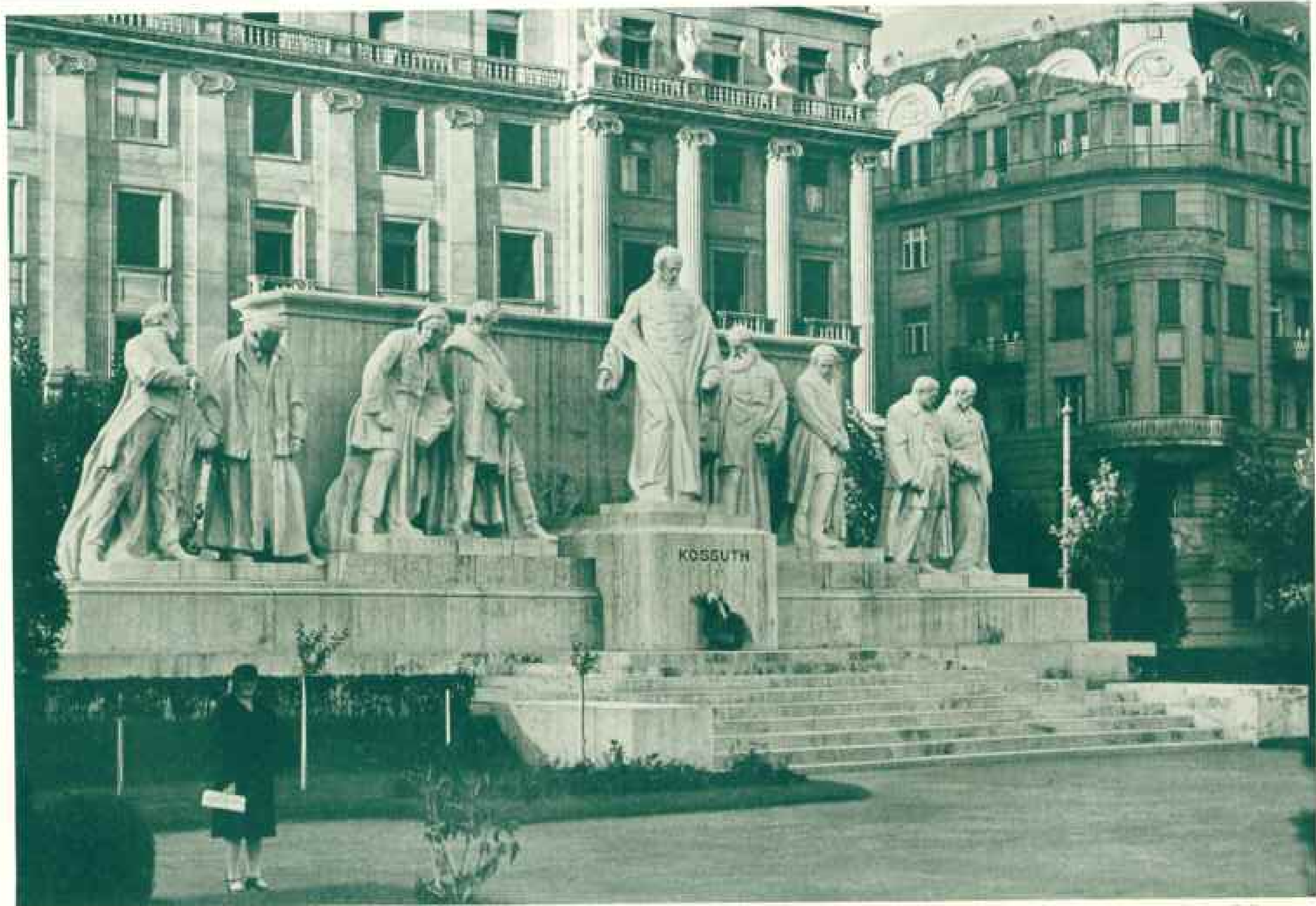
The side of this vast palace, visible from the Danube, is approximately the length of the new Department of Commerce Building in Washington, D. C. It is now a museum and residence of the Regent, Admiral Horthy.



Photograph by Ewing Galloway

#### THE "BOBBIES" OF BUDAPEST

Controversy arose recently because Hungarian policemen, even a traffic policeman, must salute a soldier, which practice held up long lines of automobiles during a Budapest military parade.



Photograph by Ewing Galloway.

MONUMENT TO KOSSUTH, HERO OF HUNGARY, WHOSE ORATORY STIRRED AMERICA

This beautiful memorial has been severely criticized by some Hungarians because Kossuth and some of the figures representing his cabinet appear with their heads bowed.



SHIPS OF MANY NATIONS ANCHOR AT THE PEST QUAYS

Darton Holmes from Galloway.

For three miles vessels load and unload beneath the "view line" from the streets of Buda, so that the pedestrian sees only an occasional mast or smokestack. The cargoes are carried through passages beneath the sidewalks to waiting trucks.



Photograph by Rudolf Balogh

NIGHTTIME IS FAIRYLAND, WITH ACRES OF GLOWWORM LIGHTS; THE GREAT DOME AND PINNACLES OF DISTANT PARLIAMENT HOUSE SEEN FROM ST. GELLÉRT HILL.



Photograph by Rudolf Balogh

#### THE CHURCH WHERE HUNGARY'S KINGS WERE CROWNED

Parts of Coronation Church date back to St. Stephen, first Christian King of Hungary. During the Turkish occupation it was used as a mosque. It is also known as the Church of St. Matthias, another kingly hero of Hungary, whose royal palaces appeared "like real fairy castles, with their hanging gardens, fountains, fish ponds, aviaries, game parks; small pleasure houses, arbors, and statues." The monument to the Trinity, at the left, is one of the oldest in the capital. In the right distance is one of the towers of the Fishers' Bastion (see page 735).

Most cafés have periodicals in various languages, including American newspapers. If the Hungarian would look out on the world through the printed page, he inevitably must learn other tongues. His unique language is a greater barrier to commerce in ideas than are tariff walls to trade. A Hungarian writer gains a considerable audience only with the aid of a translator.

Few aliens learn a tongue which has no kindred roots or relation with any other European tongue. Fortunately, English is widely spoken; otherwise even the visitor who knew half a dozen languages would be at his wits' end to find a baggage office labeled "poggyászkidás"; to produce a passport at the command, "útlevel"; to recognize "pályaudvar" as a railway station, "mosó intézet" as a laundry, or "gyógyszertár" as a drug store.

Hungary did not pass through the feudal stages as did France and Germany. It was a unified nation when neighboring lands were split into countless principalities, feuds, fees, banats, and free cities. Moreover, the inheritance of rank and privileges of nobility was not confined to the eldest son, as in England, but was shared by all children. Hence, in effect, the "upper middle class" of Hungary, the conservers of national feeling and its leaders, are the scions of nobility, often without lands, property, or office.

#### THE GOVERNMENT CONTROLS MANY AGENCIES AND INDUSTRIES

Since railroads and street cars, swimming pools, restaurants and cabarets, hotels and even factories, are operated by the Government and patronage penetrates industries, one finds men and women of aristocratic lineage in unexpected places.

The Government controls even the travel agencies and the sight-seeing cars of Budapest. The megaphones are wielded by women and the interpreters and guides are women.

My guide was pointing out the beautiful homes on upper Andrássy Ut, where a tree-lined park with bridle paths cuts the broad avenue.

"My father," she said, "was the architect for those dwellings."

A little later we visited an art gallery. Some fine paintings bore small brass plates with the names of the donors. Several

were the same family name—which in Hungary is the middle name—as hers.

"Yes," she said, in answer to my question, "my father gave those to the gallery."

Her story, told with pride, not pathos, typified the post-World War change in Hungary.

"Certainly, I had to go to work; so did all my friends. We like it. If we had been told when we were schoolgirls that we should ever have to work, we would have thought we would be disgraced. I am a guide in summer and in winter I translate Hungarian and Scandinavian novels into English for a London publishing house. If I were the only one of our crowd who worked, I would be embarrassed, I suppose; but now one would be embarrassed at not working, unless, of course, she had children and worked in the home."

#### A MONUMENT TO 1,000 YEARS OF HUNGARIAN HISTORY

In 1896 Budapest boldly erected a monument to the millennium.

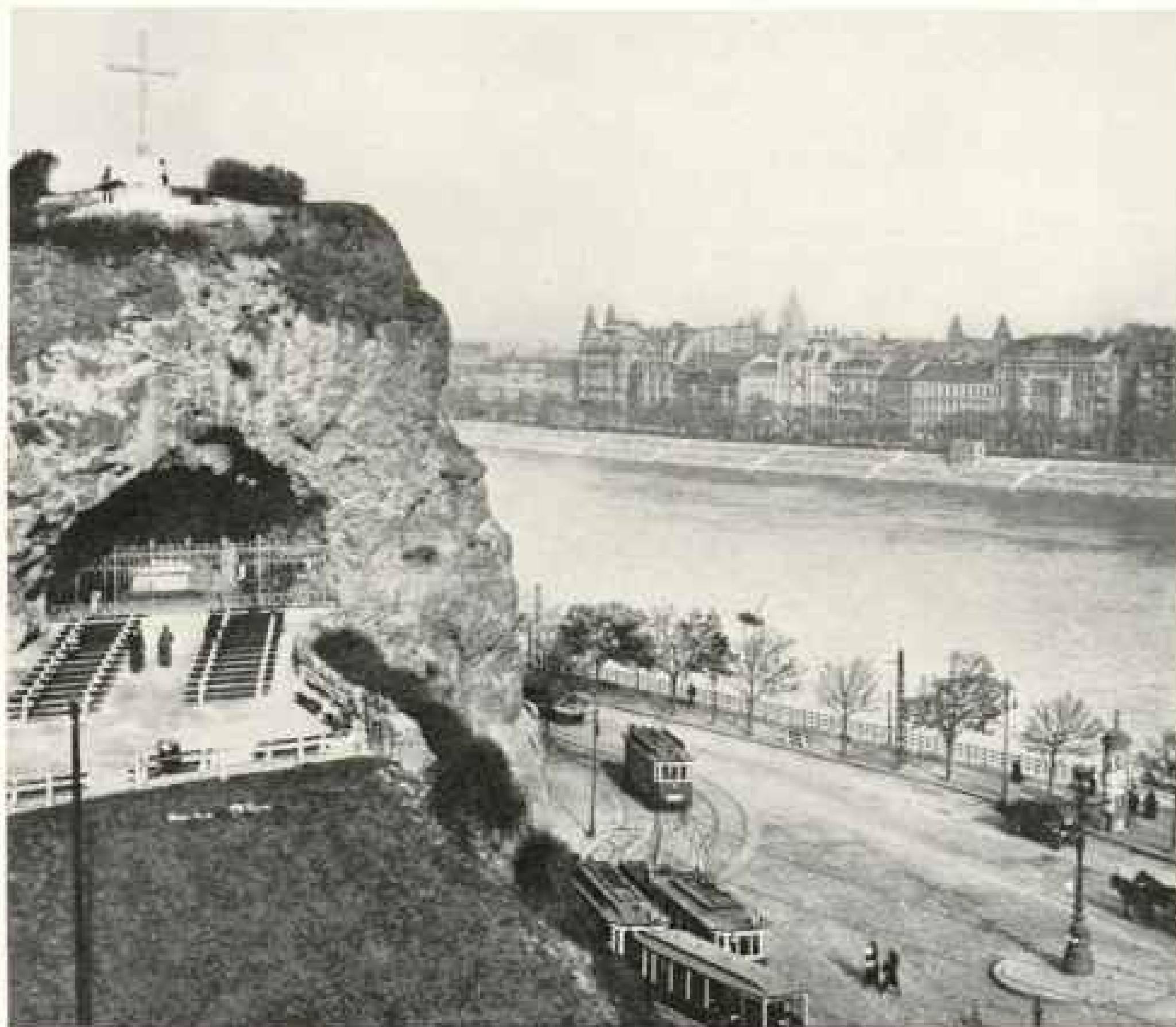
The millennium in question is the 1,000-year span since Arpad settled his fighting nomads in the alluvial Alföld. In the center of a graceful colonnade is a shaft towering more than a hundred feet, surmounted by a statue of Gabriel, who traditionally appeared before Stephen in a dream, offering him the crown of Hungary.

Set in the colonnade are statues of 14 Hungarian rulers, silhouettes of a national history that rivals the romance and color of early Scotland.

There is St. Ladislaus, whose firm rule compelled his people to settle the land and respect the property and person of their neighbors. There is the wise Koloman, who kept his country from being engulfed by Crusaders, and Andrew II, whose famous "Golden Bull" was the Magna Charta of Magyar nobles.

Bela IV, founder of Buda, and Leopold I, who, in 1686, saw the city restored after the Turkish occupation, are there; also, Louis the Great, whose campaigns ranged from the plains of Poland to the canals of Venice, while he made his own court the Paris and the Oxford of his time. Not portrayed is that other Louis—the Second—prematurely born, kept lying for weeks in the carcasses of freshly slaughtered animals, who kept a jester to swallow





Photograph by Melville Chater

A ROCK-HEWN CHAPEL ON ST. GELLÉRT HILL.

One may look from one's window in St. Gellért Municipal Hotel on Sunday mornings and see the services conducted in this cave shrine, often attended by rural visitors in their richly embroidered peasant costumes and high boots of many colors, with a tassel suspended just below the knee. St. Gellért Hill was named for a Christian martyr (see text, page 695).

mice and drink ink, lacked funds to pay his servants, and at times had to wear shabby shoes.

One gazes at the fine figure of Matthias and recalls his famous embassy to the Court of Charles VIII of France—300 comely youths clad in regal velvet, wearing heavy gold chains and precious stones, braids of pearls encircling their heads, mounted on 300 horses of uniform size and color. Or at Hunyadi, and pictures that mighty Balkan battle when a strange knight suddenly appeared among the hard-pressed Hungarians. His shield bore a black raven clutching a gold ring in its beak.

The weary troops marveled and rallied at his tireless fighting. The Turkish general fled in terror, the Moslem troops melted away, and impending defeat was

turned to glorious victory. No one knew the "raven knight"; to this day no one knows surely his lineage, but he became one of Hungary's greatest kings and all Europe mourned his death.

There is another monument, a monument to a figurative millennium, in Liberty Square. It was erected in 1921, after the brief, bitter experience of Soviet rule (see illustration, page 692).

This millennium is the day when Hungary hopes to regain her lost provinces, which the Treaty of Trianon awarded to Czechoslovakia, Austria, Yugoslavia, and Rumania. Four statues, at each corner of the peaceful square, portray the several lands to the north, south, east, and west—the lands which the Hungarian calls "our four Alsace-Lorraines."

# RAFT LIFE ON THE HWANG HO

By W. ROBERT MOORE

Author of "Among the Hill Tribes of Sumatra" and "Along the Old Mandarin Road in Indo-China," in  
THE NATIONAL GEOGRAPHIC MAGAZINE

*With Illustrations from Photographs by Léon Van Dyk*

THE Hwang Ho, or Yellow River, in north China, is one of the most extraordinary rivers of the world. Its disastrous flooding has cost the Chinese millions of lives and millions in wealth through the destruction of homes and farm lands, and because of this it has earned such titles as "China's Sorrow," the "Un-governable," and the "Scourge of the Sons of Han." At times it has changed its course over as much as 250 miles in a single flooding season. To-day it empties into the Yellow Sea north of the Shantung Peninsula, but before 1852 it debouched its loess-laden waters through a channel south of that peninsula.

It is the second largest river in China, yet in all its course, from its headwaters, high up in the Kunlun Range, in Tibet, all along its 2,500-mile path to the sea, it is not navigable for steamships or other deep-draft craft. Its course is alternately either too swift and broken by turbulent rapids or widens and becomes too shallow and filled with sand bars to allow the use of large boats.

But over some 700 miles of its course, as it winds through Kansu Province and along the edge of Inner Mongolia, from Sining to Paotow, plies an interesting raft traffic that has been carried on for centuries. Chinese literature confirms the fact that here the earlier Sons of Han 2,000 years ago were using sheepskin and oxhide rafts identical with those which one finds in use to-day.

## INFLATED SHEEPSKINS AND STUFFED OX-HIDES USED AS FLOATS

There are two types of rafts, one using as buoys inflated sheepskins and the other large oxhides which are stuffed with wool and then tied up to keep them water-tight. The sheepskin rafts vary in size, according to the use for which they are intended, ranging from as few as 12 or 15 skins on the small one-man rafts to as many as 500 in the large freight rafts. For the large oxhide rafts some 120 hides are used.

Before being used, the raw oxhides are treated on the inside with salt and oil to

preserve and waterproof them as well as keep them flexible. Raw hides cost about \$10 in the local currency (\$2.50 gold) and are considered about twice as valuable after they have been properly prepared. Consequently, the large freight rafts are often valued at as much as \$600 gold, but the hides are useful as buoys for three years and are then sold in the Paotow market for shoe leather.

Raft-making is a comparatively easy task. To a simple framework of poles lashed securely together are fastened the hides or sheepskins. Even the stuffing of the hides with Tibetan wool is a simple process, but when it comes to inflating 500 sheepskins on one raft before a voyage, that is a job! Without doubt, the industrious raftsmen can make strong claim for the record in the windiest of all ship launchings!

## MOSLEM CHINESE CONTROL THE RAFT TRAFFIC

The navigation of the rafts in the down-river trade is entirely in the hands of the Moslem Chinese, who form a considerable percentage of the population of the Kansu district. Life is not easy on the rafts, with all the contrasts of heat and cold and the strenuous labor involved in manipulating the clumsy transports through the rapids or in freeing them, once they have stranded on a sand bar; but these hardy raftsmen are a happy and friendly lot.

The great, irregular, S-shaped portion of the course of the Hwang Ho through Kansu and Mongolia, over which the rafts operate, is carved for a large part of the way through the extensive loess-plain region.\* Here and in the Wei Valley, whose tributary waters are gathered unto the Hwang Ho about 40 miles west of Lanchow, was the cradle of the Chinese race; but through the centuries great quantities of loess, or sandy loam, have been blown across these lands, submerging numerous cities and making desert many wide areas which were once fertile farming districts.

\* See "Where the Mountains Walked," in the NATIONAL GEOGRAPHIC MAGAZINE for May, 1922.

This yellow loess, carried in suspension in the water, has given the river and the Yellow Sea their names.

To-day there are only a few fertile localities in the Hwang Ho Valley, such as those around Lanchow and Ningsia. These are intensely cultivated oases that have been kept productive through irrigation, and in their districts rafts carry on considerable local transport of vegetables, dates, watermelons, and grain to the city markets. The long-distance freighting on the large rafts, however, is largely devoted to transport of quantities of wool, skins, hides, and other produce of the Tibetan region down to the caravan center and railhead village of Paotow, whence these articles of commerce can be sent by rail to Tientsin and ultimately find distribution to world markets.

The majority of the large cargo rafts start from Sining, some distance upstream on the Sining Ho, a tributary of the Hwang Ho; but to these are also added other cargo which leaves from the important caravan center of Lanchow, that lies on the historic "old silk road" between China, Turkistan, and the West.\*

The rafts can be managed with comparative ease as they float downstream, but their great resistance and their clumsiness make it practically impossible for them to be poled upstream, even in quiet water. They are taken apart at the end of the voyage and the skins are carried back overland to the place of departure.

#### RAFTS ARE ASSEMBLED IN THE SPRING

In the springtime, as soon as the ice has cleared from the river, which is frozen from the end of November to the beginning of March, the rafts are assembled.

Oxhide buoys stuffed with wool no doubt originated through the scheme of crafty raftsmen to "bootleg" wool past the customs officials and thereby escape duty. To-day, although the authorities know that it will be sold at the end of the trip, the wool still rides on down to Paotow, escaping all of the tolls and duties imposed on the other cargo.

Cargoes loaded, farewells said, the rafts push off on the first of the two journeys that are made each year. They slip past water wheels that line the river banks,

\* See, also, "The Desert Road to Turkestan," by Owen Lattimore, and "The World's Greatest Overland Explorer," by J. R. Hildebrand, in the NATIONAL GEOGRAPHIC MAGAZINE for June, 1929, and November, 1928, respectively.

which are raising water to the thirsty fields in the Lanchow region; then past the city's walls, and under the only steel bridge that spans the river for many hundreds of miles.

#### JOURNEY'S END AT PAOTOW

Some fifteen miles below Lanchow, where the village of Hsiashuitsu is perched on a rocky cliff, the current is swift and all hands are called to man the large tillers, as the rafts head down through the granite gorge, where the river makes an abrupt curve and then follows a northwesterly course.

All the way downstream to Chungwei the raftsmen must navigate through rapid after rapid. Below Chungwei the course widens as it enters the Ordos, and, except for the passage through the fertile district around Ningsia, becomes a monotonous passage through desolate yellow wastes all the way to Paotow.

The great loop around the Ordos Desert is a slow, grilling voyage during the summer months, when the sun throughout the day beats down relentlessly in a blinding glare on the water and on the shimmering sand banks.

The raftsmen share the tasks of guiding the craft, repairing punctured skins, releasing the ungainly floats when stranded on sand bars, and cooking their meager meals on deck.

After weeks on the way, everyone is glad when the rafts are brought safely to Paotow, the journey's end.

The caravan town sprawls on a barren, dun-colored hillside of sand, some little distance from the river. Low, squat adobe and brick buildings line the narrow streets and winding alleys that find outlet through the guarded gateways of the rambling city walls. Caravansaries and homes are concealed behind closed gateways and high earthen walls.

Here, in the bazaars and in the cases of itinerant venders, the raftsmen find many oddments of Western produce for which they can bargain to take back to their families. Trains, that come whistling out to this outpost, bring many things from Tientsin and Peiping matts that are not readily available farther inland.

At last, when all of the cargoes have been turned over to the wool and hide merchants, the rafts are taken apart and the hides folded up and packed on donkeys or camels for the long journey home by caravan.



"THE WATER'S FINE" AFTER HAVING POLED A RAFT ALL DAY

A refreshing swim in the muddy Hwang Ho near Lanchow. One of the inflated sheepskin buoys, loosened from their raft, is being used as a float.



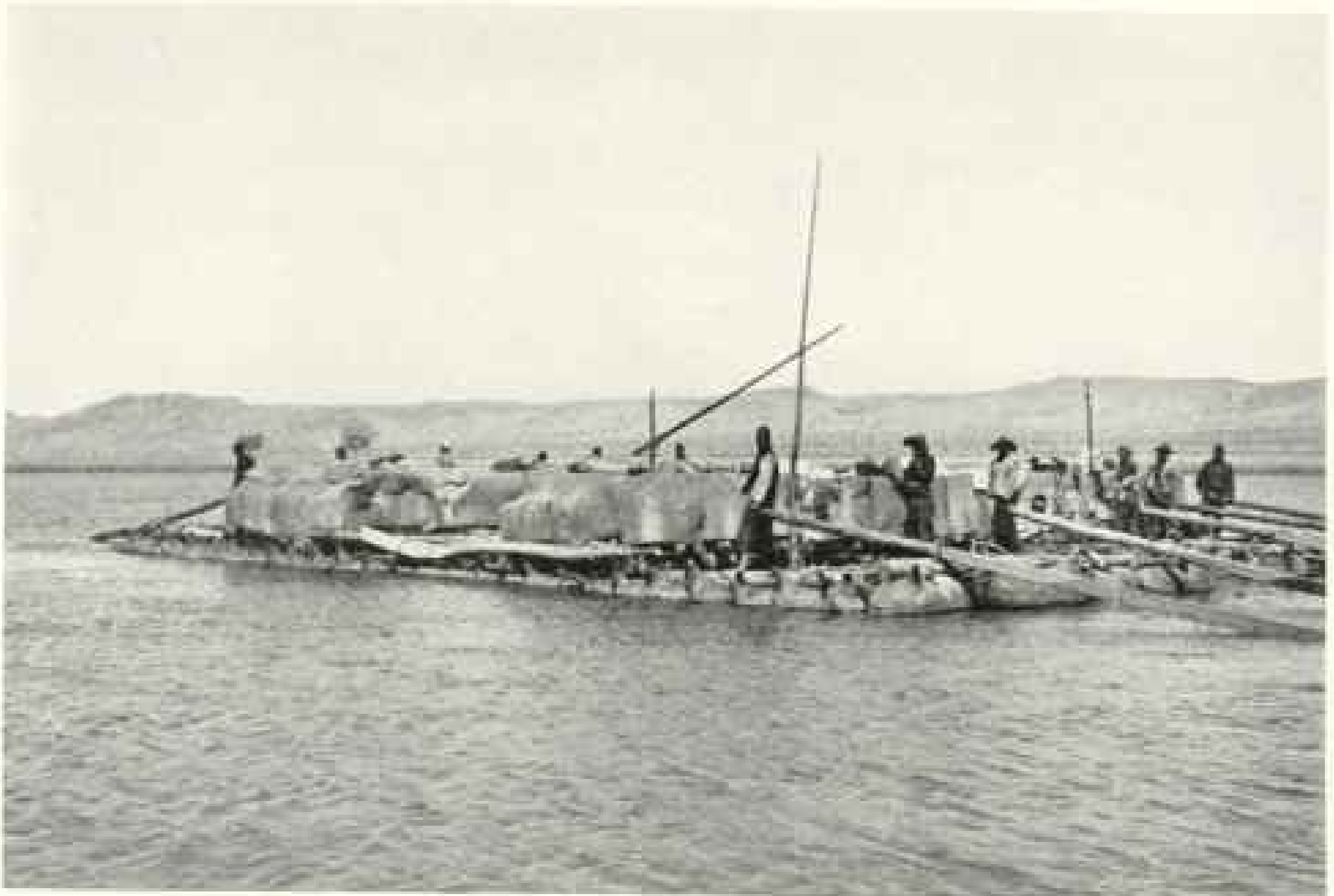
BLOW HARD!

It is a long, breath-taking task to inflate all of the sheepskins, even on this small raft. Some of the larger freight rafts, however, have as many as 500 skins bound together.



TYING THE LAST KNOT ON A NEW OXHIDE BUOY

On many of the larger rafts oxhides are used instead of sheepskins, but instead of being inflated they are filled with wool and then tied up to make them water-tight.



RAFT TRANSPORT IS TEDIOUS IN MANY PLACES ON THE HWANG HO

The large freight rafts of oxhides move slowly through the shallow waters, where the river widens, and, having no protection from the glaring sun, the trip through the Ordos Desert region is extremely uncomfortable in summer.



RAFTSMEN MUST BE APT WITH THE NEEDLE

Whenever one of the sheepskins is torn in going through rapids or grounding on sand bars, the hole is sewed up and the hide reinflated. Skins can be used three seasons.

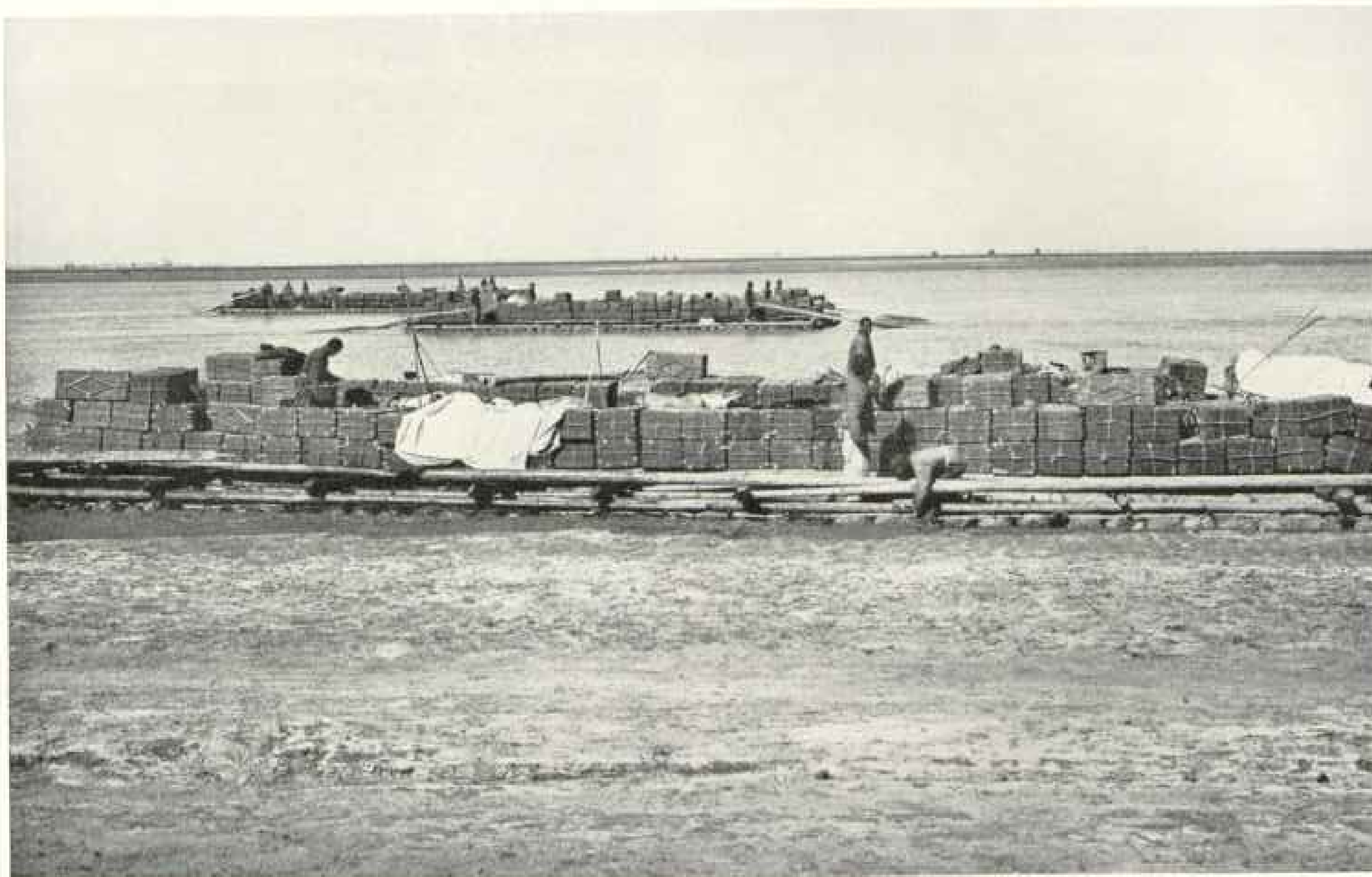


TRANSPORTING DATES TO LANCHOW

Small rafts usually accompany the large freighting rafts, such as this one, so that if it should happen to strand on a sand bar the small craft can reach shore and obtain help to get the cargo floated again.



SHEEPSKINS MUST BE DEFLATED AND WOOL REMOVED FROM INSIDE THE OXHIDES FOR THE RETURN JOURNEY OVERLAND



MAMMOTH FREIGHT RAFTS ON THE HWANG HO BETWEEN SING AND PAOTOW

Besides the legitimate cargo that is carried, considerable wool is brought downstream to Paotow in the oxhide buoys, but this wool has no duty or tolls levied on it in passing the local customs, as is required on the other goods.





A ONE-MAN RAFT



HIS CRAFT GOES AGROUND



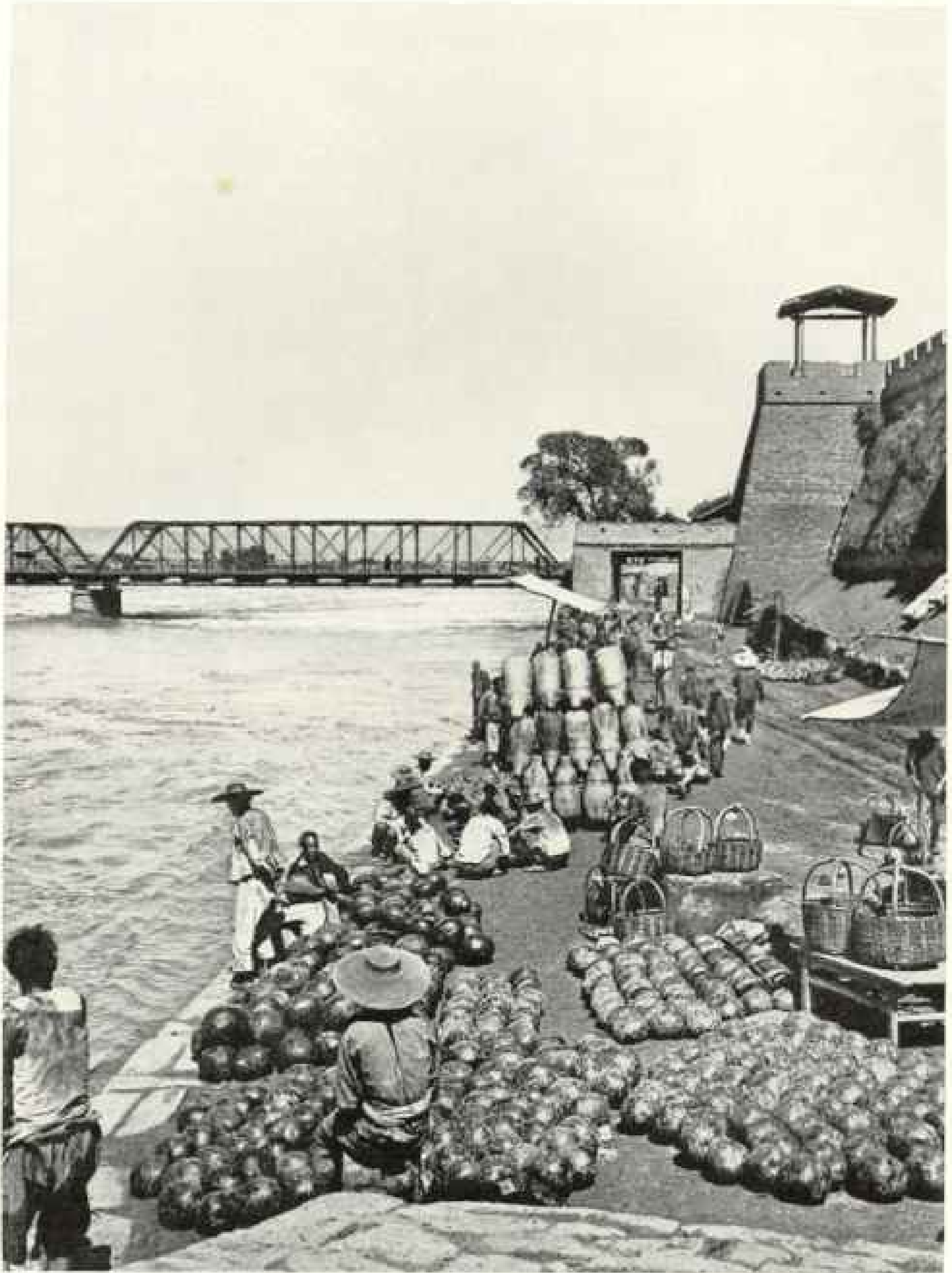
WHAT? A PUNCTURE?

Inspecting several "flats" before setting out on a new trip downstream.



THESE RAFT CRUISES OFFER FEW LUXURIES.

One man prepares a meal for the crew while another reinflates a skin.



MORNING MARKET IS HELD IN THE SHADOW OF LANCHOW'S WALLS

Some of the watermelons on sale were brought to market on the raft that stands upright on the shore near the center of the picture. The bridge in the background is the only one that spans the Hwang Ho for many hundred miles. It was built in 1909, under American supervision, and carries the heavy traffic of the "old silk road" of western China (see text, page 744).

## SURVEYING THROUGH KHORESM

### A Journey Into Parts of Asiatic Russia Which Have Been Closed to Western Travelers Since the World War

BY LYMAN D. WILBUR

*With Illustrations from Photographs by the Author*

**F**EW travelers are permitted in Soviet Turkistan and fewer still reach Khoresm, that almost inaccessible part of the territory extending south from the Aral Sea along the Amu Darya Valley. So isolated is the region that it lay for centuries in virtual oblivion, until the present Russian Government, interested in increasing cotton production, found its soil and climate well suited to cotton-growing and began considering means of bringing water to the land.

As an engineer under a two-year contract with the Soviet Government, I had the opportunity to travel through this entire area and to study several proposed irrigation projects. The survey party of which I was a member included, besides Russian engineers, two other Americans, Arthur P. Davis, from 1914 to 1923 Director of the United States Reclamation Service, and V. V. Tchikoff, of Russian birth. It was our purpose to investigate possibilities of reclaiming great tracts of rich, but spasmodically watered, country.

We began the journey at Tashkent, went southwest to Chardzhui, on the Amu Darya; followed the river by boat to Khoresm, far to the northwest; made our survey of Khoresm, and finally took ship across the Aral Sea to Aralskoe More, whence we returned overland to Tashkent (see map, page 754).

#### CARRYING OUR OWN COMMISSARY

The start was made on a sunny afternoon in the middle of August. Our private car was in the center of a combination freight and passenger train on a siding at the Tashkent railway station, and we put our personal luggage aboard under the curious gaze of native Uzbeks and Russian loiterers. Two compartments in the car had been filled with food and cooking utensils, for it was a poor country we were to travel through and there would be little food for us to buy.

Having said good-bye to our families at home, because there had been no room in the one available automobile to bring them to the station with us, Mr. Davis and I were surprised, upon looking from our car windows, to see our wives on the station platform waving wildly toward us. They had come to see us off in an *izvoshchik*, one of those queer little cabs with a single seat, too wide for one person and too narrow for two (see page 755).

The train was due to start, but for some unknown reason it was delayed, as usual. During a two-hour wait we examined the car. It was a "soft-seat" coach, with places for 20 people in two-person and four-person compartments. Since there were only ten of us, all but two could have lower berths. The car apparently had been thoroughly cleaned, and the spotless canvas covers on the berths led us to hope—vainly, we learned later—that the usual small inhabitants of beds in oriental countries were absent.

Mr. Davis had the first compartment, I the second. Then followed Mr. Tchikoff; Mr. Kainarsky, our interpreter; two young Russian engineers, only slightly past 30 years of age, who were in responsible charge of the million-acre irrigation projects that we were to investigate; two other Russian engineers; Sieb, the young Uzbek cook; and a purchasing agent. The last named was necessary because of the red tape and scarcity of food and materials, which occasioned great difficulty in buying supplies in the Soviet Union.

Each person carried a lunch basket filled with such delicacies as he chose to round out his menu and to serve as real sustenance in case of failure of the culinary department, which could not always operate *en route*.

There were no electric lights in the car, and not long after the candles were lighted we turned in, to awaken early the next morning, as the train was entering the pass



Drawn by C. E. Riddiford

#### WHERE SOVIET RUSSIA HOPES TO RECLAIM DESERT LANDS

Through the formerly fertile valley of the ancient Oxus, now the Amu Darya, the author and a group of fellow engineers traveled to survey the possibilities of restoring the region to cultivatable areas through irrigation. The party went by rail from Tashkent to Chardzhui, thence by motor boat down the Amu Darya to the Aral Sea, with numerous side excursions into the contiguous desert regions.

between Dzhizak, on the Golodnaya Steppe, and Samarkand, in the Zeravshan Valley. Through this pass the railroad follows a riverlike canal, which carries water more than 60 miles, from the Zeravshan River to Dzhizak, in another watershed. During the night the train had passed over the Golodnaya (Hungry) Steppe, so named because of its desolate character.

#### TAMERLANE'S WELLS ARE STILL USEFUL

On the steppe and in the Zeravshan Valley were a number of curious, ancient-looking brick domes. These, we learned, were *sardobas*, or watering places, built by Tamerlane in the 14th century, when his invading armies swept through the pass

and across the steppe. The climate was so arid that he found it necessary to establish them in order to make travel possible.

The domes cover wells, or cisterns, filled during the spring freshets, thus keeping the water clean. To this day they are in excellent condition.

About noon we entered the irrigated oasis of the Zeravshan and soon were in Samarkand. Here our cook went to the station restaurant and purchased hot soup and meat for us. It was forbidden to prepare meals while the train was in motion and there was no restaurant car.

During the remainder of the day the way led through the fertile valley of the Zeravshan. Pauses at the stations were



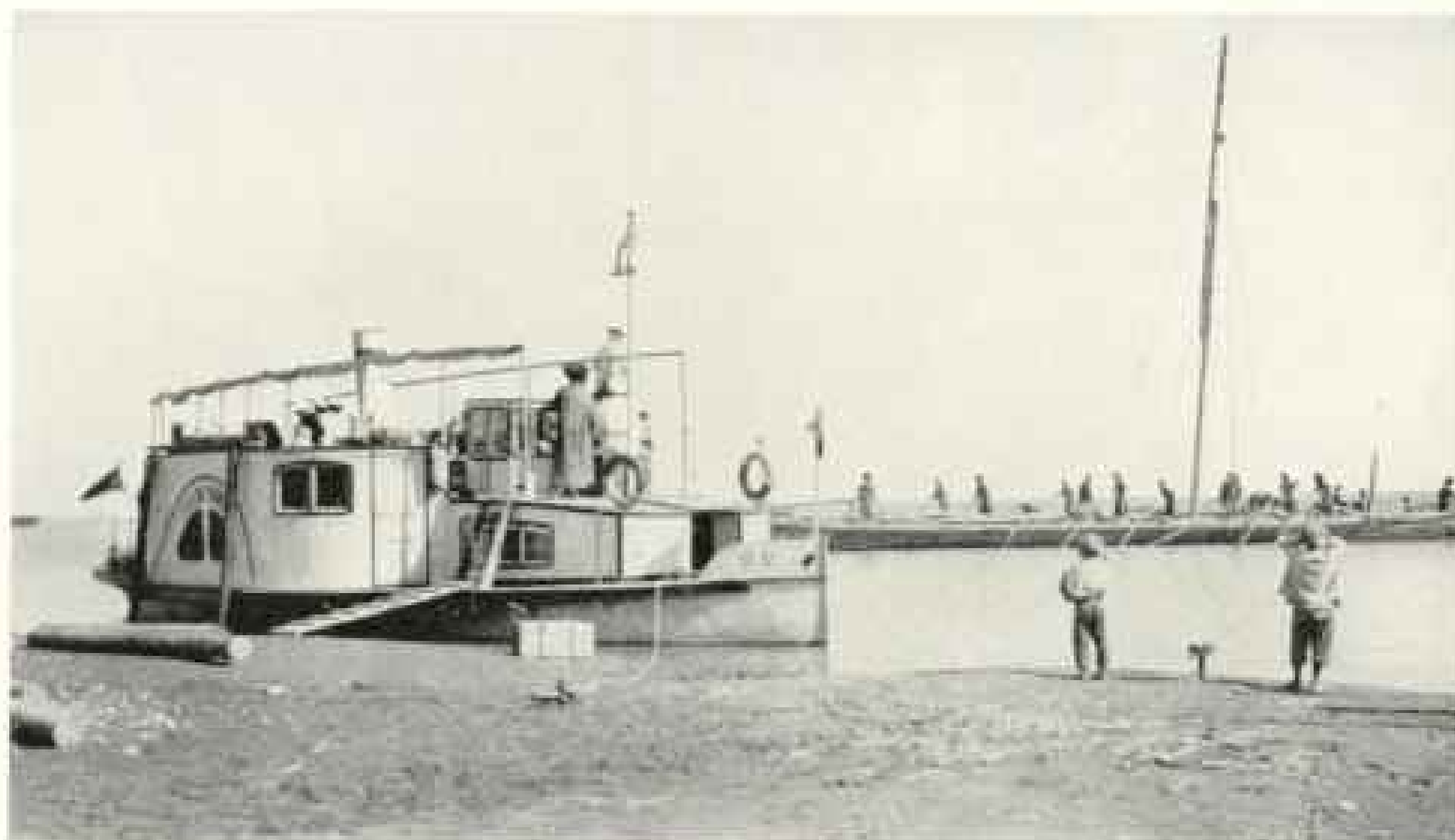
TRANSPORT THAT HAS SURVIVED THE REVOLUTION

The *izvozhchik* was the Russian cab of the old régime. The narrow back seat is wider than necessary for a single person and too narrow for two to sit in comfort. Although the vehicle is designed for one horse, the owner of this one displays his prosperity by having a second animal attached to an outrigger. It is about as useful as an extra cylinder without a spark plug (see text, page 753).



STYLES IN WOMEN'S CLOTHING SHOW A WIDE RANGE IN KHORESM

In some of the towns elaborate headdresses and brightly colored or embroidered robes are worn; in others the feminine apparel is exceedingly plain.



THIS STURDY LITTLE SIDE-WHEELER NAVIGATES THE AMU DARYA

The author and his party boarded the *Chaiha* at Chardzhui. It was powered with a 20-horsepower tractor engine. Quarters forward housed the crew of four men and the stern cabin had accommodation for 12 persons (see text, page 757). Note the spliced mast of the freight boat in the background.

long enough for us to draw hot water for tea from the boilers which are to be found at all Russian stations, or to run to the bazaars and buy apples, pears, melons, and the delicious Katta-Kurgan grapes.

American growers would do well to procure and cultivate this grapevine. Its large, green fruit is extraordinarily sweet, and the tender skin melts in one's mouth.

The next morning the train passed Bukhara, in the Karakul Oasis, source of the fur from which are made the curly gray\* coats so popular in Europe and America, and before noon we arrived at Chardzhui, on the Amu Darya River, where we were to embark for Khoresm.

Our plan called for an inspection of the river bank protection works above the 25-span railroad bridge which crosses the Amu Darya at this point.

After the inspection we called on the manager of the air transport service which operates a line between Chardzhui and Tashauz, in Khoresm, hoping to obtain a plane for an aerial survey of a vast valley, now desert, but projected for irrigation. To

\* See "The Land of the Lambkins, an Expedition to Bokhara, Russian Central Asia, to Study the Karakul Sheep Industry," by Robert K. Nabours, in the NATIONAL GEOGRAPHIC MAGAZINE for July, 1919.

cover this area by land would be impossible because of its extent and lack of water.

Our ardor was somewhat dampened when we were told that recently a Russian military plane had been forced down in the region and the aviators killed by bandits; but we still hoped to make a flight over the irrigated portions and to use the plane to return to Chardzhui. The return trip up the river against the swift current would take eight or ten days; by air it would be a matter of about three hours.

#### PLANES ARE USEFUL—IF ONE CAN GET THEM

In this country the airplane should come into its own; but, unfortunately, Government officials have a prior right to passage. A story is told of one engineer who procured reservations every day for six days only to be displaced by an official each time. Finally he gave up and went by water.

The air transport officials, extremely courteous, promised us cooperation, and told us we might have for our return trip from Chimbai the choice of a Russian plane or one of two German Junkers monoplanes with underslung wings. The first named was selected because it allowed better visibility, with its single wing above the fuselage. Though Chimbai is near the Aral



A FASCINATED GROUP OF CHIMBAI SPECTATORS WATCHES THE "CHAIKA"

Sea, beyond the terminus of the line, we were assured that a landing field existed there, and that we should have only to send a telegram when we were ready for the plane to come for us.

Rather than fight the mosquitoes on the boat, we slept in the car at the station that night, and went down early next morning to the place on the river bank that served as a transfer point between river and rail. The bank was covered with lumber, cotton, oil barrels, and other merchandise, cargo of the large, open native boats that crowded the river.

Several of the native craft were loaded with loose piles of licorice root, a commodity which Khoresm sometimes exports to the United States. Across a branch of the river an earthen dike was being built by volunteer laborers on holiday from some office.

What attracted us most was the neat little motor boat, the *Chaika* (Sea Gull), which was to be our home for the following month. It was new, having made only a half dozen trips. The clean, oilcloth-covered berths made us feel certain that we should sleep comfortably and undisturbed.

#### NATIVE CRAFT RESEMBLE OVERGROWN ROWBOATS

Along the shore was a variety of craft—several motor launches similar to ours, five small, tractor-powered dredges under

construction, one large bucket excavator dredge, and a number of 100-foot native boats that resembled overgrown skiffs, with single masts and large square sails. When they run aground, the crews, with clothes wrapped around their necks, jump overboard and push and lift them off the shoals (see pages 756, 764, 776).

The masts are unhewn tree trunks, and some of them are spliced, the splices being made by setting the butt of the upper trunk in the crotch of a multiple fork at the top of the lower. We watched one being unstepped. Its shrouds and stays removed, it was allowed to fall overboard. When there is little wind, the boats are hauled by the men from the towpaths, or poled where the water is not too deep (see page 762).

A Ford truck brought our baggage and food supplies alongside the *Chaika*. By noon we had everything aboard, the engine was started, and we shoved off. We were on our way down the Amu Darya, a river three times the size of the Colorado in volume and just as muddy. During the summer flood season it spreads to a width of more than two miles in places, and at its narrowest is 1,000 feet wide and 60 feet deep.

For several hours we observed the native irrigation along the shores. Everywhere were demonstrations of the terrible power the river wields as it meanders back and forth, cutting away its banks, destroying





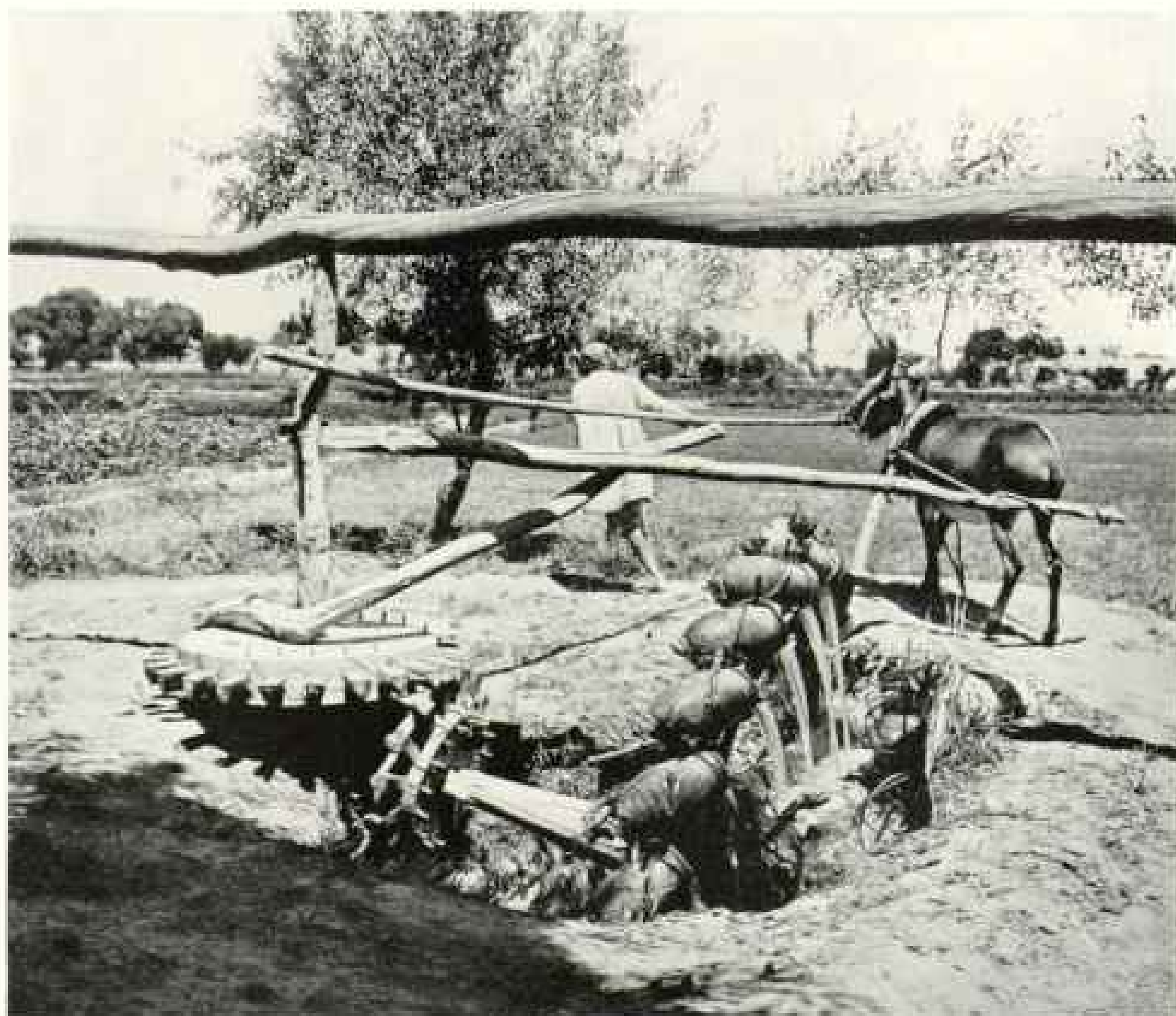
THE NATIVE KHORESM BRIDGE WAS NOT BUILT FOR TRACTORS

Only in recent years have the machines of modern progress to some extent displaced the camel caravans and horse-drawn vehicles that for centuries have been Central Asia's principal means of overland transport.



AN UZBEK MAN AND A RUSSIAN WOMAN PERFORM MANUAL LABOR SIDE BY SIDE  
AT CHARDZHUI HARBOR

A constant battle must be waged with the Amu Darya to keep it from cutting its way around the ends of the great steel railway bridge which spans the river here (see text, page 756).



WATER FROM THIS NATIVE PUMP WILL IRRIGATE ABOUT SEVEN AND ONE-HALF ACRES. Each such *chigir* will lift 100 gallons of water a minute, as the patient donkey turns the wheel (see text, page 766).

farms and farmhouses. Against this force the natives are helpless, for their only tool is the shovel.

Beyond the irrigated valley the stream cuts through a vast expanse of rolling sand dunes, on the right the Kizil Kum and on the left the Kara Kum. For almost two days our view of this expanse of sand was unbroken except for Dargan Ata, a small oasis of 5,000 irrigated acres midway between Chardzhui and Khoresm.

In places the sand dunes extend to the water's edge. Elsewhere there are cliffs from 10 to 30 feet high on one or both sides, but most of the way a narrow strip of marshland extends along one shore.

A number of motor boats slowly pushing their way upstream were passed, those carrying passengers loaded almost to swamping. At dusk we tied up to the

bank. Navigation at night would be dangerous on account of the shoals.

#### CLEAN BERTHS BELIE THEIR APPEARANCE

About midnight I was awakened by Mr. Davis's flashlight. He was searching his deceitfully clean-looking berth. It was not long before the rest of us were doing likewise. Thereafter most of the party decided to sleep on deck, on the cots always carried for such emergencies on our travels in Turkistan.

The next morning, meeting a mail boat coming up the river, we hove to while one of its passengers, Mr. Poliakoff, an engineer in charge of dredging, was persuaded to join our party. A Russian and I took advantage of the pause to go ashore and investigate the ruins of a queer-looking building or fortress near by.



THE "ARABA" IS A POPULAR VEHICLE IN SOVIET TURKISTAN

These high-wheeled carts, set wide apart and well studded, were the only land vehicles used in Khoresm until the Russian conquest and still are the principal means of transportation in an extensive region (see, also, text, page 765).

After a difficult struggle through the swamp to higher ground, we felt well rewarded for our effort, for the structure was very old. Its outside wall, of burned brick set in extraordinarily hard mortar and showing interesting designs, formed a square with only one opening, an arched door or gateway leading into a courtyard. Only a stray dog barked protest at our approach, and he slunk away as we passed through the portal.

The brick-paved courtyard, littered with dirt and bricks fallen from the walls, was surrounded by many small, stall-like rooms. We climbed up a pile of debris to the roof.

Several natives, who had come up with their donkeys while we were exploring, gazed curiously at us as we took a short cut back to the boat. Probably they enjoyed a laugh at our expense, for in our haste we floundered through some weeds covered with an oily substance that well-nigh ruined my brand-new riding breeches, tailor-made in Tashkent from rather poor but expensive cloth.

Early in the afternoon the *Chaika* passed a group of three table-topped hills called

by the natives "Three-Legged Pot," and came by a sharp right bend in the river, between rock cliffs about 1,000 feet apart, to the place known as Dool Dool. A quaint native legend purports to explain the presence here of two small mounds, one on each side of the stream.

#### THE LEGEND OF DOOL DOOL.

Many years ago, the story goes, there lived a giant holy man, Dool Dool, leader of a large army. While seated on the banks of the Amu Darya, he was able to reach Khiya with one hand, to take rice and salt, and Bukhara with the other, to take butter or oil to make *pilaf* (a favorite rice dish) for his soldiers. The food was cooked over the three hills. Angered by the thefts, the Emir of Bukhara set out with his host to attack the giant. He succeeded in destroying the army, but Dool Dool mounted his horse and with one leap hurdled the Amu Darya. The mounds are the shoe-marks of his horse.

Some distance below Dool Dool the *Chaika* struck a sand bar with such force as almost to throw us off our feet. We



REMOVING SILT FROM A CANAL, IN KHORESM

Large quantities of sand are carried into the canals every year, requiring so much effort on the part of the population to keep them clean that they cannot properly care for their land.

wondered for a moment if this was to be the end of our trip, but no damage was done and we were soon headed downstream again. Darkness caught us only a few miles above the irrigated region of Khoresm and Tuya Muyun, where a diversion for the irrigation of 750,000 acres was contemplated.

After an inspection of the Tuya Muyun site, we continued down the river past the Holy Island, a small wooded bit that has withstood erosion for so long that traditions have sprung up about it.

A few miles below Tuya Muyun is a volcanolike mound called Genghis Khan Mountain. According to native lore, Genghis Khan, while on the road to conquest, ordered each of his soldiers to bring a hatful of earth and in that way to build the mound. Upon his return he had a similar mound built, and by comparing the sizes of the two estimated his losses in warriors.

#### IRRIGATION GOES ON UNDER DIFFICULTIES

The region below Tash Saka, a downstream alternate to the Tuya Muyun diversion site, is well suited to cotton-growing; but water, with the primitive irrigation sys-

tems now in use, cannot be delivered to the land early enough in the spring for this purpose. The bottoms of the present canals are below high stages of the river, but above low stages; thus the amount of water diverted depends upon the river stage, which is high only in summer. A large amount of silt is carried into the canals every year, and the farmers must devote so much time to clearing it away that they cannot properly care for the land.

The Soviet Government plans to put in modern engineering structures, lower the canals enough to permit the diversion of water early in the spring, and install equipment to keep the ditches clean. Two modern dredges are now in operation, but thus far little progress has been made toward the solution of the irrigation problem.

Our studies of the projects began in earnest with a ride of about 15 miles through the sandy desert and irrigated oases, on horses so small and slow that they required constant prodding to keep moving. It seemed incredible that no better mounts were obtainable in the country noted for its famous horsemen in Tamerlane's time (see illustration, page 778).



ONE OF THE NEW IRRIGATION CANALS IN SOVIET TURKISTAN.

All of the old canals are constructed in sinuous lines, and when the Russians first laid out straight ones the natives refused to work on them, saying that the water would never run in a straight line (see text, page 766).

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RUIN RESULTS WHEN THE AMU DARYA CHANGES ITS COURSE.

Not even the Missouri has the destructive appetite of this stream, which eats whole farms in a day, despite frantic labor of the natives (see text, page 757).



BETWEEN SHIFTING DUNES AND RAVENOUS RIVER, IRRIGATED TRACTS OCCUPY A PRECARIOUS POSITION

High winds carry sand from the edge of the Kara Kum to cover parts of the watered land, and the Amu Darya gnaws at other portions (see, also, illustration, page 762).



A BOATLOAD OF COTTON STARTS ON ITS JOURNEY TO TEXTILE MILLS NEAR MOSCOW

Cotton is grown extensively on irrigated lands southeast of the Sea of Aral, and it was to survey the possibilities of extending the area available for its culture that the author and his companions were engaged for the Khorasm Expedition.



TURKOMAN BOATMEN PATCH AND REPATCH THEIR SAILS

Large squares of cloth rigged on masts fashioned of unhewn tree trunks furnish motive power for the skifflike cargo vessels (see text, page 757; also, illustration, page 776).



LIKE THE TIBETAN YAK, THE FAT-TAILED SHEEP OF TURKISTAN HAVE MANY USES  
They are the principal source of meat, wool, and milk throughout the country.

Some of our saddles, made of leather, resembled those used in America; others were of the Cossack type, leather-covered wooden frames surmounted by straw-stuffed leather pillows. The carved wooden saddles of the natives, with their brightly painted surfaces, looked more beautiful than comfortable.

The natives, as a rule, are short and ride with bended knee. As a result, it was practically impossible to get stirrup straps long enough for a tall American.

We passed two graveyards, one of them, on the outskirts of Pitnyak, of immense proportions. Large mausoleums, of attractive design and more pretentious than most of the native houses, contain the remains of wealthy or holy men; but the average tomb is of mud, about three by eight feet, and built above the ground, with slightly pointed arch. Beside many of the graves were poles to which red or white rags were tied. The red flags signified that the occupants met violent death, and the white that they died from natural causes.

In the roads were ruts the bottoms of which showed uniformly spaced indentations. The cause of these marks puzzled us until we saw a Turkoman *araba*, a two-wheeled, horse-drawn cart with six-foot

wheels studded with large-headed iron nails. The spokes are flat finished boards, wide at the outside but tapering toward the hub. These arabas are finished much better than most of those used by the Uzbeks, and many are fancifully carved; but despite the large wheels, which are needed for crossing canals, they carry pitifully small loads (see page 760).

It was bazaar day in Pitnyak (each town has its weekly market day), and the town was swarming with natives in their robes and lambskin fur hats, which are worn in winter and summer alike. Many donkeys were tethered near the markets.

We paused for tea and fruit. The former was made from water dipped from an open reservoir in the yard, into which a small irrigation ditch emptied. Fortunately, the water for the tea was boiled and therefore safe.

Our hosts and hostesses, whose number seemed legion, were very courteous and obliging. The women wear no veils at home or on the street. Their loose gowns, extending to the ground, usually look dirty, for they are made of easily faded material and washed in muddy river water.

The fields were dotted with round platforms of clay about three feet in diameter





BEING SHOT BY THE CAMERA WAS A NEW AND TERRIFYING EXPERIENCE

However, a lump of sugar apiece reassured the boys and restored their good humor. Men of Karakalpak are known as "black-caps," from their large black sheepskin headgear.

and five or six feet high. Criers stand on these mounds to scare away the birds.

#### CRUDE PUMPS LIFT WATER TO THE LAND

On a 10-mile trip down one of the canals by rowboat we examined a *chigir*, or native pump, which consists of a number of tile jars attached to the rim of a vertically mounted wooden wheel, rotated through wooden spur gears by a blindfolded camel or a donkey treading a circular path. Most of the irrigation in this region is accomplished by means of water raised by these crude contraptions (see page 759).

Two or three miles from the canal which we were inspecting is the town of Khazar Asp, with its high mud wall built on top of a ridge formed by the ruins of former mud walls. Much of the present town, however, is outside the barriers. Our efforts in one of its covered streets to take pictures of the people and the stands laden with grapes, plums, apples, and peaches were hampered by crowds of curious men and boys, who closed in around us with their immense woolly hats.

On our return to the boat a fish soup was served, and enjoyed—by those who liked fish soup.

We took an interesting trip across the Amu Darya to the Shura Khan Canal, the upper part of which had been washed away by the river. A new head section was under construction, and as we floated down the stream in rowboats, the Russian engineers told of the difficulties in getting the Turkomans and Uzbeks to work on it.

#### NATIVES REFUSE TO WORK ON STRAIGHT CANALS

The natives, believing that the water would refuse to run if it could "see itself," had been accustomed to dig their ditches with a sinuous alignment, even in perfectly flat country. When Russians laid out straight canals the natives shook their heads and refused to work. Not without much persuasion and many desertions by the native workers was the first undertaking completed and the proposition demonstrated that water will run in a straight line (see, also, page 762).



A PRIMITIVE WATER WHEEL FURNISHES POWER FOR A GRISTMILL.



MUD FURNISHES MATERIAL FOR HOUSES AND FENCES IN KHORESM.

The walls are smoothly finished and durable. At the right is a field of the sorghum cane called *jagara*, one of the principal crops of the country.



A KHORESM IRRIGATION OFFICIAL, IN HIS ROBES OF OFFICE  
Fancifully carved wooden pillars, mounted on stone pedestals, characterize the architecture of public buildings in this region.

Much of the canal is built through sand, which blows into it and rapidly fills it up. Attempts are being made to end this difficulty by erecting woven reed retaining walls and by flooding the sands to encourage the growth of rushes.

A suction dredge was at work on one section of the stream, and not far away 2,450 natives, varying in age from small boys to very old men, were working on another. In striking contrast to the modern dredge was this mob, pecking away with small shovels that held hardly a handful of earth.

At Turtkul, capital of the Karakalpak Republic and once a military post, from which the Tsar's agents watched the nomi-

nally independent Emir of Khiva, Comrade Zalmanoff, the Russian Governor, received us in a large room with a high ceiling. He sat at the head of a long table covered with the usual red cloth, behind him a bust of Lenin, with a telephone beside it. After an exchange of compliments, we were assured of every assistance possible. The Governor was soft-spoken and usually ended his remarks with a smile. He wore a black shirt and, like most of his Bolshevik fellows, was smooth-shaven, face and head.

From Turtkul the *Chaika* took us across the river and down the Shavut Canal to New Urgench, the capital of Khoresm. The canal cut through flood-protection levees, and large mounds of earth were piled on its banks, ready for use in shutting out the water. It is closed from the first of November until the mid-

dle of April each year.

#### KHORESM COOKERY WOULD DELIGHT EPICURES

In a Renault desert car, one of the half-dozen automobiles in Khoresm, we rode from the dock to the Government Irrigation Department Office, where we were entertained at dinner. What a feast that was, after our monotonous diet of bread, rice, mush, melons, and tea!

With appetites sharpened by an hour of waiting, we gathered around a long, narrow, red-covered table laden with vodka, wines, lemonade, black bread, canned fish, tomatoes, cucumbers, and bologna. An excellent kidney dish followed; then beef

bouillon with delicious *pirochki*, which tasted like doughnuts stuffed with rice and egg. The main course was turkey and potatoes, worthy to be set before a king. For fruit we had apples, peaches, grapes, plums, watermelons, and Bukhara melons, and by way of dessert, a *pirog*, a pie filled with mashed raisins. After this came tea, cookies, and candies. The meal had been prepared by the cook of the former Khan, who came in to greet us, wearing his baker's hat and apron.

Mr. Poliakov and a companion left the dinner early in the hope of catching the airplane for Chardzhui. They had been fortunate enough to obtain tickets without delay; but, although they arrived at the field before time for the take-off, the plane would not wait for them to go through the final formalities. Disappointed, they rejoined our party.

The Renault made a round trip from New Urgench to Khiva in one day across some sandy stretches that would have stalled almost any other type of car. At one place on the road sand dunes were engulfing a village. The graveyard was mostly covered and many mud houses were half buried.

#### MOSQUES DOMINATE KHIVA'S SKYLINE

An orchard in the outskirts of Khiva, inclosed in a mud wall so high that no trees can be seen from outside, is used as an experimental station. On the edge of the city stands a large brick hospital built in 1915 with funds furnished by the Khan. The builder was so popular that the Khan had him put to death lest he usurp royal power.

The buildings of the former Khan's palace, though now badly in need of repair,



THE MINARET MELAN KHODJA IS THE MOST ORNATE IN KHIVA.

Adjacent to it is a mosque that has been turned into an artist's studio (see text below).

retain traces of former oriental splendor. All have large verandas, with roofs supported by intricately carved wooden pillars. In front of one is a pool in which the wives of the khans used to bathe.

Khiva is a town of flat-roofed mud houses, boasting only a few public buildings of burned brick. The mosques, with their towering minarets faced with gaudy tiles, dominate the city. Some of them have been turned over to nonreligious purposes, one being the studio of a well-known Russian painter of oriental scenes.

From the towers the sands of the Kara Kum may be seen a few miles away, in striking contrast to the green verdure of

the oasis. The minarets once served a dual purpose; they were stations for calling to prayer and watchtowers from which guards could see approaching enemies.

#### KHIVA LIFE UNCHANGED FOR CENTURIES

Along the crooked, narrow streets are unbroken lines of mud houses, stables, and little factories, all looking much alike from the outside. Occasionally through an open door, which admits the only light to a dingy room, the passer-by catches a glimpse of a blindfolded camel going around a circular path turning a mill that mashes cottonseed into oil at the rate of three pounds of oil an hour. The seed is ground in a heavy tub under the butt end of a log placed at a slight angle to the vertical and weighted at the top.

In another building one may see a donkey similarly turning the millstones which grind wheat for *lepeshka*, the native pancakelike bread.

Silk factories with two or three looms are often housed in such dark holes that their product, a beautiful silk scari, seems an impossible accomplishment. The larger silk factories, with as many as a dozen looms, are operated under better conditions, with adequate light and air.

Some of the bazaar streets are covered with wooden roofs to keep out the hot summer sun. Here, on market day, come the natives to buy or sell their wares in little stalls at the sides or out in the street.

The metal workers are now organized by the Soviet Government, and no goods may be sold by an individual artisan. The beautiful, carved brass basins, pitchers, teapots, etc., of former times have disappeared from the markets and in their place are cheaper sheet-copper utensils.

To see more of the irrigated lands of Khoresm, we returned to New Urgench and from there made a trip to the territory across the Daryalik, now a ridge of sand dunes, but once a channel by which the Amu Darya flowed into the Caspian Sea. Much of the land is claimed by alkali, some of it by black alkali, that most dreaded foe of irrigators. Waste water fills all low spots, forming lakes and swamps—good breeding places for the malaria-bearing mosquitoes which every year cause much sickness.

The road from New Urgench to Tashauz via Shakh Abad was unusually good

and we covered the distance in automobiles in an afternoon. Tashauz, the capital of the Turkoman part of Khoresm, had the appearance of a boom town. Much building work was in progress in the Russian section, most of which appeared to be very new. Other evidences of modern development were a large flour mill and an airport.

The native section, separated from the Russian by the Shavat Canal, looked much the same as other mud towns of Central Asia. There were, however, even here, a few two-story houses.

A number of small brick kilns, built of mud and about 25 feet square and 20 feet high, were in operation about the town. Wild brush done up in bundles is the principal fuel, and we saw many natives busy collecting it from the unirrigated tracts of land.

After a night in Tashauz, meals at the pretentious workers' club, and a morning at the bazaars, we were off to meet our boat near Gurlen, three native policemen accompanying us as protection against possible bandits.

The road, very narrow, followed winding canal banks, and the fact that our driver had imbibed a little too freely did not help matters. He ran us into a bank once, stalled his engine many times, and was constantly looking back just as he was crossing bridges hardly wide enough for all of the wheels to stay on. He finally ran us through a bridge, or rather off the edge, but fortunately only the front wheel left the roadway, and we were able to get the car back with timber levers the farmers brought us.

#### AUTOMOBILE EXCITES NATIVE CURIOSITY

Everywhere we paused, crowds of Turkomans gathered around us and inspected the automobile. One gets the impression that the country is very densely populated. One native explained knowingly to another how the auto horn works. Children would run along behind us, breathing without concern the ever-present cloud of dust.

Darkness overtook us at Gurlen and we stayed there for the night, making headquarters in a cotton-gin compound. Although it was only 8:30 when we went in search of food, the town appeared deserted. Finally we found a Red Tea House where eggs, bread, tea, and melons could be served.



THE YOUNG ENGINEERS IN CHARGE OF IRRIGATION PROJECTS

The older men are mistrusted, so large responsibilities rest on the younger engineers.

Early the next morning we arrived at the river, boarded our boat, sent our automobile on to meet us at Khodzheili, and after a short trip upstream headed down the river for Jumur Tau, where the only mountain range in Khoresm is cut by the Amu Darya.

On the way we watched a group of Russian and native fishermen row out into the swift current, cast their nets, and then row back to shore. Occasionally a sturgeon would be caught, and we bought one weighing 24 pounds.

The remains of an old fort or castle known as Gyaarkala are to be seen on the right bank a mile above Jumur Tau, where a large boat towing four barges passed us, slowly chugging its way upstream, barely able to make headway against the swift current.

At Kipchak, an exceptionally dirty and disease-ridden town, most of the children seemed to have scalp, eye, or nose afflictions. A search of the bazaars revealed little for sale besides melons. In two of

the Government stores we tried to buy cloth and rubbers, but were informed that these goods were sold only to producers of cotton or other raw material. We stayed that night a few miles down the river, at Takhya Tash, the last narrows before the river spreads out in its delta.

A fisherman had his net on the point of the Takhya Tash Cape, where an eddy caused the water to flow upstream. The trap, on a rectangular wooden frame, was so arranged that by means of a rope it could be rotated about the inside lower corner and raised above the water surface. The fisherman held in his hand a small cord attached to a signal net inside the main net. A tug on this string indicated when a fish was caught.

#### BANDITRY CONTINUES NEAR TAKHYA TASH

In some jungle land on the right bank, above Takhya Tash, there are large rodents, wild boars, and tigers. The left bank is open and mostly uncultivated land.



THE AMU DARYA CUTS THROUGH THE ONLY MOUNTAIN RANGE IN KHORESM  
Members of the survey party, from left to right, Arthur P. Davis, the author, M. Askotchenky,  
and the captain of the *Chaika*.

In 1925 robber bands were riding in this region, and the surveyors mapping the country carried guns and had armed guards at their camps. Many of these bands are still at work, and occasionally the former Khan, who is now living in Persia, harries the region. Before the present régime the natives reaped rich profits by making raids into Persia and bringing back slaves to sell in Khiva and New Urgench.

At the port of Khodzheili, 10 miles downstream, there were only one or two half-open shelters. Bags of cotton, cotton seed and burlap, kerosene tins, and crates of engine parts were piled on the bank, to which were tied a few native boats. The telephone from the port to the town, five miles inland, was out of order and a messenger was sent to bring out the automobile we had sent from Gurlen.

Upon our arrival in Khodzheili it was necessary to look for some of the town officials to provide us with a guard, a guide, and gasoline. While we were waiting, a large crowd of men, women, and children gathered around the automobile, which to them was quite a curiosity. A few of the

people looked intelligent, but most of them appeared otherwise.

The town was terribly dirty and many of the children had the diseases previously observed in Kipchak (see page 771). The women, with their nose ornaments and gaudy dresses, added a note of color to the scene. In this region, the poorest we saw in Central Asia, the poverty is appalling.

Finally we obtained our gasoline and a guide, who was also a police officer. He sat in the front seat, next to the driver, with a cartridge belt around his waist and a rifle between his legs. Guards are still necessary in this country, on account of the robber bands.

#### BARREN COUNTRY SURROUNDS KHODZHEILI

We turned our backs on Khodzheili and started to Kunya Urgench over country absolutely barren save for occasional patches of irrigated land and bits of desert growth, principally a thorny bush eaten with apparent relish by camels.

A short distance out of the town, on a hill, is a large cemetery with graves differing from those in the Uzbek regions, in that here bodies are buried underground



Photograph by Graham Romney Taylor

THE PROFESSIONAL STORY-TELLER STILL ATTRACTS CROWDS IN BUKHARA

Under a tree at the side of the Labihanz, or tank, in front of the principal mosque, the narrator holds his audience enraptured.

in small tombs, and sometimes walls, with or without roofs, are built around the graves. The ladderlike wooden stretchers upon which the bodies are carried are usually left stuck into the ground, pointing skyward. There they remain until the rotting bases let them fall.

The ancient minaret of Urgench, visible to travelers many miles from the town, is a welcome landmark in the flat, unbroken plain (see page 776).

Halfway to Kunya Urgench, which is adjacent to the ancient city of Urgench, an armed escort of four horsemen met us. They had been outlaws less than six years before, but were now faithfully serving the Soviet State. The horses they rode were similar to American breeds, larger than the stocky, short-legged animals prevalent in other parts of Turkistan.

EXQUISITE TILEWORK GRACES INTERIOR OF TOMB

Our arrival in town brought out crowds of natives, who seemed much interested in the Americans. Kunya Urgench is only a pitiful remnant of the great city that it

once was. As soon as possible we procured horses and headed for the ancient city, a mile and a half away.

In the center of a plain littered with broken pottery and tiles is the tall minaret, perhaps 200 feet high. This tower leans to the west slightly and is impossible to climb without ladders (which we did not have), since the inside stairway starts at a considerable elevation above the ground. Near by are the remains of the old wall surrounding the city, and scattered about the plain are a number of small buildings, tombs of leaders, dating from the 11th century.

The main ruin is the tomb of a khan's wife. The ceiling of the center dome, almost perfectly preserved, shows exquisite designs of blue, white, and gold tile. Much of the exterior of the building has disintegrated, but the fine, smooth brick of the original construction preserves the greater part (see page 775).

We climbed two spiral stairs to the roof, from which there is a fine view of the oasis and surrounding country. To the south is the sandy stretch, where ran





AN UNFINISHED MINARET OF KHIVA

The present régime has put many of the mosques to secular uses (see page 769). At the right is the Madrassah Madamin Khan (college and mosque). The designs on the tower wall are wrought with brightly colored glazed tile.

the ancient Kunya Darya, or Oxus (now the Amu Darya, which flows in another channel to the Aral Sea). To the north is the narrow strip of green marking the oasis, and immediately in front of the structure are a few mud houses, in which exists the only life in a city which once covered several square miles.

From this tomb we rode to another in which reposes the body of a leader decapitated by his enemies. The two parts of the corpse were found at different times by his followers. Two beautiful tile tombstones mark the resting place, a small one for the head and a large one for the body,

It can be seen that the outside of the building was once beautifully decorated, but only a few blue tiles remain, the forces of time and the elements having destroyed the rest.

In the abandoned lands across the old river channel we found ruins of mud houses and walls, irrigation ditches and checks, which had served the land until all of the river had left its old channel. It is believed that some of this area was irrigated as recently as 50 or 60 years ago.

We startled a herd of gazelles, and our guards pursued them, but with as little success as dogs would have in chasing an airplane. As we rode, our horses would snatch bits of dead brush to eat. The desert had reclaimed the land.

#### CAMELS TERRIFIED BY THE AUTOMOBILE

Three guards on horseback accompanied us on the return trip to Khodzheili, and

we kept them at a trot. Halfway to our destination they decided to quit and return home; and, after futile argument and dire threats, which had no effect, we had to take our chances alone.

We passed many araba loads of women, as well as horsemen, and old men riding donkeys. Herds of camels, beasts of burden in all parts of Khoresm, fled in pitiful terror at the approach of our automobile. Those in the camel trains would tear out their nose pins and endeavor to escape over low walls or across ditches, often coming to grief with the heavy loads of cotton or kerosene on their backs.

The *Chaika* took us to the head of the Kattagar Canal, down which we went for a mile or two by row-boat. The oarsman was a Ural laborer, a descendant of the group of people deported to this region by the former Tsars. The deportations started in the 1870's, and there is now a considerable colony of these people in Khoresm.

We returned to the river by another head section of the canal. Most of the large ditches in the Amu Darya region have several head sections, in order that if one silts up the others may still divert water.

On the way down the Kattagar to Chimbai, the principal city of the Karakalpaks, tree-lined shores afforded pleasant contrast to the bleak deserts we had been traversing much of the time. Engine trouble gave us an opportunity to visit some *kibitki*, the reed and felt tents of the Karakalpaks and Kirghiz.

A woman was busy cooking some squash and milk inside a tent and would not come to the door to be photographed. She did not object, however, to our taking a picture as she washed her hands in water which her child poured over them from an old teapot.

Our captain feared that the river would fall before our return; for, on account of a delay occasioned by motor trouble, we had to tie up for the night before reaching Chimbai. At Chimbai the canal was too narrow to permit us to turn, and it took the combined efforts of natives pulling on one end of the boat, pushing on the other, and



THE PRINCIPAL RUIN AT URGENCH

The interior of this tomb of a khan's wife is admirably preserved (see text, page 773). Urgench once dominated a fertile plain enriched by the waters of the ancient Oxus.

excavating at both to get us around. A curious crowd of people stood on the canal bank to welcome us.

#### COMMERCIAL AIRPLANE PILOTS SHUN CHIMBAI FIELD

We soon learned that the airplanes we had selected could not land on the small field, and that there was no other for them to use. True, military flyers had landed there, we were told, but the place would be dangerous for commercial pilots. If we would wait, a plane would be sent from Tashauz to survey the field. The officials were very sorry, but that was all that could be done.



MOTOR LAUNCHES CARRY MAIL, BUT NATIVE BOATS MOVE MOST OF THE PRODUCE ON THE AMU DARYA



A THOUSAND YEARS AGO URGENCH WAS ONE OF THE GREAT CITIES OF THE WORLD

Now the ruins in the distance and the mausoleum from which the photograph was taken are about all that is left. Houses in the foreground have been newly constructed out of mud and have their winter fuel supply of dung cakes and scrub piled on the roofs (see text, page 773).



BOATMEN BATTLE THE CURRENTS OF THE AMU DARYA.

Although not so far famed as their musical fellows of the Volga, they are powerful on the towpath. When the wind is insufficient or the river too deep for poling, freight craft must be moved by man power on the long, slow journey of two weeks from Khoresm to Chardzhiui.

Since there was no telling how long it would take to settle the aviation business, we decided to return as soon as possible to the river, and, before that route was closed by a drop in water levels, go on down to the Aral Sea.

After calling on the mayor, we wandered about the city, which looked cleaner than most of the others we had seen. Some of the mud buildings had been whitewashed and a number had glass windows. An electric lighting system was in operation.

We went swimming, and as I climbed back into the boat I dropped a piece of soap into the canal. Floating downstream, it soon attracted a crowd. A small boy dived in and got it. It was amusing to see the people gather to see what it was. Before the question was settled, we had left the city.

As we moved upstream, children would run along by the side of the boat, and some to whom we threw crackers were as pleased as if we had been Santa Claus distributing candy. We reached the river without difficulty and headed for the Aral Sea.

The character of the land soon became swampy and various delta channels began to diverge. The only signs of habitation were an occasional kikitka. In the stream reeds grew so thickly that it was difficult to tell where the water ended and land began. A number of fishing smacks were about and at a fisherman's camp we bought a sturgeon with its caviar.

#### REEDS MAKE NAVIGATION DIFFICULT

As darkness approached, we had difficulty in following the channel. Once we lost it by taking a blind lead, and before we could turn around the current carried us into the reeds. Had it not been for the port lights, which could be seen in the distance, our boat would surely have remained tangled in the reeds until daybreak. It churned about and was carried by the current farther into the reeds, until by a stroke of good fortune we turned it sufficiently to retrace our course to open water.

Luck was with us at Kant Usyak, the seaport at the mouth of the river, for here we found the motor ship *Turkistan* ready



AND THIS WAS THE LAND OF THE FAMOUS HORSEMEN OF TAMERLANE!  
New Urgench has fallen on sad days, its streets filled with riders of tiny donkeys.



THE CUP THAT CHEERS WITHOUT INEBRIATING HAS GREAT VOGUE IN KITHORESM

One of the favorite recreations of the natives is to sit all day in a *chai khana*, or tea house, and sip their favorite beverage.



CAMELS ARE THE DRAFT ANIMALS AT ARALSKOE MORE

Mr. Davis superintends the loading of the party's baggage for transfer from dock to railway station. By means of carts similarly drawn sea water is hauled to the houses of the town.

to sail. If we had missed it, a wait of several days would have resulted.

At daybreak we transferred to the ship, which moved out slowly, towing a schooner behind. The *Commune*, the largest ship on the Aral Sea, lay in the outer harbor waiting for the rough seas to subside after a severe storm.

Eight or ten passengers sprawled in their bedding on the forward part of the main deck. There were also a few cabin passengers besides ourselves. The ship, of 125 to 150 tons burden, is twin screw, and is powered with two twin-cylinder, 120-horsepower, internal-combustion oil engines.

As soon as we hit the rough water most of the passengers became seasick. The ship rolled and pitched to such an extent throughout the night that, to keep from going entirely off the shelf which consti-

tuted my berth, I had to hang on to it for hours.

The next morning we were in the lee of some islands, one of which is used as a prison, and on the second night reached Aralskoe More station, a town of 12,000 population, at the northern end of the sea, on the Moscow-Tashkent Railroad. Here the *Commune* was at the dock taking on a load of wheat from Orenburg and Samara, to feed the Uzbeks, Karakalpaks, and Turkomans of Khoresm, whom the Government is encouraging to grow cotton instead of food.

The appearance of the express train with space for us all was a welcome sight. On the morrow we would be in Tashkent, our temporary home, and only memories would remain of Khoresm and its battle with the river.

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## ORGANIZED FOR "THE INCREASE AND DIFFUSION OF GEOGRAPHIC KNOWLEDGE"

TO carry out the purposes for which it was founded forty-four 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 which the Magazine can use, generous remuneration is made. Contributions should be accompanied by addressed return envelope and postage.

IMMEDIATELY after the terrific eruption of the world's largest crater, Mt. Katmai, in Alaska, a National Geographic Society expedition was sent to make observations of this remarkable phenomenon. Four expeditions have followed and the extraordinary scientific data resulting given to the world. In this vicinity an eighth wonder of the world was discovered and explored—"The Valley of Ten Thousand Smokes," a vast area of steaming, spouting fissures. As a result of The Society's discoveries this area has been created a National Monument by proclamation of the President of the United States.

AT an expense of over \$50,000 The Society sent a notable series of expeditions into Peru to investigate the traces of the Inca race. Their discoveries form a large share of our knowledge of a civilization wanting when Pizarro first set foot in Peru.

THE Society also had the honor of subscribing a substantial sum to the expedition of Admiral Peary, who discovered the North Pole, and contributed \$55,000 to Admiral Byrd's Antarctic Expedition.

NOT long ago 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 of California were thereby saved for the American people.

THE Society's notable expeditions to New Mexico 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 have solved secrets that have puzzled historians for three hundred years. The Society is sponsoring an archaeological survey of Venezuela.

TO further the study of solar radiation in relation to long range weather forecastings, The Society has appropriated \$85,000 to enable the Smithsonian Institution to establish a station for six years on Mt. Brukkaros, in South West Africa.



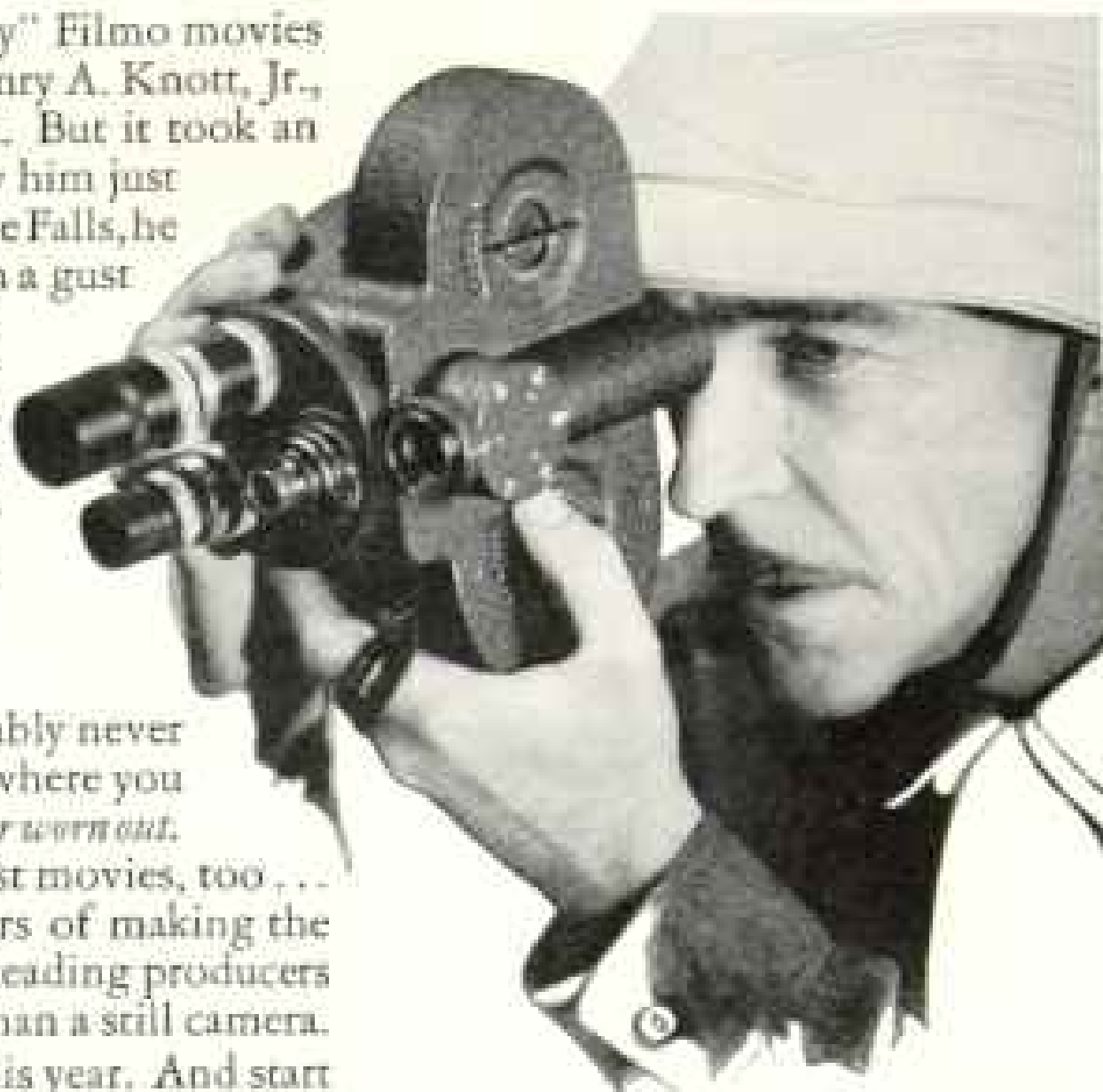
# Plunge from a Balloon

puts personal  
movie enthusiast  
out of action..

..... but it doesn't faze his FILMO



Five years of taking "eminently satisfactory" Filmo movies in America and Europe had convinced Henry A. Knott, Jr., of Chicago, that Filmo was a fine camera. But it took an incident at Niagara Falls last year to show him just how superfine. In a captive balloon over the Falls, he was filming some interesting movies when a gust of wind caught the bag, and caused a crash of such violence as to break his leg in four places and hurl his Filmo to earth. "I fully expected my Filmo to be brought to me in the hospital in small pieces," he writes, "but in fact, it did not need even a checking over. P. S.—The pictures were fine."



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The Filmo TO-D, here pictured, is the master of all personal movie cameras. Three lens turret head. Seven speeds. Variable viewfinder. In beautiful Sesame-laced Mayfair case, priced at \$245 and up. Other Filmos as low as \$97. Filmo Projectors, \$150 and up.

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**SHAVE  
WITHOUT LATHER**



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Now use Barbasol right. Follow these instructions and you'll follow the crowd.

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#### BARBASOL RADIO BROADCASTS

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*Consult radio page of your local newspaper for stations*



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# Welch's



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A noted Eastern scientist, conducting a series of research experiments, writes us that Welch's is rich in blood-building and body-energizing properties.

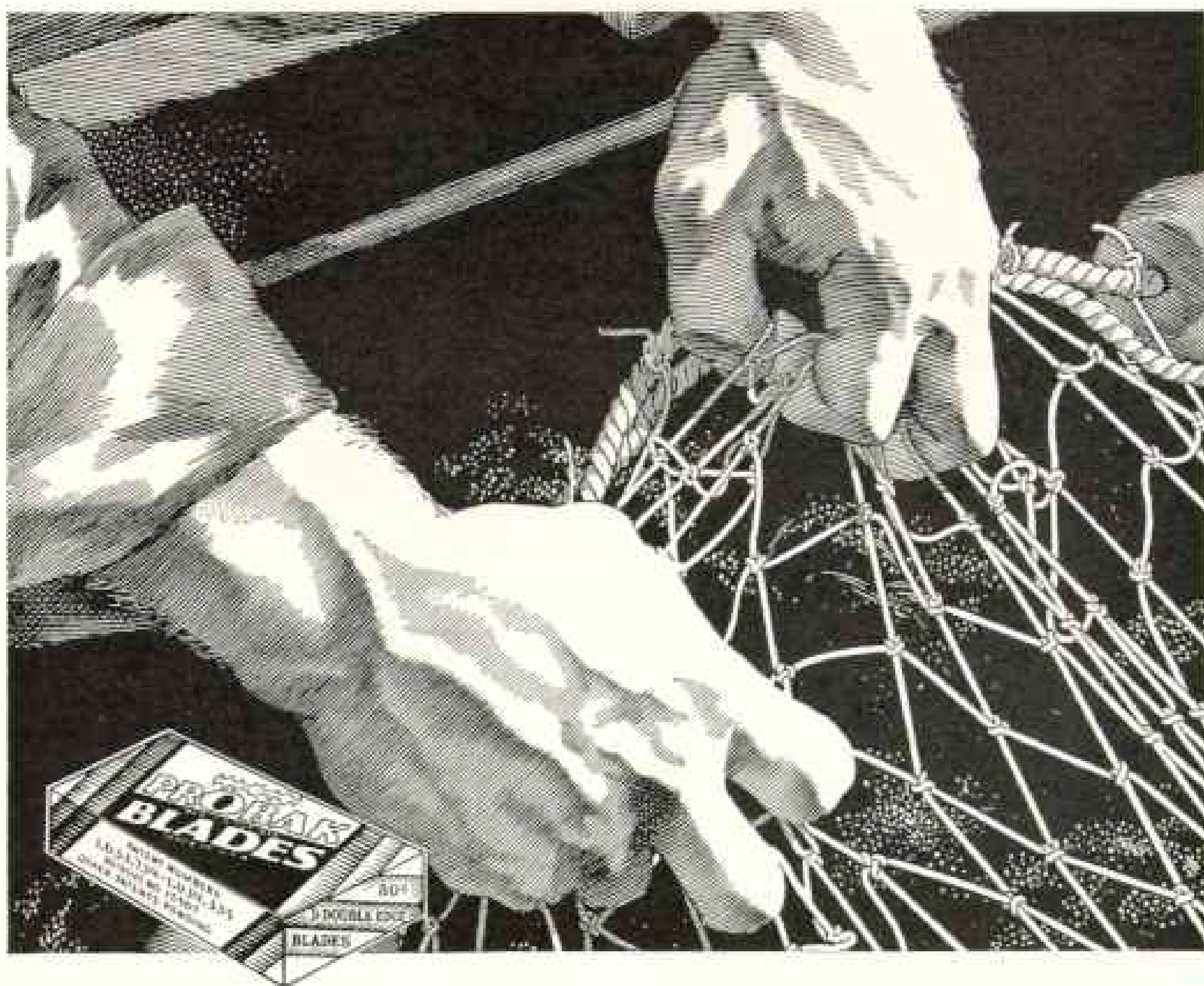
Welch's have been makers of quality products since 1869. Grape Juice, Grape Jam ("Grapolade"), Grape Jelly, Tomato Juice, all under the famous Welch label. Write for booklet of recipes. Welch's, Dept. 11 Westfield, N. Y.

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THE BLADE FOR MEN THAT *ARE* MEN

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*for you*



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Other Make No. 2—One point flatter than other. Tips not symmetrical. Iridium is rough and pitted—so thin that gold is exposed.



Other Make No. 3—Jagged ink channel which causes interrupted ink flow . . . irregularly ground tips . . . flat sides of pen end in ridges on the rough writing surface.



Waterman's—Note symmetry of points . . . perfect roundness of each tip . . . mirror-smoothness of writing surface . . . clean-cut ink channel . . . large area of thick iridium.



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\$500

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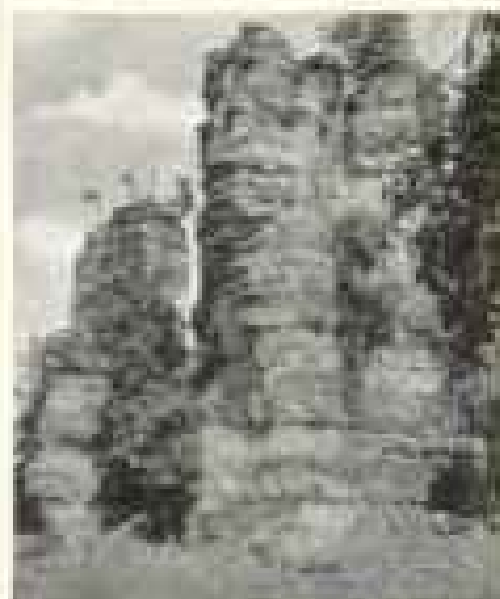
The Natural Bridge, higher than Niagara, once owned by Thomas Jefferson and pronounced by John Marshall to be God's miracle in stone, now stages every night pageantry that enthralls and every day music that entrances.

Scenically the Valley is perfection in its diversity of changing scenes. Whether one looks out upon the landscapes from the top of Mill Mountain at Roanoke, from Swift Run Gap, where the Knights of the Golden Horseshoe first beheld the Valley, or from any other of the many highway passes through the Blue Ridge, one sees dozens of vast natural mosaics made up of tens of thousands of well tilled acres. The gorge of the James at Balcony Falls and of the Potomac at Harpers Ferry are thrillingly beautiful.

Nowhere can one see more beautiful redbuds, dogwoods, rhododendrons, and azaleas or rarer autumn hues than in



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such places as the Hot Springs country. Historically the Shenandoah Valley is a land of enchantment. Here Washington began his career as a surveyor, soldier, and statesman; here Sam Houston was born and Walter Reed and Lincoln's forbears lived. Here McCormick invented the reaper and Gibbs the lock-stitch sewing machine; here Jackson's foot cavalry made military history and Sheridan galloped into fame; at Lexington Lee led his people back into the paths of peace; at Staunton Woodrow Wilson was born.

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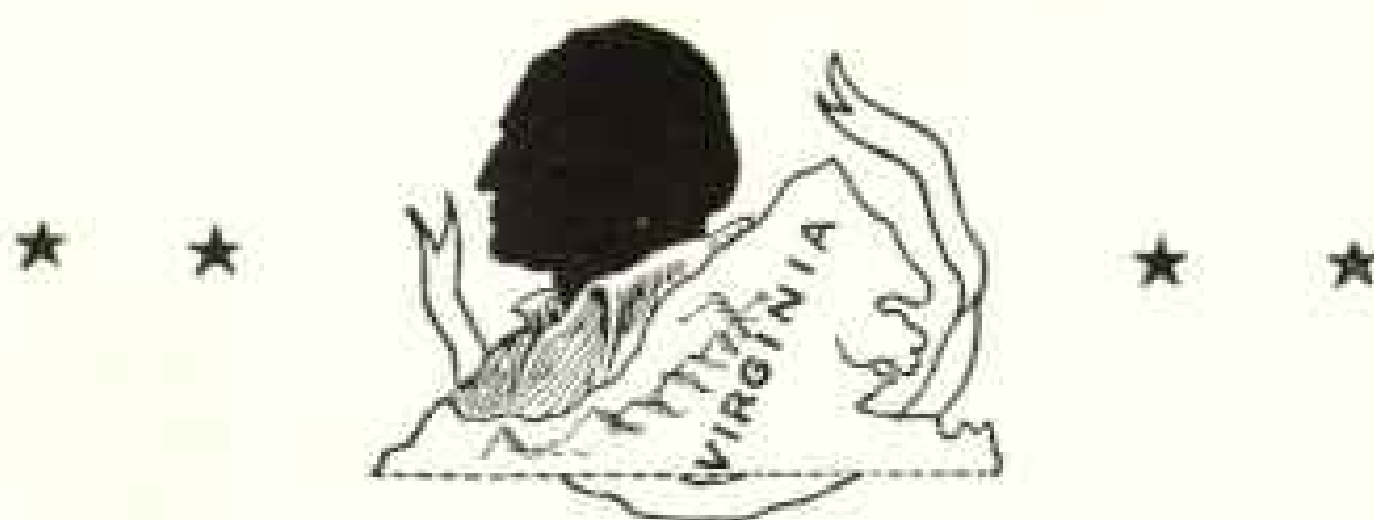
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# Guard your EYES

---

---

*Don't* read with the light shining into your eyes.

*Don't* read when recovering from serious illness—without your Doctor's consent.

*Don't* read when lying down unless your head and shoulders are propped up and the page is held at right angles to your line of vision.

*Don't* use public towels and be careful about rubbing eyes with fingers. Dangerous infection may follow.

*Don't* hold your work or book nearer the eyes than 12 inches.

*Don't* fail to visit an eyesight specialist at the slightest sign of eye trouble.

*Don't* use eye-washes, ointments, salves or other remedies unless advised by an eyesight specialist.

*Don't* wear glasses not prescribed by an eyesight specialist.

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It is good fun, occasionally, to play "Blindman's Buff" with the young people. But it would be a tragedy to have permanently unseeing eyes.

According to the National Society for the Prevention of Blindness, it is estimated that 114,000 persons in the United States are blind, and that more than half of them need not have lost their sight.

Have you had your eyes examined within the past three years? You may be unduly straining them at this very moment. Only an eyesight specialist can tell you whether or not it is wise to use your eyes in their present condition.

Whenever cases of severe, recurring headache, nervous exhaustion, hysteria, insomnia, giddiness or other similar conditions do not respond to medical treatment, the eyes should be carefully examined.

Defective vision will not improve with the passing of time. If neglected, or if the wrong treatment is given, disastrous results may follow. But a mere imperfection in vision is not the most serious thing that can happen to your eyes.



There are damaging eye diseases which, if untreated, eventually lead to blindness. For instance, glaucoma is one of the most insidious eye diseases. It can be present and yet give little indication, at first, of its threat to your sight. Recognized early, it lends itself favorably to treatment. It is, therefore, always advisable for a person more than 45 years old to have periodic examination of the eyes by an expert.

Don't take chances with your vision or with that of members of your family. Make sure that children's eyes are watched and protected. Thirty-five of the forty-eight States now have statutes providing for eye tests in schools.

Remember that it is always difficult to restore sight that has been seriously impaired. Safety lies in consulting an eyesight specialist regularly, even though one's eyes seem to be normal. The majority of defects can be rectified and the eyesight corrected so as to give satisfactory service.

**METROPOLITAN LIFE INSURANCE COMPANY**  
FREDERICK H. ECKER, PRESIDENT      ONE MADISON AVE., NEW YORK, N. Y.

# Come INSIDE the engine and SEE why Ethyl is better

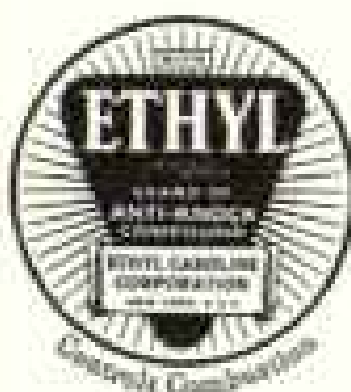


ENGINEERS in General Motors' Research Laboratories wanted to see how Ethyl controls the combustion of motor fuel, thus preventing harmful knock, overheating and power-waste.

By fitting a quartz window into the top of a modern high compression motor they watched gasoline at work—took high-speed photographs of the actual combustion of motor fuels. Below at the left—ordinary gasoline knocking. Right—Ethyl Gasoline burning powerfully.

Look at these pictures and you will understand why more car owners buy Ethyl than any other brand of motor fuel. You will understand why nearly every manufacturer of cars now offers high compression engines designed to take advantage of the universal distribution of Ethyl.

Fill your car with the new, even higher quality Ethyl Gasoline and feel the difference you see in the pictures below. Ethyl Gasoline Corporation, New York.



The quality of Ethyl Gasoline is maintained by laboratory inspection of samples collected daily in all parts of the country. Ethyl fuel contains lead.



ORDINARY GASOLINE is in the cylinder. You see the spark in the picture at the left. In the next the gasoline vapor starts to burn. More—more—more burns. Then suddenly, in the sixth picture—BANG! The remaining unburned gasoline explodes. That is KNOCK. The last picture shows nothing but afterglow. Knock wastes the gasoline that should be working now.



ETHYL GASOLINE starts from the spark in the same way—as shown in the first three pictures. But Ethyl can burn at only one speed: the right speed. See how its flame spreads evenly from start to finish. It is not all burned until the last picture—delivering its greatest power when the piston is going down—the time when power counts most in the performance of your car.

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Tomato  
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Vegetable  
Vegetable-Beef  
Vermicelli-Tomato

EAT SOUP  
AND KEEP WELL



Looking back to childhood years, what are the visions, what are the memories which are most vivid and real to you today? Through all the misty tableaux of home scenes, school-days and the big times out of doors, one supreme delight stands out, clear and unmistakable—your delight in good things to eat.

Do not disappoint your own children. Give them the tempting, lively, tasty food they long for so keenly.

There's zip and tang in every taste of Campbell's Tomato Soup. The sparkle of sunshine which has reddened and sweetened the tomatoes to luscious ripeness on the vines. This soup has the bright color and the happy flavor that children love. And it's so wholesome they can eat it until they're really satisfied. Add milk or cream instead of water for a glorious Cream of Tomato.

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A LONE figure in overalls surveys the fields of his labor. Freshly planted rows point their even lines around a gently rising hill. Seemingly the world and its people are far away. But this man is not alone!



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Undoubtedly a great factor in the continued progress and improvement of telephone service is the intangible but real spirit of service that has become a tradition in the telephone business. This spirit expresses itself daily and in any emergency. And behind the army engaged in giving service is the pioneering help of a regiment of five thousand scientists and technical men, engaged in the sole task of working for improvement. This group devotes itself exclusively to seeking ways and means of making your telephone service constantly better and better.

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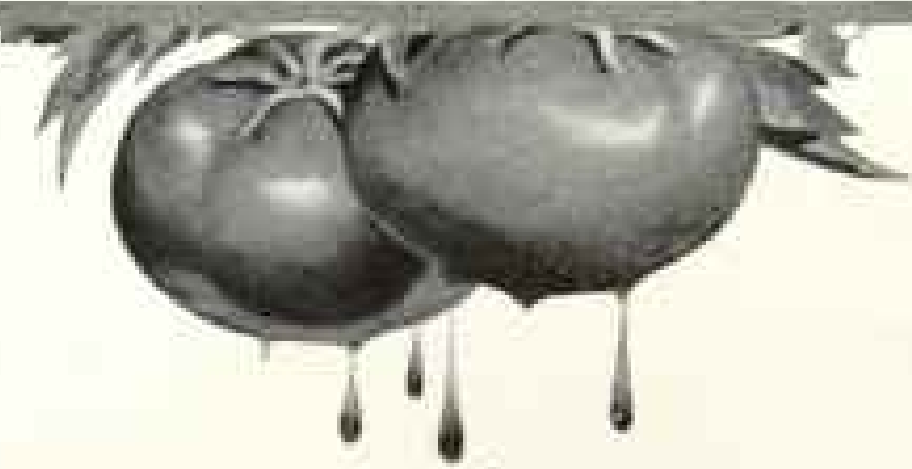
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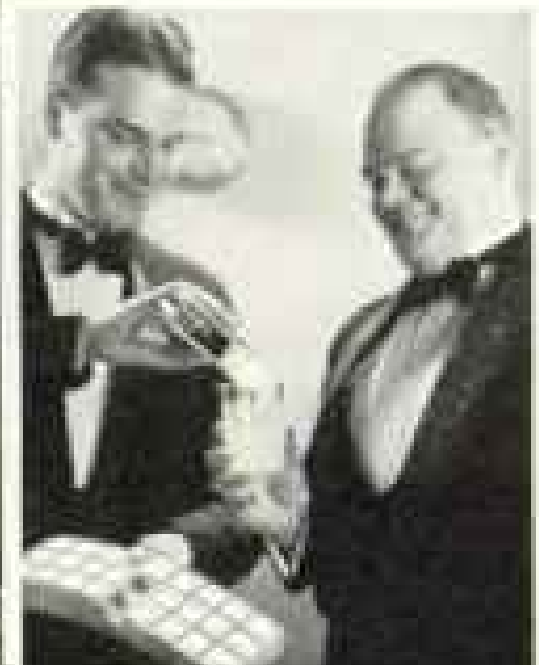
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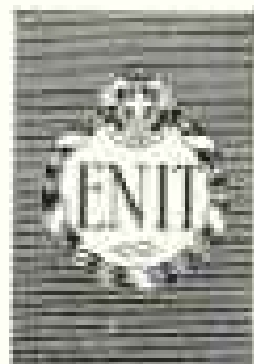
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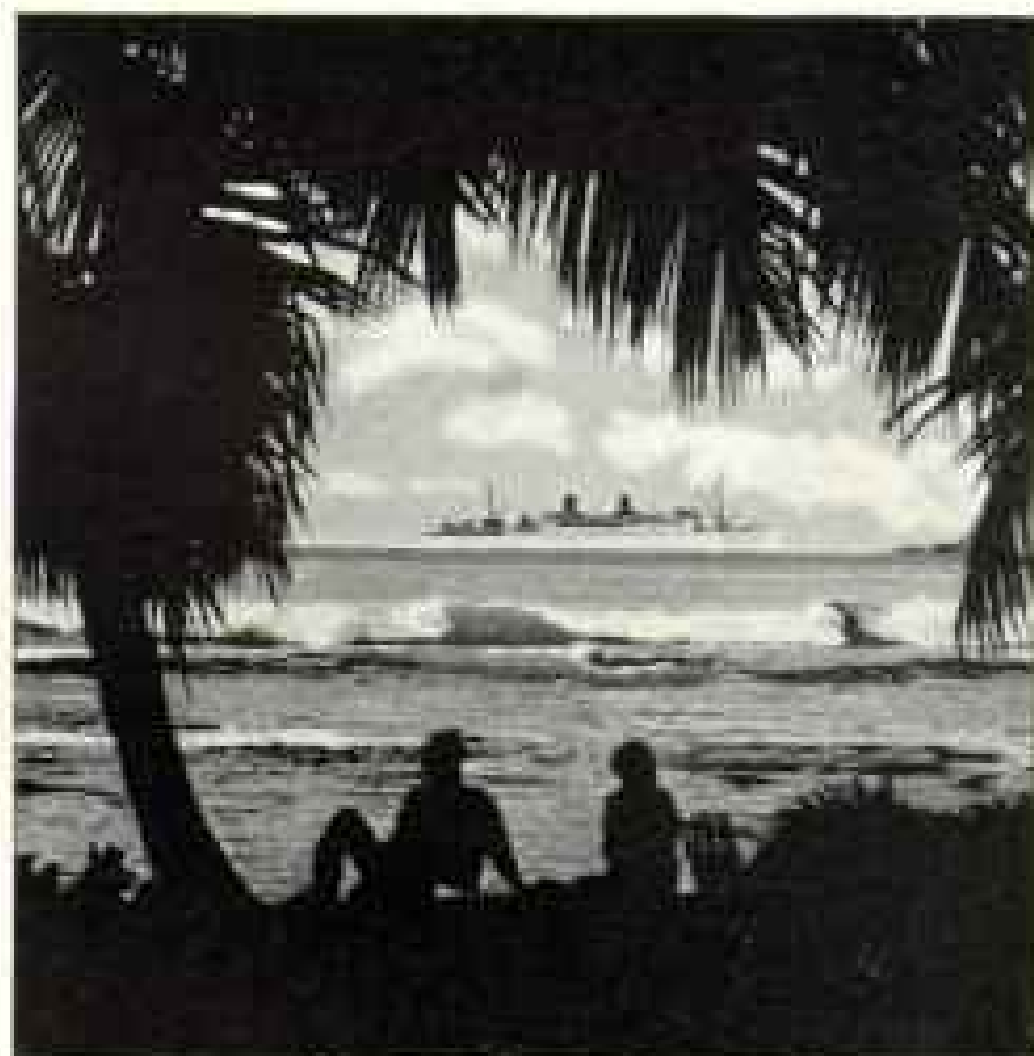
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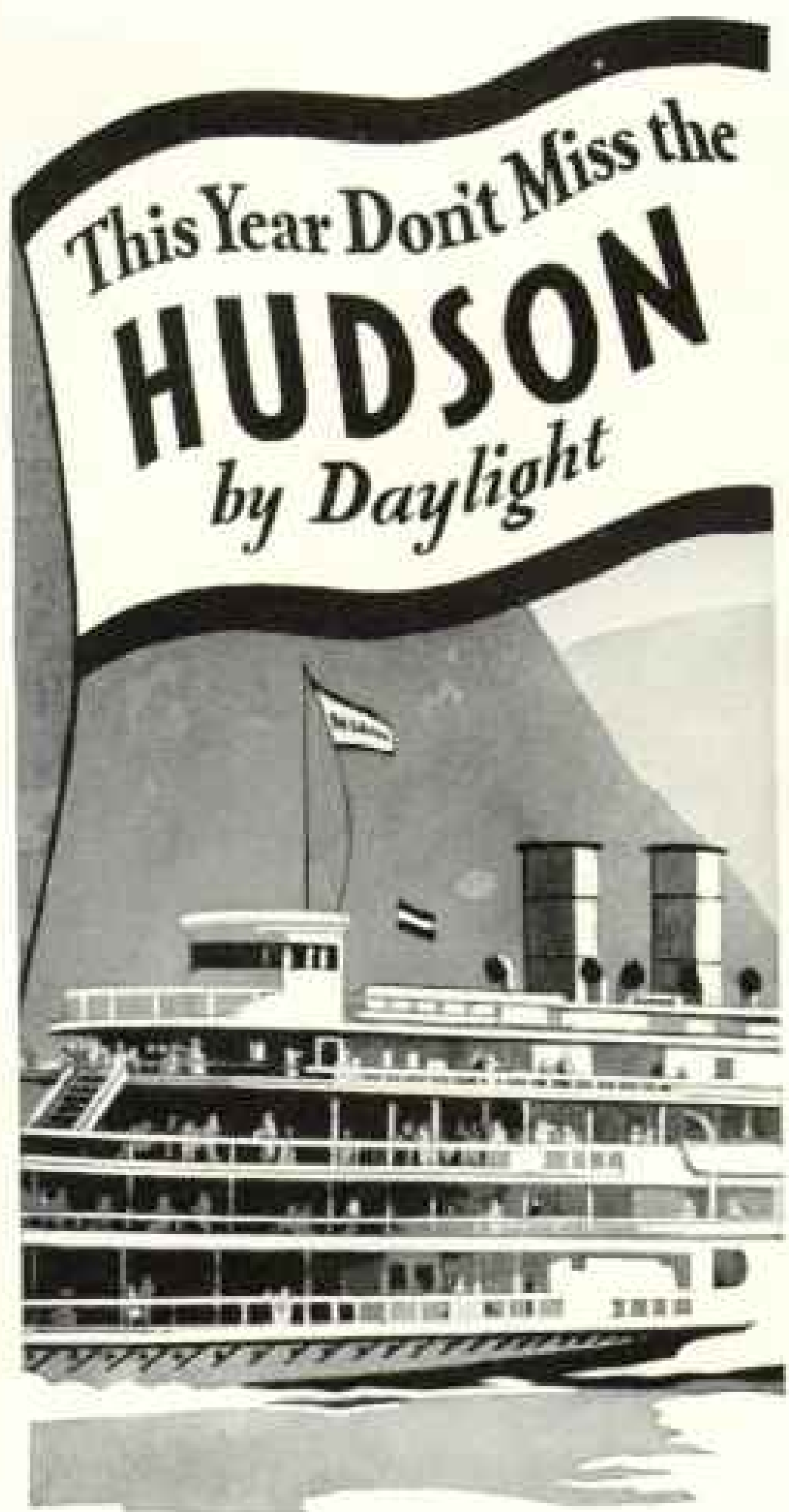
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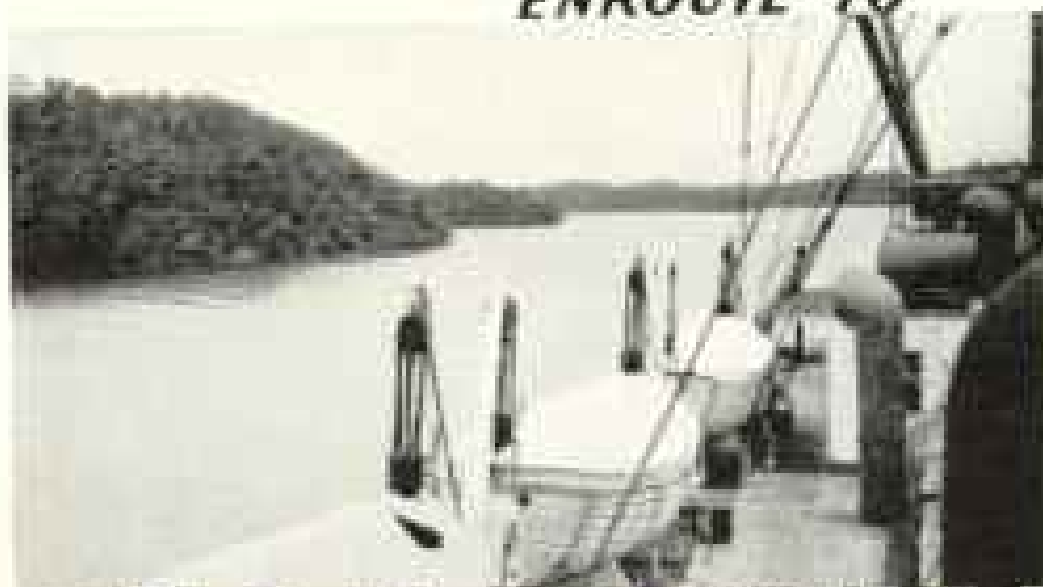
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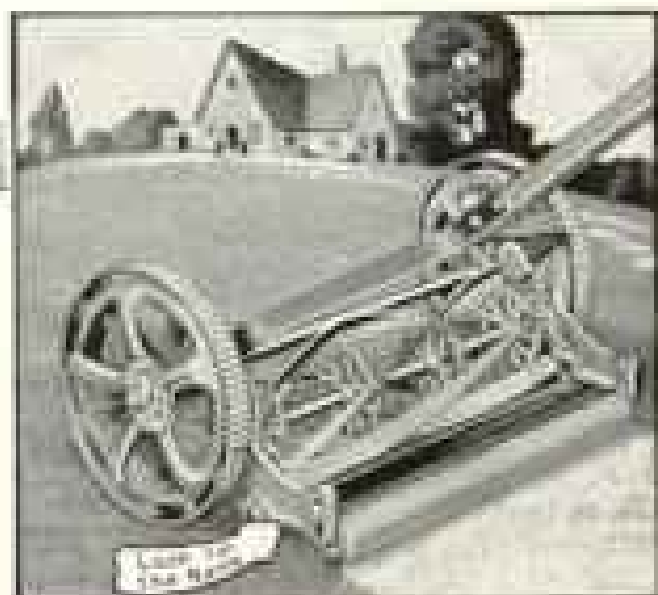
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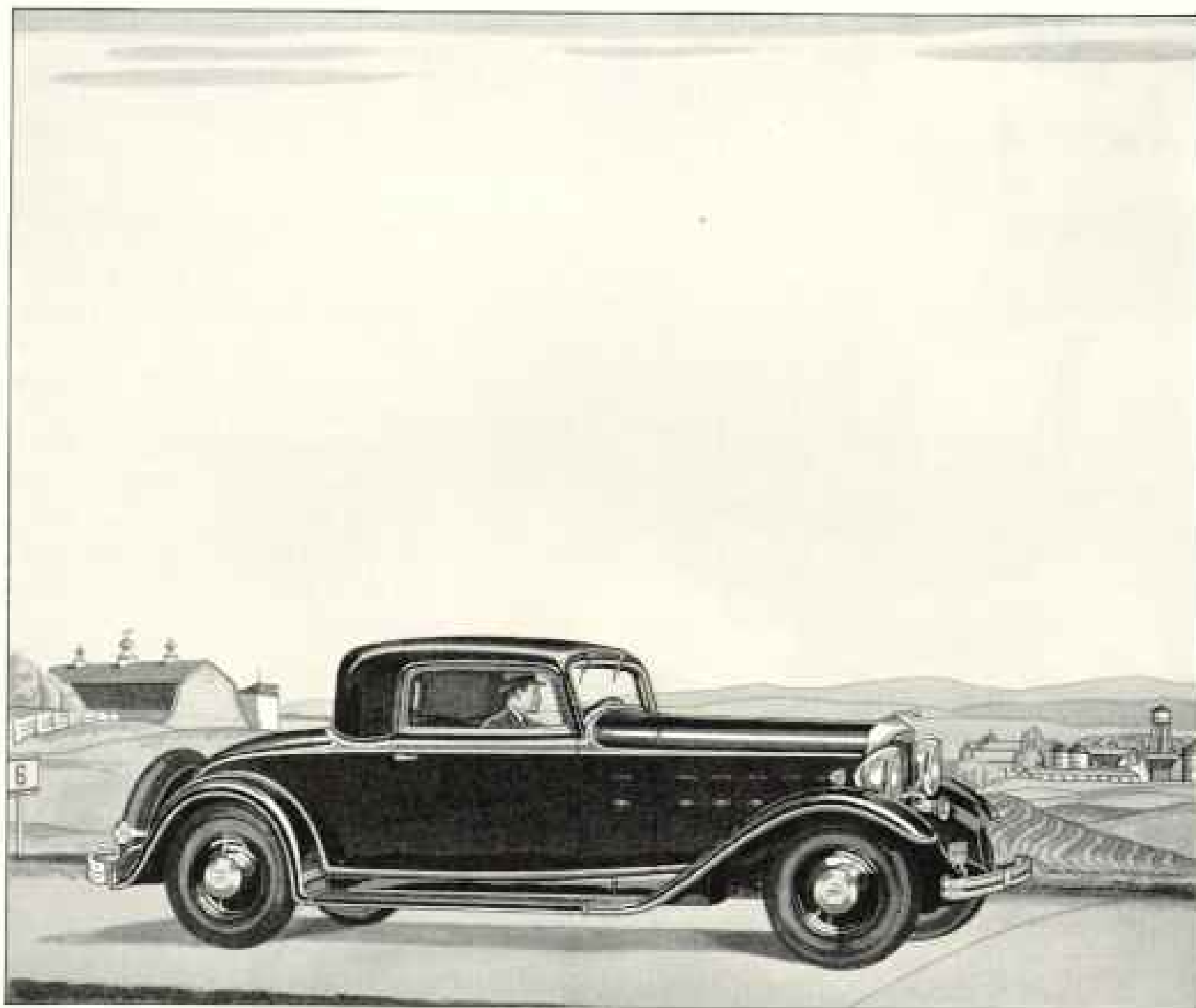
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