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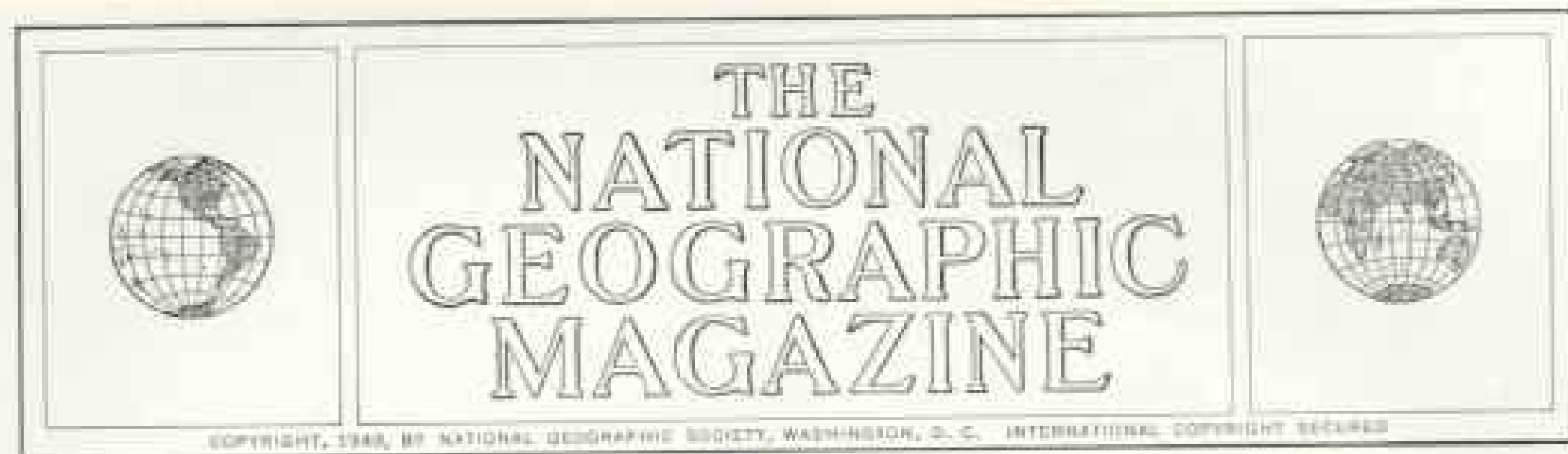
ATHOS D. GRAZZINI

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Italy Smiles Again

By BRIGADIER GENERAL EDGAR ERSKINE HUME

Formerly Chief of Allied Military Government (Fifth Army) in Italy

IT HAS been my fortune to know Italy since my student days at the University of Rome in 1914. Before, during, and following both World Wars, I have seen Italians of all classes living their lives in joy and in sorrow in the north, the south, and the islands.

During the whole of the service of the Fifth Army's war in Italy, from the landing at Salerno on September 9, 1943, until, two years later, that army ceased to operate, I was its Chief of Allied Military Government, under Generals Mark W. Clark and Lucian K. Truscott, Jr., in turn. Our organization performed its primary duty by taking the burden of civil administration from the Army commander, and at the same time did a humanitarian task and made friends for the United States and its allies.

When late in 1948 an opportunity was offered me to revisit the places we had administered during the war, I accepted with alacrity. The real measure of military government is what happens after the troops depart.

Seeds of Friendship Have Borne Fruit

Our military occupation of Italy was from south to north. My recent journey was from north to south, reversing the course of the Fifth Army. For the most part, the prefects, mayors, rectors of universities, and other officials we appointed are still in office, despite Italy's change from a monarchy to a republic and her bitterly fought general elections.

Virtually everywhere I talked to all classes—mayors, university and Church officials, industrialists, authors and artists, shopkeepers, laborers, and men of all ranks who had served in the late war, including some who had

fought against us. All were friendly, harboring no resentment. Those who had been prisoners of war in the United States spoke of kind treatment and of friendships made. Conversing with them in their own language, I gained impressions that otherwise might have been missed.

Italy Must Have Imports to Live

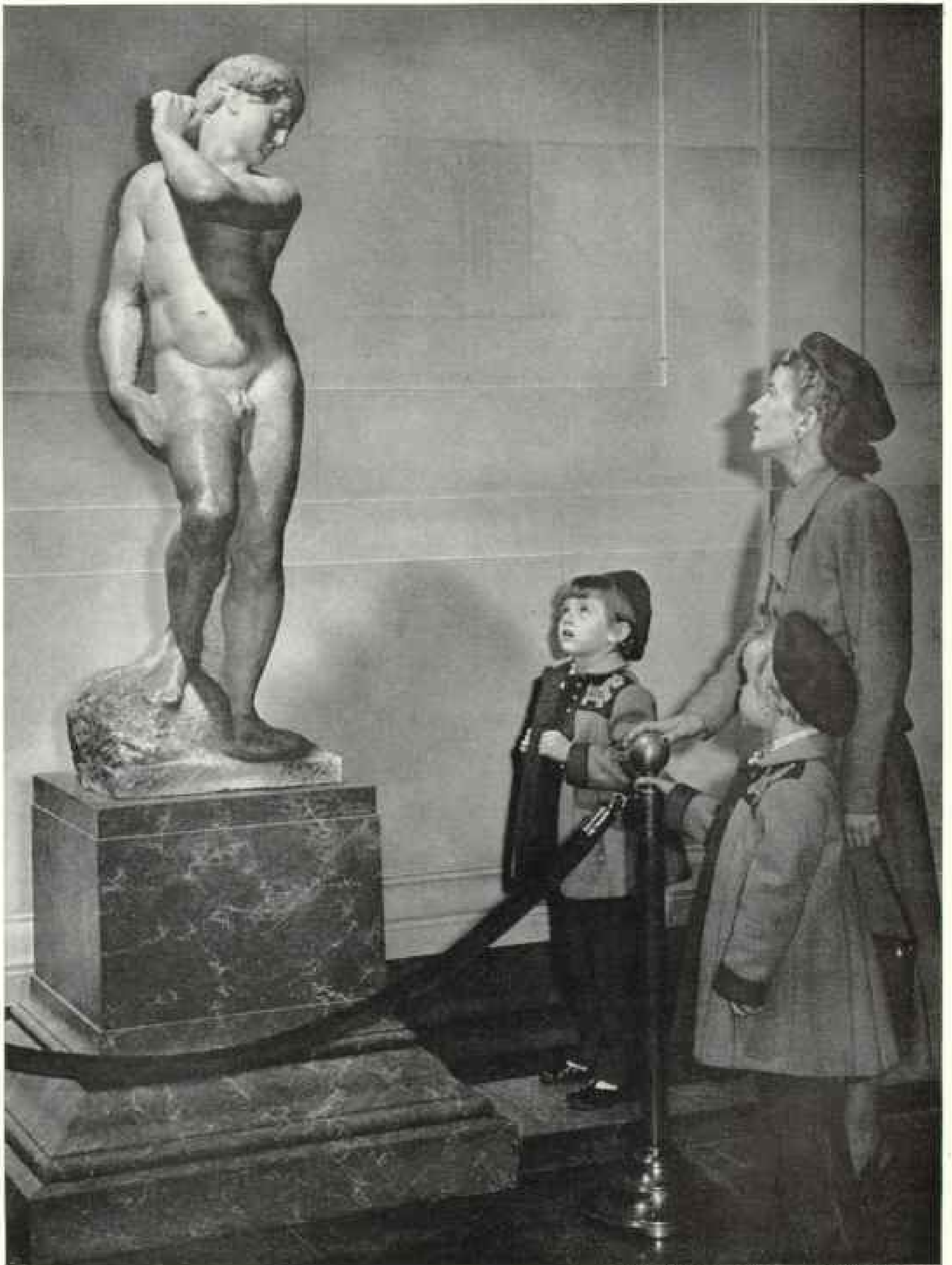
Italy, though only the size of Georgia plus Alabama (map, page 698), has a population about one-third that of the entire United States—and is growing at the rate of about half a million a year. Babies are Italy's best crop. They, the reduced death rate, and U. S. immigration laws have caused overpopulation.

Despite considerable emigration to South America and elsewhere, and despite war losses, Italy still has more people than can be accommodated (page 716).

This lovely land has priceless treasures of culture—art, science, music, literature—but inadequate supplies of lumber and of such mineral resources as coal, iron, copper, and petroleum. Imports are indispensable.

My journey, made in a Fiat car, began in Milan, called by its financiers the "moral capital" of Italy. This huge modern city in the center of the plain between the Alps and the Po has all that goes with a world metropolis, and in addition the Gothic Cathedral of Milan, the grim medieval Castle Sforzesco, and Leonardo da Vinci's "The Last Supper," often judged the world's greatest painting (pages 695 and 725).

I visited Piazzale Loreto where in April, 1945, I had seen the bodies of Mussolini and his mistress and some of his Cabinet members hanging by the heels at a gas filling station.



National Geographic Photographer Willard B. Carter

Michelangelo's "David," Gem of Italian Art, Visits America as a Friendship Symbol

On loan from the Bargello Museum, Florence, the 400-year-old marble stands in Washington's National Gallery of Art. Experts believe Michelangelo began the figure as a portrayal of Goliath's conqueror, then modified it to one of Apollo. Chisel marks on the back show where the sculptor began changing a sling into a quiver.



Arno

Leonardo da Vinci's "The Last Supper" Shows Ravages of Centuries More than of War

This masterpiece, often called the world's greatest painting, suffered from dampness after bombs damaged the refectory of Milan's Church of Santa Maria delle Grazie. Here American soldiers view the picture of Christ telling His disciples, "One of you shall betray me." Experts work constantly to preserve the classic, completed in 1497, but have failed to check time's fading of its colors.

Mussolini, after his capture near Dongo, had been shot at Mezzegra, both on Lake Como, and brought with his companions to Milan. Over each was painted the name.

I was told subsequently that the proprietor of the filling station contemplates pulling it down because he is tired of having Fascist die-hards secretly place flowers there on the anniversary of the Duce's death.

My own memory of our first day in Milan was of persuading the Italian partisans to bury Mussolini and the others. Death had paid even their heavy debt to society.

Signor Antonio Greppi, Mayor of Milan, whom I had appointed to office, welcomed me as an honorary citizen in his office in the City Hall opposite La Scala Opera House.

Serene in conscious superiority over wars and changes, one of the largest churches in all Europe, the Cathedral of Milan, unmarred, dominates the great square in the center of the city. St. Peter's in Rome is larger, but when Milan Cathedral was built in 1386 it was the largest in existence.

Here I saw again the entombed body of St. Carlo Borromeo, who consecrated the Cathedral in 1577. Vested in magnificent jeweled

robes, he rests in a silver and crystal shrine.

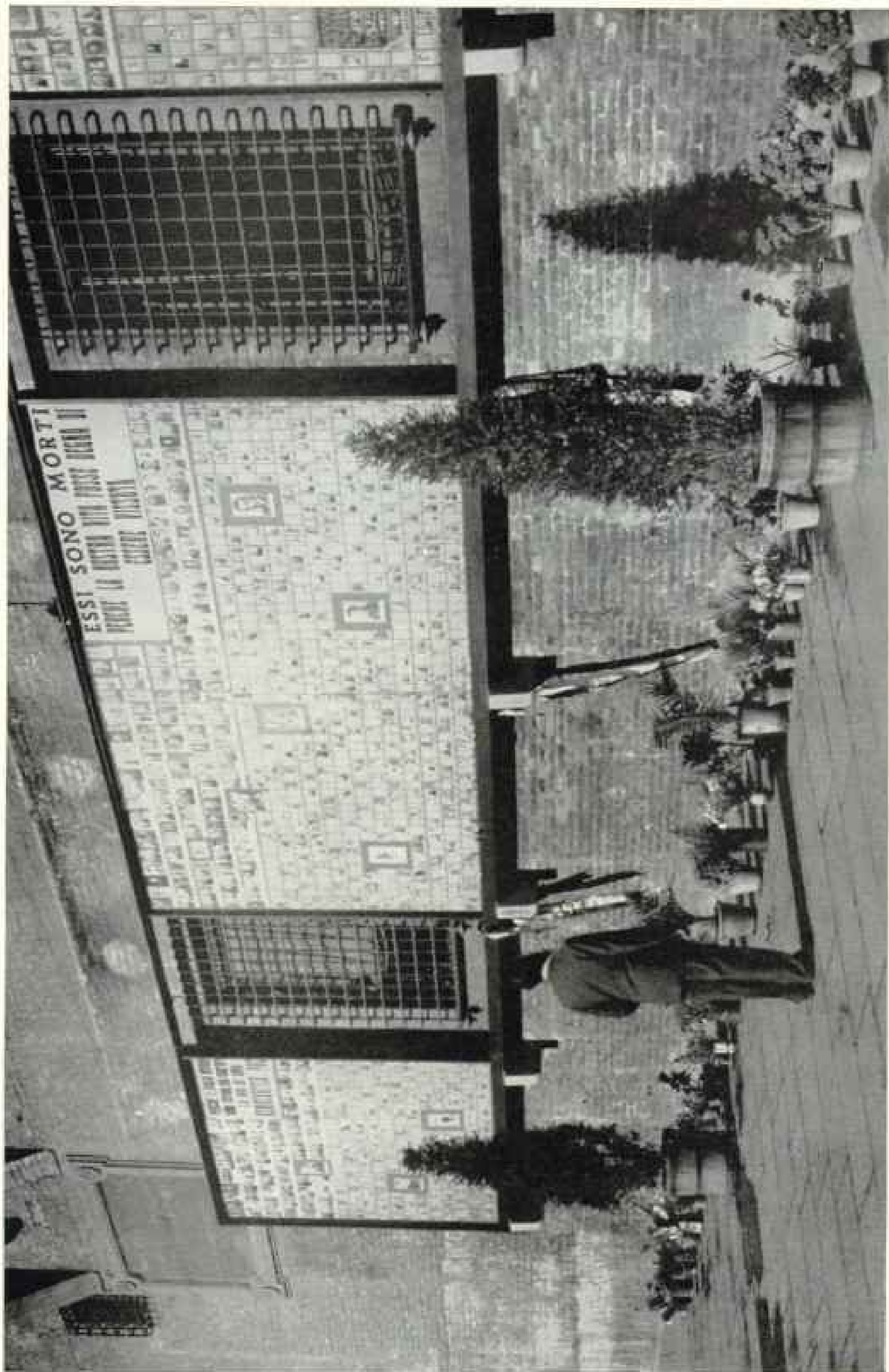
Since Milan is Italy's financial center, I talked to Dr. Alfredo Pizzoni, known as "Pietro Longhi," leader of the underground. He is head of one of the country's most important banks, the Credito Italiano.

From Milan it was less than an hour over the *autostrada*, the superhighway constructed before the war, to Como. The shell holes I remembered were no longer in this road, and automobiles of all types were numerous.

Virtually unscarred by war, Como lies beside one of earth's most beautiful lakes.* Boats in prewar style take one to the other towns on Lake Como (pages 709, 712, 713, 727). The 400-year-old silk industry, the most famous in Italy, was going strong again. I saw several factories in operation, as well as the showrooms of Guido Ravasi, where gorgeous brocades and other fabrics were to be had. The night was spent at Hotel Villa d'Este, where Willy Dombredé, the proprietor, shows that he still knows how to entertain.

We passed through Dongo, near which

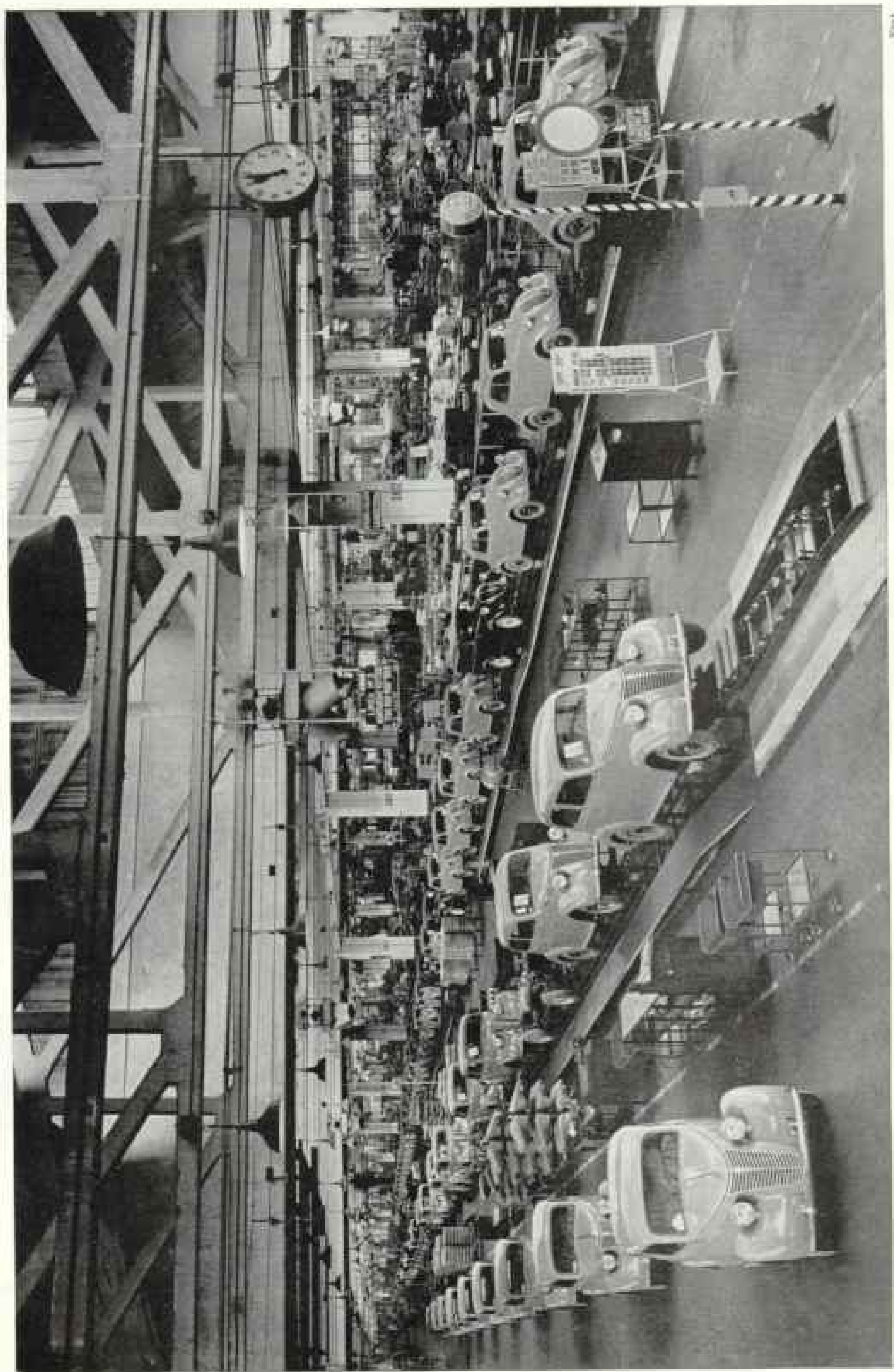
* See "Gems of the Italian Lakes," by Arthur Ellis Mayer, NATIONAL GEOGRAPHIC MAGAZINE, August, 1913.



Minor Fiskew Home

Before This Wall of Bologna's City Hall, Hundreds of Italian Patriots Were Shot by Fascist Firing Squads

With flowers, colored streamers, and photographs of the victims, relatives keep fresh the memory of Italians who fell in the cause of liberty. At the top of the memorial a legend tells passers-by: "They died so that our life might be worthy of being lived" (page 699).



Fiat

Turin's Mammoth Fiat Factory, Rebuilt from War Ruins, Rolls 400 Cars Daily Off Detroit-style Assembly Lines

Alfred ahmen bombed this ruin plant of Fabrica Italiana Automobili Torino to halt its production of military trucks and airplane parts. Restored with ECA aid, the company now employs 60,000. Fiat hopes soon to assemble and sell cars in the United States (page 744).



From Brenner Pass to Reggio Calabria, Italy Hums with Rebuilding Activity

Hard work, in the face of overpopulation and lack of raw materials, has pushed Italy far toward recovery. The population, about one-third that of the United States, jams a country the size of Georgia plus Alabama. The author started at Milan and covered in reverse course the area liberated by the Allies (page 693).

Mussolini and his entourage with their ill-gotten gains were taken by the partisans. It now seems most peaceful, with red and purple bougainvillea covering the walls.

Between Milan and Bologna we went over the Via Aemilia, named for its builder, Consul Marcus Aemilius Lepidus. It has been one of Italy's main arteries since 187 B. C.

First on this route we came to the city of Pavia, near where the Ticino from Switzerland flows into the mighty Po. This ancient capital of the kingdom of the Lombards, and later of the German kingdom of Italy, has two renowned institutions: the magnificent Carthusian monastery, or Certosa (begun in 1396), one of the world's finest examples of Renaissance architecture; and the venerable University, which disputes priority in age with that of Bologna.

Neither was hurt by the war, though it had been necessary to cover both with protective structures. Again the delicious liqueur for which the monks are famous is on sale.

The University law faculty may have been founded by Lanfranc, afterward Archbishop of Canterbury. Prof. Plinio Fraccaro, whom I appointed Rector in 1945, is still in office.

Army-built Pontoon Bridge Still in Use

Following the well-built Via Aemilia, we reached Piacenza, but it was still necessary to cross the Po on the pontoon bridge the Fifth Army placed there in 1945. Retreating Germans had blown up the old bridges.

Via Aemilia continues on to Parma, which is, as one American remarked during our stay there during the war, "famous as the birthplace of Arturo Toscanini and the home of Parmesan cheese." Maestro Toscanini is not Parma's first famous musician; the great Verdi himself was born in the Province.

Stamp collectors will remember that Parma, as an independent duchy, like Modena, had its own stamps prior to Italy's unification in 1861. I saw a collection of these rare items made for presentation to Toscanini.

Southeast of Parma lies Reggio Emilia, not to be confused with Reggio Calabria. This Reggio was probably founded by the same M. Aemilius Lepidus who built the Via Aemilia. War hurt the town a little, but the damage has been repaired.

At Modena I visited the City Hall (built in 1194 and later restored), former Fifth Army headquarters, and discussed the political developments since that never-to-be-forgotten April 22, 1945. Then a group of AMG personnel entered the city amid active street fighting and set up government in that building.

Here on that fateful day I had seen a

party of Germans and Fascists and a group of partisans engage in a brisk exchange of fire. I now retraced with one of the assessors (councilmen) the path of a melancholy group of Fascists whom I had seen being taken to a prisoner-of-war cage, the excited populace demanding their instant execution. Rt. Hon. Harold Macmillan, M. P., and later Cabinet minister, and I had managed to dissuade these people. To our embarrassed amusement, Mr. Macmillan and I had been made honorary Patriots (partisans), adorned with armbands as evidence and duly kissed on each cheek.

All of this seemed so foreign to Modena's present calm that I almost doubted my own memory. Once more I saw the old University, fortunately undamaged, where I had been made an honorary professor, though then I did not have time to deliver the customary lecture.

Bologna, Fifth Army Goal

Good old Via Aemilia took me on to Bologna, well-remembered goal of the Fifth Army through all the weary months of the Apennines Campaign. When we finally got there (April 21, 1945), how rapidly history had moved! I drove now through the arcade-lined streets into the big public square.

At the west side of the Piazza Maggiore (Great Square) is the Communal Palace, built just 700 years before Allied Military Government established itself there in the spring of 1945. I visited my former office and stood outside for a moment in silent tribute to the many victims of Fascist vengeance who had been shot there (page 696).

Bologna's venerable University, an inspiration for others of great age, is being restored. Though it was not yet ready for visitors, I was invited to see what was being done, and it gave me a sense of admiration and astonishment.

The former University building, the Archiginnasio, which became the Biblioteca Comunale, was built in 1562 by that same St. Carlo Borromeo whose remains I had seen in the shrine in Milan (page 695). This structure was largely wrecked by a bomb, and the fighting thereafter left its mark.

Here, as elsewhere in Italy, I saw each tiny bit of stone, plaster, and wood saved for the reverent work of restoration. The *alma mater* of Dante and of Copernicus lives on.

After a night at the Baglioni Hotel and a meal at the justly famed Pappagallo Restaurant, I took the road leading southward across the Futa Pass, more than half a mile above sea level. Near it is the tiny village of Traversa, where the Fifth Army had its head-



U. S. Army Official

The Promise: "Florentines, Your Stolen Art Works Will Come Home Again"

Flanked by honor guards in medieval costume, General Hume on September 13, 1944, addressed a crowd in the Piazza Signoria after appointing a mayor of newly liberated Florence. Tapestries hang outside the Palazzo Vecchio (background). The audience cheered when he pledged that the Fifth Army would recapture the city's paintings and sculptures from the Germans and restore them to their rightful places (opposite).

quarters during the campaign that finally liberated Bologna.

The highway, in use since 1762, was called the "new" road by the peasants, who had doubtless heard that it replaced the ancient Via Cassia of the Romans and a "modern" Florentine road of 1361.

I was now in Tuscany. Gone were the orchards and fields of Emilia Compartment; instead there were the rolling dark-green hills with vineyards, set off by the ubiquitous cypress trees. In Tuscany these trees are grown everywhere. They do not have a funereal significance as elsewhere in Italy.

Soon Florence came into view, majestic and calm in the valley of the Arno. Surely no visitor has forgotten his first glimpse of this lovely place.*

At Hotel Excelsior the director, Comm. Boris Skerl, whose hospitality Allied officers are not likely to forget, installed me in my old rooms as if I had not been away. The

maid, who had worked on the same floor of the hotel for a mere 22 years, had moved the furniture to just the way I used to have it, and my old waiter was assigned to me. The proprietor, Signor Gerardo Kraft, Jr., and his wife, Swiss residents of Florence for many years, made me welcome.

Politics Ignored by Loyal Florentines

At the Palazzo Vecchio, the Old Palace, I saw my erstwhile offices and was cordially greeted by everybody. The mayor, who had been one of the city councilmen in my day, is a Communist. He assured me, however, that politics make no difference between friends and that we, as "two loyal Florentines," would always do our best for the city.

Outside the Palazzo Vecchio, the Loggia with its great pieces of sculpture, such as Ben-

* See "Return to Florence," by 1st Lt. Benjamin C. McCarthy, NATIONAL GEOGRAPHIC MAGAZINE, March, 1945.



U. S. Army, Official

The Fulfillment: Trumpet Blasts Hail the Return of Florentine Treasures

Nine months after General Hume made his promise on behalf of the Fifth Army (opposite), a fleet of trucks, bearing the recaptured loot of Florence's galleries, reared triumphantly into the Piazza Signoria. Past the reviewing stand rolls a Fifth Army truck with a sign saying, "The Florentine works of art return from the upper Adige to their home." Famous works by Raphael, Botticelli, and others are now back on museum walls.

venuto Cellini's "Perseus," is uncovered again. The Piazza della Signoria, or Square of the Great Council, has been the scene through the centuries of many events of great historic moment, some tragic (such as the execution of Savonarola in 1498) and some gay, such as the *calcio*, or football game, played in the ancient way.

In August, 1944, I had here the privilege of appointing Prof. Gaetano Peraccini, famous authority on the Medici, as mayor of Florence, amid all the pomp and circumstance that Florentines love. In this I was aided and abetted by Lt. Col. Thomas J. Michie, who was in charge of our Florence team.

Nearly a thousand men and women in gay medieval costume, some on foot, some mounted, some carrying heraldic banners, others in armor, accompanied by musicians playing old airs on silver trumpets, took part. All these gentry belonged to guilds, and the ceremony was without public expense.

When the troops, the University students, and the burghers were all in place, I attempted a speech. I told them that we were there to help them, and in the name of the Army commander, General Clark, pledged ourselves to see that the great works of art that the Germans had stolen would be returned, for they belong not to Florence, nor to Italy, but to civilization. There was much applause, but perhaps some may have thought all this but a vain boast.

When, in the following spring, the Fifth Army did in fact capture these treasures of Florence from the retreating Germans at the Brenner Pass, the very frontiers of Italy, we were able to make good our promise. Lt. Col. Elmer N. Holmgreen and Maj. Deane Keller accompanied a fleet of trucks and camions containing these paintings and pieces of sculpture and drove down country to Florence, where I joined them.

Dr. Filippo Rossi, director of Florentine

From *Three Lions*

Scouting, Driven Underground by Fascists, Makes a Comeback in Italy

These Roman Girl Guides and Boy Scouts belong to organizations that were outlawed by Mussolini in 1929. To replace them, Il Duce sponsored the militaristic Balilla and Avanguardisti for boys and similar units for girls. Guides and Scouts defied the ban and met in secret. Many served with partisan forces in World War II. Today Italy has more than 80,000 members.

galleries, accompanied me through the Uffizi Gallery to show that all the paintings were back in their accustomed places. He also went with me to see Lorenzo Ghiberti's celebrated bronze doors of the Baptistery, now back on their hinges after having been carted away for safekeeping during the campaign.

But what a change had come over them! Gone was the greenish patina of age, and they now shone in all their original golden glory, the way that Ghiberti had made them between 1403 and 1452. In attempting to clean the doors, workmen had found that under the discoloration of five and a half centuries there was gold, for the doors bore a coat of that precious metal over the bronze. Now these gems are to be seen as they were seen

by Michelangelo when he exclaimed that they were fit to be the doors of Paradise.

With the head of the Jewish Community I recalled the reopening of the synagogue in the late summer of 1944. The building had been closed and desecrated by Fascists, and AMG men had devoted as much time and expense to its repair as was practicable.

Elia Cardinal dalla Costa, Archbishop of Florence, had sent a representative to the rededication, telling me that he believed it the first time such a thing had taken place in Tuscany; though we both recalled that the late Pietro Cardinal Boetto, Archbishop of Genoa, had kept the Jewish welfare funds during Fascist days.

Present also had been the Chief Chaplain

of the Fifth Army, Col. Patrick J. Ryan; the senior Protestant chaplain; and all of our Jewish chaplains. Accompanying these men of the cloth, I had sat with other AMG officers and heard an eloquent and moving address by the president of the Jewish community.

So touched had been a Jewish officer of my staff, Maj. Bertram M. Goldsmith, that when the following Christmas came around he had asked to be allowed to organize the AMG party for children. And what a success it was! Each needy little Florentine received a garment and a box of candy, all donated by Allied soldiers.

Florence was its old self save for the ghastly open spaces near the Ponte Vecchio, or Old Bridge, where once had stood buildings. Our temporary bridges over the Arno were still in use. Neatly piled squares of stones were all that remained of the Tower of the Guelph Party and Colombaria Library, but modern replacements were rising. A special fund, on the "buy-a-brick" basis, is being raised to replace Trinity Bridge, finest in Florence.

I saw some of the manuscripts of the Colombaria Library, a collection of the best of the Middle Ages. When the Germans would not allow enough time for them to be removed, the collection was blown into the street and much of it into the Arno. Our Monuments, Fine Arts, and Archives officers caused all the rubble to be sifted and much of it brought up from the river. Marvel of marvels, nearly 70 percent of the collection was saved.

From Florence to Rome we chose the road through Siena, practically undamaged gem of medieval Tuscany, which looked as if there had never been a war. Its narrow walled streets teemed with humanity—peasants, artisans, burghers all rubbing elbows. The system of one-way streets which AMG enforced to cope with traffic was still working.

I had time but for three visits: the first to the great central public square, the Campo, with its stately Palazzo Pubblico, or Public Palace; the second to the Chigi-Saracini Palace, where I found my friend Count Guido Chigi busily preparing for musical events soon to come; and the third to the Cathedral of striking black and white marble with the new bronze doors the Count had presented in gratitude for Siena's escape from destruction.

Southward from Siena the road leads through a desolate countryside where stones and scrub growth replace the usual rich Tuscan scene. We crossed the mountains at Roccastrada, a village above the Tuscan Maremma (a marshy region along the coast), noted for its breed of large white sheep dogs with lovely coats and evil dispositions.

Roccastrada is dominated by a grim 13th-century castle of the Aldobrandeschi.

Beyond the low range the country grew more fertile. Towns are many, though few of great fame. Best known, perhaps, is Montefiascone, where one may still have its Est Est wine and see the grave of the traveler who succumbed to the drinking of it. The story is that his valet, whom he sent ahead, marked all inns in which the wine was good with the word "Est." When he found the vintage of Montefiascone, he marked that word thrice.

Past Lake Bolsena, just west of Montefiascone, where our commander, Field Marshal Lord Alexander (now Governor General of Canada) had his headquarters, we reached the quaint city of Viterbo. It takes an active imagination indeed now to picture war-torn Viterbo as an important Etruscan city of what the Romans called *Tuscia Romana*.

Into Rome by the Route of Triumphs

Continuing southward, we reached Rome at last. Our car crossed the Tiber and passed along the Via Flaminia, through the Porta del Popolo, Gate of the People. This was the very path followed to the Capitoline by Roman generals accorded the coveted triumph.*

I remained some days in Rome, using my old rooms at Hotel Excelsior, thanks to its director, Comm. Giovanni Genovesi, who died subsequent to my visit. Passing through Piazza Venezia, I looked at the palace of that name where Benito Mussolini had his huge office from the balcony of which he was wont to harangue the crowd, usually assembled by order. On the other side is the building of the Venetian insurance company that we used as headquarters, with the Rome Allied Area Command.

Near by is the Capitoline Hill where on June 5, 1944, General Clark was joined by his corps commanders of the Fifth Army.

The Germans had fled the night before—with the urging of Gen. Geoffrey Keyes's II Corps. Gallant old Gen. Roberto Bencivenga, who had commanded the underground and with whom we had been in constant radio communication, turned over his civil and military functions to us. How well earned was the Legion of Merit that President Roosevelt awarded him!

In that building, where once stood the Temple of the Capitoline Jupiter, AMG had its offices for two days. Then I broadcast a

* See, in the NATIONAL GEOGRAPHIC MAGAZINE for November, 1946: "Ancient Rome Brought to Life," by Rhyz Carpenter, and "The Roman Way," by Edith Hamilton.



Marzotto Woolen Mills

Even in Sunny Italy, Artificial Rays Help to Build Sturdy Bodies

These goggled and diapered youngsters relax under health-giving lamps in a modern hospital provided for 18,000 workers and their families at the Marzotto woolen works, Valdagno. The firm also maintains schools, recreation centers, sitters for children of working mothers, even a vacation retreat in the mountains (page 723).

statement that, in accord with centuries of tradition, we felt that no one should govern Rome from the Campidoglio (Capitoline) save a Roman prince.

Accordingly, we moved to a building in the Piazza Venezia, and I appointed Prince Filippo Andrea Doria-Pamphilj as mayor in a simple ceremony in the Hall of the Caesars. Had anybody told me in prewar times that I should ever stand in the Capitol at Rome and appoint a Roman prince mayor of the Eternal City, I should have smiled.

I drove with Roman friends to the top of the Janiculum Hill and viewed the great panorama of the city—Monte Mario, the Quirinal Palace, the Pantheon, the Palatine Hill, the Forum, the Hippodrome, the Colosseum, and the rest, and on beyond the blue Sabine and Alban Hills. On the other side I could see the Vatican City, dominated by St. Peter's, around which cluster galleries containing some of man's greatest works of art.*

Though it was not the "season" in Rome, I was received by the President of the Italian Republic, whom I had long known; His Most Eminent Highness, the Prince Grand Master of the Sovereign and Military Order of Malta;

several ministers; cardinals; the Chief of Staff of the Army; and others.

All told me the same story of Italy's supreme efforts to recover from the war and to return to her normal way of life. They spoke of the great need for the Marshall Plan and of restoration of Italian colonies and liberalization of immigration laws. Too often I found people who had little idea of what the Marshall Plan is, merely considering it some new form of American charity. Perhaps the Marshall Plan postage stamps, about to be issued by Italy, will bring about a better understanding.

During my service in Italy I had frequently been received in private audience by His Holiness Pope Pius XII. He had now gone for a much-needed rest to his summer country palace. I did not wish to intrude, but an invitation came, and I drove out to Castel Gandolfo one morning.

An interview with the Pope is impressive. One's particular brand of religion has nothing

* See, in the NATIONAL GEOGRAPHIC MAGAZINE: "Imperial Rome Reborn," March, 1937; "Splendor of Rome," by Florence Craig Albrocht, June, 1922; "Augustus—Emperor and Architect," October, 1938, and "Smallest State in the World (Vatican City)," March, 1939, both by W. Coleman Nevils.

to do with it, for His Holiness receives folk of every faith. I was once in the Vatican when a delegation of 250 Jews came to thank the Pope for his gallant fight on behalf of the oppressed Jewish people.

The Pope Appeals to Men of Good Will

The Pope was, as always, kind, gentle, understanding. He has an astounding memory for facts and folk. With his facility for languages he can converse with many visitors in their own tongues. He spoke of the need of men of good will working together in the presence of common danger.

Under a full moon I went for a drive on the Ancient (built in 312 B. C. by the censor Appius Claudius), not the slightly younger "New," Appian Way my last night in Rome and next day turned toward the former Kingdom of the Two Sicilies and its capital, Naples.

Reaching Cassino in two hours, I found this town on the Rapido River an extraordinary mixture of old and new, of destruction and reconstruction. It was reduced to rubble by Allied attacks in early 1944, and was finally occupied by Gen. Wladyslaw Anders's gallant Polish II Corps (page 720).

With the town the Abbey of Montecassino likewise perished. Here, where St. Benedict established his rule and founded the order that bears his name, had been collected priceless objects of art and a famous library. Happily all this had been removed to a place of safety before the buildings were destroyed by the air attack of February 15, 1944.

We drove up the steep mountain road from Cassino to the ruins of the Abbey and talked with the Benedictine brother in charge of the restoration. The destruction, "the will of God," he said, was not the first Montecassino had suffered through war. The Lombards had laid it waste between A. D. 581 and 589, and it had not been rebuilt until 717. The Saracens had destroyed it in 884; an earthquake had toppled it over in 1349; and the French had partly ruined it in 1799.

"So you see," he continued, "we are rebuilding after only four years; whereas our brothers once had to wait for more than a century and a quarter."

From Cassino the road skirts one village-crowned mountain after another. San Pietro was the locale of one of our best official war films.

Farther along is Capua, on the Volturno River, where but recently AMG had a center of distribution. The town is old, but it is not the Capua of antiquity, the Samnite capital. That, a little farther along, is now known as Santa Maria Capua Vetere. There I saw the

ruins of the Roman amphitheater. The road runs right through a gate in the old wall.

This was the Capua in which Hannibal passed the winter after his troops had defeated the Romans at Cannae, 216 B. C. His victory made Capua side with Carthage, for the city actually hoped to supplant Rome itself.

During the winter of 1943-4 the Fifth Army wondered whether they would ultimately take Rome. They knew Hannibal never had taken it, for all that he was the greatest master of rapid troop movement and audacity of attack before Napoleon. The Fifth Army was the first force in history to take Rome from the south, if claims on behalf of Belisarius and Robert Guiscard are not credited.

Where Germany First Surrendered

Caserta is perhaps better remembered than any other town in Italy, for its gigantic palace was headquarters in turn of the Fifth Army, the Fifteenth Army Group, Allied Force, Mediterranean Allied Air Forces, and the Mediterranean Theater of Operations.

The building, one of the largest in the world, was begun in 1752. It is to Naples what the Pentagon is to Washington. Here, on April 29, 1945, German delegates surrendered German forces in Italy to the Allies, thereby anticipating the general surrender at Reims on V-E Day.

The straight road into Naples, lined with plane trees (sycamores), took me past the airports of Marcianise and Capodichino, the last actively used by Italian and foreign aviation companies, for Naples is a most important center. The buildings, largely destroyed during the war, are only partly restored, but enough to enable the airport to function.

Naples appeared once more the same sensuous city that has been loved and criticized through the years. Her people have always been poor, but it has been a poverty without shame and largely without suffering. Food is hard to get, but folk manage somehow.

In the crowded tenement districts I saw smiling women caring for their babies in the streets, cooking on primitive stoves in the open, and carrying great burdens.

I stopped at Hotel Excelsior, which has been virtually rebuilt since it was wantonly burned by the Germans in 1943. The manager, Signor Giuseppe Baccalin, knew many Allied officers and men when he was at the Royal Daniele in Venice.

Arriving at dusk, I went at once to Giacomino's Restaurant, near the old castle opposite the Royal Palace, where Giacomino himself, that good friend of Allied guests during our early stay in Naples, spread for me a

feast that old Lucullus would not have scorned. He remembered my favorite dishes and even had brought in street musicians to sing favorite Neapolitan songs, among them the familiar *Funiculà, Funiculà*, written in honor of the funicular railway up the Vomero. We had a part in restoring the funicular after the Germans had damaged it.

The Polite "Surrender" of Naples

On the dramatic day of October 1, 1943, I was one of a small group of AMG officers who first reached the City Hall after the Germans had departed. We had the unique experience of receiving the "surrender" of a city which was not surrendering at all, a city which very much desired our presence. The Germans had withdrawn a few hours earlier to the hilltop whence they kept Naples under desultory fire.

Once in the City Hall we were shown into the office of the mayor, though that official, a well-known Fascist, had decamped. In charge was Dr. Giuseppe Solimena, Commissioner Extraordinary. He, not without emotion, said that he had the sad duty of surrendering the city to us.

We told him that the Fifth Army had come as liberators and not as conquerors, and that General Clark, who was entering the city at that moment, would doubtless tell him the same.

"But," asked Solimena, "must we not lower our flag?"

"Not at all," we replied. "We have no wish to dishonor the flag of Italy, but we do ask that you raise the Stars and Stripes and the Union Jack beside it."

In so directing, we were carrying out the precedent of General Eisenhower, who authorized ships of the Italian Navy to come into port under their own flags. This gave the Neapolitans great joy, and in a short time American and British flags appeared from somewhere and the city was ablaze with them.

Dr. Solimena and I shook hands on the balcony where the crowd could see us, and repeated this ceremony in other public places amid wild applause. Then we all went off for luncheon as guests of the municipality.

After Italy had declared war against Germany (October 13, 1943), this flag of Naples was presented to us as "friends and brothers" who had "refused to dishonor it as enemies." A tablet is being erected in the Town Hall to commemorate the events of that morning.

Naples, old and large and dirty, contains a population descended from many races which, in turn, have occupied the city. It is Greek in origin and may be older than Rome. Its very name is a corruption of the Greek

Neapolis, or New City, to distinguish it from *Palaeopolis*, the Old City near by.

During the general elections not long ago the Communist Party, which was overwhelmingly defeated, sought to win popular support by using Garibaldi's picture as its emblem.

Just before the election, some of the anti-Communists wired the statue of Garibaldi near the Naples railway station and concealed a loudspeaker. Passers-by were startled to hear the statue cry out: "Do not vote for me! Do not believe the lies that are told in my name!"

The Naples post office has been repaired and is again in full use, though the great cavity in the street caused by the explosion of the Germans' time bomb is still there, walled off to protect pedestrians. That explosion occurred just a week after the Fifth Army entered Naples. It caused much loss of life, many children being victims.

From our AMG offices just across the street, I happened to be looking on at the moment of tragedy. It gained nothing but hatred for the Germans, and was of no more military value than the burning of the city's ancient archives and the library of the University of Naples.

How busy the port of Naples now appeared! The Germans had turned this port, Italy's second largest, into a mass of overturned broken ships, and the U. S. Army had restored it enough to meet war needs.

Now I found the Italians had done much more restoration work; but an overturned submarine was still used in 1948 as a walk between the shore and a ship in the harbor. Much remains to be done. For this work Naples hopes to use Economic Cooperation Administration funds.

Shops which had been emptied by the Germans, and could not replenish their stocks during the war, are prospering. Luigi Barra supplies some of the prettiest and best of gloves. Corals and cameos and articles of carved tortoise shell once more abound.

Falernian Wine Can Still Be Bought

Wineshops sell all manner of wines, particularly those of this region, such as Capri, Ischia, Lachryma Christi, Falerno, Gragnano, and many more. Horace wrote of sitting under a tree and quaffing old Falernian wine.*

In Naples I visited some of the hospitals where we had treated sufferers from typhus fever during the epidemic of 1943-44. This outbreak was stopped by use of DDT. Never

* See "Horace—Classic Poet of the Countryside," by W. Coleman Nevils, NATIONAL GEOGRAPHIC MAGAZINE, December, 1935.



U. B. Nary, Official

At Salerno, Italians Read a Message from the First American Invaders of Fortress Europe

On the wall is Proclamation No. 1, posted by General Hume's Military Government unit in September, 1943. Here began the long, costly struggle that ended in 1945 with surrender of German forces in Italy. On the day this photograph was made, the author's party narrowly escaped death when a land mine was detonated on Salerno beach (page 708).

before had an epidemic been stopped thus. The Neapolitan hospitals, including that of the Order of Malta, are going strong.

The Grand Prior of the Order for Naples-Sicily, Marquis Carlo Maresca di Camerano, recalled with amusement one of the German broadcasts during the epidemic. "There was," said the German radio, "no typhus epidemic at all. It was merely a story started by a man named Hume, who wished to get rich by selling drugs to the United States Army." My friend, with a wink, asked me how the drug business was coming on.

Baia and Pozzuoli, ancient seaports, are near by. St. Paul landed at Puteoli, early name of Pozzuoli, when he came to Italy to demand trial in Rome, as was his right as a Roman citizen. Lucullus had one of his villas in the Baia region, and not far away we revisited Lake Avernus (Lago d'Averno), which Virgil said was the entrance to the underworld.* Cumae, where once the Cumaean sibyl dwelt, is the oldest Greek colony in Italy.

One of the best-known areas near Naples is the Peninsula of Sorrento and the dead

cities of Pompeii and Herculaneum. I went to Pompeii with the celebrated Prof. Amedeo Maiuri, who has done much to reveal how ancient people lived. Pompeii is open to visitors, its treasures again on display.

The city, destroyed A. D. 79, was rendered even more ruinous when World War II aviators let fall some bombs here. AMG aided in sifting every bit of earth and stone thrown up by the explosions, and Pompeii is now in as good repair as before the war and new treasures are still being unearthed.

Vesuvius Ominously Quiescent

While I was there, those who gave Vesuvius a thought were concerned at its quiescence, which so often precedes an eruption. The old villain, they told me, had been without sign of life since the eruption I had seen in 1944. To everyone's relief, smoke began to rise some weeks after my visit.

Again I visited Herculaneum, which was destroyed at the same time as Pompeii. A

* See "Perennial Geographer (Virgil)," by W. Coleman Nevils, NATIONAL GEOGRAPHIC MAGAZINE, October, 1930.

goodly part is under the modern town of Resina and cannot be reached. Herculaneum has been more difficult to excavate than Pompeii, since it was covered originally not with dry ashes but with a torrent of liquid mud which solidified into a kind of tufa. Later eruptions added lava.

Passing on, I stopped for a while in Castellammare di Stabia, the Stabiae of the Romans, and the third of the three important towns that Vesuvius destroyed in the year 79. In that city the 82nd Airborne Division had waited briefly before taking Naples.

At length I reached Sorrento and stopped once more at Hotel Vittoria, which all Fifth Army personnel remember as a rest area. It is again open commercially and again one may descend by elevator from the hotel to the beach for a swim in the bluest of water.

Sorrentine shops, such as Gargiulo's for laces and inlaid wood, are again in operation. Many of the shopkeepers remembered our men and asked about them by name. The square near which boats land is named Piazza Musmanno, in honor of an AMG officer.

From Sorrento to Capri

One convenient way of reaching the island of Capri is by the restored boat service from Sorrento. By a sleepy horse carriage I drove from the town of Capri to Anacapri, the island's second town, where the new hotel is almost finished. At Capri, I saw again San Michele, made famous by Axel Munthe's book. The house is now a museum, and in the garden I even viewed the tortoise mentioned in his book. High above the town is the ruin of the villa of Emperor Tiberius.*

Bathing at Capri is excellent, whether at the Marina Grande or the Marina Piccola. At both famous folk of the world are to be seen at play. Recently Italian authorities have ruled out two-piece bathing suits for ladies. When one foreign girl appeared so clad, a policeman told her that she could not wear a two-piece suit.

She replied: "All right, which piece shall I remove?"

Once more the little motorboats take one to the Blue Grotto, on the north coast, and I again visited that strange and enchanting place, with its unearthly sapphire color derived from the light passing through the water.

One of the most expensive shops in Capri is run by Countess Edda Ciano, Mussolini's daughter and widow of his Minister of Foreign Affairs, whom he ordered executed. But she no longer lives at Villa Ciano as formerly.

Back in Sorrento we drove around the coast

of the peninsula by the famous Amalfi Drive, as foreigners usually call it, one of the finest views in the world and a worthy rival of the Corniche near Nice.

Farther on lies Amalfi, one of the medieval maritime republics of Italy. Its arms now appear as part of the coat of arms on the Italian Republic's naval ensign, merchant flag, and jack. Amalfi merchants fared forth to the Holy Land and instituted the hospital in Jerusalem which gave its name to the Knights Hospitalers of St. John in the 11th century.

As an honorary citizen, I was received in the City Hall and with the officials visited the Cathedral. There, though not all Scots know it, rest the bones of St. Andrew.

Fishermen in Amalfi once more go out at night with their lights to attract fish to their nets. During the war, for security reasons, the British and U. S. Navies prohibited this form of fishing.

Up the mountain from Amalfi is dreamy Ravello, to which my small Fiat easily made the sharp turns without backing. Leaving the car in the main square, for one must walk in Ravello, I went to Hotel Caruso Belvedere, where Gino Caruso, the proprietor, a kinsman of the great Neapolitan-born tenor, made me at home. He had me served with *cannelloni* (large macaronilike tubes filled with meat) and chocolate soufflé, the two specialties of the house. The Caruso wine is equally famous whether white, red, or rosé.

U. S. Invasion of European Mainland

On the road again, I pushed on to Salerno. That town holds abiding memories not only of the long ago but of recent times. Near by, on September 9, 1943, American troops landed, and our invasion of Europe's mainland began (page 707).

Greeks and Romans lived here; Lombards and Normans followed centuries later; and in more modern times French and Spaniards contended around the city, and also Neapolitans and other Italians. It was a fitting place for the Allies to begin a campaign that was to overthrow Mussolini and Hitler.

When we arrived there, I visited the prefect, my old friend Dr. Antonio Mascolo, who had been secretary of the commune of Naples. Together we went to the venerable Cathedral, where repose the bones of St. Matthew and also the few remains of the great medical school of Salerno, the most important in

* See "Isle of Capri: an Imperial Residence and Probable Wireless Station of Ancient Rome," by John A. Kingman, NATIONAL GEOGRAPHIC MAGAZINE, September, 1919; and "Capri, the Island Retreat of Roman Emperors," 12 illustrations from photographs by Morgan Heiskell, June, 1922.





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Kochstrasse by Luitpold (Gustaf)

Near Historic Brenner Pass, Man's Graceful Church Tower Reaches Skyward with Nature's Soaring Cathedrals

Dark masses of pines hem in placid farmyards surrounding the village of Funes, northeast of Bolzano. Beyond, in solemn profile, looms the Odle group of the Dolomites; rising to 9,525 feet. Centuries have carved the limestone crags along Italy's northern frontier into fantastic shapes.

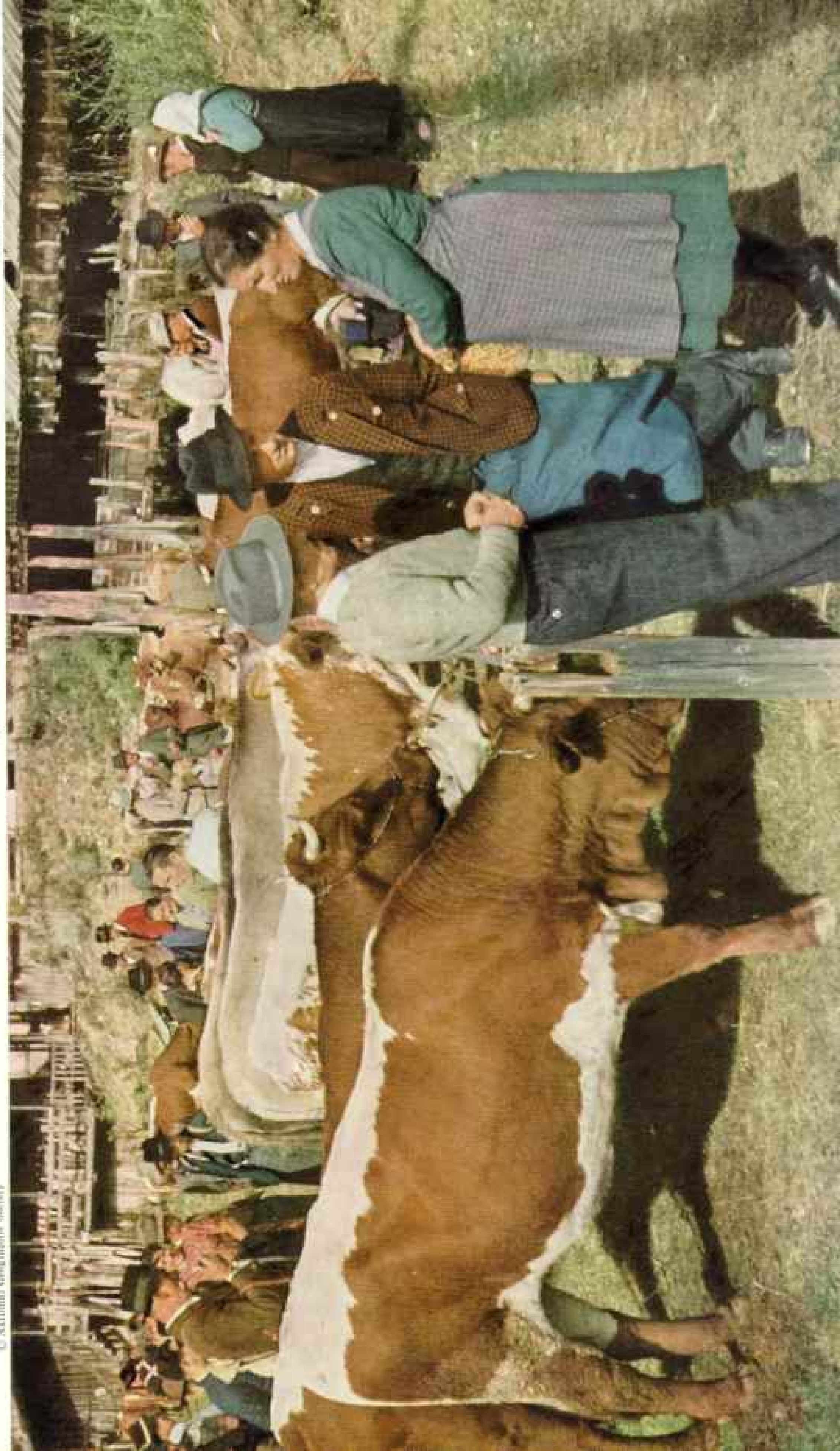
At Ortisei's Cattle Market, Buyers and Sellers Haggle in an Ancient Romance Dialect

Here a mountain couple discuss prices and a milch cow's fine points with an aproned dealer. Under the ECA program, Italians look forward to improvement of herds through artificial insemination. Swiss and Austrian influences are strong in this region. Many of the people speak Ladin, an obscure offshoot of Latin.

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Restaurants by Ladef Ogelli





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Photographs by Lodovico Ghislini

Racing Cyclists Sprint Past a Cheering Crowd in Como, near the End of a 2,000-mile Grind Around Italy's "Boot"

This scene is enacted in dozens of villages each spring as Europe's top pedal-pushers compete in the Giro d'Italia. Riders go south to Naples, east to Bari, north to Bologna, and back to Milan, the starting point. They ride about 300 miles a day, resting at night.

◀ Motorcycle Racing Roars Back as a Favorite Italian Sport

Northern Italy factories are again turning out a long list of products, including automobiles, bicycles, and motorcycles. Many of the latter are tested by daredevil riders in spine-jarring races over enduro-type mountain roads.

Here a contestant confers with his mechanics before the start of a race around the outskirts of Varese, northwest of Milan. His shirt bears the name of the Guzzi plant, maker of his machine.

▶ On Balmy Sundays, Milanese Bask in the Sun on Como Steamers

An hour's drive from busy, crowded Milan takes holiday throngs to peaceful Como.

Touring the lake's shores in 1948, the author saw Italy's 400-year-old silk industry going strong. In every garden, mulberries grew beside olives and grapes. Near-by mills were busy transforming tossamer thread into rich fabrics.

General Hume also revisited the villages on Lake Como where, in April, 1945, Italian partisans captured Benito Mussolini, his mistress and other followers, killed them, and took their bodies to Milan to be strung up by the heels over a filling station.

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Re-statement by Louis Gruhn



When Hay's To Be Gathered, They Turn Their Backs on Maggiore's Charms

On a steep slope near Stresa, one farm woman (right), bowed under a mountainous load, gazes glumly at her chattering, unburdened companions.

Below them, like a toy village resting on a mirror, lies Isola dei Pescatori (Fishermen's Island). At the mouth of the bay of Pallanza (left) is Isola Madre, largest of the four Borromean Islands, named for a noble Italian family that began converting them into garden spots in the 17th century.

Above Isola Madre, hotels and villas on the outskirts of Pallanza gleam like cake frosting on Punta della Castagnola. Beyond, the lake stretches away into the Alpine mist toward Switzerland.

Though its name means "major," Maggiore is the second largest of the Italian lakes. It covers 87 square miles, as compared with Garda's 147.

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Excerpted by Latet Osmitt



Hardly a Rich Haul—But Every Little Bit Helps!

Between excursions to scenic spots such as Isola Bella (background), this Lake Maggiore boatman nets a few tiny fish from the quay at Stresa.

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In Murano, Housewives Plus Fountain Mean Gossip

While they chat, their husbands work in the town's famous glass factories. Murano occupies five islets in the Venetian Lagoon.

Photographer: Sir Lancelotti Corbelli





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Illustrations by Laila Orrell

↖ City Park and Village Square Overflow with Italy's Biggest Crop—Children

Everywhere the author found crowds of youngsters such as these frolicking in a Milan park pool. Italy's birth rate has always been among the highest. Contributing to overpopulation are a lower death rate, due to improved health, and a virtual end of emigration.

↘ To Catch Trade, a Milanese Hardware Dealer Moves His Stock Outdoors

Pots and pans, brooms, baskets, and long-handled feather dusters are spread before buyers in the Piazza Vetra, near the 6th-century Church of San Lorenzo. In Milan, General Hume renewed acquaintance with the Mayor he appointed in 1945.



Europe in the early Middle Ages. Until Joachim Murat, Napoleon's brother-in-law, closed it in 1811, it had maintained an unbroken history for a thousand years or more.

St. Thomas Aquinas, while a professor at the University of Naples, wrote in praise of this famous school, as have many others. Its great book on hygiene contains such timeless maxims as: "If you want to live in good health, drive away ill humor and avoid becoming angry," or "Don't drink too much; eat moderately."

In the offices which I had first visited on the day we entered Salerno in 1943, I met once more the men whom AMG had placed in office. It was a happy reunion, for this was September 9, Salerno Day, as we call the anniversary of the city's liberation.

Following our ceremony in the Prefecture of Salerno, a motor procession was formed, and behind motorcycle policemen with screaming sirens (Lord forgive us for teaching them that trick!) off we went to Paestum.

We passed Pontecagnano, town famous for its *pizza*, that delectable pastry prepared from tomato, anchovies, and *mozzarella* cheese (made from buffalo milk).

We saw poor Battipaglia too, an old town thrice captured in this war, first by us, then by the Germans, and finally by us.

When I first saw it in 1943, there was, literally, not one habitable building left. Now, five years later, much of Battipaglia has been rebuilt with salvage stone, and there are restaurants and shops and homes and smiling faces as of yore. There is even a new railway station.

Under the personal guidance of Prof. P. C. Sestieri, director of archeological work in this region, I revisited the famed Greek temples at Paestum, the delight of visitors for many centuries. The city dates from about 600 B. C.

When Allied soldiers first caught sight of these ruined buildings, they thought the damage had resulted from the present war! Our AMG signs are still in evidence.

A 4,500-year-old Cemetery Uncovered

Of extreme interest now is the necropolis discovered in Paestum by the merest chance of war.

General Clark had ordered bulldozers to clear off a level area. When the engineers were leveling the ground, they found a number of cists containing pottery, funeral objects, and bones—nothing other than a cemetery of 4,500 years ago! (Page 718.)

Immediately the site was re-covered and the landing strip built some distance away. More than thirty of the tombs have been opened

since, and about as many have been left intact.

Sestieri told me that the date has been fixed at not later than 2500 B. C. "This is possibly the oldest cemetery in Europe," he said. "These tombs were here before the Trojan War!"

A half hour's ride south of Paestum lies the little town of Agropoli, its name derived from the Greek *akropolis*, the old fortress atop the mountain. I found the people busily engaged in sun-drying figs, the town's chief industry.

Hotel Santa Rosa, where many of our AMG men stayed, is under the same old management, so that we had a pleasant reunion and toasted Italian, British, and American friends in the sweet local wine.

The bridge, destroyed by enemy fire, has been rebuilt, and the town is again of easy access. Several damaged American landing craft are still on the beach. From this point Marquis Achille di Lorenzo, my loyal voluntary secretary through the whole campaign, who had been with me thus far on the present trip, had to return to Naples.

A Land of Weird Customs

South and east of Paestum and Agropoli I entered an area that few visitors see.

Lucania, as this Compartment of Italy is now called (Mussolini resumed this ancient name and dropped the name Basilicata), is almost an unknown land in many ways. Communications are difficult and slow; distances are great and poverty even greater.

Running through Lucania are some of the highest mountains of all the Apennines. Here earthquakes abound. Many of the forests were destroyed long ago, and the denuded rock offers no resistance to the bleak winds. Carlo Levi, in his *Christ Stopped at Eboli*, describes a desolate Lucanian town.

Here most of the inhabitants believe in the presence of supernatural beings such as demigods (usually evil ones) and warlocks. Here one wears an amulet to protect against the Evil Eye, against impotence, and against Satan and other "enemies of God." Opposing the evil spirits are angels who sometimes transport holy images from place to place. There are miraculous grottoes and ways to cast out devils.

This is a most undeveloped area. About the only modern thing is the good highway running through, with electricity in limited supply in the larger places. Here a foreigner is something of a curiosity, though I experienced none but kindly treatment. Malaria was, and is, the curse of the region.



National Geographic Photographer Willard B. Gilver

GI "Archeologists" Helped Uncover This Jar in a Tomb Dug Before the Trojan War

The author delivers the vessel to Neil M. Judd (left), Curator of Archeology, for exhibition at the Smithsonian Institution, Washington, D. C. The relic came from a 4,500-year-old cemetery laid bare by Fifth Army bulldozers clearing ground for an airstrip near Paestum, on the Salerno beachhead. An Italian expert said this "city of the dead" was possibly the oldest in Europe (page 717).

When I asked one mayor whether the disease were present, he indignantly replied, "Oh, no, Signore, here the air is good," and he drew a deep breath to prove it.

To him the words "mal aria" still connoted "bad air." But there were too many yellowed malarious faces.

A few signs placed there by Allied armies are still to be seen. Thousands of the inhabitants have emigrated from here to America. I saw some who had returned to spend their declining days. Others spoke of kinsfolk in America.

I spent the night in the town of Sapri and fared forth betimes for Calabria. I passed Paola, birthplace of St. Francis of Paola, before reaching Reggio Calabria.

There is frequent ferry service from Villa San Giovanni, near Reggio, to Messina, a journey of less than an hour. The ancients used to say that on one side was Charybdis and on the other (mainland) Scylla, the two monsters who took toll of mariners and from whom Ulysses escaped. I took the ferry across the strait to begin several days' travel in Sicily. That will be the subject of a later story.

After my sojourn there, I flew back from Palermo to Naples in a converted C-47, the driver taking the car overland. From Naples, after a night, and again accompanied by di Lorenzo, I drove on to Rome by a highway which leads through many a seacoast town where our troops saw active fighting.

Minturno is once more leading its quiet life, little known to the outside world except to archeologists who study its Italic, Greek, and Roman remains.

At Formia, one of the few towns damaged by naval bombardment, we saw our former office, now restored as an inn. The Allies' stay in Formia was so brief that I wonder if it will leave an impression on people whose record of visitors goes back to Jason's Argonauts, on their search for the Golden Fleece; to Aeneas, fleeing from burning Troy; and to Cicero, buried here. Cicero's reputed tomb was pointed out to me. The town's present inhabitants recalled with pleasure the kind treatment they had experienced from AMG.

The road runs near, but not through Gaeta, where various emperors and Cicero had villas.

Once practically independent, it was captured by the Normans soon after their con-

quest of England. Lord Nelson's fleet was here, and here the Bourbon dynasty of Naples took refuge, but the city was captured by the Italians in the wars for unity.

Northwest of Gaeta we passed finally into the area of the Pontine Marshes. Here Mussolini did an excellent job of improvement of the land. Powerful pumps drew the water out of the mosquito-ridden marshes. Thus was malaria's malevolent rule of centuries ended.*

In 1944 the Germans blew up these pumps, so that the water again settled in the marshes, and consequently there were mosquitoes and malaria once more. AMG did what it could during the campaign to keep down malaria, but it was too much for an army facing the enemy. Now in 1948 the new and repaired pumps were working, with the natural reduction of mosquitoes and consequently of malaria (page 721).

When the Pontine Marshes were made habitable, Mussolini built several new towns, to one of which he gave the Fascist name of Littoria. It is now called Latinia (Latina), and has some 20,000 inhabitants. In this modern little city AMG had its offices in the Fascist building just before we moved into Rome. I saw our old offices, once more devoted to the prefect's establishment.

Anzio Beachhead Now a Sleepy Spot

From Latinia it is half an hour's drive to Anzio, now a household word that few Americans had heard before 1944. Only classical scholars remembered that Emperor Nero was born here A. D. 37.

I found Anzio once more a little port town, near enough to Rome to help serve the city but not large enough to rival such places as Leghorn. As the town, with its twin, Nettuno, slept in the noonday sun, it was hard to visualize those cruel days in January of 1944 when our VI Corps had so gallantly established that costly beachhead, one of the necessary milestones on the road to Rome.

What was once our office is again devoted to the commerce of peace. Underground, the cellars and passages which we used in 1944 again serve for storage of wine and olive oil.

One may now drive from Anzio to Rome in less than an hour, but in 1944 it took us several weary and costly months. Near by is the cemetery in which rest our soldiers who lost their lives at Anzio, as well as some who died in other battles.

* See, in the NATIONAL GEOGRAPHIC MAGAZINE: "Story and Legends of the Pontine Marshes," April, 1924, and "Redemption of the Pontine Marshes," August, 1934, both by Gilasio Cactani.

Beyond Anzio is the town of Cisterna, or what there is left of it, for the ruins of war are still unrepaired, though the place has been cleaned up. Here the two columns of the advancing Fifth Army united in May, 1944, for the final drive which liberated the Eternal City on June 4.

After a night in Rome, we drove on northward, continuing the coastal road. At a distance of some 45 miles I passed through Civitavecchia, an old town, as its name implies, which was and is again one of the chief ports for Rome. We had seen much of it in war-time.

Farther northward is Orbetello, famous for its eels, shipped all over the world. The eel industry, ruined by the war, has been resuscitated.

We stopped at Grosseto, which but a few years ago had been an AMG center of distribution. The inn, formerly our mess, turned out a luncheon of dishes which the proprietor said "the British and American gentlemen had found not bad." That, as an understatement, was not bad, either. The arms of the Medici family are everywhere, though the town is modern.

We passed through Piombino, another busy port where the U. S. Army used to receive its supplies after the troops reached the north. Many repairs had been made. Unfortunately the boat service was limited, so that I could not run over to the island of Elba, once the shadowy empire of the exiled Napoleon.

At Cecina, where the Fifth Army had headquarters under pines near the sea, the pine-nut industry again flourishes. Leghorn, or Livorno as the Italians call it, was still largely wrecked, but the port, Italy's third largest, was working busily. This city was the headquarters of our Mediterranean Theater of Operations after we left Caserta. In the center of town there was then a "black zone" which the Germans had walled off.

Home Town of "Leghorn" Hats

"Leghorn" hats are so called merely because they have long been shipped from here. They are made in Fiesole, a suburb of Florence.

Mussolini's son-in-law, Count Galeazzo Ciano, was from Leghorn. We authorized his burial after his execution at his father-in-law's command January 11, 1944. Here the Italian Naval Academy is once more giving instruction, though the size of Italy's Navy is limited by the treaty.

The great city of Pisa is still lying in her ruins, but the stones of those ruins have been cleared away to a great extent. Along the



U. S. Army, official

Cassino, German Stronghold Blocking the Allied Drive on Rome, Crumbles under One of History's Greatest Air Attacks

Dark blotches mark bombs bursting on March 15, 1944, when 678 planes dropped 1,271 tons of explosive. Germans fought on from the ruins until routed by Polish troops two months later. Near the old site, still sown with unexploded bombs, shells, and mines, Italians are building a new Cassino (page 705).



U. S. Army, Official

Over the Pontine Marshes, Flooded by Germans, a Plane Unfurls a DDT Cloud to Kill Malaria-bearing Mosquitoes

A major achievement of Mussolini's regime was draining these lowlands northwest of Gaeta. Germans blew up pumps as they retreated. Water spread over farmlands; mosquitoes came back. Malaria flourished until AMG went to work with DDT. In Naples the insecticide halted an epidemic of lice-borne typhus (pp. 706, 719).

Arno one must still sorrow at war's toll of Italy's art. But the Cathedral, the Baptistery, and the Campanile (Leaning Tower) are all in perfect repair now, for their slight damages were healed before the Allies left.

So great was General Clark's solicitude for the Leaning Tower (for all that the German radio said that he was going to have his engineers try to straighten it!) that he would not allow soldiers to climb to the top lest the enemy, who had observation, would destroy the tower by shellfire and claim we were using it as an observation post. When AMG first reached Pisa, they found similar notices posted by the Germans.

While the great frescoes in the Camposanto (cemetery), such as the "Map of the World" (1390) and the "Triumph of Death" (1350) were being restored, we found, under the plaster that had broken away, the original brown chalk drawings which had served the painters who completed the frescoes. These marks had not been seen for some six centuries (opposite page).

From Pisa it is an easy drive to Florence over an almost straight road through typical lush Tuscan countryside. We saw a few Roman cattle, as they are called, though the breed is usually found chiefly in the Campagna. They are large clay-colored beasts, as dangerous to strangers now as were their ancestors two millenniums ago. In Florence I paused only long enough to pick up some jewelry and leather articles I had ordered at Leopoldo Settepassi's and Guglielmo Papini's.

Pistoia, Famous for Pistols

An hour's drive brought us to Pistoia, the ancient Roman town where Catiline was defeated in 62 B. C. Here was the scene of some of the fiercest struggles between the Guelphs and Ghibellines, which resulted in the creation of the Blacks and the Whites, described in Dante's *Inferno*.

Pistoia's many works of art are intact. In the City Hall I was given an ancient pistol as a souvenir of the town where that weapon is said to have been invented.

Across the Porretta Pass, once Brazilian Army headquarters, we were back in Emilia, pushed on northward, and stopped briefly in Mantua (Mantova), where in the ducal palace are laid scenes of *Rigoletto*. I had often visited the headquarters of the U. S. Army Ambulance Service in the "Rigoletto room" in 1918.

The most famous Mantuan died some time ago. His name was Virgil. Virtually undamaged, the city appeared to me as busy and as unconcerned as ever.

Arrival in Verona brought to my mind Shakespeare's *Two Gentlemen of Verona* and the love affair of Romeo and Juliet. The city was sorely smitten during the war, with the loss of beautiful palaces and historic buildings.

Here Romeo Wooed Juliet

The building that used to be pointed out by guides as the place of the balcony scene of Romeo and Juliet is gone. Since there are other palaces with suitable balconies, guides in future will doubtless point out one of them.

The fine old Communal Palace was undamaged, having been "done over" by Mussolini. Once more I visited the huge bedroom which my former ADC used to tell people that Dante and I had used—some centuries apart.

Unhurt by this war, as by many which preceded it, is the great Roman arena, built toward the end of the first century (page 730). I entered it and with little exercise of imagination recalled that day in 1945 when we held a great ceremony and gave certificates of service to the partisans, who at the time turned in thousands of weapons. My executive officer, Col. Arthur E. Sutherland, Jr., now Professor of Law at Cornell, took a leading part in all this.

The splendid statue of Can Grande, one of the great Scaliger, or della Scala, family is now freed from its protective brick and wood covering placed there during the war.

The city seemed normal in its way of life. The old market in the open square near the public buildings is dominated by a marble column topped by the winged Lion of St. Mark, showing that the Venetians were here.

A Mayor Brought from Jail to Serve

We paid a quick visit to Vicenza, the next town in Venetia (Venezia). This beautiful storehouse of Venetian art was seriously damaged during the war when our II Corps under General Keyes clashed with the enemy. Repairs, however, have been extensive and successful.

Vicenza was a scene of activity in World War I. Having known it in two world conflicts, I felt at home.

When we entered in 1945, it was found that the Fascist mayor had slipped away, and one of our first duties was to replace him. Enquiring as to what had become of Luigi Faccio, the mayor I had known in 1919, I learned that he was in prison in Padua for his anti-Fascist principles. It was the work of but an hour for Lt. Col. Francis M. Wray to send a car for him and restore him his office. This is a favorite story now in Vicenza.

Not far from Vicenza is the model town of Valdagno, in the region of Monte Pasubio, which was important in World War I. Here are the extensive woolen works of Count Gaetano Marzotto. This *lanificio* employs 18,000 workmen, for whose care some of the most modern facilities have been created. There are training schools for employees, schools for children, hospitals, recreation centers, etc. (page 704).

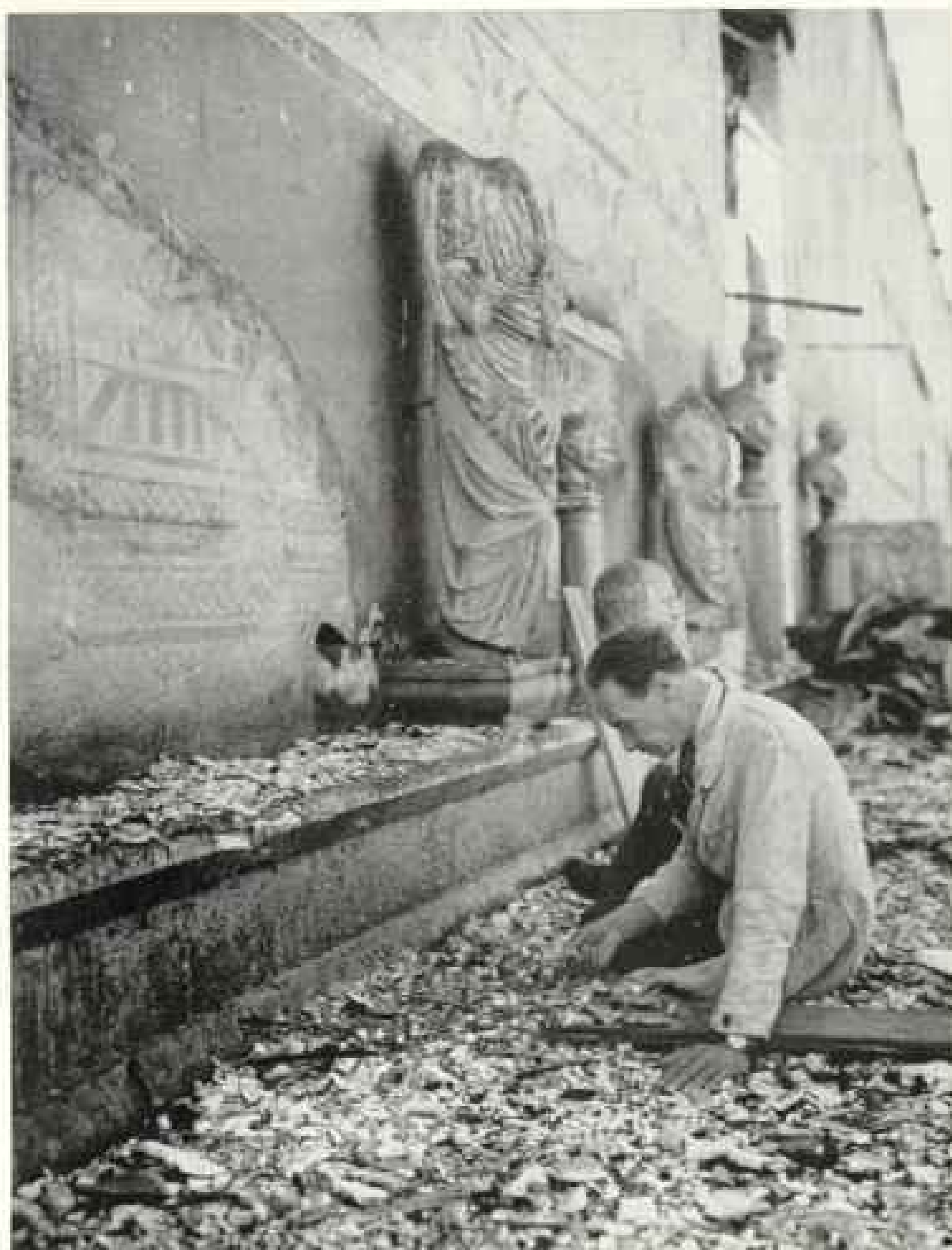
There is even a colony in the mountains for summer rest and recreation. The manager explained that they had offered to send representatives of the workmen to the Soviet Union and to the United States on condition that they return and report their comparison of the two systems. While there was no difficulty in visiting the United States, one excuse after another has thus far prevented the visit to Russia.

Where the Fifth Army Ceased Firing

A half-hour's drive from Verona and we were once more beside blue Lake Garda, to my taste the most beautiful in Italy.

In the adjoining towns of Gardone and Salò on the western shore the mighty fighting machine that was the Fifth Army came to rest and wound up its administration when the war had been won. I stood once more beside the lake where I had heard our Army commander, General Truscott, make the announcement that the Fifth Army was to become nonoperational. That day was exactly two years after its landing at Salerno on September 9, 1943.

In Gardone I saw the large hotels we had used as offices, all now serving the numerous visitors to Lake Garda, and Villa Piccoli where



Edgar Erskine Hume

Lost Beyond Recall Are Many of Pisa's Famous Frescoes

Here an expert from Florence sifts fragments from a wall painting in the Camposanto, a 13th-century cemetery where war took heavy artistic toll. Some frescoes have been put together like jigsaw puzzles. Molten lead, cascading down after a shell fired the cloister roof, caused much of the damage. The near-by Cathedral, Baptistery, and Campanile (Leaning Tower) escaped serious harm.

I had lived, as well as the small building in which was my own office. Mussolini's short-lived "Fascist Republic" had made its last stand here against the oncoming Allies. His villa near by is now a scene of desolation.

Over the splendid highway the little Fiat took us to Brescia and Bergamo, important cities that we had administered in 1945. Celtic tribes lived here before the Romans came. Attila passed this way.

I had time only for a quick visit to the industrial cities of Turin and Genoa, and for a flight to Venice for a day.

Turin, which had not suffered greatly in the war, seemed as busily engaged in com-

merce as ever, and with some of the most energetic people in Europe. The streets are lined with arcades, so that in rain or shine one may go about in comfort. Hotel Principe di Piemonte, where we used to live, is refurbished and affords modern comforts.

Best known of Turin's industrial firms is, of course, the Fiat works. Fiat is a little world of its own, directed by Prof. Vittorio Valletta, one of the best industrialists in Europe (page 697).

In Turin I found still on sale an amusing collection of jokes and cartoons about Mussolini, called the "Cardboard Caesar." It appeared in 1945 as soon as such a publication could be made with safety. The mere possession of such material would have sent one to jail in Fascist days, but the fact that it was collected at all shows that even a Duce cannot permanently control an individualistic people.

One of the jokes was a set of three drawings: Hitler, Stalin, and Mussolini. Hitler was labeled *Baffino* (small mustache); Stalin was *Baffone* (large mustache); and Mussolini was marked *Buffone* (buffoon). Italians love puns.

Genoa suffered terribly in the war. As Italy's largest port, the city was constantly the object of attack from one side or the other. The water front was completely flattened and still is a sad sight, though extensive repairs are in progress.*

The Colombia, used by American personnel during the war, is now a busy commercial hotel again. Genoese insist that they will make full repairs to their city and continue to justify their proud title of "The Superb." The commercial area of the city is already in rather good shape, though much remains to be done.

From Milan one can fly by Italian plane to Venice in about 45 minutes. From the airport I used a motorboat to the stop near Hotel Royal Daniele, that fine old palace now used as a hotel. It is managed by Comm. Riccardo Zucchi, one of Italy's best known hoteliers, who was my liaison officer during World War I.

Venice Now Gay as Ever

The city was filled to overflowing, for the season was in swing. There were those who had come to swim at the Lido, where Hotel Excelsior is no longer requisitioned for American personnel. Others came to enjoy the city's unique charms (page 729).

The museums are all in running order; for works of art that were taken away for safety during the war are now back in their accustomed places. The Palace of the Doges, St. Mark's Cathedral, and the rest are again peaceful in the sunshine. The bronze horses

which prance above St. Mark's, and which I have seen taken away in two world wars, are back in place (page 732).

The pigeons are just as fat and saucy as ever. I used to wonder how any of them survived in wartime when food was so scarce. Once I saw Italian children feeding these same pigeons, when I was sure their own stomachs were far from filled. I understood.

With my return to Milan, my revisit to Italy came to an end.

An hour before my departure I went to Castle Sforzesco, before which, in the summer of 1945, I had been one of the officers accompanying Lt. Gen. Willis D. Crittenger, commander of our IV Corps, witnessing the final parade of the Patriots (partisans). On that day Gen. Raffaele Cadorna, Chief of Staff of the Army, who had been their leader, decorated their colors with the Gold Medal for Military Valor.

At that time the commander of the Presidio of Milan had been Gen. Erisio Marras, who himself became Chief of Staff shortly after my visit in 1948. He was succeeded in Milan by Gen. Umberto Utili, erstwhile commander of the Legnano Division of our Fifth Army. These gallant Italian soldiers represent the best of their country's arms. General Marras's recent enthusiastic welcome in the United States was eloquent of the cordial feelings of respect between the two countries.

As I look back on it, I feel more than ever that the expedition in which American soldiers played an outstanding part in defeating the common enemy accomplished something else that is no less lasting. The good feeling engendered by our efforts to help people in need bore rich fruit.

Italy *is* recovering, *is* working hard, *is* making a go of the difficult situation in which she must always find herself, with her paucity of natural resources. There are poverty and need, of course, but Italy has done much to regain her prewar condition. And the work goes ever on.†

* "Genoa, Where Columbus Learned to Love the Sea," by McFall Kerbey, NATIONAL GEOGRAPHIC MAGAZINE, September, 1928.

† See in the NATIONAL GEOGRAPHIC MAGAZINE: "Behind the Lines in Italy," by Cpl. Macon Reed, Jr., July, 1944; "Italy, from Roman Ruins to Radio," March, 1940; "Sojourning in the Italy of Today," by Mrs. Kenneth Roberts, September, 1936; "Life's Pattern on the Italian Riviera," by Helen Churchill Candee, January, 1935; "Hunting Castles in Italy," by Melville Chater, September, 1935; "Holidays Among the Hill Towns of Umbria and Tuscany," by Paul Wiltach, April, 1928; "Inexhaustible Italy," by Arthur Stanley Riggs, October, 1916; and "Frontier Cities of Italy," by Florence Craig Albrecht, June, 1915. For additional articles on Italy, see "NATIONAL GEOGRAPHIC MAGAZINE Cumulative Index, 1899-1948."



Once a Citadel of Milanese Despots, Castle Sforzesco Now Houses Art Treasures.



Bathing, Bunting, and Basking—These Make Viareggio the Atlantic City of Italy's Northwest Coast

In summer, thousands from Pisa and other near-by cities flock to this sun-drenched resort on the Ligurian Sea. A statue in the town honors the English poet, Percy Bysshe Shelley, drowned near Viareggio in 1822.

At Pescallo, Lake Como Fishermen Net Trout, Perch, Pike, and Tench Almost at Their Very Doorsteps

Rough seas often batter small boats on Lecco, Como's southeastern arm. Pescallo's Villa Giulia once was owned by the King of the Belgians.

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While Burano's Menfolk Fish in the Adriatic, Lace-making Wives and Daughters Stay Home To Ply Their Needles

Like its big neighbor, this miniature Venice drowns on a network of canals. On fair days, needle experts work outdoors.

From Island Gardens Come Bouquets for the "Queen of the Adriatic"

Even flowers travel by boat to Venice, the labled city of canals nestling behind the lido breakwater. Here a boatman and his helper unload a day's supply.

Though venerable steel-prowed gondolas still ply the labyrinth of watery "streets," many have been replaced by power craft. Larger vessels, like the one beside the quay (background), carry travelers to Murano, Burano, and other islands of the Venetian Lagoon.

"Venice," reports General Hume, "gives one the impression of having returned to prewar life perhaps more successfully than any other Italian city. The museums are all in running order, for works of art that were taken away for safety during the war are now back in their accustomed places.

"The Palace of the Doges, St. Mark's Cathedral (page 712), and the rest are again peaceful in the sun-shine. The pigeons are as fat and saucy as ever."

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Enfance by Jutta Groll

In Verona's 1,800-year-old Arena, Roman Throgs Once Roared as Gladiators Battled Wild Beasts

The author, on his return visit here, recalled a 1945 ceremony in the amphitheater honoring Italian partisans who helped defeat the Axis.

From Orchards near Verona Come Luscious Peaches by the Ton

A valuable export commodity, is fruit grown in the fertile Adige River Valley and other northern Italian regions. Much of Italy's peach crop, harvested in July and August, goes to England.

The youngster takes time out from picking to apply the taste test, while mother and sister fill their baskets from a heavily laden tree.

Since the end of World War II, Verona has revived its annual peach festival. Orchardists exhibit their produce, and prizes are awarded to painters and photographers who create the best pictures with peaches as their subjects.

The festival is part of Verona's gay summer season, which reaches a grand climax with opera in the Roman arena (opposite page).

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Bronze Horses, Removed in Several Wars, Prance Above Doors of St. Mark's, Venice

The West Through Boston Eyes

BY STEWART ANDERSON

With Illustrations from Photographs by the Author

MY WIFE and I and Belinda, our black cocker spaniel, needed a change. An ex-GI, I had just come out of long hospital confinement. Helen was tired from the triple load of maintaining our home near Boston, holding a responsible position at Wellesley College, and driving over wintry roads to bring me presents and encouragement.

Belinda was at low ebb, too, after nursing six fine pedigreed puppies.

Those puppies did it! They brought us new tires and cash. With the rent from our cottage it should be enough.

I had never been west even to Albany, and Helen had only a faint recollection of her childhood in Nebraska. We would explore the West all the way to the Pacific coast.

There would be no real plan—just “westward ho—let’s see what’s over the next ridge.” As it turned out, this meant a 15,000-mile ride into 31 States, three Canadian Provinces, and even a slice of Mexico (map, pages 736-7).

Modern Covered Wagon Heads West

We were methodical only in equipping ourselves for a new, rugged standard of living. Into the trunk of our little four-cylinder car went Army-surplus sleeping bags, tested for 35° below zero. Around these we crammed our gasoline cookstove, camp lantern, tent stakes, canned goods, auto refrigerator, ax, shovel, and tool kit. On the bumper, after we got out west, we hung a water bag.

Under our legs, against the front seat, went the rolled-up tent. Up on the Willys’s roof we put tent poles, fishing rods, bedboards for sleeping in the car, and a tarpaulin to keep everything dry. Ours was a “covered wagon.”

Let others fight it out over lodgings! We were prepared to make our own bed, either on the prairie or inside the tiny sedan. But lest Helen stamp on the automobile horn while dreaming, I made a cover for it—out of a pie plate.

The back seat was smothered with suitcases and camp blankets. At the top of the pile we placed a thick pillow and, on that, Belinda. She could sleep here comfortably with her nose through a slit in the window. The arrangement made her happy; her ambition, apparently, was to sniff all America.

California in-laws had written us, “Get west of the Mississippi before early summer to avoid the worst heat.” We took this advice

to heart. With two dismal hounds in pursuit—they had been courting Belinda—we pulled out of our driveway on June 1, heading for Ol’ Man River by way of Niagara Falls and Springfield, Illinois (page 742).

Today in Mark Twain’s Home Town

For us the West began when we crossed the Mississippi. The Mark Twain Memorial Bridge carried us into Hannibal, Missouri.

Mark Twain had been haunting us. We had thought of him as we passed through Hartford, Connecticut, where, as he put it, people “labor along in the old customary way, as presidents of insurance companies.” In Connecticut he had made his last home and last joke. At Elmira, New York, we had stopped by his grave.

Some years previously, I had taken time off from life in a Cambridge soap company to read all Mark’s works and write an M.A. thesis upon his opinion of New Englanders—and theirs of him. Now I was curious to learn what his own home town thought of him.

Hannibal was glad to talk to us about its local boy who made good. Some townspeople whispered that Mark was a ne’er-do-well. Others were tremendously respectful and could recite long passages from his works.

All recognized his commercial value. It was “Mark Twain This” and “Mark Twain That” on signs throughout the city. We took a frontal photo of his boyhood home. After processing, the picture came back to us labeled “Mark Twain Hatchery and Feeds.” That was the sign visible over the famous white-washed fence.

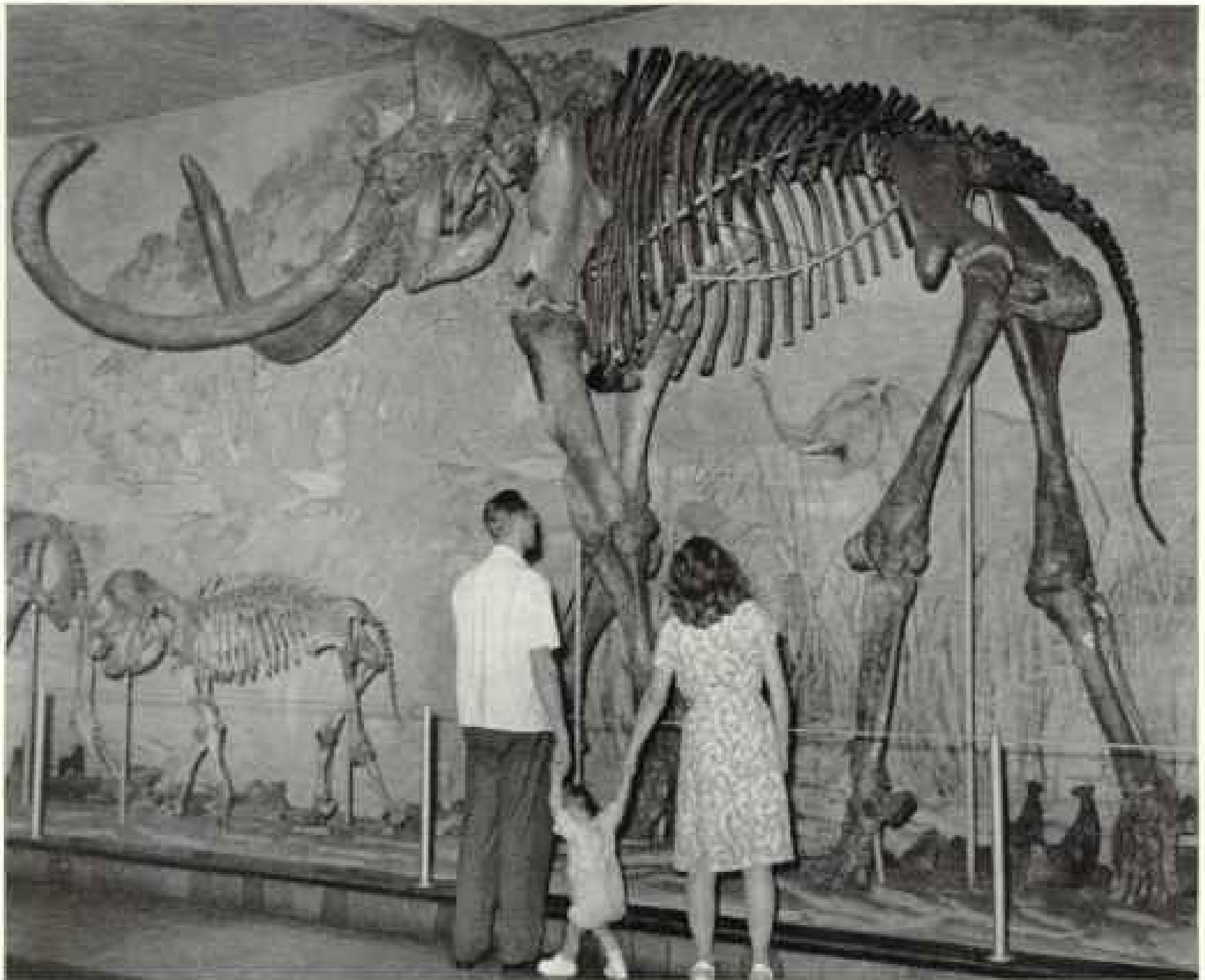
I wanted a picture of myself whitewashing Tom Sawyer’s fence—and discovered that a bucket and brush were kept at the Mark Twain Museum to meet just such a whim.

More in line with what visitors expect of Hannibal were the naked boys we saw swimming. A colored youngster in Huck Finn clothes roller-skated past Mark’s house.

Exploring Tom Sawyer’s Cave

Under the river bluffs we explored the Hannibal cave where Tom Sawyer and Becky Thatcher had their adventure with Injun Joe.

We expected to find a mere hole in the ground, because Mark Twain loved to exaggerate and his boyhood imagination could have run riot. But no, there were several miles of



Nebraska's "Lincoln County Mammoth," Nearly 14 Feet High, Lived During the Ice Age

A farmer's wife found the old bones eroding in a canyon not far from her chicken house and began feeding the tusks to her hens to provide "lime." Many skeletons in the University of Nebraska Museum's famed Elephant Hall are prehistoric, but the smaller ones to the left of the monster are those of two circus elephants killed in a train wreck in southern Nebraska.

labyrinths quite worthy of the Tom Sawyer story. The names scratched on the walls dated back deep into the last century and included the scrawls of Mark's boyhood chums.

At Riverview Park we sat on a stone balcony high above the Mississippi. Behind us, Belinda barked menacingly at the heels of Mark Twain's statue.

At our side a Missouri lad pointed down to a toylike train emerging from a rock tunnel. He knew its engineer and cried, "There goes Uncle Homer!"

Oh Man River, seen from this height, was not mud-yellow but sky-blue. He swept majestically into the distant haze. Lush foliage leaned out over the stream, and the valley fragrances were so heavy they were almost felt.

I had long thought of the Mississippi as unimpressive except in strength. But here was a symphony of the senses even more

stimulating than Mark Twain's descriptions. The final touch of artistry came when a steamboat churned into the channel, evoking ghostly memories of Hannibal's river pilot and the warning cry, "Mark twain!" (page 743).

Here and elsewhere we did as average Americans do. We feasted on the country's grandest scenes and then moved on.

As we rolled through the Great Plains, we saw that we were not the only covered-wagoners hitting the trail. All America seemed to be doing it. Roads teemed with modern accelerating pioneers going outlandish distances.

"The Sower" Strews Grain over Lincoln

Second of the few cities which interrupted our tenting was Lincoln, Nebraska. Our relatives in Lincoln assured us we need travel no farther. Heaven was here.

We might have agreed with them, except



Ray Atwood

Following the Westering Sun, the Motorist Gains an Hour Here

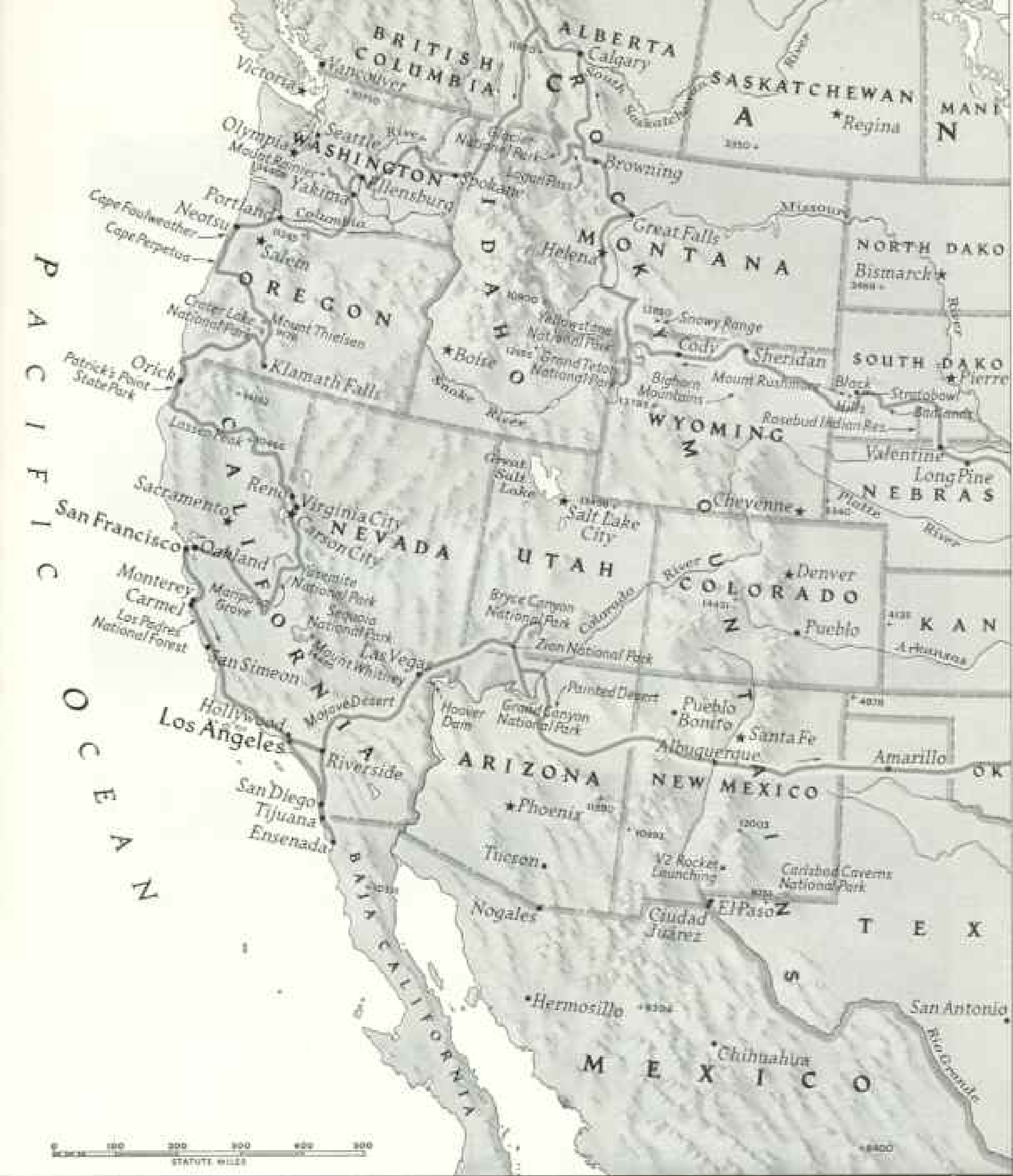
West of the Snake River, separating Oregon from Idaho, he passes suddenly from Mountain to Pacific time.



Charles J. Bolden

Holding On by Their Toes, Thirsty Customers at Cody, Wyoming, Wait Their Turn

The fat man's fancy boots may have cost anywhere from \$50 to \$75. Bootmakers thrive in Wyoming because of its scores of dude ranches, patronized by well-to-do visitors who like to dress as they think the ideal cowboy should. These two wives of dude ranchers prefer high heels when in town.



From Boston the Author and His Wife Made a 15,000-mile Swing Through 31 States

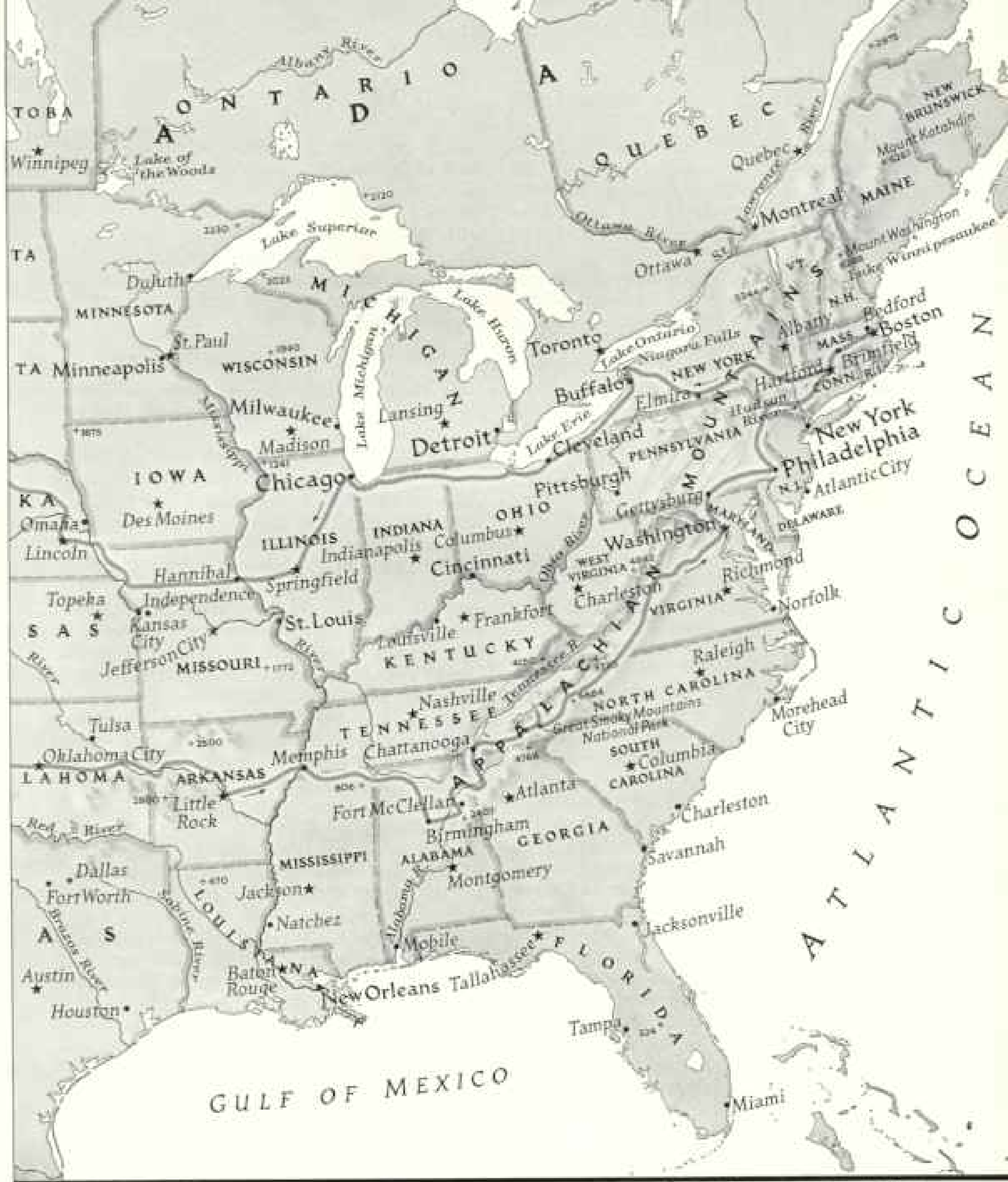
for heaven's heat. It was 109° F. in the shade!

Otherwise, this cleanly capital was a prairie paradise. It had pretty trees and prettier girls. Such novelties as towering elephant skeletons, one of an Ice Age mammoth, in the University of Nebraska Museum; Lee Lawrie's giant statue of "The Sower," atop the Capitol Building, strewn grain on the city; and In-

dian bones and scalps on display in the capitol museum offered everything an easterner could ask in his quest of something new and western (pages 734, 745).

"Lincoln will spoil you for other cities," said Mrs. Paul Kline, wife of a young Air Force veteran studying at the University, "because of its air conditioning."

Helen investigated the claim and found a



Drawn by Theodore P. Thompson and Irvin E. Alliman

To Get the Best Possible Photographs, Anderson Later Retraceed Much of the Route

cool oasis behind nearly every business front. Heat waves in Lincoln could almost be dismissed as a minor technicality.

"Aerial" View from Skyscraper Capitol

"Pershing and William Jennings Bryan once lived in Lincoln," added Mrs. Kline proudly, to clinch her "sale."

Paul Kline conducted me to the top of the

400-foot-high tower of the capitol, "the heart of Nebraska" and the most unusual government building I have ever seen.*

The whole city was visible from here, rimmed with gold where it ran into the Nebraska wheat fields. Below were spread the 22 parks, 110 churches, 37 schools, the

* See "Nebraska, the Cornhusker State," by Leo A. Borah, NATIONAL GEOGRAPHIC MAGAZINE, May, 1943.

universities and colleges, and the 148 manufacturing establishments of this city of 95,000, not counting some 8,000 temporary students at the University of Nebraska. Lincoln is as modern as larger eastern cities I know, and much cleaner.

From Lincoln we drove toward western Nebraska. Towns were few. At each a lofty water tower announced its presence from afar.

In the sand hills south of Long Pine, the wind moaned over a sea of grass with no sign of life but an occasional "lighthouse," the prairie windmill. The hiss of sand under our tires sounded like water against the prow and sides of a ship.

In Valentine we saw our first Indians—Sioux camped near the railroad station. They had come in wagons and dilapidated cars from the Rosebud Reservation on the South Dakota line. During the night a thunderstorm unloaded 2.96 inches of water. Blankets and papooses were drenched, but Sioux spirits remained undampened.

Indians Battle Whites—at Baseball

It was the Fourth of July, and we asked two youthful redskins if they had come to town to stage an Indian dance.

"No," answered one, "we're going to play the white guys at baseball."

On the ball field the Indians waved their mitts, talked things up, took razz from the Valentine bleachers and gave it back with interest. I liked the feeling in that crowd. Valentine is only 100 miles from the scene of one of the last bitter clashes between Sioux and United States troops, the Battle of Wounded Knee, in 1890. But you could see that the old barriers were down.

One part of the Niobrara River Valley at Valentine was as lush with vegetation and trees as our river valleys in New England. Yet another section was all prairie and canyon, and there in the Fort Niobrara National Wildlife Refuge, of the Fish and Wildlife Service, we found about 170 buffalo, the first real herd we had ever seen.

The buffalo were camera-shy until Belinda plummeted through the car window. Then their leaders advanced in an ominous, photogenic, solid front and stared aggressively through the fence. There were no casualties.

At a service station I heard a motorist grumbling about the "monotony" of the treeless expanses in Nebraska and near-by States. He was typical of a small number of cross-country tourists who cannot see beauty unless it looks like home.

The thick forests Helen and I love at home would have spoiled Nebraska's charm—the

prairie sky and clouds, the red-peaked barns flanked by whirling air chargers and windmills, the voice of the unceasing wind, the pleasant rhythm of the rolling range, dotted with isolated bands of horses, cattle, and sheep; names like "Arabia" in the sand hills, the rivers lazing through canyons, the wheat fields that make a green and gold checkerboard of the plain. . . .

Badlands and Bodies Beg for Water

As we left the Cornhusker State, we sliced through the southwest corner of South Dakota to look at the Badlands.

For 25 miles we idled among these awesome formations. They resembled deep western canyons and high foreign Alps, but actually were neither tall nor deep. I walked up one in five minutes.

The earth that made them was parched, bleached almost white, and cracked by the sun into millions of separated inch-squares that begged for mercy and water. It was soft and crumbled under foot. Why, one could almost knead one's own little canyons, ravines, and jagged peaks out of this plaster!

At twilight the "Mounds" region of the Badlands glowed red-purple. Color strengthened as sunlight failed. Weeks later we were to know how similar to Arizona's Painted Desert were these round hillocks, splashed with paint (page 744).

The ground was booby-trapped with cactus. I found that out when we had finished washing the supper dishes and I sat down heavily beside the tent.

"This is the life!" I said on the way down, and something quite different on the way up. An operation was performed under the moon.

In this arid air our bodies became as dehydrated as the soil. Every few hours we crawled out of the tent to take a long drink from the water bag on the auto bumper.

Next night we turned on the dashboard light and saw the speedometer ticking past 3,400. We had explored the Black Hills, Mount Rushmore National Memorial, and the Needles. Now it was midnight under a full moon, and the Wyoming skyline coasted by us in lazy black waves.*

Over the car radio came crystal-clear music from Calgary, Alberta, and also from Portland, Oregon. It reminded us that for every mile behind there were several ahead.

"It's a big country," I told my wife for the hundredth time, as if she didn't know.

* See "South Dakota Keeps Its West Wild," May, 1947, and "Grass Makes Wyoming Fat," August, 1945, both by Frederick Simpich in the NATIONAL GEOGRAPHIC MAGAZINE.



If This Man Stepped Between Mother and Cub, He Might Be Seriously Injured

Even feeding her is dangerous. Back of these cars a score or so more will pile up as drivers abandon them in the middle of the highway to leap to the scene, camera in hand. Most bear-tourist relations in Yellowstone National Park are cordial; yet such reckless tactics as these, in violation of National Park Service warnings, often result in clawings and bitings. Two persons have even been killed.

Driving fatigue and where-to-camp worry had vanished. The car was our home. Our bodies were acclimated to motion. Passing scenery was relaxing, like the action on a stage or screen.

Snowcaps!

The sight, next morning, reminded me of the Maritime Alps. But here instead of the Mediterranean was the green-lawned, flowering little city of Sheridan, Wyoming, neatly nestled under snow peaks of the Bighorn Mountains.

Sheridan Celebrates "Bots Sots"

Old Sheridan Inn was a former headquarters of Buffalo Bill.

North of the city, on the Little Bighorn River in Montana, General Custer and his troops were massacred in 1876.

One old fellow I met in Sheridan pounded on a table to tell me I was *not* an easterner.

"You can't be," he insisted. "You don't talk like one."

Talk here was of Rodeo Week, an event as important as Christmas in dude-ranch country. Crow Indians from round about were already in their wagons, headed for town.

Sheridan requests its citizens to dress in strictly western garb during this "Bots Sots" rodeo celebration. The name is a Crow greeting and means, approximately, "The best of everything to you."

A dentist told me that Sheridan's awnings are raised to make room for ten-gallon hats, and that the hats seldom go skidding out in the streets because the wind velocity here is one of the lowest annually of any spot in the United States.

Despite what the dentist did to me, I still like Sheridan.

When the speedometer read 4,103 miles, we were in "Colter's Hell."

John Colter, fleeing Indians in 1807, discovered what is now Yellowstone National Park. At first people laughed at him and the "hell" he described, but the last laugh went to Colter. His Yellowstone gehenna is just as incredible today as it was 142 years ago, but now a whole Nation admits it.*

We entered the park over Sylvan Pass and there threw summertime snowballs. Then we descended to Yellowstone Lake, nearly twice as big as our own Winnepesaukee and higher than "Winny" would be if it was atop Mount Washington.

Steamboat Point hissed and spat mouthfuls of steam out over icy clear water. And a bull moose near the shore was watched by a long automobile procession.

As we followed the 153-mile drive which winds through the park in a figure eight, I recalled travel posters I had seen in London advertising the United States as a package of skyscrapers, canyons, and geysers. An odd team-up, yet apt in its way. Take our towered, teeming East, season with the fantastic West, and perhaps one has—America. Perhaps.

Belinda burned her nose in the "burbblers." That was the name I gave to those vigorously bubbling, boiling little pools of water no larger than a washbowl.

10,000 Geysers, Hot Pools, Burbblers

Yellowstone has about 10,000 thermal features, large and small, named and unnamed, and of these the burblers are so numerous that one can inadvertently step into one while admiring the larger attractions. Some of the bigger pools are steaming ponds of hot emerald green or sapphire blue.

Not all of the geysers were like Old Faithful (page 755). Some, like dogs, growled noisily, but took no bites out of the ether. Some sprang upward a mere yard or two. One would sound off while another became silent.

We never knew which of the little holes, there in front, there behind, there to the side, was going to deliver next; but we could count on hearing from one or more at all times. We found this variety the spice of Yellowstone.

Wherever there was thermal action there came that indelicate scent which surprises people despite all its publicity: hydrogen sulphide—bad eggs!

Gushing up from great depths, Mammoth Hot Springs are turning a mountain inside out, building high travertine terraces on the side of Terrace Mountain (pages 747 and 748).

Superintendent Edmund B. Rogers told us, "The spectacular runoff from Jupiter

Spring which comes down over the front of the terrace area gives to it a color pattern unsurpassed in Yellowstone." He added that many fail to see it because it is not visible from the highway.

At Yellowstone Canyon camera-cruising visitors swarmed over Inspiration and Artist Points, trying vainly to record its incredibility for the folks at home.

Here is rather terrifying space, 1,200 feet deep at the deepest point, and 2,000 feet from rim to rim. It swallows up the 308-foot Lower Yellowstone Falls, nearly twice Niagara in height, and makes them look small. Ospreys' nests rest on unattainable pinnacles rising within the canyon.

I set my camera on a tripod and let it take my picture as I crawled on stomach, over loose stones, toward the abyss (page 746).

At Jenny Lake under the Tetons that night I tossed in my sleeping bag. Over and over again I saw that terrible drop, and again the loose stones moved inexorably, with me—and this time, *over* the edge.

What "Mountain" Means in the West

Dawn's redness struck the serrated Teton spires at 12,000- and 13,000-foot heights and then crept down toward our Jenny Lake campground (page 758).

But before it arrived, I had eaten my breakfast and was on the Teton Glacier trail. Helen watched me go with a glint in her eye, half of apprehension, half of amusement.

Whenever we go camping, Helen seeks fresh-air leisure—and I, a mountain. She thinks me a crazy goat, but family tradition marches with me on every high trail.

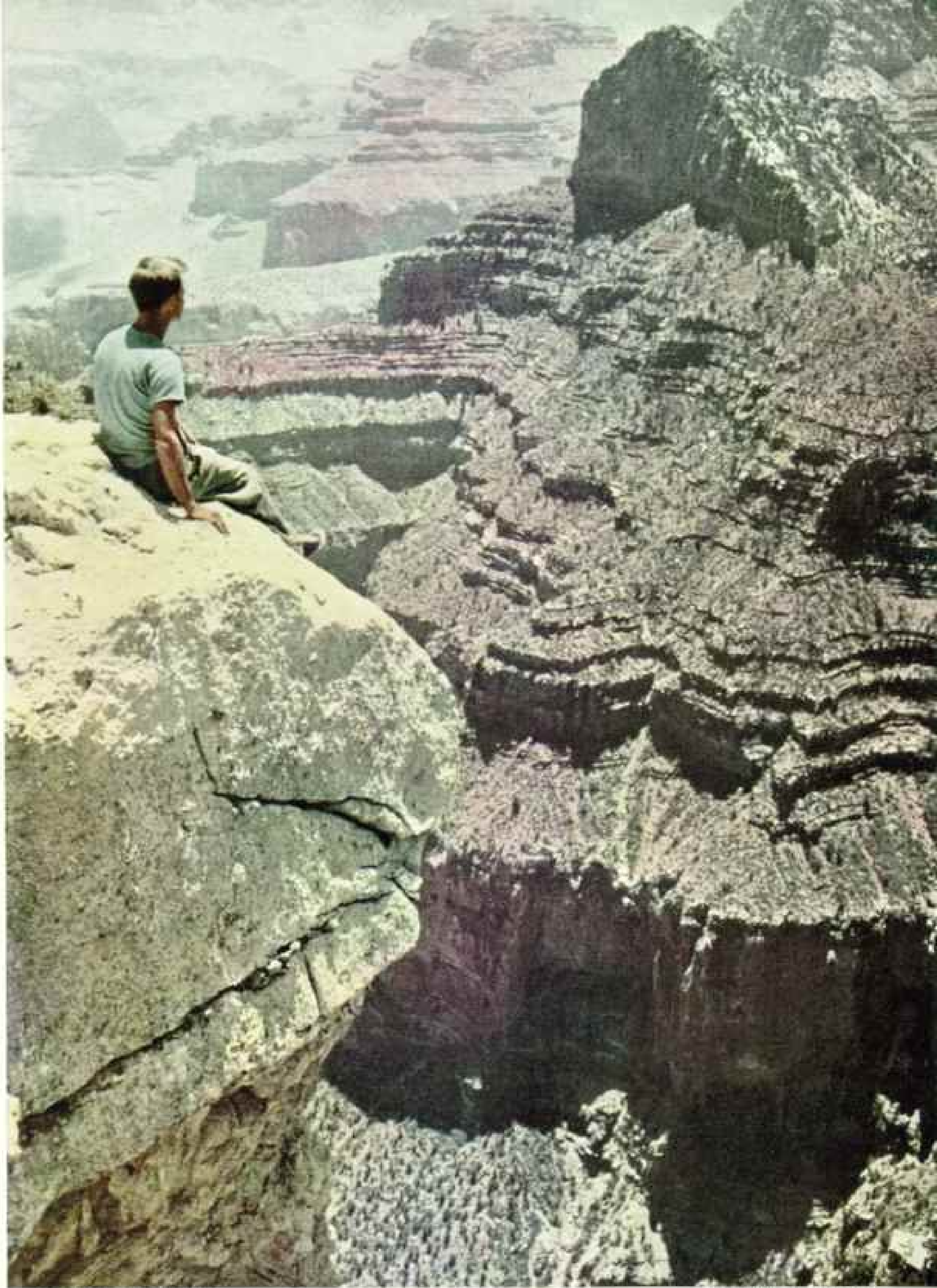
My family and I have often packed over the Mount Washington area and over the Knife Edge of Maine's Mount Katahdin, and have slept beside porcupines in just about every Appalachian Mountain Club hut in New England.

So now I applied the New England-trained muscles to the Teton Glacier trail and made comparisons. I hiked up—and up—and up.

Finally I had gone skyward for four long miles, or about the same distance as would have taken me to the summit of the highest New Hampshire peak. But here I was only halfway (page 759). At 9,750 feet the trail still zoomed at heaven. The West, I decided, has *mountains*. Even Mount Washington was never like this!

Far above, someone was yodeling, a sound indescribably enchanting when heard through thin air over vastly hushed rock space.

* See "Fabulous Yellowstone," by Frederick G. Vossburgh, NATIONAL GEOGRAPHIC MAGAZINE, June, 1940.



On Grand Canyon's North Rim a Visitor from Boston Flirts with a Half-mile-deep Abyss

Stewart Anderson says he "fought uneasiness in the pit of the stomach." Such liberties with gravity are not to be encouraged. Cutting through radiant strata, the Colorado River has opened the geology book of the ages.



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Illustrations by Stewart Anderson

♣ **At Lincoln's Tomb Patriotic Hands Raise the Flag of the Union He Saved**

Two pilgrims to the hallowed spot in Springfield, Illinois, were allowed by the friendly custodian, Herbert W. Fay, to do the honors in his stead. Erected in 1869 and dedicated in 1874, Lincoln's Tomb has had five million registered visitors.

♣ **Niagaras Thunder Salutes at Each Other Across the International Boundary**

From this Canadian balcony above plunging waters of Horseshoe Falls people look downstream at the international bridge and American Falls. Split by Goat Island, the Niagara River leaps over 158- to 175-foot-high cliffs.





Memories of Mark Twain Hover over the Mississippi at Hannibal, Missouri

Below Lovers' Leap, graced by Mrs. Anderson and Bellinda, rolls the river described in *Huckleberry Finn* as "a whole mile broad, and awful still and grand." The steamer churns waters familiar to the river-pilot author.



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Photographs by Brent St. Anderson

Like a Scene from Dante's *Inferno* Seems the "Devil's Playground" in the Mounds Region of the South Dakota Badlands

Weirdly eroded clay formations are cracked into millions of inch-squares by the sun; visitors become dehydrated, too. Colors are strongest when sun is least intense.

For Contented Camping, Here's the Author's Recipe:

"One wife, adept at cooking; at least one child or dog; one tent, waterproof; one campstove; good food. Pump pressure into stove, as shown. Light burnacts. Turn support responsibility over to spouse. Sit against convenient tree."

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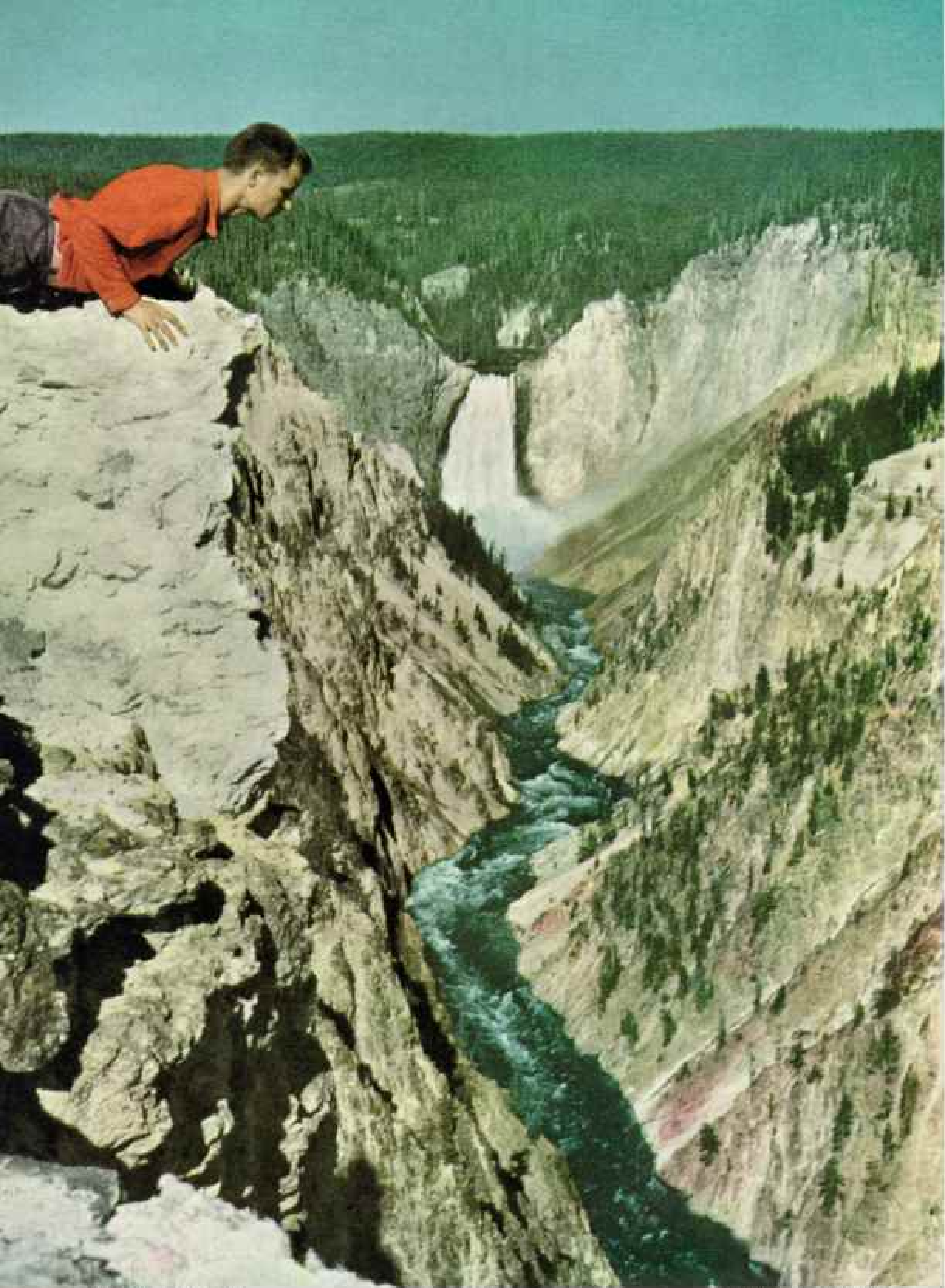


Carved Indians Flank the 'Red Man's Tree of Life'

Senate Chamber doors in Nebraska's magnificent State Capitol at Lincoln are carved so deeply on one side that gloomy critics predicted the wood might warp. But it hasn't. Indian art motifs represent early Nebraska history.

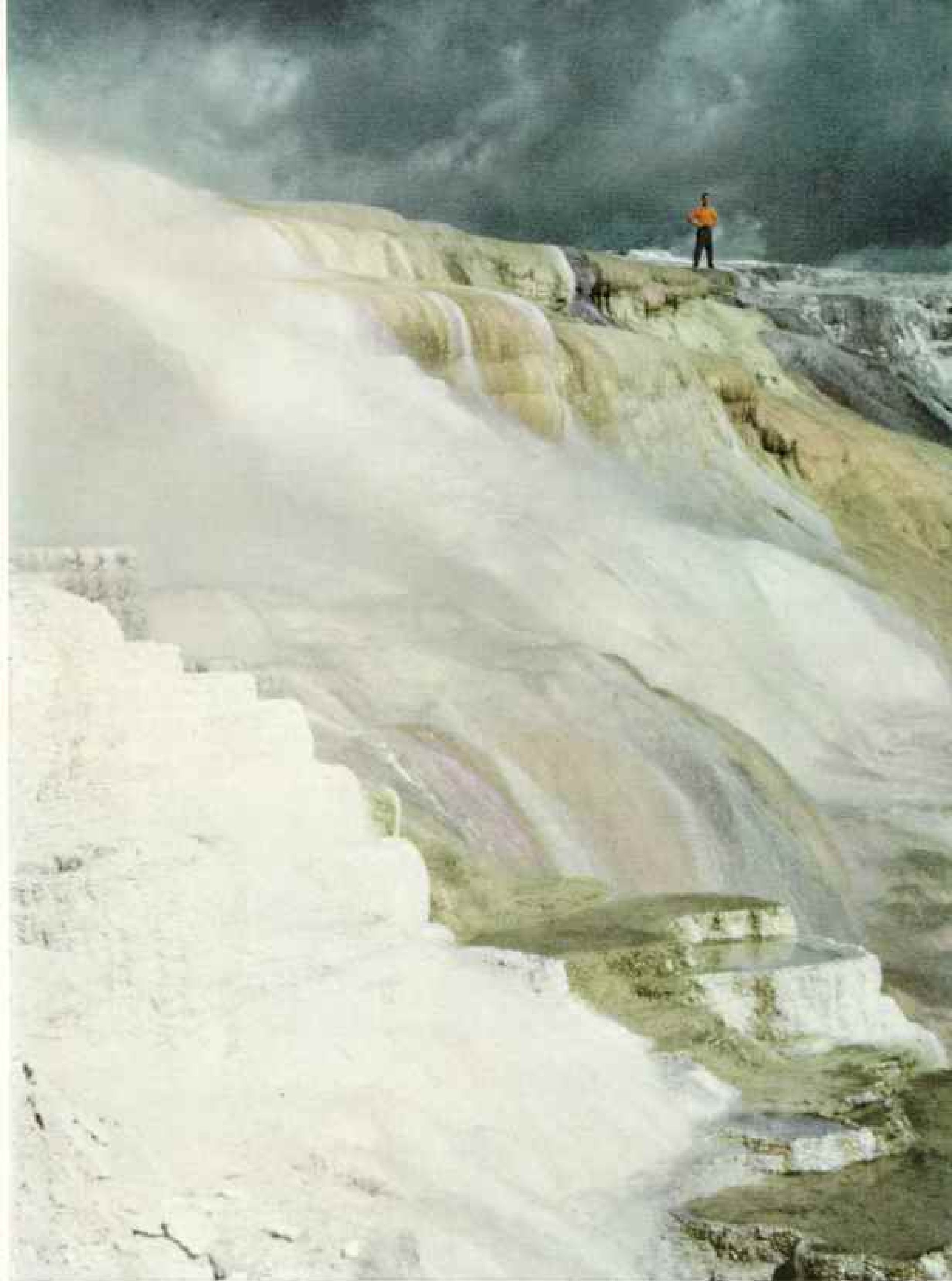
Photographs by Stewart Anderson





Below His Chin Yawns Yellowstone Canyon, Here 600 Feet in Depth

Crawling to the brink, the author took his own picture with a self-timing camera. Lower Yellowstone Falls, 308 feet high, are dwarfed by distance and the golden gorge of the aptly named Yellowstone River.



Amid the Vapors and Hues of Hades, a Mountain Turns Itself Inside Out

At Mammoth Hot Springs, Yellowstone National Park, steaming waters bring up lime in solution from rocks deep inside Terrace Mountain and deposit their load on the surface. Some terraces thus built have buried trees.



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Establishments by Stewart Anderson

▲ "Home on the Range" for a Massachusetts Couple Discovering America

Using national park campgrounds and occasionally the open plain—as here, near Browning, Montana—Mr. and Mrs. Stewart Anderson visited 31 States, three Canadian Provinces, and Baja California, Mexico. Inside their canvas home are two mosquito tents.

▼ Cupid Spring in Yellowstone National Park Resembles Lemon Meringue Pie

Walked on, the crust sounds hollow, compels caution, for there are danger places where one could fall through the "meringue" into steaming hot-water "filling." Above Cupid Spring appears Montana's Snowy Range. Most of Yellowstone is in Wyoming.



But this yodel was broken into dots and dashes. I listened more carefully and made out "Who-r-u?" Back at him I dit-dotted, "N-o-b-o-d-y."

The hospital months had sapped my strength. I went on for another half-mile, however, crossing treacherous snowfields on the Ledges and finally stopping on the last long mass of snow that led to the glacier.

I had no ice ax and no crampons. My climb had to end. Already overwhelmed by what I saw around me, and knowing it worth every aching muscle, I took off my hat to Wyoming. It had taught me the western definition of "mountain"!

From Dizzy Peak to Grassy Plain

Turning north, through Yellowstone again, we headed for Glacier National Park.

Northwest of Great Falls, Montana, Highway 89, like the old wagon trails, tries valiantly to cross endless grass. Hour after hour the same ridge of distant mountains remains obstinately on one's left, giving the traveler the impression that he has not moved at all.

At twilight our position seemed the same, squarely in the center of a treeless table. We pitched our tent and slept.

In the morning we found that four other motorists near by had spread their sleeping bags right on the ground, with only the Montana sky for cover (page 748).

Twenty miles farther on, Helen talked to a wizened shepherd down by a muddy water hole, who said he would like Belinda for a sheep dog. He reeled off an impressive list of qualities he admired in the black cocker. This interest so endeared him to Helen that she ignored me in favor of hearing his life story.

Instead of threatening suit for alienation of affections, I went off and made friends with Flat Tail. He was a Blackfoot Indian who just then came racing along the range, trying to lasso his favorite horse to ride into Browning. It took him ten minutes to catch it.

"Going to the Sun" in Glacier Park

By early afternoon we were "Going to the Sun." The main highway in Glacier National Park bears that tantalizing name. A 53-mile construction marvel, it carried us to the heart of Montana's Switzerland, where some 60 glaciers, 200 lakes, and 1,538 square miles of superlative Rocky Mountain scenery decorate the Canadian border (page 757).

The sights along that road! Cataracts dropped from high-altitude snowfields down over tremendous rock walls into shimmering finality. Mountains blazed with brilliant ver-

ture on their slopes, and with scarlet rock and snow on their peaks.

Milky jade lakes sat in the ravines—daubs of green paint that made one rub one's eyes in disbelief. Glacier water, filled with ice-ground rock silt, was responsible for this unusual color.

When we had gone sunward for eight miles, we drove through a snow "avalanche"—at least to a bug-eyed tourist. Actually it was only an impressively steep snowfield. Even in July it was still moving across the road, keeping shovelers busy.

Over Logan Pass hung hundreds of feet of greenery and rock. It looked like a stony lawn which had managed to kick its feet up in the air and stand on edge. Aptly called the Garden Wall, it cuts like a sharp knife blade through miles of sky and constitutes the Continental Divide.

Near Logan Pass was a gem which four out of five motorists miss—Hidden Lake, a large blue snow pond which laps all summer at the icy crusts lining its rim. Helen and I thought it well worth its price: feet sopping wet from crossing two miles of soggy alpine meadows and melting snowfields.

Coming back, we received a bonus. A mountain ptarmigan appeared on the trail with her chicks, all unruffled at sight of Belinda.

Too-bold Bears Are Deported

When we camped at Avalanche Creek, a big brown bear came begging from tent to tent. We were now quite accustomed to bruin, having been formally introduced at Yellowstone. But this one was becoming too familiar and soon was trapped in a cage-on-wheels by the rangers. He had lost his wariness of humans and was now so bold and such a campground nuisance that he had to be carted away a few miles.

A ranger explained that the prisoner would probably receive three rides. If he came back the first time, as bears often do, he would receive a second and longer ride. And as for the third ride, brother bear would have sore paws indeed if he managed to walk back from that one!

On Going to the Sun Highway traffic jams usually meant a bear feeder ahead. While horns honked, one man lured bruin into the middle of the road, offered food with his left hand, and stroked the animal with his right. He was lucky to retain either.

We learned that even "sensible" feeding is dangerous. Many bears can't be given half a lunch bag—they want it all, and will claw at human flesh to get it. But we felt little

solicitude toward people who broke the no-feeding rules (page 739).

It is bruin who deserves sympathy. He has learned to crave civilized diet. When the tourists go home, he has forgotten how to grub for himself (page 755).

Friendly Fraternity of the Road

"Now that you've come this far, you might as well go on up into the Canadian Rockies," a chance acquaintance from Michigan said. We did, but that is another story.*

As we left the magnificent Rockies and rolled on toward the Pacific coast, we made assorted and innumerable new friends of the road. "Sagebrushers" such traveling campers are called in western lingo.

One was an 88-year-old Californian who camps the various parks all year round. In the winter he camps throughout the warm Southwest. For 17 years he had led this life, ever since he retired as principal of a California school. He carries a bagful of small stones, picked up in various parks, and knows their geology.

Once he camped from California to Massachusetts and back.

"I came to Tremont Street, Boston," he said, "and asked an Irish policeman where I could find a campground. He looked perplexed for a moment. But then he sent me on to Melrose, and I found one."

We met camping professors, artists, song writers, Hollywooders, photographers, farmers, businessmen, and even a burly wrestler just out of the penitentiary—the last a man so considerate and cordial that I would have trusted him with my pet canary, if I had had one!

People live, act, and even speak a good deal alike out in God's country. The American campground is the best melting pot I have ever encountered. You talk small talk, but it adds up to perfect unity and a complete forgetting of State boundaries, because everyone for the moment has a single pursuit—American grandeur.

Helen had never camped before. She is an average American woman and mighty fussy about keeping herself tidy. "How did you stay clean?" friends asked later.

Our campstove provided hot water in large pans, and our tent gave us privacy. Even a heavy washing could be done, and strung up on clothesline from tent pole to tree.

Inconveniences were few. During a day's drive we could usually get ten pounds of ice for our small car refrigerator.

Also, it was fun to chop free ice from hard-packed snowbanks lining mountain highways.

If refrigeration ran out, we had reasonably good meals based on canned meat and milk, bottled butter, hard-boiled eggs, and tinned vegetables.

Firewood and fireplace, picnic "dinner table," water spigot, restrooms, sometimes showers, log-marked "private" parking space, gasoline station, restaurant, information center, grocery store—all these were either at our camp sites or a few yards from them.

Campgrounds were right up against the grandeur we came to see, handy to the starting points of wonderful ranger-conducted nature walks, and close to the outdoor auditoriums where rangers stage the main attraction of a national park evening, the campfire program. So always at our elbow were the finest of informative ranger talks, color movies, color stills—a different park subject treated each night. There are worse ways of living!

In the car, Belinda slept so quietly on her tower of duffel that we grew accustomed to hearing no sound from her for hours. Near Yakima, Washington, we unwittingly left her at a gasoline station and drove on for 30 miles without looking at the back seat.

We drove back the 30 miles, found Belinda sitting indignantly by the gas pumps, and received from her some highly unladylike commentary.

Our dog introduced us to most of our campground friends. We often found it hard to pitch tent and start supper because Belinda's admirers had to be talked to first.

The popularity spoiled her, however. Now her home life is dull. She is sitting restlessly and reminiscently near my typewriter, giving me bored looks.

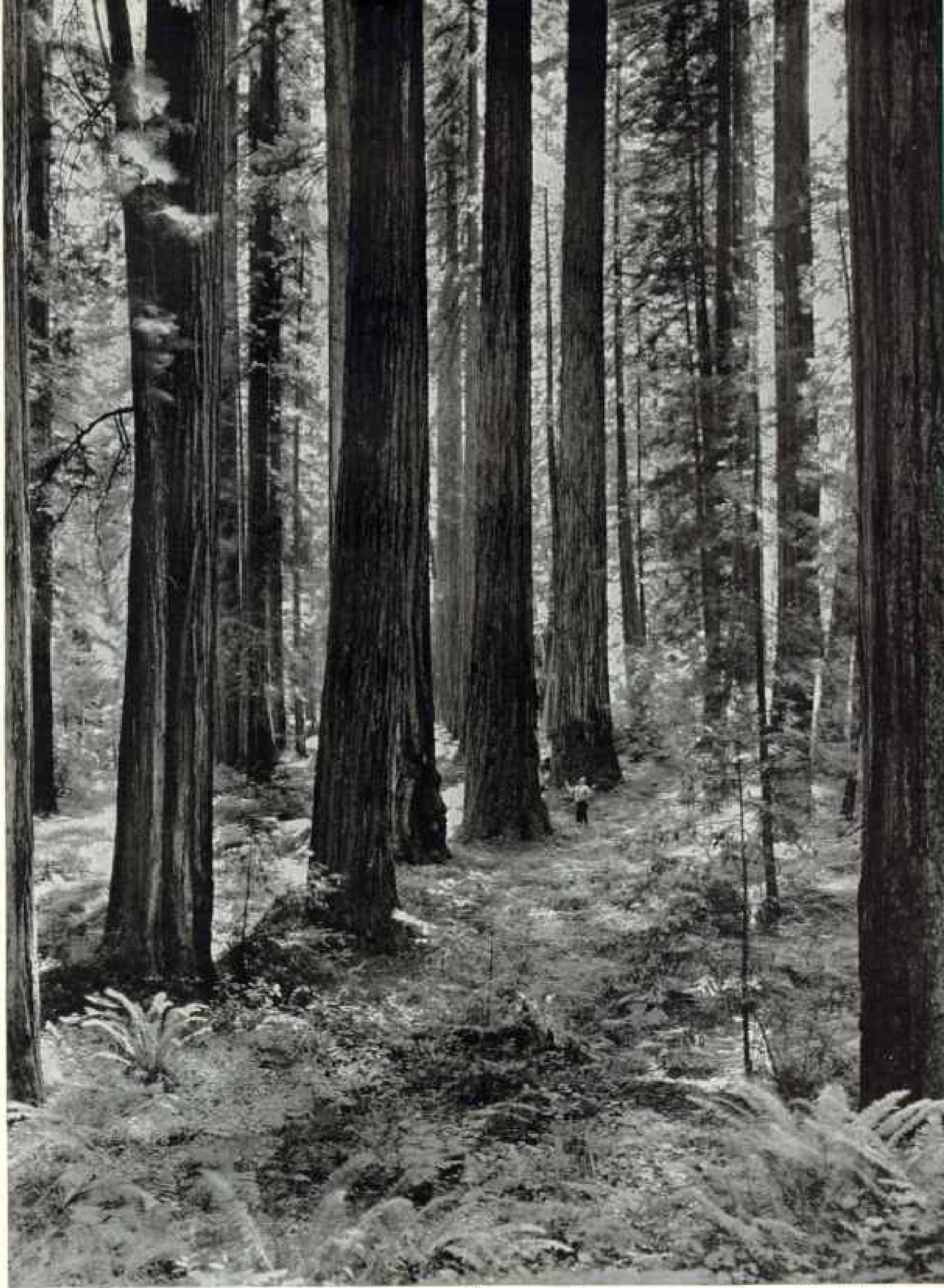
Everybody Claims Mount Rainier

"How do you like my mountain?" a woman in a trailer next to us asked when we arrived at Mount Rainier.

She was from Seattle and claimed the 14,408-foot peak as her own because, like so many State of Washington women, she could see it from her back yard while hanging up clothes. I had first beheld it from a distance of at least 60 miles.

Our car had labored long miles up through bare rocky wasteland east of Ellensburg. When it finally gained the ridge, what I saw nearly made me lose my grip on the steering wheel. There, shaped like a volcano, was Mount Rainier, sitting on the edge of the world and drawing snow from heaven to earth down its sides.

* See "On the Ridgepole of the Rockies," by Walter Meyers Edwards, NATIONAL GEOGRAPHIC MAGAZINE, June, 1947.



Coast Redwoods Average Taller than the Statue of Liberty from Pedestal to Torch Tip

One *Sequoia sempervirens* (ever-living) reached a height of 364 feet. Growth rings in another indicated it was growing in 266 n. c.; yet these are young compared with the shorter, more massive *Sequoia gigantea*, or Big Tree (p. 763).



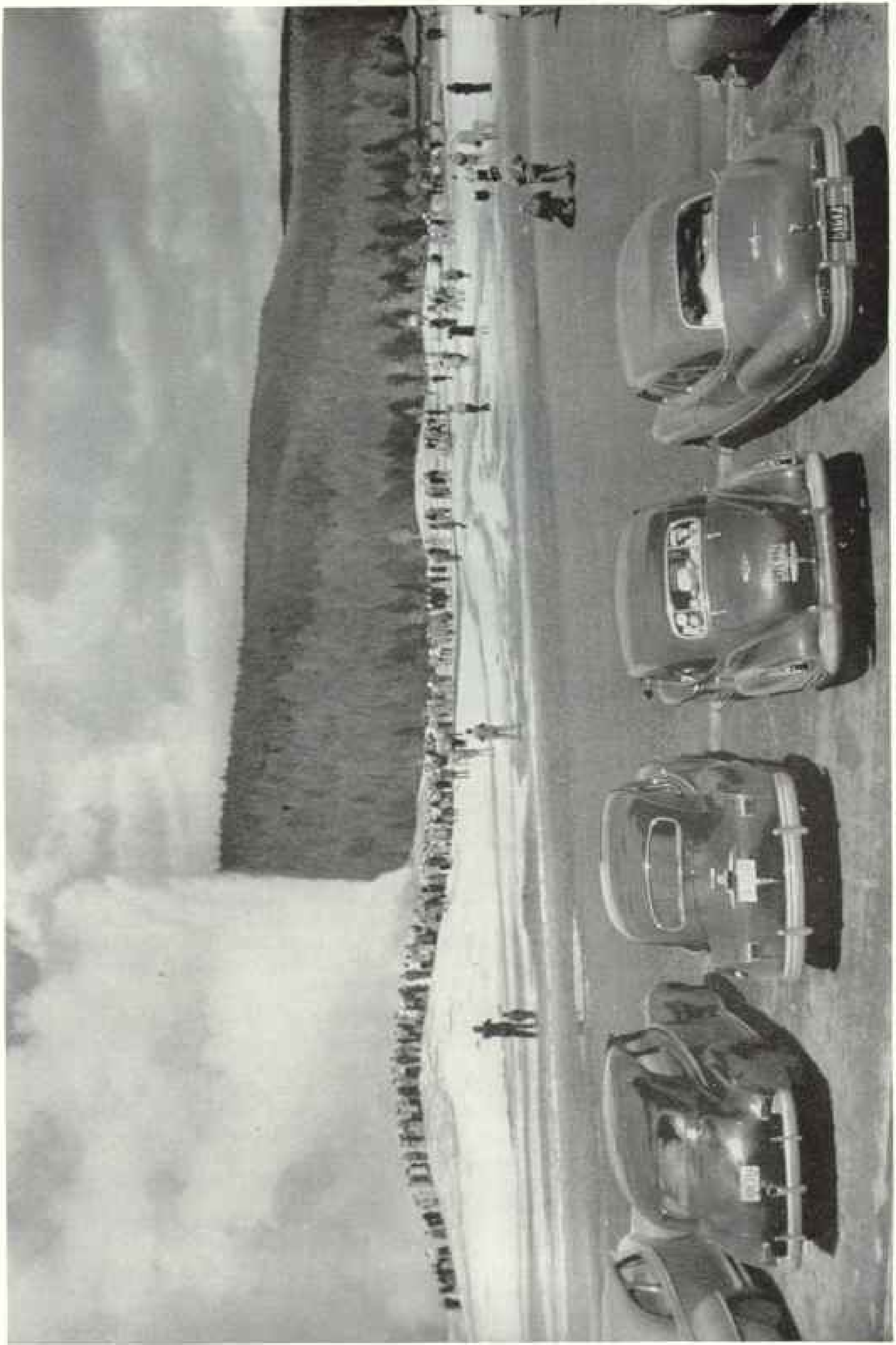
Ranchlands of Frontierlike Loneliness Hug the Pacific Coast near San Simeon, California

Today's gasoline-propelled explorer can drive for hours with a splendid beachline at his elbow, seeing hardly a house, hardly a person on the shore, only occasional untended cattle. A Coast Guard light station swings into view—and a whitefaced herd. That is all.



A San Diego Hill Overlooking the Pacific Forms a Perfect Camp Site

Tenting at San Diego for a full month, the Andersons were furnished mattresses, linen, meals, and ideal outdoor hospitality by their relatives, Mr. and Mrs. John M. Bates. Most of the time the tent was pitched in the Bates's back yard, overlooking the sea but somewhat farther away.



Hundreds Gather as Old Faithful Erupts on Schedule, About Every 65.5 Minutes

Each four-minute performance of Yellowstone National Park's famous geyser hurls 10,000 gallons of scalding water 115 to 150 feet into the air.



"Corpse-carting" Across the Mojave Desert!

Spelling each other—one spouse lying on padded boards on the passenger side of the car while the other drove a turn of 100 miles—the Andersons crossed the blazing desert in the cool of a September night. Passers-by were sometimes amused, sometimes electrified, at sight of the "corpse." The improvisation carried the travelers restfully over a single driving stretch of more than 600 miles between San Diego and Bryce Canyon.

Adjectives are wasted on Mount Rainier; it towers above them all.*

Among our neighbors at Yakima Park Campground, perched on a shoulder of the mountain, was a tentful of Japanese-Americans. They had come up in a family truck from their fruit ranch in the astoundingly irrigated Yakima Valley.

The Nisei young men were just out of service. They loved cameras; hour after hour they coaxed a cute little ground squirrel to spots where they could bend over it with a big Speed Graphic. Every time they entered their tent, they observed the Japanese custom of removing shoes. We liked our new neighbors.

Brave wild flowers grew cheerily on Mount Rainier's chilly flanks, turning large meadows into flames of color. Ranger talks had sharpened my amateur eyes, and now I could recognize alpine species of columbine, Indian

paintbrush, lupine, phlox, asters, and heather.

One day we followed the Burroughs Trail up to Frozen Lake and then crept farther upward over snowfields on which people were skiing, in August.

The End of "Westward Ho"

At the top of the trail we looked far down, and farther up, on the largest glacier in the United States. Emmons Glacier is just one of Mount Rainier's 16 rivers of ice. Climbing above even its lowest extremity made us feel we were getting toward heaven.

From Mount Rainier we headed for Portland.†

Driving this route, we felt the Pacific come closer and closer; on our car radio the coastal

* See "Washington, the Evergreen State," by Leo A. Borah, NATIONAL GEOGRAPHIC MAGAZINE, February, 1933.

† See "Oregon Finds New Riches," by Leo A. Borah, NATIONAL GEOGRAPHIC MAGAZINE, December, 1946.

NOTICE TO BEARS BEWARE OF SABOTAGE

We want to warn you that certain humans in this park have been passing the biscuits and soda pop to some of your brothers. Keep your self-respect—avoid them. Don't be pauperized like your uncles were last year. You remember what happened to those panhandlers, don't you?

Do you want gout, an unbalanced diet, vitamin deficiencies, or gas on the stomach? Beware of "ersatz" foodstuffs—accept only natural foods and hunt these up yourself.

These visitors mean well but they will ignore the signs. If they come too close, read this notice to them. They'll catch on after awhile.

THE COMMITTEE.

IF YOU CAN'T READ, ASK THE BEAR AT THE NEXT INTERSECTION

This Sign in Yosemite National Park Warns Bears To Be Wary of Humans
Every year people get hurt for forgetting that bears, though highly amusing, are wild animals (page 749).



Shades of Paul Revere! What Is This Bell Doing in California?

A bell bearing an inscription saying it was rung by the town crier of Bedford, Massachusetts, on April 19, 1775, is now in Mission Inn, Riverside, California. Lest eastern visitors be tempted to take it back, the bell is chained.

signals grew always stronger, and our anticipation mounted with station volume. KFI, Los Angeles, was becoming powerful enough to blast us out of the car. A new world, a new ocean, were almost at hand.

Our dash down the grand Columbia River Highway was the more triumphant because we knew the big stream was sweeping us to the unknown shore.

The river was a total surprise to us. We had anticipated deep forests, leaping salmon, thundering Niagaras, and a torrential blue stream. Instead, at the eastern entrance to the highway we came upon a muddy Columbia, fumbling through brown and treeless desolation. Wild desert cliffs on which people write "Where Will You Spend Eternity?" held sinister arms high above the naked Columbia Valley.

Looking down from wind-swept heights, we felt as if poised above a wild barren planet with one solitary river snaking along its surface. The desolation was as romantically alluring as the moors of England.

Near Portland the river assumed more the character we had expected.

At twilight we arrived on the western shore at Neotsu, Oregon. Belinda only growled at the breakers. But Helen and I felt an exaltation, a surging emotion. This was the end of "westward ho."

Along the Unpacific Coast

For three days we explored the steeply walled and forested Oregon coast, camping along Highway 101. Big trucks rumbled past us through the fog atop the sea cliffs, carting as few as one to three logs, so titanic are the Oregon trees, secured with ponderous chains.

Surfside lookouts bore names that bespoke the power of the Pacific: Devils Punch Bowl, Cape Foulweather, Cape Perpetua, Boiler Bay, Devil's Churn. The so-called "Pacific" seemed rougher than our Atlantic.

The Pacific States, we discovered, held fast to a covered-wagon and gold-rush heritage never known to the Atlantic. In Klamath Falls, Oregon, a bushily bearded face loomed at Helen over a drugstore counter. Another hirsute head popped at me over a five-and-dime-store counter.

I summoned courage to ask my hairy one concerning his religion. He said he belonged to no strange order, but—didn't I know?—Klamath Falls was observing the centennial of the opening of the Southern Route to Oregon, and the growing of pioneer fuzz was practically a local law.

In the mail we picked up regularly at post-office general-delivery windows, there were re-

peated invitations from our San Diego relatives. After nearly 8,000 miles of sleeping on hard ground or car bedboards, the pleasing mental picture of real beds and seaside relaxation in San Diego kept us hurrying southward, and we caught but rushing glimpses of the miracles Nature and man have worked along this incredible coast.

We kept comparing what we saw in terms of the Atlantic seaboard. Certainly nowhere along our own coast could people drive more than 6,000 feet up into the sky and look down into a mountain filled with water.

Crater Lake, Oregon, in an old volcano, was amazing for more than this. The drive around its mountaintop rim is 35 miles long. This is the deepest lake within the 48 States. Its blueness puts the Mediterranean and the very sky to shame (page 760).

The Redwood Highway in northern California had surprises waiting for us, too (pages 751, 764, 765). I had no idea that the cathedrallike grandeur of the redwood titans would be so heightened by that of the sea.

In northern California we climbed atop 10,466-foot Lassen Peak, only recently active volcano in the United States. I crawled down close to the small remaining patch of yellow volcanic crust and steam, and could see nothing more dangerous than in similar regions in Yellowstone. The volcano punished me for that thought; when I sat down, I came up with smoking trousers.

Virginia City, Nevada, fabulous gold-mining town which burned down in 1875, still has 600 miles of Comstock Lode tunneling underneath its few remaining buildings. It sits courageously in the desert, doing a good tourist business. We saw only one miner, the old-time light in his eye, still hard at it in a town which has had its golden days (page 762).*

Again we were haunted by Mark Twain. He adopted his pseudonym here, wrote his first famous published story, about the Jumping Frog, and also fought a duel.

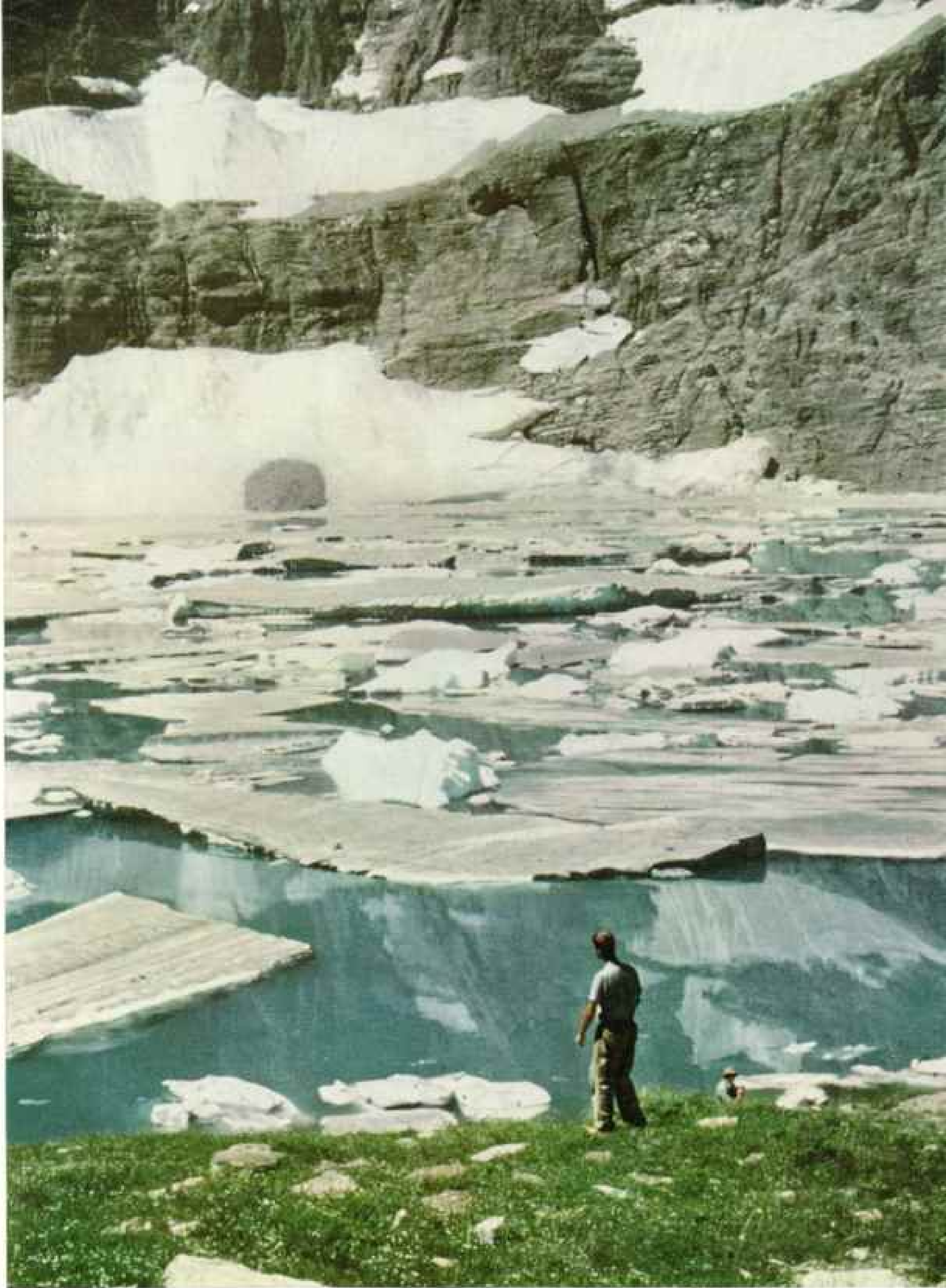
Spectacular San Francisco

San Francisco broke down our camping morale. We used a hotel. We tried our little car on most of the city hills and felt as if falling from a skyscraper when we plummeted down California Street.

From beyond Golden Gate Bridge fog came rushing in over the tall buildings in sun-colored wisps.

But Golden Gate, for us, was not *the* bridge of San Francisco. Give us the San Francisco-

* See "Nevada, Desert Treasure House," by W. Robert Moore, NATIONAL GEOGRAPHIC MAGAZINE, January, 1946.



Iceberg Lake in Glacier National Park, Montana, Is a Pint-size Polar Sea

Gem-colored waters of the lake cradled in curving cliffs of rock are never free of ice, even in midsummer. Here hikers on nature walks sometimes see mountain goats and highborn sheep.



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Photograph by Stewart Anforth

“What! Only to *There!*” Scoffed Mrs. Anderson When Her Husband Pointed Out How Far He Had Climbed Up Grand Teton’s Flanks
Lowest visible snow in bowl cradled by three peaks at right marks the limit of his climb in Grand Teton National Park, Wyoming. Grand Teton (center) is 13,766 feet.

It's July, but Ice and Snow Grip Amphitheater Lake, Halfway Between the Valley and Grand Teton's Summit

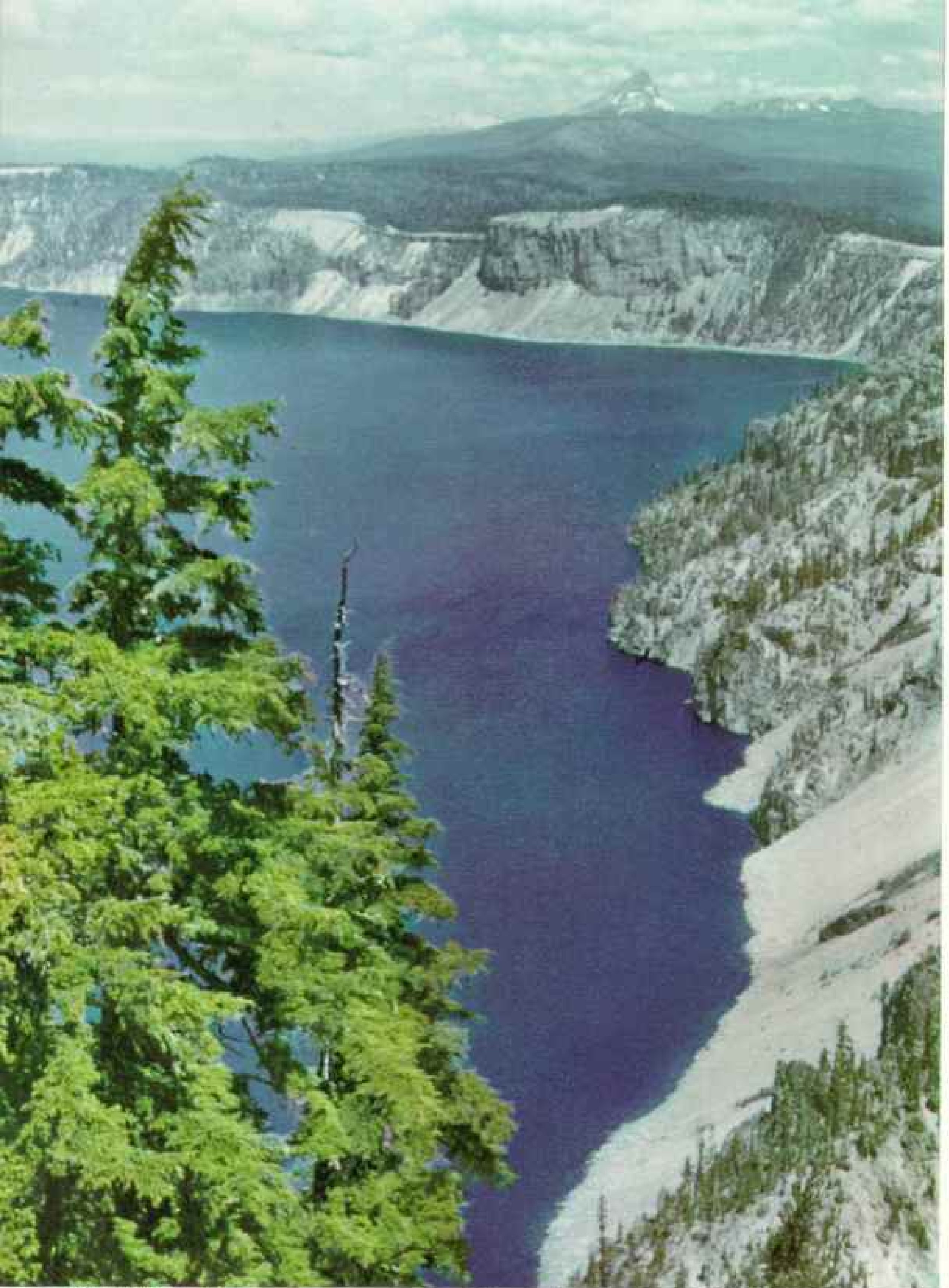
Eating lunch with snow-conditions bands, the author gratefully gulped ice water from one of the pools. Snowfields slanting toward deep ravines forced him to turn back.

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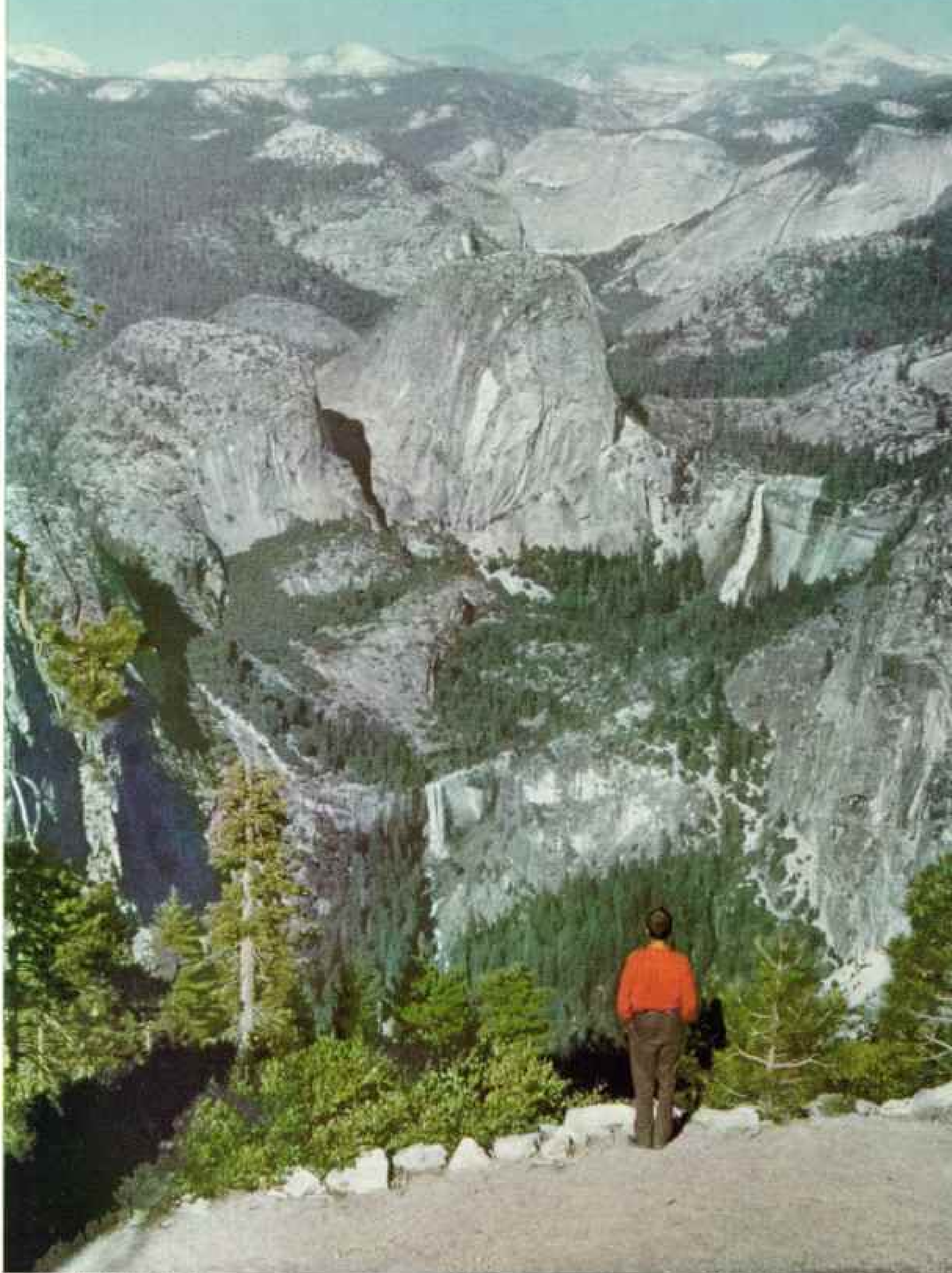
Illustration by Stewart Anderson





Hemlocks Hang Above the Unbelievable Blue of Crater Lake, Oregon

Filling the heart of an ancient volcano more than a mile above the sea, the lake has neither inlet nor outlet. It maintains its one-third-mile depth by rain and snow water alone. Mount Thielsen towers beyond the high cliff walls.



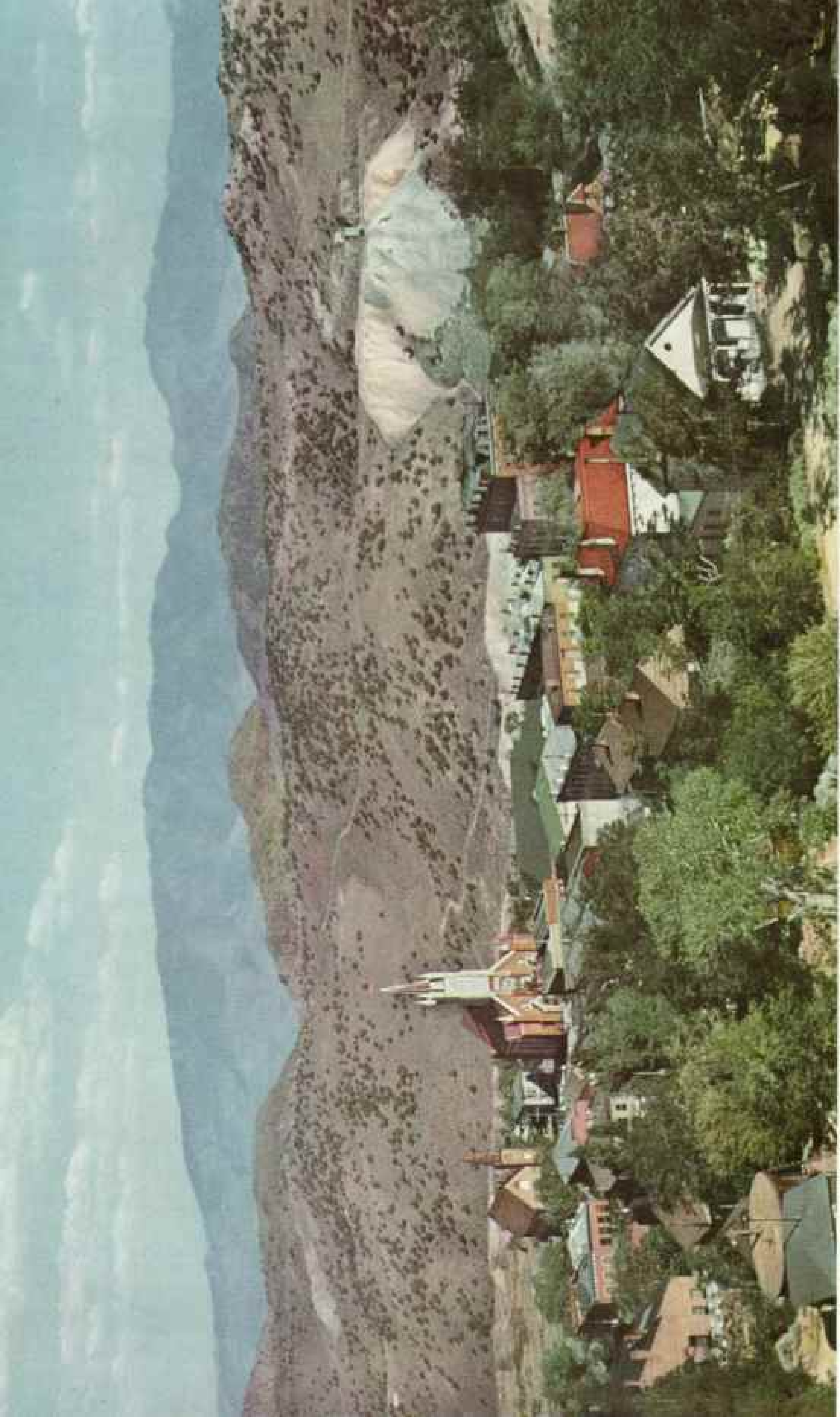
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Excursions by Robert Anderson

"Look at Those Two Tiny Trickles!" But Each Is Far Higher than Niagara

Scenery beneath Washburn Point, Yosemite National Park, California, appears fantastically miniature—"toy" mountains, streams, waterfalls. But Nevada Fall (right) is 594 feet high and Vernal Fall (center) 317.



Virginia City, Nevada, Sits Atop the Once-rich Comstock Lode, a Honeycomb of Gold and Silver Mining Tunnels

Here mushroomed a stable city after the "strike" in 1859, but only about 1,000 inhabitants remain. Combination Shaft, to right of church, dips down 3,262 feet.

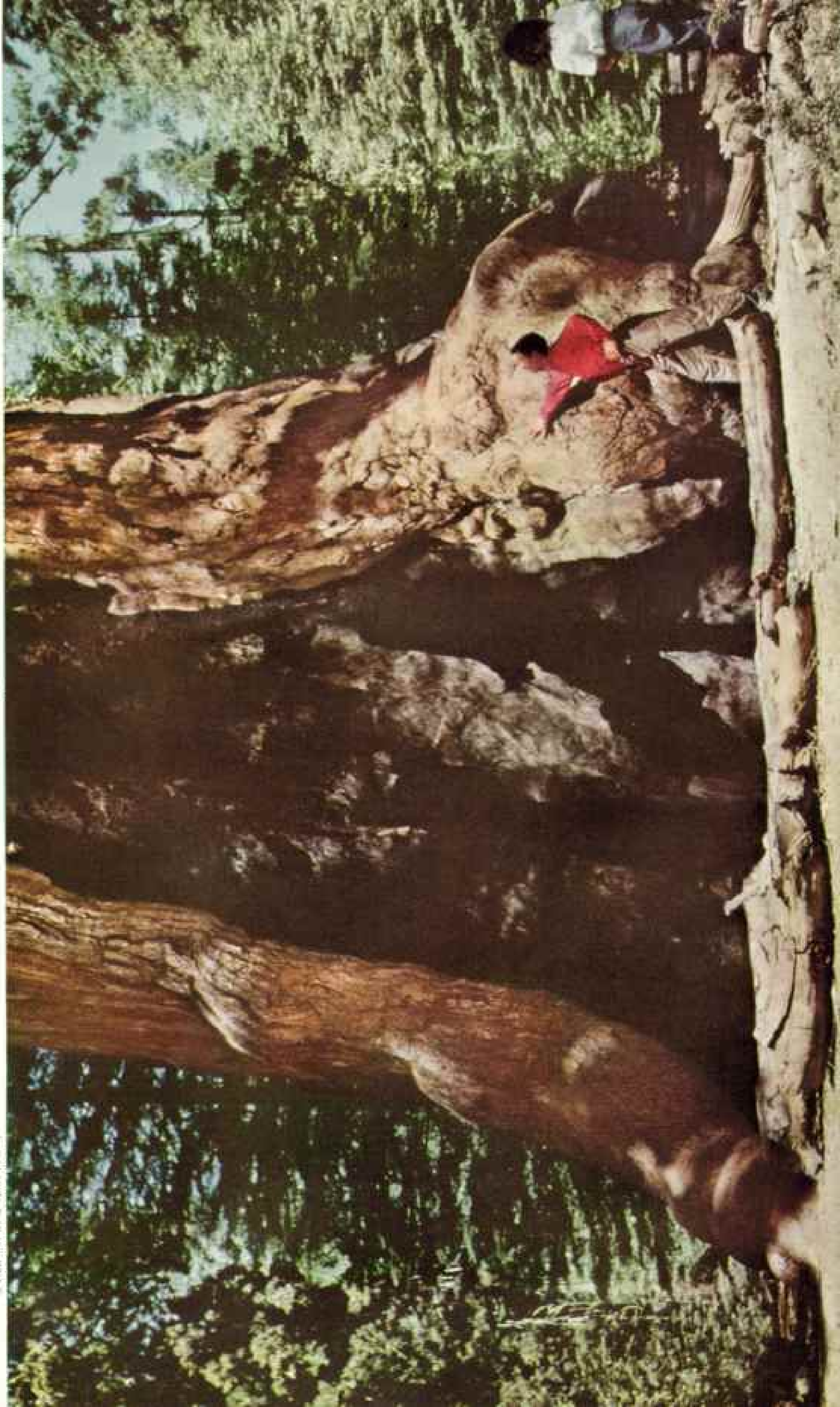
Grizzly Giant Began Growing 500 Years Before Ancient Egyptian King Tutankhamen Was Born

Oldest in the Mariposa Grove of giant sequoias in Yosemite National Park, this tree has seen its 3,800th birthday. Its girth is 96½ feet, height 299,

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76.1

Reproduction by Stewart Audetson





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Reproduction by Margaret Anderson

What's Pacific About This? Hissing, Rock-thumping Rollers Burst at Patrick's Point State Park, California

Having crossed the continent, the Andersons found the Pacific as exciting as was Balboa's glimpse from his "peak in Darton." Here Indians once hunted sea lions.

Wild Flowers and Creaming Surf Augment the Splendor of Giant Forests Along the Redwood Highway

At Redwood Lagoon, west of Orick, California, raphanus blooms embroider a path leading down to the ocean. Close by is the site of an ancient Yurok Indian village.

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Photograph by HEINER ANDREWS

“Where Have I Smelled This Before?” Belinda Sniffs the Harbor Air of Monterey, California

A Massachusetts spaniel, Belinda has often visited her own State’s Rockport Harbor and near-by Bass Rocks. Monterey Harbor’s scents her black nose finds familiar.

Los Padres National Forest Ends Abruptly in the Churning Pacific

Flowers, thickets, and open brown terrain plunge down to the sea. Waves boil hundreds of feet below onlookers at this point on State Route 1 south of Monterey.

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Collection by Herbert Bodman



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Illustrations by Stewart Anderson

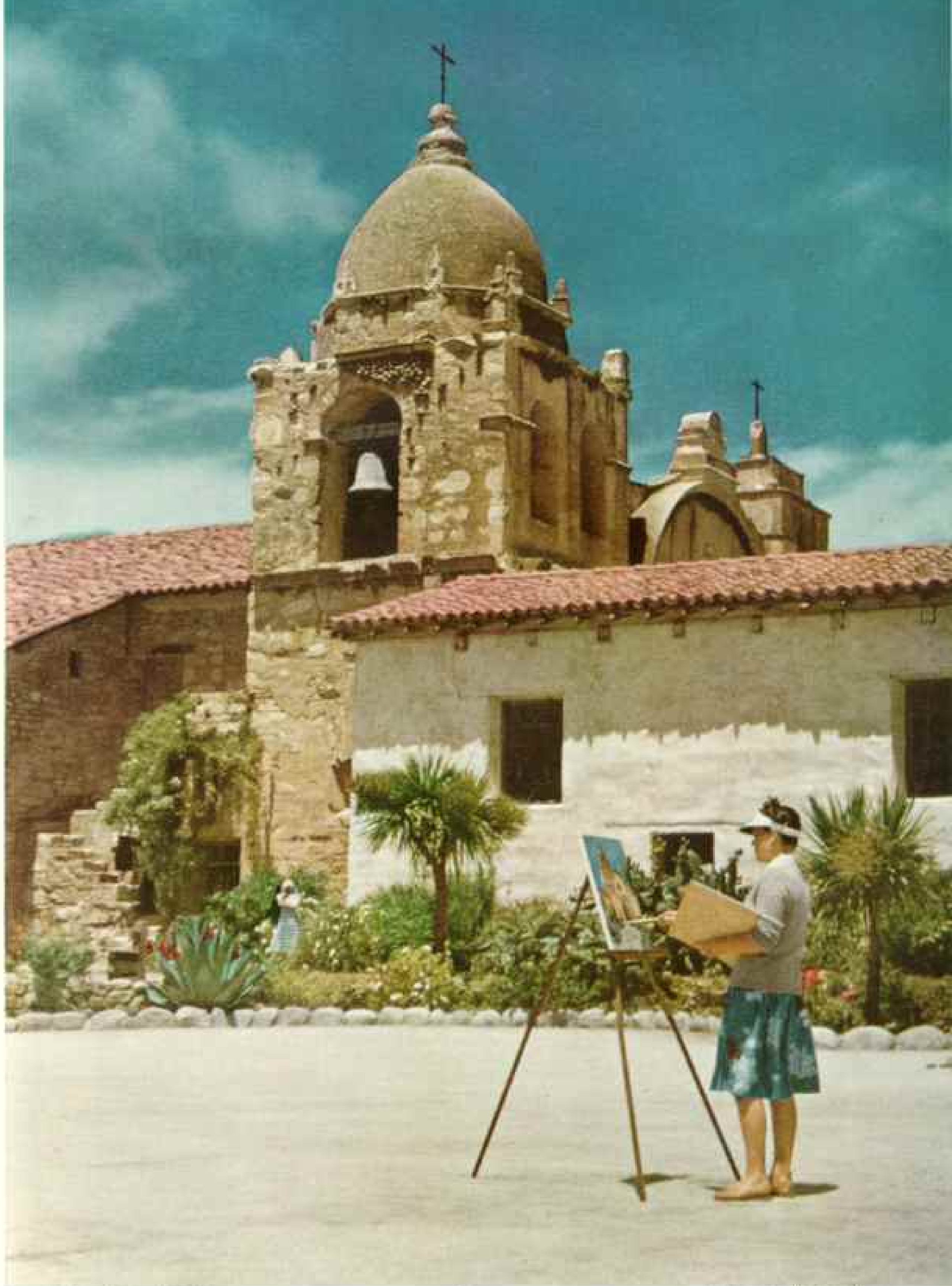
↑ "Cat and Kittens" Spring from Rocks
Close to Booming Surf

This cluster of sempervivums is one of many which the author found at Patrick's Point State Park, California—all within surf-spray distance of the scene shown on page 764. The plant is a member of the stonecrop family. It grows amid boulders and on faces of cliffs.

✧ Even the "Basket" Itself Is Cactus—
a Cholla Skeleton

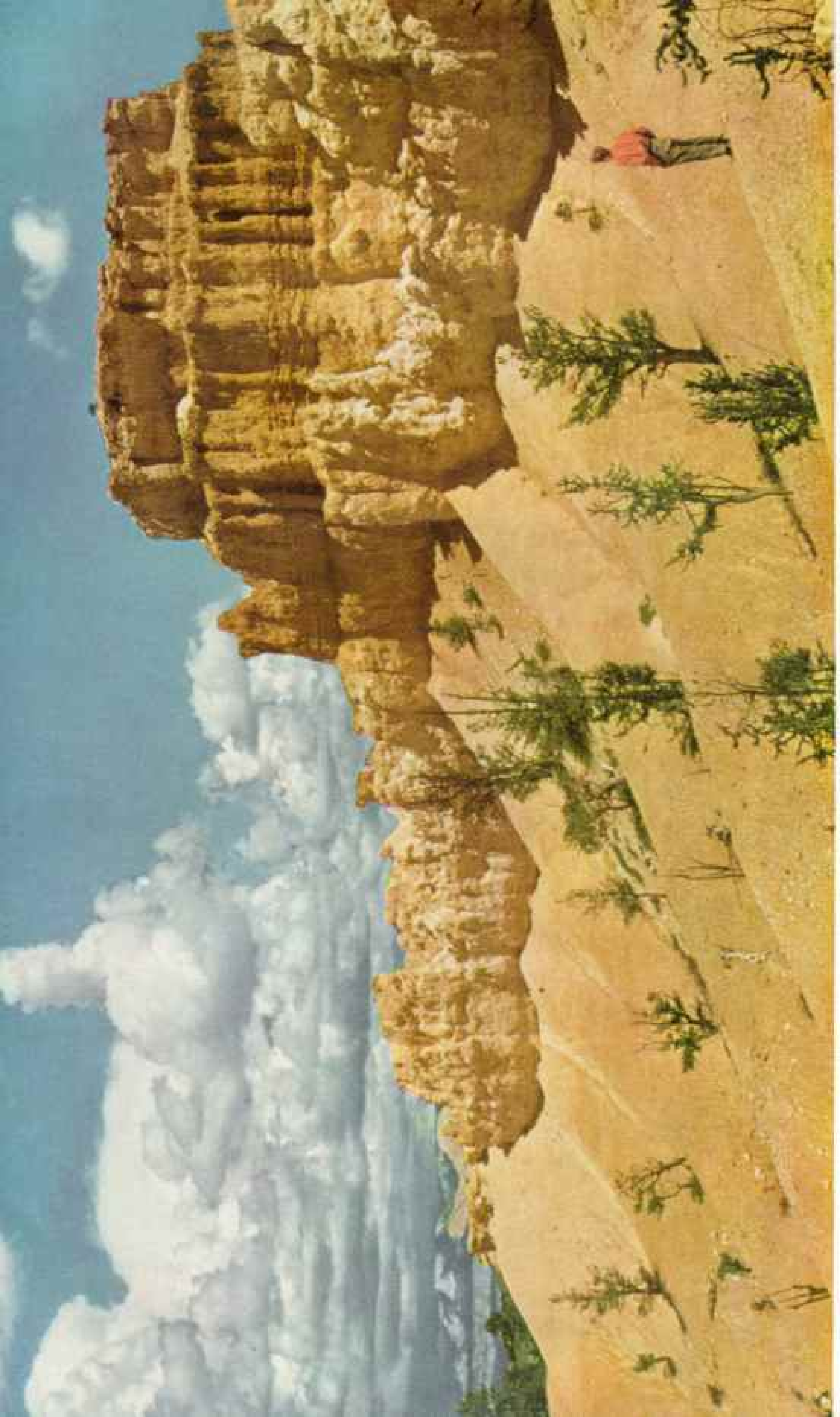
Lewis Walmesley, owner of Soledad Gardens in San Diego, presented the display to visiting easterners. The succulents include uloe, sedum, euphorbia, bishop's-cap, elephant shrub, and others with technical names such as *Meisembryanthemum uncinatum*.





Padre Serra's Mission at Carmel Demands To Be Painted and Photographed

Second of the missions founded by Father Junipero Serra in California, San Carlos Borromeo del Rio Carmelo was long his headquarters. Here he died. Old tower, bell, and swallows' nests inspire artists.



In Bryce Canyon, Utah, Erosion Has Built "a Temple Not Made with Hands"

Brilliant sandstone and limestone formations suggest about everything under the sun. This one, seen from the Peek-a-boo Trail, is called Bryce Temple.

On the Peek-a-boo Trail, Visitors Pause in Incredulity

"I don't believe it!" thinks a Bryce Canyon hiker amid fantastic erosion shapes.

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The Wealth of "Wall Street" Is Its Color

From Sunset Point, Bryce's Navajo Trail zigzags down into shadowy recesses.

Resolutions by Stewart Anderson





Beneath the Radiant Banners of Fall Basks the Quiet Beauty of a Massachusetts Town

As the trip nears its end, New England greets and consoles the returning vacationers with a blaze of autumn color. This is a Sunday-morning scene at Brimfield, Massachusetts.

Oakland Bay Bridge, better known as "Bay Bridge."

One of the longest in the world, it carries six-lane traffic on the upper level, or "deck," and, on the lower deck, three truck lanes and two interurban lanes, across $4\frac{1}{2}$ miles of sea water. Motorists approaching San Francisco on it can look down upon the city's remarkable beauty.*

Yosemite National Park was in dry season. The falls seen from the unbelievable heights of Glacier and Washburn Points were thin but could never be disappointing (page 761).

Going on to the Mariposa Grove of giant sequoias, we met Grizzly Giant. Older than King Tutankhamen, the tremendous tree made us marvel at the Force which has kept him living since the dawn of civilization (page 763).†

At Monterey we found East-West similarity. Take Rockport and Gloucester, Massachusetts, add heaping tablespoons of old Spanish houses, and you have California's Monterey. The same clutter of boats and tackle was here. Sitting on white sea boulders, Belinda looked puzzled, lifted her nose to the briny air, and sniffed to make sure these were not the Bass Rocks of her native north shore (page 766).

The shore line south of Monterey and Carmel (page 769) bore little resemblance to the wooded inlets and bays of New England. California cliffs extended for much longer distances and were topped by brown grass instead of trees (page 767).

Few people were on the beaches. At times the effect was virginal, as if we were pushing through country untouched by man.

At Los Angeles we camped in Tujunga Canyon, a ravine as untamed and barren, as sparsely silent, as if there were a desert next door instead of the metropolis.

Oil Wells Near "City of the Angels"

We were startled to find oil wells so profuse near Los Angeles that the derricks blackened the sky along oceanside highways, the drills working the grounds of seaside cottages and even pulling oil out of beaches.

San Diego was now so near that we stopped in the sprawling "City of the Angels" only long enough for a glimpse of Hollywood's movie-making‡ and a visit to Riverside. Mission Inn's historical collection includes a bell rung by the town crier of Bedford, Massachusetts, on the night of Paul Revere's ride. I threatened to smuggle it back to Massachusetts, but my friends of the inn won because the bell was chained down (page 755).

When we finally came to San Diego, two tired "sagebrushers" craved nothing more than to wiggle their toes in the beach sand. In a

backyard overlooking the Pacific we went on living in a tent, but now in luxury, with cots, mattresses, and other comforts provided by our relatives, who fed us home-cooked meals.

Next door was a cactus ranch. The kindly owner, Mr. Lewis Walmsley, gave us many hours of his time, arranging lovely displays of cactus flowers, and those of other fleshy plants, for us to photograph (page 768). Talking with gentle earnestness about his plant friends, he was quite unaware of using technical language:

"Let's see, where will I put the *Notocactus ottonis*? I think for your picture it will look best if I put it next to the *Kalanchoe* hybrid gold over against the *Echeveria*. Now you'll want some contrasting colors behind, so why don't we move the *Euphorbia splendens* and *Faucaria tigrina* into the back row?"

My fancy was caught by the last plant mentioned.

"Does it have any other name?" I asked, hopefully.

Walmsley smiled, suddenly remembering my ignorance.

"Tiger jaws," he explained.

Southwest Corner of the Country

The brown hills of southern California required some getting used to. We missed eastern greenness at first, but were gradually won over by the glorious sunshine which makes the brown grass glow all the way to the horizon with a golden hue.

Angels must have made the San Diegan climate. Red bougainvillea scrambles over gleaming white, modern houses. Orange oleanders line the streets in the La Jolla area. Drooping green pepper trees weep, like willows, over the roads of Point Loma.

The size of San Diego Bay was one of our many surprises. Miles and miles of docks and large ships opened our eyes as only New York Harbor could do back home.§

One day we drove 80 miles into Mexico, past the border city of Tijuana, to Ensenada.

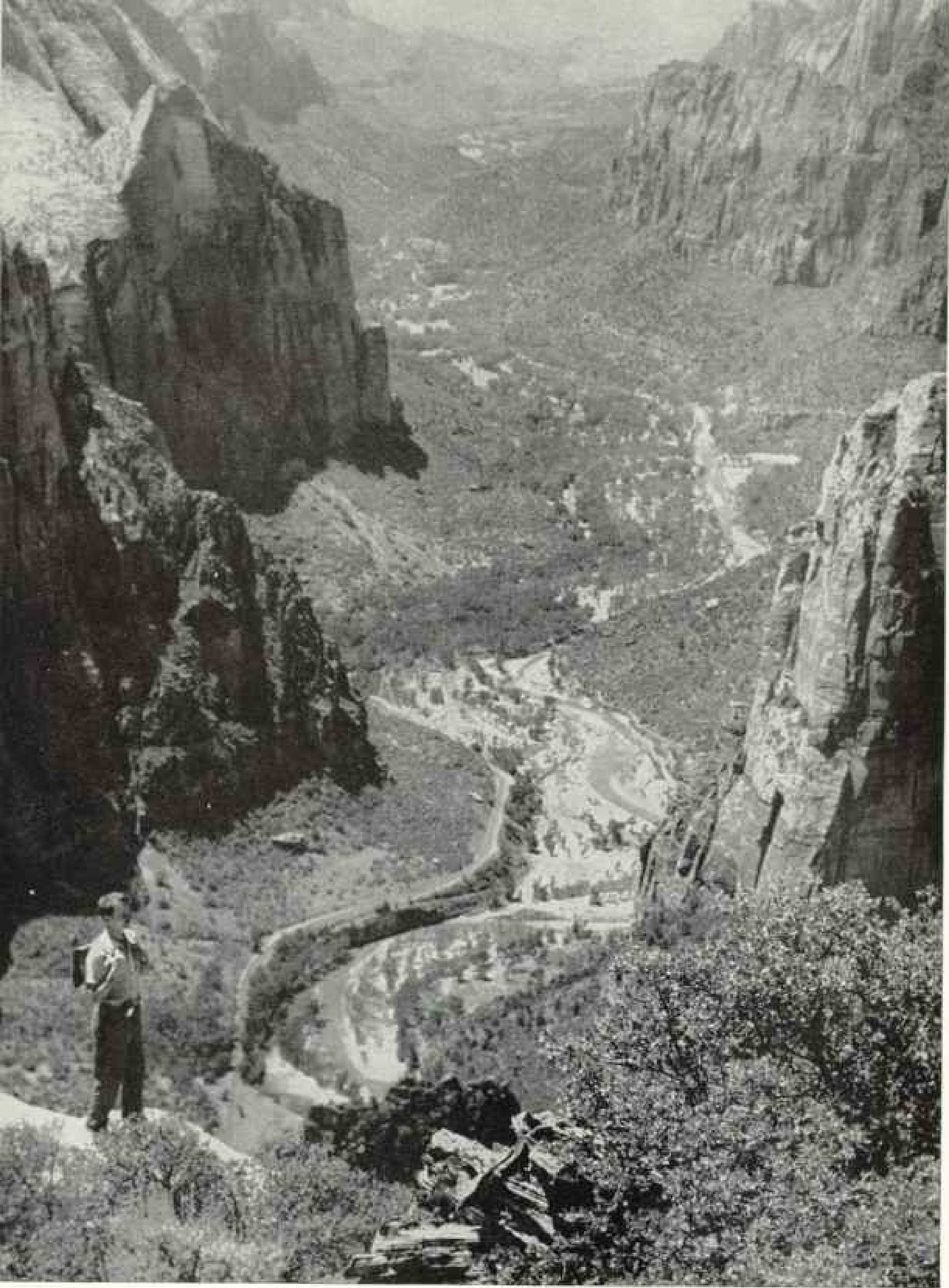
"No meat shortage here," said a man who was butchering his cow in an open field. "Every time fiesta, I kill cow. You come?"

* See "San Francisco: Gibraltar of the West Coast," by La Verne Bradley, NATIONAL GEOGRAPHIC MAGAZINE, March, 1941.

† See "California's Coastal Redwood Realm," by J. R. Hildebrand, NATIONAL GEOGRAPHIC MAGAZINE, February, 1939.

‡ See "Southern California at Work," by Frederick Simpich, NATIONAL GEOGRAPHIC MAGAZINE, November, 1934.

§ See "San Diego Can't Believe It," by Frederick Simpich, NATIONAL GEOGRAPHIC MAGAZINE, January, 1942.



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Looking Down into Utah's Zion Canyon, Instead of Up, Is a Hard-earned Privilege

From Observation Point the conqueror of the East Rim Trail sees the incredible handiwork of the North Fork of the Virgin River. Nearest at left are base of Great White Throne and Red Arch; at right, Angels Landing.

There was blood on his face, and he waved two knives perilously close to my throat. There was only one possible answer.

Ensenadans are poor. Their homes are often mere piecings together of cardboard. Yet we found them remarkably unjealous of their prosperous California neighbors. They were also friendly hosts.

We had rested a month in San Diego when the executive occupying our cottage in Massachusetts wrote us a courteous letter requesting his release from the rental contract. His business was finished. Our flow of rent money was gone. Now we would have to rush home through the vast distance between the southwest and northeast corners of the Nation.

Mighty Zion, and Bizarre, Brilliant Bryce

But we were not going to go home without first looking at "canyon country."

To speed our progress, I placed two bed-boards over the seats on the passenger side of the car. One of us could then relax on the padded boards, though rather rigidly, and even snooze, while the other drove. We switched places every 100 miles and covered long distances restfully.

Gas station attendants and motorists stared. It looked as if a corpse were being carted through the desert (page 754).

The sun rose over an eternity of sagebrush, cactus, and flaming red sand. But by early morning we were out of the desert and in Zion National Park, Utah.

To stretch my legs, I struggled up the East Rim Trail to Observation Point. There I looked down upon the handiwork of the North Fork of the Virgin River. How did such a tiny stream carve the Great White Throne, Red Arch, or Angels Landing?

These typical red-white Zion formations are as high as a New Hampshire mountain—rising sheer! The garage-size boulders at their feet looked like pebbles.

By evening Red Canyon had given us its scarlet welcome into the Bryce Canyon region, and a few minutes later our motor said it had had enough. In a day it had covered 600 miles. It gave a few coughs and died. We put up the tent in darkness.

The canvas shook so hard next morning that I poked my head out to see what was wrong. We were up against a pasture fence, and over it leaned a cow, mistaking our tent ropes for grass and chewing them heartily.

We poured ice from our water bag. The September night had been cold.

The car trouble was only a loose wire. It was soon fixed and we went on to the canyon. The Navajo, Ute, Comanche, and Peek-a-boo

Trails took us among Aztec altars, Greek temples, Roman statues, blood-red bridges, orange-gold cathedrals, strawberry ice cream cones, marshmallow fluffs, coral pillars, and sculptured schoolma'ams and preachers. Bryce Canyon's erosion reminded us of just about everything (pages 770 and 771).

At Grand Canyon, Arizona, Helen said, "I've had enough of your photographing me on the brink of doom."

On both rims, at lookouts such as Hopi Point, Cape Royal, Point Imperial, and Bright Angel Point, Helen or I inched as close to death as the spouse with the camera would permit (page 741).

The crossing of the canyon by car required over 200 miles of driving to go 10 airline miles!

There were many surprises in Grand Canyon, despite all we had heard about it. Was this arid and barren Arizona? Hundreds of square miles of wilderness forest march to the canyon edge. Quaking aspens, so like New England birches, were masses of autumnal gold.

Deer crossed the wooded roads in tens. Rangers told us that as many as a thousand had been counted by a single motorist driving down to the North Rim from Jacob Lake. On the South Rim the deer came to our camp site in daylight and nuzzled our hands for food. Sagebrushers near us reported food stolen from their tents by deer.

After Grand Canyon, Helen felt as if her eyes could absorb no more. We found it difficult to sleep. Ten thousand miles of scenery paraded through our heads. We would come again; America is best seen on the installment plan.

Homeward, Again "Carting the Corpse"

From Arizona to Massachusetts we ate up the roads without using a hotel, a cabin, or even our tent. The car housed us all that distance. We slept in it or "carted the corpse" every night.

Highway 66 carried us rapidly out of the West. Our bodies were now so used to motion that there was little strain in driving 12 to 16 hours a day, stopping only to cook a meal by the highway, rolling on and on at night to the music of the radio.

Nevertheless, we took mental notes of the vistas whizzing by us, to use in planning our next, or southern, trip.

By flew the Navajo hogans and large Indian reservations of Arizona and New Mexico—the flat Texas Panhandle—the oil wells of Oklahoma City—the swamps and cottonfields of Arkansas—the mansions in Mississippi.

By went the coal and pine odors of Ala-



William Delaney, Jr.

Six Feet—and All Off the Ground

Rodeo thrills abound at the "Hellorado," Las Vegas, Nevada. This cowboy, competing in the saddle bronc riding event, has just parted company with a few hundred pounds of white dynamite.

bama—hushed Fort McClellan where I trained in the infantry—the blue haze over the Great Smoky Mountains of Tennessee and North Carolina—the red fields of Virginia—the steel mills in Pennsylvania—and the battlefield at Gettysburg, symbol of the union of it all.

Our speedometer turned past the 15,000-mile mark as we crossed the Hudson River on Bear Mountain Bridge and headed into New England. We found ourselves looking curiously at our native region, as if we had never seen it before.

It was so tiny and unspectacular by western standards, with its plains blocked from view by trees, its rivers small, its mountains sometimes not worthy of the name, its ocean seldom parading grandly beside the turnpikes.

But, even to westernized eyes, how lovely and how green! Curving roads, strange to us after so many straight stretches in the wide open spaces, brought us with exquisite suddenness upon the scene just around the bend:

a village green, perhaps, or a lake, or artfully placed farm buildings, or stony pasture. Climaxing all was a brilliant blaze of fall color (page 772).

We saw that this small part of America, like every other region we had visited, lacked certain types of beauty only to be unsurpassed in others.

"To Each His Own"

When our car finally pulled up in front of a cottage nestled amid white pines and ferns, we had a much better mental photograph of the United States than we had had when we left. Now we could picture a country made up of many marvelous parts, each contributing to and enriching the others.

There seemed to be no point in deciding which part was the most beautiful, for all were in some respect unchallenged—and all belonged to us as American citizens, wherever we chose to live.

Notice of change of address for your NATIONAL GEOGRAPHIC MAGAZINE should be received in the offices of the National Geographic Society by the first of the month to affect the following month's issue. For instance, if you desire the address changed for your August number, The Society should be notified of your new address not later than July first. Be sure to include your postal-zone number.

Newfoundland, Canada's New Province

BY ANDREW H. BROWN

Illustrations by National Geographic Photographer Robert F. Sisson

SEAGIRT NEWFOUNDLAND, Great Britain's oldest colony, this spring took up a new rôle, as tenth Province of the Dominion of Canada.

The fateful balloting took place in the summer of 1948. Before the votes were cast, the Government of Canada expressed willingness to welcome Newfoundland into the family of her Provinces—if the island's citizens in free election spoke for admission into the Dominion.

Canada Extends Atlantic Seaboard

By this change Canada adds thousands of miles of coastline to her sea frontiers. Now North America's eastern shores are Canadian from Grand Manan Island, southern New Brunswick, to Cape Columbia, the northernmost jut of Ellesmere Island, 475 miles from the North Pole.

The "baby" Province of Newfoundland brings Canada much more than huge chunks of strategic territory. It pours into world trade forest products, minerals, and fish.

Undeveloped Labrador counts vast wealth in forests, water power, and iron ore (map, page 782).

With Newfoundland goes also a great aerial crossroad of the new air age.

Two-thirds as many people as live in Newfoundland stopped off at one lonely spot on the island in 1948; yet few of them stayed as long as a day in the country. They dropped in, ate a hot meal, or maybe just a sandwich and a cup of coffee on the run.

Some groups talked volubly among themselves, yet couldn't ask for a paper napkin or an extra spoon except in sign language!

This many-tongued throng converged on the big Gander Airport in northeast Newfoundland, en route to Europe, Africa, or America. A total of 208,631 of these air-borne transients bustled through Gander last year, making it one of the busiest aerial junctions in the world.

In 1949 the fabulous airfield may count an even higher total of here-today, gone-tomorrow visitors (page 780).

Backdoor Callers Miss the Best

These air travelers entered Newfoundland by its wilderness back door. Even those voyagers who went through in daytime and good weather saw only vast reaches of sparsely populated country.

For Gander lies deep in a forest area.

Rough lumber roads fan out from the thread of the cross-island railway that skirts the airfield. Otherwise, bushwhackers go places by canoe—or dog sled.

Most of Newfoundland's proud and hearty citizens live far away from this airport crossroad, around the jagged rim of the island. They populate widely scattered fishing outports and a few larger towns. These cling to the cliff-hung coast or to bays and inlets that pink its fringes.

My companion on the summer flight that whisked me in five hours from New York to Gander, Newfoundland, was a big map of the island I was setting out to see (page 783).

The sheet held improbable place names: Heart's Content, Heart's Desire, and Heart's Delight; Come by Chance, and Seldom Come By.

By a route I traced on the map a modern Pilgrim could go direct from Manful Bight across Confusion Bay to Paradise Point.

Sailors must have named inland hills Main Topsail, Mizzen Topsail, and a near-by way stop, Gaff Topsail. Hunters and fishermen christened Seal Cove, Trouty, Foxtrap, and Black Duck Cove.

My searching finger moved from romantic Lake of the Hills and Red Indian Lake to bluff titles like Sitdown, Puddle, and Gulp Ponds. Harpoon Hill, Bay d'Espoir, and Blue Hills of Couteau sparked wanderlust.

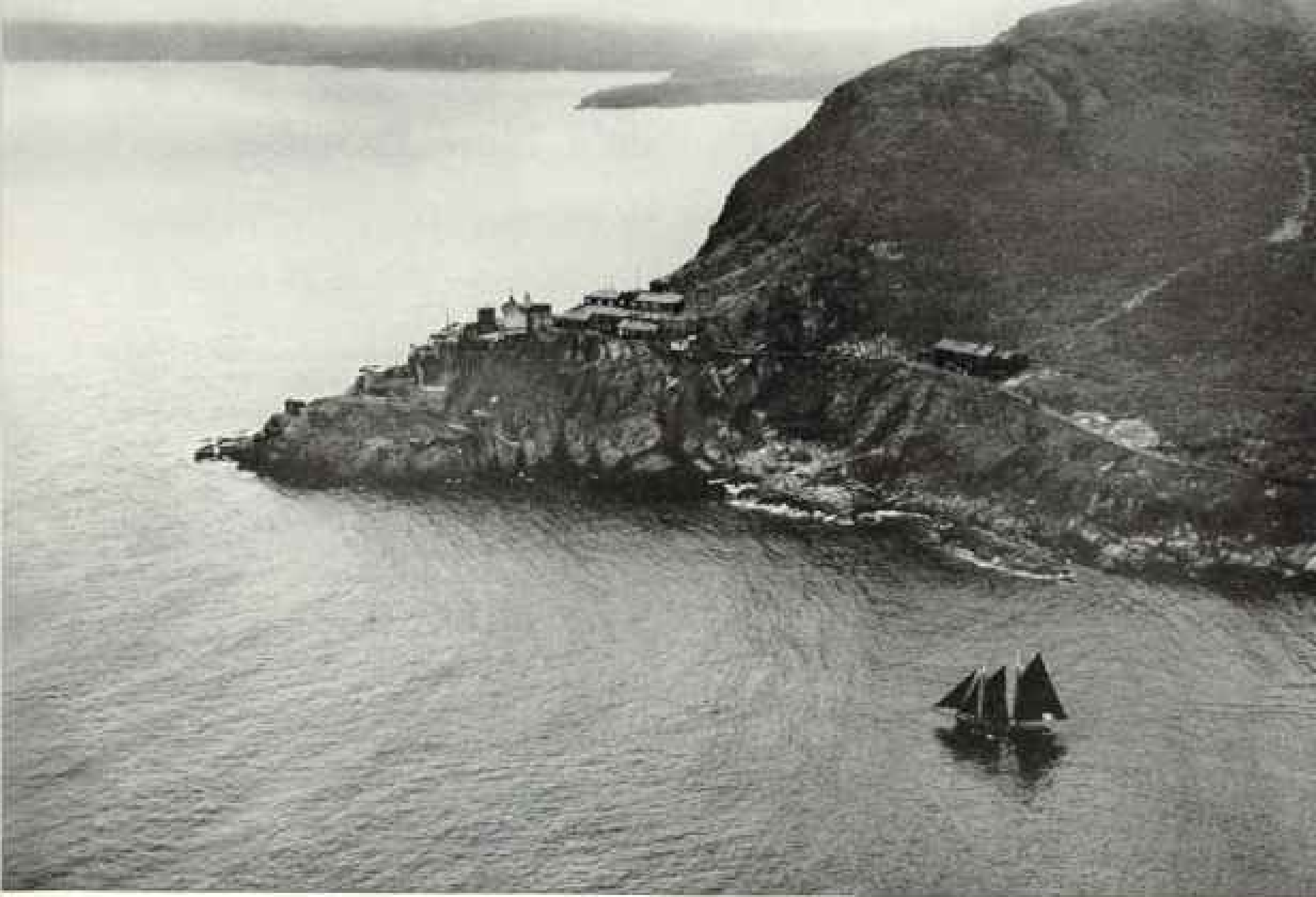
Poetry surely dwelt in the hearts of people who called villages Fleur de Lys, Rushoon, and Ireland's Eye. And what odd fancy had named two little outports St. Jones Without and St. Jones Within?

Gander was only a refueling stop for the transatlantic plane carrying me to Newfoundland. But it was jump-off spot for my tour of the island.

Way Stop for Thousands of Bombers

A charming Newfoundland redhead, Mary Norris, guided me around the busy base. She worked for one of the American airlines. Ten airlines of nine countries operated scheduled flights through Gander. More than a dozen nonscheduled air carriers made frequent use of the airport.

We walked past 15 big hangars, monuments to all-out war effort. During the recent conflict 17,000 military aircraft winged to the battle fronts through Gander.



Fort and Lighthouse Guard the Rocky Narrows Leading to St. John's

To a passenger at sea the cliffs appear unbroken, sure to dash the incoming ship to pieces. Suddenly the narrow cleft appears (opposite page). In olden times it was closed to hostile vessels with chains. In World War II, guns studded the crags. When mist creeps in, the foghorn booms from Fort Amherst on the point. Fog and currents make the coast treacherous; many a ship has left her bones on Newfoundland rocks.

From Gander I flew southeast to Torbay Airport 5 miles northwest of St. John's, capital and chief town of Newfoundland (page 789).

A city of 57,000, St. John's is the lusty metropolis of the Ohio-size island that is home to 316,000 folk of British and Irish descent. Denver, Colorado, has more people than the whole island of Newfoundland.

The Narrows, a deep cleft in the coastal cliffs, leads into a capacious basin a mile and a quarter long and half a mile wide. Concrete gun emplacements around the harbor gateway yawned hollowly. Long-barreled teeth had been pulled.

War's recent presence lingered in the U. S. Air Force's gleaming Fort Pepperrell, at the north edge of town. GIs strolled Water Street, "main drag" of St. John's.

Building and repairs blossomed along the steep streets and among the smoky brick and wood structures of the town. The St. John's Housing Corporation had refurbished a whole suburb with modern homes and apartments. Yet St. John's still was a time-tarnished old seaport, too busy to worry much about show.

In the still dusk I wandered through the town. A wisp of breeze from the harbor wafted the breath of the port: fish and the

salt-and-seaweed landwash smell, aromas of lumber, oil, tar, and—yes!—a whiff of rum.

Children played in the darkening canyons of the streets. Late fishing boats putt-putted to the wharves. A star popped out above the South Side hills.

Sixteen Years of Ups and Downs

In the last 16 years Newfoundland has counted trials and triumphs.

In 1933 the island—at that time a British territory with Dominion status—went bankrupt. A Commission of Government under the eye of the British Crown established emergency rule in February, 1934. Years of economic ups and downs followed.

World War II struck. Newfoundland's strategic position thrust her abruptly into the spotlight. There she rode, an unsinkable aircraft carrier, splitting the vast distances between the American democracies and embattled Europe.*

Canadian and American forces built air and naval bases across the island's breadth and assumed the job of her defense. Newfound-

* See "Newfoundland, North Atlantic Rampart," by George Whiteley, Jr., NATIONAL GEOGRAPHIC MAGAZINE, July, 1941.



Sail and Steam Glide Out of the Landlocked, Boot-shaped Harbor

Twenty years before the Pilgrims landed at Plymouth Rock, Englishmen were coming here for fish, but they did not settle until much later. Now some 57,000 people make St. John's their home. Fish and seal-oil plants still fringe the South Side water front (center). The main part of town climbs the slopes on the upper right. This photograph and the one opposite appear to be a panorama, but they were taken separately.

land troops hurried to Europe to help the Allied cause.

The country won new wealth from her wartime and postwar roles. Millions of foreign dollars poured into her defense works. War-impooverished lands clamored for the rich yield of the island's fisheries, mines, and forests.

In 1946 the Newfoundland electorate chose a National Convention. Delegates to this congress met to discuss and select forms of lasting government from which the people would make their choice. In June, 1948, a vote was taken, but the balloting was so close it was called inconclusive. In the runoff referendum, held July 22, 1948, the people chose confederation with Canada. The alternative, and losing, choice was "responsible government," equivalent to Dominion status.

Thus Newfoundland and Labrador, lands where codfish still is king, on March 31, 1949, gained formal admission as the tenth Province of the Dominion of Canada.

I called on Maj. Gen. Caleb V. Haynes, then Commanding General of the Newfoundland Base Command of the United States' Military Air Transport Service (MATS). He welcomed me to Fort Pepperrell, whose buildings are "permanent"—for 99 years.

General Haynes headed American forces in the Command's home island as well as in Labrador, northern Quebec, Baffin Island, and Greenland. He told me:

"Our troops' morale is high, even though this is an overseas station for them. Why? Chiefly, I think, because of the fine appearance and facilities of their post. Give a soldier a trim place to live and work in, and his own looks and habits soon perk up."

We also visited the U. S. Air Force base at Harmon Field, near Stephenville, and our Navy base at Argentia.

Joys—and Woes—of Fishing

One day I met Harry Nosworthy, who had been fisherman and schoolteacher. Now he was an assistant magistrate.

"Go to Pouch Cove," he advised. "It's only 15 miles from St. John's. Stay with my mother and father." With proper pride he added, "I was born there. It's the best fishing village in the country."

When I got to Pouch Cove, John and Emma Nosworthy took me warmly into the family. Sturdy, jolly Emma arranged a dawn fishing trip with cousin Billie Nosworthy. For me she hauled out Harry's fishing suit and boots,

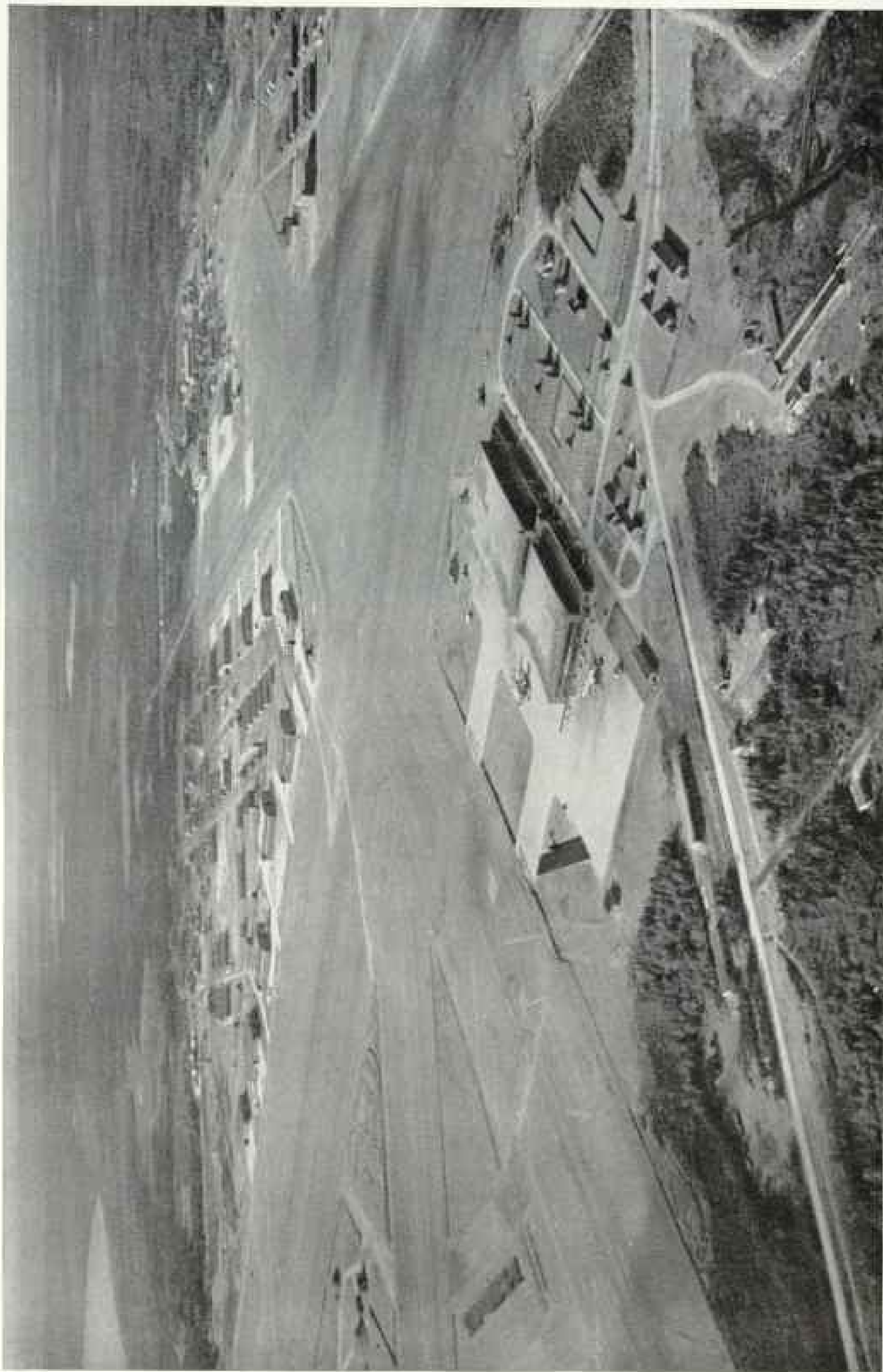
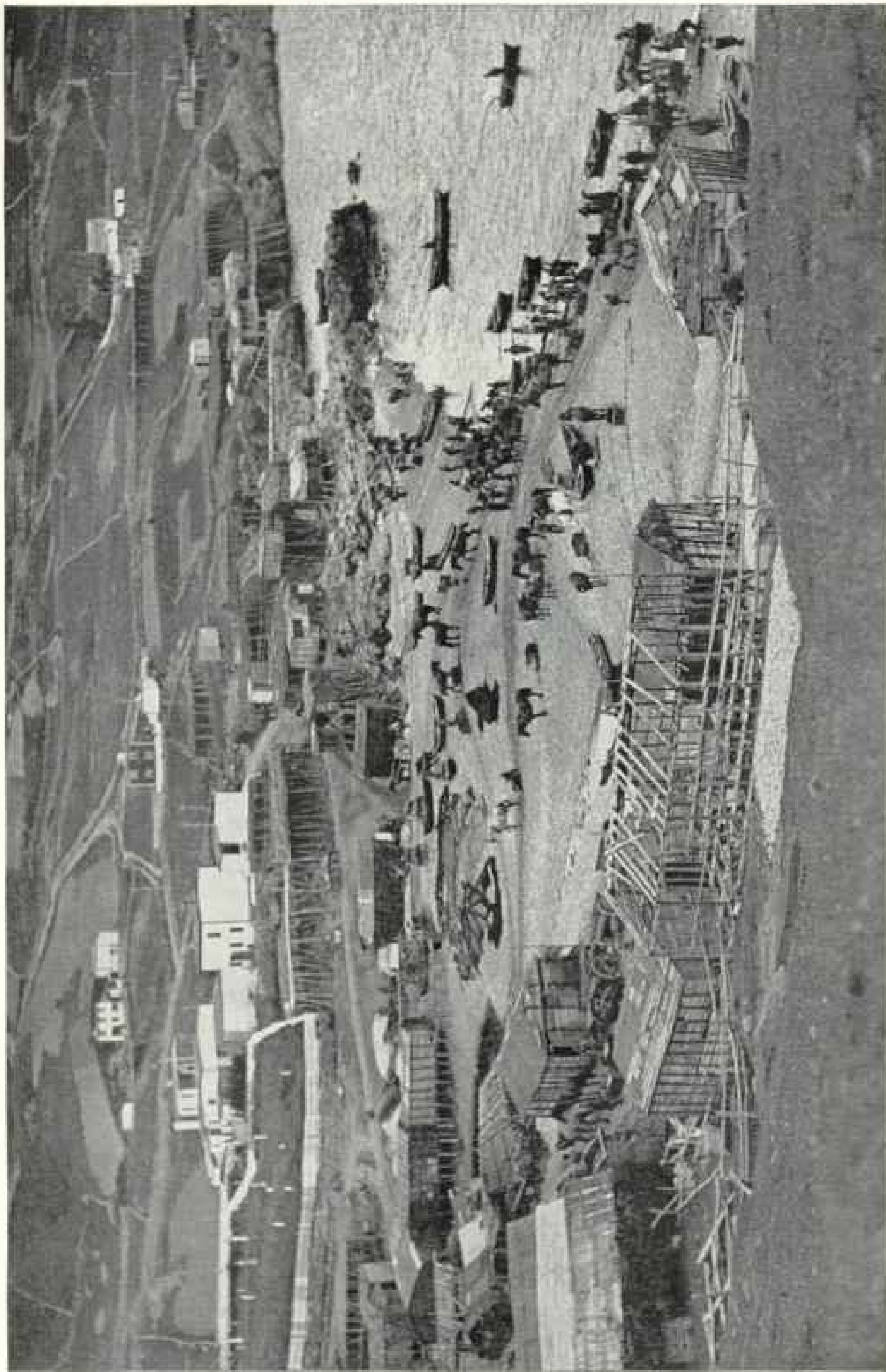


Photo-Canada Air Films

Forest-bound Gander Airport Puts North American Within 2,000 Miles of Irish Flying Fields

To many passengers, Gander is a cup of coffee. They see no more of Newfoundland, nor do they realize that North America's old and new industries, codfishing and transatlantic flying, have exist side by side. During the war the field sent 17,000 military planes across the sea (page 777). Left: Gander Lake.



Ernest Mammeter

Fishermen-farmers and Their Horses Drag Living Fertilizer from the Sea onto Torbay Beach

Boatmen seine for capelin, a small smeltlike fish swarming into shallow water to spawn. Horses pull the glittering haul away on sledges. Later the fish will be planted in furrows to enrich the thin, glaciated soil. Migration of the capelin attracts schools of hungry cod. Waters writhe as the frightened fish take flight.



Drawn by Harry B. Oliver and Irvin E. Allen

Canada Welcomes a Tenth Province—Seagirt Newfoundland

The new Canadian Province comprises Newfoundland and Labrador, the most easterly reaches of North America. The island forms a giant "stopper" in the mouth of the Gulf of St. Lawrence. Ships bound for Quebec and Montreal pass either north or south of it. Labrador contains great potential riches—huge reserves of iron ore (near Burnt Creek, Quebec), extensive forests, and vast undeveloped water power at Grand Falls and other spots. Its sparsely peopled territory is home to only 5,500 trappers, traders, and fishermen. (page 808).

his wool cap, hand line, and shoulder bag.

Up long before the sun next day, I gobbled the breakfast Emma had left out—sandwiches, sweet "excursion biscuit," and raspberry preserves. I picked up my gear and trotted across the street to Billie Nosworthy's.

Besides Billie, our crew included his brother Joe and a young boy, Matt. We went slapping out to sea as the rising sun flushed scattered clouds.

At a certain spot Billie cut the engine and dropped anchor. He threaded my hook with squid to show me how. We heaved over

our lines. Bottom was in thirty fathoms. We pulled the hooks just off it.

Soon Billie, Joe, and Matt were yanking fish aboard every few moments. There was a knack to the business. It was a quarter of an hour before I took my first brown-backed, yellow-eyed prize.

The fishing seemed good to me, but the men said it was slow. Yet the storage bins steadily filled with flopping cod.

At noon Billie told Matt to start the fish stew. ("Chowder" is a word I never heard in Newfoundland.) The boy diced pork, scrubbed and cubed potatoes, and cut up onions. Joe cleaned a plump three-pound fish.

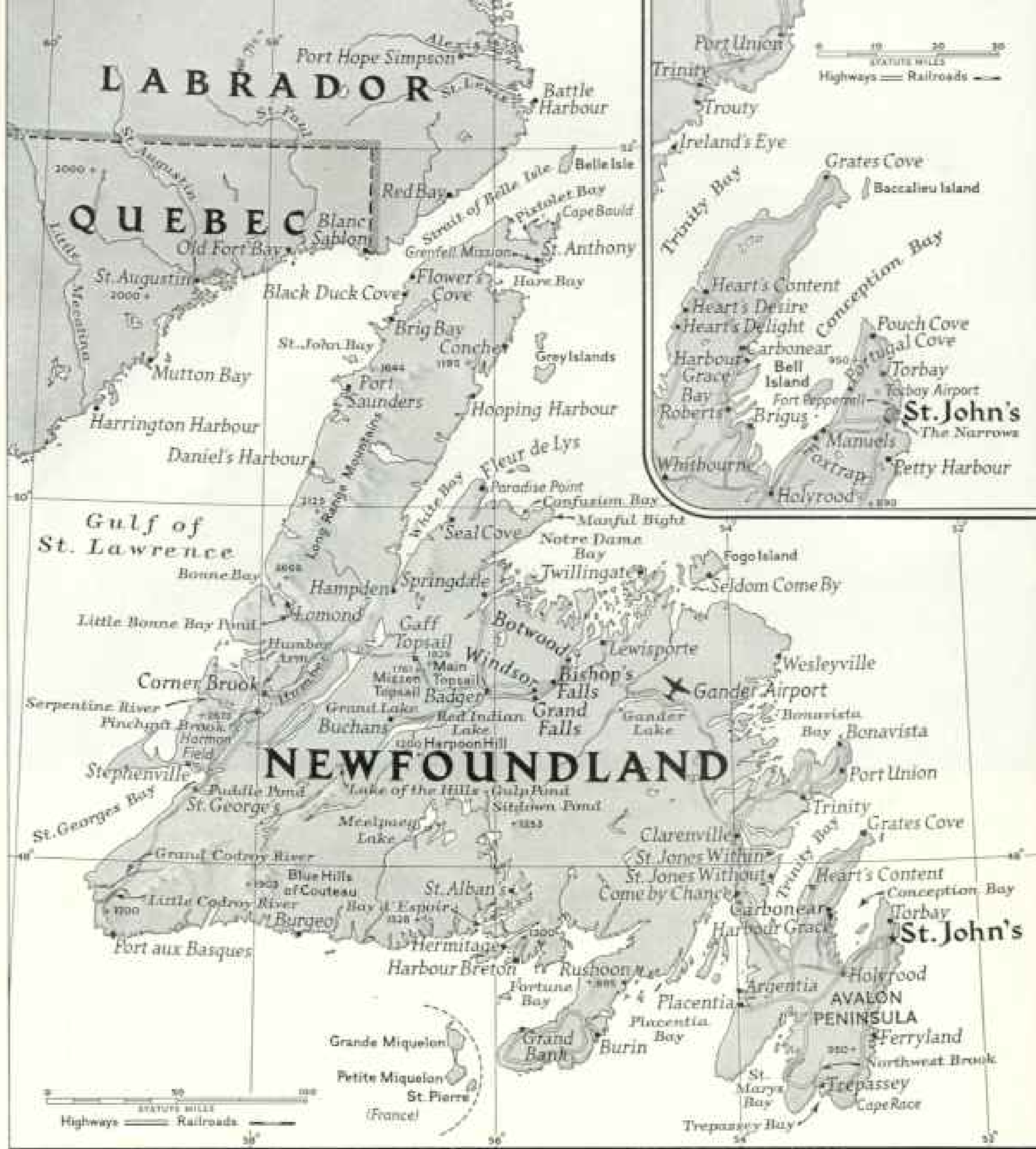
Billie produced a flat piece of cast iron with upcurved edges and set it firmly across the top of the middle fish bin. With a jackknife he shaved a birch chunk into splinters and overlaid this kindling with heavier wood. He splashed a cupful of gasoline over all, tossed in a match, and—poof!—there was a blazing fire.

The black, broad-bottomed tea "kettle" was set to boil. The

iron stewpot joined it on the flames, at first with just the pork cubes set to sizzle to make crisp brown "crunchin's" for the stew. When the fat back was ready, Billie tumbled fish, potatoes, and onions together into the pot. He tossed tea into the steaming kettle—and everyone fished listlessly, eyes on the cooking food.

Billie had to right the heeling pot and kettle whenever a big wave struck, but no coals fell from the fire.

When the stew was ready, Joe cut birch-wood forks. The pot was lifted from the



Drawn by Harry S. Oliver and Irvin K. Allaman

"Newfoundland Is a Forest Surrounded by Fish!" an Islander Told the Author

Most of the new Province's people live along its rocky coasts, close to the cod fisheries. No highway yet crosses Newfoundland, but road building is gradually closing the gaps and joining up scattered sections. The trans-island railroad is narrow gauge but modern. Nearly half of Newfoundland island's 316,000 inhabitants live on the Avalon Peninsula, where St. John's, the capital, is located (page 778).

flames, and everyone reached in for morsels. I took two bites. The first was delicious, the second flat and savorless. I could hardly force it down. Then, with a body blow, nausea struck. I had felt queasy earlier, but this was all-out seasickness.

Until we turned the point into the cove, I took no more interest in anything.

"It's too bad she was so lippy," said Billie sympathetically. "If it had only been civil,

you'd have had more fish and a better time."

At rugged Pouch Cove shores are so steep and high that the fish must be tossed from the boats to a shelllike platform just overhead. From that level the men throw them up one, two, or even three more "steps" to the stages, shacks where they are prepared for "making." Spidery stages built of spruce poles and slats are tough enough to withstand roaring gales and crashing surf (pages 785, 791, 793).



E. Fred Miller

"It's Grand to Come Home in the Evenin' with a Boatful of Fine Fat Fish!"

These men pitch their catch ashore with single-tined forks which they call "pews." Pronging cod is good exercise for the back, they say, when urging reluctant sons to stop play and get to work.

Billie tied his boat to the foot of the first step. With a single-pronged fork called a "pew," he flipped the cod up to the lower platform. Matt pitched them on up to the stage.

Joe sent for his wife and another woman. At a table in the stage one of the women split the fish open from gills to vent and cut around the heads. Her companion took the cod, ripped out the entrails, and dropped the precious livers into a tub. Against the table edge she snapped off the heads. Joe removed the spines with two deft cuts.

In wheelless two-man barrows they carried the fish to a shed. There Joe's wife laid them away, spreading salt thickly between layers. As weather and curing space allowed, they would wash the fish, take them to the drying flakes (racks of boards or boughs), and spread them out in the sun and breeze to "make" (page 786).

Back at Emma Nosworthy's I washed the fish slime from my hands and the caked sea salt from my face. It had been a good day.

At Joe's house we had tea to celebrate my baptism on the fishing grounds. Legs crossed and rough hands folded on knees, the men yarned between gulps of the strong brew.

Newfoundlanders dearly love a story. They spin tales in language as full of flavor as their smoked salmon.

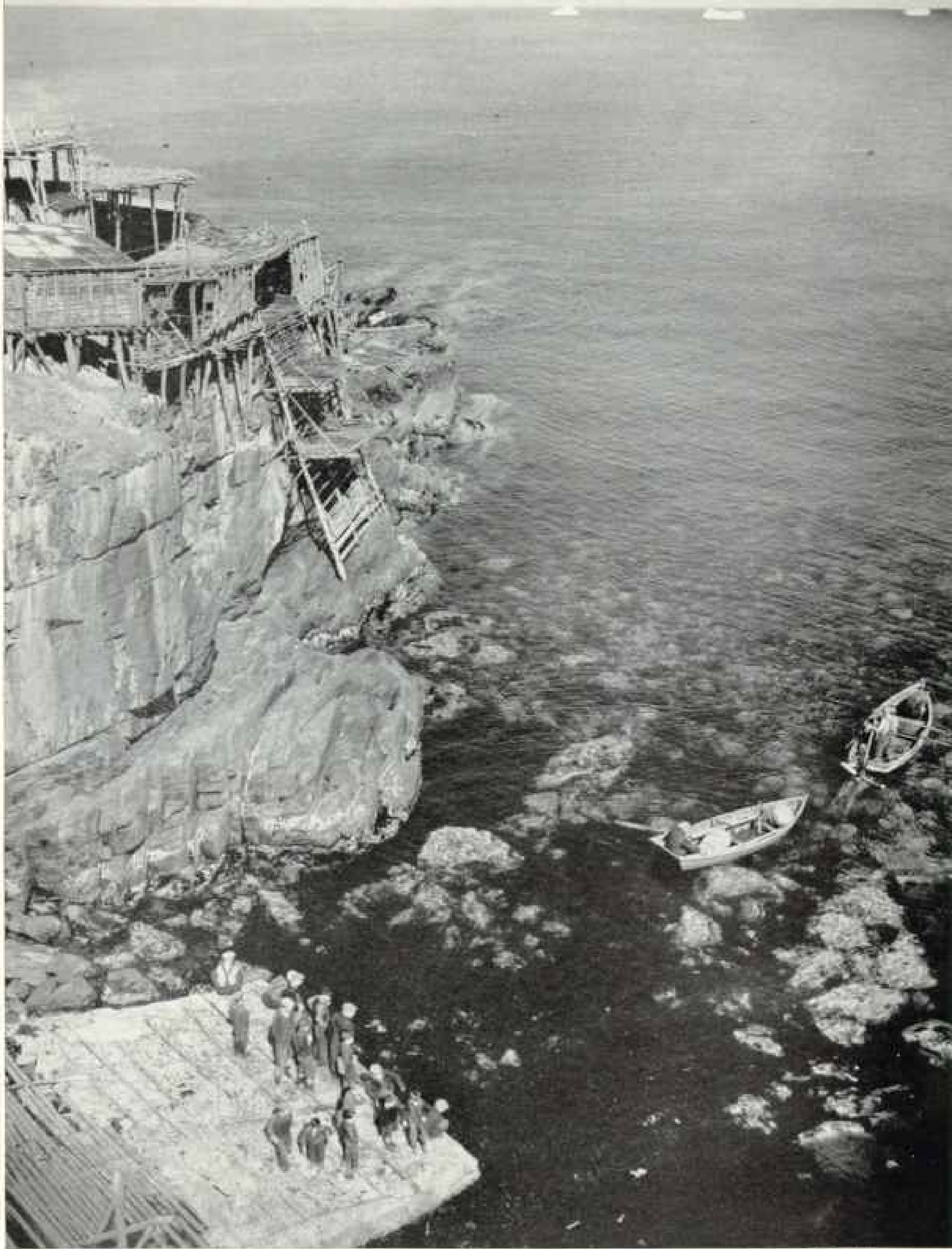
They speak of "bilin' the kittle" over a fire of "blasty boughs." Both phrases ring as familiar to the island folk as "double play" to a Yankee. Blasty boughs are dried branches of fir or spruce trees. If the needles have crisped to a bright red-brown, they burn with a gay snapping, like the explosion of tiny firecrackers (page 806).

Culling Fish a Special Skill

After returning to St. John's, I met NATIONAL GEOGRAPHIC photographer Bob Sisson and drove with him to Carbonear, on Conception Bay. In the W. & J. Moores salt fish plant Graham Moores took us through store-rooms starting to fill with cured cod.

We rifled through piles of salt cod graded for size and quality. Some purchasers like big fish; others prefer the little ones.

Culling fish is a special skill. Like grading tobacco, it demands ability to judge color, texture, and size at a glance. A good culler sorts in a day 200 quintals—several thousand fish, since a quintal is the equivalent of 112 pounds.



From Open Boat to Cleaning Shed, Cod Climb Pouch Cove Cliffs, Platform by Platform

When the season is on, fishermen stand one above another, like miners on open terraces or farmers in a hayloft, and pitchfork the heavy cod from step to step. Though the structure looks flimsy, its stout poles resist sea and gale year after year. Rocks gleam through the clear water. Boatmen stand on the foot of their ramp (page 791). Small icebergs drift past the harbor, just a shallow dent in the cliffs.



E. Fred Miller

Cod Are Seldom Out of Sight or Scent Alongshore; These Drying Fish "Thatch" a Roof

In the stage below, the cod have been cleaned, split, beheaded, and salted down. Now they are spread on flakes (boughs of spruce or wood racks) to cure. Ordinarily the entire family joins in this operation. They turn the fish twice a day for about a week and rush them to cover if it rains.

Clean white casks and barrels made in Carbonear were stacked to the ceilings. They would carry the cod to Italy, Portugal, Spain, Greece, Brazil, the West Indies, and the United States (page 811).

In the past few years Newfoundland has pushed ahead with export of frozen fish fillets. From 13 quick-freezing plants more and more frozen fillets of cod, haddock, and halibut are marketed in England and America.

Jump-off Point for Transoceanic Flights

Next morning in the fog we went hunting for a "lost" airport, the abandoned airstrip at Harbour Grace that launched Amelia Earhart on her solo flight, Wiley Post and Harold Gatty, W. S. Brock and E. F. Schlee, James Mattern and Bennett Griffin, and others on transatlantic flights to fame.

Wandering among blueberry barrens and overgrown roads, we emerged at last on the lonely hillcrest runway.

Lindbergh set the pace with his New York-Paris nonstop odyssey in May, 1927. Flying the North Atlantic became almost an obsession. From Harbour Grace many flyers took off, mostly in single-engined aircraft.

Several pilots tried the long hop in tiny, unsuitable planes. Many survived to shake ticker tape and rose petals from their clothes. Some bold hearts vanished in the ocean waves.

Years before Harbour Grace's flying flurry, Newfoundland was jumping-off place for the first successful transoceanic airplane flights. From Trepassey Bay the U. S. Navy seaplane, *NC-4*, rose into the air on May 16, 1919, on the first aerial crossing of the Atlantic. The route was by way of the Azores.

And on June 14 the same year Capt. John Alcock and Lt. Arthur Whitten Brown lifted their British bomber from Lester's field, near St. John's. Next morning they landed at Clifden, Ireland, completing the first *nonstop* flight across the Atlantic.



Wild Game Sells on St. John's Streets; Pony Carts Compete with Trucks

Game from the wilderness and salmon from the streams frequently grace dinner tables. These hares were trapped 50 miles from St. John's. Traffic only lately started moving to the right.

From Harbour Grace we went south to Brigus. In a simple churchyard we stood beside the grave of a famous native son. His bold yet modest character, honest heart, and abiding optimism won him friends and honors wherever he went. Mention of his name awakes images of glacier-ringed Arctic seas.

Through decades of stirring action Capt. Robert A. Bartlett earned his rest. He died on April 28, 1946, in New York City.

Companion of Admiral Peary to within 150 miles of the North Pole, "Cap'n Bob" skippered ships for 40 years on northern voyages of exploration and adventure. Many of his trips were to collect for zoos and museums.

The NATIONAL GEOGRAPHIC MAGAZINE featured several articles by Captain Bartlett. The last appeared in May, 1946, the month after the gallant hero's death. In December, 1909, Cap'n Bob received the Hubbard Gold Medal of the National Geographic Society. He became an American citizen in 1911.*

Two of Captain Bartlett's sisters, the Misses

Emma and Eleanor Bartlett, invited us to visit their home, Hawthorne, which was Bob's, too, when he was in Brigus. They took us into the stout old sea dog's own room. Pictures, awards, gifts, and things nautical studded the walls and crowded shelves and cabinets.

Iron Mines under the Sea

I returned to St. John's, drove out to Portugal Cove, and ferried over to the undersea iron mines of Bell Island.

Next morning, clad in hard hat, dungarees, and work jacket, I went down into one of the mines. Mine manager T. J. Gray took me to a spot two miles slant distance from the shore and 1,200 feet under the *bottom* of the bay.

* See, by Robert A. Bartlett, in the NATIONAL GEOGRAPHIC MAGAZINE: "Sealing Saga of Newfoundland," July, 1929; "Greenland from 1898 to Now," July, 1940; and "Servicing Arctic Airbases," May, 1946; also "Discovery of the North Pole (Presentation of Hubbard Gold Medal to Captain Bartlett)," January, 1910.

Water dripped from a fault crack in the tunnel roof.

"Is that salt water?" I asked Mr. Gray.

"No, just brackish," I was reassured.

Mr. Gray waved a pair of drillers aside and gestured for me to take over. I grasped the chattering drill and slowly turned the feed crank that pushed the bit into the ore body.

Red dust filmed my glasses. With a harsh, high-pitched clatter, the long steel chewed out a hole in the iron-rich rock. This one, and hundreds more, would be blasted that night, breaking loose more tons of muck.

From three sloping submarine ore beds off the north shore of Bell Island the Wabana Mines of the Dominion Steel & Coal Corporation, Ltd., dug about 5,300 gross tons a day—roughly a shipload every 24 hours.

There's enough trackage in the four operating mines to stretch from Detroit to Toledo.

On the surface, I saw the waste rock removed and the ore crushed to a size suitable for blast furnaces, four to five inches square. Dust from the hematite ore quickly turned work clothes rusty red. Even Bell Island's sheep and goats sported a natty ocher hue.

U-boats Struck at Ore Supply

Tramways carried the cleaned material across the island to the shipping piers. H. D. Cameron, mine superintendent, pointed to a corner of the wharf which had been struck by a German torpedo in the fall of 1942. Four ore ships had been sunk in two sub attacks that had killed 64 men.

After these losses the Canadian Navy had rigged antitorpedo nets around both piers.

From St. John's I rode the trans-island Newfoundland Railway through the wild heart of the country. This Government railroad links Port aux Basques and St. John's with 547 main-line miles of narrow-gauge track.

It's a friendly, informal railroad. Daisies and clover grow between its winding rails. From the observation car the grades often gave a roller-coaster effect.

A lady across the aisle was trainsick and couldn't go to the diner. The steward brought her a tray with tea, toast, and a boiled egg, saying, "There you are, m'dear, an' I hope it'll cheer your stomach."

Another woman told me the tale of Pat, a new conductor, who became rattled on his novice run when the train pulled into the first station. Failing to recall the name of the place, Pat improvised, shouting in a confident voice: "Here ye are for where you're goin'! All in there for here come out!"

I took day trains all across the island,

enjoying a grand cross-section view of the country. We clickety-clacked at a gentle pace past fishing villages and peaceful coves. The train chugged by sawmills and along rushing, log-filled rivers.

It labored up to rocky barrens of the height of land at the Topsails. Once "over the hump," we coasted down the west country hills and twisted through the magnificent Humber gorge. At last we rolled through the "California" of the island along herring-rich Humber Arm, blue St. Georges Bay, and the fertile meadows of the Codroy Valley.

I broke my cross-island journey halfway to see the Buchans Mine and the Grand Falls paper mill.

The caboose of an ore train carried me to Buchans (page 804). The lead-zinc-copper mine of the Buchans Mining Company, Ltd., dangles from a spur line of the railroad.

Dog Teams Must Keep Off Railway Track

As we rattled along, a big bull moose crashed through underbrush beside the track. I read a sign: "Use of railroad track by dog teams is strictly forbidden. B. M. Co. Ltd."

Buchans is buried in burned woods north of Red Indian Lake. It is a frontier boom town, a groping knob of civilization thrust into the wilderness on an antenna of winding rails. No road reaches the village.

Miners' homes were arrayed in neat rows. White churches, schools, and a small hotel, all were built on ground known before only to moose and caribou, to ruthless blizzard and crackling forest fire.

Of the 2,100 people living there, about 800 worked for the mines run by the American Smelting and Refining Company under lease from the Anglo-Newfoundland Development Company, Ltd., owner of the mineral rights.

Before sunset I was 500 feet down in the Lucky Strike mine. In the shadowy labyrinth of the working stopes we watched muckers load newly blasted rock into small cars. Electric locomotives hauled the cars to the ore pockets. Four-ton skips hoisted the ore up the main shaft to the mill.

One night an engineer took me through the mill. He showed me that it did not smelt the metals, but simply crushed the ore and by flotation separated out the three primary metals as powdered concentrates. The average run of ore contained 15 percent zinc, 7½ percent lead, and 1½ percent copper.

Big bubbles, shiny and iridescent, clung to the surface of the frothy flotation tanks.

Buchans moves its concentrates by rail to Botwood, on the north coast of Newfoundland, where ships load them for transport to



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Restoration by Andrew H. Brown

Venerable Capital of Canada's Infant Province Is St. John's, Newfoundland

Newfoundland's 321,000 people have voted to unite its destinies with the Dominion's. Here in its principal harbor a fishing schooner prepares to sail for the Grand Banks. The listing, rusty derelict is a wartime fire victim.



Craggy Shores Discourage Farming, but Bays and Seas Yield a Golden Harvest. Newfoundland Is the Domain of King Cod

Prosperity has depended on cod almost since the day Cabot discovered the island in 1497. When cod are "running plenty," these men work night and day.

Clenched Faces on Pouch Cove Ramp Tell the Strain of Steering a Motorboat Uphill on Dry Land

Each summer morning fishermen launch their flat-bottomed rowboats (foreground) down this log incline to take them out to moored motorboats. Old codgers who thought nothing of a ten-mile row in a fish-laden dory tease their sturdy sons about using power. "'Tis wiser and weaker you're gettin'," they say. A power winch drags this boat in for repairs. The men hold her on an even keel; one slip may mean a broken leg.

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Reproduction by Andrew H. Brown





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Redrawn by Robert E. Dixon

A Cod Fisherman Keeps His Home Brightly Painted, but His Sagging, Weathered Harbor Shack Cries for Attention

In these sheds the men of Petty Harbour clean their catches. On foreground's spruce branches, called "flakes," they dry split fish in the sun.

Life in Newfoundland's Scattered Fishing Villages Goes On Much as It Did Two Centuries Ago: Pouch Cove

Most of the interior is unsettled wilderness; 90 percent of the people cling to the coast. Save in St. John's, they tend to separate into isolated outposts perched on the rocky shore. Here the average man can have his garden, which, if cod prices drop disastrously, helps to sustain him. His wife bakes his bread; his children gather wild blueberries; his horses help him around the fish sheds and in the garden.

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Excitement-starved Folk of the North Gather in Hooping Harbour To Meet the Mail Boat, Their Life Line with the World

These people, who live beyond sight of motion pictures and automobiles, make the boat's visit a holiday.

American Boy Meets Eskimo Girl

This Harvard student is a vacationtime volunteer with the International Greenfell Association. He is called a "WOP" because he Works Without Pay. The girl, a visitor from Labrador, is a patient in the well-equipped, 100-bed mission hospital in St. Anthony (page 808).

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Write a Letter Home? Do It on Birch Bark

Everyone who has seen the white birch's smooth, thin bark must have wondered how it would serve as stationery. This Newfoundland girl cuts a sheet for the photographer. His souvenir letter made a hit at home. Almost every island farmhouse has its stack of birch firewood.

Illustrations by Robert F. Rossen





Drums of Seal Oil on a St. John's Wharf Give No Hint of the Hunters' Icy Perils

In sealing's heyday Newfoundlanders employed 152 vessels and took up to 350,000 skins a season. After a brief wartime halt, the industry revives. Many a sealer, trapped by blizzard on the floes, has perished.



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Illustrations by Robert F. Simon

♣ Bottoms Up at Petty Harbour Means the Cod Have Gone and Winter Is Coming

Fishing craft have been overturned for painting, repairs, and protection from the elements. This owner, having removed the rudder, goes to work with hammer and saw to stop a leak in the rudder hole.

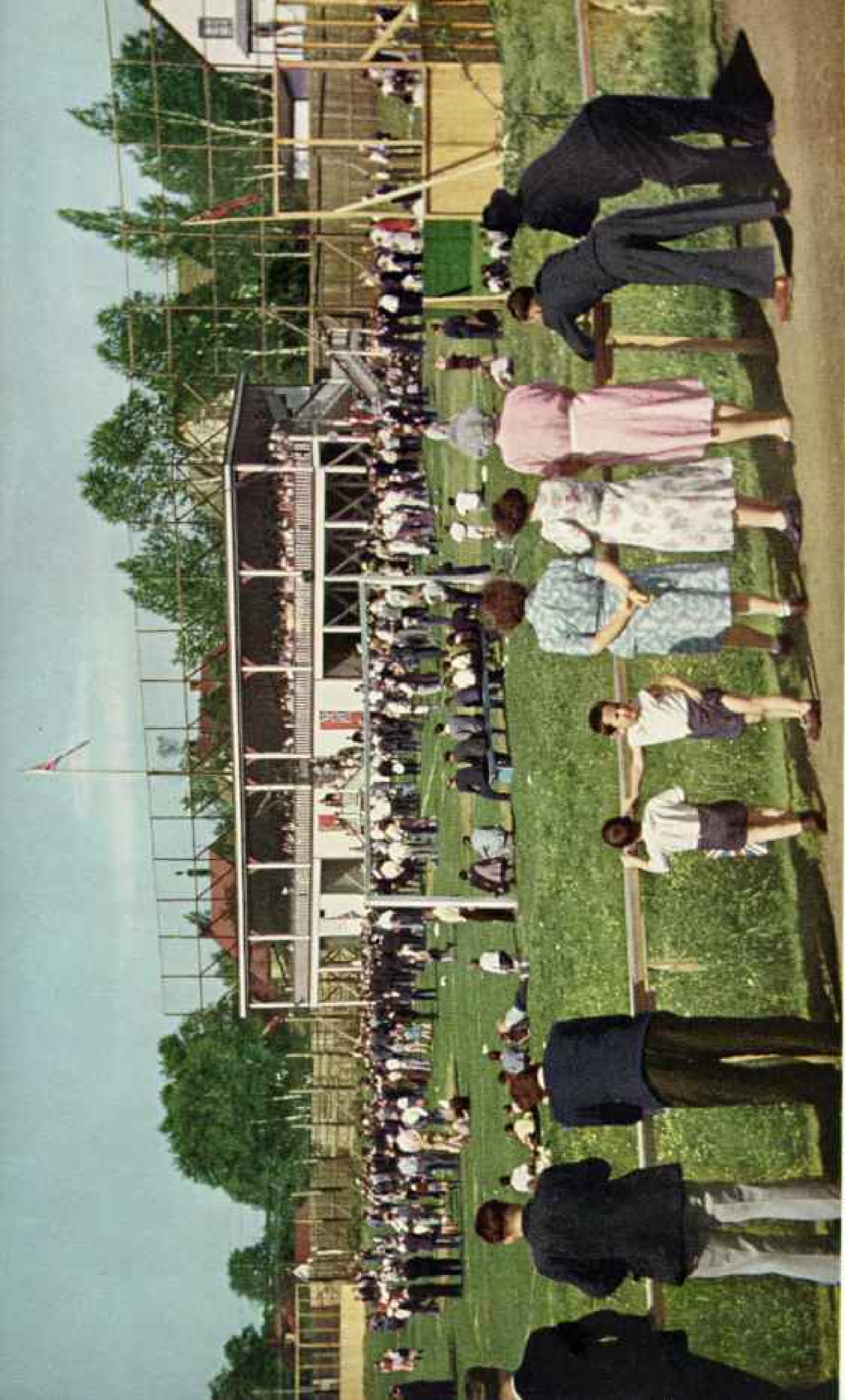
Most Newfoundland fishing boats are powered with simple but rugged gasoline engines built in the home island. Knowledge of boatbuilding passes from father to son; many fishermen fashion their own. Thirty-seven oceangoing ships were completed in Newfoundland in 1948.

♣ A Wooden Anchor Appears as Impossible as a Leaden Float, but It Works

A close glimpse reveals a boulder caged in bound staves. Stout crosspieces dig into the bottom and hold a small boat even in rough seas. Newfoundlanders call this homemade anchor a "killick."

As roads and coastal ship services are extended, use of such primitive makeshift equipment declines. The village supply merchant, who outfits the fisherman, usually buys the catch. The fisherman pays off his debt with fish. When the value of his cod exceeds the cost of outfit, he puts cash in his pockets.





Loggers with Steel-tipped Pike Poles Break a Jam on Flooded Pinehog Brook

The newsprint industry, taking advantage of bountiful resources and easy water transportation, has saved Newfoundland from the tyranny of a one-crop economy (codfish) and thereby raised its standard of living. Today two paper mills are the island's largest employers. During winter's freeze-up these four-foot sticks were cut and stored beside the stream. Now a storage dam has opened, flushing them millward (page 800).

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Illustration by Robert F. Stone





A Purple Raft of Unbarked Pulpwood Chokes the Holding Pond at Corner Brook

Here Bowater's Newfoundland Pulp and Paper Mills devour 1,400 cords a day and turn the logs into newsprint destined for various parts of the world. Big freighters can come up Humber Arm and load at the warehouse.



Machines Stack Wood into Golden Cones for Use When Rivers Freeze Over

A quarter-century ago Corner Brook was a hamlet, its only industry a sawmill. Now it is a city of modern homes, with a pay roll close to \$14,000,000. Sulphur, essential to papermaking, lies in a yellow heap (right).

← Fishing Guides Find
Their Jobs More
Fun than Work

John Duffney (left) and Jim White sit on the stoop of their log shack, its chinks talked with moss.

These two led the author and the photographer on a fishing trip to the little-visited Serpentine River. Even they couldn't lure shoals of fat salmon plain to see in limpid pools. Trout rose to nearly every cast, but salmon, lazily fanning their tails, refused every fly. Ordinarily, Serpentine's salmon fishing is a thrill never to be forgotten.

More and more Americans are realizing their fishing dreams in Newfoundland, whose wilderness streams are still unspoiled. Some arrive by air, mooring their float planes in the swift rivers they fish.

Labrador Gold →

Fox pelts taken by Indian trappers are displayed at Northwest River, Labrador, by Hayward Mercer, manager of a Hudson's Bay Company post.

Labrador's discovery of a vast high-grade iron deposit forebuds a possible mining industry as mammoth as Minnesota's; but, pending its development, the area relies on primitive enterprises such as fur trapping.

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Contributor by Robert F. Wilson



When Northern Ranger Docks at Brig Bay, No One Ashore Would Think of Missing the Fun. The Pier Is Mobbed

When the horse balked at the gangplank, deck hands lowered him ashore kicking in a bellyband (left).

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#03

Illustration by Arthur H. Brown





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Kodachrome by Andrew H. Dixon

♣ An Immigrant Yankee Sells Bargains Beside the Railway Tracks in Badger

Once called "two streaks of rust running across the island," the road has become a vital carrier. No through truck highways yet compete. The cabooses wags at the tail of an empty ore train heading back to the lead-zinc-copper mines at Buchans, deep in the interior. Loaded trains transfer ore concentrates to ships on the coast at Botwood (map, page 783).

To eliminate dry-season forest fires from locomotive sparks, the Newfoundland Railway has converted to oil-burning engines along most of its main-line route.

♣ A Lumberjack Strips Bark from a Fir Log near Little Bonne Bay Pond

Your copy of today's paper may have started life in these forests, but, before it reached the mill, water had to be impounded to wash the wood downstream. These logs will help dam such a reservoir.

Newfoundland's abundant lakes and streams have greatly aided movement of wood, but timber convenient to watercourses is decreasing. Lumbering roads reach ever deeper into the forests. The dream of a trans-island highway is nearing reality. Newsprint companies have contributed long stretches of their logging roads.

Kodachrome by Robert F. Stone



Europe and the United States for smelting.

I backtracked from Buchans to Grand Falls, home of the Anglo-Newfoundland Development Company newsprint plant.

Last year the mill turned out enough newsprint rolls to fill 95 hundred-car freight trains. To feed this production, lumberjacks had to cut and drive a mighty mass of wood—roughly a cord for every ton of finished paper.

Plucked from the river, the logs tumbled through barrel-shaped barking machines, and into grinders, chippers, and digesters. Sulphite and groundwood were mixed in tanks. Screened and washed, the creamy "soup" poured out on the "wet end" of the long paper machines.

Zip, Whish!—It's Paper!

The wet pulp sprayed on an endless wire screen, which raced along at 1,200 feet a minute—13½ miles an hour. Far down the enormous room finished paper wound swiftly on rollers.

In cavernous sheds I walked past newsprint rolls piled 50 feet high. Stenciled on the packages were names of famous journals: *New York Times*, Buenos Aires' *La Prensa*, Washington's *Times-Herald*.

From Grand Falls I rode on west to Corner Brook, chief town and port of the island's sunset coast.

The newsprint plant of Bowater's Newfoundland Pulp and Paper Mills Limited and a lucrative herring fishery feed and clothe a big share of the west-coast population. Bowater's employs 7,000 on an annual pay roll of almost \$14,000,000. The larger of the country's two paper mills, the company has recently increased its output by 40 percent.

General Manager H. M. S. Lewin showed me through the clean, brightly painted plant. It was devouring about 1,400 cords of spruce and fir a day (pages 800-801).

Late in August Sisson and I hiked and paddled to Serpentine River, a famous fishing stream. It flows from a mountain-rimmed lake of the same name to the west coast.

The train dropped us beside a weathered sign that said "Serpentine." There was no station, not even a section hut. Our guides, John Duffney and Jim White, swung packs to their shoulders, and we were off (page 802). After seven boggy up-and-down trail miles we paddled seven more miles down the lake.

Steep hills rose from both shores, clothed with forest never touched by the ax. White bands of waterfalls streaked wooded heights and barren, rusty mountains beyond.

The cabins stood where the Serpentine River flows out of the lake. Near by we had

trout fishing such as I had dreamed of but never realized. A fat sea-run brook trout rose to almost every cast.

Thrill of the Salmon's Leap

With salmon we did poorly. The guides said fishing on the rise of the stream was almost useless. (After weeks of drought, it rained all three days we were there!)

John would tensely whisper, "There they are!" and point out shoals of salmon lying in the pools. We offered those big fish everything in the book—big flies and little flies, dry and wet. Even the guides drew blank.

We managed to take some grise, young salmon of four or five pounds. What a thrill to feel the rod tremble as a fish crisscrossed the swift water with arrowy runs!

Just sliding down the glorious river was joy enough. There was no sound save the whisper of the stream and the rattle of a kingfisher flushed from his perch.

Then we pushed back upstream. That was work—for the guides, who poled up the most turbulent stretches.

The influx from the United States and Canada of salmon fishermen and hunters of moose, caribou, duck, and "partridge" (willow grouse, or willow ptarmigan) constantly increases. Accommodations are expanding.

To see remote, isolated outports, I boarded the *Northern Ranger* at Corner Brook. This stout little steamer is one of a fleet that shuttles mail, supplies, and people all around the island during the ice-free months.

We sailed up and down the long northern finger of Newfoundland. The ship stopped at 61 ports. Where we tied up to a wharf, the whole village rushed aboard. Where we anchored in a harbor, small boats crammed with waving men, women, and children swarmed out from land (pages 794, 803).

No Autos or Movies Here

Our vessel skirted capes where candy-striped lighthouses lifted welcome torches. Hamlets of a few score fisherfolk or woodcutters huddled in the coves. Some villagers have never seen a movie or an automobile.

Between the boxlike white, yellow, and green houses the seawise people had spread herring nets to dry. Stake fences to keep out sheep and goats ringed potato and turnip patches. The pastures, in August, greeted us with wild iris, buttercups, and clover.

We reveled in scenic splendor galore, like the "purple mountain majesties" of Bonne Bay. Our craft slipped through many tight "tickles," where a passenger could pitch a stone from shore to shore.



"Bilin' the Kittle" Is a Happy Ritual

Allen Dawe, working on a road near Manuels, roasts capelin, a sweet little fish, threaded on a wire (page 781). He and a colleague each has his teakettle over the fire.

We sailed north to chillier latitudes. Surf broke over "friendly" reefs. The bad ones were those just too deep to see! The captain had to know the way as he knew the terms of his contract—and did.

In the old days, one of the officers told me, many a shipmaster found it awkward to direct his wheelman with such bookish orders as "Easy port," "Hard starboard," or "Steady."

Schooners always had two small boats (called "punts") slung one on each side. One always was the newer. They called the galley island amidships the "caboose." So skippers used shiplike terms that came easy to the tongue. They shouted, "Old punt!" (to turn to the side where the old boat hung), "New punt!" (for the contrary direction), and

"Caboose!" (for straight ahead).

Seeing the fog thickening, an old fisherman at the rail said, "She's comin' in black again."

The *Northern Ranger's* cargo was the furniture of existence on these shores. Horses, calves, and piglets rode in jerry-built stalls on deck, wherever rows of gasoline and oil drums left space. Fishing boats swung on davits outboard from the lifeboats.

Hundreds of sacks of flour and sugar, boxes of groceries and dry goods, bundles of brooms, axes, shovels, and pitchforks were packed into the holds, tight as cherries in a crate. There were unpainted spinning wheels destined to whirl through long winter evenings in remote homes. There were lumber, paint, and kegs of nails.

Miss Jean Smith came aboard at Flower's Cove. A nurse of the International Grenfell Association, she carried a rucksack and a pair of snowshoes strapped to her back.

Miss Smith told me she was the only nurse along a 50-mile stretch of coast. Her concern was the health of more than 2,000 fishermen, lumbermen, and their families. Fishing craft ran her from hamlet to hamlet in summer. She made her winter rounds by dog sled.

Three Churches, Three Schools

Flower's Cove, famous for sealskin boots, had only 175 people in the town itself, Miss Smith said. But, like most Newfoundland outports, there was a school for each religious denomination. Her village had three schools—Church of England, United Church, and Roman Catholic. Each had one teacher to instruct 30 or 40 children of different grades.

Miss Smith said tuberculosis was all too



Up from the Hold Comes Salted Cod; Salt Showers the Deck Like Snow

"Time is fish and fish is money," says the Newfoundlander, who sweats for his coin. By "fish" he means cod, and no other. This cod is "green"—cleaned, split, but only partly cured. The schooner has hauled it to Harbour Grace for sale. Next stop for the fish may be the Mediterranean, West Indies, or South America. Portugal could scarcely exist without its *bacalhau* (cod). Lately Newfoundland has been quick-freezing cod filets and shipping them to the United States, where they fetch a higher price (page 786).



George H. Stiles, III

Frantic Caribou Flee the Camera as They Might a Gun Across a Newfoundland Lake
 Hunters, railroad, and towns, all interfering with the caribou's migration, have sadly reduced the herds. These five ride high on the water, thanks to buoyant, hollow hairs. A doe shepherd's four young.

common. Because villagers had lived on fish and potatoes so long, it took artful persuasion to get them to eat a more varied diet. Gradually, slowly, they were learning the benefits of milk, berries, and such vegetables as they could grow, such as turnips, lettuce, cabbages, and radishes.

"The other day I had to drop a half-mixed plum pudding to run next door to pull a tooth," Miss Smith continued. "In my spare time I press wild flowers."

We sailed into St. Anthony's fine far-north harbor on a sparkling afternoon.

St. Anthony is famous as Newfoundland headquarters of the International Grenfell Association, founded by the late Sir Wilfred Grenfell (page 795).*

Dr. Charles S. Curtis, superintendent of the Grenfell Mission in Labrador and Northern Newfoundland, greeted me at the modern 100-bed concrete hospital that has spelled hope and new health to thousands. The doctor and his wife showed me spotless wards, operating room, and latest medical equipment.

Dr. Curtis took me to see his special joy, the Jesse Goldthwait Dairy. In clean white-

washed stalls stood 30 registered Holstein cattle. Blueblood cows gave milk enough to supply hospital and orphanage, with plenty left for outside distribution.

My guide led me through a warehouse piled high with dolls, patchwork leather jackets, and gay woolens. Boxes of Christmas cards and gifts came from donors in many lands.

By November, Dr. Curtis explained, the storehouse would be empty. By that time all gifts must be on their way to settlements far down the Labrador or they would not get there in time to arrive on Santa's sled.

Calling briefly at dozens more fishing villages and lumbering towns, the ship at last reached St. John's.

A Flying Look at Labrador

Newfoundland and her dependency, Labrador, cover together an area nearly as big as California. Labrador makes up more than two-thirds of this total, but its population is only 5,500 compared with the mother island's 316,000! (Map, page 782.)

The Newfoundland Base Command of the U. S. MATS flipped Bob Sisson and me north by air to Goose Bay, Labrador. Three and a half hours out of Torbay we slanted down to the concrete triangle of Goose Bay's

* See "Land of Eternal Warring (Labrador)," by Sir Wilfred T. Grenfell, NATIONAL GEOGRAPHIC MAGAZINE, August, 1910.



U. S. Air Force, official

Fur Flies in Operation Paradog

This rescue exercise was tried out over Newfoundland by the United States Air Force, operating out of a base leased during wartime for 99 years. The unwilling sled dog was tossed out by the jumpmaster; his chute opened automatically. In the future the Air Rescue Service expects to rely on pararescue teams, helicopters, and caterpillars, using dogs only in emergencies.

super airport. Laid down with urgent haste in the northern forest, these tremendous runways were built as a way stop for Europe-bound bombers.

Canada, by agreement with Newfoundland, constructed the field and has maintained it. The United States still mans a military city there known as the "American side."

We flew over to visit the little town of Northwest River, 20 miles from Goose. There Dr. Anthony Paddon and his gracious mother showed us the Grenfell school and hospital. They served us coffee and cake in their cozy white cottage ringed by gardens, forests, and the lapping waters of Lake Melville.

The Hudson's Bay Company manager unpacked choice fox, ermine, and mink skins for our inspection. He told us Northwest

River handled more fur than any other H. B. C. post in Labrador (page 802).

Climax of our Labrador visit was a flight in a search and rescue B-17, *Hangar Queen*. We wanted to see and photograph the spectacular Grand Falls of the Hamilton River, one of the half-dozen major cataracts in the world, in terms of height plus volume.

We flew 180 miles to the falls 50 to 300 feet above the rushing river. From the Plexiglas nose of the ship I scanned fast-moving vistas of rapid and waterfall, forest and cliff.

"Homing" on the column of mist that marks the falls, the plane swept over the mighty cataract (page 810).

We zoomed so low that spray blotted out my view. Later Bob said, "I wondered for an instant if the pilot misunderstood and thought



819

Labrador's Grand Falls Plunge 245 Seething Feet. Beauty and Millions of Horsepower Go to Waste in a Wilderness

Europe's Hunger for the Noble Cod Helped Build North America

Grateful Massachusetts honors the cod with an image in its State House. Nova Scotia bank notes have borne its picture. Newfoundland courts have ruled that the word "fish" means cod. The biggest catch on record weighed 211 pounds.

E. FRED MILLER



Newfoundland Fish in Newfoundland Barrels Cover the Globe

This craftsman, in a sawdust-perfumed coopage at Carbonear, bevels in the inner rim with a drawshave so the barrelhead may slip in evenly. William Saunders, the owner, carries on a business founded by his grandfather.





E. Fred Miller

Cascades Cannot Stop the Salmon's Migratory Urge; He Leaps as if on Jet Power

From June to September the salmon, quitting the Atlantic, seek their spawning grounds in fresh water's gravelly headwaters. Unlike their Pacific kindred, they do not close their life cycle with this adventure, but descend again to sea. This pair climbed the falls on Northwest Brook by taking one desperate leap, then swimming violently the rest of the way.

we'd asked him to fly *under* the falls!"

The great river, biggest and longest in Labrador, plunges 245 feet at the Grand Falls. A deep caldron, hemmed by 400-foot cliffs, receives the foamy tide.

Counting the descent through the rapids just above and below the falls, the total drop is 1,038 feet. Here is one of the earth's outstanding undeveloped waterpower sources.

Millions of Horsepower—Unused!

Northwest of the Grand Falls, 135 miles away, Canadian mining interests, based at Burnt Creek, Quebec, are exploring iron deposits said to be among the richest ever found. Part of the deposits are in Labrador and part in Quebec. To exploit these resources would call for building a 360-mile railroad through rough Labrador and Quebec hinterland.

What future awaits Grand Falls, which surveyors say might yield up to 5,000,000 horsepower if certain control works and di-

versions were effected? Who knows? For the present, eerie mist wraiths and deep-throated rumblings of the great cataract force superstitious Indians to give it a wide berth.

Hangar Queen circled the gleaming spectacle of the falls for half an hour. We winged back to Goose Bay with a helping wind. Our take-off had been at 12:15. At 2:30 we were enjoying late lunch. By canoe the trip would have taken at least a month.

I returned to Gander Airport and boarded plane to leave Newfoundland.

I remembered how three of my new northern friends, saying good-bye, had honored me with a homely old-time toast. In turn their offerings were: "I looks towards ye," "I smiles accordin'," "I likewise nods!"

For my part, I looked, smiled, and nodded farewell to Newfoundland. The big island dropped away. Clouds thickened below, drawing a veil over dark forests, silver lakes, and brawling streams.

Menhaden—Uncle Sam's Top Commercial Fish

BY LEONARD C. ROY

Illustrations by National Geographic Photographer Robert F. Sisson

MENHADEN, what are they? Most inlanders and even many salty citizens who help catch more than a billion each year might miss that question on a radio quiz program. For this fish probably has more nicknames than any other. In the months spent with menhaden fishermen I seldom heard the proper name.

Yet more menhaden have been taken from American waters than any other species, and today they form the basis of Uncle Sam's largest commercial fishery.

A Herring of Many Names

Along the Maryland and Virginia coasts you hear leather-skinned men, who have been seining menhaden for a generation, speak of their hauls of bughead, bugfish, oldwife, alewife, greentail, and chebog.

In Delaware you hear those names and mossbunker, too. Connecticut adds whitefish, bonyfish, and bunker. North Carolinians call them fatback, although now and then someone will mention shad or pogy.

The fact that menhaden have never been popular for human consumption may be another reason they are so little known. From time to time scarcity of food near the fisheries has landed small numbers on local dining tables, but attempts to market them as food fish on a commercial scale have failed.

A menhaden canning plant was established at Morehead City, North Carolina, before World War II, but after it was destroyed by fire in 1946 its owners abandoned the enterprise and there has been no attempt to erect another plant.

The common complaint one hears about the edibility of the fish is that they are too oily, too mealy, and, for their size, too bony. Menhaden roe, however, does find a market. I sampled it at Morehead City's Water Front Cafe. In taste it was not unlike shad roe, but it takes four to six to equal the roe of the average larger fish.

The menhaden is one of the numerous members of the herring family. Last year over 1,417,000,000 menhaden, weighing more than 950,000,000 pounds, were processed.

That is more than twice the poundage of the second-ranking fish, the salmon, and about four times the total of the menhaden's nearest rival in the Atlantic fisheries, the rosefish, or sea perch.

When full grown, menhaden normally range

from only three-quarters of a pound to a pound in weight and are about 12 inches in length. In nearly every menhaden plant office on the North Carolina coast one sees a cast of the daddy of them all, a five-year-old which was 20 inches long and weighed 3½ pounds.

More people come into contact with menhaden in some form than with any other fish. The thousands employed in the industry last year are a mere handful compared with the number who use menhaden oil and meal.

The soap in your kitchen and bathroom is apt to contain menhaden oil. The linoleum on your kitchen or office floor, the varnish and paint that decorate the furniture and walls in your home, and your waterproof garments may have been made with the oil. Steel manufacturers use the oil in tempering their product.

Since animal protein is important to the health of cattle, hogs, and poultry, menhaden meal, mixed with their food, often brings this fish indirectly to your dining table.

Indians along the New England coast knew menhaden when the colonists arrived.* The name is derived from a Narragansett Indian word meaning "that which enriches the earth." The Indians placed a fish in each hill of corn to promote crops. White men found that the oil of the fish fouled their land.

First Oil Factory on Rhode Island Coast

Astute American businessmen turned the undesirable feature of the fish into an asset. The first oil "factory" rose on the Rhode Island coast. Oil was produced by the "rotting process."

Large casks of fish, covered with water, were strewn along sun-drenched beaches. To press the contents of the casks, boards were placed atop the fish and weighted down with rocks. In a few days decomposition set in.

As the tissues of the menhaden broke down, fish oil was liberated and skimmed from the water. The process was slow, the stench overwhelming.

While today's menhaden plants are not devoid of unpleasant odors, rapid handling of the fish has helped clear the atmosphere in their vicinity. Fish are seldom left unprocessed more than 24 hours after they have

* See "America's First Settlers, the Indians," by Matthew W. Stirling, NATIONAL GEOGRAPHIC MAGAZINE, November, 1937.



North Carolina State News Bureau

Huge Drums Wind 1,200-foot-long Purse Nets Like Thread on Spools

Purse boats bring seines to drums for drying and repairing at a Beaufort, North Carolina, menhaden plant.



North Carolina State News Bureau

A Successful Fisherman Loads Her Hold Until, Deck Awash, She Seems About to Sink

Since pay is based on the size of the catch, a crew will cram the boat until a million or more menhaden go aboard. Like the proverbial straw that broke the camel's back, the last few fish may sink the ship.



North Carolina State News Bureau

Bony, Oily Menhaden, Ignored by the Gourmet, Is Worth Millions to American Industry

When herded by feeding porpoises, these members of the herring family seem as tightly packed as sardines in a can. The very weight of their numbers sometimes forces the top layer above water. Each year a billion or more are caught by Atlantic and Gulf fishermen. A good 12-inch specimen may exceed one pound; the record is 20 inches, 3½ pounds. This portrait is greatly enlarged.



At Dawn, Gulls and Menhaden Boats Come to Life at Beaufort, North Carolina

In the fall of 1948 a record 66 vessels operated in the Morehead City-Beaufort fleet. Among these were a few wartime LCI's refitted for fishing duty. Here the craft receive their crews; purse boats approach on the right. Within two hours they all will be on the fishing banks.

been caught. Thus odors are reduced, and fresh fish produce more and better oil.

Thirty-one menhaden reducing plants along the Atlantic and Gulf coasts were in operation last year. Menhaden like water from 60° to 70° F.; so activity at the plants largely depends on the temperature of the near-by seas. The plant farthest north is on Long Island.

Cold-weather Refuge a Mystery

New England sites were abandoned because cold water shortened the fishing season, thus making plant operation unprofitable. Farther south, on the Atlantic and Gulf coasts, fishermen are active nearly all year.

Scientists disagree on the cold-weather rendezvous of menhaden. Some believe that the fish spend the winter in or near the warm waters of the Gulf Stream. Enormous schools of fish appear off North Carolina and in the Chesapeake Bay areas in March and April, but are not seen until late April and early

May off New Jersey and New York. The biggest catches are made in the fall. The fish then are larger and supply seven or eight times as much oil as the spring catch.

Many fishermen move as the menhaden appear more abundant at different points along the coast. Last fall there were 66 vessels in operation off North Carolina. I saw boats from points as remote as New York City and Cameron, Louisiana.

Swimming in immense schools with heads close to the surface and packed side by side and tier upon tier almost as close as sardines in a tin, menhaden like best the shallow water of the seacoast, the near-by brackish bays and sounds. They have even been known to penetrate streams nearly to fresh water.

To get a firsthand glimpse of the menhaden industry, I chose the Morehead City-Beaufort, North Carolina, area on Bogue Sound late in the month of May.*

* See "Tarheel on Parade," by Leonard C. Roy, NATIONAL GEOGRAPHIC MAGAZINE, August, 1941.



North Carolina State News Bureau

With Each Thrust of the Dipper, 2,000 Menhaden Move from Purse Net to Ship's Hold

All sorts of sea life, even large sharks, are caught in the nets, but food fish, by law, must be thrown back or consumed by the crew. This giant dipper hangs from a boom operated by a deck engine. Horizontal movement is controlled by a hickory handle (right) in the hands of a crewman. Below it, a chain opens and closes the dipper (page 821).

Day was just breaking on the Morehead City water front when I sought the *W. A. Mace*, one of the sturdy craft of the local menhaden fleet. Sleepy-eyed Negroes, members of the crew, came out of the fading night and joined me as I approached the craft.

The crow's-nest of the *Mace*, distinctive feature of menhaden boats, was silhouetted against the moonlit waters of the sound beyond.

Boat Space for a Million Fish

Menhaden boats are usually wooden and are built especially for menhaden fishing. They range from 85 to 150 feet long. The bow is high to withstand rough water and to permit a broad view of the sea. Aft, the craft slopes so that the stern is only a few feet out of water. The central portion is the hold—storage space for the menhaden catch.

Some boats have space for more than a million fish. Forward and aft of the cavernous

hold are two houses. The forward structure is the galley and the crew's and officers' mess.

Above that are the pilothouse and officers' quarters. The aft structure contains the big steam or Diesel engine that powers the vessel, the hoist engine, and quarters for the engineer and his assistants. The messroom is the bad-weather haven of the crew. Otherwise the men lounge on deck.

Since World War II a few LCI's and mine sweepers have been converted for the menhaden fleet.

Shortly after I boarded the *Mace*, two motor-powered purse boats, each laden with half of the purse seine, approached the rear of the vessel, stopped on either side of the aft deck, and to the rhythmic grunts and groans of the crew were hoisted on davits and lashed to the ship's sides. Now we were dressed for action and silently eased out into the sound, headed for the fishing grounds.

"We go as far out to sea as 40 miles and



Gulls and Men Vie for Fish Trapped Within a Narrowing Circle in a Limitless Sea

Small boats of five North Carolina craft have "made two sets" (or laid two nets, center and left). Purse boats (right foreground) have pulled the drawstrings, pursing or drawing together the bottom of the net. Now they take aboard sections of the seine, constricting the fish into a smaller area. A striker boat (left) supports the far side against sinking. Once the fish are massed, a mother ship will load the harvest.

fish the ocean from Cape Hatteras to Cape Fear, but menhaden like shallow water and that distance is unusual," said Capt. Brady Wade, who has been fishing for menhaden for more than half of his 41 years.

As we talked, the muffled hum of a spiritual vied with the heavy breathing of members of the crew relaxing and sleeping on deck in the cool morning air. At 5 a. m. a bell signaled a sudden awakening, and 20 hungry men squeezed through a narrow messroom door.

Menhaden fishing, I learned, is hard work; hence a good chef and hearty fare are essential. Peering through a window, I watched scrambled eggs, bacon, grits, hot biscuits, and coffee with authority disappear in record time.

Preacher and Deacons Help Keep Peace

It seemed only a matter of minutes before the men emerged from the room. During the day the crewmen frequently visited the mess-

room for coffee, kept hot in a two-gallon pot.

Crews of the menhaden fleet often are superstitious. Captains who fail to catch fish sometimes have trouble rounding up crews, and now and then crews become unruly.

"My men behave pretty well," Captain Wade said. "We don't allow drinking aboard, and we have a preacher and two deacons in our crew who help hold any would-be trouble-makers in line."

Cape Lookout Light seemed to flash a welcome as the thin morning mist lifted, revealing the distinctive white and black diamond pattern of the lofty pile. Simultaneously two other menhaden vessels appeared.

Pilot Harold Taylor picked up the receiver of the *Mace's* two-way radio and discussed with officers of other vessels the fishing possibilities in the area of their ships. The conversation was interspersed with much good-natured banter. The two-way radio is a



Purse Strings Tighten Around Acres of Fish; School's Out for 200,000 Menhaden

Though the menhaden is pursued with increasing diligence, its numbers do not seem to decrease. In 1948 almost a billion pounds were processed, double the yield of the salmon, its closest rival. Menhaden nets, costing up to \$6,000, require frequent repairs. Sharks, trapped inadvertently, rip the fabric to shreds. Massed menhaden have been known to suffocate sharks preying on them.

rather recent addition to the menhaden fleet.

The industry, always alert to new aids, has added airplanes to its equipment in the last two years. Radio-equipped, company-owned or chartered planes scout the fishing grounds. When the pilot discovers a school of menhaden, he directs his company's boats to its location.

"Boats Away!"

Taylor scanned the sea with his binoculars, handed them to me, and pointed to a menhaden boat to the south of us. I saw its purse boats lowered and leave the mother ship. Menhaden had been sighted.

That was assurance that the fish were running and the *Mace* would get its share.

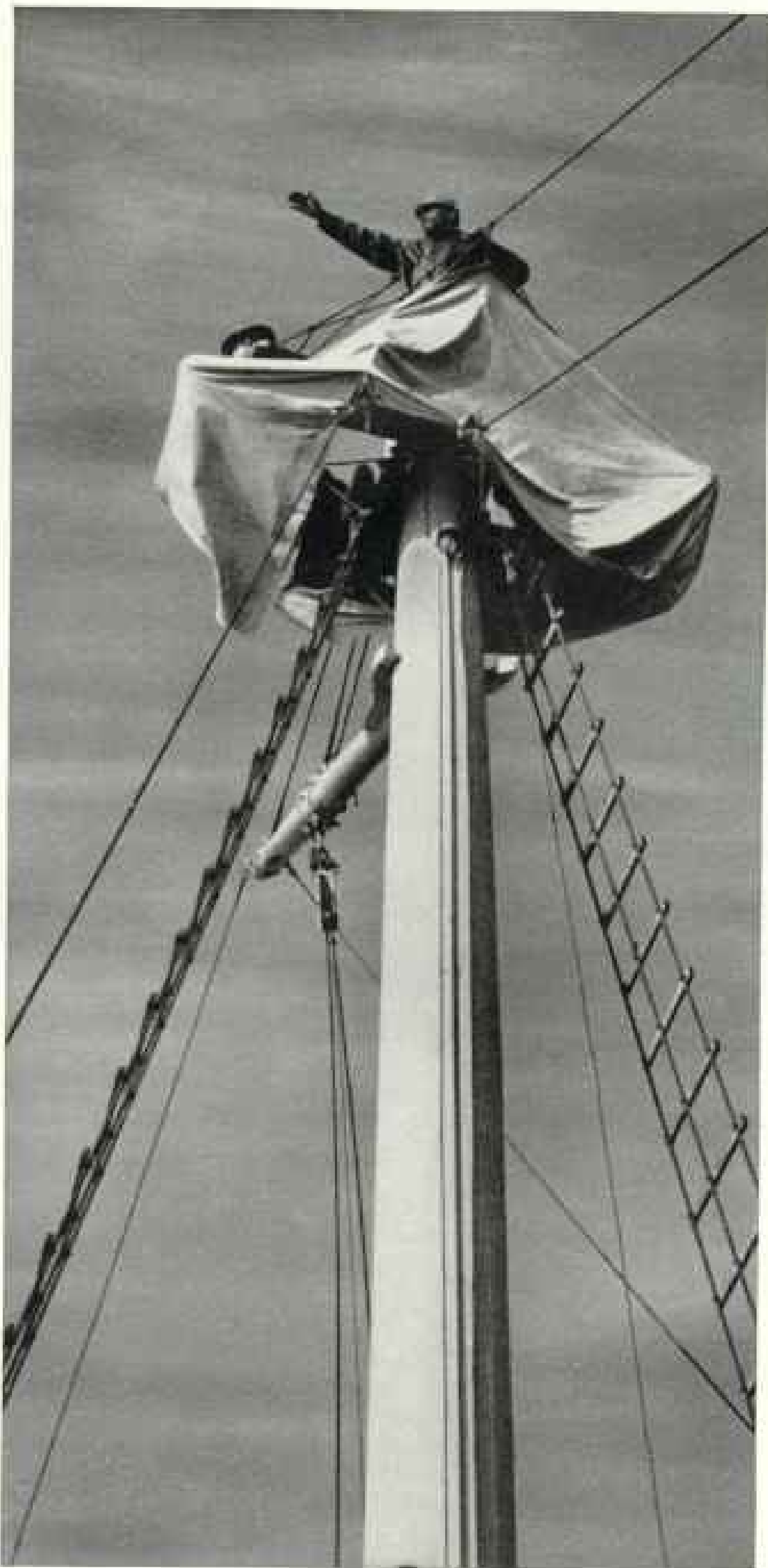
Captain Wade and the mate climbed to the crow's-nest, 60 feet above the water (page 820). They were up there less than 20 minutes when the captain commanded, "Boats

away!" Pilot Taylor stepped to the door of the pilothouse, looked up, and noted the direction in which the captain pointed. I saw no evidence of menhaden.

"How does the captain know menhaden are schooling?" I asked Taylor.

"There are two ways," he explained. "Sometimes porpoises pursue the schools, causing the fish to cluster so tightly for protection that they are literally forced to break water. The other way is to sight a reddish-brown patch."

Taylor pointed out the reddish-brown patch; the *Mace's* engines stopped. Crewmen scurried to their stations, tugged to release the seine-laden purse boats. The striker boat, a small round-bottomed craft, already had been dropped overside and boarded by a crewman. Standing upright and facing forward to keep the menhaden in sight, he rowed toward the school.



"Boats Away!" Cries the Captain in His Crow's-nest.

When a ship reaches the fishing grounds, captain and mate climb to this vantage point some 60 feet above the water. Here they watch for cues—a quiet, reddish-brown patch just below the surface, or seething water in which frightened menhaden madly flee the pursuit of predators. Big fleets scout the fishing grounds with airplanes equipped with radiotelephones (page 819).

The captain and first mate clambered down from the crow's-nest. The purse boats now were in the water. The captain commanded one, the first mate the other.

The striker boat had reached a point on the far side of the school so that the fish were between it and the *Mace*.

The purse boats, lashed together, pointed for the near side of the school. On reaching the fish, they separated, swinging in a large circle and meanwhile paying out the seine. The top of the net was kept afloat by scores of corks and the bottom weighted down by leads.

Fish Trapped in Bowllike Net

When the purse boats met the striker boat on the far side of the school, the seine ends were secured and the bottom drawn together, or pursed, so that the menhaden were trapped in the bowllike net, 1,200 feet in circumference and nearly 60 feet deep (pages 818, 819).

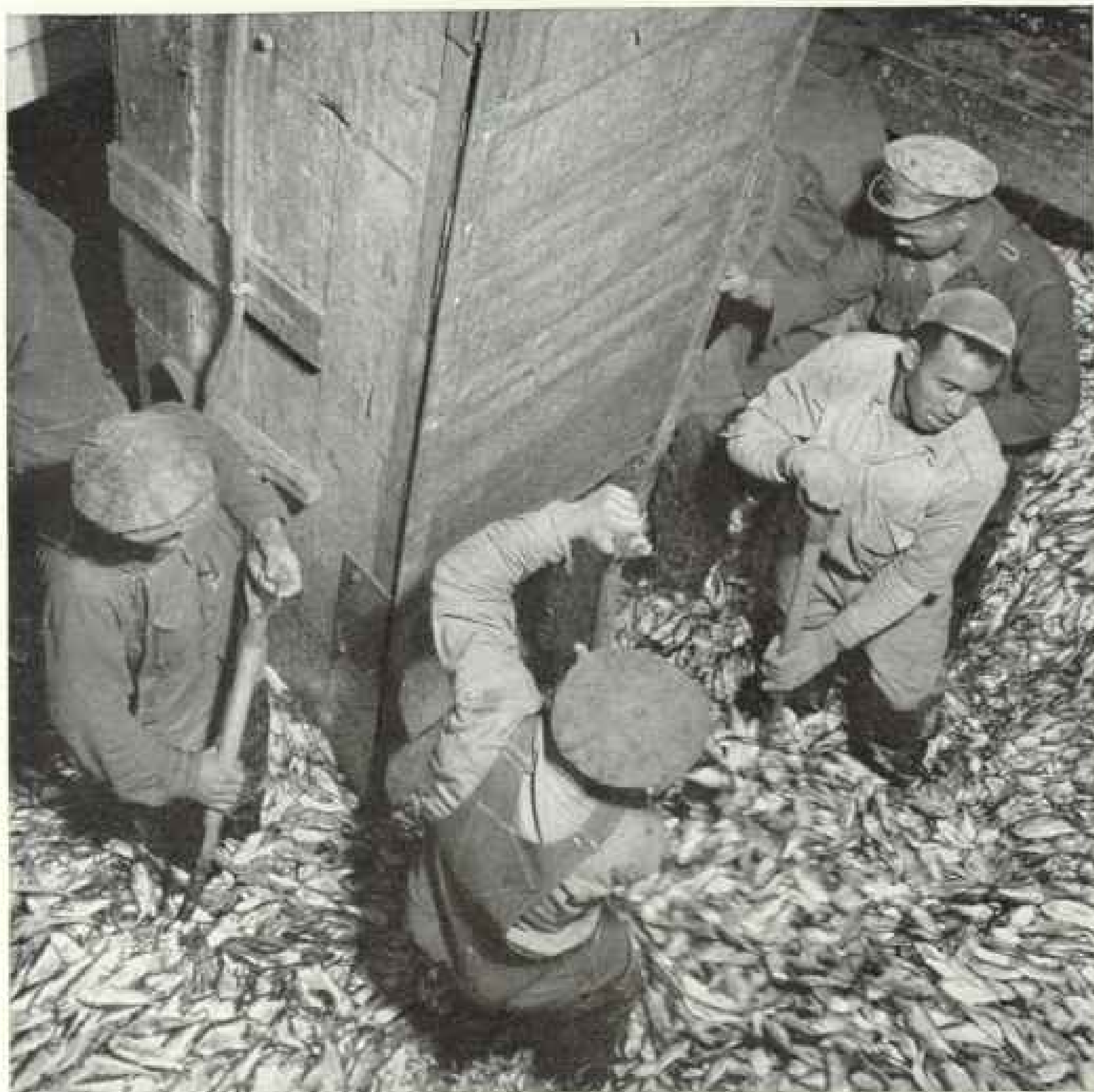
From the deck of the *Mace*, a hundred yards away, I could hear the men in the purse boats rhythmically moaning and groaning as they drew in the net, concentrating the fish into an ever smaller area. Now and then the sounds would give way to a spiritual led by a bull-voiced crewman.

A signal from the captain brought the *Mace* beside the seine, which was then secured to the mother ship. Now the fish were confined to a triangle with the purse boats forming two sides and the *Mace* the other.

From the deck I looked down into a seething mass. The captain estimated that about 25,000 fish were in the seine.

"Is that a large catch?" I asked a crewman.

"Naw, a good set [a single catch] is more than 100,000 fish." Sets of half a million fish, or more than twice the capacity of the *Mace*, fre-



Booted Men, Knee-deep in Fish, Unload the Catch with Pitchforks

Once a menhaden boat has docked, the processing plant goes to work on its cargo. Here a 30-foot-long chute has dropped into the hold. It encloses an endless belt with scoops attached. Into these scoops the fish are shoveled like raw ore. Generally such work is done by night, since the boats are at sea by day.

quently have been made. A set of six to seven million is on record, but the net broke and all were lost.

Down into the seine dropped a huge dipper, or bailing net, four feet in diameter and five feet deep. With a scooping motion each dip brought up about 2,000 fish (page 817).

The dipper was suspended from a boom operated by a small deck engine. With water gushing through the net it was guided from seine to hold by a crewman at the end of its 20-foot hickory handle.

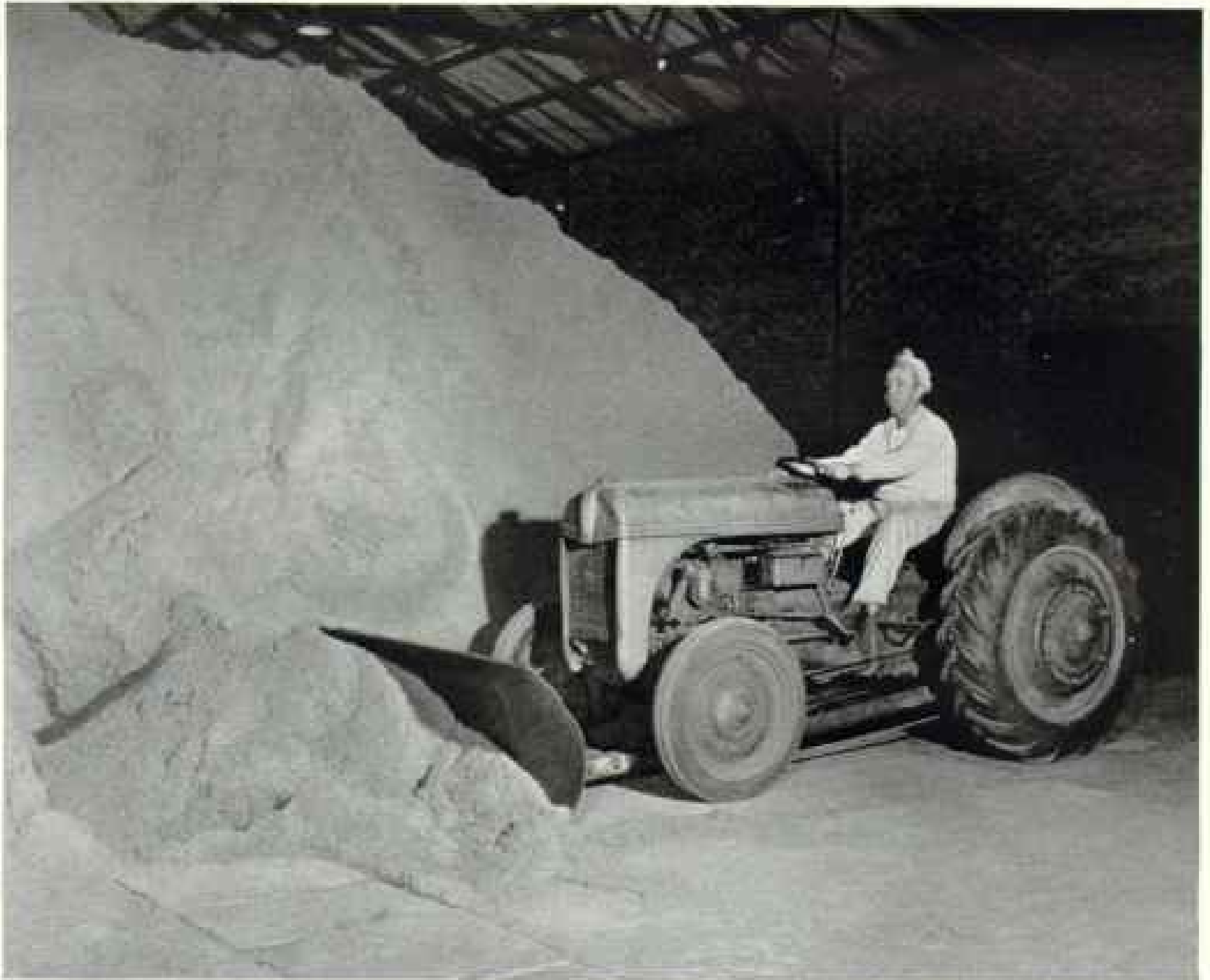
When the filled dipper swung over the hold, another crewman released the fish by a chain, then pulled the chain to close the

gap for another dip into the seine.

With the seine emptied and purse boats in tow, the *Mace* again got under way. Captain and mate climbed back to their crow's-nest perch. At 10 a. m. dinner—chicken and dumplings, fried potatoes, hot biscuits, and coffee—briefly absorbed the interest of the crew.

Size of Catch a Gamble

The sun was lowering in the west when the captain ordered the *Mace* to port. It was not a big day for the men, but the mate explained that even an empty hold is no reflection upon the crew.



An Indoor Mountain of Menhaden Meal Is Bulldozed Down to Size

Warm and humid, the heap must be kept moving to prevent souring or spontaneous combustion. Here it is pushed toward a loading device for packing and shipping. Cattle, swine, and poultry are the consumers.

Menhaden fishing, like hand-line fishing, is a gamble. The men have a philosophical attitude born of long experience. Boats return empty for many reasons: absence of fish, bad weather, or ill fortune in losing a school. Now and then the crew makes a "stab" or "waterhaul"—losing the school after the seining operation has been completed. Or it may make a "pull back"—losing the school before the seine is entirely paid out.

At a Beaufort reducing plant the crew of the *Mace* had hardly secured the vessel to the dock before one end of a long chute about four feet square was swung into the hold.

Inside the chute was an endless belt with scoops attached. Four men in the hold with pitchforks thrust menhaden into the scoops, which delivered the fish to a deep trough 30 feet above the hold (page 821).

Down the trough slithered the fish into a drum which, when full, tipped and deposited its burden onto another endless belt leading into the plant.

Crewmen of the menhaden fleet are more interested in the tipping of that drum than in any other feature of the menhaden industry. It measures the number of fish, thereby determining their pay. It is estimated that the drum holds 1,000 fish.

Our captain was paid 50 cents per thousand fish, the mate and engineer each 20 cents, and the cook and pilot each 15 cents. I saw the *Mary Ellen*, another ship of the fleet, with 400,000 fish in its hold. This meant \$200 for the captain for his day's work.

Processing the Fish

If the plant is in operation, fish move directly from the vessel to the processing apparatus. If not, they are deposited in a raw box for brief storage. First they go to the cooker, a long stationary cylinder, where they are continuously in contact with live steam. There the oil cells of the fish are broken down.

A conveyor then delivers the fish, now completely mangled, to the presses where oil and



North Carolina State News Bureau

Menhaden Oil, Steaming Hot, Funnels from Purifiers into Storage Tanks

At this North Carolina plant the fish are broken down into two components: meal for farm animals and oil for industry. This golden stream may wind up in soap, linoleum, paint, waterproof garments, or a steel-tempering agent. In Pilgrim times, colonists found Indians planting menhaden in their corn hills as fertilizer.

water squeezed from the mass flow into separating tanks. Here fish particles and water are removed and the oil is funneled into storage tanks.

The residue in cake form is either dried or treated with acid to preserve it for commercial use. In this form it is called scrap. Grinders reduce the scrap to meal. In 100-pound sacks it is shipped to consumers, mostly for farm animal and poultry feed. A very small quantity of scrap is used as fertilizer.

Menhaden More Abundant Each Season

As far back as 1873, nearly 400,000,000 menhaden were processed in plants in the United States. Before 1946, the Pacific pilchard led in our commercial fisheries. In that year menhaden took the lead with 1,350,000,000 caught, and they have led ever since.

After observing the huge daily catches of menhaden off the Atlantic coast and studying the industry's records of more than half a

century, I wondered if menhaden too would not decline in numbers as did the Pacific pilchard. I asked Captain Wade about that.

"I've been fishing for menhaden nearly 22 years, and instead of the fish decreasing in numbers they seem to be more abundant each season," he said.

"In 1941 porpoises herded menhaden like sheep and jammed a near-by half-mile-wide inlet. At times the menhaden were forced above the water from three to four inches."

A glance at the menhaden figures during Captain Wade's life with the fleet revealed he was right. In 1927, 586,214,000 were netted. In only four years since that time has the annual catch been less.

Although approximately half the menhaden fleet and many men served in World War II, the catch dropped below a billion only in 1942 and 1943. Since 1943 the billion mark has been topped consistently. A record day's catch in 1946 was 17,000,000 fish.



Wide World

U. N.'s General Assembly, Final Arbiter of Boundary Disputes, Hears the President of France

Flags of 58 member countries form a colorful backdrop in the Palais de Chaillot, Paris, as President Vincent Auriol (left foreground) delivers an address. Behind him (left to right) sit Secretary-General Trygve Lie, of Norway; Dr. José Arce, Argentina, in the presiding officer's chair; and Andrew W. Cordier, United States, executive assistant to Lie. Major frontier problems on the Assembly agenda were those arising from partition of Palestine and disposition of Italian colonies. Others involved India and Pakistan, Indonesia, and former Japanese islands.

The Society's New Map of Europe and the Near East

BY ATHOS D. GRAZZINI

National Geographic Society Research Cartographer

AS A SERVICE to its 1,800,000 members the National Geographic Society has redrawn its Map of Europe and the Near East in the light of the five World War II treaties signed thus far (page 827).

Because a peace treaty with Germany has not yet been possible, the map can show only the actual or de facto boundaries which exist, as of April 1, 1949, on Germany's eastern borders, with Soviet Russia and its satellite Poland in possession of thousands of square miles of former German territory.*

These acquisitions have not been recognized by the United States, and this country has publicly disapproved Russia's absorption of the Baltic States of Latvia, Estonia, and Lithuania.

Not until peace treaties with Germany and Austria are signed by the United States and our Allies in World War II will the boundaries of those countries be officially fixed. In spite of the fact that some boundaries shown in eastern Europe are not official, this map has great permanent value as a record of the disorganized situation, the confusion, still existing four years after Germany surrendered.

Map Shows Actual Boundaries

Thus The Society's new map, which reaches its members as a supplement to this June issue of their *MAGAZINE*, shows the actual though unrecognized boundaries of territory administered as part of Russia and Poland and guarded by their troops.

Other boundaries and territorial changes shown are results of treaties concluded with Italy, Finland, Hungary, Romania, and Bulgaria.

The map also shows clearly the four occupation zones—United States, British, French, and Soviet Russia—into which Germany and Austria are divided.

Since 1938 Russia has taken over 182,500 square miles of territory—an area about equivalent to California, Maryland, New Hampshire, and Delaware.

This territory has been acquired in three ways: by unauthorized absorption of the Baltic States, occupation of northern East Prussia pending a German peace treaty, and accessions of land ceded by Finland, Poland, Czechoslovakia, and Romania by treaty.

That is only a small part of the story of

Russian expansion, since the figure does not include Soviet-occupied Germany and the still nominally independent countries under Russian influence and behind its Iron Curtain: Poland, Czechoslovakia, Hungary, Romania, Bulgaria, Albania, and, to a less extent, Yugoslavia. In all these countries except Albania, the United States maintains diplomatic representation.

Need for Frequent Revision of Map

Shifting sovereignties and boundaries in Europe illustrate the need for constant revisions of the National Geographic Society's map supplements.

Every area changing sovereignty has immediately made a major revision of its place names.

This map shows 300 new place names in the Soviet and Polish territories. In Russia and Poland many cities and towns have been renamed entirely since World War II.

These new names are essential for the proper addressing of letters to those places. Letters not addressed by the new designations already have come back with the notation "No such place." This information is also essential to students of geography and international affairs.

In all the new Soviet territory old place names have been Russianized or swept from the map and new ones substituted. On the new map these now conform to the latest Russian maps.

For example, in northern East Prussia Königsberg is now Kaliningrad, named for the late president of the U. S. S. R., Mikhail Kalinin. Tilsit and Insterburg have been renamed Sovetsk and Chernyakhovsk. Even those familiar with the region will have to start anew to learn the cities of the former Prussian State.

The name of Rybinsk, a city of major importance 165 miles north of Moscow, has been changed to Shcherbakov after another promi-

* Members may obtain additional copies of the new Map of Europe and the Near East (and of all standard maps published by The Society) by writing to the National Geographic Society, Washington 6, D. C. Prices, in United States and Possessions, 50¢ on paper; \$1 on linen; Index, 25¢. Outside United States and Possessions, 75¢ on paper; \$1.25 on linen; Index, 50¢. All remittances payable in U. S. funds. Postage prepaid.

ment figure in the Communist Party. Akkerman, Black Sea port south of Odessa, has been renamed Belgorod Dnestrovski (White City of the Dniester). "Akkerman" was a Turkish name, also meaning "White City."

The Polish Government has substituted a complete new set of names in Poland's 38,986 square miles of added territory. The list includes such tongue-twisting collections of consonants as Szczecin (Stettin) and Choszczno (Arnsvalde).

In many cases the National Geographic map gives the old name in parentheses.

New charts of Yugoslavia, used by The Society's cartographic staff for incorporating the latest data, indicate that all Italian spellings have been replaced with Slavic.

Fiume, at the head of the Adriatic, headline news for three decades, is now Rijeka. The former Italian Dalmatian enclave of Zara is Zadar. The erstwhile Italian Adriatic islands of Cherso, Lussino, Lagosta, and Pelagosa take the Yugoslav forms of Cres, Lošinj, Lastovo, and Pelagruža (page 831).

Tito on, Mussolini off

Marshal Tito, Yugoslav Chief of State, has been honored by the Montenegrins; the former city of Podgorica near the Albanian frontier bears the name of Titograd.

On the Italian island of Sardinia, the name of the town of Mussolinia has been wiped off the map and replaced with Arborea. Littoria, created in the drained Pontine Marshes by the Fascist regime, has been changed to Latina.

A town in northwestern Bulgaria which appears on most maps as Ferdinand is shown on The Society's map in its new form, Mikhailovgrad, in honor of Christo Mikhailov, commander in chief of the Bulgarian resistance forces during German occupation.

Forty-five miles east of Plovdiv the Government is building the new industrial center of Dimitrovgrad. The country's five-year plan calls for the city eventually to accommodate 40,000 workmen. It now takes its place on the map for the first time.

Near-by Borisovgrad, named for King Boris, Bulgaria's former ruler, has been changed to Pervomai (First of May), commemorating the workingman's holiday.

New and improved versions of Albanian and Greek names, adopted during the war by the United States and British Governments, have been used by the National Geographic Society's map makers in Anglicizing the nomenclature of these countries.

The area mapped stretches from Europe's Arctic North Atlantic outpost of Iceland to Saudi Arabia's oil-rich sands on the Persian

Gulf, and from Casablanca, in Africa, deep into the Soviet Union. It includes the Negeb, in Palestine, scene of Israeli-Egyptian clashes, and the Ural Mountains, site of Russia's expanding industrial centers.

Europe and the Near East encompass peoples of many languages. In the upper left corner of the map is an extensive glossary, prepared by The Society's cartographers, to interpret the foreign terms applied to many of the physical features named.

Oil Pipe Lines, Main Railroads Shown

The map features oil pipe lines, shown in black, and includes oil pumping stations. In the southeast corner of the map, where the rich Arabian oil fields are located, The Society has shown the progress being made in construction of a 30- to 31-inch pipe line from the Abqaiq oil field across Saudi Arabia, Transjordan, Syria, and Lebanon to the Mediterranean coast, a distance of 1,100 miles. Civilization is influencing this once forbidden land. Caravans of American-made jeeps and trucks have replaced the cumbersome camel.

Important railways are shown in halftone lines, a technique designed to improve the legibility of the map. Drawn in two weights, heavy for international railroads and light for others, the routes do not obscure the type, yet can be followed unbroken.

Blue, ticked lines show canals, also important in Europe's economy.

Many Places Have New Name

The map, 32 by 28½ inches, contains 8,085 place names. Of these 1,000 are new spellings or new designations. Its scale is 1:7,500,000, or 118.4 miles to the inch.

For this map The Society has used an ingenious new projection, the Chamberlin Trimetric, devised by staff cartographer Wellman Chamberlin.

Hitler's occupation of Austria in March, 1938, set off a series of drastic changes in the map of Europe, which had been stable since the Treaty of Versailles. Hence, statesmen and cartographers usually use maps dating from about January 1, 1938, for comparison with those of today in noting boundary changes.

To show exactly what areas changed sovereignty, a two-page map is presented on pages 828 and 829.

This outline map indicates both the 1938 and 1949 boundaries, revealing at a glance the changes wrought by these eventful years. The table on the same page shows how much territory the various countries have gained or lost, and at whose expense or profit.

By 10 successive supplement maps the National Geographic Society has kept its members informed of changes in Europe's ever-fluid frontiers since 1900. For their benefit and in response to demand from the press, radio, and students of international affairs The Society, in the last 11 years, has published 11,950,000 copies of eight separate maps in color showing the whole or part of Europe and the Near East.*

These maps are dated and show the de facto boundaries of states as they existed at the time of publication. The conquests of Hitler and Mussolini can be followed with accuracy. The partition of Poland and the step-by-step breakup of Czechoslovakia are clearly indicated; the fate of the Baltic States, of Finland, Bessarabia, Memel, and Wilno, all headline news a few years ago, are but a few of the many territorial changes shown on National Geographic maps.

Three Countries Reappear on Map

Though four years have elapsed since Germany's capitulation, the Allied Powers have not agreed upon a German or Austrian peace treaty.

In Paris, on February 10, 1947, treaties of peace were concluded with Italy, Finland, Hungary, Romania, and Bulgaria. With the exception of Bulgaria, each country lost territory. Hungary's loss, however, was only 25 square miles. The United States signed four of these treaties, but not the one with Finland; we were never at war with that country.

Albania, Austria, and Czechoslovakia have been restored as sovereign political entities, although both Albania and Czechoslovakia are now behind Russia's Iron Curtain.

Little Albania lost her independence when, on April 7, 1939, the Fascist Mussolini Government invaded the 11,100-square-mile Kingdom and incorporated it into the Italian Empire.

Italy has renounced all claims to special interests or influence in Albania.

In addition, Albania has acquired the former Italian island of Saseno (Sazan), an area of two square miles strategically located in the Strait of Otranto, southern gateway to the Adriatic.

Czechoslovakia ceased to exist as a sovereign state during World War II. Germany, Hungary, and Poland shared in her 1938-39 partition, which was declared null and void by the Allies.

Slovakia, a part of the old Republic in 1938, declared itself independent after partition, but has been returned to the reconstituted Republic of Czechoslovakia.

In addition, the Czech State received a fragment of Hungarian territory south of the Danube at Bratislava, based on the need of expanding that port's facilities.

Czechoslovakia acknowledged Russia's claim to the 4,921-square-mile Carpatho-Ukraine in a treaty signed June 29, 1945. Inhabited mainly by a Ukrainian population, the region was included in the Czech State after World War I so that the Carpathian Mountains would form a natural and easily defended frontier.

The Soviet Union and the Czech State have agreed to an exchange of populations.

Acquisition of the Carpatho-Ukraine brought Russia to the Hungarian frontier.

Baltic States Lose Independence

The Baltic States of Estonia, Latvia, and Lithuania, caught in crosscurrents of German-Russian intrigue, lost their independence when they set up Soviet-sponsored governments. Incorporated into the U. S. S. R. in August, 1940, the former states are now functioning as constituent republics of the Soviet Union. At a single stroke some 64,000 square miles were added to the Soviet Union. This acquisition is not recognized by the United States.

Memelland, 1,025 square miles, ceded by Lithuania to Germany in March, 1939, is now a part of Russia's Lithuanian Soviet Socialist Republic.

The Free City of Danzig, a constant source of tension in Polish-German relations, no longer exists as such. The 754-square-mile area was established by the Treaty of Versailles (1919) and placed under supervision of the League of Nations. Though predominantly German in population and character, the free zone at the head of the Polish Corridor was created to provide Poland first-class port facilities.

The Fate of a "Free City"

On September 1, 1939, the day Germany invaded Poland, Danzig was annexed to the German Reich. Now it's a Polish city, Gdańsk.

Though no formal disposition of this Free City has been made, it was agreed by the United States, Great Britain, and Russia at the Potsdam Conference that Poland was to administer the area pending a final peace settlement with Germany. On the strength of

* Europe and the Mediterranean, April, 1938 (First edition); Central Europe and the Mediterranean, October, 1939; Europe and the Near East, May, 1940; Europe and the Near East, June, 1943; Germany and Its Approaches, July, 1944; Union of Soviet Socialist Republics, December, 1944; Bible Lands, December, 1946; and Europe and the Near East, June, 1949.



Iceland became a republic June 12, 1944, severing union with Denmark.

Republic of Ireland severed ties with British Commonwealth of Nations, December 21, 1948.

Memel, Lithuania in 1938 incorporated into Germany March, 1939, now Russian.

Danzig, a Free City in 1938, now Polish.

Northern East Prussia, German in 1938, now Russian.

Czechoslovakia independent in 1938, dismembered by Hitler in 1939, again independent but with reduced boundaries.

Southern East Prussia, German in 1938, now Polish.

Austria, independent January 1, 1938, absorbed by Germany March 13, 1938, again independent within its old boundaries.

Five areas, Italian in 1938, now French: Little St. Bernard, Mount Cenis, Mount Thabor, Mount Chablerton, Tenda-Brige District.

Bratislava Bridgehead, Hungarian in 1938, now Czechoslovakian.

Julian Alps territory and Istrian Peninsula, Italian in 1938, now Yugoslavian.

Trieste, Italian in 1938, now Free Territory under United Nations.

Zara and Adriatic islands, Italian in 1938, now Yugoslavian.

Strategic Saseno, Italian in 1938, now Albanian.

Albania, independent in 1938, annexed by Italy in 1939, again a sovereign State within its old boundaries.

How Europe Has Changed in Eleven Stormy Years Is Shown by This Map Indicating 1938 and 1949 Boundaries

Largest slices of territory have been obtained by the Soviet Union, chiefly along its western borders. Black dashed lines show today's actual frontiers as marked on the large ten-color map, Europe and the Near East, which accompanies this issue as a supplement. Gray dashed lines indicate boundaries before Hitler's march into Austria in 1938 started a chain of events that greatly altered the map. Areas that have changed hands are marked by gray horizontal lines.

Under terms of Italian Peace Treaty disposition of Libya, Italian in 1938, was turned over to United Nations for recommendation, September 15, 1948.

NATIONAL GEOGRAPHIC SOCIETY

MAP OF

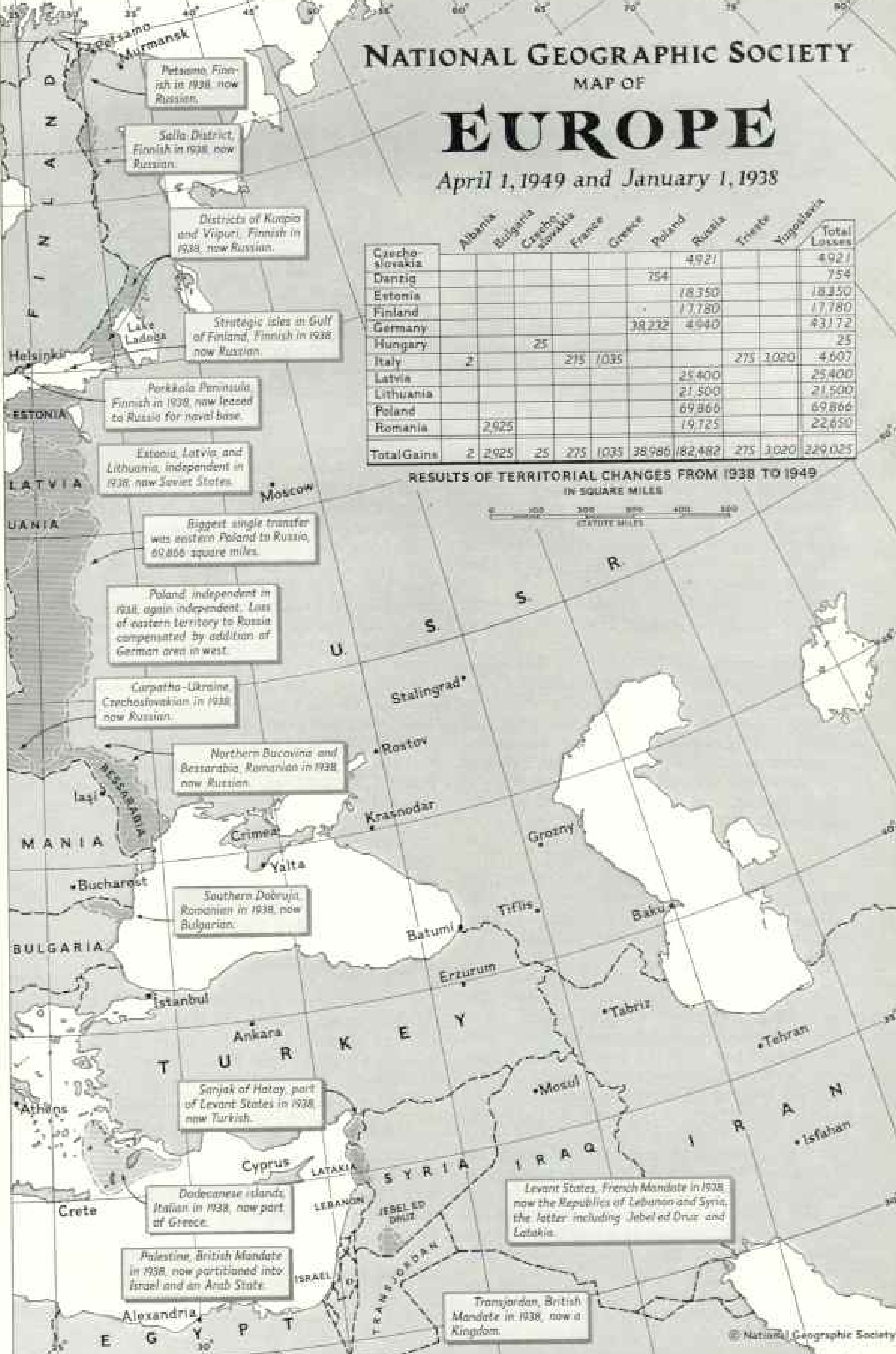
EUROPE

April 1, 1949 and January 1, 1938

	Albania	Bulgaria	Czechoslovakia	France	Greece	Poland	Russia	Turkey	Yugoslavia	Total Losses
Czechoslovakia							4,921			4,921
Danzig						754				754
Estonia							18,350			18,350
Finland							17,780			17,780
Germany							38,232			43,172
Hungary										25
Italy	2			275	1,035			275	3,020	4,607
Latvia							25,400			25,400
Lithuania							21,500			21,500
Poland							69,866			69,866
Romania		2,925					19,725			22,650
Total Gains	2	2,925	25	275	1,035	38,986	182,482	275	3,020	229,025

RESULTS OF TERRITORIAL CHANGES FROM 1938 TO 1949

IN SQUARE MILES



Petsamo, Finnish in 1938, now Russian.

Salla District, Finnish in 1938, now Russian.

Districts of Kumpo and Viipuri, Finnish in 1938, now Russian.

Strategic isles in Gulf of Finland, Finnish in 1938, now Russian.

Porkkala Peninsula, Finnish in 1938, now leased to Russia for naval base.

Estonia, Latvia, and Lithuania, independent in 1938, now Soviet States.

Biggest single transfer was eastern Poland to Russia, 69,866 square miles.

Poland, independent in 1938, again independent. Loss of eastern territory to Russia compensated by addition of German area in west.

Carpatho-Ukraine, Czechoslovakian in 1938, now Russian.

Northern Bucovina and Bessarabia, Rumanian in 1938, now Russian.

Southern Dobruja, Rumanian in 1938, now Bulgarian.

Sanjak of Hatay, part of Levant States in 1938, now Turkish.

Dodecanese islands, Italian in 1938, now part of Greece.

Palestine, British Mandate in 1938, now partitioned into Israel and an Arab State.

Levant States, French Mandate in 1938, now the Republics of Lebanon and Syria, the latter including Jebel ed Druz and Latakia.

Transjordan, British Mandate in 1938, now a Kingdom.

these promises Poland has expelled the German population and geared the economy of the former Free City to the needs of the Polish State.

The reconstructed State of Poland is made up of vastly different territories from those within its 1938 frontiers. Losing 69,866 square miles of territory to Soviet Russia, the State retains a little over half of its original prewar area. Compensated in the west by 38,986 square miles of German territory, including Danzig, Poland has had a net loss of 30,880 square miles, an area about the size of South Carolina.

At the Crimea Conference at Yalta, early in 1945, the United States, Great Britain, and Russia agreed that Poland's eastern frontier should follow a modification of the Curzon line, originally proposed in 1919 as a basis for establishing the Polish-Russian frontier. The frontier is substantially the same agreed to by Germany and Russia after they made a pact and partitioned the country at the outset of World War II (see the 1940 National Geographic Society map of Europe).

Poland recognized Russia's claims and signed the Soviet-Polish Treaty of August, 1945.

Great Britain, the United States, and Soviet Russia recognized that Poland should be compensated for her losses to Russia with substantial German territory in the west and north. At Potsdam, pending a permanent German peace treaty, Poland was assigned to administer Danzig, the southern half of East Prussia, and all other German territory east of the Oder-Neisse Rivers.

Poland Gains Industries

The new lands assigned to Poland are rich in minerals, industrial areas, and agriculture. The Polish State, formerly dependent on agriculture, now has important manufacturing centers.

Recent reports from Poland indicate that she expects to administer permanently the rich German territory assigned to her. The German population has been replaced with Polish nationals from the area ceded to Russia and with Poles transferred from less productive regions. The schools, transportation, and postal system have been developed to tie in with the balance of the Polish State as a single political unit. Polish names for towns and villages have replaced the former German.

The question of permanent disposition of these German lands now in Polish hands looms as one of the stumbling blocks in the writing of the German peace treaty.

Two costly wars have deprived Finland of one-eighth of her former territory. Her loss aggregated 17,780 square miles, an area about the size of Massachusetts and Vermont.

Finland's Heavy Territorial Losses

When Finland refused to accept Soviet demands for military advantages, Russia attacked her. Defeated in the Finnish-Soviet Winter War of 1939-40, Finland was forced to cede parts of Viipuri and Kuopio Provinces (Karelia) and a number of islands in the Gulf of Finland, and also to grant Russia a 30-year lease of the Hangö Peninsula. These areas control the sea and land approaches to Leningrad and other vital points in the Soviet Union.

Farther north, in the sparsely settled Salla District, Finland was compelled to cede a strip of territory paralleling the old Russian-Finnish frontier, across which the two countries have collaborated in building a railroad connecting the Murmansk line at the White Sea with the Gulf of Bothnia. For the first time Russia's White Sea districts got rail connections with Sweden across northern Finland.

Finland was also compelled to turn over to Russia her fragment of the Rybachi Peninsula, bordering the Arctic Ocean, which dominated the sea lane to her Arctic port of Petsamo.

Under German pressure, and hoping to recover these lost areas, Finland, in June, 1941, plunged into the second war with Russia. At the end of hostilities, in September, 1944, Finland, in addition to acknowledging the terms of the first peace treaty, was required to surrender additional territory.

In the far north Finland lost the important Petsamo (Pechenga) district, 4,235 square miles. The area is one of Europe's chief nickel-producing regions and is open to shipping all year round.

This cost Finland her only outlet to the Arctic and brought the Russians to the border of Norway.

In exchange for Russia's agreement to cancel the 30-year lease of the Hangö Peninsula, Finland agreed to lease for 50 years a 150-square-mile area in the Porkkala district west of Helsinki. Germans held this area during the war and demonstrated its strategic value.

Europe's Largest Lake in Russia

Incidentally, Russia now contains the biggest lake in Europe—Lake Ladoga, larger than the combined land area of Connecticut and Delaware. Formerly on the Russian-Finnish border, it formed for the Finns a valuable defensive water hazard. Now Russia has it all.

In June of 1940 Romania surrendered to Soviet demands by ceding northern Bucovina and the Province of Bessarabia, comprising 19,725 square miles.

Bessarabia, peopled by Ukrainians, had been detached from Russia after World War I. The major part of the rich province is known now as the Moldavian Soviet Socialist Republic.

Romania lost the southern Dobruja, a 2,928-square-mile region, to Bulgaria in September, 1940, under Axis pressure. This slice of territory on the Black Sea had been acquired by Romania from Bulgaria after the Second Balkan War (1913).

Bulgaria, though a member of the Axis, lost no territory as a result of World War II. By confirming her frontiers as of January 1, 1941, the treaty makers required Bulgaria to restore all Greek and Yugoslav territories annexed during hostilities.

Old Alpine Frontier Adjusted

France's acquisition of five small areas, totaling 275 square miles, along the Franco-Italian frontier, modifies a boundary that was one of the most stable on the Continent.

The Little St. Bernard, and the Mount Thabor, Chaberton, and Cenis zones, though sparsely inhabited, dominate the Alpine highways and slopes on the Italian side of the Alps. Except for hydroelectric power and small local industries, the regions contributed little to Italy's over-all economy.

It was through some of these strategic routes that Fascist legions launched their initial attack on France in 1940. With these small territorial adjustments, France is now able to control the Alpine ridges separating the two countries.

To strengthen the security of France, the treaty also provides that an Italian zone 12½ miles wide along the whole Franco-Italian frontier be demilitarized.

The fifth area ceded includes the upper valleys of the Vésubie, Tinée, and Roya Rivers. Varying in width from about one to ten miles, the area parallels the old frontier for 50 miles. Most of the population is centered around the villages of Tenda and Briga. A plebiscite held in the two communes favored attachment to France.

Italy's losses here include economic and strategic advantages, for the area has valuable hydroelectric stations and water power resources. In order not to upset the economic equilibrium of Italy's northern industrial centers, France has agreed to furnish power to Italian industry.

In the peace treaty with Italy, Yugoslavia

was given most of the Italian province of Gorizia in the Julian Alps, nearly all of the Istrian Peninsula, and the Italian enclave of Zara (now Zadar) in Dalmatia.

Islands Change Sovereignty

In addition, Italy lost a number of strategic Adriatic islands, including Cherso, Lussino, Lagosta, and Pelagosa, thus forfeiting the special advantages she formerly held in the eastern Adriatic. Italy's losses amounted to approximately 3,020 square miles (page 826).

The former Italian city of Trieste, in northwestern Istria, was so bitterly contested for by both Italy and Yugoslavia that the treaty makers established the Free Territory of Trieste, a 275-square-mile state under control of the United Nations. The international position of the area is similar to that held by Danzig after World War I.

Italy renounced in favor of Greece all claim to the 1,035-square-mile Italian Islands of the Aegean, better known as the Dodecanese. Though always Greek in tongue, custom, religion, and sentiment, the Dodecanese, including Rhodes and Kastellorizon, never before have formed a part of the modern Greek State.

Strategically located at the crossroads of three continents, the islands have been used as pawns in international diplomacy. Although economically unimportant, they served as Fascist and Nazi military bases which, for a time, hampered Allied shipping in the Mediterranean. Under Greek administration the islands are to remain demilitarized.

Although Italy has been stripped of her Mediterranean colony of Libya and her East Africa holdings of Eritrea and Somaliland, no decision has been made on their final disposition, and the problem was turned over in September, 1948, to the General Assembly of the United Nations for recommendation.

Ethiopia, conquered by Italy in 1936, has been restored as an independent state.

New Independent States

A number of states enjoying varying degrees of independence have acquired the status of sovereign and independent states.

Iceland, once a Danish possession, had become, in 1918, an independent state, though Denmark had continued to administer its foreign affairs and Iceland had maintained allegiance to the person of the Danish King.

Having proclaimed itself a republic on June 17, 1944, and severed its personal bond of union with the King of Denmark, Iceland now maintains diplomatic relations with other

countries and is a member of the United Nations.

Ireland, formerly a member of the British Commonwealth, cut its last tenuous tie with that great family of nations when it passed the Republic of Ireland Act on December 21, 1948. This repealed Ireland's 1936 External Relations Act, which had authorized the King of England to act as Ireland's agent in matters relating to foreign affairs.

On the map, Ireland has been tinted green in contrast to the pink used for the British Commonwealth.

"Eire" and "Irish Free State," formerly used to designate the country, now disappear from the map in favor of "Republic of Ireland."

Syria and Lebanon Now Independent

The Near Eastern States of Syria and Lebanon, formerly under French Mandate, were guaranteed their independence by France and Britain in September and October of 1941. The withdrawal of all foreign troops in April, 1946, achieved complete independence.

Under French administration, the whole region was known as the Levant States. It was divided into the Arab States of Lebanon and Syria. The latter included the semiautonomous territories of Jebel ed Druz and Latakia, which formed part of the central government at Damascus.

Acceding to the wishes of the people, the Syrian Government, by parliamentary acts of January, 1945 and 1946, formally incorporated the territories as an integral part of the Syrian Republic.

Hatay, once a part of the Levant States, was transferred by France to Turkey in June, 1939, increasing the latter's area by nearly 2,000 square miles.

Formerly under British Mandate, the newly established Kingdom of Transjordan became independent, by agreement with Britain, in March, 1946.

The acute Palestine problem was brought closer to a solution when Great Britain expressed her intention to terminate by May 15, 1948, her mandate over the area.

Palestine Partitioned, Israel Recognized

The United Nations appointed a Special Committee on Palestine to study the difficult situation. The majority report recommended that Palestine be partitioned into separate Jewish and Arab states, with the city of Jerusalem administered as an enclave within Arab territory under United Nations trusteeship.

The city of Jaffa on the Mediterranean,

lying wholly within a Jewish area, was designated as an Arab enclave.

This report was adopted by the United Nations, and the boundaries as recommended and shown on the map make complicated-looking geography.

In deference to the economic needs of the inhabitants and to population distribution, each of the proposed states is composed of three separate areas connected with each other by a right-of-way corridor—a unique method of partitioning an area.

Jewish reaction to the partition plan was favorable, for it meant that the ambition of centuries for a national homeland was to be realized.

Immediately after Great Britain terminated her mandate, the National Council of Palestine Jews announced establishment of the State of Israel, on May 14, 1948. Many months of bitter fighting with neighboring Arab countries followed.

Though the recommendations for Palestine have not been accepted by the Arab League, the new Jewish State of Israel has been recognized by many nations, including the United States. The boundaries as shown are not final. Their definite determination awaits a favorable conclusion of present Jewish-Arab negotiations.

Signers of the Atlantic Pact

In Washington, D. C., on April 4, 1949, ten nations of Western Europe joined with the United States and Canada in signing the historic North Atlantic Treaty "To reaffirm their faith in the purposes and principles of the Charter of the United Nations and their desire to live in peace with all peoples and all governments.

"They seek to promote stability and well-being in the North Atlantic area."

The map shows the European countries whose Foreign Ministers signed the Treaty—popularly known as the Atlantic Pact—reaching from the Arctic to the Mediterranean. The European signatories are: Great Britain, Iceland, Norway, Denmark, The Netherlands, Belgium, Luxembourg, France, Portugal, and Italy.

Except for Occupied Germany, the only nonsigners among the European nations bordering upon the Atlantic were: Ireland, Sweden, and Spain.

By unanimous agreement of the twelve signing nations, "any other European State in a position to further the principles of this treaty and to contribute to the security of the North Atlantic Area" may be invited to accede to the Treaty.

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

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

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

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

In Mexico, The Society and the Smithsonian Institution, January 16, 1939, discovered the oldest work of man in the Americas for which we have a date. This slab of stone is engraved in Mayan characters with a date which means November 4, 201 B. C. (Spinden Correlation). It antedates by 200 years anything heretofore dated in America, and reveals a great center of early American culture, previously unknown.

On November 21, 1935, in a flight sponsored jointly by the National Geographic Society and the U. S. Army Air Corps, the world's largest balloon, *Explorer II*, ascended to the world altitude record of 72,205 feet. Capt. Albert W. Stevens and Capt. Orvil A. Anderson took aloft in the gondola nearly a ton of scientific instruments, and obtained results of extraordinary value.

The National Geographic Society-U. S. Army Air Forces Expedition, from a camp in southern Brazil, photographed and observed the solar eclipse of 1947. This was the seventh expedition of The Society to observe a total eclipse of the sun.

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

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

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



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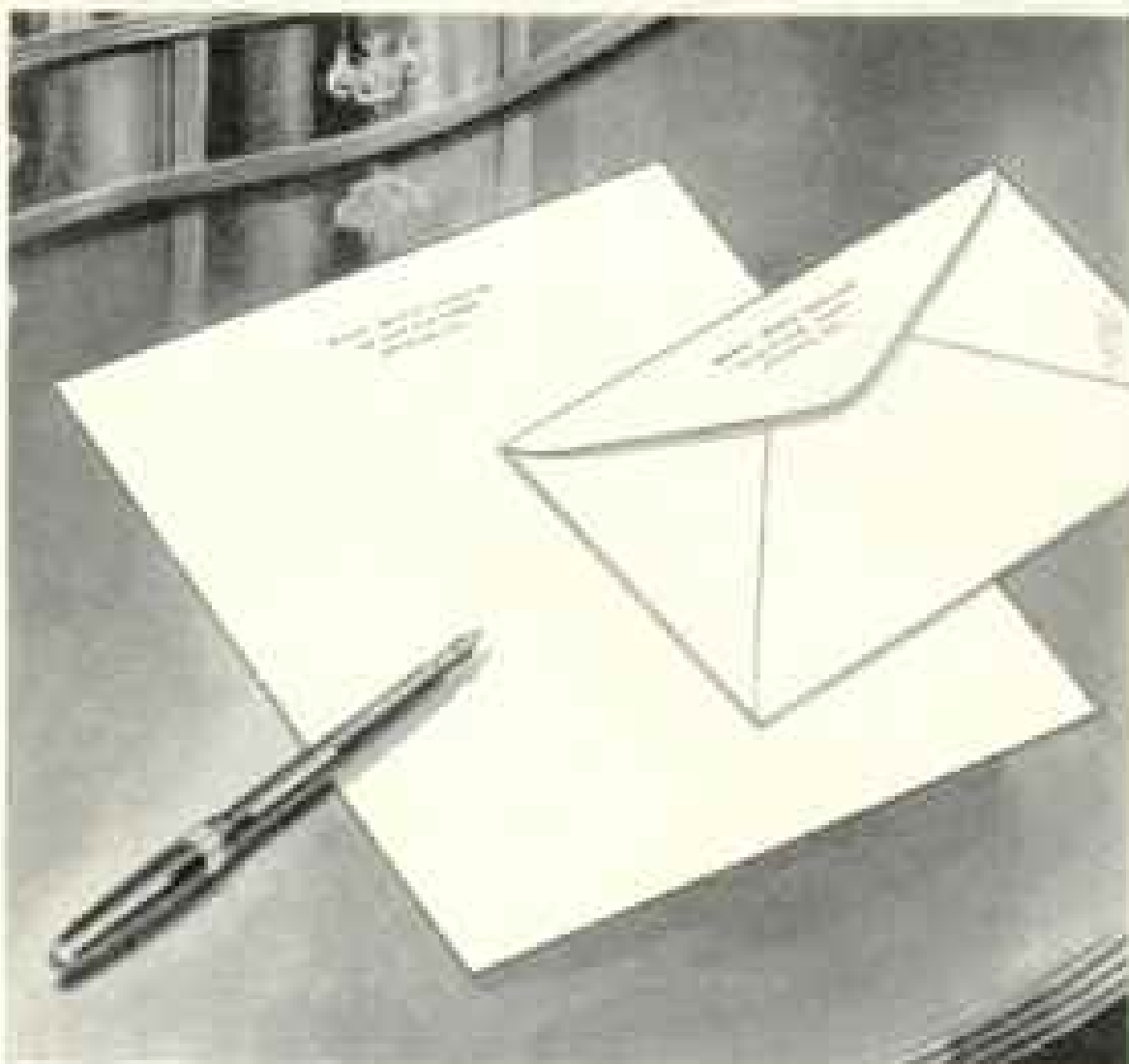
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It's your kind of car . . . created with common sense and imagination in engineering. There's more for your money in performance. Smoother, faster acceleration from our high compression Spitfire engine. The greatest driving advance of all—Prestomatic Fluid Drive Transmission. Softer, smoother Safety-Level-Ride, Exclusive Safety-Rim wheels! Safeguard Hydraulic Brakes, Cyclebonded Brake Linings, Waterproof Ignition System! More headroom, legroom, and shoulder room. Wider chair-height seats. New well-bred beauty. It's the best car value in our 25-year history for safety, comfort, convenience and performance. See it . . . drive it!

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IN the South today, the romance of the past greets a future that is young, energetic, promising.

Look down any stretch of track of the 8,000-mile Southern Railway System and you'll find yourself looking down bright new vistas of industrial opportunity.

For the South is a thriving, abundant, open-handed land where new factories are rising on every side . . . where forward-looking industries are promised a happy tomorrow.

"Look Ahead—Look South!"

Ernest E. Harris

President



SOUTHERN RAILWAY SYSTEM

The Southern Serves the South



It's what
so many everywhere
hope to do . . .



New "51" gift set. Midnight Blue, Lustraloy cap. \$19.75. No P. E. tax.



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Graduate to
new Parker "51"



NEW—Foto-Fill Filler • Visible Ink Supply • Pli-Glass Reservoir • Exclusive Ink Flow Governor • 5-Layer Insulation • Hi-Flite Leak Prevention • Greater Writing Mileage • Platinum-Tipped Point • "Live Metal" Clip . . . 5 other significant advances.

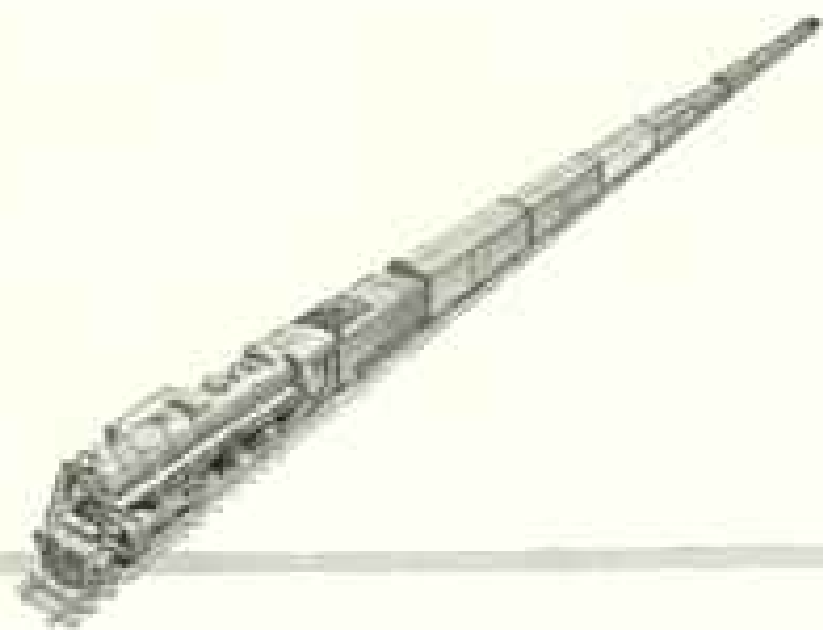
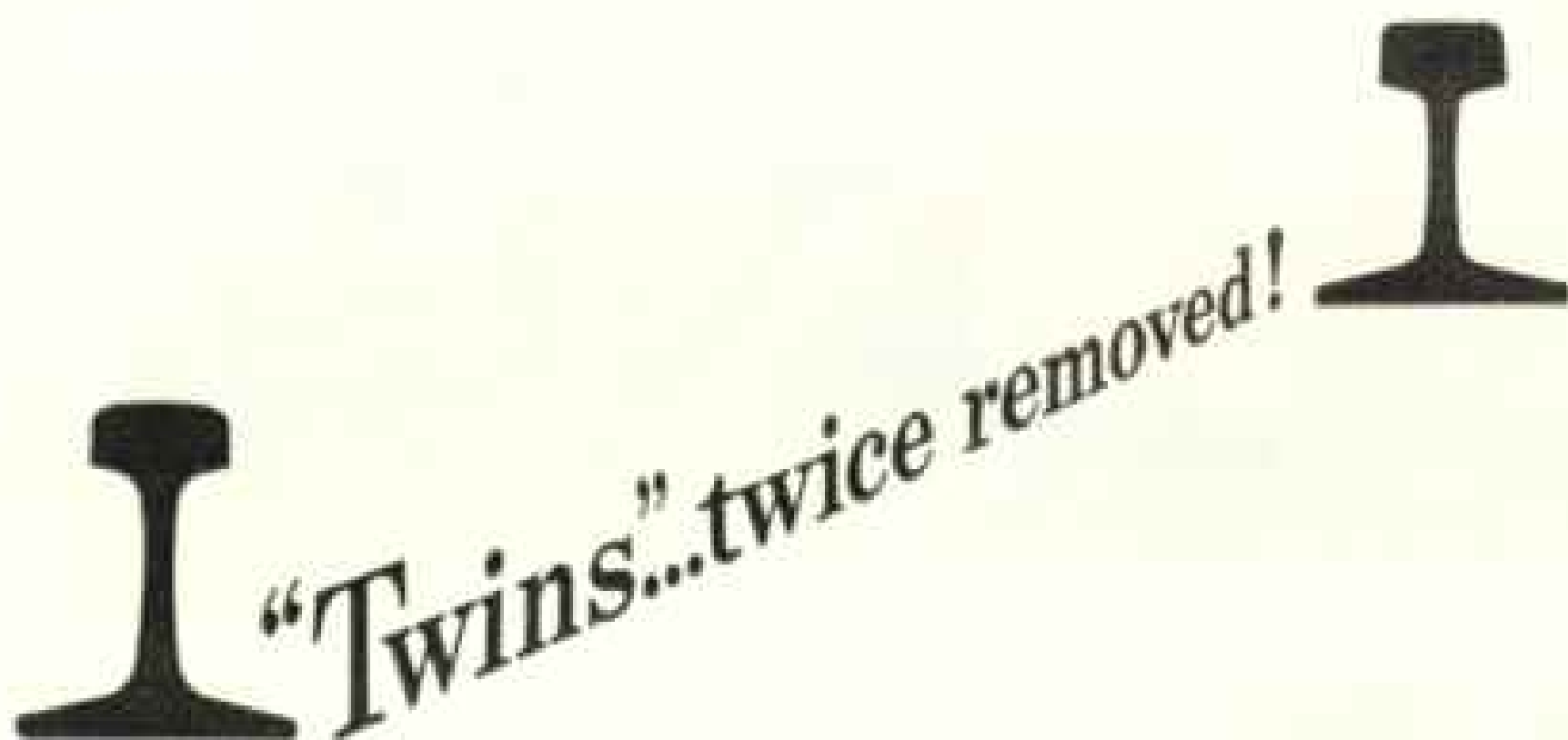
FOR GRADUATION OR ANY OCCASION, IT'S THE GIFT THAT MEANS A LIFE OF WRITING EASE:

- The New Parker "51" has 14 important advances. It skims with an unerring line. The ink flow is metered from a *visible* supply.
- Filling is extra easy. An exclusive device protects against leaking—even at jet-plane heights.
- New "51" is right for graduation, Father's

Day, weddings, anniversaries, birthdays. It's perfect for the one who "has everything." Choose from 7 rich, new colors and black.

• Sets, \$19.75 up. Pens, \$13.50 up. Pencils, \$6.75 up. Standard "51" models also available—\$12.50 and up. The Parker Pen Company, Janesville, Wis., U. S. A.; Toronto, Canada.

World's most wanted pen... writes dry with wet ink!



Unless you happen to be an expert, the two rail sections shown above may look about like twins. But actually—as a result of continuous research in rail design and metallurgy—the modern rail shown at the left has 80 per cent more strength and supporting power than its “twin” of 25 years ago, and is less than one-fourth as likely to break.

That’s typical of the kind of improvement which has been made in every part of the railroad—from locomotives to crossties, from signals to yards, from car seats to air-conditioning—as a result of research and investment.

Altogether, the improvements

made in American railroads in the years since the first World War represent an expenditure of more than 15 billion dollars—of which more than 2½ billion dollars have been spent just since the end of the second World War.

This is not government money lavished on railroads. It is railroad money—some of it borrowed, some of it taken out of earnings and plowed back into plant and equipment. In the past quarter of a century in fact, for every dollar paid out in dividends to the owners of the roads more than two dollars have been spent on improvements—for better service to you.

There is every reason to expect

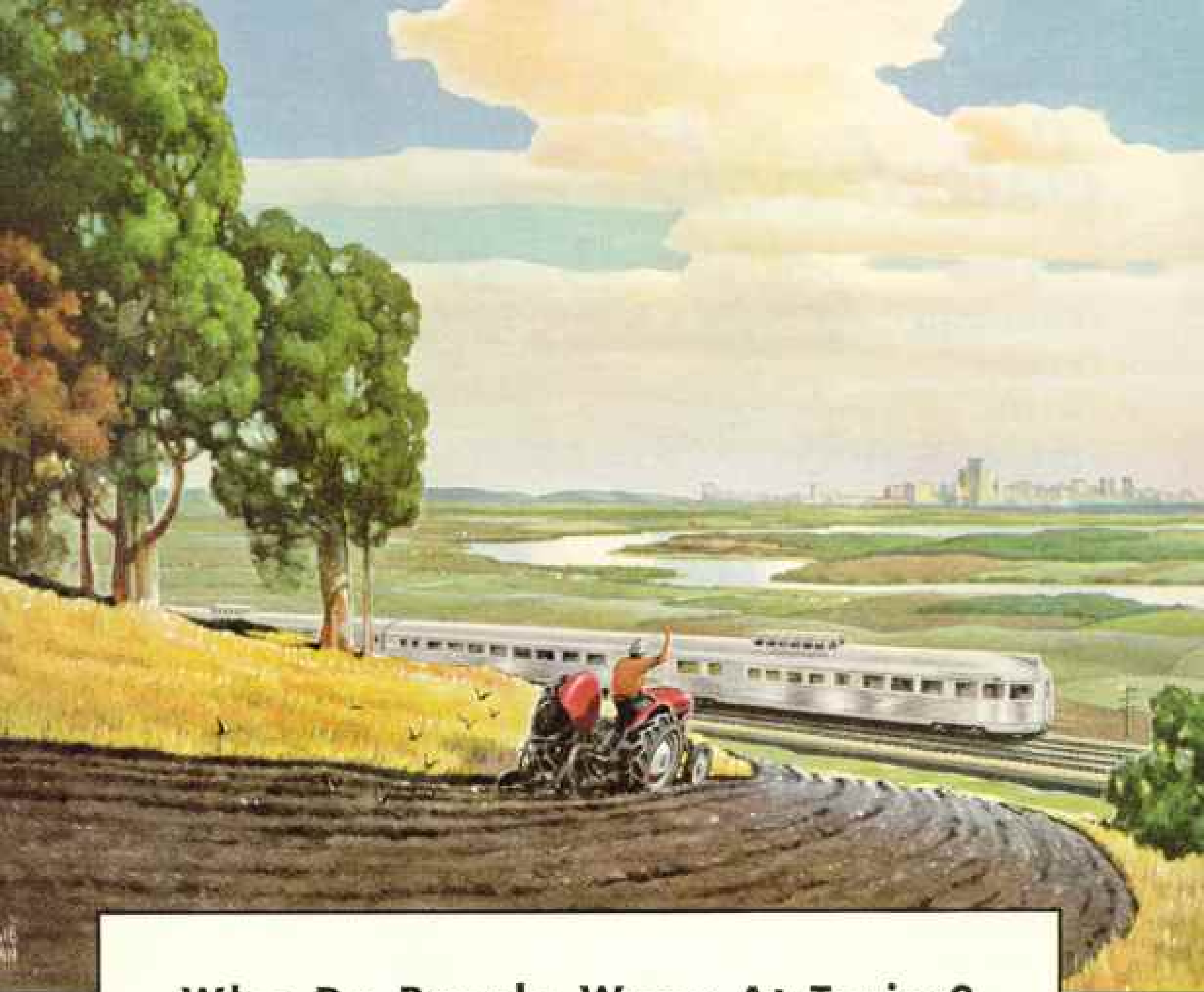
that railroad research will be as fruitful of benefit in the future as it has been in the past. But to provide the funds necessary to put these results to work so as to produce even better and more economical service in the future, it is necessary that railroads have a chance to earn a sound return on their investment today.



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And the trains Budd builds receive a special wave. For these sleek, gleaming creatures of stainless steel bear many of the country's proudest names — Zephyrs, Champions, Meteors, Eagles, Rockets, Pacemakers . . . thoroughbreds of the rails, and constantly growing in number.

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of the new railway passenger cars produced in this country.

Building superior products by the use of better materials and challenging design has made Budd an important industry, important both to the United States and foreign lands. Budd is the world's largest independent maker of automobile body components. There are more Budd wheels on busses, trucks and trailers than all others combined. And Budd plows are reaching America's farms at the rate of 100,000 a year. You can hardly find a scene, today, of which Budd is not a part. The Budd Company, Philadelphia, Detroit.

Budd

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THE
FOUNTAIN
PEN
WITH
THE
RIGHT
POINT
FOR
THE
WAY
YOU
WRITE

Gregg Shorthand

Written With Point No. 1555

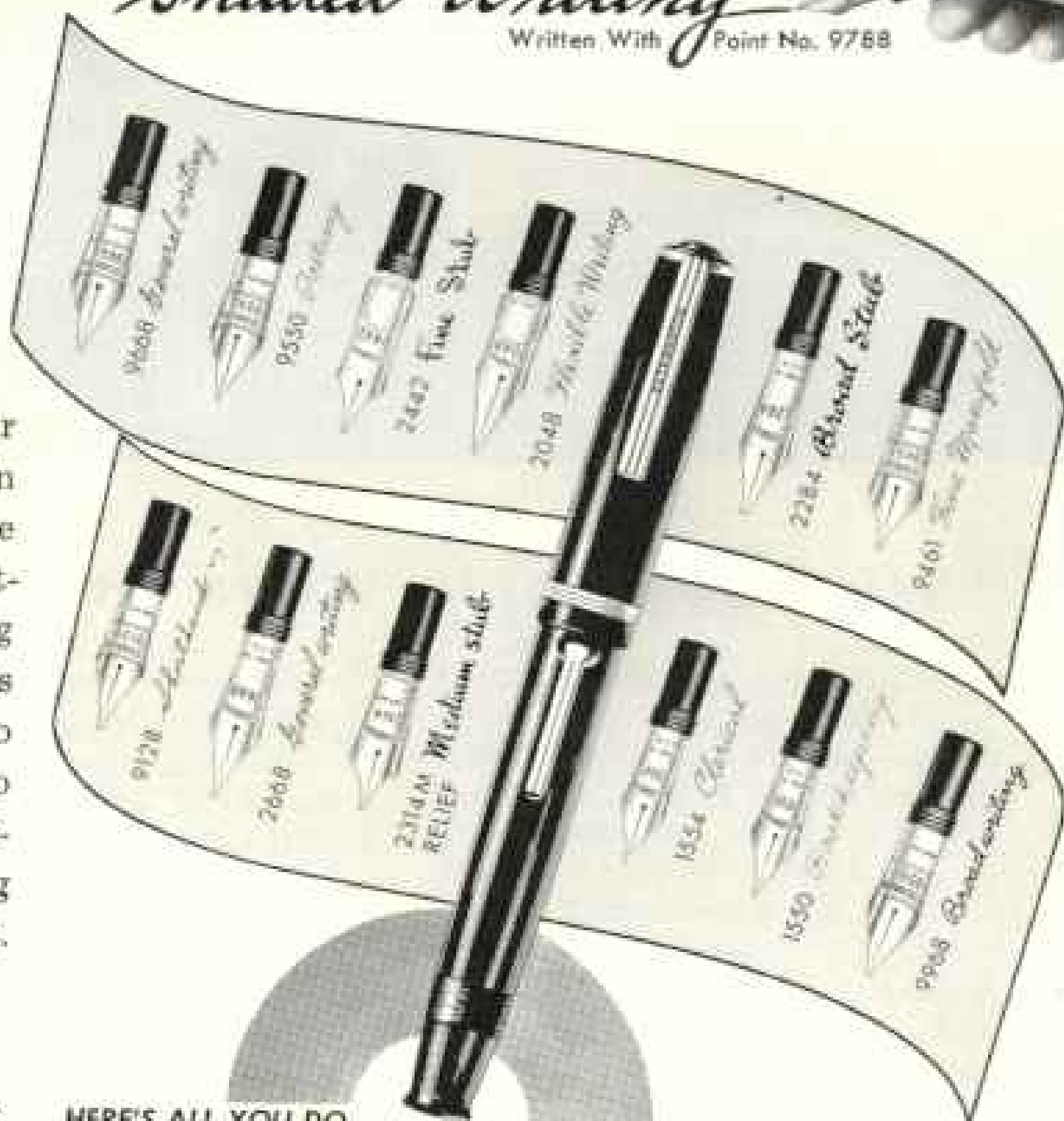
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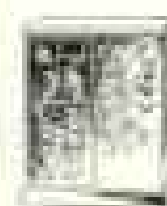
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The DuMont Chatham—72 sq. in. direct-view table-top television, FM radio, receptacle to plug in record player.

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Cabinets designed by Herbert Rossignol

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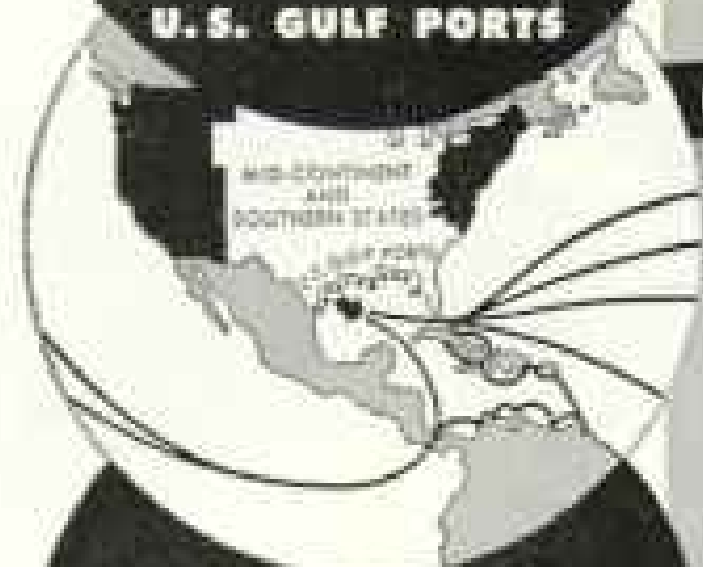
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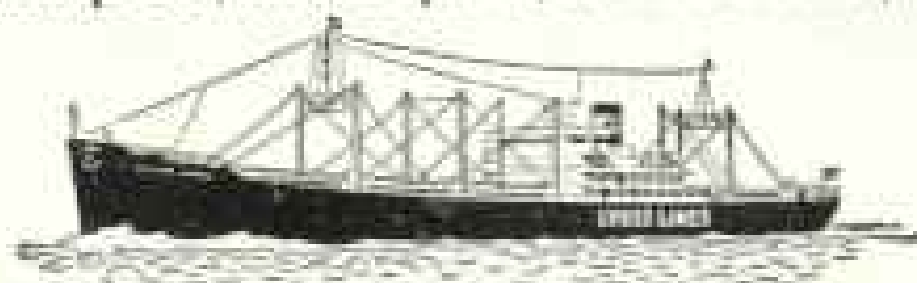
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Write: Holidays Headquarters, Convention Hall, Atlantic City, N.J.

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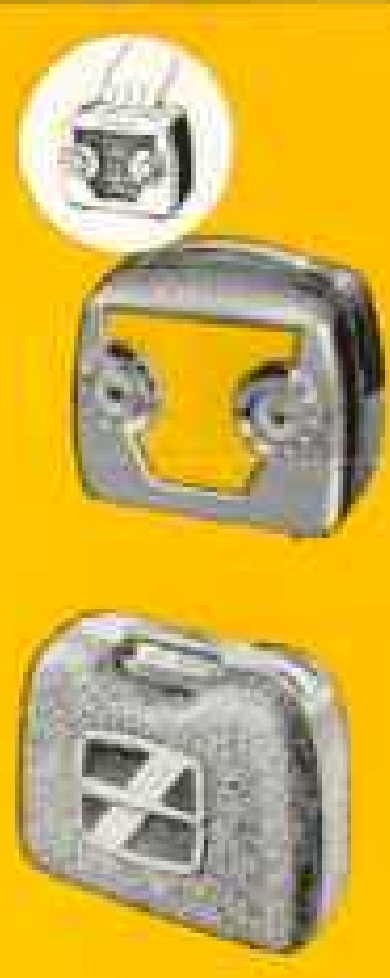
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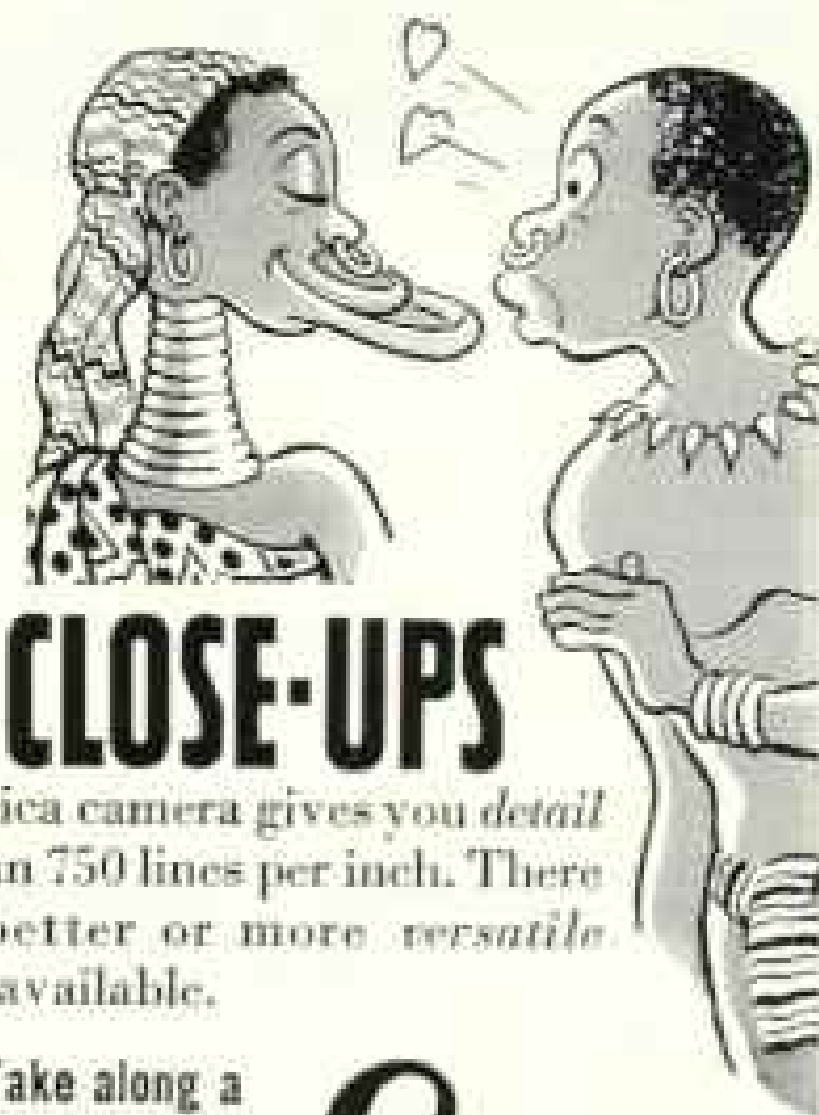


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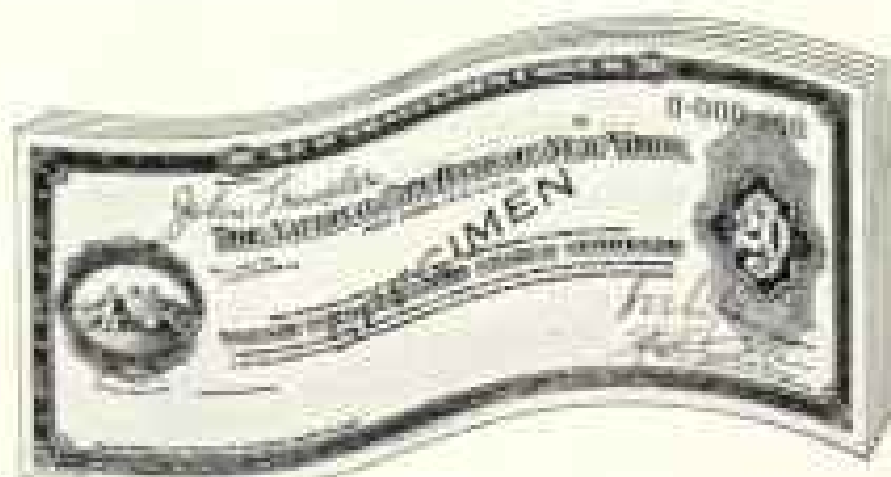
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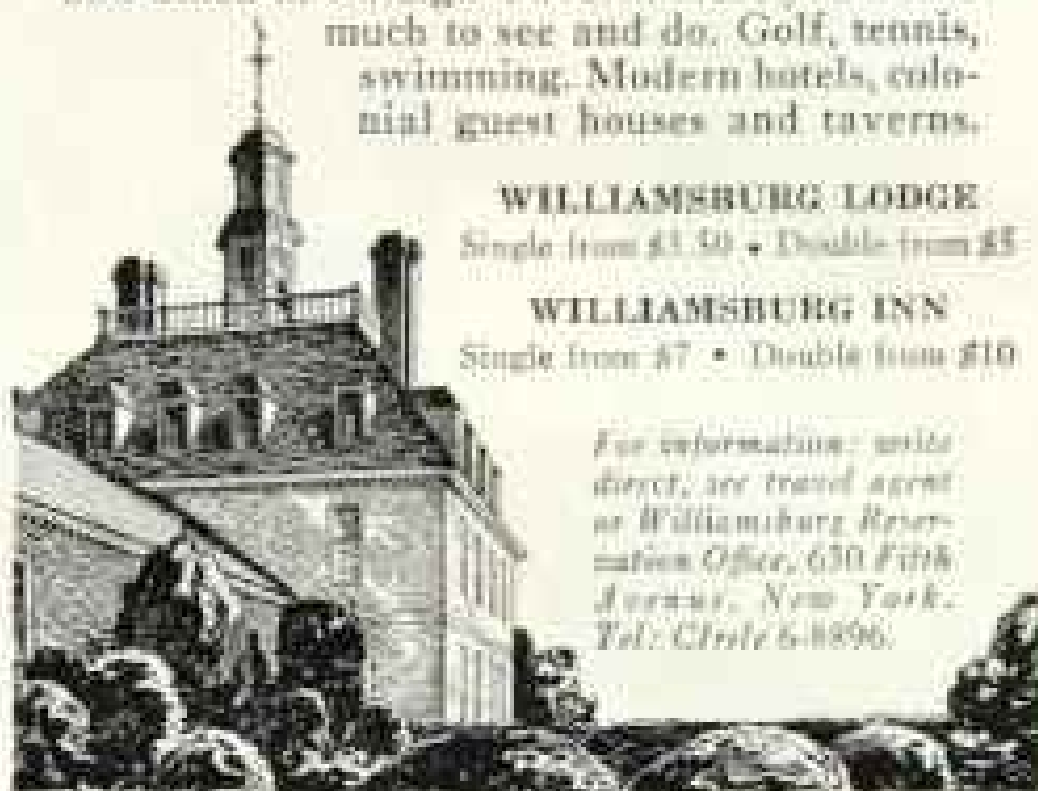


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1699 Williamsburg's 250th Anniversary 1949

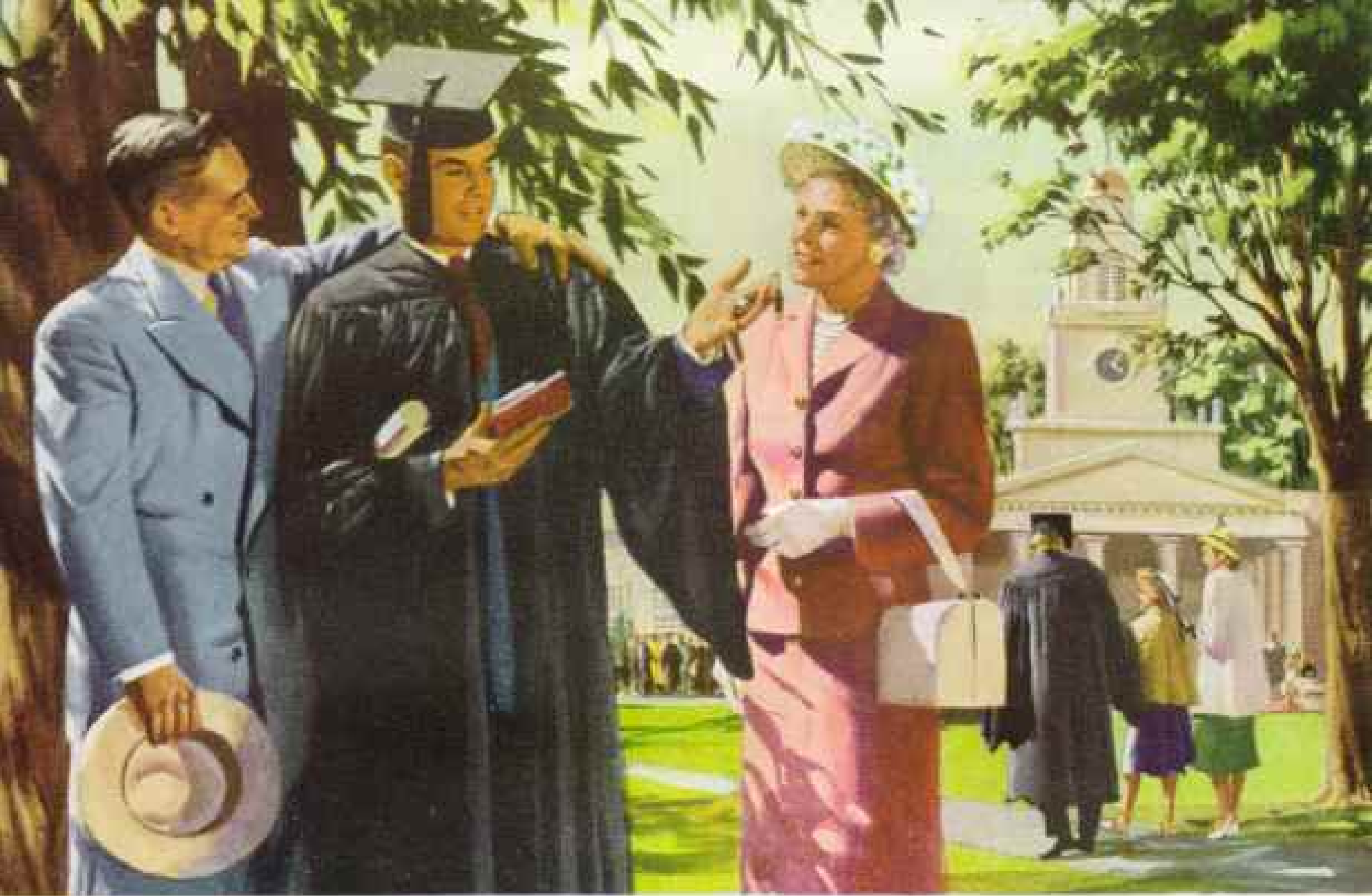
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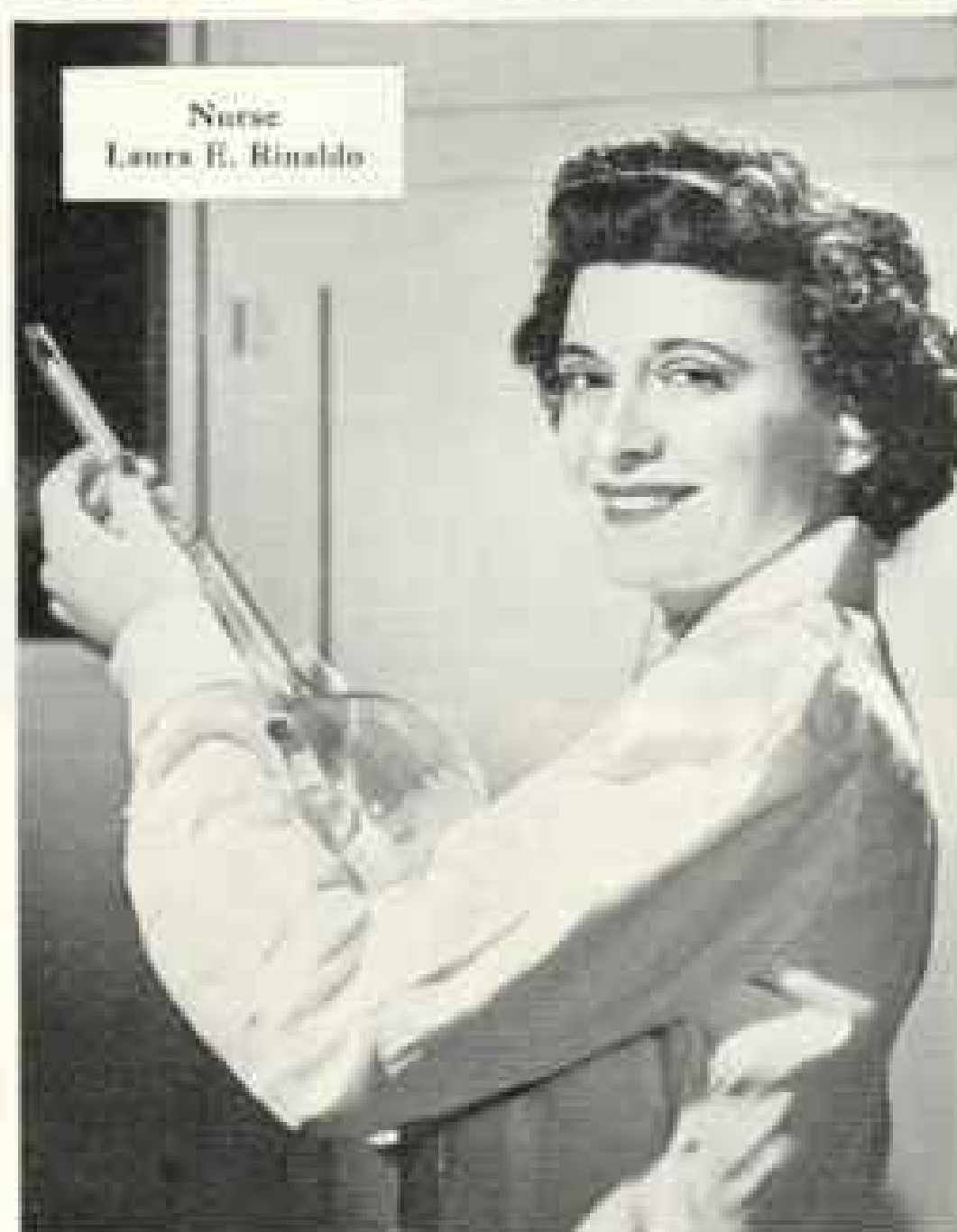
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M-10-49



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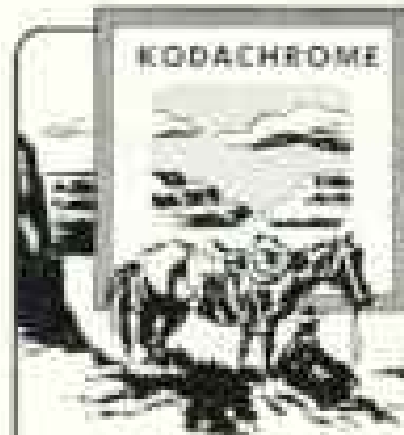
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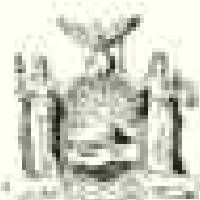
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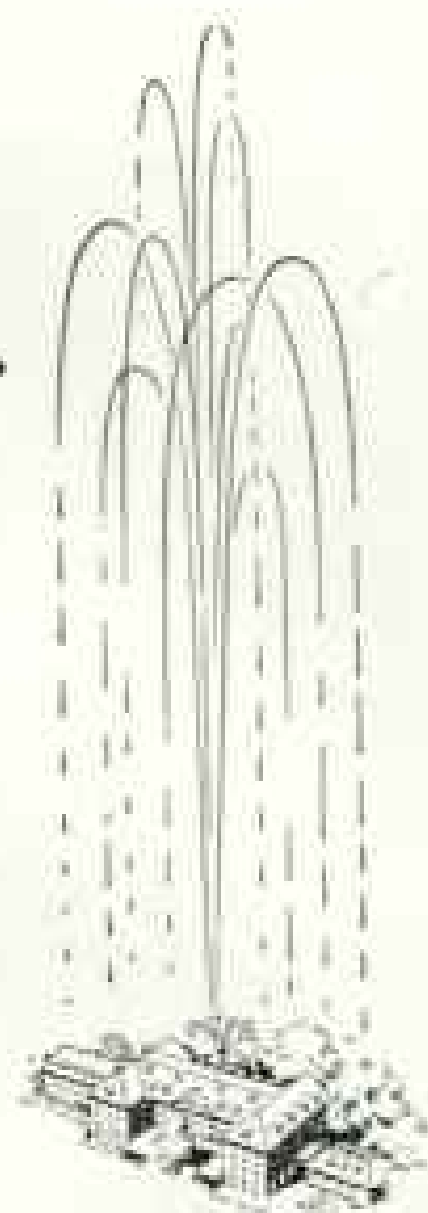
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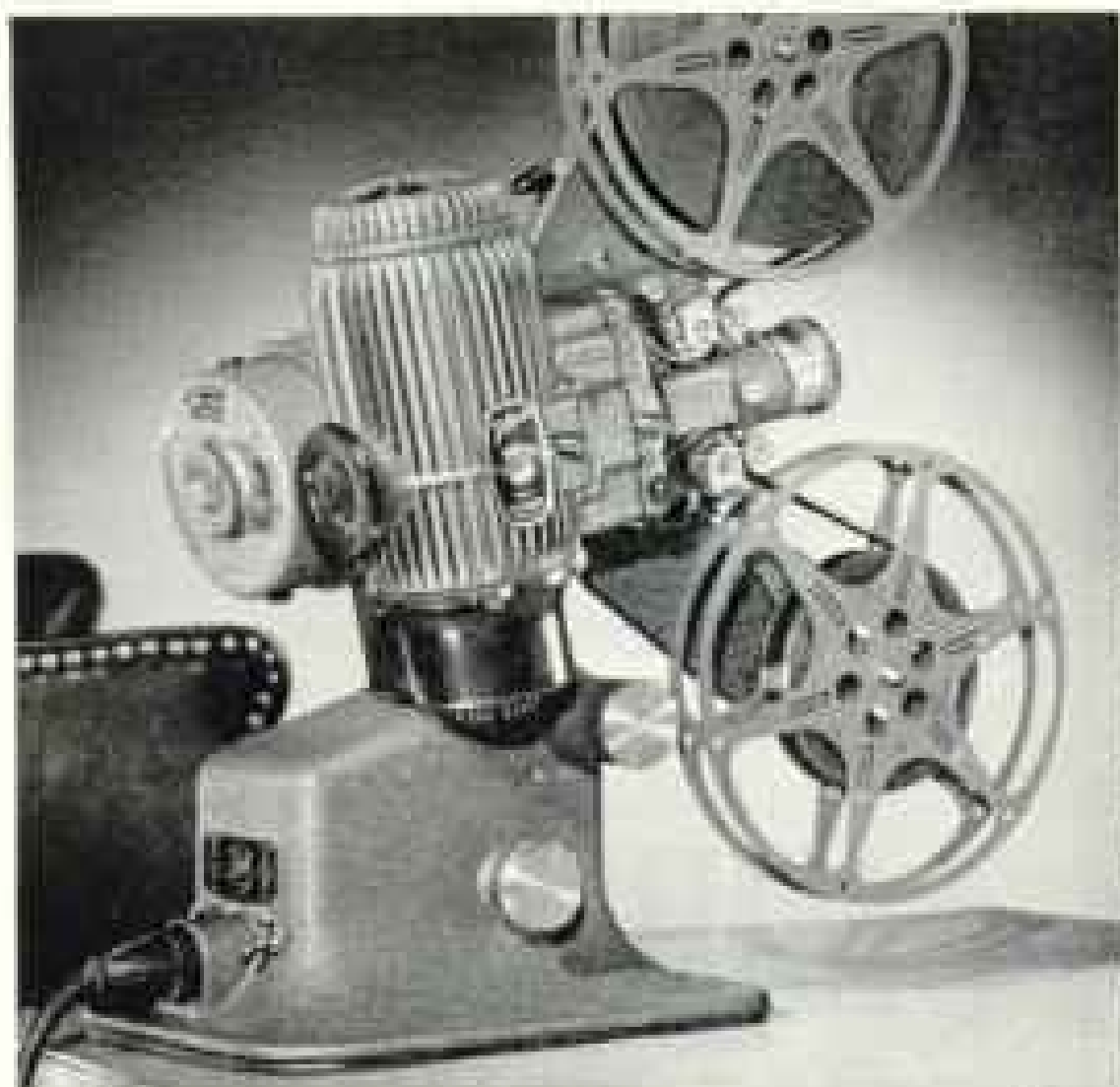
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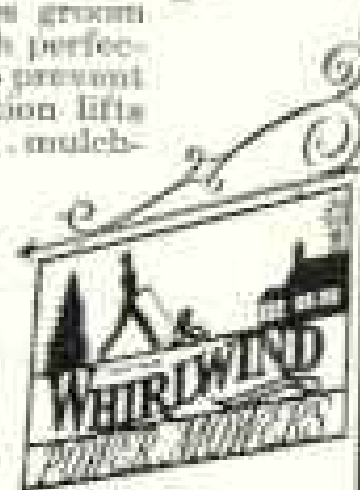
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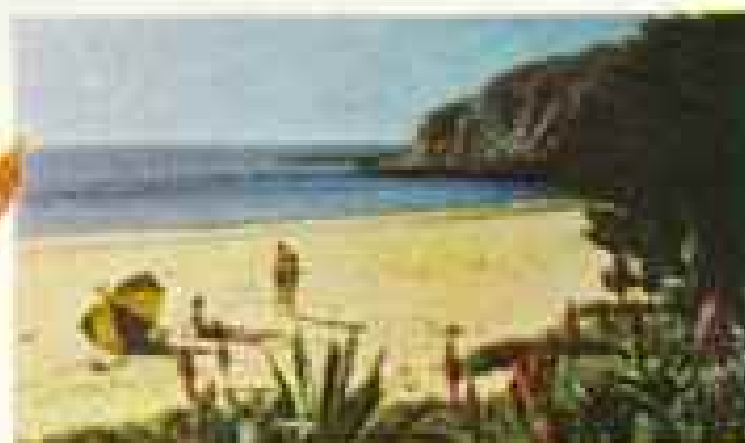
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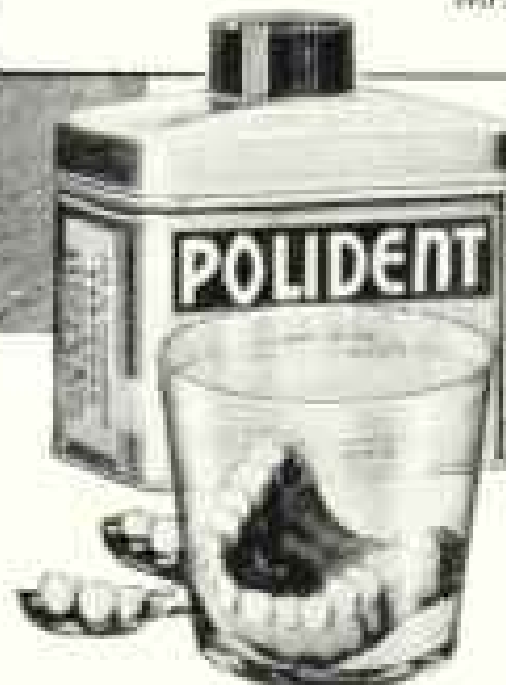
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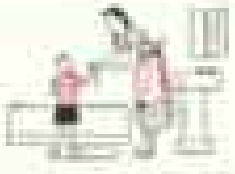







for Summer Emergencies

Last year more than 10½ million people were injured by accidents—an average of one every 3 seconds. There were undoubtedly many million more minor accidents which were never reported.

Many types of injuries occur most frequently in summer. Knowing First Aid, in-

cluding what to do until the doctor comes, may prevent complications and save someone's life.

The chart below will help you meet such emergencies. In case of a serious accident, however, it is always wise to call a doctor at once.

INJURY	FIRST AID TREATMENT
 <p>Cuts, scratches, or any small wounds</p>	<p>Clean the wound with mild soap and water and apply antiseptic. When dry, cover with sterile dressing.</p>
 <p>Minor burns</p>	<p>To relieve pain, apply burn ointment or petroleum jelly, and cover with sterile dressing.</p>
 <p>Sunburn</p>	<p>Treat like any minor burn. If sunburn is severe, call a doctor.</p>
 <p>Sunstroke</p>	<p>Lay patient on his back in cool, shady place, apply ice bag or cold cloths to head. Do not give stimulants.</p>
 <p>Drowning or when breathing stops</p>	<p>Start artificial respiration <i>immediately</i>. Keep victim warm. Send for a doctor.</p>
 <p>Sprained joints</p>	<p>Keep injured joint raised and apply cold cloths or ice packs for several hours.</p>
 <p>Strained muscles</p>	<p>Rest the affected muscle. Apply mild heat if needed to relieve pain. If pain persists, call a doctor.</p>
 <p>Ivy, Oak, and Sumac poisoning</p>	<p>Wash with soap and water immediately after exposure. If redness and blisters appear, apply calamine lotion or use compresses soaked in cold baking soda or epsom salts.</p>

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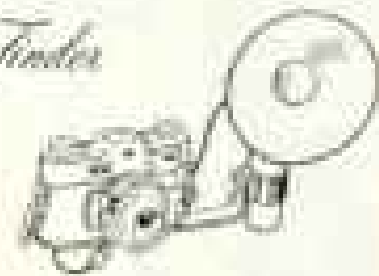
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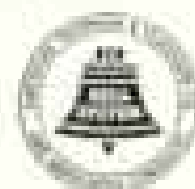
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