

VOLUME XLVIII

NUMBER FOUR

THE NATIONAL GEOGRAPHIC MAGAZINE

OCTOBER, 1925

CONTENTS

SIXTEEN PAGES OF ILLUSTRATIONS IN FULL COLOR

The Romance of Science in Polynesia

With 69 Illustrations

ROBERT CUSHMAN MURPHY

Iridescent Isles of the South Seas

16 Illustrations in Full Color

Collarin' Cape Cod

With 46 Illustrations

LIEUTENANT H. R. THURBER, U. S. N.

MacMillan in the Field

With 3 Illustrations

PUBLISHED BY THE
NATIONAL GEOGRAPHIC SOCIETY
HUBBARD MEMORIAL HALL
WASHINGTON, D. C.

\$3.50 A YEAR

50¢ THE COPY



THE ROMANCE OF SCIENCE IN POLYNESIA

An Account of Five Years of Cruising Among the South Sea Islands

BY ROBERT CUSHMAN MURPHY

AUTHOR OF "SOUTH GEORGIA, AN OUTPOST OF THE ANTARCTIC," AND "THE MOST VALUABLE BIRD IN THE WORLD," IN THE NATIONAL GEOGRAPHIC MAGAZINE

With Illustrations from Photographs by Rollo H. Beck

TO numberless readers the flood of books and articles by war-weary sojourners in the southern Pacific has meant the discovery of a new literary field—one in which heavenly isles, green with the breadfruit and the hibiscus tree, ringed by sapphire lagoons and dancing surf, are the setting for the lives of languorous natives who retain the pristine charm of Adam and Eve.

Looking at the subject with a historic eye, however, it is illuminating to note that from the days of the early discoverers the lands and peoples of the Polynesian archipelagoes have periodically claimed the attention and excited the imagination of civilized mankind. The present tide of favor is only a recurrence, such as has taken place about once in every generation since 1760 or earlier.

In the beginning, the vital narratives of the great voyagers of the eighteenth century, such as James Cook in Britain and Bougainville in France, were read by practically all educated men of their day. That they exerted a profound effect is reflected in the prose, the poetry, the humane and religious zeal, the developing wanderlust, and even the social customs of the period.

About forty years after the death of Cook, or in the twenties of the nineteenth century, the activities of British non-conformist missionaries in the Society Islands, as described in William Ellis's "Polynesian Researches," once again focused the eyes of the world upon the ever-fascinating South Seas.

MELVILLE REVEALS CHARMS OF THE MARQUESANS IN "TYPEE"

Ellis's studies, one volume of which is a classic source book for first-hand records of Polynesian history, traits, and culture, passed through several editions. The memory of them had hardly faded, even from the popular mind, before the original "cannibal island thriller" appeared, in the form of Herman Melville's "Typee" (1846).

This work, which has recently shared in the general Melville revival, is a Yankee whaler's simple, personal account of four months' captivity among the then uncontaminated savages of the Marquesas Islands, the same people whom Captain Cook had long before called the finest race in the Pacific, for fair form and regular features "perhaps surpassing all other nations."



A WORKER IN THE TARO FIELDS OF RAPA.

The taro has thick, tuberous roots and large heart-shaped leaves. The leaves are eaten as a sort of spinach, while the roots are used either like potatoes or in the form of *poi*, which is made by boiling them, then grinding, and allowing the substance to ferment for a day or two. The result is a paste much esteemed by the natives.

"Typee" made Melville a literary lion the world over, and, although the book lacks the imaginative power of his whaling romance, "Moby Dick," it is, nevertheless, a tale which one can scarce lay aside unfinished. Moreover, the modern ethnologist does not hesitate to record the observations of its author with the same assurance that he would feel in quoting from a work of scientific scholarship.

Melville followed "Typee" with a sequel entitled "Omoo," dealing with the Society Group, and his success evidently spurred a host of lesser travelers, whalers, and romancers to burst into print.

A considerable proportion of the books of the era were by British "globe-trotters," and, although these are of very irregular merit, they contain scattered kernels of priceless information.

The South Sea cult, if it may be so called, found its way even into literature for children. One famous, though long forgotten, example should be cited—Ballantyne's "Coral Island," published in 1858.

This is a book of the "Swiss Family Robinson" order, only much more so! It is excruciatingly melodramatic, with a pious moral on every page, and quaintly absurd in its geography, natural history, and ethnology. It reflects the influence of Ellis and Melville; but the penguins (which inhabit coral atolls!) the coconuts (which grow without husks!) and many other surprising flights of fancy must be credited entirely to Ballantyne's creative imagination.



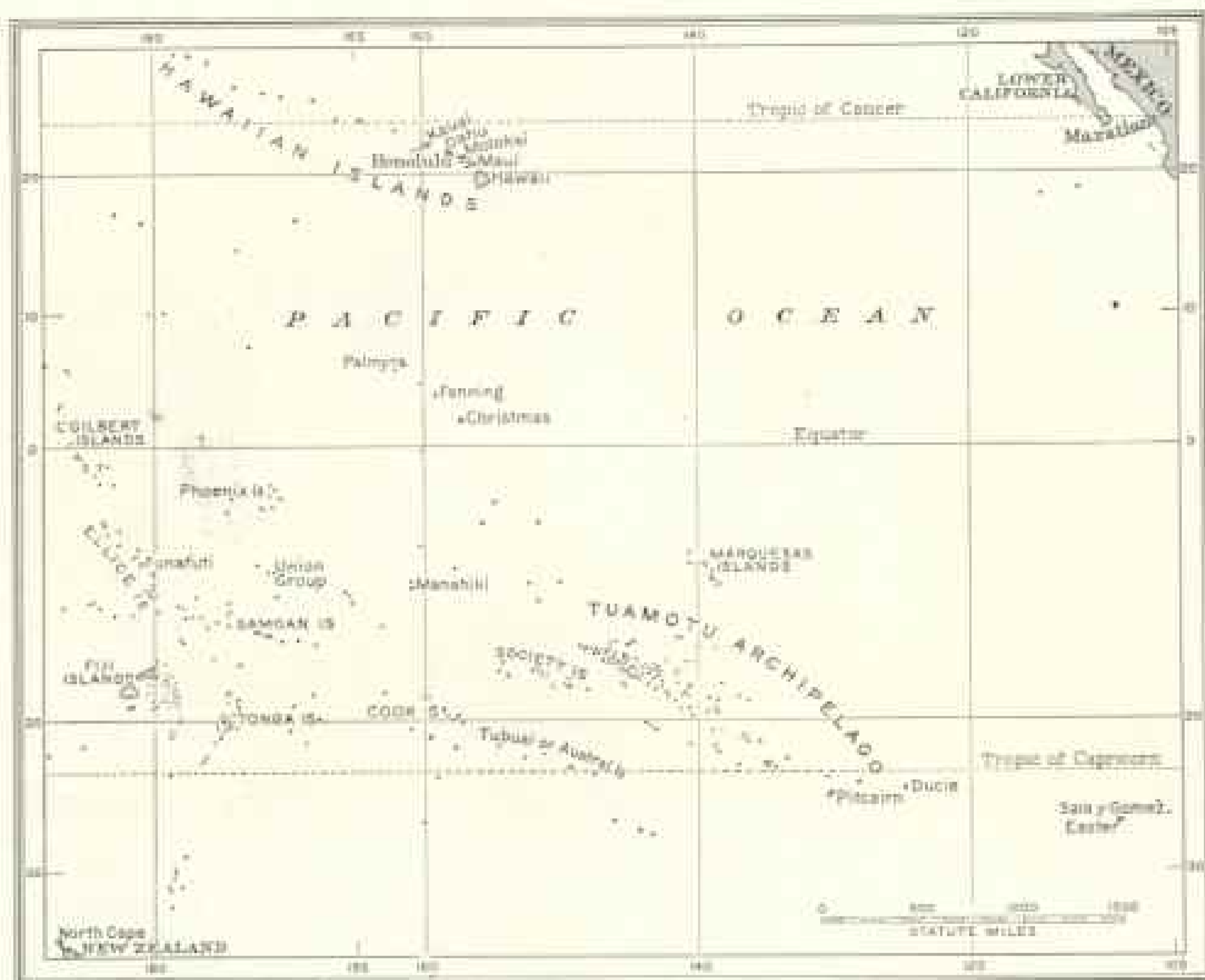
YOUTHFUL COPRA WORKERS OF APATAKI ISLAND

A native boy shows how simply a coconut can be husked on a stake.

Pens continued busily throughout what might be termed the Melville epoch, but it remained for Robert Louis Stevenson to place once more the stamp of genius upon Pacific literature.

"In the South Seas" and other essays are, of course, beguiling and informing. Stevenson is at his best, however, when recording his pure impressions of the islands and their inhabitants; when he turns to moralizing or quasi-scientific speculation, he is usually wrong.

In the more recent exploitation and advertisement of Polynesia, literary men have had to share the honors with painters. The artistry of John La Farge and Paul Gauguin, for example, has had its part in the popular flare, no less than that



Drawn by James M. Darley

A SKETCH MAP OF THE ARCHIPELAGOES OF POLYNESIA

Polynesia ("Many Isles") comprises land areas of the Central Pacific Ocean lying within a rectangle bounded by the longitudes of 105° and 165° east, and latitudes 10° north and 30° south. (See, also, detail map of the Tuamotu, Marquesas, and Austral Islands, page 366.)

of Stevenson and Pierre Loti. Finally, the group of contemporary writers have found among the islands subjects which are always alluring and, to the bulk of readers, always new.

So much for a brief sketch of the popular history of the South Pacific, the object of which is to show that at more or less regular intervals someone has had the talent to "rediscover" Polynesia, and to put the region into the minds of multitudes.

THE GREAT TALES OF COOK AND OTHER VOYAGERS

It must be emphasized that most of the great tales have not been written within our own lifetime. The modern reader cannot afford, indeed, to neglect the wealth of information and the thrill of glorious adventure suggested by the

names of Quiros, Roggewein, Forster, Sir Joseph Banks, Bligh, Vancouver, Wallis, Krusenstern, Marchand, Carteret, G. A. Byron (grandfather of the poet), James Wilson, F. D. Bennett, Kotzebue, Wilkes, La Pérouse, Porter, Langsdorff, Darwin, Fitzroy, du Petit-Thouars, Garcia, Dumont d'Urville, Beechey, and Stewart.

If one would know the South Pacific in its day of barbaric splendor he must go back to the yellowed pages of Cook's "Voyages," to read Homeric descriptions of Tongan feasts, of pagan sacrifices, or of the maneuvers of the Tahitian canoe fleet, with its 7,760 fighting spearsmen, for the war against Moorea.

To turn from the present-day writers to James Cook is to feel

"like some watcher of the skies
When a new planet swims into his ken."



SEARCHING FOR THE MOUNTAIN BREEDING GROUNDS OF THE TAHITIAN PETREL.
Beyond the crest looms the Dindem, the loftiest of whose jutting spurs towers 4,000 feet above
the sea.



MODERN POLYNESIANS

Fishing parties on the fringing reef of Tahiti, in the harbor of the port and capital, Papeete.



INSPECTING THE NEST OF A MINA BIRD
IN TAHITI

The white man brought the mina to the South Seas. He also introduced the weavers, hawks, rock pigeons, and Indian bulbuls.

The genius of the great voyager, the strength of his character, and his gift for critical observation stand out everywhere in his record. After a reader has followed him and lived with him through crowded years of his travels, the futile tragedy at Hawaii which ended his noble career comes as a dramatic, fateful blow, such as is rarely equaled in either history or fiction.

GEOGRAPHY OF POLYNESIA

In our consideration of the Polynesian archipelagoes, New Zealand may be disregarded because of its geographic affinity with the Australasian land masses. Hawaii, likewise, will be omitted, partly because of its remote location, north of the Equator and outside the field of the American Museum's contemporary investigations, and, more especially, because President Grosvenor, of the National Geographic Society, has recently published an admirable account of his Hawaiian studies and personal field work, which filled an entire number of the NATIONAL GEOGRAPHIC MAGAZINE.*

The typically "South Sea" islands, some of which stand alone while a larger number enter into clusters of considerable magnitude, include such important groups as the Society, Tuamotu, Marquesas, Austral, Samoa, Ellice, Phoenix, Union, Manihiki, and Tonga Islands. In general, they lie within a rectangle bounded by the longitudes of 105° and 165° east, and latitudes of 10° north and 30° south (see map, page 358).

The total number of islands is impracticable to estimate, for an atoll of a single name may in reality be composed of scores of separate islets. Brigham's "Index to the Islands of the Pacific" lists about 2,650 main bodies of land, after the elimination of synonyms applied by successive European discoverers.

The terrestrial area is in the neighborhood of 3,500 square miles, exclusive of Hawaii and New Zealand. The Societies, one of the larger groups, comprise about

* See "The Hawaiian Islands: America's Strongest Outpost of Defense—the Volcanic Floral Wonderland of the World," by Gilbert Grosvenor, LL. D., in the NATIONAL GEOGRAPHIC MAGAZINE for February, 1924.



A WORLD WAR MONUMENT AT PAPEETE, TAHITI

"Les Etablissements Français de l'Océanie à leurs Enfants Morts pour la France 1914-1918"
is the inscription on this marble memorial.

637 square miles; the Marquesas, 490; and the Tuamotus, for all their "Cloud of Islands," which is the meaning of the original native name—80 islands and numberless fragments—sum up to but 364 square miles.

Politically, the Society, Marquesas, Tuamotu, and Austral islands have been French since the middle and latter parts of the last century. Many of the others are British colonial possessions, or are now under New Zealand mandate.

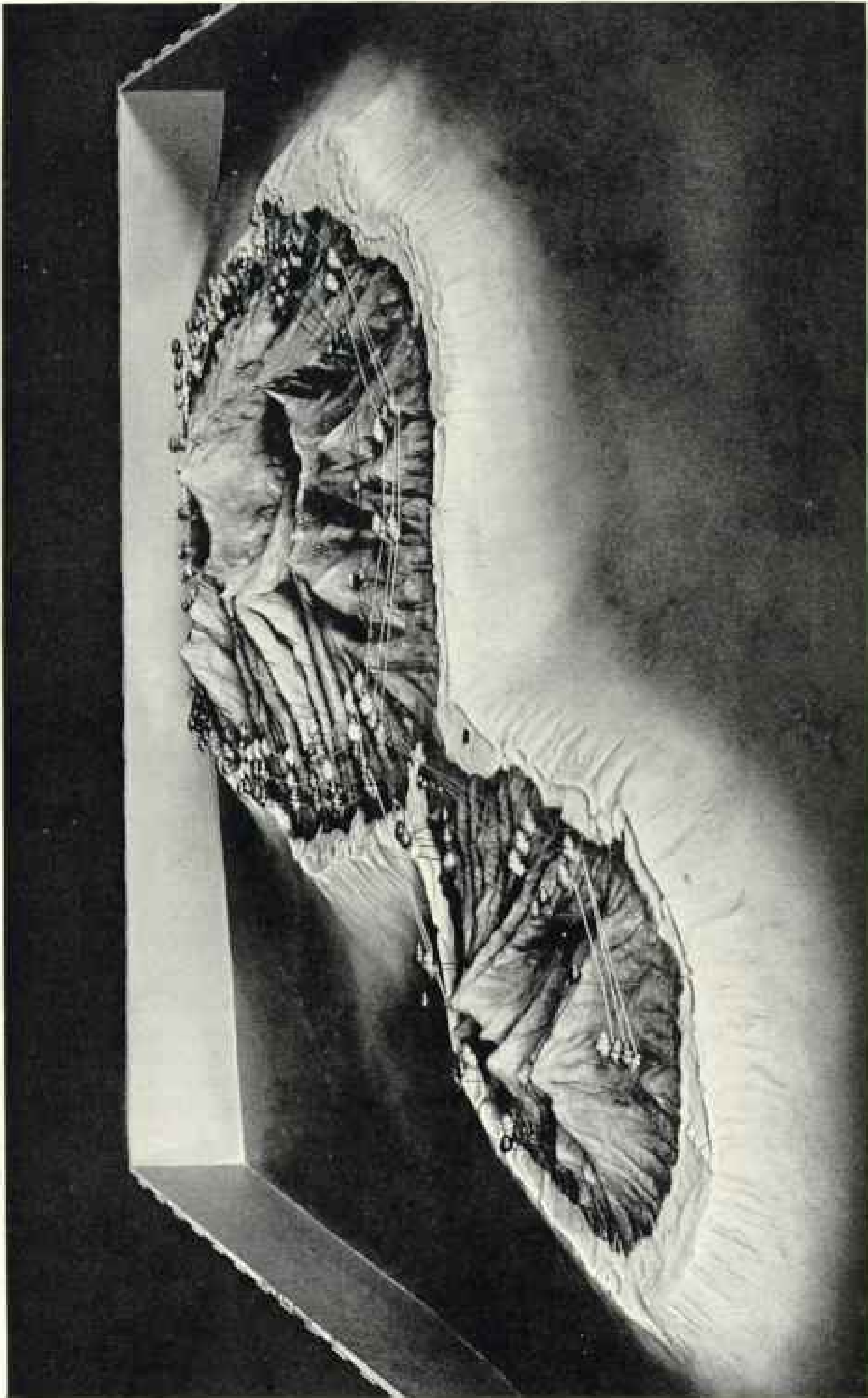
The United States has undisputed control over part of Samoa and less definite claims upon certain other islets. Easter Island and Sala-y-Gomez, the eastern outposts of the region, are Chilean.

For a clear record of the rather complicated status of post-war sovereignty, the reader is referred to the authoritative map of the Pacific, which was issued as a supplement to the NATIONAL GEOGRAPHIC MAGAZINE for December, 1921.

REEF-FORMING CORAL RESPONSIBLE FOR MANY ISLANDS

In the western South Pacific, as at Hawaii, volcanic phenomena are still in active progress, but, throughout the area with which we are here concerned, the earth-building fires have long been extinguished.

Disintegrating rock and erecting coral, separately or in combination, make up the



A PROFILE MAP OF TAHITI SHOWING THE ERODED VOLCANIC CORE, THE LAGOON, FRINGING REEF, AND BARRIER REEF

The main body of Tahiti consists of two high land masses connected by a low isthmus. The core of richly carpeted volcanic hills is surrounded by a coastal plain, which reaches a width of as much as a mile only at the mouths of the river valleys. Around the strand-belt are the fringing reefs, which extend, just awash or slightly submerged, into the lagoon moat (see text, page 363). Principles of geographical distribution are illustrated by land snails of the genus *Partula*.

structure of the innumerable dots in the wide sea, although more fundamental movements in the floor of the ocean basin itself have often compensated for the wasting tendency of the one or vitiated the constructive power of the other.

At certain islands the bottoms of the very bays in which the old-time explorers anchored have sunk or risen with the subsequent action of forces beneath the ocean.

The limits of the range of reef-forming corals in the central Pacific are roughly indicated by the parallels of 28° north and 30° south. But steep shores, and consequent absence of shallow coastal shelves, prevent the growth of reef-corals even within the favored area. The beetling Marquesas, with all but strandless shorelines, are, for example, without a girdle of reefs.

TAHITI IS EXAMPLE OF COMPOSITE VOLCANIC AND CORAL ISLAND

At Tahiti, as a type of the composite islands which attain the peak of Polynesian diversity and beauty, the core of worn and richly carpeted volcanic hills is surrounded by a coastal plain which reaches a width as great as a mile only in the mouths of the river valleys (see relief map on preceding page).

This encircling strand is a strip of great fertility, and is the only zone of such cultural plants as the coconut, sugar cane, banana, coffee, and vanilla. It was also the sole belt of permanent human habitation, even when the classic isle supported 150,000 aboriginal people, the estimate of Sir Joseph Banks in the late 18th century.

The strand overlies an ancient lava bench and portions of a buried fringing reef, although the surface soil, a product of crumbling uplands, has now in many places a thickness of nearly 20 feet.

Around the strand-belt, which here and there narrows until it disappears altogether, are the fringing reefs. These extend, just awash or slightly submerged, into the lagoon-moat. The latter is of varying breadth, and of a maximum depth of about 18 fathoms. It is in turn protected from the battering rollers of the open Pacific by the barrier reef, which is broken by numerous passes, especially opposite the outlets of streams where the

flow of fresh water tends to inhibit the growth of coral.

At most points the moat is broad and navigable, but at intervals it narrows to such an extent that the fringing and barrier reefs practically coalesce.

The main body of Tahiti comprises two high land masses connected by a low isthmus. The larger mass culminates in several sharp peaks, of which Orohena is credited with an altitude of 7,321 feet.

Both Tahiti proper and its smaller peninsula have been dissected through tremendous erosion, which has produced many valleys with almost vertical walls and knifelike dividing ridges.

These gorges are, in fact, so sharply marked off one from another by factors of altitude and plant zones that the respective populations of such creatures as sedentary insects and land snails are as completely isolated from each other as if they were on opposite sides of the world. Professor Henry E. Crampton has taken advantage of the circumstances which have converted the various valleys into natural laboratories of evolution, and has published a brilliant series of studies upon the astonishing geographic variation in one genus of land mollusks inhabiting this single island.

Turning to the atolls, or coral rings without a central pile of hills, we find that several large Pacific groups include islands of no other type. Atolls, however, are rarely in the form of the perfectly symmetrical, palm-lined "doughnuts" so quaintly portrayed in the woodcuts of old geographies. Most of them are highly irregular in outline and, moreover, the land which actually projects above the surface of the ocean is more often a chain of disconnected islets or *motu* than a ribbon of continuous beach.

The principal entrance to the lagoon is usually at the northwesterly or leeward end, for corals thrive best and build the strongest bulwarks on windward shores, or where the southeast trade wind heaps up the waters which bear their sustenance.

Hau Island, of the vast Tuamotu archipelago, may serve as a characteristic example of the low islands. It is thirty miles in length, seven in breadth across the widest part of the lagoon, with the longer axis parallel with the course of the



A TROPHY OF THE TROLLED LINE: A TUNNY CAUGHT NEAR CHRISTMAS ISLAND



BIRD STUDY DE LUXE

The naturalists of the Whitney Expedition enjoyed the use of Père Rougier's American motor cars at Christmas Island (see text, page 402). The subject being photographed is a man-of-war bird. At the nesting time these birds are seemingly without fear.



THE SHARK HAS STRUCK.

A familiar scene to one who has traversed the tropical ocean in a windjammer.

trades. The only entrance is at the leeward end (see page 369).

The long thread of the reef is elsewhere unbroken by navigable channels, but the "dry land" is made up of more than 100 distinct units, of which the longest has an extent of perhaps eight miles.

Since the greatest width of the islets nowhere equals a mile, it is clear that the coral-studded lagoon makes up 99 per cent or more of the entire area of the atoll. This explains why it is possible for vessels to sail into the lagoons of certain Pacific coral-rings and to anchor *out of sight of land* in the heart of glassy and sheltered waters.

In such friendly lagoons the primitive atoll-dweller plied his paddle, and on the quiet inner beach he built his villages.

The jagged spit behind his home was often a desolate and uninhabited waste, while the outer stretches, toward the booming sea, were, as Stevenson tells us, the abode of horrible specters among which the superstitious islander would hardly venture alone.

Here the rollers crashed as if they envied the peace within, and sought to destroy it; but the greater their volume and power, the more luxuriant became the soft, living coating of the limy breast-works.

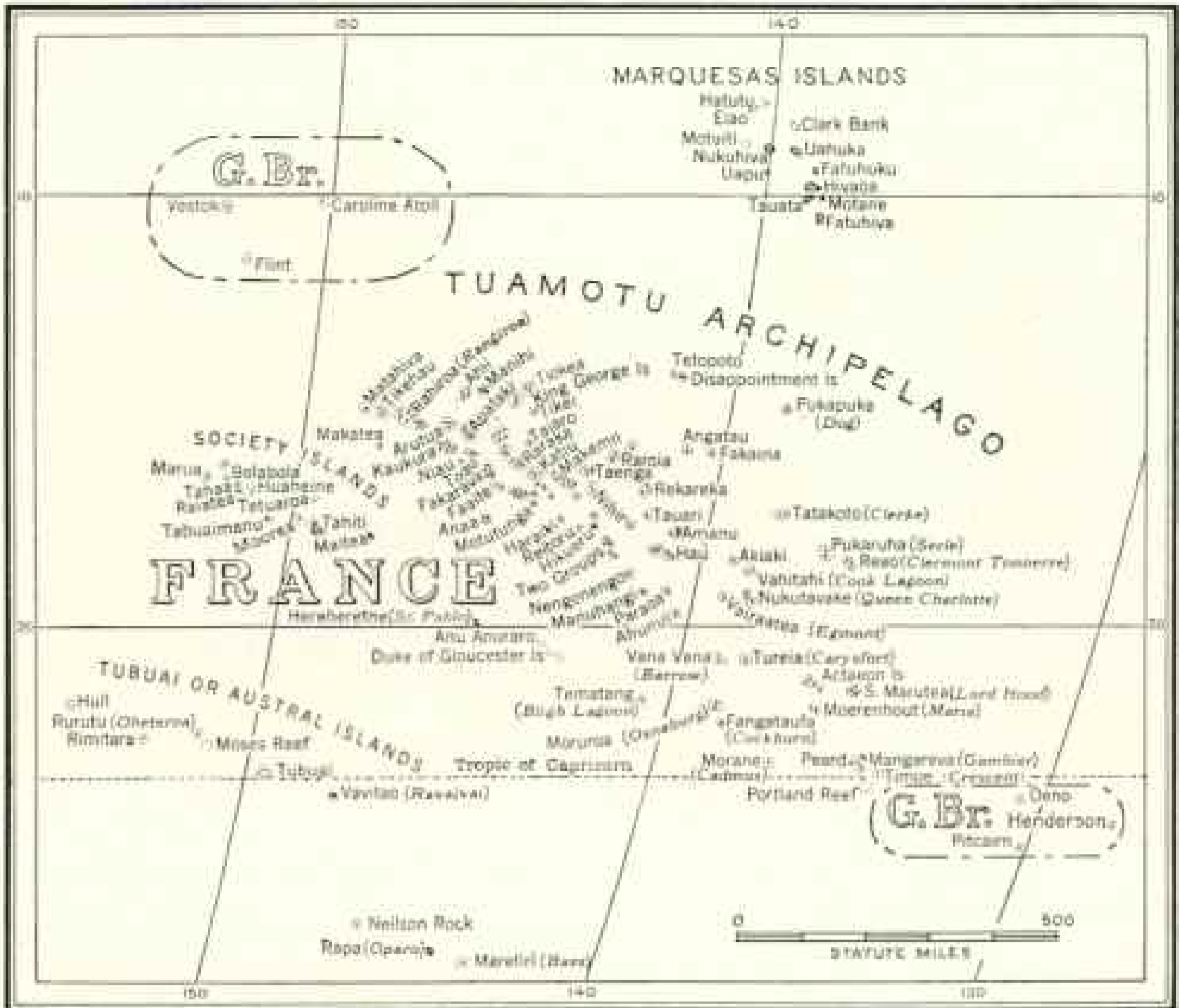
It is not difficult to comprehend that the seaward rim of an atoll, across which a hurricane might send an avalanche of water, should seem depressing to the Tuamotuan, whereas the native of such a lofty island as Nukuhiva could plunge joyfully into breakers which pounded his citadel in vain.

ORIGIN OF ATOLLS A SUBJECT OF FAMOUS CONTROVERSY

The scientific controversy regarding the origin of atolls is an old and famous one, and is not yet fully settled. Darwin held that the rings of coral, which sometimes rise from depths far below the limit at which reef-building polyps can live, are the result of the gradual wearing away or subsidence of a central land mass, accompanied by the equally slow upgrowth of the girdling reef.

According to this view, each atoll is in effect the barrier reef of an island which has vanished, or of a submarine mound which approaches the surface of the sea. More crudely stated, the atoll is the crown of a sinking volcano.

Sir John Murray, the botanist Guppy, and Professor Alexander Agassiz combated this theory, and showed that reefs exist in parts of the Pacific where there



Drawn by A. H. Bumstead and James M. Darley.

THE MARQUESAS, TUAMOTU, AND AUSTRAL ISLANDS (SEE, ALSO, MAP, PAGE 358)

The three main archipelagos belong to France, while the small groups to the northwest and the southeast are British possessions. The aggregate land area of the Marquesas group is less than 500 square miles; of the Tuamotu ("Cloud of Islands"), 364 square miles. This map is a detail from the National Geographic Society's "Map of the Islands of the Pacific," in colors, size 24 x 18 inches.

is no evidence of subsidence, but where, on the contrary, there has been uplift.

Borings made at the atoll of Funafuti, however, both through the ring itself and through the bottom of the enclosed lagoon, revealed the presence of coral rock to a depth of 1,114 feet.

Since reef corals cannot grow below 20 fathoms, the Funafuti experiment points to a progressive sinking of the ocean floor in this region, and confirms the older explanation. Many facts of zoological distribution in the Pacific make it difficult to avoid the same conclusion.

CLIMATE AND VEGETATION OF POLYNESIA

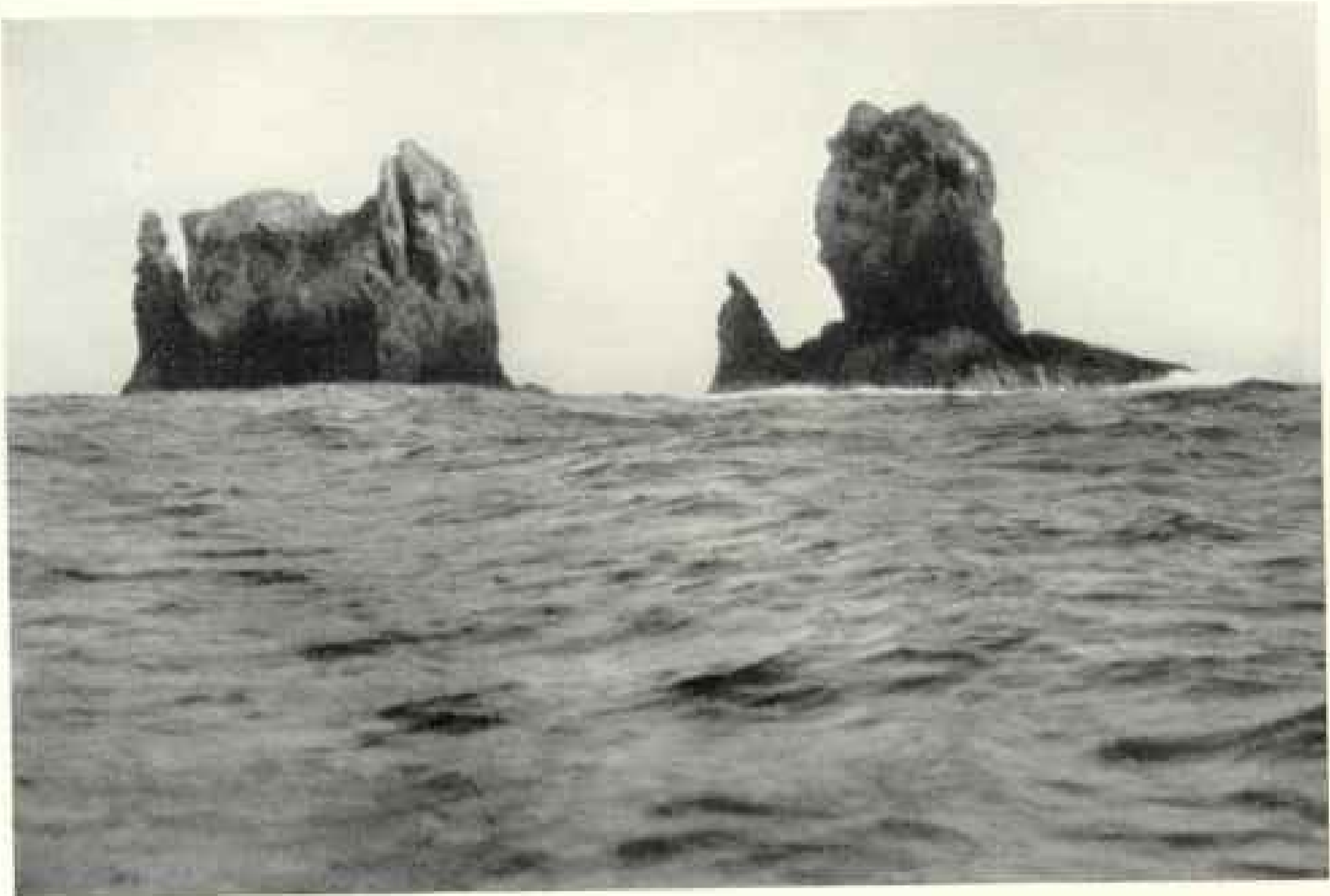
The final type of island to be mentioned is the secondarily upraised or tilted atoll,

which may present cliffs and hills of considerable altitude and of misleading superficial appearance.

The greater number of the Polynesian islands lie within the zone of the southeast trade wind, and enjoy a mild and equable climate, although many of the groups near the Equator are subject to hurricanes.

Rainfall is naturally most copious on the windward, or southeasterly, slopes of the high islands. In the Marquesas the difference is so pronounced that the principal islands have a heavily forested windward face, and a leeward, semi-desert side, where the vegetation and the fauna may be quite distinct.

In the same way, a high island often produces a "rain shadow" which more or



BASS ROCKS, SOUTHWARD FROM RAPA, THE LAST OUTPOSTS BETWEEN POLYNÉSIA AND THE ANTARCTIC

"Here there is no place to land on from out of the gray water. For without are sharp crags, and round them the wave roars surging, and sheer the smooth rock rises" (Homer).

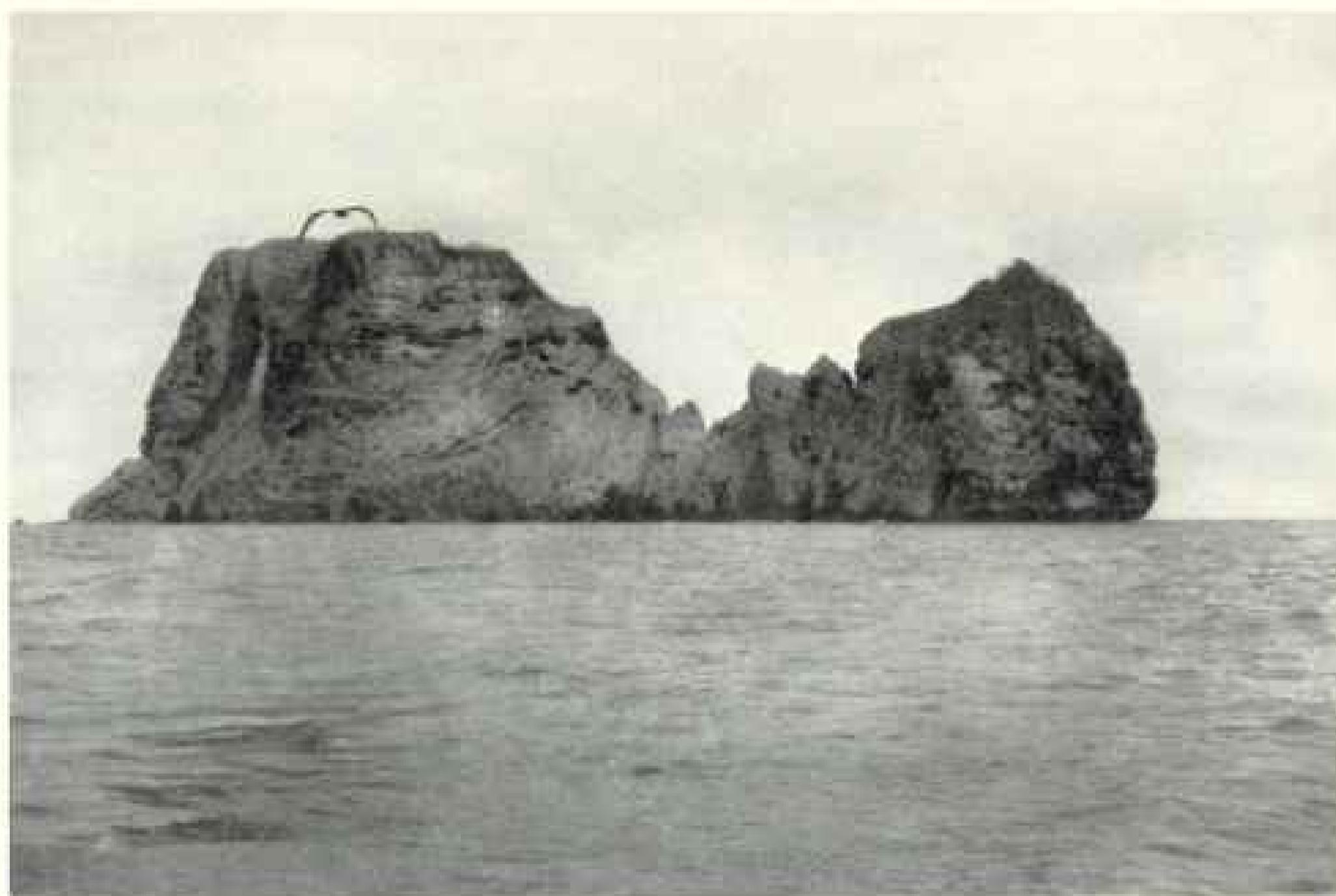


AN UPLIFTED CORAL CLIFF OF RURUTU: AUSTRAL GROUP

In places this structure of submarine origin now rears 300 feet above the sea (see text, page 366).

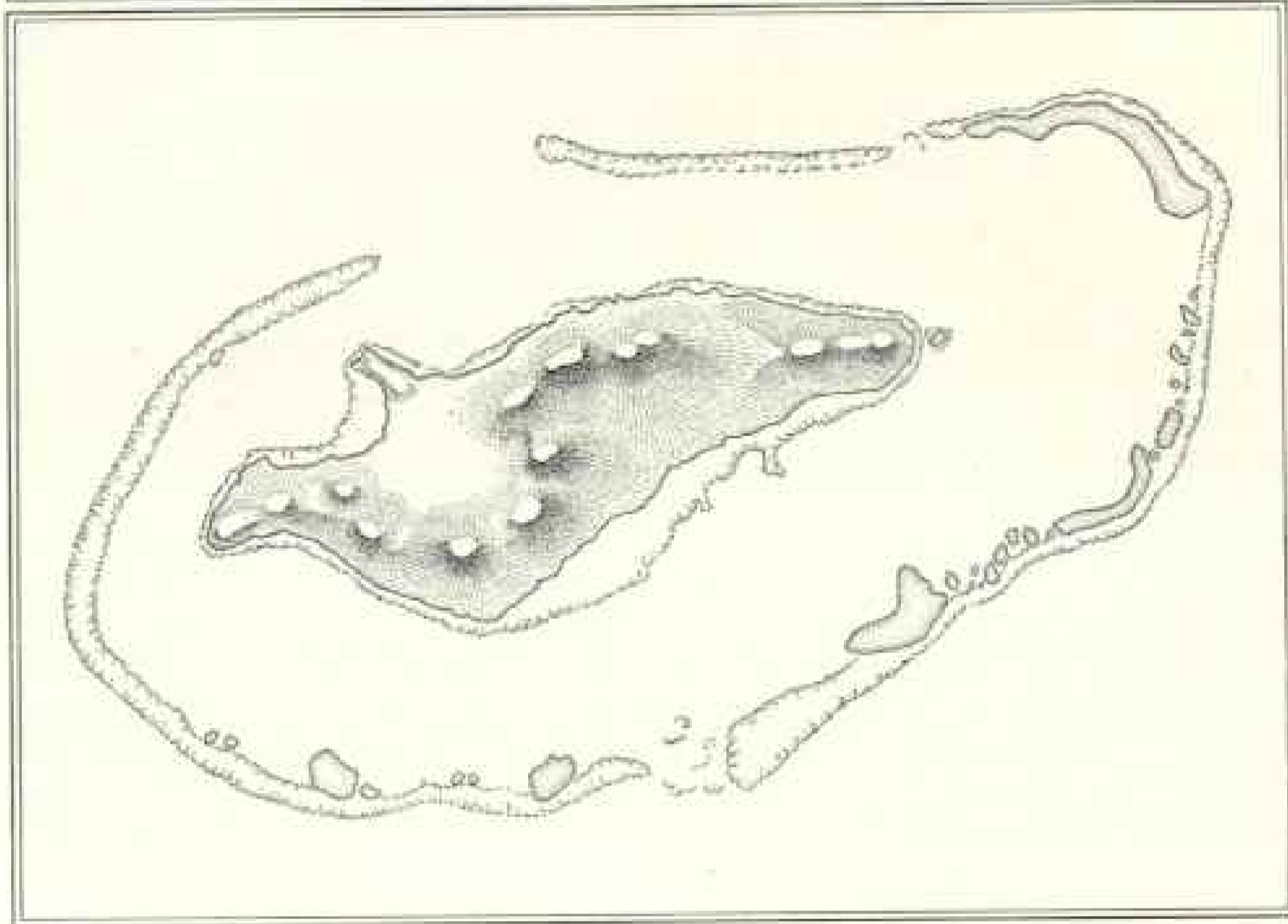
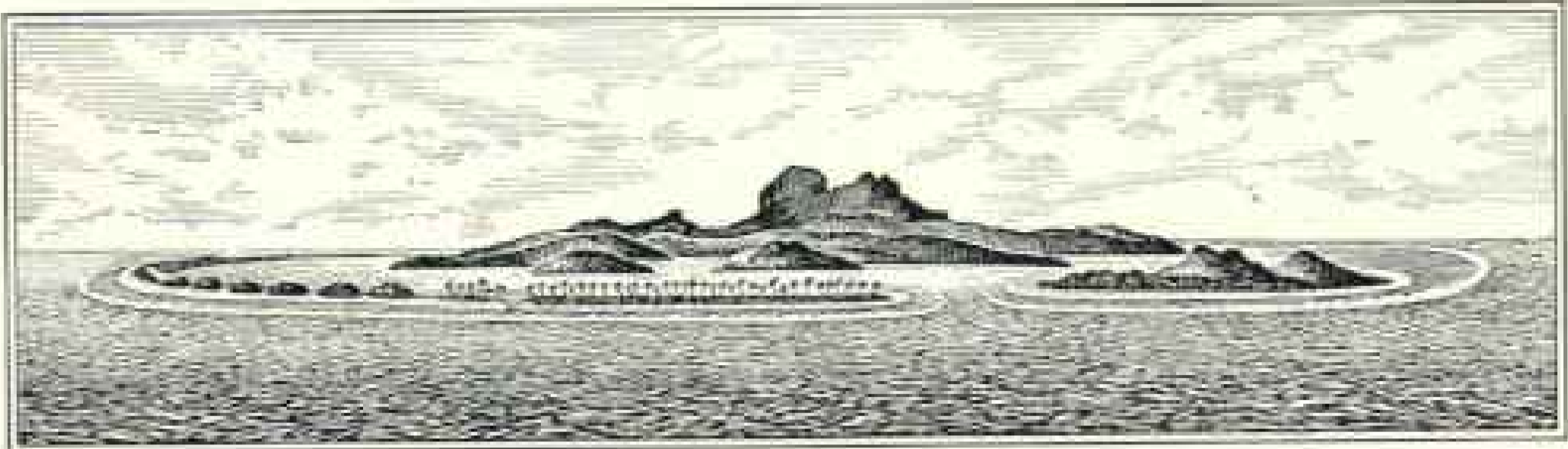


THE "FRANCE" BETWEEN BEETLING CLIFFS OF TAUATA ISLAND, MARQUESAS



THE ISLE OF FATUHIVA, MARQUESAS

In viewing this incredible little island from the sea, who would suspect that for ages its valleys harbored tribes that were sworn and bloodthirsty enemies? One shore was totally tabu, for example, to the hostile inhabitants of the other, beyond the mountains.



Drawn by William E. Belanske

THE TOPOGRAPHY OF A CORAL-RINGED VOLCANIC ISLE: PROFILE OF BOLABOLA, OF THE SOCIETY GROUP, AFTER ALEXANDER AGASSIZ

Below is Vavitaö, of the Austral group, from a Hydrographic Office chart. These represent the type of Polynesian islands which attain the height of beauty and diversity. The drawings show the volcanic central mass, with weathered peaks, the thickly forested and more maturely weathered surrounding hills, the fringing reefs of the main body of land, the lagoon moat, and the inclosing barrier reef. The latter is partly awash, but is studded with higher islets, or *motus*, some of which support a rich growth of coconut palms and strand vegetation (see, also, relief map of Tahiti, page 362).

less thoroughly deprives its leeward neighbor of moisture, leading to considerable geographic diversity within small groups.

The Polynesian flora is pronouncedly Asiatic. The vegetation of the fertile volcanic islands is relatively rich; that of the coral islands scanty. Among the latter the coconut, pandanus, and mangrove

are almost the only conspicuous native trees.

In the high islands the more interesting forms of plant life, including all the species peculiar to the region, begin at an altitude of 1,000 feet or more above the sea. Orchids and ferns are abundant, the latter constituting fully 15 per cent of the total flora.



COFFEE PICKERS OF RAPA.

These young women are not "posing," but were photographed unawares at their task.

At the Society Islands and elsewhere the indigenous valley forest is largely made up of tree ferns which descend well toward sea level in moist valleys, but not much below 1,500 feet on the drier coasts.

FEI, TARO, AND BREADFRUIT ARE IMPORTANT FOOD STAPLES

Features of the hillsides between 3,000 and 5,000 feet are the thickets of the fei, or Polynesian wild banana, an important source of food to-day as in prehistoric times (see page 385).

Another widely distributed staple, which, however, grows in the lowlands and is intensively cultivated, is the taro (see Color Plate IV), distantly related to our jack-in-the-pulpit. Both root and

leaves of this plant are edible after cooking has destroyed its acrid taste.

Still another important starchy food is supplied by the famous breadfruit, of which a score of varieties flourish among the Pacific islands.

The Marquesans of old practiced the laudable custom of planting breadfruit trees upon the birth of children, to insure the subsistence of their descendants. Owing to the dying out of the people and the lack of recent cultivation, the breadfruit is gradually disappearing over wide areas, for the seedless tree cannot compete unassisted with the more vigorous forest flora.

At such a long-settled island as Tahiti, a discerning visitor notes at once that



STRIPLINGS OF RIMITARA ISLAND, AUSTRAL GROUP, BOUND FOR SEA

enormous changes in the vegetation have occurred since the discovery. The transformation is most evident in the coastal plain, but even on the higher slopes many of the native plants have been driven out or upward by such interlopers as the guava and the tropical American lantana.

INTRODUCED PLANT PESTS RESPONSIBLE FOR SOUTH SEA "JUNGLES"

The rapid dissemination of the thorny lantana is due to the agency of another introduced form of life—the Indian starling, or "mina."

Writing of similar conditions in Hawaii, Brigham says: "The lantana (*L. camara*) was cultivated for years in gardens in the Hawaiian Islands, but it showed no tendency to spread until the so-called

mina (*Acridotheres tristis*) was introduced, when the berry became its favorite food and the indigestible seed was scattered everywhere."

Although the Polynesian islands were never lacking in areas of dense and tangled vegetation, it is the introduced plant-pests, rather than native flora, which are responsible for much of the impenetrable "jungle" found to-day.

In the higher, less affected places the steepness of the slope and the crumbling nature of the soil and rock contribute more toward the "inexplorable" conditions than the thickness of the vegetation.

The absence of poisonous plants on most of the islands and the paucity of native edible fruits are further characteristics of the Polynesian flora.



RAT-PROOF STOREHOUSES FOR COEBA IN THE LAGOON OF KAUEHI

On some of the islets of the South Pacific, as at Tahiti, rats and mice were the only indigenous mammals found by white men. They have become a real pest, and the natives have devised water-bound storehouses for their harvested crops.

All the fruits which now abound in the gardens and orchards have been introduced since the time of the early discoverers.

RATS AND MICE WERE FORMERLY ONLY LAND MAMMALS OF POLYNESIA

Throughout the easterly Polynesian groups, rats and mice were the only native land mammals, and the ancestors of some of these may have been first brought into the region by early human migrants. One must go at least as far west as Samoa before even bats become an added element in the mammalian fauna.

Reptiles have only slightly better representation. Except for sea-snakes, there is none of the serpent kind in the long expanse between Samoa and the Galápagos Islands.

The clinging-footed geckos are the commonest of Polynesian reptiles, no less than eight genera occurring, together with half that many genera of the small lizards known as skinks.

Amphibians are practically wanting, for although a single species of toad inhabits Hawaii, we must make a long jump beyond the western limits of the region—to the Fiji and Solomon Islands—before we encounter frogs, salamanders, or another toad.

The birds of the South Sea Islands, both indigenous species and migrants, naturally exemplify a wide variety of marine and terrestrial forms and warrant special consideration in some future number of this magazine.*

MELVILLE ACCUSES REVENGEFUL WHALER OF INTRODUCING MOSQUITOES

The writer knows little about the insect population, except that the number and variety decrease as one progresses in an easterly direction from islands close to Australia and Malaysia.

As would be expected, the insect fauna of the coral Tuamotus is poor indeed when contrasted with that of the luxuriant forests of Melanesian isles. Biting flies are an annoyance at certain of the

* See, also, "Bird Life Among Lava Rock and Coral Sand" (on the Leeward Islands of the Hawaiian Group), by Dr. Alexander Wetmore, in the NATIONAL GEOGRAPHIC MAGAZINE for July, 1925.

Marquesas Islands and elsewhere, while mosquitoes, which doubtless include native species, are among the curses charged against the invading white man.

The tale of the alleged introduction of mosquitoes into Moorea, of the Society Islands, is related by Melville in "Omoo." It is quoted without warrant as to its accuracy:

"Some years previous a whaling captain, touching at an adjoining bay, got into difficulties with its inhabitants, and at last carried his complaint before one of the native tribunals; but receiving no satisfaction, and deeming himself aggrieved, he resolved upon taking signal revenge. One night, he towed a rotten old water-cask ashore, and left it in a neglected taro patch where the ground was warm and moist. Hence the mosquitoes."

FIRST HORSES AND GOATS ASTOUNDED NATIVES

The domestic animals which the primitive Polynesian navigators carried with them on their remarkable wanderings apparently comprised only poultry, dogs, and pigs. These have been so constantly augmented within the historic period that it is now difficult to tell what the original types were like. The modern chickens, for example, which are wild or feral on all the wooded islands, depart widely from the ancestral jungle fowl, and show the characters of many domestic strains.

Early in the last century Bennett noted that the hogs of the Marquesas "still exhibit, in great purity, the gaunt form, acute snout, arched back, high tail, pricked ears, and small deer-like feet, of the original Polynesian breed."

Razor-backed animals are still to be found, but even on small islands remote from the trade routes, one now sees many round, short-legged pigs of highly cultivated appearance.

The early travelers record amusing incidents of the amazement of the islanders when they first saw such monsters as horses and goats, and of their difficulties when they set themselves the Adam's task of naming them.

"To all the exotic quadrupeds," writes Bennett, "the Tahitians apply the generic names of their indigenous kinds, giving to the larger the name of *buua*, or pig, and to



COCONUTS READY TO BE CONVERTED INTO COPRA

The sun-dried meat of the coconut is the chief article of commerce of the South Seas. It is estimated that 1,000 full-size nuts will yield approximately 500 pounds of copra, from which 25 gallons of oil can be obtained.



DRYING COPRA AT MANGAREVA

In addition to its use in soaps and the manufacture of candles, coconut oil is now successfully utilized in the manufacture of oleomargarine.



DRYING COPRA ON TUREIA ISLAND

The coconut crop is not only profitable, but it requires no labor in cultivation and comparatively little effort in harvesting.

the smaller that of *uri*, the dog, or *iore*, the rat. The ox they name *buaa-toro*, or pig with a long neck; the horse, *buaa-horo-fenua*, or pig that runs quickly over the ground; the goat, *buaa-niho*, pig with teeth (horns) on its head. . . . The monkey, of which some examples have been taken to their shores, they call *uri-taata*, the man-dog; and the cat, *iore-pii-fare*, the rat that climbs the house."

ABORIGINAL POLYNESIANS A TALL, HANDSOME PEOPLE

Most of the islands which can strictly be called Polynesian are, or formerly were, inhabited by a rather tall and handsome aboriginal people, representing a mixed race, but very distinct from the dark-skinned and frizzly-haired Australasian natives.

In the literature of Polynesia no branch of knowledge is so obscured by uncertainty and confusion as that concerning the origin, relationships, and migrations

of the people. Their entrance into the oceanic islands has been traced back indefinitely, to about the first century of the Christian era.

Dr. E. S. C. Handy has recently concluded from genealogical evidence that such a remote group of islands as the Marquesas may have been settled in the tenth century.

The racial status of the Polynesians is, if possible, even more complex a subject than that of their tenure of the numerous archipelagoes.

Earlier students not only emphasized their uniformity in culture and language, but also pointed to them as an example of striking uniformity of physical type, extending over a widely varying environment. They are described as being almost identical in appearance from Hawaii to New Zealand and from Samoa to Rapanui (Easter Island).

A great deal of sheer speculation, and no little nonsense, has been written about



A COPIRA-LADEN SLOOP IN THE LAGOON CHANNEL OF MANIHI, TUAMOTU ARCHIPELAGO, WITH THE "FRANCE" IN THE BACKGROUND



BRAIDING HOUSE WALLS FROM PALM FRONDS: KAURHI ISLAND, TUAMOTUS

In addition to the copra of commerce, the coconut palm supplies the South Sea native with one of his chief articles of food, a refreshing drink, an intoxicating beverage, timber and thatch material for his dwelling, water vessels, and fiber for ropes.



A MARQUESAN WOMAN WOOD-CARVER OF HANAVAVE VALLEY, FATUHIVA ISLAND.

this subject. It is only within the last few years that the investigations of trained anthropologists have begun to solve the problems.

The late Dr. Louis R. Sullivan, Associate Curator of Anthropology in the American Museum of Natural History, says of racial types in Polynesia:

"The now rapidly accumulating data on the biology of the inhabitants of the Pacific islands are beginning to indicate clearly that the 'Polynesians' are in no sense to be considered a uniform racial type. The 'Polynesian type' is, in fact, an abstract concept, into the make-up of which have entered the characteristics of several varying physical types.

"Anthropologists have long disagreed on the racial affinities of the Polynesians. Some have classified them as Mongols, others as Caucasians; while still others have maintained that they are a special race. This in itself is strong evidence that the Polynesians are a badly mixed people, for, whenever there has been a general disagreement as to the racial affinities of any group, it has been found almost invariably that the group was non-homogeneous.

"There is much vagueness as to what

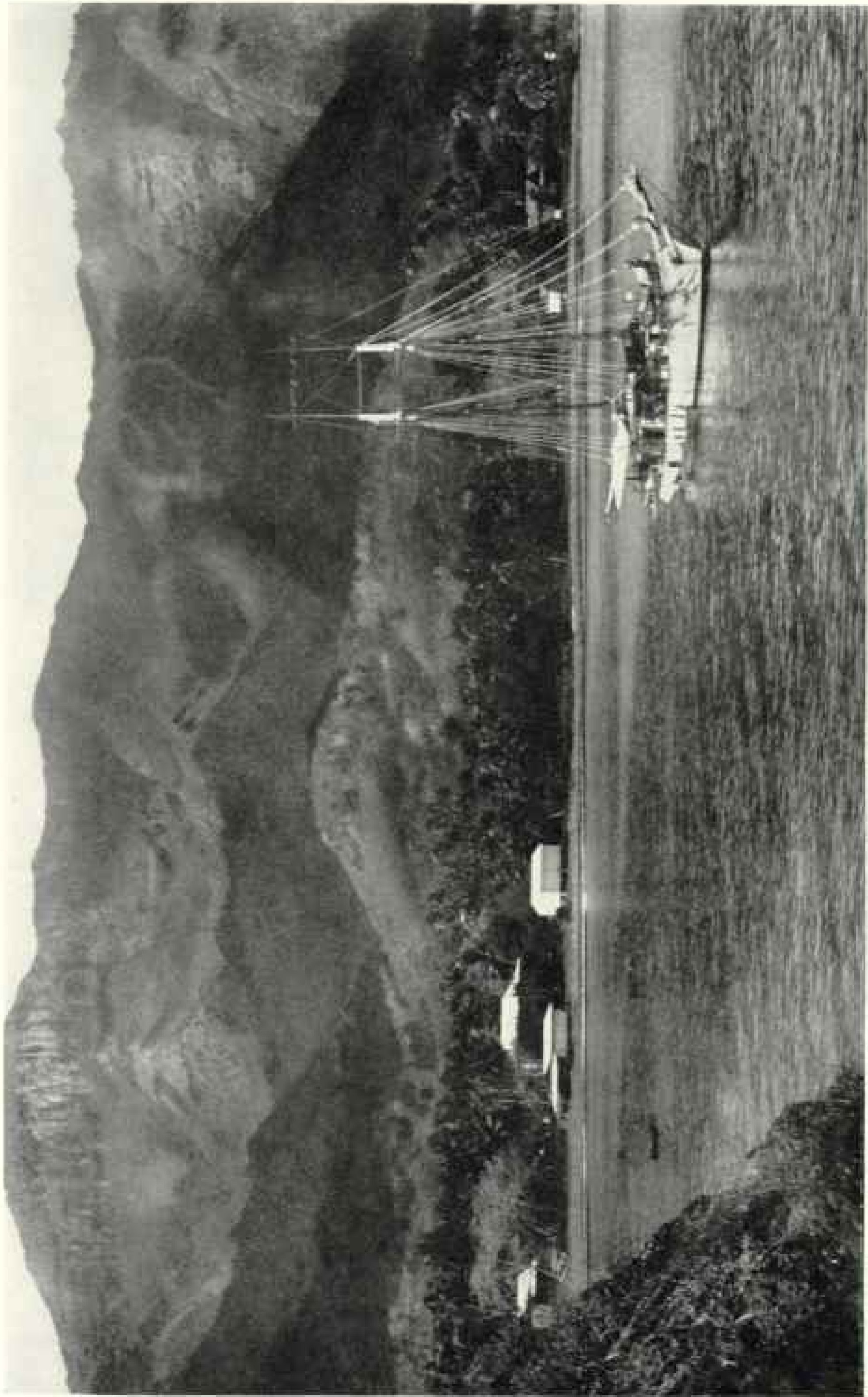
constitutes a Polynesian, but as generally conceived and described, he is a tall and remarkably well proportioned type, with a short head, a high and relatively narrow nose, straight or slightly wavy black hair, and a yellowish brown skin.

"In no part of Polynesia from which we have information does this type make up the entire population at the present time. There is strong evidence that in times past, and not so very long past either, this element was entirely absent, or not present in any appreciable strength."

ISLAND WOMEN IMPRESSED EARLY VOYAGERS AS PARAGONS OF BEAUTY

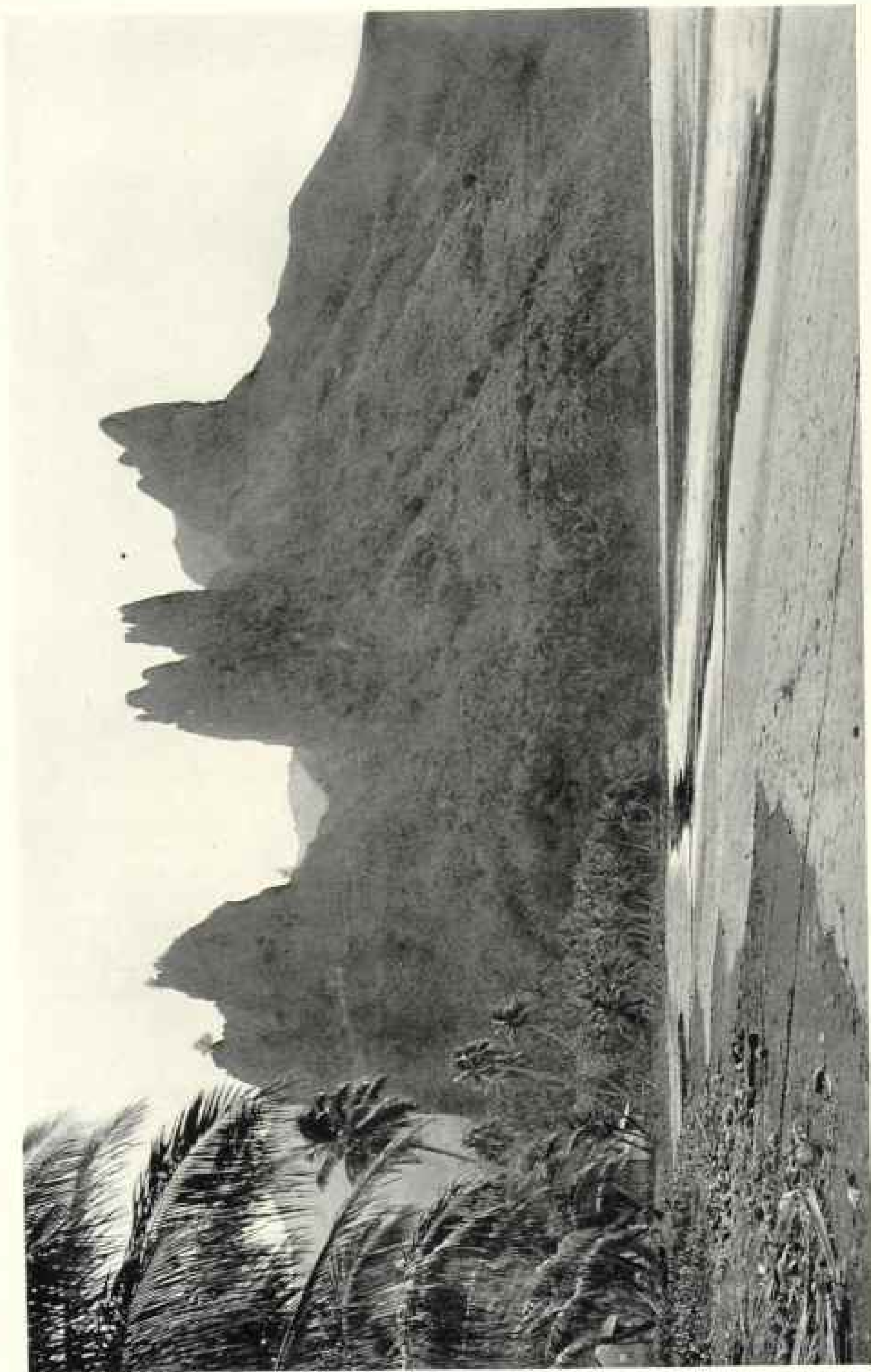
According to Dr. Sullivan, the racial affinity of the Pacific islanders with ourselves is not nearly as close as the romancers assume.

It is undeniable, however, that temperamentally as well as physically the Polynesians seem to share an extraordinary number of traits with people of European stock. The apparent resemblances, together with the charm of their idyllic islands, have combined to endow them with a peculiarly strong attraction for the white men who have come among them during more than two centuries.



A QUIET ANCHORAGE OFF NUKUHIVA ISLAND

Fourteen miles in length and ten miles wide, Nukuhiva is the principal island of the Marquesas group. There are three safe harbors on the southern side.



SPIRES OF NUKUHIVA ISLAND FROM HATHEHU BAY

Stevenson has described the vale and bay of Hathehu as inclosed on three sides by a bowl of mountains, while on the fourth the rampart has been bombarded into ruins. "The interior of this vessel is crowded with lovely and valuable trees—orange, breadfruit, mummy-apple, cocoa, the island chestnut—and for weeds, the pine (pandanus) and the banana. Four perennial streams water and keep it green; and along the dell, first of one, then of another, of these, the road, for a considerable distance, descends into this fortunate valley."



YOUNG TARO AT RAPA

In southern Polynesia the starchy root of this water-growing plant replaces the equatorial breadfruit as the basis of poi.

As regards the famed personal attractiveness of the Polynesian women, due allowance must, of course, be made for an almost entirely subjective factor in the early records—the enthusiastic state of mind of European or American seafarers who had been cooped up with companions of only their own sex during voyages many months in length.

The island women would naturally seem paragons of beauty, moreover, to voyagers who had touched *en route* at the Strait of Magellan or at primitive African or Australian havens.

The relative leisure in which most of the women spent their lives, their distinctly "feminine" natures as judged by European standards, and their locally broad and independent views concerning the distribution of their favors, all had effect in creating an impression which has grown into a fetish.

Native ideas of sexual morality were, as a matter of fact, by no means uniform; a reader of Cook, or of any of the other early navigators, will find abundant evidence that originally the freedom observed at certain groups of islands was

balanced by rigid ideas of chastity at others.

From Tahiti, and still more from the Marquesas, the tradition of beauty coupled with almost total lack of restriction seems to have pervaded the world. The propaganda, if it may be so called, dates back to Quiros and has been carried on by Cook, Marchand, Krusenstern, Porter, and a host of later travelers, as well as, indirectly, by missionaries and others who could regard no part of the condition without abhorrence.

And yet not one of the early writers gained an inkling of the real significance of native customs which departed from the ethics or the social code of Europe!

The whalers who visited the Marquesas mainly to take part in debauchery, returned home filled with pious condemnation. More godly sojourners attributed the whole state of affairs entirely to the zeal of the devil.

Krusenstern explains the depravity of young Marquesan women as due to the cupidity of the men of their families, who sought by vicarious means to obtain iron or other useful material from the white



RAPA GIRLS BOUND FOR THE TARO FIELDS

At the right is the end of the white church of Ahurei Bay. The members of the expedition presented a case of kerosene for the mariner's light on this church, and were rewarded by a deluge of gifts from the hospitable islanders (see text, page 425).



MATRONS OF RAPA POUNDING TARO ROOTS, AS THE FIRST STAGE IN THE MANUFACTURE OF POIPOI

The natives of Rapa, as shown by both physical characteristics and their dialect of the Polynesian language, are more akin to the primitive inhabitants of the New Zealand region than to those of the Society Islands.



A DAMSEL OF RAPA WITH A BURDEN OF TARO ROOTS, WHICH SHE HAS CARRIED A MILE ACROSS THE MOUNTAINOUS RIDGES

men. Stevenson, with even greater error, regarded the misdeeds which he records as chiefly a new development resulting from recent degeneration of the inhabitants.

WHITE MAN BROUGHT A PANDORA'S BOX OF TROUBLE TO MARQUESANS

It has remained for modern ethnologists, working without mental bias among the sad remnant of the Marquesans, to demonstrate that the native customs can not justly be summed up and dismissed as mere depravity.

The obvious answer to such a charge is that the ancient code worked too well—that it enabled the inhabitants of the islands to develop through long centuries

into a splendid type of savage, who exhibited in marked degree virtues which are a necessary requisite of happy, successful family and tribal existence.

Marriage among the Marquesans, for example, was characterized by quite as much loyalty and affection as among any other primitive people, even though (or perhaps because) the wedded state came rather as an end than as a beginning in the intimate relationships of men and women.

The manner of life, whatever its abstract ethical status, was eminently practical during the period of isolation. With the coming of the white man, however, a Pandora's box of predatory and destructive influences was opened, and the Mar-



A LAD OF RAPA IN HIS TARO-LADEN OUTRIGGER

In a region of amphibious people, the men of Rapa are particularly noted as boatmen (see text, page 425). Of old they were favored as recruits for the Yankee whaling vessels, with the result that to-day there is a preponderance of women in this island's population.

quesans were wiped out before they had received much encouragement to alter their ways.

Readers who are familiar with the sorely misinterpreted record of Polynesian vices owe it to themselves to round out their information by referring to Dr. Handy's admirable study of "The Native Culture in the Marquesas."

A LOYAL, GENEROUS, FRIENDLY, AND IMAGINATIVE PEOPLE

Dr. Handy stresses the democracy and truthfulness of the Marquesans, and attributes to them "loyalty, generosity, and gratitude in friendly personal relationship; a keen appreciation of individual integrity expressed in personal independence with clear conceptions of justice and honor; high refinements, subtleties, and graces in social and æsthetic expression; and capacity for rational and imaginative thought belonging to a very high order of intelligence."

Of such kind were the Pacific people who were among the first to melt away after ships had moored in their roadsteads. "The tribe of Hapaa," wrote Stevenson, "is said to have numbered some 400, when the smallpox came and

reduced them by one-fourth. Six months later a woman developed tubercular consumption; and the disease spread like a fire about the valley, and in less than a year two survivors, a man and a woman, fled from that new-created solitude."

MARQUESANS ARE GRADUALLY DISAPPEARING

To-day the inhabitants of the once populous Marquesas number about 1,800, including a handful of whites and many Chinese mixed-bloods.*

The story is characteristic, for, while the Samoans and certain other islanders have fared better, occasional pestilences, to which they are in nowise inured, still carry away large proportions of the population.

From the days of discovery the Polynesians have been subject to every disintegrating evil. The altruism of a few pioneer missionaries has been unable permanently to stay them.

* See, also, "A Vanishing People of the South Seas: The Tragic Fate of the Marquesan Cannibals, Noted for Their Warlike Courage and Physical Beauty," by John W. Church, in the NATIONAL GEOGRAPHIC MAGAZINE for October, 1919.



TUMANU, AN OLD WARRIOR OF TUREIA ISLAND,
TUAMOTU GROUP

His canoe, on the beach of the lagoon, is joined with sennit in the ancient Polynesian manner. The canoes of the Tuamotians were of such superior make in the old days that the primitive Tahitians dignified them with the name of *fahi*, a term applied only to their own war canoes and to the ships of the white men.

One of the most successful evangelical ventures in the South Seas was that of the early British mission at the Society Islands.

Ellis's record of the years of devoted labor without visible sign of response, and then of the sudden tumbling of the pagan régime as if by divine fiat, makes dramatic reading even for one not interested in the special cause. Whole families, communities, and tribes at Tahiti and the neighboring islands suddenly expressed a desire to become Christian. Within a matter of days or weeks, the old order

topped like a house of cards.

The temperament of the Polynesians seems to be well adapted to acceptance of a literal, one might say a primitive, type of Christianity.

At Pitcairn Island, and in a very few other localities where extraneous influences have not yet obliterated it, the simple and fervent religious life, naïve and unashamed, recalls descriptions of the church in patriarchal times.

THE WHITNEY SOUTH SEA EXPEDITION

The preceding brief account of the history of discovery in Polynesia, and of the profound changes which are still taking place, points to the importance of further scientific investigation.

Opportunities now existing must be seized within the span of the present generation or they will slip away irrevocably. This is the reason for the intensive activity of the Bishop Museum, of Honolulu, in many branches of Pacific re-

search, as well as for the contemporary work of the American Museum of Natural History.

Five years ago, Mr. Harry Payne Whitney agreed to support for the American Museum a notable project in the Pacific. The choice of a leader in the field was fixed by virtue of former accomplishments upon Mr. Rollo H. Beck, a veteran exploring naturalist who had previously served on expeditions in South American waters and elsewhere. Thus the Whitney South Sea Expedition was launched.

After a reconnaissance of Tahiti and of

several adjacent parts of Polynesia, Mr. Beck purchased the auxiliary schooner *France*, a step which made the expedition independent of sailing schedules and trade routes.

The *France* has since visited more than 100 islands of the Society, Marquesas, Tuamotu, Austral, Cook, Samoan, and Fiji groups.

Collection and study of the birds of the South Seas have been the primary objects (see text, page 394), but many other animals and plant specimens have also been obtained. Photographs illustrating the environment, the animal life, and the appearance and customs of the human inhabitants, have been taken. Especially valuable are the camera's records of those localities—regrettably numerous—in which the state of the fauna and of the people is still altering materially in response to external transformations.

Some idea of the extraordinary industrial activity occasionally undertaken in even the most out-of-the-way islands may be gained from a description of a pearl-diving season.

AMONG THE PEARL DIVERS

The opening of this great event in the French colonies comes in July. Since diving is not permitted during successive years at the same island, all gear, stocks of merchandise, and building material must be taken to new islands in annual rotation—no small undertaking when it is remembered that a coral atoll which normally supports perhaps 200 persons,



A MAN OF MOOREA, SOCIETY ISLANDS

This stalwart native is carrying two bunches of fei, or mountain bananas, and his fighting cock. Heavy loads of fei are carried down many miles from the upland forests.

may become during the diving season the abiding place of thousands.

The following quotation is from a recent press account:

"This year the open island is Hikueru, one of the Tuamotus, 400 miles to the eastward of Tahiti. Already this lonely atoll is taking on a metropolitan appearance. The profits to be gained come not only from the pearl-shell won from the lagoon, but from the sale of all kinds of wares dear to the native heart and from the providing of entertainment to refresh the weary diver and his women folk after the labors of the day are over.

"The average native diver wins a good



A DANCING GIRL OF TAKARUA

The Manchester cotton prints have long since replaced the native *tapa*, or bark cloth.

sum from the bottom of the lagoon and much of it goes on expensive silk dresses for his wife and daughters, on the delectable canned goods of the *popaa* (white man) and on the movies.

"This year there are to be, it is said, three moving picture theaters, any number of motor cars for hire—the length of the roadway in Hikuera is less than a half mile, but that apparently makes no difference—a brass band, and, it is reported, electric lights along the Great White Way of this little ring of coral sand.

"Late advices indicate that the season this year at Hikuera will be the most active in many years. It is estimated there will be at least 1,000 divers at the island. These, together with their families and the traders with their staffs, will swell the population of the island during the season to nearly 4,000."

The effects of such concentration upon the breeding birds and other forms of indigenous life are easy to imagine!

After the preliminary field work at Tahiti, in 1920-21, Mr. Beck and his companions sailed northward to Christmas



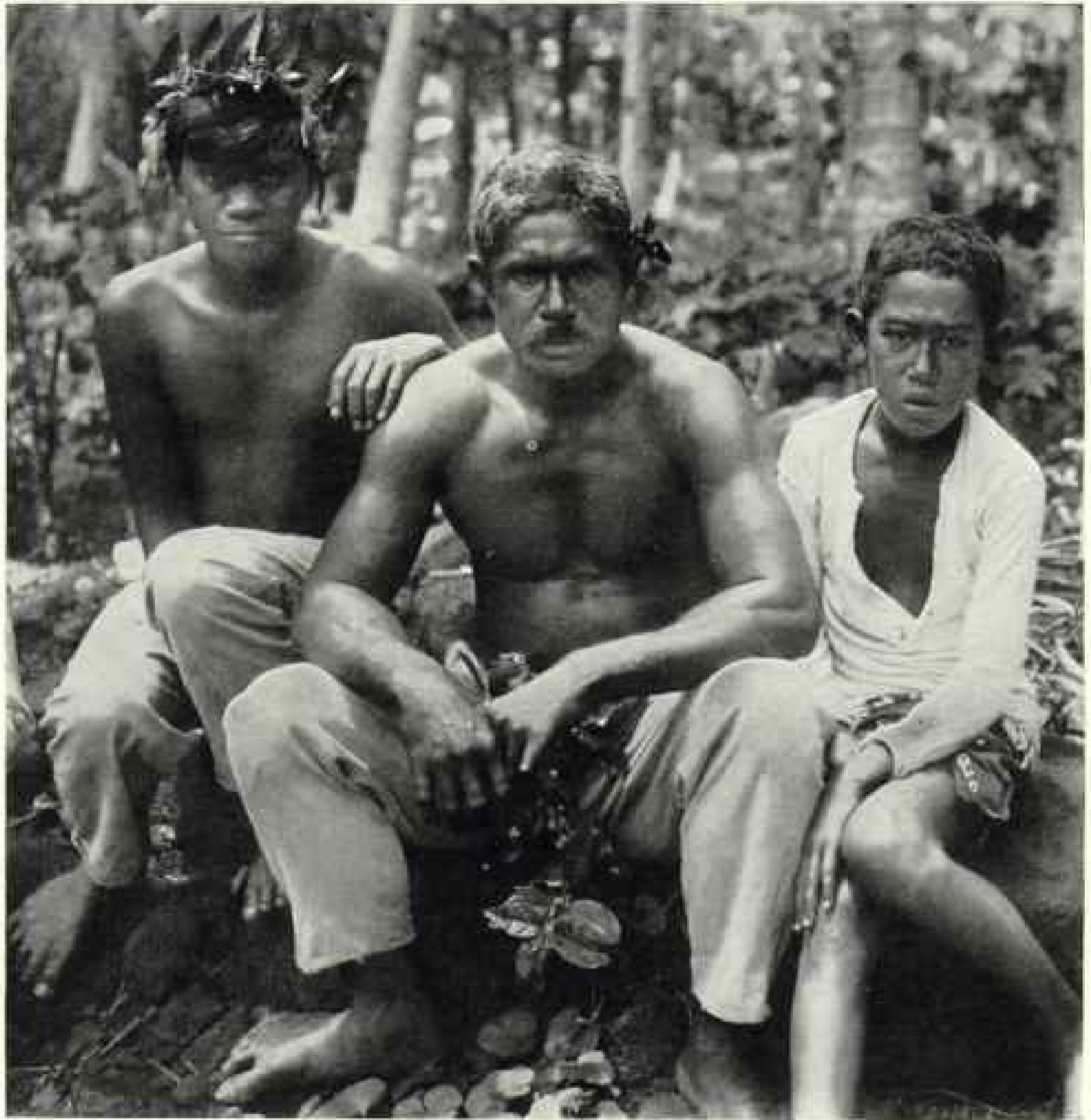
THE CALL TO SUNDAY SCHOOL, FAHITE ISLAND, TUAMOTU GROUP

A cotton jacket over the pareu (see Color Plate VI) and a straw hat make up this lad's Sabbath attire.



YOUTHFUL FISHERMEN OF RURUTU ISLAND, AUSTRAL GROUP

The children of Polynesia have always been treated with great tenderness. The early missionaries, who looked at nearly every custom askance, recognized the primitive islands as a children's paradise. Destruction of new-born infants was, to be sure, extensively practiced in the Society Islands and elsewhere, but this evil had its root in overpopulation and periodical food shortage.



FATHER AND SONS ON THE MARQUESAN ISLAND OF TAUATA

The Marquesas Archipelago has long been famed for the fine physique of its people. The wearing of wreaths, and of flowers in the ears, is a widespread custom in Polynesia.

Island, where Père Rougier operates great coconut plantations.

Then the *France* made the first of three visits to the romantic Marquesas. Then far southward among the Austral Islands, removed somewhat from the blight of civilization, and on to lonely Rapa, the "Uttermost Thule" of the Pacific, renowned for peerless sailors and interminable hospitality (see pages 419-425).

Next, eastward to isolated Pitcairn, where the descendants of Commodore Bligh's seamen, who fled into oblivion after the notorious *Bounty* mutiny of 1790, were found happy, law-abiding, and

devout, suffering not at all for the stormy sins of the fathers (see, also, page 392).

After reaching her easternmost goal at Ducie Island, the *France* turned again toward Tahiti by way of the thickly strewn Tuamotus, sending ashore her boats at every rock or palm-green strand.

FOLLOWING THE "FRANCE"

While we cannot keep in the wake of the *France* within the brief scope of this article, we can skip about among the Polynesian isles by drawing upon the voluminous notes of Mr. Beck and his comrades, Messrs. Ernest H. Quayle and

José G. Correia, recording some of their impressions and comparing these with experiences of earlier pioneers.

Upon landing in Tahiti, the members of the expedition arranged with two native guides for a trip into the interior. On the morning of October 11, they left Papeete by motor, a pleasant ten-mile ride along the western coast of the island, to the mouth of the Punarua River, where the guides were to join them.

Minas were calling loudly from the tops of the taller trees; terns were sailing over the smooth lagoon, and migrant shore birds whistling on the beach; while the steady boom of breakers on the barrier reef offshore was mingled with the rustling of near-by coconut fronds.

Interspersed with neglected palm groves were little patches of finely cultivated ground where Chinese gardeners, the inheritors of Polynesia, raised in rigidly straight rows the various vegetables for which they found a market in Papeete.

When the car reached the Punarua River, the luggage was soon transferred into four sacks which were swung on poles borne on the stalwart shoulders of the islanders. The latter then led the way along the trail which wound into the gorge of the Punarua. At its mouth this canyon was half a mile in width, but it narrowed rapidly to 100 yards, with precipitous walls on either side.

Three miles from the entrance the party came upon a small tract where an industrious native had cleared off a bit of



LITTLE MAIDENS OF TAUATA ISLAND

The sweet Marquesan smile has captivated all visitors from the early days of Pacific discovery.

the steep, rocky hillside, and had planted it with papaya trees which were laden with green fruit.

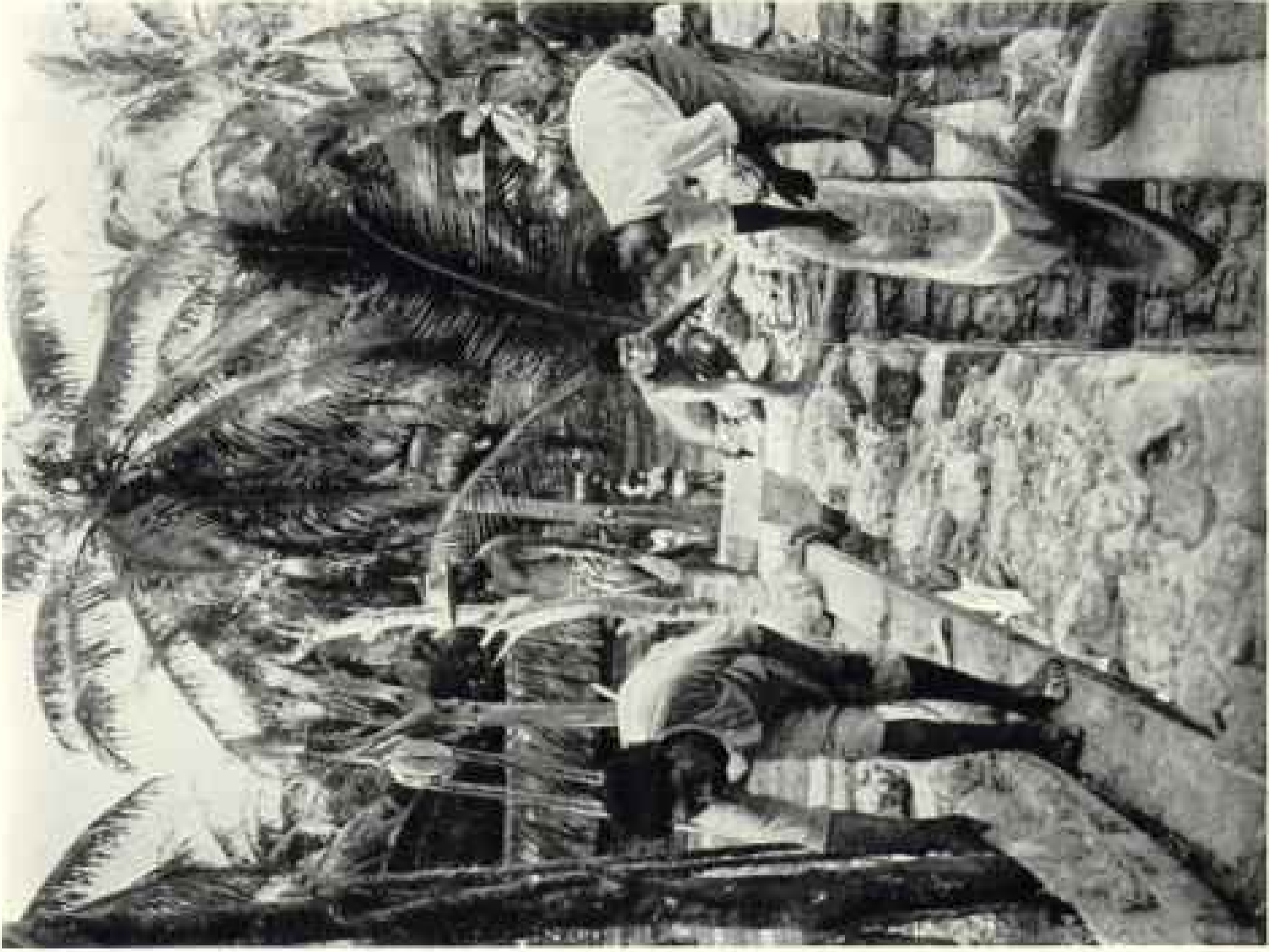
Wading back and forth across the stream as one side or the other seemed to offer the smoothest trail, the travelers after three hours turned out of the main gorge and picked their way along a rivulet that trickled down between yet narrower walls. Stopping by a shady pool, Tafia, the head guide, dropped his burden and pointed up the left cliff to indicate the route.

A faint trail led skyward, so, after a leisurely lunch, they began the thousand-foot climb, finally surmounting the precipice near a group of welcome coconut



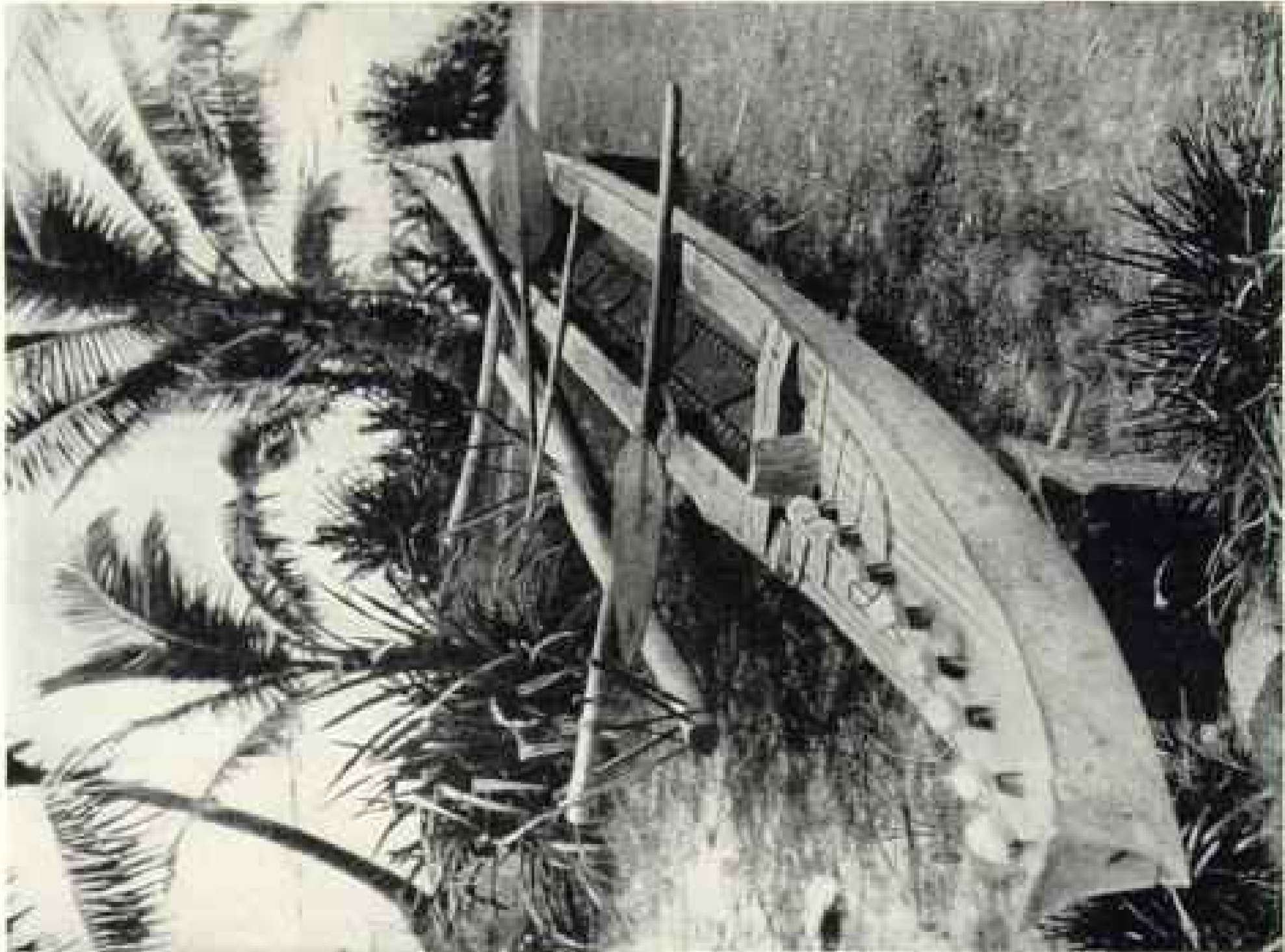
COOLIES AT WORK IN THE PHOSPHATE BEDS OF MAKATEA

The richest of the Pacific's many phosphate islands is Nauru (see the NATIONAL GEOGRAPHIC MAGAZINE for December, 1921).

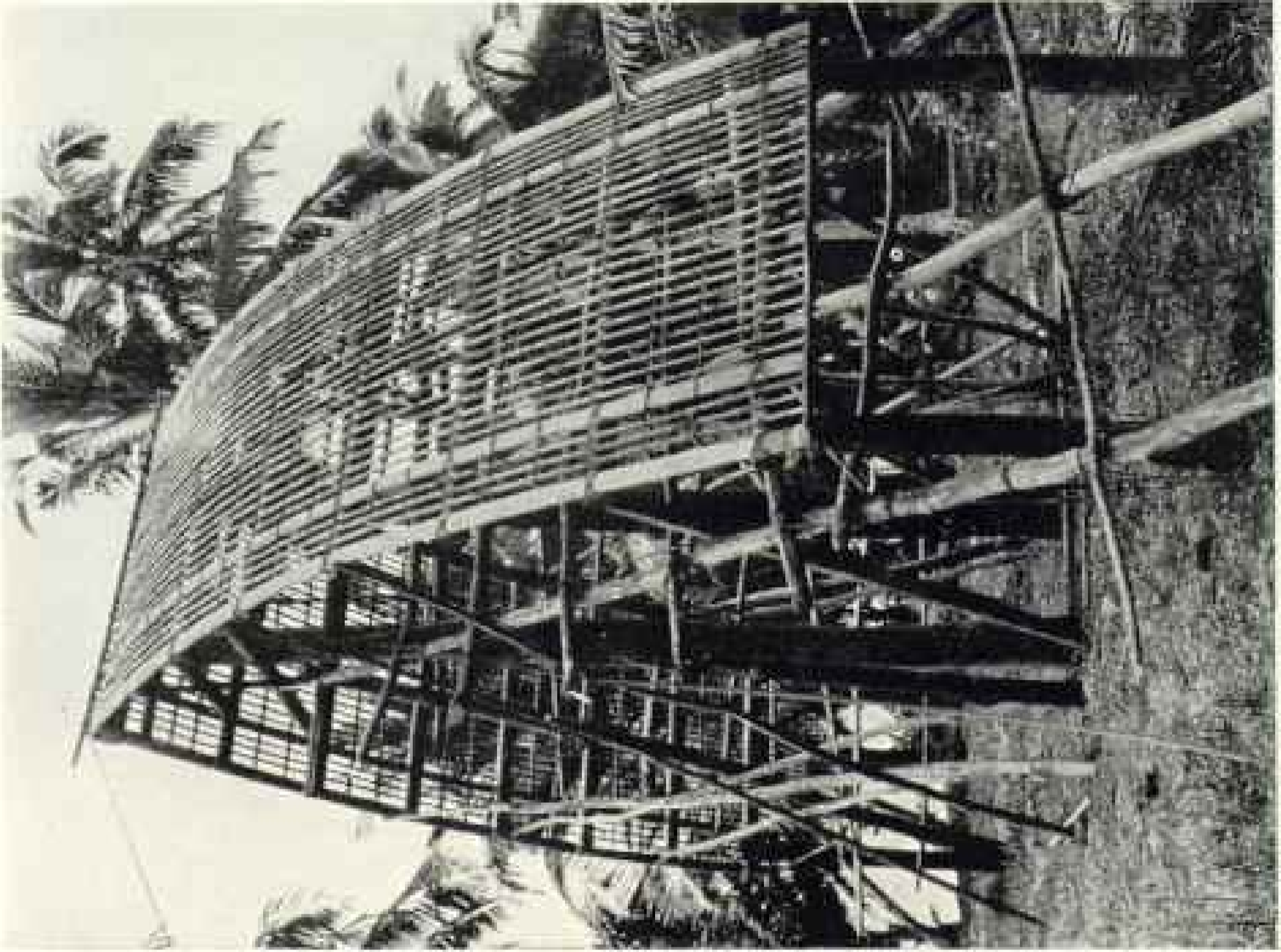


POLYNESIAN MASONS

They are rebuilding with coral blocks the wall of the church on Tureia Island. The mortar trenches suggest small canoes.



A FISHING CANOE OF AMERICAN SAMOA, WITH SHELLS
DECORATING PROW AND STERN



A STAGE IN THE ERECTION OF A SAMOAN RESIDENCE,
ISLAND OF OLOSENGA



MEN OF PITCAIRN, AHOV!

The male population of one of the most romantic spots on earth is seen coming out to visit the *France*. The treasured whaleboat could have come from nowhere on earth but Buzzards Bay.



A RESIDENCE OF PITCAIRN, THE VERITABLE PROSPERO'S ISLE OF THE "BOUNTY" MUTINEERS

Pitcairn was discovered by Carteret on July 2, 1767, but the foundation of its fame dates from Bligh's famous voyage in the *Bounty*, 20 years later. The mutiny is one of the most blood-stirring and most often told romances of the sea. The present inhabitants are descendants of the mutineers. They are of mixed blood, but in appearance the Caucasian features predominate. They are notable in Polynesia for virtue, piety, supreme contentment with their island home, and for a simple, patriarchal type of Christianity.

palms. After a draught of fresh coconut milk and a few minutes' rest, they started forward again through the gloomy forest, emerging at a grassy depression where a few golden plovers, recent arrivals from far-off Alaska, were resting about the borders of a small pond.

A mile beyond the pond they halted beside a brook for the night. The scarcity of birds during the first day was attributed by Mr. Beck to the rain which had fallen in frequent showers.

A PIG IS COOKED IN TAHITIAN STYLE

The next morning was bright and hot, so it was decided to hunt for the day in the vicinity of camp.

Tafia accompanied Mr. and Mrs. Beck toward the foot of towering cliffs which bounded the plateau to the eastward. Before reaching the base of the cliffs, they began to note roughly built stone walls which supported terraces of earth against the hillside. Dozens of these structures were observed during the course of the day.

An occasional cooing dove or chattering kingfisher was heard though seldom seen in the tall trees which reared above the lower tangle of brush. Game seemed scarce, but while the naturalists were enjoying some juicy oranges at the base of the tree out of which the guide had dropped them, a wild pig was attracted to the spot by the thud of falling fruit. Hastily slipping a heavy charge into his fowling piece, Mr. Beck added the unlucky porker to the larder.

Tafia, all smiles, at once began to break up twigs and branches, and, after piling them carefully together, fired the heap. Next he inclosed the flames with chunks of lava and, as the fire began to burn well, piled on still more rocks. Within ten minutes conditions seemed to be to his liking, so he took the pig and pulled it rhythmically back and forth over the heated stones.

In a short time clear patches appeared on the scratched surface; a little more rubbing, and a few deft pulls with his fingers under the legs and about the ears, completed the depilating process. It was astonishing to watch a dirty, bristly, brindle pig become a clean, smooth, white-skinned carcass.



THE SCHOONER "FRANCE" LUFFING TO PICK UP THE COLLECTOR OF SEA BIRDS

Within less than half an hour from the time the victim had walked to its fate, Tafia was carrying the bristleless body campward.

After this exhibition of Tafia's skill, he was instructed to cook the animal in the ancestral Tahitian manner.

The meat was accordingly cut into convenient pieces and thoroughly washed in the brook. Then it was placed on a thick layer of green leaves above a pile of rocks which had been heating for some time. Another layer of leaves was laid over the meat, and the whole covered with stones.

CATS ACCUSED OF DESTROYING BIRDS OF TAHITI

When supper-time came the appetizing food was removed. After the choicest parts had been eaten, the remainder was cut from the bones, and rammed into three large, green bamboo segments. These were laid on the still hot stones, covered once more with leaves, and taken out next morning, deliciously cooked, to furnish all with meat rations for the next three days.

Thus, by employing the principle of the fireless cooker, do the Polynesians pre-



A HUNGRY CHICK; NESTLING MAN-OF-WAR BIRD OF MARIA ISLAND; TUAMOTUS

pare dishes which for economy and tooth-someness cannot be excelled.

The next camp, built against a great overhanging rock and well roofed with the leaves of a mountain tuber, was not altogether proof against the tropical downpour that assailed the party during the first night beneath it.

First in one place and then in another, the dripping wetness would strike through; a shift of position would be made, and then a wait for the next leak.

The little brook, 20 feet below, which had been dropping in tiny rapids and cascades from one shallow pool to another, changed its placid murmur to a lusty rumble as it rolled stones along its bed and carried down the heavy volume of

water from the reeking watershed.

A sunny morning dried the moisture on the foliage, but the search for birds was again disappointing. Two or three Tahitian crag-swallows flying back and forth in the dark shade of orange trees, a pair of noisy kingfishers pursuing insects instead of perching above the water with an eye for funny prey, and companies of the boisterous, introduced minas, comprised the species seen.

The negligible number of native birds in so seemingly favorable an environment was new in Mr. Beck's experience. One could hardly believe that the rats, which are such a pest in the lower parts of the island, had destroyed the nests of the native birds while permitting the imported minas and weaver-finches to increase.

It seems more likely that cats, running wild for a century, may have exterminated several of the ground-living species which were formerly found in these mountains.

As the guides had assured Mr. Beck that they knew where shearwaters nested close under the cliffs of the highest peaks, the journey inland and upward was continued. The trail led past well laden orange and lemon trees, beneath which were thick tracks of the wild hogs.

Camp was made near the famous Diadem (see page 359), and here, at an altitude of 2,700 feet, the roof was shingled with the great leaves of the fei, the plants of which grew by hundreds all about.

Few ripe clusters of these wild bananas were observed, for native carriers had



A RESTING MAN-OF-WAR BIRD OF DUCIE ISLAND.



DIVESTING A TROPIC BIRD OF ITS DECORATIVE RED PLUMES WHILE IT STICKS TIGHT TO ITS EGG

This bird can neither perch nor stand up. It nests on the ground and must shuffle away on its breast before taking flight. The long, red tail plumes of this tireless flier (see Color Plate XII) have always been prized ornaments of the South Sea people. Islets where the birds nested in good-sized communities were formerly monopolized by Polynesian rulers as sources of wealth.



A LARGE MOUTHFUL.

A Tuamotuan purple-crowned fruit pigeon accepting a berry from the captain of the *France*.

recently visited the groves and had trundled the weighty bunches down a 10-mile trail to the coast, where they could be marketed at about 10 francs apiece.

A VAST PLATFORM WHERE CEREMONIAL
DANCES WERE ONCE HELD

A two days' hunt in nearly unscalable mountain country, where the rope was more than once necessary for the safety of the climbers, revealed only a few deserted burrows of the hoped-for ocean birds.

Leaving the camp near the Diadem, they hiked down a sharp ridge, penetrating a canyon which opened into the main watercourse from Mont Orohena, highest peak of the Society Islands.

Following down the brawling stream, they soon reached a rockbound waterfall, and it became necessary to scale the straight bank and scramble over the spur that descended between converging rivers.

Atop the spur was a vast square platform of hewn rock, formerly the scene of ceremonial dances and other impressive pagan rites. A more inaccessible site, under present-day conditions, would be hard to imagine, but when the coast below teemed with human inhabitants it may have been otherwise.

A few more days of camping and hunting among the thick ferns and bamboo brakes of the lower upland basins, and the party returned to the mouth of the Puna-ruu. To ornithologists the trip was not



MAN-OF-WAR BIRDS PERCHED HIGH ABOVE THE SHIMMERING PACIFIC: EIAO ISLAND, MARQUESAS

During the mating season the male man-of-war, or frigate, bird wears an inflatable sack of flame-red at his throat, a sort of toy balloon, with which he lures the female bird to the nesting site which he has chosen. (See, also, "Bird Life Among Lava Rock and Coral Sand," in the NATIONAL GEOGRAPHIC MAGAZINE for July, 1925.)



RED-FOOTED BOOBIES AND THEIR NESTS: HATUTU ISLAND, MARQUESAS

Two members of the booby family, the brown- and the blue-faced, lay their eggs on the ground, but the red-footed species, like the man-of-war bird, nests in trees.

highly satisfactory, but to those who appreciate the incomparable mountain loveliness of "la Suisse Tahitienne" it left nothing to be desired,

EXPLORING A SOUTH PACIFIC ISLAND IN A FORD

In January, 1921, Messrs. Beck and Quayle made the voyage to Christmas Island, north of the Equator, where, in sharp contrast with the Tahitian field work, they conducted their hunting in a Ford!

The first view of Christmas Island was of two or three distant sand hills. It was obtained several hours after the vessel should have been at the center of the island, if the skipper's morning observations were to be credited! Discounting the astronomical calculations, they had been sailing steadily westward, knowing by the constantly increasing numbers of seabirds that they were heading on the right course.

Just before dark the mate climbed to the masthead and reported land both dead



THE PRECARIOUS NEST OF A FAIRY TERN

The most delicately beautiful of all sea birds (see illustration, page 401) deposits its single egg on the rough bark of a horizontal limb, upon a broken stub or even on the shaft of a palm frond.



AFTER SCHOOL HOURS AT MANTHI

The native boys used the *France* and its hawsers as a gymnasium.



SOOTY TERNS ABOVE THE GREAT BREEDING COLONY OF KAUEHI ISLAND, TUAMOTUS

These birds (*Sterna fuscata*), familiarly called "widnawakes," are so numerous that Yankee whalers, who were accustomed to gather the eggs for food, reckoned the population by "acreage" rather than by numbers, and so recorded the extent of the colonies in their log books.



A FAIRY TERN, THE LOVELLIEST OF SEA BIRDS

The adults of this species are snow white, with dark bills and feet and
 extraordinarily large eyes.



PORTRAIT OF A RED-FOOTED BOOBY SHELTERING HER CHICKS

This is a long-tailed, perching species and the only Pacific booby which
 builds its nest in trees.

ahead and on the starboard bow. They then realized that they were off the treacherous bight on the eastern coast of the island.

On account of a strong ocean current, a sailing vessel in a light breeze has little chance of beating out of this pocket if she has entered more than a short distance. So sails were trimmed, the motor started, and the schooner stood offshore until the approach of daylight.

Later in the day the *France* moored at the spot where Captain Cook had first dropped anchor on Christmas day, 1777.

At six o'clock on the following morning the naturalists were rowed ashore and found a dark-skinned chauffeur awaiting their pleasure at the wharf.

To watch boobies, man-of-war birds, several species of terns, and many other birds from the breezy front seat of a Ford, which had neither a top to obstruct the vision nor a windshield to block camera or gun, was hardly to be anticipated when starting for remote and rarely visited islands in the South Seas (p. 364).

A short stretch of elevated coral rock near the settlement of the copra workers had required paving, and the readiest material had evidently been coconut fronds. At low speed, the Ford negotiated this strip very handily. Thereafter it proved good going for 20 or more miles, although at one or two crossings over narrow isthmuses the bristling coral looked dangerous for tires.

For a few miles after leaving "London," the port of Christmas Island, the road wound through endless series of coconut groves, and the skill of the Polynesian driver in missing most of the fallen nuts which dotted the roadway gave constant cause for wonder.

Whenever the wheels struck a glancing blow, the nuts shot to one side—and how the land crabs scurried! At the approach of the machine many of these crustaceans would dodge into holes, but occasionally one would stand ground and raise threatening claws.

BIRDS WITH "TOY-BALLOON" THROATS

In low bushes along the way, sometimes only a foot or two above the ground, the man-of-war birds were occupying loosely built nests. Three or four of the red-

pouched males were often seen sitting together on a shrub, with wings extended and heads pointed skyward toward some soaring female. Their distended throat sacs looked like toy balloons, and when such birds were driven from their perches, they seemed to find difficulty in carrying the encumbrance, and would travel on an uneven keel until the sac collapsed.

Male birds appeared greatly to outnumber females. Whenever one of either sex was frightened from its nest, a strange male was always likely to swoop down and settle contentedly on the egg, whereupon the presumably rightful owner would make vicious but vain lunges at the intruder.

CHRISTMAS ISLAND HAS UNIQUE WARBLER

At many of the islets or motus in the great lagoon of Christmas Island, large breeding colonies of petrels, tropic birds, terns of seven species, and other rare water birds were found. The only land bird of the island—the *kokikoko*—a little gray warbler found nowhere else in the world, and not previously represented by specimens in any museum, was also collected.

The sooty terns of Christmas Island range regularly 150 miles out to sea from their nesting colonies. The island, which looms but a few feet above sea level, can hardly be visible to the birds at a greater distance than 20 miles. Although many do their fishing inside this range, flocks of from 10 to 300 go several times farther. That the darkness of night has no perceptible effect upon their coming and going, is evidenced by their creaking cries, which one can hear as they pass a ship.

Even the combination of darkness, dense fog, and drizzly rain does not prevent sea birds from finding their nests, as is proved by the fact that several kinds of petrels select the thick forests of high islands in which to dig their burrows, and then depart from and return to them only at night.

At several members of the Marquesas Group and at the majority of the 51 islets of the Tuamotu Archipelago visited the members of the Whitney Expedition were the first naturalists ever to make zoölogical observations of any description. What changes, incidentally, their notes reveal,



Photograph by Kille H. Beck

©

A MAIDEN OF RAPA, AUSTRAL ISLANDS

Papote, filling her gourd at the brook, as her forbears have done from time immemorial.



Photograph by Beulah H. Beck

A SEA-BEATEN GLEN OF THE MARQUESSAS

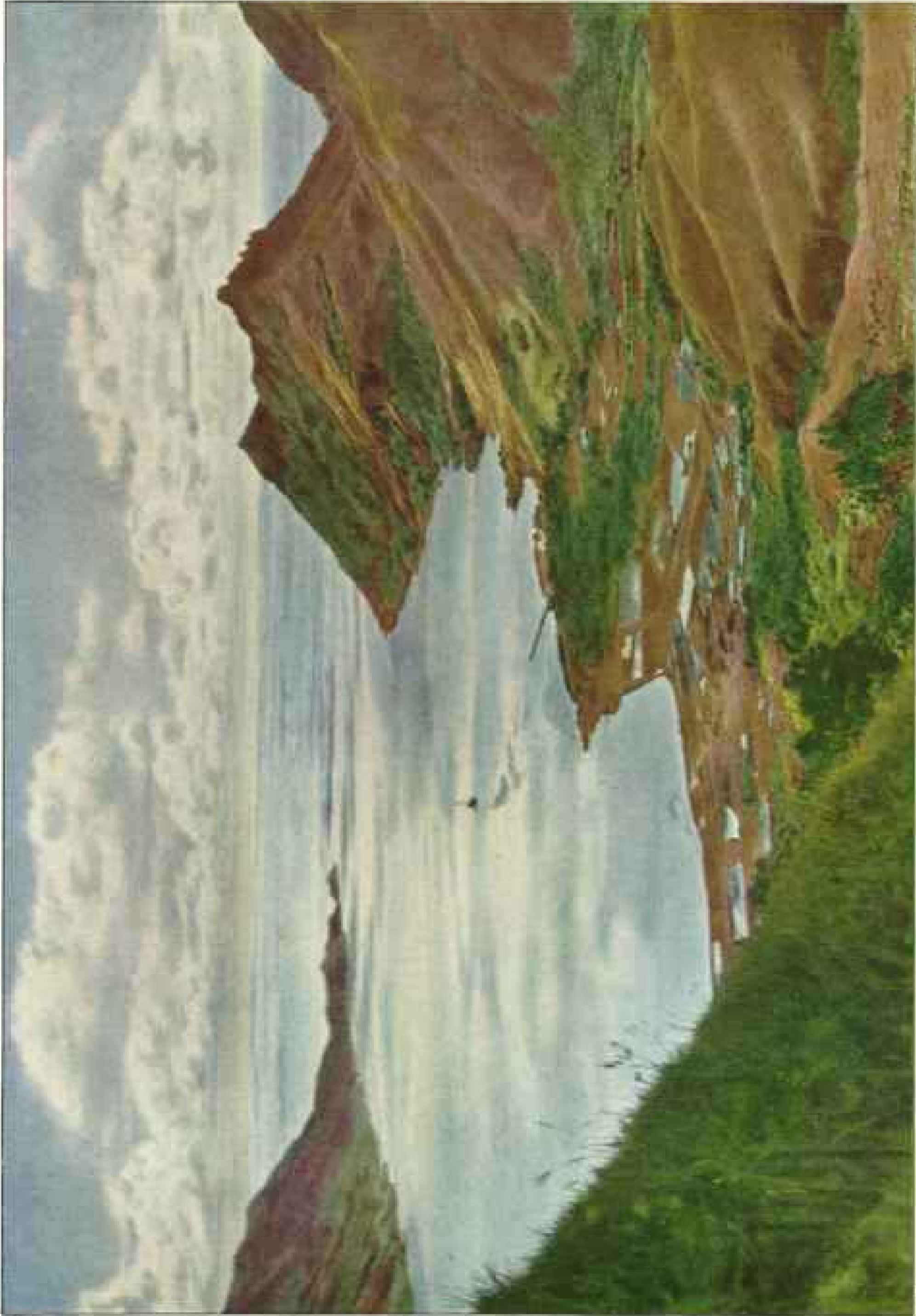
Ormoa Valley, in the small island of Fatuhiva, the essence of all that is loveliest in the isles of the South Seas.



Photograph by Rollie H. Beck

TADOUSSAC BAY, NUKUNUI ISLAND

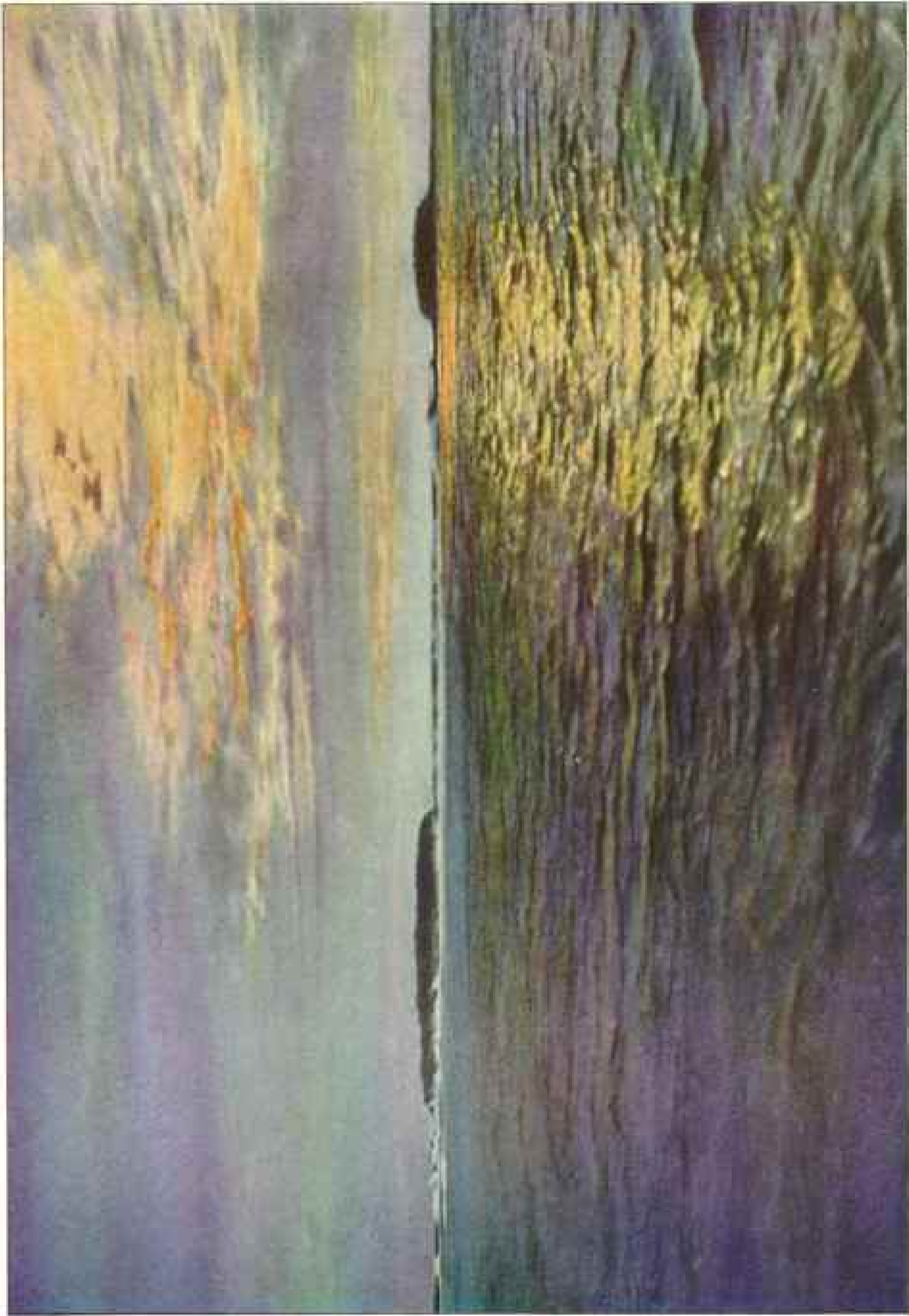
A characteristic scene on the (dry or leeward) coast of one of the Marquesas, with copra and trading schooners at anchor.



Photograph by Rolf H. Beck

A HAVEN IN DISTANT RAPA

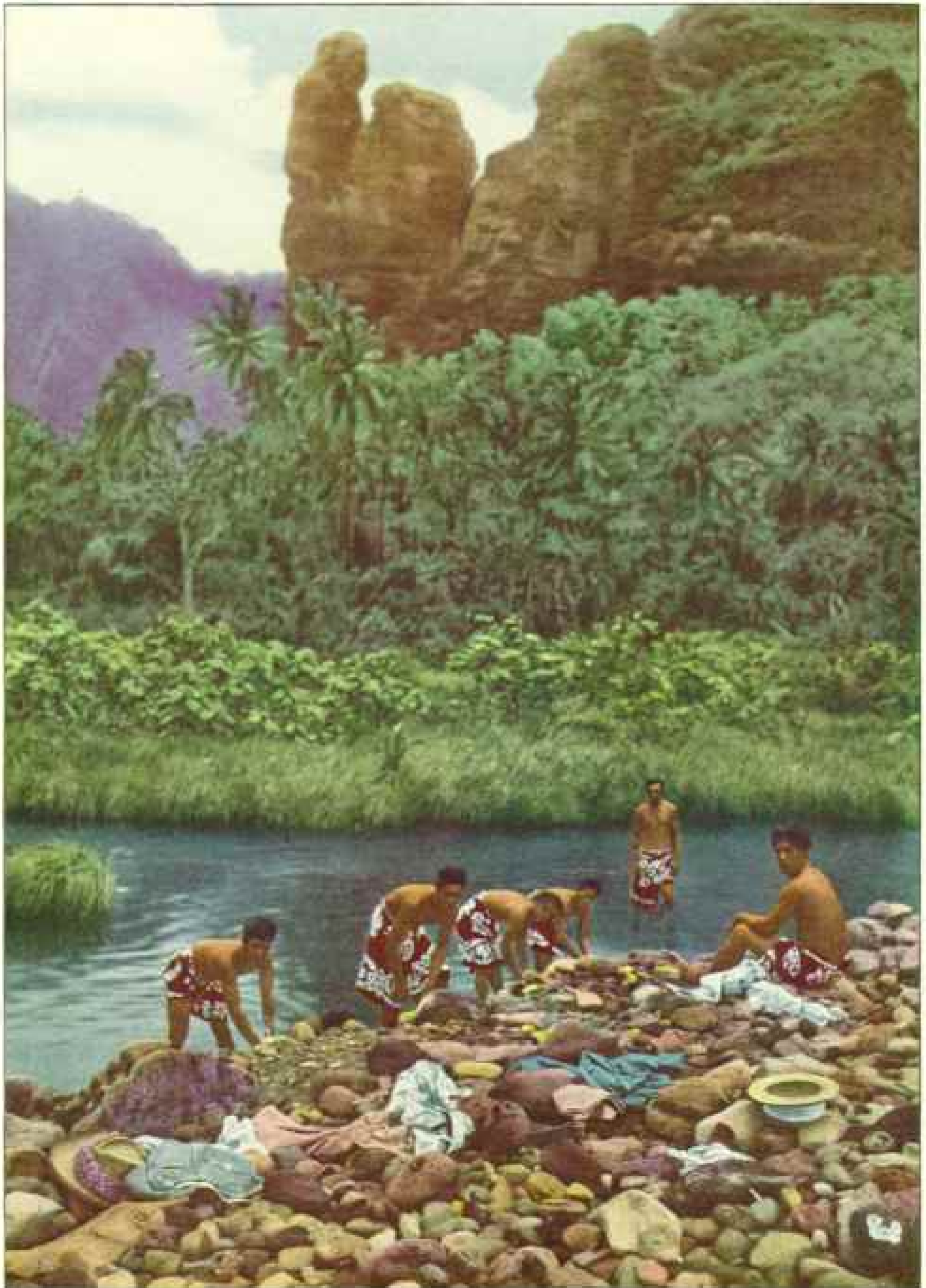
Aburel Bay, the harbor of Rapa, southernmost island of eastern Polynesia. Beds of turo, whose roots are a food staple in the South Seas, gleam on the narrow plain at the head of the bay. Beyond the grove are the stone pier and the community church, the Whitney Expedition schooner at anchor, and the bright Pacific stretching eastward.



Photograph by Kollo H. Beck

LES ÎLES DANGEREUSES

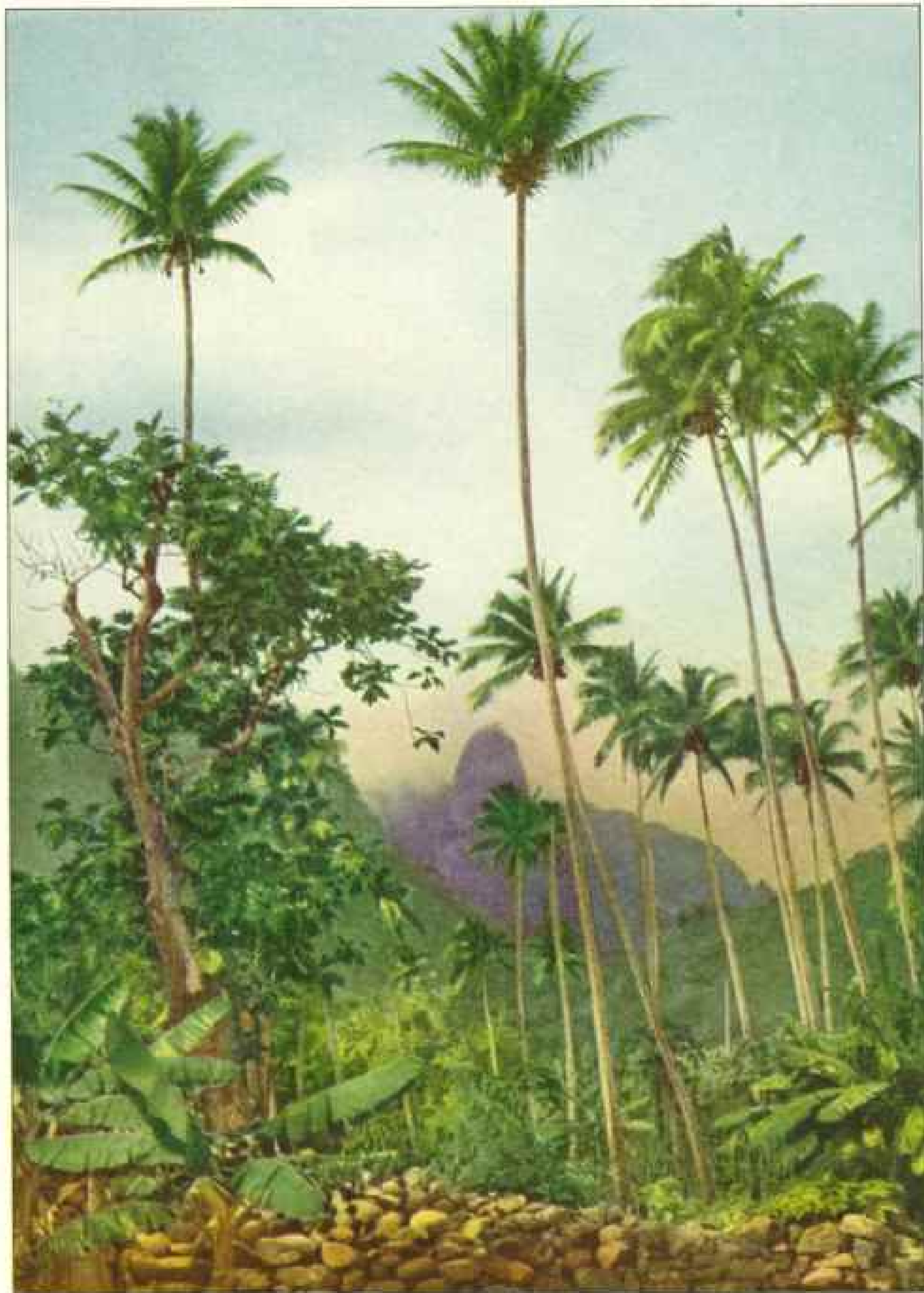
"The Dangerous Islands" of French Oceania are well named. The photograph shows the looming reefs and islets of Tenararo, one of the numberless atolls of the vast Tuamotu Archipelago, as first seen from the deck of the *Frantz*.



Photograph by Rollo H. Beck

WASH-DAY AFTER A LONG VOYAGE

In a clear streamlet beneath the weathered, lava battlements of Otua Valley in Fatuhiva Island, Marquesas Group, the Polynesian sailors of the schooner *France* wash their prosaic, workday clothing of shipboard, reverting for the time to the picturesque attire of the red *pareu*, a strip of calico which in recent years has supplanted the *tapa* cloth made from beaten tree bark.



6

Photograph by Rolla H. Buck

THE "GIRAFFE OF VEGETABLES": HUAPU, MARQUESAS

So Stevenson calls the coconut palm. Speaking of the rock formations, he wrote, "—the needles of *Ua-pu* . . . pricked about the line of the horizon; like the pinnacles of some ornate and monstrous church, they stood there, in the sparkling brightness of the morning, the fit sign-board of a world of wonders."

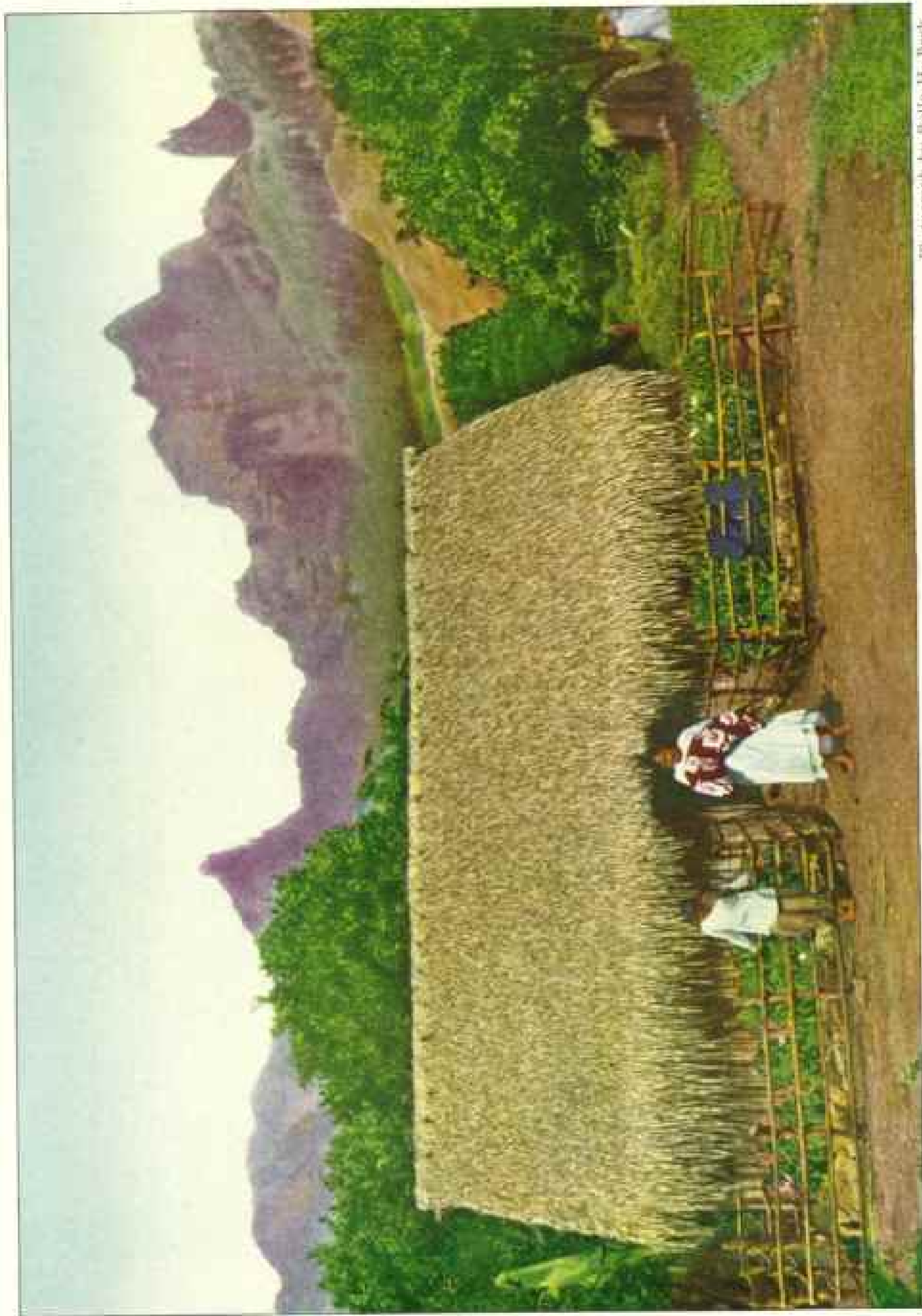


Photograph by Rolfo H. Buck

HOUSEHOLD LABOR IN RIMITARA

Natives of Rimitara, Anstral Islands, grating coconut meat. The effective utensils are carved upon the "necks" of the heavy, quadrupedal stools. The native girl at the right shows pronounced mongoloid characteristics.

6



Photograph by Robbo H. Buck

THE CHIEF'S HOME IN RAPA

This pastoral dwelling was but one of several in which the members of the Expedition were feasted to the verge of collapse during their cruise among the Austral Islands.



Painting by Hasbun Murayama

©

FRUIT PIGEONS OF THE SOUTH SEAS

Above are a male (left) and female (right) of the exquisite species common to Samoa and Fiji, and called *Ptilopus perousei* in honor of the early French voyager, La Pérouse. Below is a large, raspberry-breasted fruit pigeon (*Thylophaps huttoni*) peculiar to Rapa.

IRIDESCENT ISLES OF THE SOUTH SEAS



Painting by Hashime Mizuyama

©

BEAUTIFUL VARIETIES OF FRUIT PIGEONS

Above, the white-crowned, Marquesan fruit pigeon (*Ptilopus dupetitthouarsii*); at the lower right a rose-crowned species (*Ptilopus tristrans*) found only upon Hivaona Island, Marquesas Group; beside it is the purple-crowned Tahitian species (*Ptilopus purpuratus*).



Painting by Hashino Murayama

LAND AND SEA BIRDS OF POLYNESIA

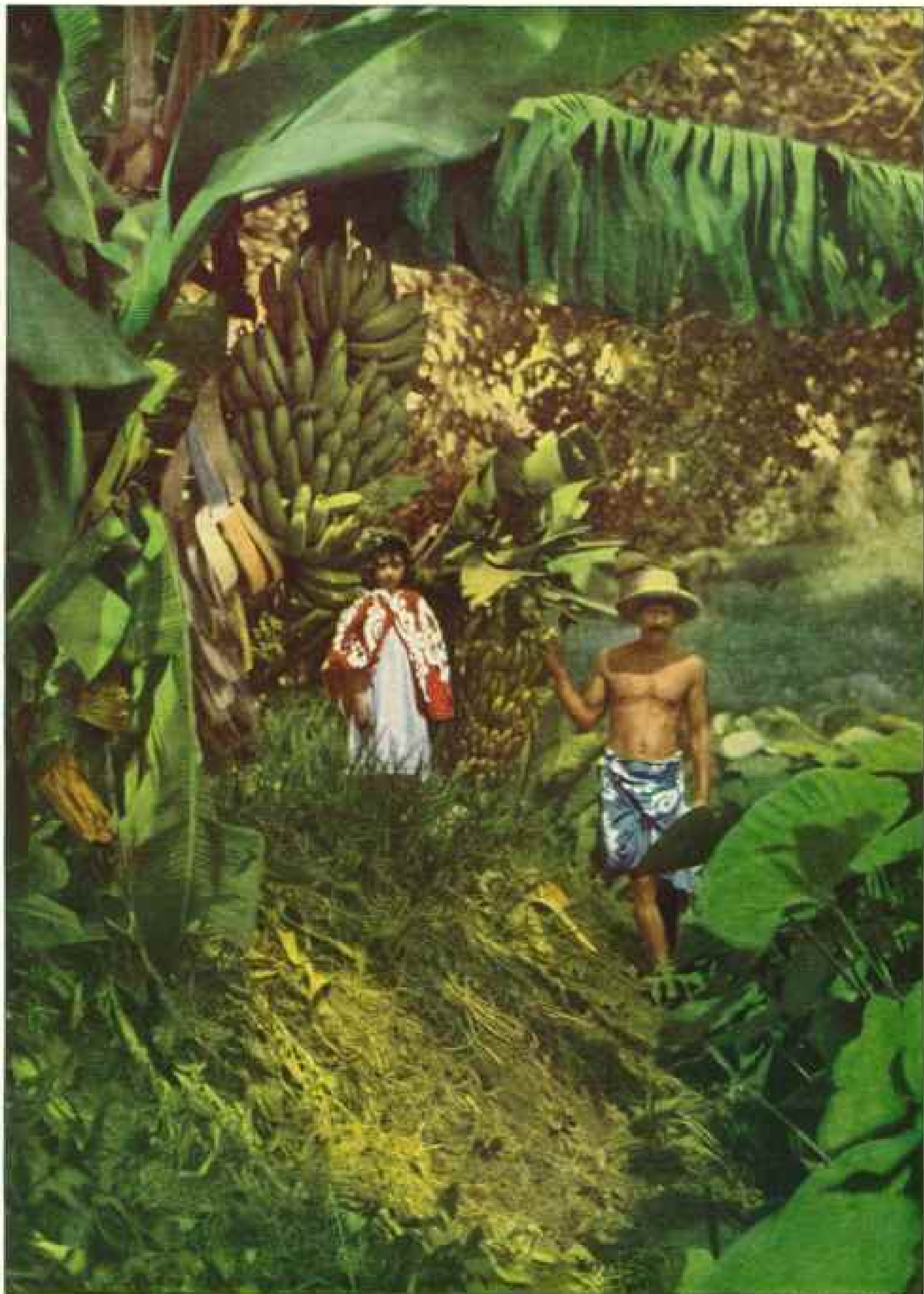
The upper bird is a widely distributed parasitic cuckoo (*Urosynotis iaitensis*); below it the little Marquesan kingfisher (*Halcyon goodfrewi*); and, at the right, the red-tailed tropic bird (*Phaethon rubricauda*)



Painting by Hashime Murayama

BRUSH-TONGUED PARAKEETS

Left, the species known as *Carpodacus ferrugineus*, although it does not occur in Peru; center, the red-breasted parakeet (*Ptilinopus*) of the Austral Islands and elsewhere; right, the bizarre Marquesan species (*Carpodacus maroccanus*). One or more of these have been distributed far and wide by the jet-loving Polynesian islanders.

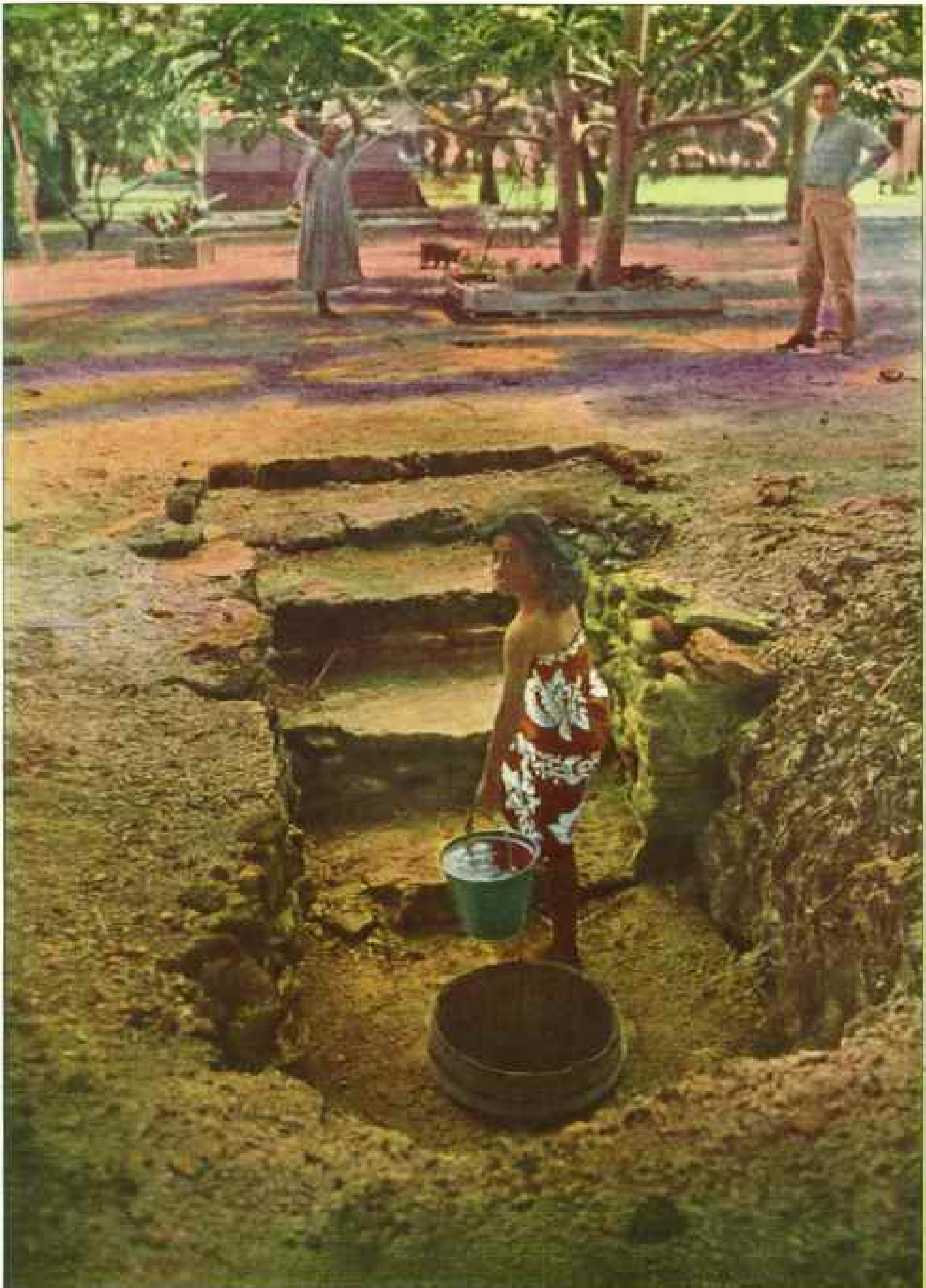


©

Photograph by Rollo H. Beck

A GARDEN OF EDEN, IN THE AUSTRALS

A scene on the hillside of Kimitara, with ripening bananas, elephant-eared taro leaves, and two citizens of a land where food is produced without sweat of the brow.



©

Photograph by Rollis H. Beck

A WELL ON KAUKURA ISLAND

The fresh water of the Tuamotus comes from shallow surface diggings, and is derived from rain or through natural filtration from the ocean.



6

Photograph by Rolla H. Beck

LADS OF RAPA

These boys, who served as guides, fail to understand the elation caused by the discovery of a Polynesian teal's nest.

when compared with records of a century or 50 years ago!

The Gambier cluster of the Tuamotus, for example, in which is included Mangareva, government seat of the eastern half of the colony, has now a population of 500. Formerly it was inhabited by 1,000 natives.

Crumbling stone houses line the shores of Mangareva. A convent, which in years past housed hundreds of girls, is to-day covered by the growths of the encroaching jungle and will soon be only a memory.

The cathedral of the island is larger than that in Papeete, and is decorated about the altar with thousands of pearl shells, telling of a congregation that is no more.

Anaa, in the western part of the archipelago, has but a handful of people, yet it was once the savage stronghold of the Tuamotus and was reputed to have a population of 5,000, as noted by Wilkes in 1839. In common with many others among the low islands of the Tuamotus, Anaa has suffered severely from hurricanes.

With reference to the dwindling and rapidly shifting population of the Tuamotus, under modern industrial conditions, Mr. Beck's journal mentions a motion-picture theater at the island of Takoumé, with nobody now living within five miles of the building!

RAPA WAS ONCE A FORTIFIED STRONGHOLD

Of the Austral or Tubuai Group, far south of the Societies, the most fascinating island is Rapa, which lies detached from the others, well beyond the Tropic of Capricorn.

Rapa was discovered by Vancouver in 1791. For the next 35 years the native savages had little contact with the outside world, but about 1825 they began to be Christianized through the first intercourse with Tahitian missions.

In later years Rapa became a favorite port of call for whaleships, because the men of the island were peerless boatmen, but with the decline of whaling, the curtain of isolation once more descended. Now Rapa is visited only two or three times a year.

Twice during the Whitney Expedition periods of a week or longer were spent at

Rapa. On the first visit Mr. Beck tramped off across the taro fields and through the coffee groves toward one of the ancient and mysterious forts that top the ridge of the island (see illustration, page 420).

Climbing through ferns knee-deep, he soon reached the crest. Four distinct levels on the ridge had been protected by built-up rockwork, and at the highest point a massive wall had been constructed as a last stronghold. On a leveled terrace just below was a small rainwater cistern.

Four miles away in an air line, two other forts stood up against the sky. These were so built that a small force could defend itself against a host of besiegers as long as food and water held out. The only approach was by way of the ridge, for the adjacent sides of the mountain were too steep to scale.

Down to eastward the beautiful harbor of Ahurei, with scattered taro beds about its head, showed clearly (see Color Plate IV), while high above the village wild goats could be distinguished along the craggy ridge. South of the fort the hill rose to nearly 2,000 feet, forming a backbone of unclimbable cliffs, while toward the west and north other ridges divided narrow valleys and cut the island into sharply defined districts.

Upon returning to the shore, Mr. Beck found the captain and mate and their wives enjoying the charming garden of the French administrator, where fig and orange trees were weighted with fruit.

A splendid crop of tobacco, maturing in a small grove, also bore witness to the rich soil and the favorable climate.

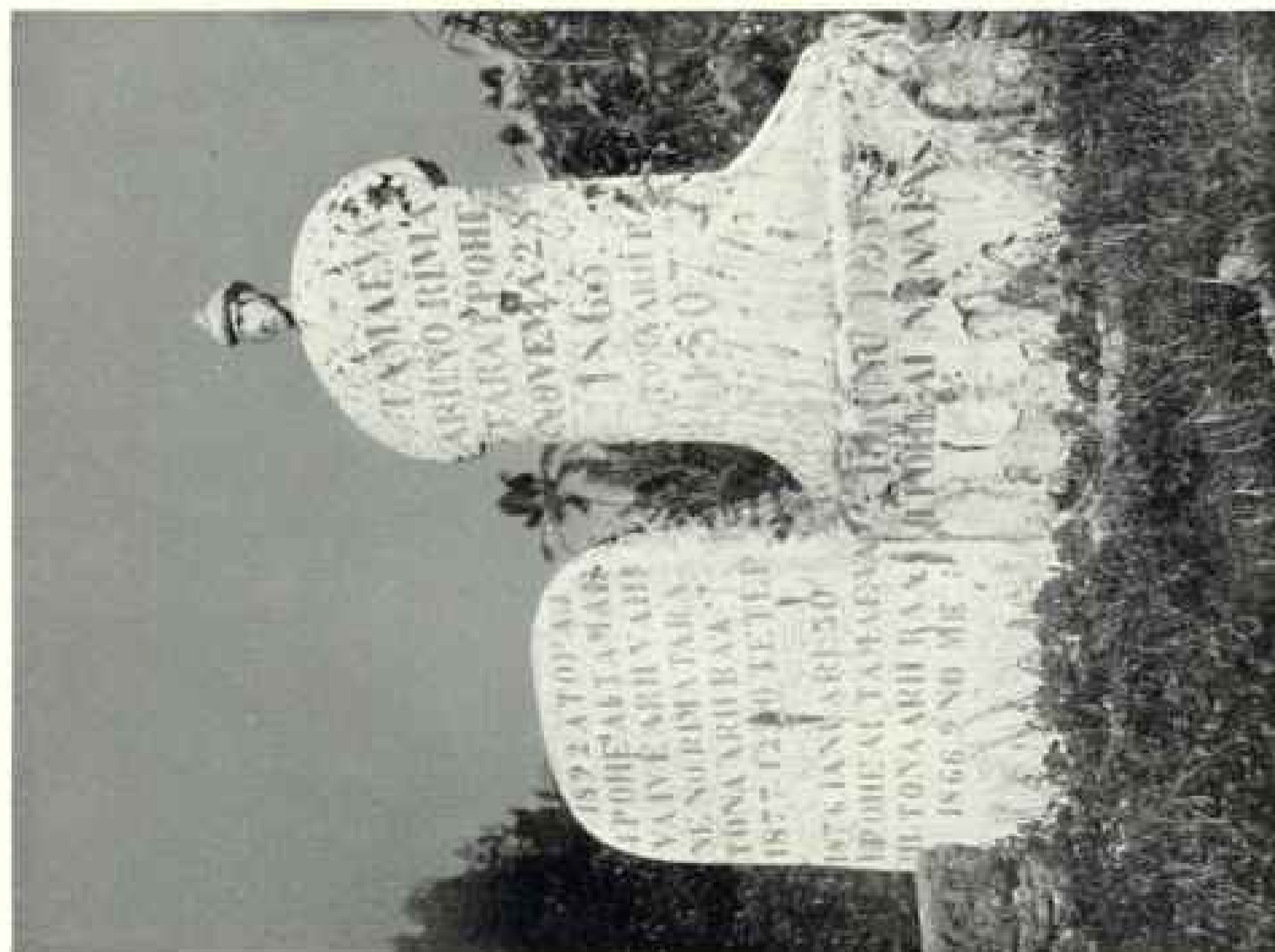
THE TRIALS OF DINNER GUESTS IN RAPA

While they were lingering in the garden, the native chief's son arrived to lead the visiting guests to a Sunday feast. On the way thither they were followed by a troop of the island children, some in shirts, some in *parous*, one in the discarded vest of an itinerant visitor, and several of the youngest wearing nothing at all. As they entered what was at first supposed to be the residence of the chief's son, the supercargo, who knew the customs of Rapa, warned all the strangers to eat lightly, as they would be expected to partake of food at several additional homes.



POLYNESIAN FORTIFICATIONS ON THE CRESTS OF RAFA (SEE PAGE 419)

The full significance of these ancient structures is hardly less enigmatical than that of the great stone monuments of Rapauni, or Easter Island. (See "The Mystery of Easter Island," by Mrs. Scoresby Routledge, in the NATIONAL GEOGRAPHIC MAGAZINE for December, 1921.)



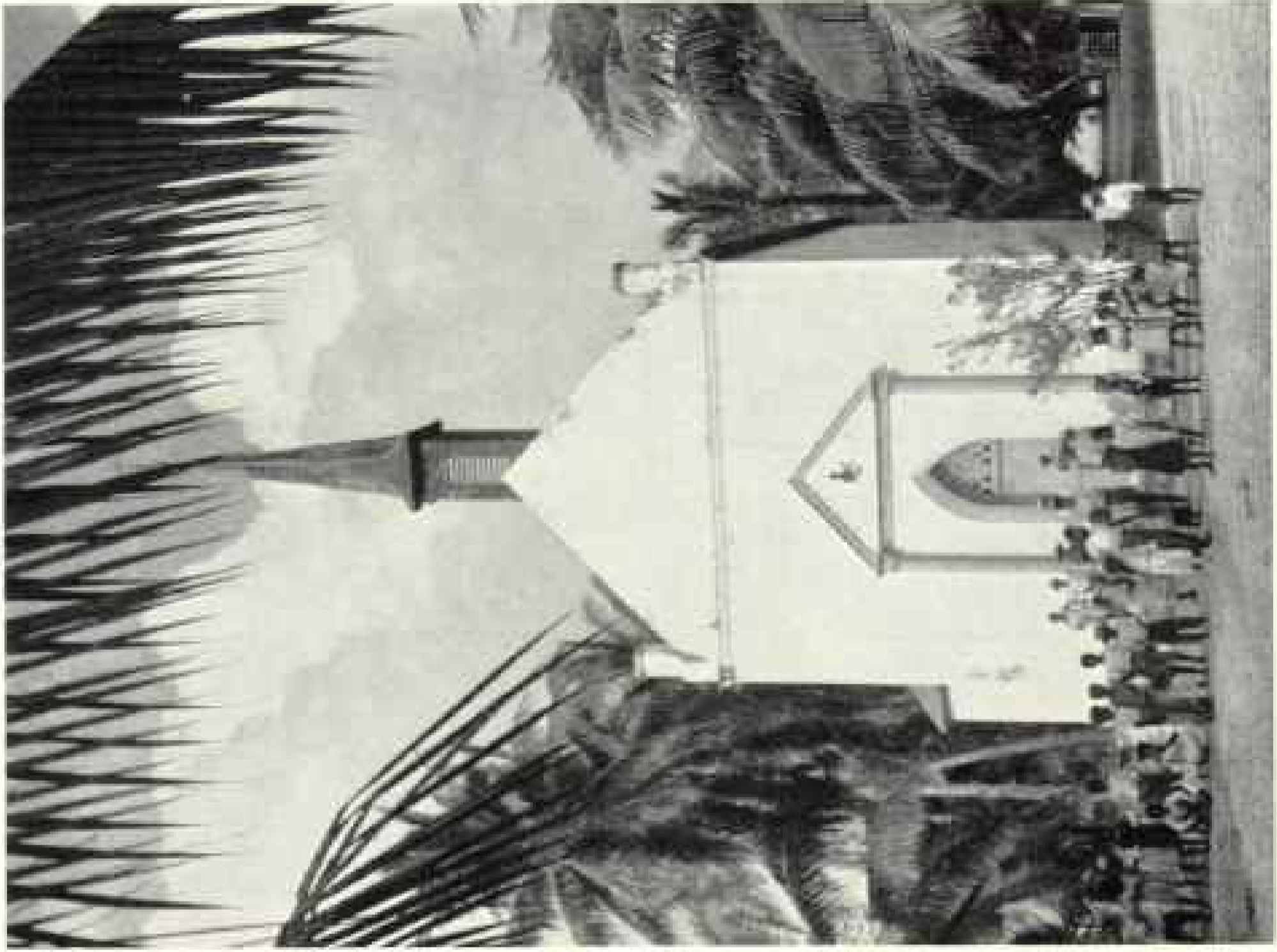
A KING'S TOMBSTONE ON RIMITARA ISLAND

A Christian memorial, but not without reminiscence of the old paganism.

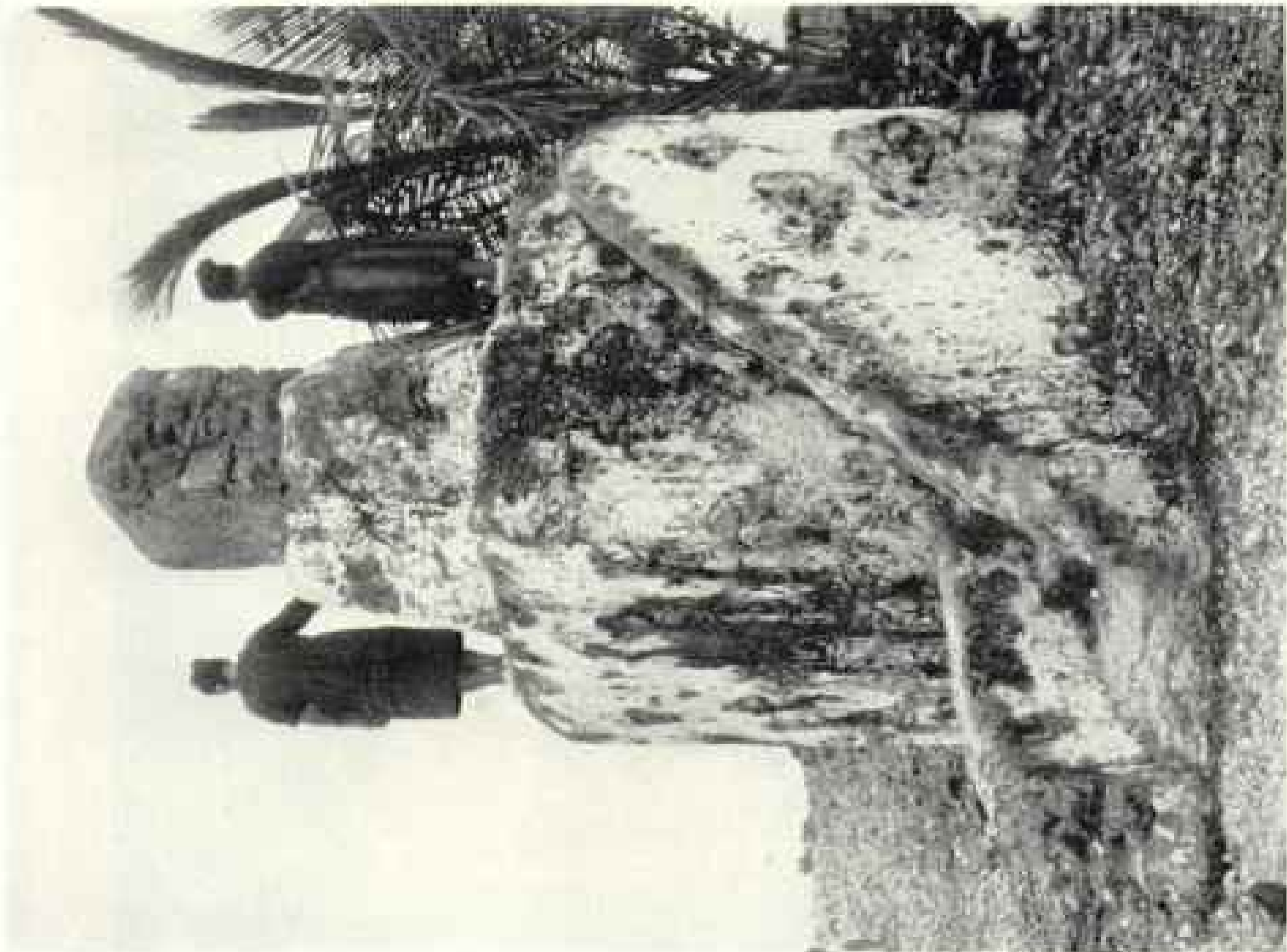


AS OLD HOGH, IN THE FOREST OF VAVITAO

Many such stone carvings (*fihis*) were overthrown and destroyed after the Christianization of the natives.



THE ROMAN CATHOLIC CHURCH AT MAKEMO ISLAND,
TUAMOTU GROUP



A SCHOOL, TEACHER AND HER SISTER ON THE OBSERVATION POST
OF MANTUU ISLAND, TUAMOTU GROUP



AN AGED INHABITANT OF TARNGA, ONE OF THE CORAL ISLETS
OF THE TUAMOTUS



TAKING NATURAL HISTORY NOTES ON FAKARAVA ISLAND,
TUAMOTUS



A PREHISTORIC WALL OF LICHEN-COVERED SLABS, HIMITARA ISLAND

Fresh banana leaves had been laid in a row across the mat-covered floor, and at each place was a plate containing one or two whole fish, another with several large pieces of juicy pork, and beside the plates a taro root. Seating themselves on the mats, the diners ate with their fingers.

When the first few pieces of fish gave way to the pork, the serving maids brought in the *poi*, the Polynesian staff of life resembling sticky, yeasty dough, neatly wrapped in the broad green leaves of the *rauti* plant.

While they were still eating, the son of the chief appeared again and advised them to hurry, as dinner was awaiting them at his home. So, leaving the untasted residue of the first banquet, they walked to the scene of a similar repast. In addition to fish, however, they here found a whole lobster at each place, and two taro roots instead of only one.

Before this meal had proceeded far, the captain leaned back from his partly eaten lobster, which was close to two feet long, and in deference to his example the other guests first slackened their pace and then ceased.

They next passed along a lane to a thatched cottage smaller than the others, and encountered a repetition of what had gone before, except that deliciously cooked chickens replaced the pork.

The supercargo again reminded them to eat sparingly, as a hearty appetite should be reserved for the chief's home, to be visited next!

When the party finally strolled over to the large dwelling of the chief, his wife and three or four girls welcomed them in the open yard before the door (see Color Plate IX).

In this house, lobster, pork, and chicken were in readiness as a last test of gustatory capacity. The taro had been increased to three big roots, although a small bit from the end of one root would easily have sufficed for a meal.

Besides the staples, the chief had supplied coconut milk in which to dip the meat and roots, a rare beverage in Rapa, as coconuts can be obtained only from ships coming from more northerly islands. They were served also with molasses made from the roots of the *rauti*. The syrup was placed on the plate with the



HARDSHIPS OF AN EXPLORER'S LIFE

The leader of the Whitney Expedition and the engineer of the *France* are about to regale themselves with boar's head, fish, chicken, breadfruit, poi-poi, fruits, and other staples of Mangareva (see, also, account of the feasts on the island of Rapa, pages 419-424).

poi-poi, enabling the latter to go down more easily than when it was lubricated with water only.

At the conclusion of what, fortunately, proved to be the last meal, bananas were passed around.

FAREWELL GIFTS BESTOWED BY A HOSPITABLE PEOPLE

On another day, a few of the hardy, energetic native fishermen made a trip to the lobster beds at the entrance of Ahurei Bay, and brought back 100 lobsters for the visitors. Practically every house in the village entertained one or more of the schooner's crew during the entire stay.

At the captain's suggestion a case of kerosene was presented to the church, the light of which shows up brightly as vessels enter the harbor.

That this courtesy was appreciated by the inhabitants was shown by their gifts on the day of leavetaking. A count of the acquisitions on deck, after the departure of the pilot, showed 5 sacks of taro, 18 packages of poi-poi wrapped in rauti leaves, 19 boxes of taro and poi-poi, 15

bunches of bananas, 22 rabbits, and 14 goats. Very few of these items had been purchased; the greater number were presents from the most hospitable people in the Pacific.

The girls and younger women at Rapa do most of the labor in the taro fields, while the older women attend to the housekeeping (see illustrations, pages 370, 381, and 382). The exemption of the men from agricultural labor allows them more time for fishing, and as a result of their sea experience they are much sought by captains of sailing vessels at Papeete.

The constant demand for Rapa men during a period of nearly a century has led to a considerable preponderance of women in the island population.

RAPA NATIVES ARE PEERLESS BOATMEN

Upon the second visit of the expedition, when the *France* was three or four miles from shore, a boat came out to meet the schooner. The men had made no allowance for the fact that an engine was aiding the sails, and within a minute they



TWO MEMBERS OF THE EXPEDITION DISCOVER A BOOBY'S NEST ON FAKARAVA ISLAND

were left 100 yards astern. But when the cabin boy, a native of Rapa, called out to them to catch up and be towed, they bent their oars and showed what they could do.

The schooner was progressing at a rate of about six miles an hour, but the boat was going at twice that speed when it neared and overtook her.

On another occasion a Rapa crew rowed five miles to an islet on which certain sea birds were nesting. Two of the members of the crew were only about 13 years of age, but when a heavy storm arose these lads stood the test of pulling for hours against a head wind and a rising sea, even though the poorly balanced, homemade oars weighed close to 50 pounds.

GIRLS OF RAPA ARE EXPERT IN HANDLING OUTRIGGER CANOES

The girls of Rapa are scarcely less skillful in using their unstable-looking outrigger canoes. At evening they would

frequently pass the schooner on their way home from taro fields on the far side of the bay, with heavy loads of the roots weighing down their narrow dugouts almost to the swamping point (see illustration, page 381).

From babyhood these people become familiar with the sea. At all hours the children can be seen playing in the water or paddling tiny canoes alongshore.

The whole population of Rapa, exclusive of a few lepers confined in another valley, was living in or near the village on Ahurei Bay at the time of the Whitney Expedition visits.

Five or six valleys that formerly supported villages (and which may have warred with one another in their oceanic microcosm from immemorial time) are now deserted.

Only the lofty, stone forts, last refuge of the inhabitants of these communities (see page 420), still stand as monuments on the hilltops, and can be discerned from far at sea.

COLLARIN' CAPE COD

Experiences on Board a U. S. Navy Destroyer in a Wild Winter Storm

BY LIEUTENANT H. R. THURBER, U. S. NAVY

ON BOTH sides of the long dock at the Yard flurries of action told that the other ships of Squadron Nine were getting ready to shove out into the stream. Whistles and sirens were being tested, safety valves blowing off, the exhaust steam scurrying away down the wind, men running about decks, signalmen tailing pennants of signal orders to the yardarm and whipping them out into the fresh breeze. It was crisp weather, such as kept all hands moving to prevent stiff fingers and toes.

"Is everything ready, Page?" Captain Welles was looking along the dock.

"All ready for getting under way, sir," replied the Executive Officer, saluting smartly.

"Well, let me see." The Captain was musing aloud, a twinkle in his eye. Only a two-and-a-half striper (lieutenant commander), Captain Welles, nevertheless, was known throughout the entire fleet as a destroyer handler *par excellence*. "Sort of looks as if we might hang up on that lighter if the tide catches us; or, if the wind hits our bow, we might be in a bad way on the piling at the end of the dock. What do you think, Page?"

"I think if we backed our port engine one-third, sir, with right rudder, we would clear nicely and easily," said the "Exec."

"Well, I don't know. Suppose you take her out."

From my position, discreetly removed from the front of the bridge, I turned to the Chief Quartermaster.

"Say, Stearn, what's the idea?" I nodded toward the Captain and Page.

Stearn, red-haired and bright of eye, taking cognizance of my ensign's single stripe, explained.

"Well, you see, Mr. Hall, the Captain believes in letting his officers handle her, especially the Exec. These here destroyers have pretty near as much horsepower

as battleships, and they can move fast. And you never know which way they're wantin' to go."

SAVING FAREWELL TO SNOW-COVERED BOSTON

Sharply at two the K * * * 's whistle tooted, the icy lines were hauled aboard, and we slid gracefully out into the stream. Heeling down river, we whipped up our wake and proceeded toward President Roads. The bite of the cold wind caused those not needed above decks to hunt the heated living compartments as soon as the lines were reeled and loose gear was stowed and lashed. It was my portion, as "makee learn," to stay on the bridge.

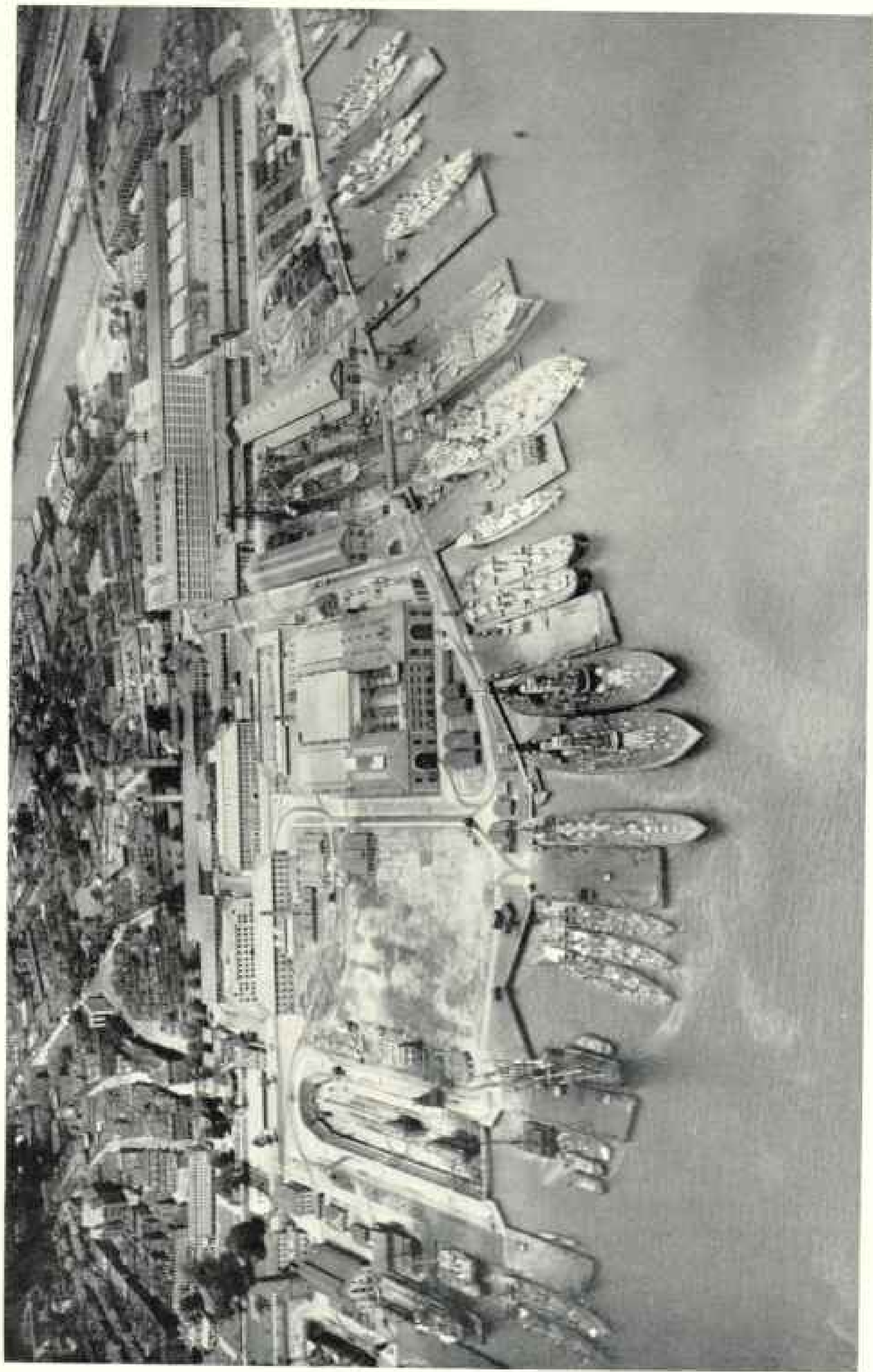
After observing the ease with which Page got the ship under way from the dock, I sought the lee wing of the bridge, watching with keen interest the water front and shipping.

Stearn joined me.

"Look there, Mr. Hall." He pointed back toward the Navy Yard, where two flags were being hoisted—a red flag with a black center over a red pennant. "South-east storm warning, Mr. Hall," he remarked with something akin to a malicious smile.

A few hundred yards ahead of us the squadron flagship, the S * * *, was showing her heels to the ships astern. Close on our port quarter the foremast of the L * * *, towering upward some hundred feet, came to view; and then her bridge and four stacks were visible; soon she went racing past to assume her position in column, the roar of her forced draft blowers sounding like that of an express train.

Over there, at one of the many docks which lined the water front, a tug was puffing out, pushing an unwieldy barkentine with snow-whitened rigging. An in-bound coastal steamer was screeching for the right of way over a lumpish trawler



Photograph from Hamilton Maywell

THE CHARLESTOWN NAVY YARD, BOSTON, MASSACHUSETTS

In addition to being an important Naval station and possessing one of the world's largest dry docks, this Navy Yard is also the home port of the *Constitution*, the famous "Old Ironsides." This fine old ship, made immortal by her many victories, especially that over the English ship *Guerrière*, in 1812, was a 44-ton frigate. She was saved from scrapping in 1830 by Oliver Wendell Holmes' thrilling poem, "Old Ironsides," and since 1877 has been used some as a training vessel. She may be seen in the left foreground, with three destroyers moored in the same slip to the right and the great dry dock a little to the left and beyond.



Official Photograph, U. S. Navy

LIKE AN ARROW IN FLIGHT

The larger destroyers have a displacement of more than 1,200 tons, are about 300 feet long, and have a 30-foot beam. They are oil-burners and can attain a speed in excess of 30 knots. Their armament usually consists of four or five four-inch guns, two or more sets of torpedo tubes, two mounted machine guns, and a store of depth bombs.



Official Photograph, U. S. Navy

ACTION ON THE SIGNAL BRIDGE (SEE, ALSO, PAGE 467)

The man at the extreme right is receiving a semaphore message through the telescope, while the one standing on the rail in the center is sending the same kind of message, his arms forming the letter "U." The two men at the left are hoisting signal flags just taken from the flag locker in front of them.

hugging the wrong side of the channel, close to an ice-topped can buoy.

Down toward President Roads, where the North and South channels forked out to seaward, was anchored a fleet of barges, low in the water, waiting settled weather and a tow through Cape Cod Canal.

The prolonged snowfall, lasting through the Christmas holidays, had whitened the muddy banks of the channel, covered the roofs and docks of warehouses along the river front, and mantled the surrounding hills with a heavy winter coat. Overhead the sky was leaden and the wind was tumbling cumbrous clouds hurriedly out of the southeast.

On the bridge we were muffled to the ears now; for, as the ship had picked up her speed, the raw air had nipped our faces to a bluish hue. The Captain, enveloped in heavy uniform overcoat, his hands stuffed into side pockets, paced the

bridge briskly, glancing now and then at the chart, by which he was conning the K * * * down harbor.

We were in position in column by this time, three ships between us and the flagship. The Exec. kept us smartly at our proper 300 yards' distance astern of the L * * *. Trailing us, well closed up, were our eleven other squadron mates.

In a short time we were sliding past buoys close-anchored in the strong current of the North Channel. As the course was changed eastward and the white tower of The Graves appeared, we began to pitch lazily. Wind and sea from the Bay were backing an ebb tide, and out farther the gray-green expanse of open water was spread with whitecaps.

THE STARBOARD TURBINE BREAKS DOWN

"Huh!" I mused. "Looks as if my initiation is about to begin."

My "initiation," however, was due to



Official Photograph, U. S. Navy

CHARTING THE COURSE

This young sailor is being initiated into some of the mysteries of navigation by the officer at his side.

be delayed, for the Senior Engineer Officer, chagrin in his eyes, dashed up the bridge ladder.

"Captain," he announced, "starboard turbine bearings are all running hot. I'd like to look at them before we go outside. We can run on the port engine until we're ready to lift the starboard bearing caps, and then we'll have to stop and examine them."

Captain Welles strode to the engine-room annunciators. "Hoist the breakdown flag," he ordered curtly. "Sheer out to the right, Page."

As the ship swung out of column, he rang up "Stop!" on the starboard engine annunciator.

"All right, Johnston," he shot out. "Fix 'em. Let me know when you're ready to stop everything." He wagged his head and snorted. "Knew those bearings needed overhaul by the Yard. Signal the Squadron Commander, Page. Request permission to stop and examine hot bearings."

A waiting signalman jumped up to the flying bridge with a pair of semaphore flags; another hoisted the call pennant for the squadron flagship. The S * * * answered, and the semaphore flags began to snap their message (see page 430).

It was a matter of half an hour before Johnston reported he was ready to look at the bearings. The port engine was stopped, and examination revealed that further steaming was impossible until repairs were effected. After getting permission from the Captain, Page ordered "Let go!" and the port anchor splashed over the side. It was then 3:30 o'clock. Boston Light Vessel was visible southeast about five miles.

"Hall can stand the deck watch at anchor, don't you think, Captain?" Page asked.

"Yes, certainly. You've had some deck-watch duty on battleships before, I believe, Hall? Johnston, how long before you'll be ready to get under way? Eight o'clock! I'll have to notify the Squadron Commander. Guess this means we'll go on to Norfolk alone. Don't like it, either." He stamped down the bridge ladder.

I could well understand the Captain's annoyance. The ship had not been overhauled to suit him because of a shortage of money for the work. Then, too, the crew contained but a skeleton of seasoned men. There were many new men, a majority of whom were recruits fresh from



"SAIL, HO!"

Official Photograph, U. S. Navy

During the World War a lookout descending from the crow's nest caused a convoy of ships some anxious moments when his foot slipped. In the hurried descent that followed, he fell across the whistle cord and a prolonged toot resulted. Thus momentarily held up in his fall, he grasped for something to hold to and chanced to seize the halyard that released the green flag from the yardarm. It so happened that a long blast of the whistle and running out a green flag were the signals of a submarine attack, and, while there were no U-boats in the vicinity, the sailor's carelessness caused an alarm to be sounded.

a training station, and had been received on board at the eleventh hour. This greenness of personnel extended even to the officers, for Atkins and I were but ten days on board, and in the particular case of officers we were short-handed as well.

THE SEA BEGINS TO "KICK UP"

Left as Officer-of-the-Deck, I busied myself looking over the charts laid out for the voyage to Norfolk, glancing occasionally around the horizon. The sea had commenced to "kick up" a little and the K * * * rose and fell gently, straining lightly at her anchor. The wind was growing stronger, bringing a fine sifting of snow, which in the course of half an hour grew into a thick, white veil. By four bells a driving snowstorm had set in around us, walling in the ship as if she were incased in a shroud.

I sent for oilskins and rubber boots, and, shielding my eyes from the pelting flakes, began pacing the bridge, directing the quartermaster on watch to sound the ship's bell rapidly at regular intervals.

Only once during the watch did I stop pacing. This was when the C * * *, the last of the squadron to complete re-



Official Photograph, U. S. Navy

A BUSY WATCH ON THE BRIDGE

The man on the left is at the wheel, steering the vessel by the compass in the open case at his side. The instrument in the foreground is the engine telegraph (see, also, illustration on page 441).

pairs at the Yard, roared past, looming large as she ranged alongside, and then vanishing almost immediately into the curtain of white.

"Hot dog!" I exclaimed to the quartermaster. "I could have tossed a spud on her bridge!"

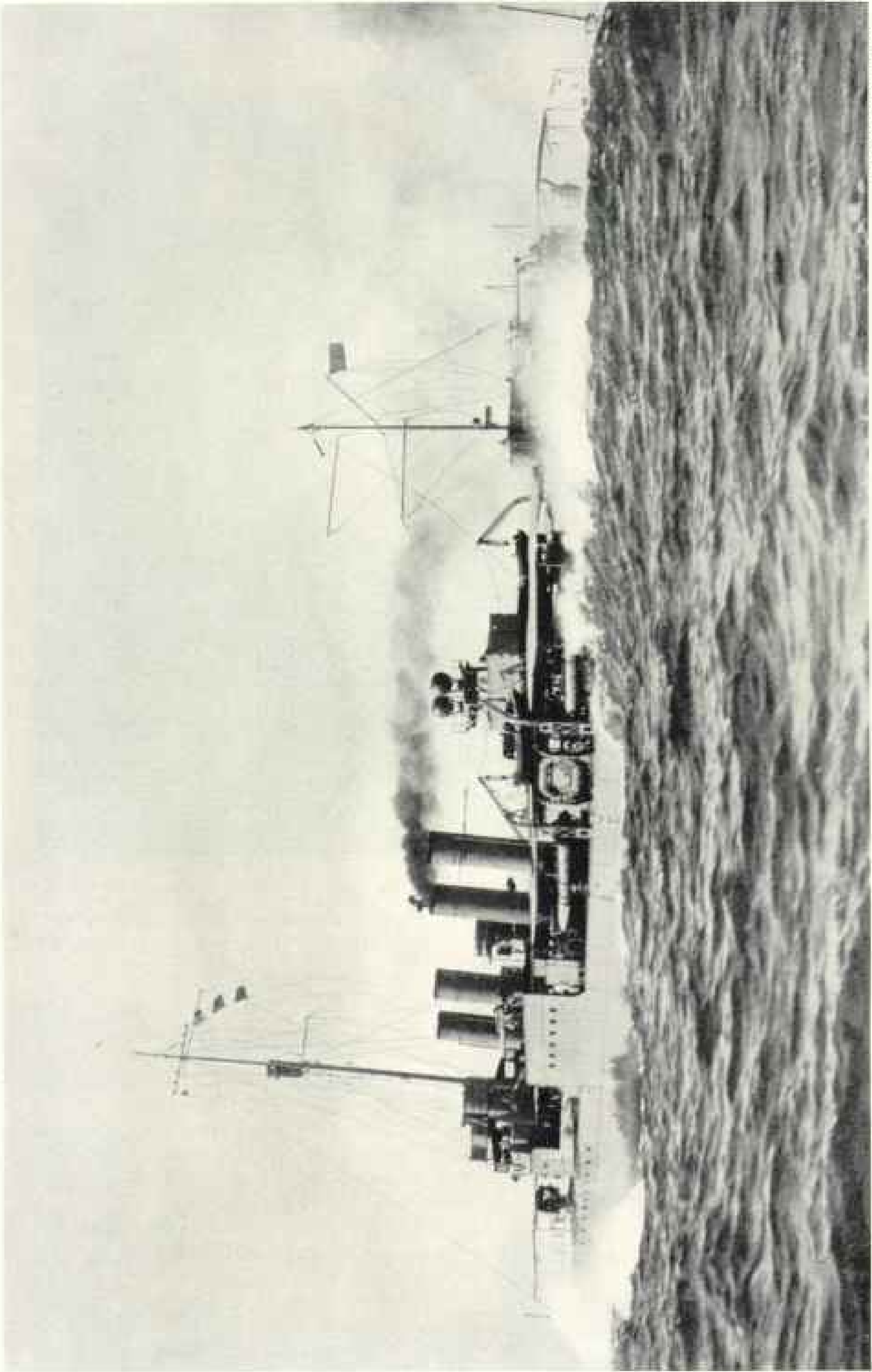
UNDER WAY ALONE FOR THE RENDEZVOUS
AT NORFOLK

It was not until 8:15 that repairs were completed. Atkins, swathed in oilskins, had relieved me at eight bells, bringing news that the skipper had received a radio from the Squadron Commander to prepare for heavy weather.

At 8:30 the K * * *'s anchor was weighed and we were under way, headed southeast toward Boston Light Vessel. The red and green running lights and the white masthead light peered dimly at us on the bridge through streamers of snow outlined against the darkness, as we sped on our way, lurching and tossing occasionally in the rising sea.

I had remained on the bridge after being relieved and was standing at the Exec.'s elbow.

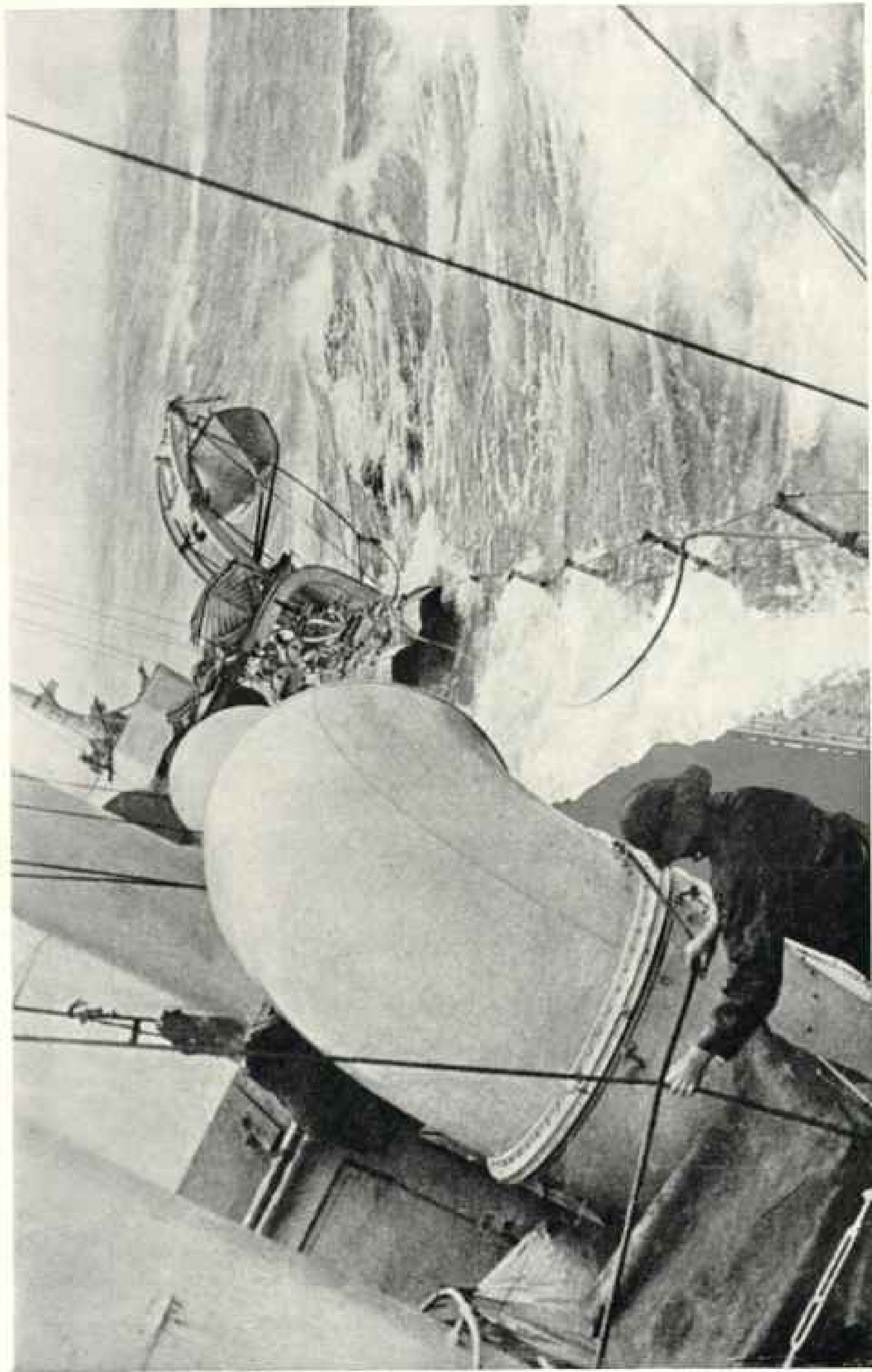
"Kind of thick to-night, isn't it, Mr. Page?" Page, his eyelids fringed with white, continued his search dead ahead, as he replied.



© O. W. Wainman

HEADING TOWARD NORFOLK, WITH CAPE COD "COLLARED"

With its long, rakish lines and narrow beam, the destroyer is the speediest and most mobile unit of the fleet. Although lying so low in the water that the waves often wash over its decks, it is an exceedingly seaworthy vessel.



Official Photograph, U. S. Navy

"SCUPPERS UNDER"

A destroyer in a rough sea is far from being a comfortable place in which to live. In the words of one who has been there, "The craft rolls dips, shudders, plunges like a horse straight up at the stars, sinks rapidly and horribly, and even has spells of seasawing violently from side to side. Its worst motion is an unearthly twist—a swift, appalling rise at a breath-taking angle, a toss across space to the other side of a wave, a fearful descent sideways and down, and a ghastly shudder."



Official Photograph, U. S. Navy

"HEAVING THE LEAD"

The leadsman, standing in the chains, uses the lead for taking soundings of the depth and nature of the sea bottom. The weight is hollowed out on the bottom, and this cavity is treated with tallow, which picks up some of the sand and shells from the floor of the ocean. By comparing the information thus obtained with his chart, the navigator is able materially to supplement the findings of sextant and compass (see text, page 448).

"Yep. Got to see this light, though, so we can shape a course to Cape Cod or Peaked Hill Bar gas buoy. Unless we get a good departure from Boston Light Vessel, we'll be wandering around pretty much in the dark off Cape Cod, and there are enough wrecks piled up on the cape now."

Twenty minutes passed. On Page's suggestion, the Captain slowed speed.

"Don't want to run afoul of the light-ship," muttered the Exec. "Couldn't see her much before we hit her. Ah!" It was a sigh of relief, for there, close aboard, on the starboard bow, was the blinking white light, dimmed in its range almost to uselessness by the driving snow.

I watched the Exec. as he laid the course on the chart for Peaked Hill Bar gas and whistling buoy. Page, singing out the new course to Atkins, turned, nearly walking over my feet.

"Say, son," he exclaimed, surprised at my presence, "you'd better go down and turn in. You'll need all the sleep you can get before 4 o'clock. I'll have you called about a quarter of."

I accepted the advice with alacrity, for, to tell the truth, I didn't care at all for the motions the ship was going through as she came on her new course.

I started down the bridge ladder, my knees unsteady, and had reached the bottom tread when the K * * *, lifted high by a long, green wave, dropped into the trough following it and left me hanging by my hands alone to the ladder rail.

Then the bow was tossed up, my feet hit the steel deck, and the jar shocked me to the topmost hairs. But the bow nosed under the next comber, and, as the ship labored to lift and free her fore-castle of



Official Photograph, U. S. Navy

THE "FANTAIL" OF A DESTROYER

This part of a destroyer's deck offers damp footing when a great Atlantic "comber" overtakes it. The deep-sea sounding machine, dimly seen through the spray, is the last feather in the fantail.

water. I was caught by the sea which poured aft through a doorway to the forecastle, the water-tight door having been carelessly left open.

It took all my strength to hold on, as the sea slid over the side, leaving me soaked, breathless, and decidedly more wobbly.

"Phe-ew!" I gurgled, "I sure *am* goin' to turn in!"

But sleep was not so easy, as I found after reaching my stateroom. Stripping off my drenched clothes, I rubbed vigorously with a Turkish towel, attired myself in woolen pajamas, and crawled thoughtfully into my bunk. The same lifting of the ship under the heavy seas, with elevator-speed descent into the following trough, caused the springs in the bunk to weave up and down in most irritating fashion.

As the ship was lifted under a wave, it seemed as if I were being swung easily

upward in a hammock; when she crashed down, the springs poised at a high peak momentarily, and then, with a sickening rush, hurtled down, stopping with a thud. It was most discouraging.

I composed myself for sleep several times, but the ship's antics robbed me completely of all rest. Then, too, the air was becoming stuffy under battened hatches, despite the ventilation blower and electric fan in the room, which were drafty and unpleasantly cold.

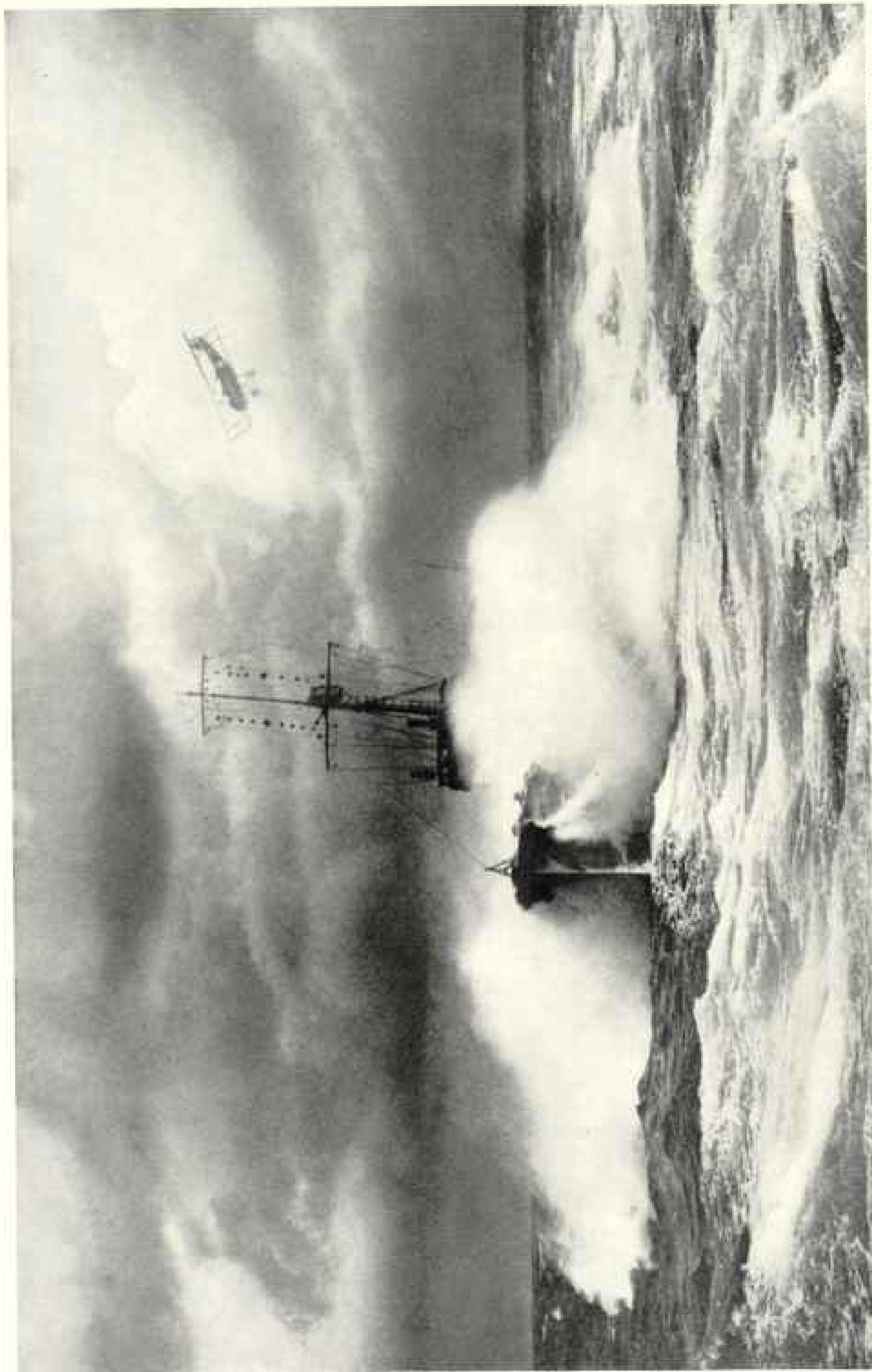
There were queer noises of creaking, unlatched doors banging and sliding; even the rings on the curtain across my door jangled. And by no means were my digestive organs tranquil, for the weaving of the springs was also weaving the stability of my dinner. During the course of my efforts at composure I damned the steward more than once for serving a dinner of greasy pork chops and creamed asparagus.



Official Photograph, U. S. Navy

A SEAGUING STRAP HANGER

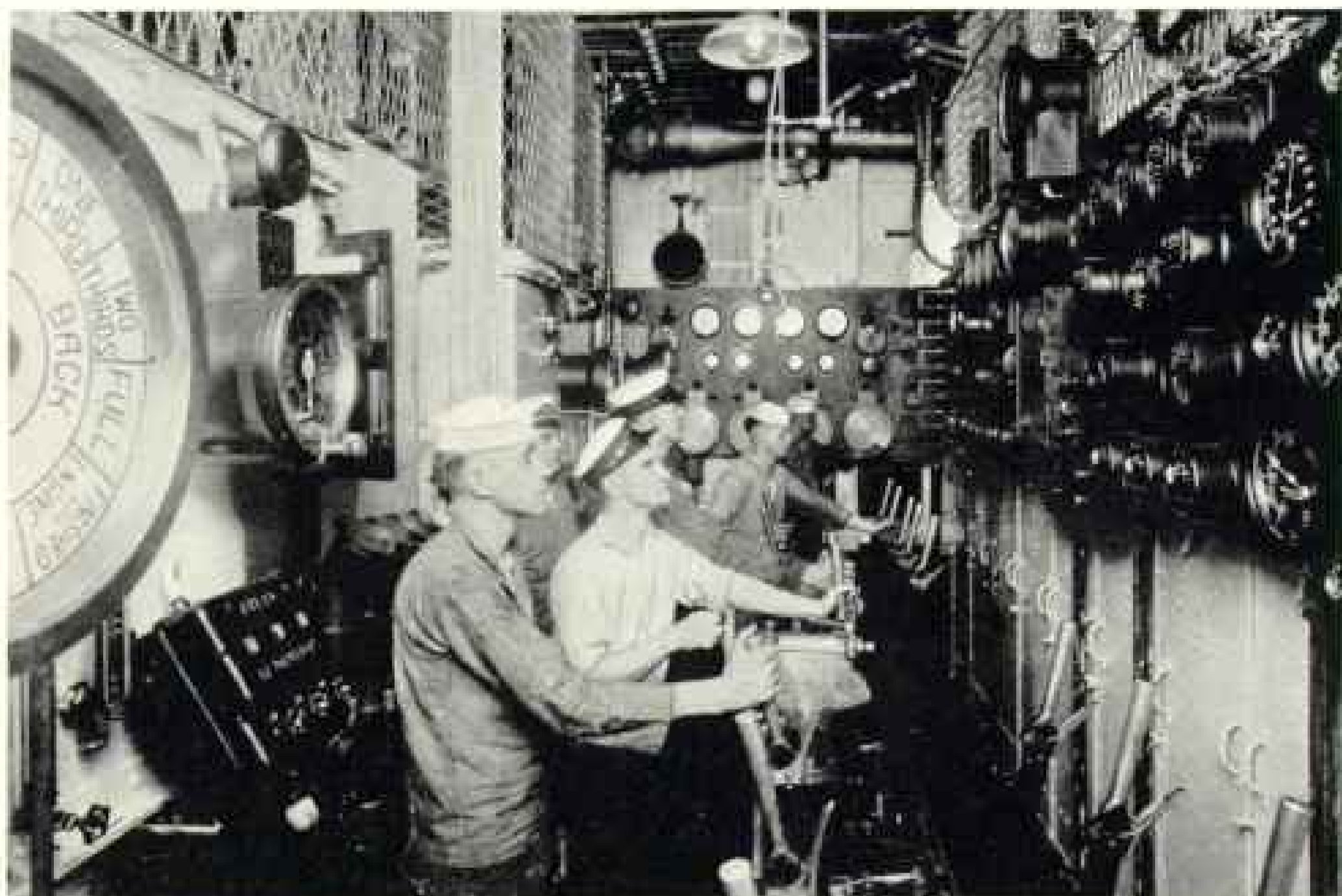
Footing is so precarious on the decks of a destroyer in any kind of rough weather that lines are stretched between various parts of the vessel and short ropes, much like trolley-car straps, are attached, so as to slide along them and provide something for one to hold to. The story is told of a young sailor who failed to hold on to his rope and was swept overboard by a huge wave, only to be picked up by another and deposited on the deck of the destroyer next behind in the line.



© Alfred G. Buckham

A STORMY DAY

This light cruiser has taken a good part of the sea over her bows and is just "coming up from under" again. This is not an uncommon experience in heavy weather, but it is one seldom recorded by the camera.



Official Photograph, U. S. Navy

FULL SPEED AHEAD!

The multitude of levers, dials, switches, and other mechanical devices concentrated here in the control room of the U. S. ship *Tennessee* gives some idea of the magnitude and intricacy of the superdreadnaught.

It was hours, it seemed, before I devised a posture for reclining, but finally attained one resembling that of Mercury lying on his right "statue" side, and in this attitude I drifted off to weary, uneasy slumber. It seemed, too, as if I had not slept more than a few minutes before rude hands were shaking me and a crusty voice was calling me from a far world.

"Mr. Hall! Mr. Hall! Quarter of four! Mr. Page says it's pretty wet on the bridge. Are you awake, sir? Weather's tough. Everybody's sick. Do you hear me? Mr. Hall! Mr. Hall!" Much shaking. "*Mr. Hall!*"

"Huh? Yeah! All right!" I swung my feet over the edge of the bunk and rubbed my eyes. So this was to be my second day at sea on a destroyer! Why wouldn't the darned ship be quiet!

Dressing was a slow process, for it was necessary to grip something stable with one hand and brace hard with at least one leg to keep from sliding and landing against the sharp edges of the metal furniture.

By eight bells I was on the bridge—weak, but, nevertheless, there. I couldn't see anything on the bridge except the dimmed compass light and the tiny light over the helm angle indicator. The deck was careening and sliding underfoot in a most disconcerting manner.

As my eyes became more accustomed to the darkness, I made out the wing railing of the bridge and gained it. The reflection of the running lights on the waves rushing past wasn't particularly encouraging.

THROUGH TUMBLING PRECIPICES OF WATER

Long curlers, with a 30-foot depth of trough, went whistling past. At one moment the K * * * was in the trough, and at the next was tossed high on a combing mass of seething sea. Then she was sliding rapidly into the next valley, and the shock, as she crashed into the tumbling precipice of water that followed, burying her forecastle under and seemingly knifing it backward, was terrific.



Official Photograph, U. S. Navy

"SHOOTING THE SUN"

This officer is standing on the bridge of his ship making observations with a sextant, from which he will work out his latitude and longitude. The clocklike instrument in front of him is the engine telegraph, by means of which the engineer is kept advised as to the speed desired.

Shielding my eyes from the spray, I tried in vain to see ahead, but found it impossible to glimpse anything from the depths of the watery canyons except the next curler rushing at us.

A heavy form pressed me against the rail.

"That you, Hall?" It was Page. "Well, it's a corker. What?"

"Yes, *sir!*" I found my voice rather faint, and cleared my throat, resolving not to show weakness.

"Come over to the chart."

We pushed our heads and shoulders up through the canvas flap of the inclosed chart board (see, also, page 431).

"I think we're about here, Hall," said Page, wiping the salt spray off his hands and face and pointing to a position some thirty miles south and east of Cape Cod Light. "We missed Cape Cod Light and also Peaked Hill Bar Buoy. Just as glad we didn't get close enough to see the light. Didn't stop snowing until about two hours ago; couldn't see a thing.

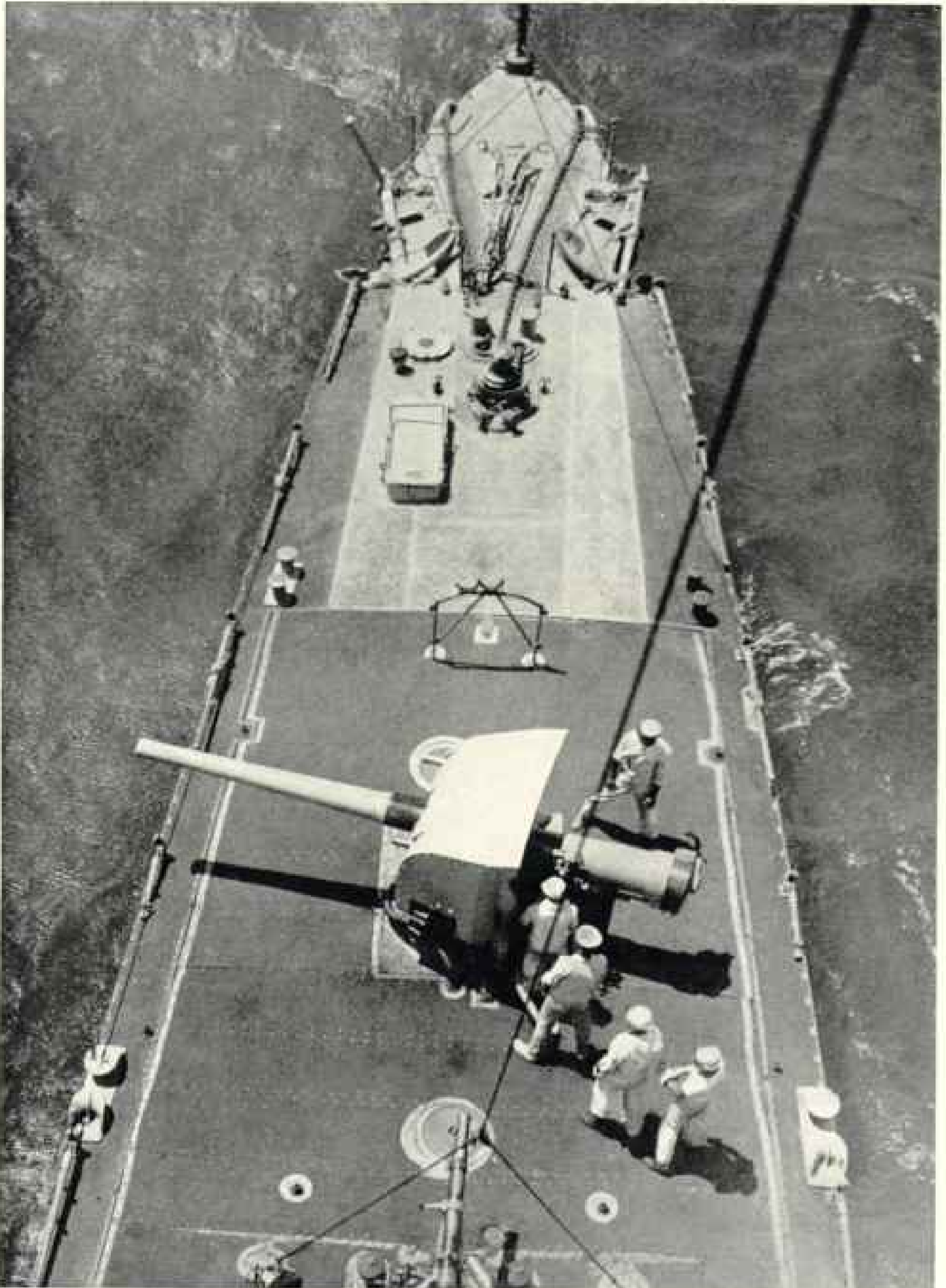
"Had to slow speed to five knots at 1

o'clock. Seas broke a couple of bridge windows in front of the helmsman and battered up the chart house some. Put oil bags over each bow; keeps down the sea a bit.

"We're heading off Nantucket Shoals—course, 145 true, 162 per compass. You can see I've allowed enough on the course, so we won't be set inshore.

"North Truro is the only radio compass bearing we can get, so that doesn't help much. Surfside radio compass station doesn't bear yet and Cape Elizabeth is out of commission for a month's repairs. Makes it rather hard for navigating."

Page paused, smiled wryly, and continued: "Steering engine room's flooded; ventilator cowl on deck was ripped loose by seas an hour ago; engine's running all right under water, though. Nobody has gone overboard except Pay's little French bull, poor fellow. Some ports in the forward crew's compartment are cracked; have to keep the watch bailing out down there about once an hour. Whaleboat's been smashed up a little, but



Photograph: International Newsreel

THE DESTROYER READY TO STING WHILE AT FULL SPEED

The anchors, which sometimes prove such life-savers to a destroyer, are here shown "catted," which is Naval parlance for "pulled up on the deck and secured." The bow gun is trained on a target and ready to fire.



Official Photograph, U. S. Navy

OFF TO SEA

He is wearing the Navy's blue for the first time and evidently is happy about it. In less than six months he'll be well filled out and as "hard as nails."

is fast now. Everything else has been secured.

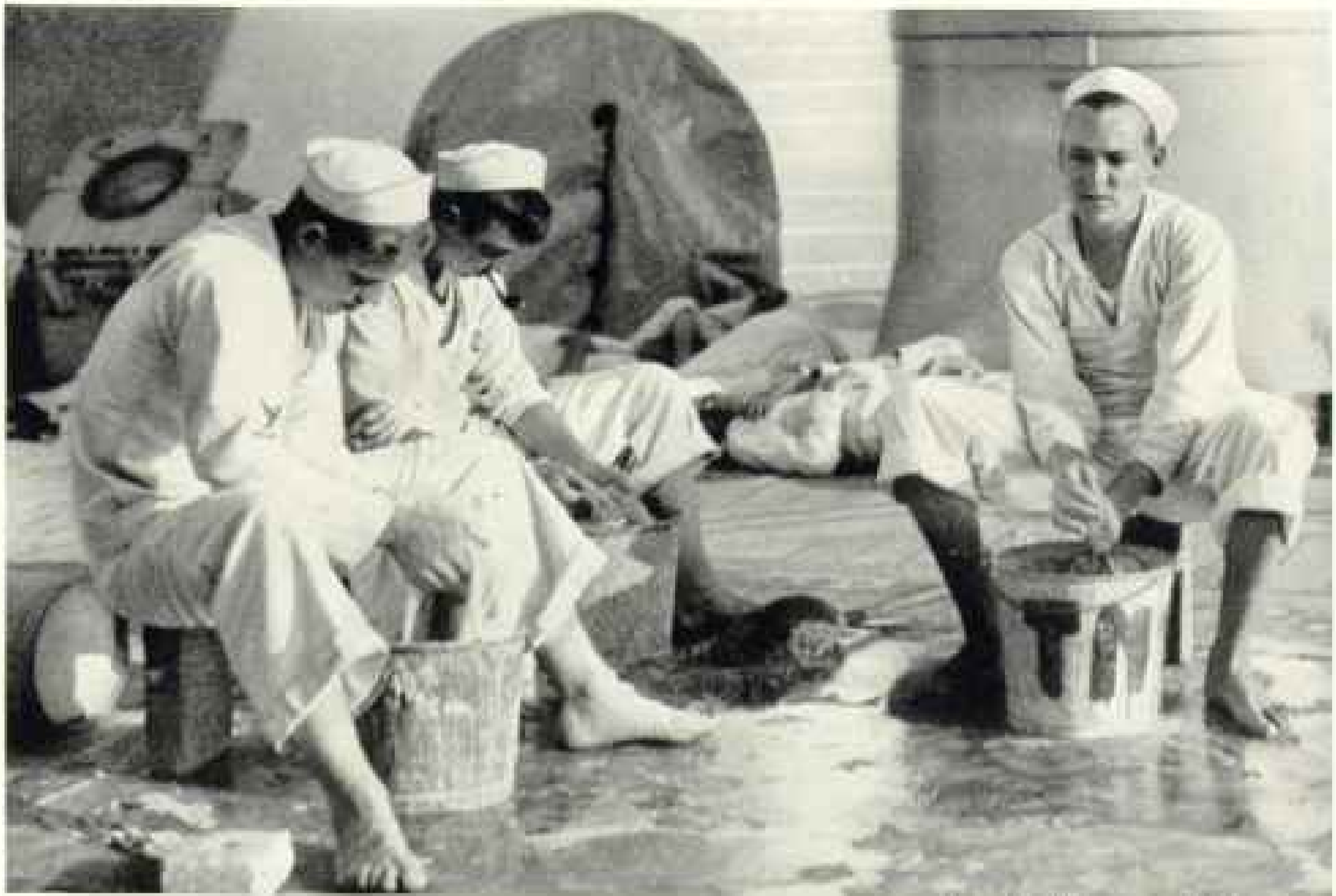
"Barometer's still falling, now 29.28. Wind and sea are hauling around; wind's about a force eight or nine and has gone from southeast to east; probably will continue the circle. Sea has been from southeast, but is hauling east. You can expect a nasty roll before long. Clinometer in the emergency cabin'll tell you how much we roll. If we roll more than 50 degrees, slow down, head up into the sea, and call me.

"Watch has been relieved. Captain's in the emergency cabin. Johnston and the Paymaster are playing dead in their rooms. Atkins seems to be all right. Got everything?"

"I relieve you, sir." I was grinning feebly.

The Exec. looked at me keenly. "Atta boy!" he laughed, slapping me heartily on the shoulder. "Well, guess I'll turn in, then." He withdrew his head from the canopy.

I turned out the light over the chart and, gaining the lee rail, braced myself against the ship's lurching, waiting for my eyes to become accustomed to the darkness. *So we were going to have a nasty roll before long!* Seas were breaking regularly over the forecastle and romping aft to the bridge breakwater. Spray flew aft in stinging sheets, as we drove on, and the salt froze on my face.



Official Photograph, U. S. Navy

DECK LAUNDRY

These boys are making a bucket serve as a washtub and their hands as a board, but the larger Naval vessels now maintain laundries, at which the men can have their clothes washed for a nominal sum.

On the bridge the helmsman and quartermaster were able to stand their watch; the messenger and two lookouts were dizzily holding on, too sick to be of use.

Down below, in the steaming fireroom, I could picture the watch gripping desperately at anything, as they regulated the burners which supplied oil to the boilers.

In the engine rooms I thought of the watch sliding about, as they governed the racing turbines, on floors wet with bilge water, which sloshed up as the ship tossed and rolled (see, also, page 440).

THE GRAY MORNING OF OUR SECOND DAY

The night lightened slowly to a leaden, freezing dawn. I looked out over the gray expanse of waters. The incessant rolling and pitching was wearing down my physical endurance.

At 8, as Atkins came up on the bridge to relieve me, the K * * * drove into a hurtling, massive sea. The long hull quivered and trembled, and as our fore-castle lifted from tons of rolling water, a cross-sea caught the bow. Under the im-

pact, it seemed to me that the bridge was rolling from under my feet, as the ship heeled over. From below decks there was a crash of broken crockery and a sliding shock of some heavy weight cast loose.

Slowly the ship came to a stop in her roll, and then whipped back to vertical and over the other way. But the opposite roll was not so great, and, as the water rushed and swirled off the decks forward and aft, I fought my way to the wheel. The ship's head had been thrown forty degrees to the right of the course, and the K * * * was rolling heavily, with her beam now to the sea.

"Where is he?" I heard some one with a gruff voice shouting hoarsely.

LASSOING A BUCKING SAFE

"Mr. Hall!" It was Reilly, the chief boatswain's mate. Shirtless and hatless, his hair tousled, Reilly came toward me hand-over-hand on the bridge railing. "Mr. Page says to slow down and head up into the sea. The Paymaster's safe is cast loose!"



Wide World Photos

"TAKING A REEF"

Men do many things at sea that they never did at home, including the mending of torn garments. This open-air tailor shop on the deck of a destroyer appears to be doing a "while-you-wait" business.

In a quick leap I reached the annunciators and rang up one-third speed, directing the helmsman to put on full left rudder. As we hauled around laboriously, I swallowed; my knees felt a trifle shaky. The safe, which was in the wardroom, had been lashed. Evidently the heavy roll had snapped the lashings. That must have been the shock of heavy weight I had felt so plainly.

I bethought myself to inform the Captain; but the Captain was not in the emergency cabin. I sent the scared and seasick messenger to tell him, then turned the watch over to Atkins.

Anxiously I hurried below. To have this ton-and-a-half juggernaut sliding and crashing against the steel sides of little better than eggshell thickness was threatening, serious.

In the passageway to the wardroom a big form crowded past me.

It was Page.

"Just about got her!" he shouted. On his arm was a coil of heavy line. As he stepped into the doorway the ship rolled heavily; a warning yell came from husky throats. I had a vision of a black object sliding and battering past the door, and then Page disappeared. A groan, a splintering of wood, glass, and metal, and then a rush of men. I gained the doorway and saw a handful of burly men straining at the safe, hauling it away from the metal sideboard into which it had crashed.

"Reilly!" Page yelled. "Lasso 'er! Lash it between the stanchions in the middle of the wardroom!"

Struggling and gasping, the men carried out Page's directions. I jumped in to help, and found the Captain and Page shoulder to shoulder with me. The line which Page had brought with him soon inclosed the safe, the mass of broken chairs, the twisted metal dining table, and the splintered victrola cabinet.



Official Photograph, U. S. Navy

THE SKY-PILOT'S DAY

The ship's band furnishes music for the church services conducted on board. The church pennant, to be seen at the left (blue cross on a white field), is flown above the national emblem during divine services. This is the only flag that enjoys such distinction.

I heard Page's voice in my ear: "Darned thing nearly went through the side; the starboard transom got the first dent. Don't see why the Pay, couldn't invent a lighter box to carry his cash in."

I gazed long at the buckled and splintered transom, driven in almost to the ship's side, and shuddered.

The men completed their work. I wandered to my stateroom. Tugging and pulling at my wet clothing, I finally threw myself upon my bunk, drifting off to exhausted slumber.

A VISIT TO THE GALLEY FOR REINFORCEMENTS

When I awoke the dull afternoon light showed me by my wrist watch it was almost 1 o'clock. I decided to get on deck, fill up with air, and also pay a visit to the galley. The sea and wind were from almost dead astern now, picking us up and lifting us along viciously. At times the seas romped up and swarmed over the after decks, and at other moments a speeding green mountain got under the

counter and careened us over until it seemed to me our foretopmast would dip water.

After reinforcements of a hot beef sandwich and a cup of steaming "Java," I clambered up to the bridge. Johnston was on watch and greeted me with a feeble wave.

I returned the salute. "How's she steaming, John?"

"Rotten, thanks. Boilers are salted up badly—and so am I. I can't imagine what it was I ate before we left 'Bosting,' but I feel inside like a wriggly eel. No thanks to the Exec., either, for putting me on watch."

"Where's the Exec. now?"

"In the emergency cabin with the Old Man, dopping out where we are."

WE CHANGE OUR COURSE

I looked through one of the emergency cabin ports. The Captain, bending over the chart desk, looked up and proposed something to Page. The latter agreed and the Captain stepped out of the cabin,



Official Photograph, U. S. Navy

SEAPLANE AND DESTROYER

The narrowness of the destroyer is well illustrated by the fact that the wings of the seaplane reach entirely across its deck and extend to the vessel alongside.

"Johnston, change course to west. You may have to slow speed a little, for the new course'll bring the sea on our bow. By dusk we may see Nantucket Shoals Lightship, so keep your watch alert."

As the K * * * was headed west, I stepped aft and into the emergency cabin.

"How's she steaming, Mr. Page?"

"Pretty rough, Hall. Picked up speed to ten knots at 9 o'clock this morning, and that helps some. Hope the Captain slows down on the new course or we'll get an awful hammering. Not much sleep the rest of the trip, I guess."

As we approached our new course, the K * * * 's laboring increased. By the time we were west by compass, we were

alternately lifted high and rolled over by each crested sea, and then dropped like a pile driver into the following canyon. When we struck, the hull quivered and strained to rise under the weight of water which flooded the forecastle. It was on the third crash that a splintering and sliding from overhead occurred, and our radio aërials, sparking from an outgoing message, snapped and fell from their waving heights to the upper decks.

"No one can repair that in weather like this," Page remarked laconically. "No chance of aid now from radio compass bearings."

I stepped out on the bridge and saw the radioman who had been on watch strip



Official Photograph, U. S. Navy

"CROW"

But one not versed in the slang of the sea may wonder what it is all about when he hears a table lined with gobs calling for "Java" (coffee), "slum" (stew), "red-eye" (catsup), "sweet sand" (sugar), and "shiverin' Lix" (gelatine).

away the broken spreaders and twisted antennæ. A wet flake dropping on my nose broke my somber train of thought. I looked up. It was snowing again, and over toward the west the sky was black. A rumble of thunder came to my ears, and off to the southwest a thin fork of lightning shot down to the horizon.

"Will you look at that!" I thought. "All the weathers together! More—and yet more."

Wondering what was coming next, I sought my restless bunk for a possible short nap before my four-to-eight watch.

When I came up on the bridge at eight bells, the snowstorm was being driven by a vigorous, freshening, northwest wind. The Captain was on the bridge.

"Haven't seen a thing of Nantucket yet, Hall." Captain Welles' lips were drawn. "Page thinks we'd better take soundings at half-hourly intervals, so

start them at 5, in case we don't see the lightship. Let me know when you have one or two."

After I had taken over the watch, I peered out into the thick veil. We were walled in almost completely, wallowing and careening under the intensified rush of seas which leaped out from the white drapery and vanished into the opposite curtain of snow.

By two bells it was dark. Nothing had been sighted, so I sent for Stearn. Soundings began to come up regularly. The light in the emergency cabin was suddenly switched on. Startled by its comparative glare, I peered in through one of the open ports. The Exec. was bracing himself and checking over the soundings.

"Forty-five fathoms, fine gray sand bottom, was the last, Stearn?"

"Yes, sir. And this one is 36 fathoms, same bottom."



Official Photograph, U. S. Navy

"PEELIN' SPUDS"

These young men should be well trained in domestic arts as well as in the ways of war. They get lots of this kind of experience, for the Navy is a great potato market.

Page laid down the soundings, distance made good, and course steered, on a strip of transparent paper and slid it over the chart. At last he found chart soundings to correspond with those taken.

"H-m-m-m. Puts us fifteen miles south of Nantucket Shoals Lightship, roughly, eh? Let me see—24 hours should put us off Cape Henry, if we steer about 236 true and make fifteen knots in this sea. Tell Mr. Hall I want him. Oh, you there, Hall! Will you send a messenger to the Captain—ask him to please step up here?"

The Captain came on the bridge, checked over the chart navigation, ordered the course changed and speed increased to fifteen knots, cautioned all hands to keep

alert, and then went below decks again to his cabin. We ground on, whipped and buffeted by seas which, because of our increased speed, seemed to rush at us with anger.

OUR THIRD DAY OUT

It was not until the dawn of our third day at sea slowly unveiled the sky that the gale had lightened its intensity. I was on deck again with the four-to-eight watch. Page, who had slept in the emergency cabin, called for the messenger. I stuck my head in at the lee port of the cabin and managed a grin. "Helmsman, quartermaster and I are the only ones on our feet, sir."



Official Photograph, U. S. Navy

"UP AND OVER"

Something is always being scraped and painted aboard a man-of-war. The peculiar seat used by these sailors who are engaged in painting the smokestack is known as a "boom's chair."

Page smiled back. "Well, I'm coming out to look around."

He gained the lee rail and I joined him. It had stopped snowing before daylight, but the skies were heavily overcast and the seas were rolling high, even to the horizon.

"Don't think we'll see the sun to-day, do you, sir?"

The Exec. slanted his eyes upward. The wind was dying down but slightly, leaving little prospect of dispelling the snow-laden clouds massed overhead.

"No. We'll have no sights and probably won't see anything to help us until to-night. Then, by George, we'll have to pray that our dead-reckoning line is right, our seasick helmsmen haven't thrown us more than ten miles off that line, the engines have been pushing us according to Hoyle, and the Virginia Cape lighthouse keepers don't have apoplexy about eight bells."

He paused reflectively, and then went on:

"This is the first time I've ever been this long without seeing sun, moon or stars, or some light, or having a radio compass bearing. Six hundred miles around corners without some reassuring touch is my idea of a whale of a good start for the southern cruise."

"Check!" said I, with feeling.

FEELING OUT THE SHOAL
ATLANTIC SHELF

Despite the fact that the wind was relaxing its vigor, the sea was still remorselessly rushing at us, but from a different direction, having hauled back around to nearly astern, pushing us along.

The air was penetrating to the marrow. It continued in this way throughout the daylight hours. About noon the monotony was broken when an east-bound tramp was sighted to the southward, her cumbrous bulk



Official Photograph, U. S. Navy

OFF WATCH

Although there is much to be done at sea, there is still some leisure time, when the weather's fair and the sea calm. A part of the skipper's gig may be seen a little to the right and above the middle of the picture.

tossing back walls of foaming white. As dusk began to settle, I came up to relieve Johnston.

"Captain says to have soundings taken every half hour, Kewpie. We're getting in touch with the bottom again, but no one knows whether we're steamin' for Chesapeake Bay or the Panama Canal. Captain's inside the emergency cabin now, plotting the last batch of soundings, and he's sure worried. When you land on the beach, be sure to let me know, will you?"

I braced myself near the compass and tried to see ahead. The glass was covered with frozen spray, so I gripped hard at the emergency cabin railing and finally

reached the lee wing of the bridge, peering out into the dusk. The K " " " was slashing and swashing along doggedly. Worn as I was by the continual physical punishment, my nerves thoroughly shaken by the pounding effect of the seas, I let my mind dwell on Johnston's jocular remark.

When, at 7 o'clock, the sounding taken showed 56 fathoms, gray sand, I hurried to the emergency cabin. Page was plotting the sounding. The Captain was sitting on the transom, his elbows on the chart desk, chin cupped in hands, watching the results.

"Can't tell much yet, Captain," Page



PALS



Official Photographs, U. S. Navy

A COUPLE OF KIDS

The young "gob" is playing nurse to the ship's mascot, who seems to enjoy being a bottle-fed baby.



Official Photograph, U. S. Navy

WHERE SEA TALES ARE MADE

These men are writing on a mess table which hooks on to the ceiling when not in use, and is thus completely out of the way. One thing a sailor never lacks is interesting news for his letters home.

remarked. "That's sure enough. Another sounding or two may help us. If we have made anywhere near our speed or course, we ought to see either Cape Henry or Cape Charles Light by eight o'clock."

As soon as Atkins had relieved me at eight bells, I wrote my log for the watch and then went into the emergency cabin.

"It's about 8:15, Page." The Captain was speaking. "The last sounding was 42 fathoms, and the bottom makes me believe we're south of the Capes, about an hour behind in distance. Think we'll be all right if we change course to northwest. Ought to sight Cape Henry or Buoy 2CB in half an hour."

Stearn, who had stuck his head in the cabin doorway in time to hear the Captain's last words, grabbed a telescope out of the case. I followed him out on the bridge and watched him as, clinging to a bridge awning stanchion, he began a determined search of the horizon for lights, pausing only at intervals to wipe the spray

off the lens. As he concentrated on his search, he looked up and whistled.

DANGER SIGNS AHEAD

"Sir, there's a heavy haze hanging low on the water toward the west. Can't pick up much."

The Captain, who had come up beside me, was galvanized into action. "Atkins, we've got to double our lookouts! Pick out a good man to send aloft, too, with a pair of binoculars. He may be able to see over the haze. It'll be heavy work up there, hanging on, so he's got to be a husky. I'll slow down soon, unless we sight something."

Here was my chance for proving myself, I thought.

"Captain, how about me for a foretop lookout?"

"Certainly, Hall! By all means!" The Captain, seemingly pleased, slung a pair of binoculars around my neck. I removed my cap and started precipitately for the flying bridge.

"Here, Hall"—Page was pulling off his



© Underwood & Underwood

SEAMEN THREE

Seagoing pets are often trained to do all kinds of tricks and stunts, their sailor friends devoting many an hour to their proper education.

woolen gloves—"take these. It will be pretty cool up there."

"Be careful now!" was the Captain's final warning.

BREAKING AWAY FROM THE ODIUM OF
"MAKEE LEARN"

As I started my ascent I was reminded that I should be cautious. The steel ladder rungs were glazed with ice and, my feet slipping, I rapped both shins smartly against the next higher rung. The rungs were treacherous to the grip; it was all I could do to hang on by my hands. I began all over again by wrapping my arms around the uprights and bracing my legs as I went up slowly, step by step.

As I went higher, the swaying of the long mast, as the ship lurched drunkenly, caused me to look down. Thirty feet below I could see the light from the emergency cabin. The glare of the running lights revealed the spreading phosphorescence on either bow. Close underfoot, the white masthead light offered nearer companionship.

Climbing on, my arms chilling and stiffening, I pushed head and shoulders up through the trapdoor in the crow's nest and in another moment was inside. Closing the door underfoot, I began searching with my naked eyes all around where I imagined the horizon should be. I could not see the dividing line between the sea and the heavens.

The weaving of the mast caused me acute annoyance when the ship pitched and lurched; the shock of the crashing water came up through my

feet, vibrating and shaking the tiny crow's nest as if it were a rat in the jaws of a terrier.

I could see nothing for a time, and, pulling off the gloves, I adjusted the binoculars to my eyes, searching where I thought the horizon should be, from beam to beam, occasionally wheeling to look astern. The cold wind whistled through the crow's nest, chilling me and stinging tears into my eyes. It was as if I were in a world by myself up there—a cold, misty, stinging, waving world. I looked over the edge of the crow's nest to get a comforting touch in the way of seeing the ship's lights beneath.

As I looked up again, a tiny light

flashed somewhere there, close on the starboard bow. I caught my breath and tried to focus my eyes on the exact bearing, as the mast weaved over and back. It came again, but was lost in the foglike haze. I couldn't afford to wait. Fumbling with numbed fingers for the bell to the bridge, I pushed it, then yelled down the voice tube.

"Captain there? . . . Captain, there's a flashing white light almost broad on the starboard bow!"

The query shot back, "A flashing light?"

That was all I heard. I rang the bell again, but could get no reply. The ship seemed to be continuing her course and speed. If that light were Cape Henry, we were heading for the shoal shelf off Virginia Beach! I looked again for the light and located it; it seemed nearer, brighter. Two short flashes and then a long flash—Cape Henry! I pushed the bridge bell frantically and shouted down the voice tube. No answer. I tore open the trapdoor and, half sliding, half falling, started the slippery descent. As I reached the masthead light, clouds of white smoke began rolling from the fireroom stacks. The acrid fumes gagged and blinded me, but I reached the flying bridge.

There I paused for just a moment, for down on the bridge all was darkness; there were sounds of men scrambling about; orders being shouted. Above me, the masthead light suddenly flickered out. I caught the words of some one passing under my feet—"Lost oil suction in the firerooms!"



Official Photograph, U. S. NAVY

SMILING AT A SCOLD

When the fleet returns from a southern cruise the decks often look like a menagerie in transit. Many small tropical animals and birds are brought back, but monkeys and parrots predominate.

I slid down to the bridge and in the darkness found the Captain.

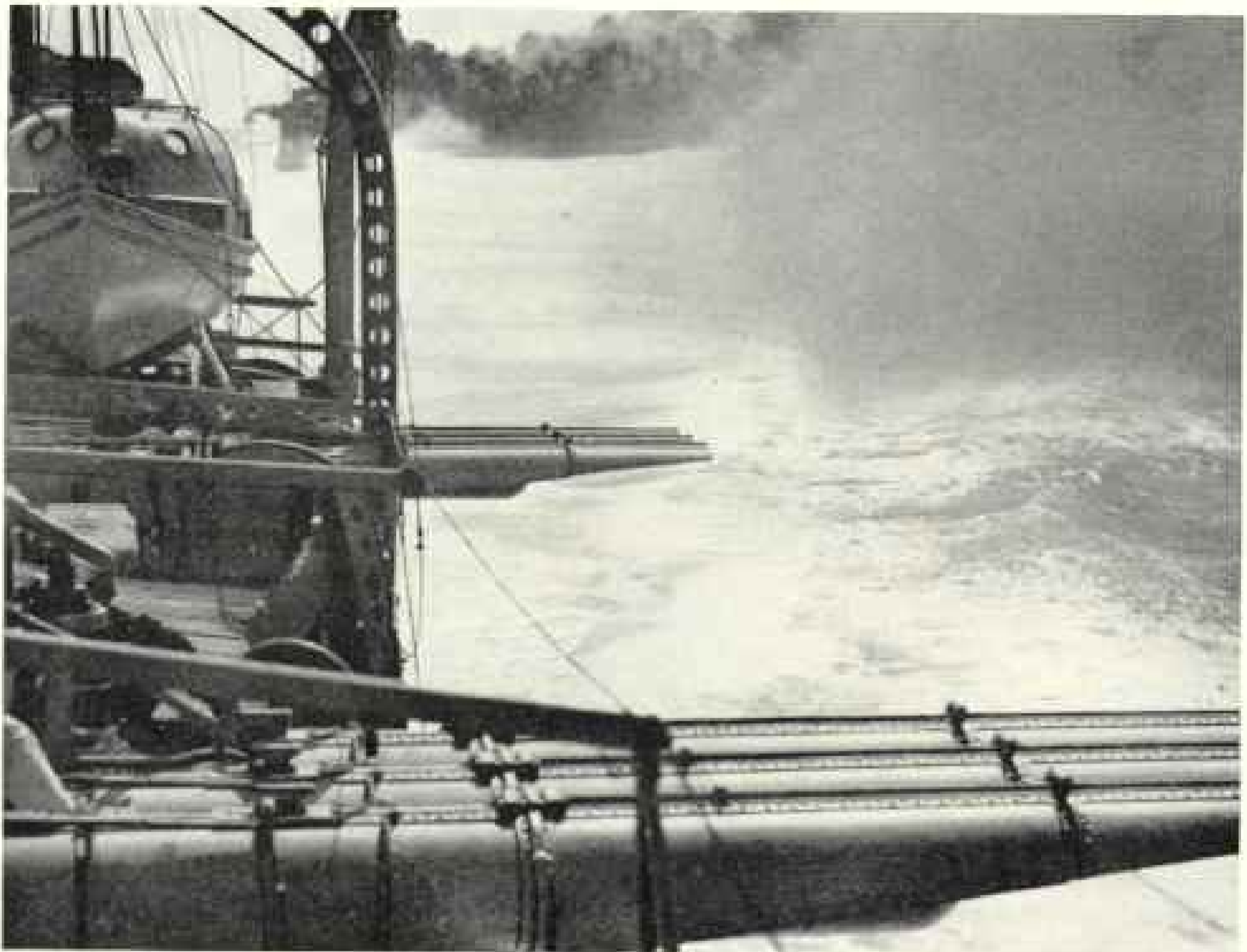
"That's Cape Henry, Captain!"

ENGINES FAIL, ANCHOR DRAGS

"What? Oh, yes, Hall! Fireroom has lost oil suction—no power. Oil barge at Boston must have had some water in that lot she gave us, so we're being washed and drifted along onto the beach just now."

"Look there, Captain!" I pointed.

The haze had thinned for a moment and Cape Henry Light was plainly visible. Gripping my arm, the Captain shouted in my ear, "Anchor, Hall! Get Reilly—"



Official Photograph, U. S. Navy

READY FOR A TORPEDO BROADSIDE (SEE, ALSO, PAGE 458)

I struck out for the bridge ladder, spilling over two of the scared watch.

"Reilly! Reilly!" I shouted, as I landed on the main deck. The big boatswain's mate was a welcome figure, as he stood there at the foot of the bridge ladder, an oil lantern in his hand. "Here, sir!"

"We're going to anchor!"

Clinging to the lifelines on the fore-castle, we fought our way to the eyes of the ship. As the K * * * rolled and staggered, we cast off the lashings, drove out the stopper, released the compressor, and in but a moment—no more—the star-board anchor jumped off the billboard, the chain rattling as it ran and throwing a whirl of spray off the unreeling wild cat. A roar through a megaphone came from the bridge.

"Veer to 90 fathoms!"

As the chain took the strain, the ship hauled around, head to sea, pulling and heaving mightily on the thin links of steel. Treacherously the anchor slipped, caught for a fraction of a minute, only to be

yanked clear by the surging strain of the ship.

I secured the chain and returned to the bridge. Johnston was there, too.

"Be ready in about ten minutes, I think, Captain," he was reporting.

The Captain was unmindful of the engineer's words. He was watching Page check the bearing of Cape Henry Light. A hail from the fore-castle leadsmen, "Ship's dragging, sir!" verified his suspicion. Only then did the Captain reply.

"Ten minutes. H-m-m! We're dragging to the beach. Atkins, you here? Have all men on deck! Close all water-tight doors!"

A TOUCH OF SEAMANSHIP

By the light of oil lanterns I saw men pouring out of the hatches from the living compartments, sleepily cursing. They listened quietly to Atkins' sharp, brief commands; then went swiftly to their assigned stations. "The other anchor, Captain?" Page was asking.



Official Photograph, U. S. Navy

RECLLOUDING THE ISSUE

Destroyers are useful not only as convoy and patrol boats, but also play an important rôle in actual "battle-fleet" engagements. There they launch their torpedoes at the larger ships of the line and dart away under cover of a smoke screen. Notice the scout planes flying above the smoke and thus enabling their fleet to see beyond the dense screen put up by the destroyers.

The Captain nodded. "Hall! Get Reilly to help you."

I reached the forecastle, Reilly faithfully at my heels. In a trice the port anchor was over, and as the strain was taken off the dragging starboard anchor, the port anchor seemed to grip and hold at the 30-fathom mark. The ship swung off on its new lead of anchor chain, and as this happened I eased the port chain slowly out of the hawsepipe.

Desperately we clung on, as the bow was pitched high, vibrating the chains till they sang taut, and then crashed down. As the strain took on both chains, the forecastle dug into the huge waves, carrying us under. The tearing force of the green water wrenched and twisted our arms. After what seemed to be an eternity, we again drew in free air.

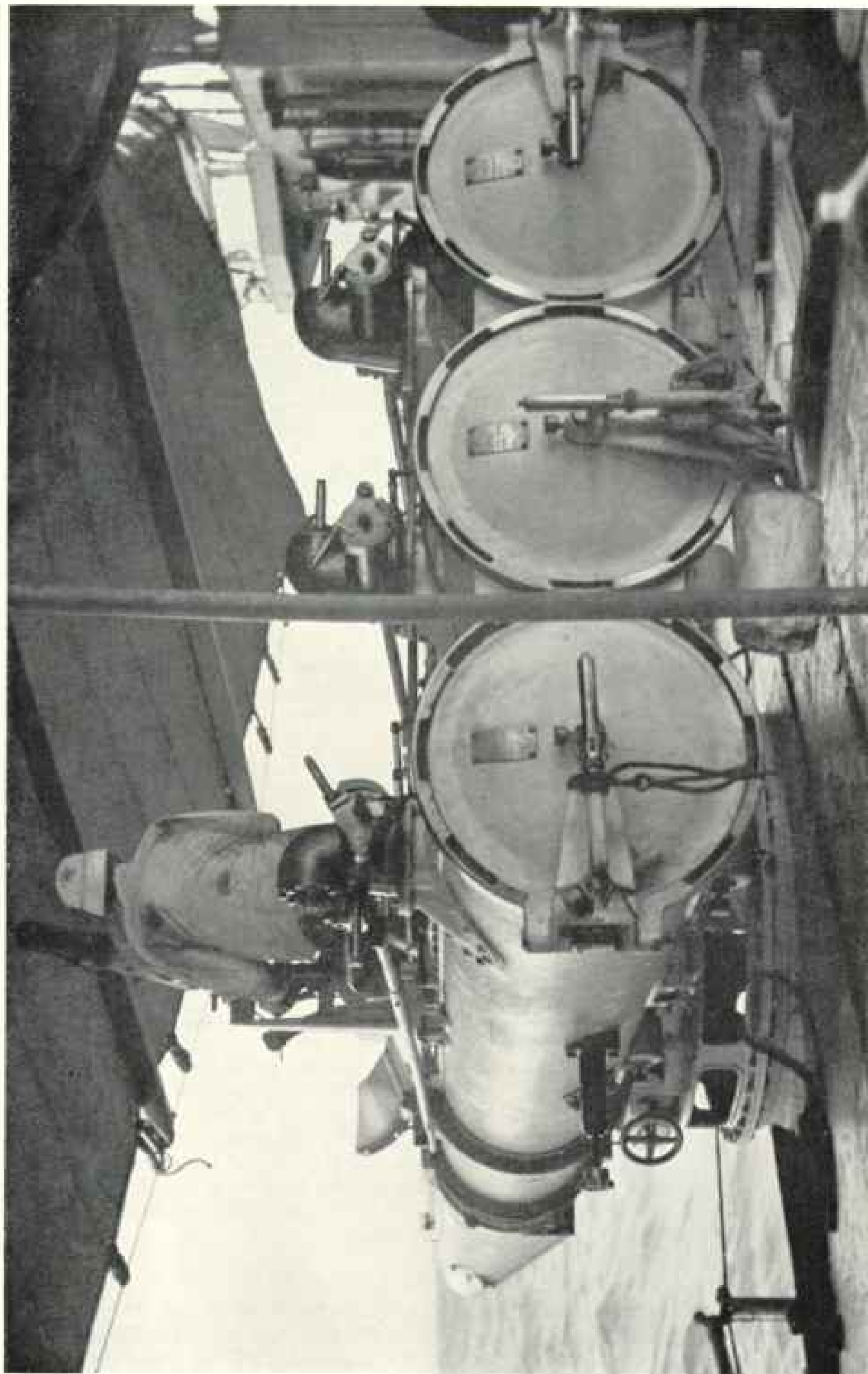
"Better get out of here, Mr. Hall!" Reilly sang out, choking and sputtering.

Choosing our moment, we dashed aft, holding grimly to the lee lifeline. Aft the break of the forecastle we stopped for breath.

Farther aft, the men not on watch were standing ready in life jackets around the big life rafts. On the fantail, Stearn was heaving a hand-lead; the water had become too shallow to bother with the sounding machine. Calmly, methodically, as if it were merely a drill, he dropped the lead over the side, plumbing the depth and noting the mark in his hand by a flickering lantern held by a scared youth. The result was transmitted to the bridge by voice tube.

GETTING THE LIFE-GIVING OIL TO FLOW

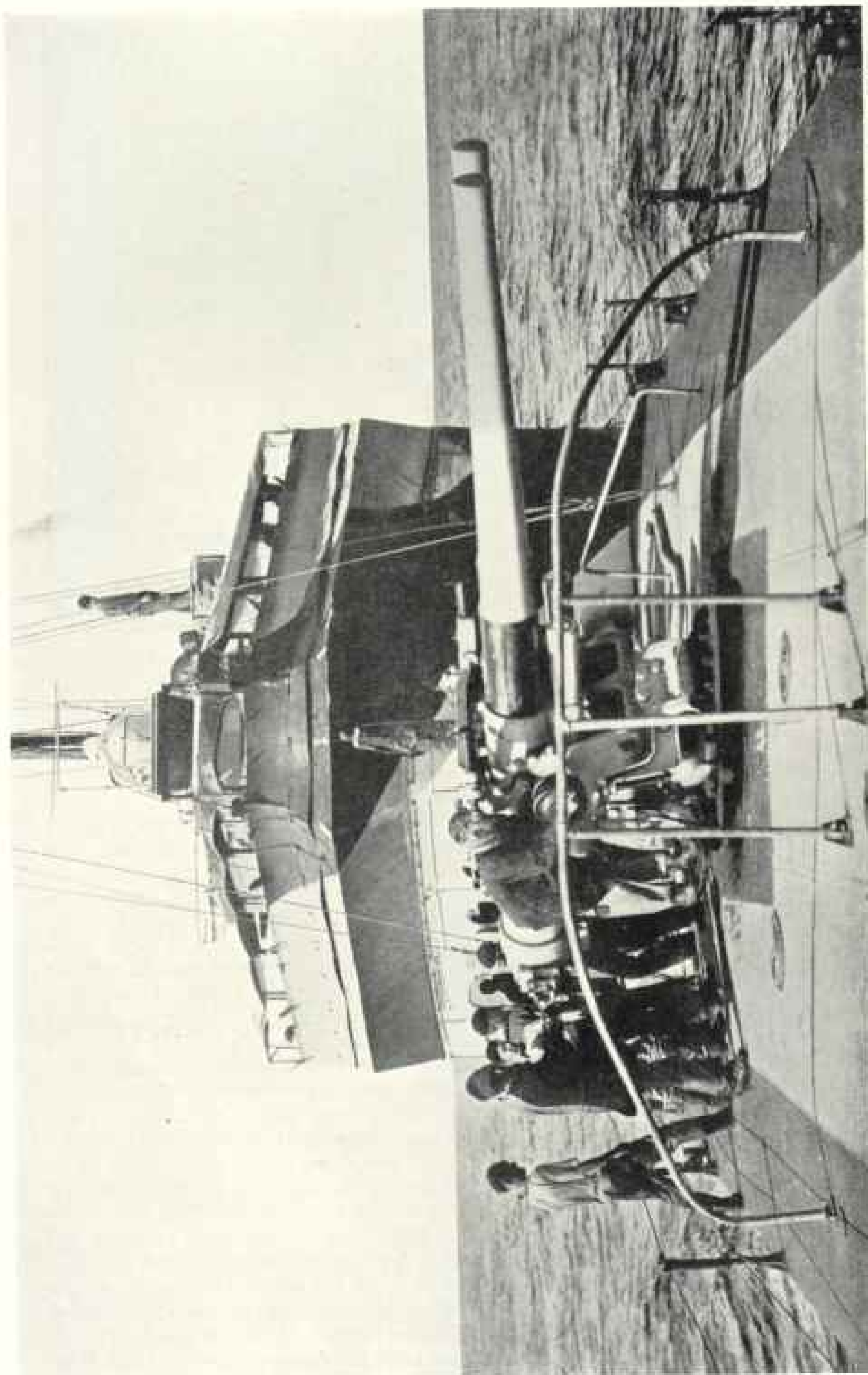
Down below, in the steaming fireroom, men splashed with fuel oil were fighting to get the life-giving oil to the boilers. The feeble light of the auxiliary lamps



Pacific and Atlantic Photos, Inc.

TRIPLETS OF DEFENSE

While a destroyer carries a few guns for use against submarines and other destroyers, her real batteries are her torpedo tubes. These most effective weapons send the "silver fish," as the torpedoes came to be known during the World War, off on their course of destruction against the great battleships (see, also, illustration, page 456, and text, page 467).



Official Photograph, U. S. Navy

GUN DRILL

This crew is engaged in sighting their "twin mount," as the pair of guns is known. The latest destroyers' batteries are equipped with a shield to protect the gunners from waves and spray (see illustration, page 442).



Official Photograph, U. S. Navy

SIGHTING DUMMY TARGETS (SEE ILLUSTRATION ON OPPOSITE PAGE)

This deck work constitutes an important part of the gunnery training of young officers. The officer looks through the reverse end of his binoculars to lend distance to the view of the targets.

cast ghostly shadows against the shining boiler fronts. Johnston, his hair caked, his eyes almost blinded by a faulty burner that had sprayed him with oil, hammered the gratings with a monkey wrench.

"Not a man of you leaves this fire-room—do you get me? We've got to pick up suction! Cut in all burners! Cut in all tanks! Let 'er go! Water or oil—something's got to start!"

As if his determination had struck fire from flint, a roar of flame rushed through the burners of both boiler furnaces. Oil was coming—oil mixed with water—for the roaring was punctuated with fizzes, and the white smoke from the mixed oil and water backed out from the boilers, gagging and choking the men frantically trying to manipulate the burners.

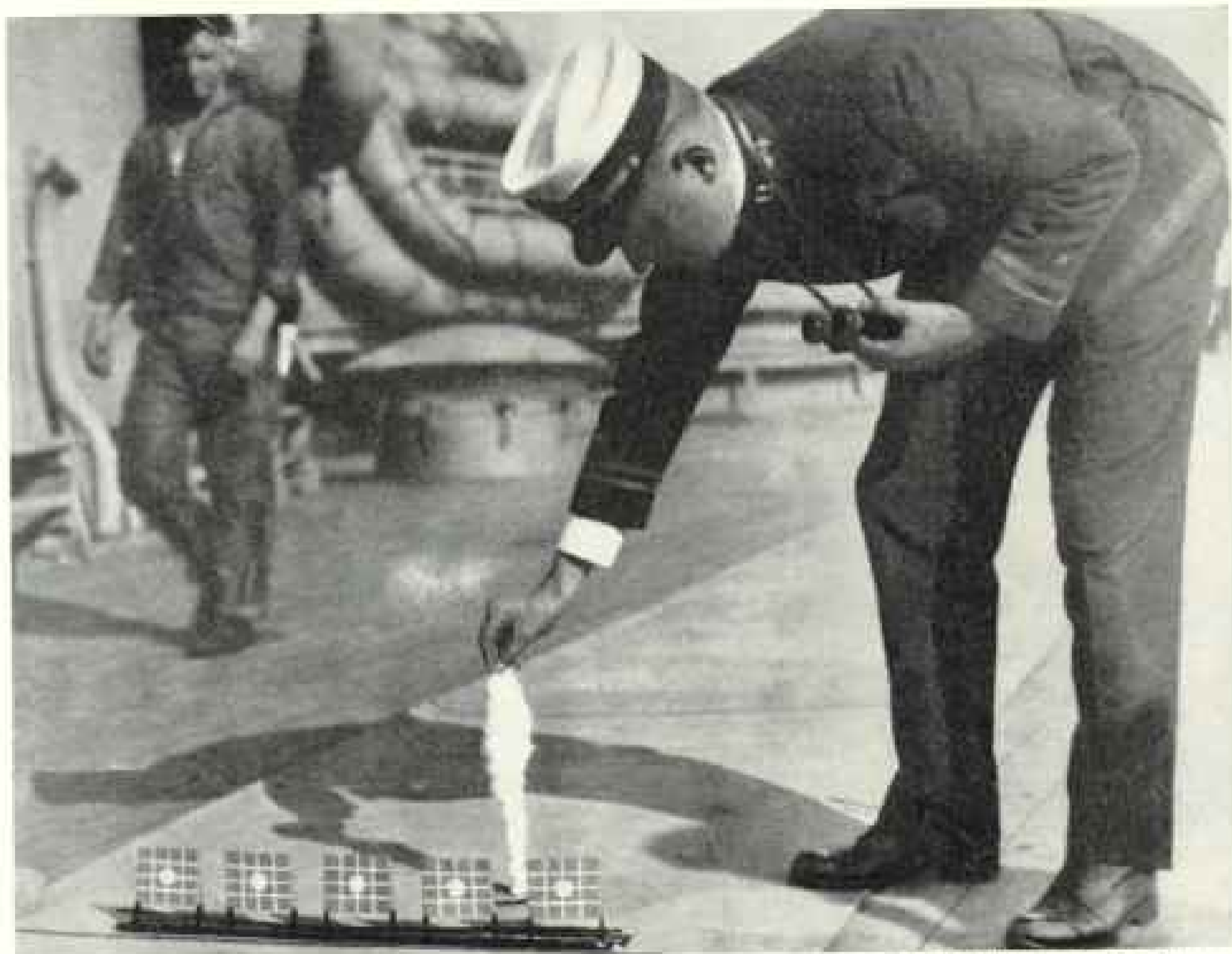
Suddenly, in the midst of this mêlée, the ship shook from end to end, straining at every rivet, quivering under a terrific shock.

"Hold it, boys!" Johnston yelled, white beneath the oil and grime on his face. "Never mind that! We'll get her yet!"

The oil sputtered and fizzed, but the fires swept under and over the boiler tubes. Steam gauges began rushing up. Forced draft blowers commenced humming in a low, encouraging tone. As the steam gauges registered 150 pounds, the engine rooms cut in on the generators and the ship was once more aglow with light.

On the bridge the shock had turned our faces white under the cover of darkness. I had returned there, feeling a strange sense of unreality. The weird sensation of helplessness was increased by the black of the night, the screeching of the wind, the ghostly wash and spray of the waves, the incessant roll of the ship, the uncanny light of the Cape pointing its finger at us and then withdrawing it suddenly, leaving us to the mercy of the howling dark.

Suddenly the boilers were torching red flames high above the tops of the stacks—this due, as I learned afterward, to the sudden heat applied to the accumulated oil in the bottom of the furnaces. A moment later the ship was shaken from stern to stern, as the boilers started "panting."



Official Photograph, U. S. Navy

SPOTTING PRACTICE

Training in spotting the fall of shot is given officers through the medium of diminutive targets and splashes set up on deck at distances which through binoculars appear in proportion to the actual distances over the water when real targets replace the models.

"They've got suction!" yelled the Captain in my ear. "Page, ring up full speed ahead! When the engines have enough steam, they'll answer. Don't know whether we've hit or not, but we'll get out of here, *pronto!*"

Atkins shouted out of the darkness, "Can't find a thing wrong, sir! All compartments are tight!"

Almost simultaneously came Stearn, clambering up the bridge ladder. "Captain, we're draggin' again!" he cried. "We stopped for about five minutes, but the last sounding was eight fathoms. Puts us close to the bottom in this sea!"

All at once the lights came on.

"We're going ahead now, sir!" Johnston, wild of appearance, was on the bridge, reporting to the Captain.

"What? Good! Fine! Here, Hall!" Captain Welles rushed toward me. I was tingling with excitement. "See that those

anchor chains are secured as tightly as they can be. I'm going to drag the anchors until we're in deeper water!"

WHAT CAUSED THE HEART-SICKENING STOCK

I was on the forecastle in a moment. Afterward I wondered how I had ever been so slow getting there. Reilly, the faithful, was with me, and as we started to put double stoppers on the chain, he turned to me.

"Port chain's gone, Mr. Hall. Snapped her links just at the 45-fathom shot. She musta held—Stearn says we held until that big crash. By the great saints! That was what the crash was! Chain surged and cracked under the strain, and when she went, the whole ship jarred like she had hit the bottom!"

We worked on in silence for a moment, both thinking what might have happened if the port anchor hadn't held.



Official Photograph, U. S. Navy

FUELING AT SEA

The use of oil as a fuel for warships has greatly increased their cruising radius and hence their effectiveness. It is now possible to fuel a destroyer in mid-ocean by means of a hose connection between it and the fuel ship. To accomplish this transfer in rough water is no easy task and calls for consummate seamanship.

To the bridge I sang out, "All secure, sir!"

"Very well!" came back by megaphone. "Stand clear! We're going ahead!"

As the ship forged ahead, the starboard chain tautened, then surged. Slowly the ship dragged out to deeper water, where the lone remaining anchor was weighed and catted, and we picked our way carefully on past Buoy 2CB, and shortly after four bells rounded the Tail of the Shoe Buoy.

ANOTHER SHOCK AT THE RENDEZVOUS

Inside the Capes the haze was lighter. The anchor lights of our squadron and those of Squadron Fourteen danced dimly over in Lynnhaven Roads. It was but a matter of minutes before we were threading our way among our mates, signaling the flagship for instructions.

The reply came sharply by blinker:

"Anchor 300 yards bearing 90° from the S * * *. Fleet sails at 0200 (2 a. m.) to-morrow for Guantánamo. Commanding officer report aboard immediately."

Three hours, and we, worn and somewhat crippled after our 600-mile battle, were to sail for Cuba! Flooded peak tanks and the steering engine room to be pumped or bailed out, broken port lenses to be blanked off, bent stanchions re-braced, fresh water for the boilers to be made. And every man and officer on board had been under physical strain untold for the past 50-odd hours.

The Captain called a hurried conference of officers on the bridge; then went below to shift into clean uniform for his call on the Squadron Commander.

I went into the emergency cabin. Page was there, talking to Stearn. He turned to me as I entered.

WITH THE FLEET AGAIN AND OFF FOR CUBA

"Well, Hall! Destroyer life may be rough, but it's seldom dull, eh? Come on, let's get below and start cleaning up. Nice little nap, and then you and I will get 'er under way. Others'll be ready to drop in their tracks after making repairs. Oh,

sail ho, for Cuba—*Cuba, perla del mar!*"

At 2 we were under way. A handful of men and officers moved the K * * * into her position in column, and, with our bodies aching and eyes strained, we slipped along out the entrance to Chesapeake Bay.

Ships were proceeding out of harbor in a night sortie. A dimmed light on the vessel ahead was our only beacon of the fleet's existence. Ahead of us somewhere mine sweepers had cleared a narrow channel for our exit. Destroyers of Squadrons Nine and Fourteen followed out astern of submarines, and were followed in turn by the battleships and supply ships of the Scouting Fleet. The first series of tactics for the Southern cruise was on.

I was no longer acutely aware of the ship's lurching. Spray tossed in my face by the wind served to cool and soothe the wearied feeling which had crept over body and mind.

Once outside the Capes, our division separated, taking up an assigned position in scouting line ahead of the main body of battleships and ships of the train. By 4 o'clock, when I stumbled below, the K * * * was steaming south at 15 knots on the rim of a huge circle, in advance of the fleet main body, which formed the center.

I was awakened before noon by the same talkative quartermaster who had hauled me from my bunk the first memorable night out of Boston. It seems to be a necessary qualification for a quarter-



Official Photograph, U. S. Navy

A CLOSE-UP: OILING SHIP

Fuel oil has almost displaced coal in the Navy. Not only is it more efficient and much more easily handled, but it is so much cleaner than the "black diamonds" that fueling is no longer the fearsome and filthy process it once was (see, also, illustration, page 462).

master—to talk sufficiently, perhaps to no point—until the oncoming watch officer is thoroughly on his feet.

"Only an hour or two from Hatteras, Mr. Hall!" This was what finally awakened me, for the reputation of the Stormy Cape put me on the alert. But what words were these? "Mr. Johnston says the weather's warmer and the sea is getting as flat as a looking-glass."

What, ho! Was Johnston "spoofing" me again, or was fortune about to change for us? After all the constant hammering we had received, could this be possible? Especially off Hatteras! I es-



Official Photograph, U. S. Navy

MAIL FROM HOME

sayed a puckering whistle, as I swung my feet over the edge of the bunk. By the time I was standing, the whistle had grown to full size and was varied by an attempt at song.

"Hey, Hall!" This roughly, across the passageway, from Atkins' room, which was dark, with curtains drawn. "Don't forget I had the four to eight and need my beauty sleep."

A CLEAR TICKET PAST HATTERAS

In spite of this reproach, my spirits would not down. At the wardroom table, which the carpenter's mate had miraculously contrived to bend and patch into some semblance of its former shape, I could scarcely refrain from humming.

The spirit seemed to be spreading, too; for López, the Filipino mess attendant serving me, was actually "on deck," with his quiet smile, for the first time since we had left Boston Light Vessel.

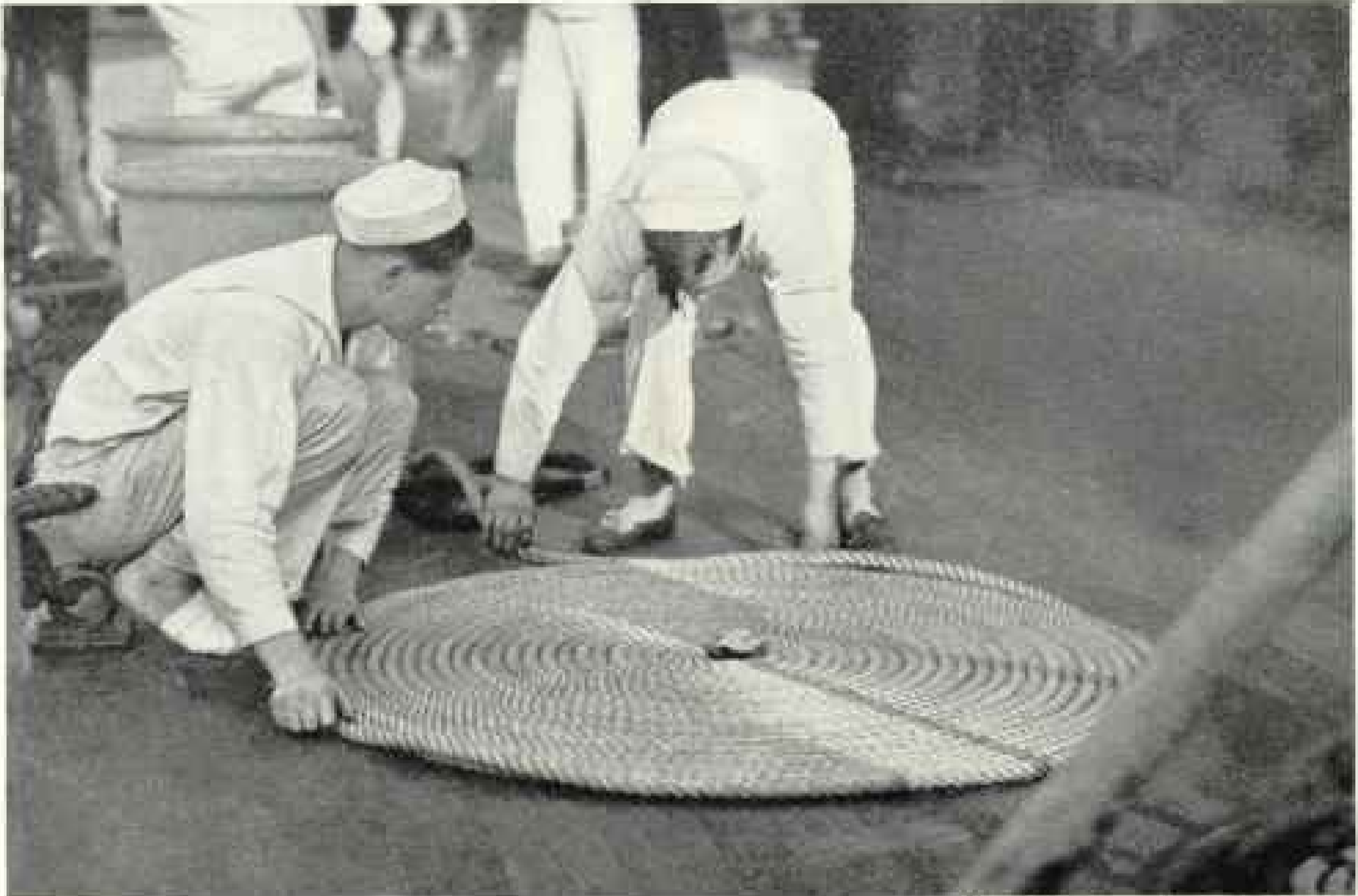
When I went up on the bridge, Johnston greeted me with a wan smile. Poor devil looked to be all in—probably due to getting his repair work done before sailing. However, he was, as usual, in good humor.

"See what I've left for you!" He swung his arm around the horizon. "Nothing like it, old boy; this is the life! People pay good money for trips like this; and to think, in two more days we'll be in the sunny Caribbean!"

After taking over the watch, I looked out across the waters. The crow's nest of the S * * * was barely visible through binoculars, there, slightly

abaft the port beam. That of the L * * *, as well as the tops of her stacks, I could see on the starboard beam without the aid of my glasses. Nothing else was visible from the ship but the rolling indigo blue below and a tufted blue sky, glarish in the midday sun, overhead. Astern of us some 12 miles, I knew, were the battleships, for we were dead ahead of them, on our part of their surrounding circular screen.

"Well, Hall, how does this strike you?" It was Page, yawning at the moment I turned to him and stretching his arms wide. "By George, this is great! Tomorrow we'll be through the Gulf Stream, and then we'll be changing into whites. What's that!" He pointed at the surface of the water on our starboard bow. "A



Official Photograph, U. S. Navy

GETTING THINGS SHIPSHAPE

So neat and orderly is everything aboard a warship that we have derived the term "shipshape" as a synonym for trim and spotless arrangement. Making the rope coil shown in the picture is known as "flemishing down the boat falls" and is peculiar to a man-of-war.

flying fish? Tell me, old man! Y'know, if it is, we can all have a bath to-day. It is! What? Never heard of that famous old tradition? Sure disaster to take a bath at sea down this way until you've seen a flying fish, I assure you!"

The crew on watch were smiling.

"Think I'll suit the action to the word, Hall. Give me a call about three, will you? Have to catch up sleep some time. Ever navigate any? Get you in practice checking my afternoon sun sight. Might get Stearn to oil up a sextant; but mind you"—this with stern burlesque—"don't take the nav-i-ga-tor's sextant by mistake!" (see page 441).

WE ARE ORDERED INTO ACTION

He started to go down the bridge ladder, but stopped when he saw a messenger running up with a radio blank in his hand.

"No sleep for me; I can see it coming! What is it, messenger?"

He took the outstretched message, scanning it. "Squadron Commander has ordered squadron to assemble on him, Hall,

Smoke-screen attack on the battleships. Work's starting early this year." He handed the slip of paper to me. I verified the details of the message and sent it on to the Captain.

In a moment after the Captain's arrival on the bridge we had increased speed and changed course to intercept the S * * *. There was an air of eager anticipation evident, not only on the bridge, but also about the decks.

Snatches of excited conversation drifted up from the crew engaged in clamping down the decks and from the men scrubbing paintwork. Not all of the attempts to get the K * * * looking shipshape after her strenuous trip could down the man-o'-war's-man scent of a coming engagement with "the enemy."

SETTLING DOWN TO THE WORK OF THE CRUISE

It was not long before the squadron was formed. The ships farthest away had lighted off extra boilers, and now came up with roaring blowers, slicing the Atlantic clean with their sharp bows and



Pacific and Atlantic Photos, Inc.

SCRAMBLED SIGNALS

One might reasonably wonder what kind of a signal required such a jumble of flags, but all it really denotes is that the flags got wet, for the bluejackets are hanging them up to dry. This is known as "airing the bunting."

leaving it foaming white astern from racing propellers. A flag hoist from the S * * *, and the ships slid like well-drilled troops into a boxlike formation, with one side open. Circling and maintaining the same relative position in formation, the squadron changed course and sped at 20 knots toward the approaching battleships.

Gongs for general quarters began sounding throughout the squadron. Decks were alive with men donning gas masks. Guns and torpedo tubes were manned, engine rooms and firerooms were being manned to battle complement.

Signal flags raced to the yardarm of the flagship.

"Van divisions, make smoke screen."

As the order was executed, heavy, black billows began rolling from the stacks of our two van divisions nearest the path of the approaching battleships.

"Good screen, Page," Captain Welles remarked, as he put on his gas mask. We were engulfed in the smoke of the ships ahead of us. The gas masks we were wearing for protection against an expected aerial gas attack afforded us relief from the gagging smoke clouds.

A messenger, who had been standing with his ear glued to the voice tube from the radio room, suddenly dashed past me. He touched the Captain's arm and made an emphatic gesture. The radio signal to execute the torpedo attack had come!

The Captain motioned the quartermaster at the wheel to give hard left rudder, and himself rang up full speed ahead to



Official Photograph, U. S. Navy

VISIBLE RADIO

Despite the introduction of radio for Naval communication, the semaphore signal is still an important agency for the transmission of messages between ships within easy "eye-range." The quartermaster in the picture is sending the letter "J."

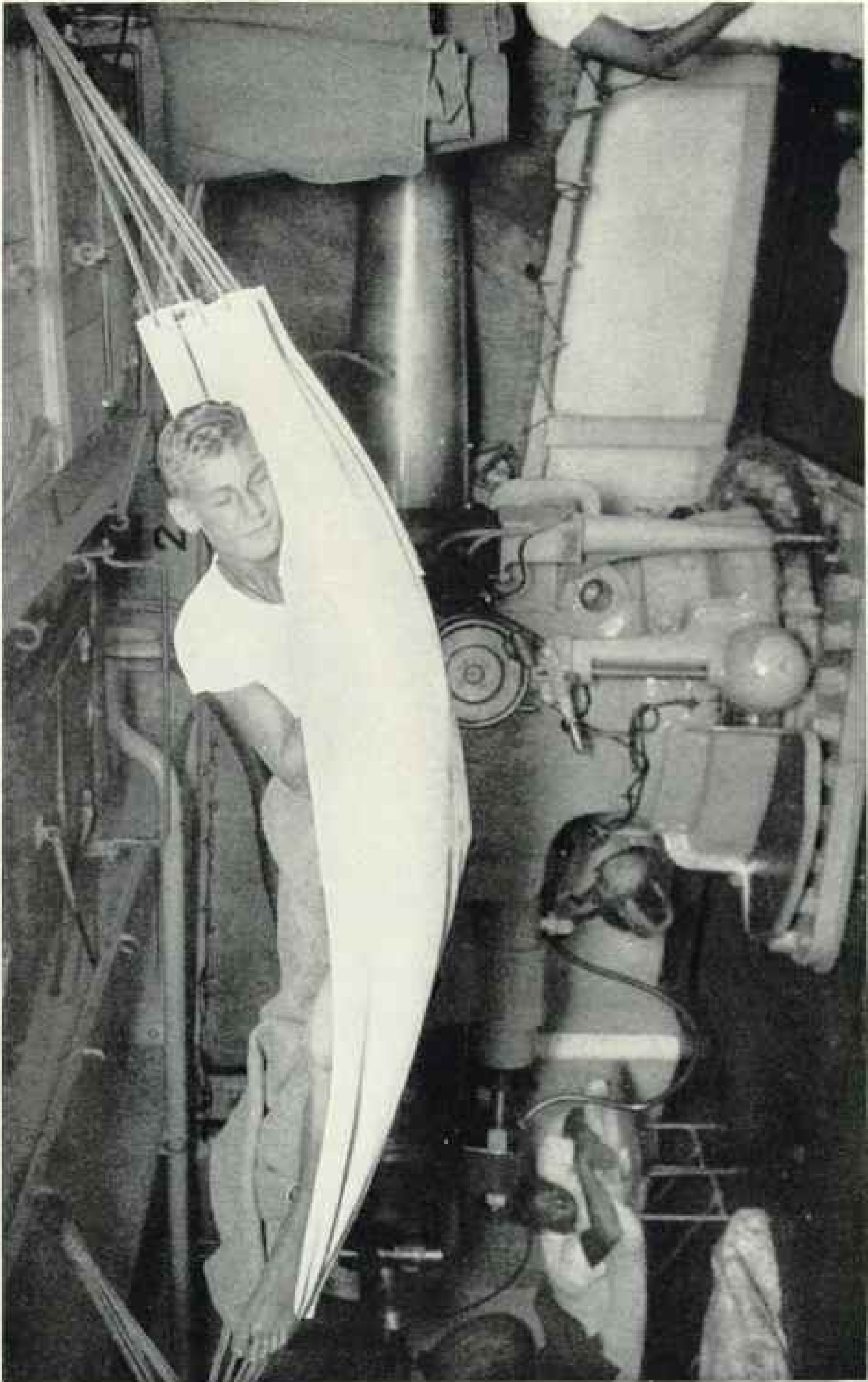
the engine rooms. In a second we were clear of the smoke screen with our mates of the attack division, dashing in column and baring our teeth to the line of battleships, there on our starboard bow, distant 8,000 yards.

Our leader dipped a signal flag. Instantly the division "fired" its broadside. I could almost see the wakes of 36 torpedoes slipping at high speed toward the targets. As airplanes from the fleet swooped at us, the division turned sharply around. The leader's flag again dipped, our other broadside was "fired," and we darted back into the smoke screen.



Official Photograph, U. S. Navy

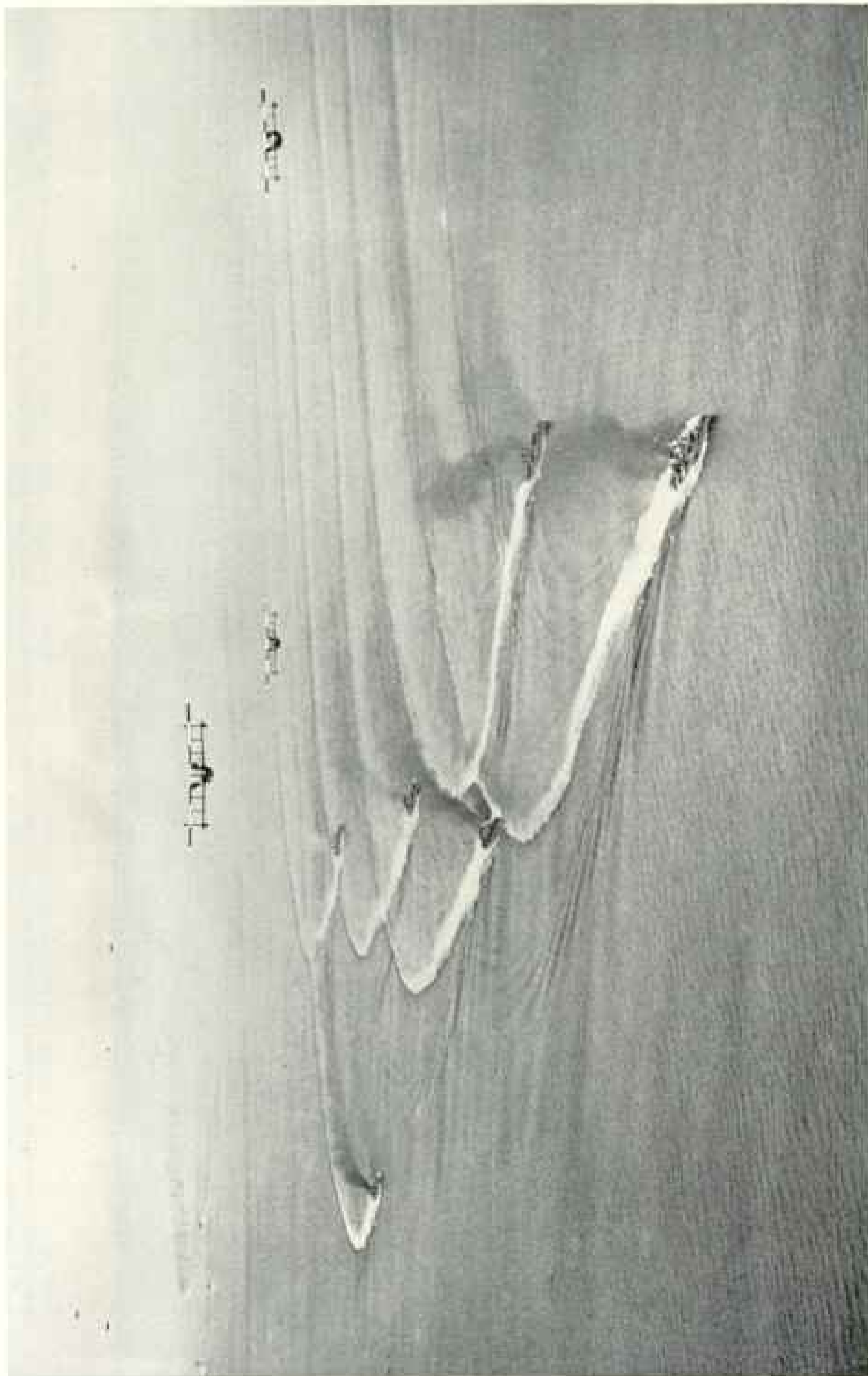
WASHING DOWN DECKS, A DUTY WHICH THE SAILOR HAS FACETIOUSLY DUBBED "FIELD DAY"



Official Photograph, U. S. Navy

ROCKED IN A HAMMOCK ON THE DECK

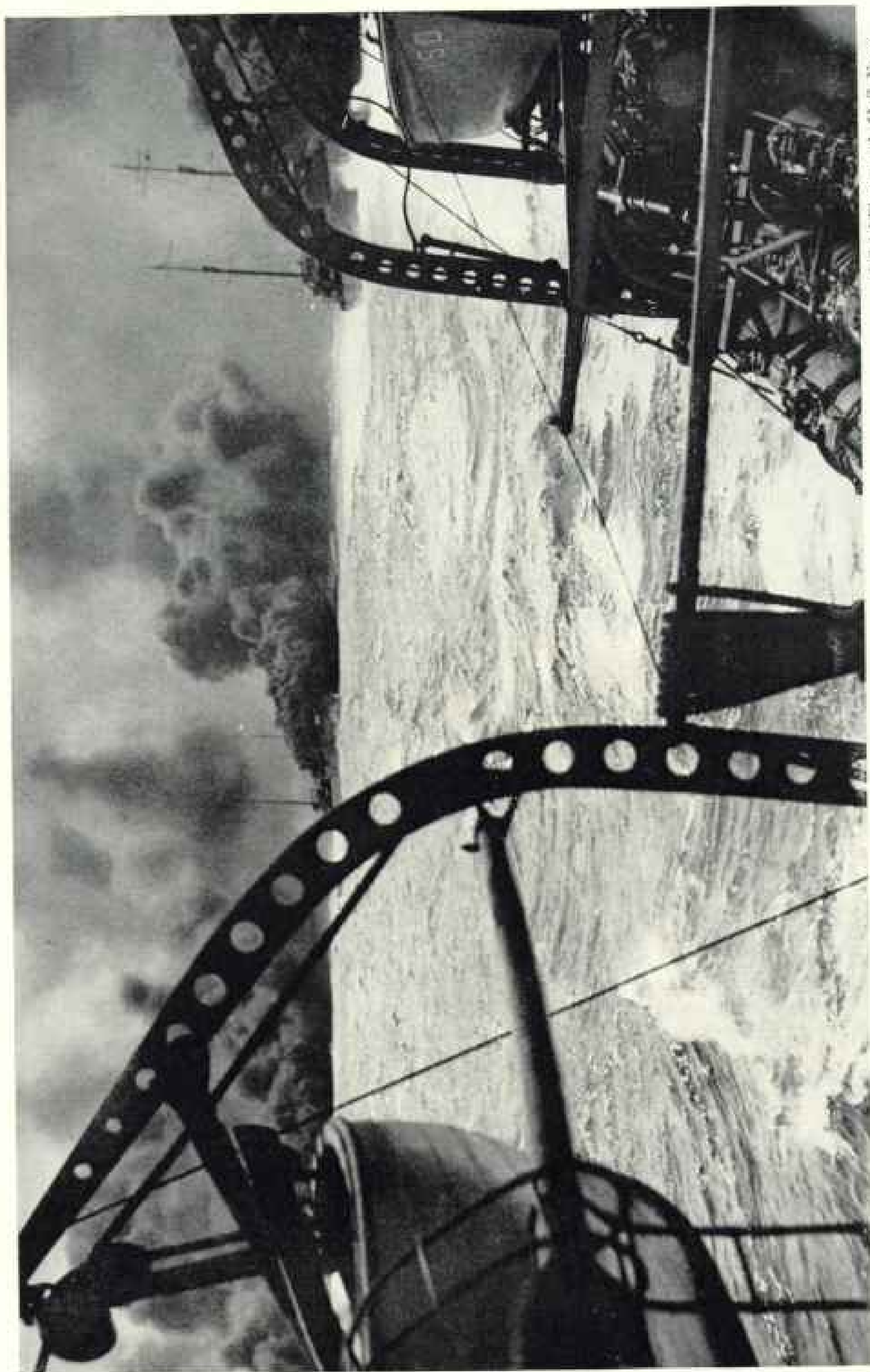
Sleeping quarters for the men on a battleship are very much "à la sardine," because a small space must accommodate many men. Hammocks are swung only about 18 inches apart, and their principal value is that, no matter how badly the ship may roll, the hammocks remain "on an even keel."



Official Photograph, U. S. Navy

CIRCLING INTO LINE WITH NAVY SCOUT PLANES OVERHEAD

"Circling and maintaining the same relative position in formation, the squadron changed course and sped at 20 knots toward the approaching battleships" (see text, page 467).



Official Photograph, U. S. Navy

DESTROYERS MANEUVERING BEHIND A SMOKE SCREEN

As an order to make a smoke screen is executed, heavy black billows begin rolling from the stacks of the destroyers nearest the path of the battle-ships they are attacking. This enables the other members of the squadron to maneuver for position out of sight of the enemy (see text, page 467).



Official Photograph, U. S. Navy.

THE "CORRECTION"

The origin of the destroyer dates back to the time of the Russo-Japanese War. The successes of torpedo boats in that conflict led Naval architects to devise a torpedo-boat destroyer in much the same way that the student in Hugo's "Les Miserables" said: "The Bon Dieu made a mouse. 'Hullo,' he said, 'I've made a mistake?' So he made a cut to correct it."

"Cease present exercises," came by radio from the Fleet Commander, and, as the squadron ceased smoke and assembled on the S * * *, a "Squadron Nine, Well Done," was seen flying at the yardarm of the fleet flagship.

"Old boy's not only generous, but also irreproachably fair," chuckled the Exec.

"Well done" had been passed down on deck by the Captain, and as the ship "secured" from general quarters, a lighter

spirit was evident. Atkins and Johnston, who had joined us on the bridge, noticed this, too. All of us, in fact, were feeling the wholesome effect of that signal. The Captain, actually grinning, stopped in front of us.

"Well, boys, after collarin' Cape Cod, I didn't feel as though we had done so well. But," and he looked behind at the vanishing flagship of the fleet, "we'll make a good ship of her yet!"

Notice of change of address of your GEOGRAPHIC MAGAZINE should be received in the office 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 December number, the Society should be notified of your new address not later than November first.



Photograph by Maynard Owen Williams

LIFE AT BATTLE HARBOR, PORT OF CALL ON THE LABRADOR COAST FOR THE RETURNING MACMILLAN ARCTIC EXPEDITION

MACMILLAN IN THE FIELD

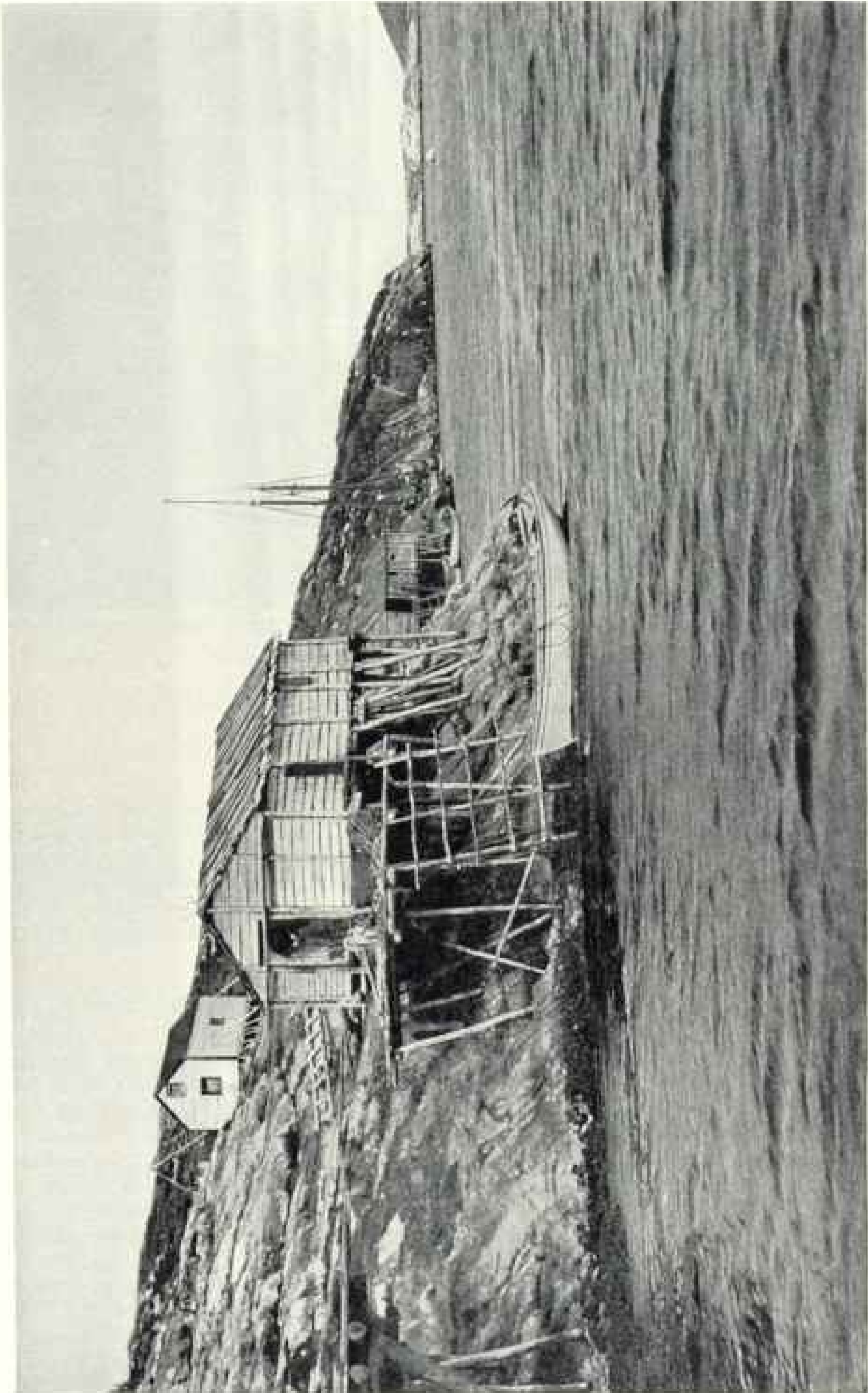
Commander Donald B. MacMillan is now engaged in preparing his complete report of the work of the MacMillan Arctic Expedition, under the auspices of the National Geographic Society, with the cooperation of the U. S. Navy. It will be published in an early number of the NATIONAL GEOGRAPHIC MAGAZINE and will be illustrated with photographs made by The Society's staff photographers who were members of the Expedition. With this number a large new map of the Arctic Regions, in six colors, will be issued as a special supplement.

THE safe return of the MacMillan Arctic Expedition will be a source of gratification to every member of the National Geographic Society who has followed the day-by-day news, received by radio, of the work of exploration and scientific research which has been carried on during the summer under the auspices of The Society.

The achievement of the United States Navy flyers in the face of seemingly insuperable obstacles is in itself an epic of Arctic aviation. Lieutenant Commander Byrd, at the request of The Society, has given a bare outline of the work which he and the members of his command in the air have accomplished, but behind each

sentence of that unembroidered, matter-of-fact account lies a story of initiative, skill, and daring worthy of the best traditions of the service to which these pioneers in Arctic flying overland belong.

An unprecedentedly severe season on this side of the Pole, with almost continuous fogs and snowstorms, and with an unexpected assault by icebergs on the anchored amphibian planes in the ordinarily safe harbor of Etah, has prevented the fulfillment of the expedition's plans to establish bases on the edge of the Polar Sea, from which the great "blind spot" on the map, aggregating an area of some million square miles, might be explored. Much has been accomplished for science,



THE MASTS OF THE "BOWDOIN" SILHOUETTED AGAINST A HIGH PROMONTORY AT BATTLE HARBOR, LABRADOR

Photograph by Maynard Owen Williams

however, and it is believed that the knowledge and experience gained by the Navy airmen will fortify the succeeding expeditions with data which will result in the eventual elimination from all maps the word "UNEXPLORED" which now disfigures for eager, acquisitive man that large region lying between Alaska and the North Pole.

PLANES FLEW MORE THAN 6,000 MILES
WITH ONLY ONE FORCED LANDING

Commander Byrd's statement, transmitted by radio to The Society, is as follows:

"My records show that the planes have a total of 75 hours and 50 minutes flying time, which at 80 miles per hour equals 6,066 total miles flown—by NA-1 away from Etah, 2,506 miles; by NA-3, 1,713 miles; by NA-2, 1,073 miles.

"Total miles flown away from Etah by three planes on work accomplished for flight mission, 5,286 miles.

"Only one forced landing occurred on these flights. The NA-3 was forced down on the way to Igloo Dahouny, a half mile from Etah harbor.

"Approximately 30,000 square miles were seen from the planes on these flights. Of course, many of the flights were made over the same course south and southeast of Bay Fiord, extending for 70 miles.

"There are mountain ranges and mountain peaks, some of which reach an altitude of at least 7,500 feet and mostly covered with snow, except for a few comparatively low ranges near Bay Fiord.

"These mountain ranges do not show on any charts which I have seen. Mountain ranges lie nearly all of the way from Sawyer Bay to Cannon Fiord, and it is thought that most of this region is unexplored by white men.

"There is a lake about two miles long frozen over in the mountains between Sawyer Bay and Cannon Fiord about 20 miles from the northwest end of Sawyer Bay.

"The Greenland ice-cap reaches an altitude of at least 10,000 feet in a direction 100 degrees from Robertson Bay.

"It is thought that little has been known heretofore of ice conditions around Ellesmere Island in the summer period. Nearly all of the many fiords seen by us show them to be filled with ice which occasion-

ally opens up, but soon closes in again. Bay Fiord and Eureka Sound east of Axel Heiberg Island are filled with drifting ice. The land in Ellesmere Island is firm, but too rugged to afford a landing place.

"In all territory flown over the Greenland ice-cap a comparatively warm stratum of air was experienced at 7,000 feet, and a bitterly cold one at 11,000 feet."

While the Navy flyers and MacMillan were making airplane history in the Arctic, other members of the expedition were engaged in transcribing in a series of remarkable color photographs the tints and hues of the Frozen North—north Greenland's surprising flower vales, the bizarre costumes of Eskimos, the animal, bird, and plant life that only the eyes of occasional explorers have ever beheld.

Dr. Walter N. Koelz, chief naturalist of the expedition, has collected data on fish life of the north and has studied and photographed winged snails, found floating through the waters of Etah harbor. He has also obtained the juvenile plumage of many birds that, while resident of the southern and central portions of North America during the winter months, breed within the Arctic Circle and are consequently little known. Specimens of bird species poorly represented in most of the museums of the United States, such as the Greenland Redpoll and the Purple Sandpiper, have also been collected.

Commander MacMillan, an authority on early Norse history, has pursued his studies of the Norse ruins in Greenland.

DAILY NEWS REPORTS GIVEN OUT BY
THE SOCIETY

A unique feature of the MacMillan Arctic Expedition was the daily contact maintained with civilization by means of the short wave length or high frequency radio transmission, and an important aspect of the work was the coöperation throughout the United States of some 1,200 amateur radio operators of the American Radio Relay League.

From the Atlantic to the Pacific, and from the Gulf of Mexico to Canada, these radio amateurs, who accept no pay for their services, have worked long hours in the night receiving messages of many thousands of words, addressed to the National Geographic Society and the



Photograph by Maynard Owen Williams

ON BOARD THE FLAGSHIP "DOWDOIN"

Commander Donald B. MacMillan, leader of the MacMillan Arctic Expedition; Dr. Gilbert Grosvenor, President of the National Geographic Society, and Dr. Wilfred T. Grenfell, medical missionary. The photograph was taken at Battle Harbor, Labrador.

Navy Department, and given by them to the newspapers and press associations. Thus the news of the expedition forwarded by Commander MacMillan, Lieutenant Commander Byrd, and by The Society's representatives was published daily.

The wave lengths used by the Zenith equipment ranged from 16 to 40 meters. These are especially advantageous, because they can be employed in the daytime and the expedition was working in 24 hours of daylight, and also because extremely high power is not required for their sending.

So successful was the radio communication that the expedition was not out of touch with the National Geographic Society or the Navy Department for a single day during the entire summer. Messages were picked up all over the United States

and also in England, Australia, New Zealand, and Canada.

Not until the complete report of Commander MacMillan is given to The Society for publication in the NATIONAL GEOGRAPHIC MAGAZINE, along with the pictures from the air and color photographs which give new impressions of the Far North, will the full results of the expedition be known and contributed to the world's knowledge. Preliminary reports, however, from the various members of the party show tangible results in the fields of topography, meteorology, zoölogy, ornithology, botany, and ichthyology which fully justified the labor, the hardships, and the sacrifices entailed.

Above all, the members of the National Geographic Society rejoice in the safe return of every member of the expedition.

NATIONAL GEOGRAPHIC SOCIETY

GEOGRAPHIC ADMINISTRATION BUILDINGS

SIXTEENTH AND M STREETS NORTHWEST, WASHINGTON, D. C.

GILBERT GROSVENOR, President
JOHN OLIVER LA GORCE, Vice-President
JOHN JOY EDSON, Treasurer
BOYD TAYLOR, Assistant Treasurer
HENRY WHITE, Vice-President
O. P. AUSTIN, Secretary
GEO. W. HUTCHISON, Associate Secretary
EDWIN P. GROSVENOR, General Counsel
FREDERICK V. COVILLE, Chairman Committee on Research

EXECUTIVE STAFF OF THE NATIONAL GEOGRAPHIC MAGAZINE

GILBERT GROSVENOR, EDITOR

JOHN OLIVER LA GORCE, Associate Editor
WILLIAM J. SHOWALTER, Assistant Editor
RALPH A. GRAVES, Assistant Editor
FRANKLIN L. FISHER, Chief of Illustrations Division
J. R. HILDEBRAND, Chief of School Service

BOARD OF TRUSTEES

CHARLES J. BELL, President American Security and Trust Company
JOHN JOY EDSON, Chairman of the Board, Washington Loan & Trust Company
DAVID FAIRCHILD, In charge of Agricultural Explorations, U. S. Department of Agriculture
C. HART MERRIAM, Member National Academy of Sciences
O. P. AUSTIN, Statistician
GEORGE R. PUTNAM, Commissioner U. S. Bureau of Lighthouses
GEORGE SHIRAS, 30, Formerly Member U. S. Congress, Faunal Naturalist, and Wild-game Photographer
E. LESTER JONES, Director U. S. Coast and Geodetic Survey
WILLIAM HOWARD TAFT, Chief Justice of the United States
GRANT SQUIRES, Military Intelligence Division, General Staff, New York
C. M. CHESTER, Rear Admiral U. S. Navy, Formerly Supt. U. S. Naval Observatory
J. HOWARD GORE, Prof. Emeritus Mathematics, The George Washington University
FREDERICK V. COVILLE, Botanist, U. S. Department of Agriculture
RUDOLPH KAUFFMANN, Managing Editor The Evening Star
JOHN FOOTE, M. D., Professor of Pediatrics, Georgetown University
JOHN OLIVER LA GORCE, Associate Editor National Geographic Magazine
CHARLES G. DAWES, Vice-President of the United States
JOHN BARTON PAYNE, Chairman American Red Cross
A. W. GREELY, Arctic Explorer, Major General U. S. Army
GILBERT GROSVENOR, Editor of National Geographic Magazine
GEORGE OTIS SMITH, Director U. S. Geological Survey
O. H. TITTMANN, Formerly Superintendent U. S. Coast and Geodetic Survey
HENRY WHITE, Member American Peace Commission, Formerly U. S. Ambassador to France, Italy, etc.
STEPHEN T. MATHER, Director National Park Service

ORGANIZED FOR "THE INCREASE AND DIFFUSION OF GEOGRAPHIC KNOWLEDGE"

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

ARTICLES and photographs are desired. For material which the Magazine can use, generous remuneration is made. Contributions should be accompanied by an addressed return envelope and postage.

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

AT an expense of over \$50,000 The Society sent a notable series of expeditions into Peru to investigate the traces of the Inca race. Their

discoveries form a large share of our knowledge of a civilization waning when Pizarro first set foot in Peru.

THE Society also had the honor of subscribing a substantial sum to the expedition of Admiral Peary, who discovered the North Pole.

NOT long ago The Society granted \$25,000, and in addition \$75,000 was given by individual members to the Government when the congressional appropriation for the purpose was insufficient, and the finest of the giant sequoia trees of California were thereby saved for the American people.

THE Society is conducting extensive explorations and excavations in northwestern New Mexico, which was one of the most densely populated areas in North America before Columbus came, a region where prehistoric peoples lived in vast communal dwellings and whose customs, ceremonies, and name have been engulfed in an oblivion.

THE Society also is maintaining expeditions in the unknown area adjacent to the San Juan River in southeastern Utah, and in Yunnan, Kweichow, and Kansu, China—all regions virgin to scientific study.

TIFFANY & Co.

JEWELERS

DEEP-ROOTED STANDARDS

INQUIRIES INVITED

FIFTH AVENUE & 37TH STREET
NEW YORK

Now

THE

NEW MARMON

becomes an even Greater Automobile

because of these new, important and far-reaching developments *exclusive in Marmon* at no increase in price...

Marmon now introduces what we believe to be the foremost and soundest contribution of the year to motor car engineering... By a new and ingenious application of proved principles, Marmon engineers have endowed the New Marmon with a magna-power quality, which attains a high water mark in motor car performance and efficiency.



In driving this Greater New Marmon you will experience a smoother flow of power and a more pronounced acceleration than you have ever known. You will go

from five miles an hour to maximum high speed, quietly, easily and with a swiftness which even Marmon has never before attained. On difficult hills, the car hangs on and pulls in high gear, smoothly, quietly and without apparent effort.

These amazing results are accomplished by a skillful combination of *Double-Fire Ignition* and the efficient New Marmon gas-intake system, in the proved Marmon valve-in-head type of engine.

Even with ordinary grades of gasoline, every atom is vaporized—is exploded between two fires—and the combustion accomplished instantly and completely. Naturally this system is productive of greater fuel economy.

The Three-Way Oil Purifier

(Exclusively Marmon) increases the life of the engine by preserving the lubricating properties of the oil. It automatically removes all forms of extraneous matter from the oil—both solid and liquid. It distills—

and passes back to the crankcase, only clean, pure oil. All vapors distilled out of the oil are returned to the combustion chamber and are consumed. It does all of these things automatically, in a simple fool-proof manner.

New Self-Lubricator

Marmon engineers have gone even further to provide a car which mechanically and automatically does things which ordinarily would be sources of annoyance and expense. By means of the *Self-Lubricator* all of the wearing surfaces or bearings of the chassis which require frequent attention are now oiled simply by pushing a conveniently located pedal.

New Body Styles—Greater Values

There is a wide range of body styles, including a line of four luxurious *Standard Closed Cars*—now at *exactly open car price*. These include two new body styles—the *Victoria Coupe*, for four passengers, and the *Two-Passenger Coupe*. Also the standard *Seven-Passenger Sedan* only \$75 more than the open car, and a comprehensive selection of *De Luxe* models.

All models are *extraordinarily* roomy, richly upholstered and finished in colors refreshingly new and different.

We strongly suggest to all who surround themselves with the best things of life that they see the Greater New Marmon, even though it be for comparison only.

NORDYKE & MARMON COMPANY

Established 1851
INDIANAPOLIS, INDIANA

"It's a Great Automobile"

Only Marmon Provides
Maximum Built-in Safety



CHOSEN
by
VICTOR
and
BRUNSWICK

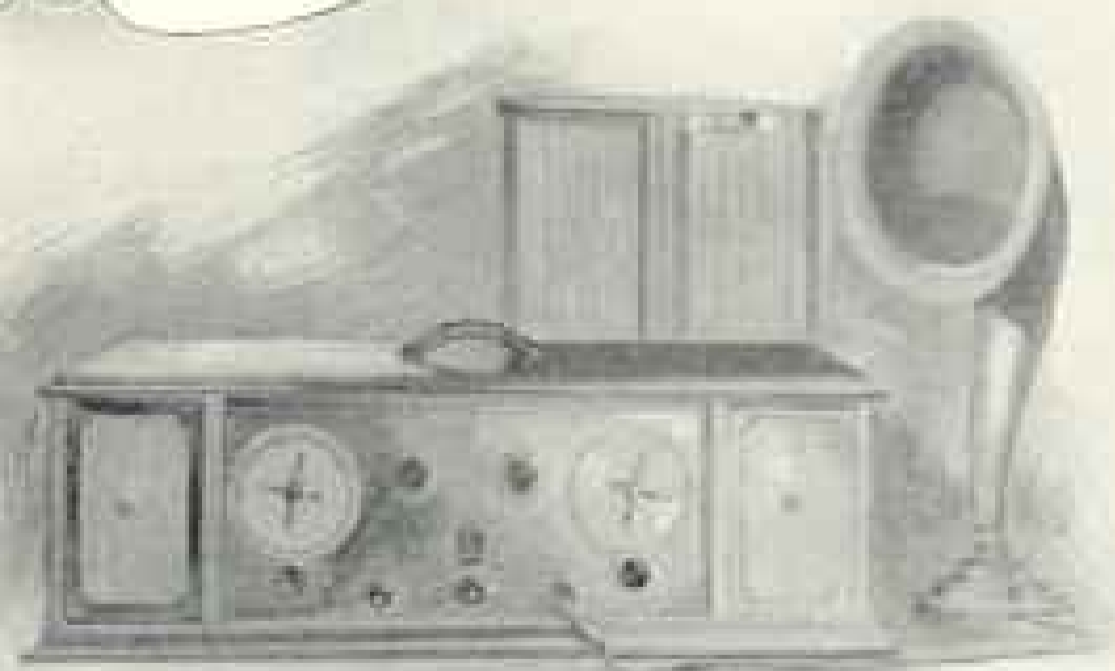
 **Radiola**
AN RCA PRODUCT

TWO great manufacturers — working independently and competitively — set out to find the radio receiver worthy to be combined with phonographs that have a world-wide fame to uphold.

They had every known kind and variety of radio set to choose from. They had every facility for research, test and exhaustive study. And they had a firm determination to combine with the Brunswick phonograph and the Victrola only that radio set which proved to be the leader today and which carried full promise of holding that leadership through the years of tomorrow.

*Both chose the
Radiola.*

*Radiola
Super-Heterodyne,
the most famous of
Radiolas. With the
new power Radiotron
as its sixth tube, it
achieves new volume
of tone and finer tone
quality than ever.*



The CRUISES SUPREME 1926

AROUND *the* WORLD

On the specially chartered Cunarder:

"FRANCONIA"

*Sailing Eastward from New York
January 14th*

30,000 Miles — 133 Days

Amidst an atmosphere of ease, comfort and luxury; on a steamer which in her equipment, service and cuisine stands pre-eminent, and one which through her previous cruises has made for herself a mighty host of warm and enthusiastic friends.

Last but not least, the ship is under charter and direction of Cook's, the world's foremost and most experienced travel organization.

The itinerary selected is as perfect as possible, synchronizing the visits to the many fascinating and engrossing countries, with the time of year when climatic as well as other conditions offer their greatest attractions.

Fares are fully inclusive and cover all shore excursions.

MEDITERRANEAN

On the White Star "Ship of Splendor"

"HOMERIC"

*Sailing from New York
January 23rd*

14,000 Miles — 67 Days

The supreme opportunity to see the Garden of the World, the countries of Ali Baba, the whimsical Don, the heroes of the Aegean and the Kings of the Nile.

Supreme in the superb, especially chartered ship—the largest and most luxurious steamer sailing to the Mediterranean—; in the cruise management; in the entertainments aboard and ashore.

The itinerary covers the widest field of worth-while points, including sixteen days in Egypt and Holy Land; optional visits to Paris and London on the homeward trip; also stop-over privileges.

Cook's Fleet of Nile Steamers and Dahabeahs stands foremost on that river.

THOS. COOK & SON

585 Fifth Avenue
Philadelphia
Los Angeles

Boston

Toronto

NEW YORK

Chicago

Montreal

St. Louis

253 Broadway

San Francisco

Vancouver

ELGIN TIME · KEEPER · TO · THE · SUCCESSFUL



Painted from life by
W.M. OBERHARDT

WALTER P. CHRYSLER

An engineer made him an Elgineer on his twenty-first birthday

*One of a series of little biographies
of Elgin Watches*

WRITTEN BY EMINENT ENGINEERS

Everyone knows what a watch means to a railroad man. My father—a locomotive engineer in the days of wood-burning locomotives in the West—taught me how to read time almost before I learned the alphabet.

On my twenty-first birthday, he gave me an Elgin Watch and to a railroad man, the son of a

railroad man, no finer gift could have been given.

During many years of railroad service, I worked by this Elgin. Long after its heavy hunting case design went out of style, it remained dear to me.

Today I carry a modern Elgin—a Corsican model. But the old watch still means much to me, the gift of a father to a son, a remembrance of railroad days.

—by WALTER P. CHRYSLER

 ELGIN 

THE · WATCH · WORD · FOR · ELEGANCE · AND · EFFICIENCY

ELGIN NATIONAL WATCH COMPANY, ELGIN, U. S. A.

1918 W. 54

WORLD CRUISE Belgenland

Largest and finest liner ever to circle the globe

Westward around the world to follow the sun—to visit each country at its most delightful time—to reach Cairo at the height of the Egyptian season and the Riviera in time for Spring sojourns in Europe. *Limited to 475 Passengers.*

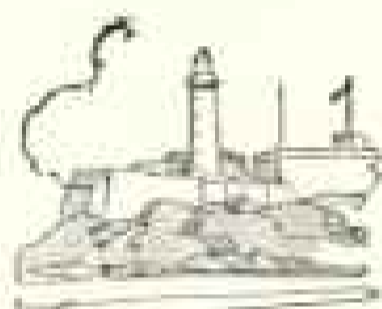
To 60 cities in 14 countries. 132-days. 24 in Japan, China, and Korea; 20 in India; 8 in Egypt and the Holy Land; 11 in the Mediterranean. Shore trips under the skilful direction of the American Express Company.

THE RIGHT TIME TO GO

Sailing Westward from New York, November 25

LOS ANGELES, December 11, SAN FRANCISCO, December 14

Back in New York, April 6, 1926



Havana

Into an interesting harbor, past historic Morro Castle to Havana, a bit of old Spain in the New World. Then on through the Panama Canal to Los Angeles and San Francisco.



Calcutta and Benares

Mountains and mosques—nature's creations—and man's. Benares, sacred city of the Hindus. The appalling bathing ghats of the Ganges.



Hilo and Honolulu

The thrills begin. Four thousand feet up to the crater of fiery Kilauea and a view into the burning volcano. In Honolulu, a dip at Waikiki. Dinner and dance to crooning Hawaiian music.



Colombo and Bombay

Colombo, port of Ceylon, an emerald set in a silver sea. Trips to Mt. Lavinia and Kandy, beautiful mountain capital. Then on to Bombay and thence, inland, to Delhi and the Taj Mahal at Agra, most glorious structure in the world.



Yokohama and Kobe

Six days—and a range of memorable excursions to Tokyo, Kamakura, Nikko or an overland journey to Korea, Manchuria and China. Four days at Kobe with trips to Kyoto and Nara. Into the famous Inland Sea and thence to China.



Egypt and Palestine

In Egypt, the Sphinx, great pyramids, old Cairo, the Mosques, the tombs of the Caliphs. In the Holy Land, the ever-vital scenes of Jerusalem, Bethlehem, Jericho.



Shanghai and Hongkong

Jiggling rikishas, queer sampans, tempting shops. Three days in Hongkong. Up Victoria Peak and to Kowloon, Macao and Canton. Then off to India via Manila, Java and Singapore, with liberal stops at each.



Naples and Monaco

By auto through Naples. Trips to Vesuvius, to Capri and the Blue Grotto, to the ruins of Pompeii. Then to Monaco with its famous Casino, luncheon at Nice. Thence to Gibraltar and a glimpse of Spain (Algeciras). Return to the *Belgenland* and home across the Atlantic.

Complete itinerary: Havana, Balboa, Panama, Los Angeles, San Francisco, Hilo, Honolulu, Yokohama, Tokyo, Nikko, Kamakura, Kobe, Nara, Kyoto, The Inland Sea, Shanghai, Hongkong, Macao, Manila, Batavia, Singapore, Diamond Harbor, Calcutta, Colombo, Kandy, Bombay, Port Sudan, Port Tewfik, Cairo, Alexandria, Naples, Monaco, Nice, Gibraltar.



For detailed information and descriptive literature apply to Red Star Line, No. 1 Broadway, New York City.

RED STAR LINE

INTERNATIONAL MERCANTILE MARINE COMPANY

In Cooperation with

American Express Company

American Express Company, 65 Broadway, New York; or other offices or agencies of either company.



—from Lieutenant Wade's
Letter to Alvan Macauley, President
Packard Motor Car Co.

New York, N. Y.,

**** I would never have attempted such a trip in any other car but the Packard Eight, for I know that the Packard is the only car equipped with the chassis lubricator and the motor oil rectifier.

**** These devices enabled us to drive the entire 3,965 miles without once changing oil or leaving the driver's seat to lubricate the chassis. To them, and the wonderful Packard Eight motor which never faltered in the 165 hours and 50 minutes continuous driving, I attribute the success of the run.

**** We have suffered no after-effects from strain. This is a real tribute to the ease with which the car was handled and its riding qualities. ****

The car came through with a perfect score. We had no mechanical difficulties of any kind. I believe we could have turned right around and driven back to Los Angeles without stopping either car or motor.

Leigh Wade

SEVEN DAYS Without a Stop!

Lieutenant Leigh Wade, round-the-world flier, accompanied by Linton Wells, his "aerial stowaway" on the flight, recently drove his own Packard Eight from Los Angeles to New York, 3,965 miles, without once allowing either the motor or the car to come to a stop.

The mileage covered was eight times as great as any ordinary car should be driven without change of motor oil. Yet thanks to the motor oil rectifier an analysis of the oil at the finish showed 98% pure lubricant.

The chassis was thoroughly lubricated while the car was in motion by a mere pull of a plunger every hundred miles.

Wade's spectacular trip impresses what the owners of 20,000 new series Packard cars already know—that the chassis lubricator and the oil rectifier mean longer life of parts, smooth, quiet operation and uninterrupted service.



PACKARD

ASK THE MAN WHO OWNS ONE



The Knowledge, Wisdom, Romance of 7000 years of human history concentrated for you now in these twelve volumes!

YOU may now have, in the actual words of the world's greatest historians, the whole authentic story of the people and events that have influenced the life of mankind. At last there is offered to you the combined historical knowledge of all ages and all writers in the light of modern research.

THE NEW LARNED HISTORY

For Ready Reference, Reading and Research

The only great reference work that is new and up to date from cover to cover

The best portions of a vast library of 9,783 volumes—the most brilliant writings of 5,500 great historians, including the best of present-day writers. Each of *The New Larned* is the broad conception of history as the authentic record of the world's development in all fields of human activity—literary, political, economic, social, religious, scientific. Nine times out of ten, when you consult a reference work, it is for that kind of information. *The New Larned* has been designed to concentrate just that constantly needed information more fully, with greater authority, and with higher literary excellence than any other work, and it is so arranged that every point is as quickly accessible as a word in your dictionary. That is why it meets so completely your daily reference needs and your desire for diversion and enlightenment.

This Coupon Brings the Free Book

C. A. NICHOLS PUBLISHING CO., Est. 1851, Springfield, Mass.

Please send me, without cost or obligation, a copy of your 96-page booklet describing *The New Larned History*, with specimen pages, illustrations, and full information. (Geographic 10-25)

Name _____

Street Address _____ City and State _____

An epoch-making task has been completed

It has required years of painstaking effort and hundreds of thousands of dollars to produce what may fairly be called—"the most authoritative reference work in the world." Its completion makes available a work that puts at your daily service that great heritage of knowledge accumulated through thousands of years of human progress. In these 12 plentifully illustrated volumes there is offered the knowledge that means a liberal education to any thoughtful man, woman or child.

The publishers offer you FREE this 96-page illustrated book

It is beautifully illustrated and contains many interesting specimen pages from *The New Larned* together with full information regarding its scope, arrangement and characteristic features. The coupon brings your copy free.



The Instrument of the Immortals

LOOK through a file of musical programs, old or new. Or read the announcements of musical events in the metropolitan newspapers during the concert season. . . . You will begin to realize the astonishing majority of pianists, singers, directors and violinists who own and use the Steinway piano. And in this group that prefers the Steinway you will find the most notable figures, not only among the pianists, but in the entire world of music.

Paderewski, Rachmaninoff, Hofmann, Kreisler, Ernestine Schumann-Heink. . . . The list is endless. For the Steinway piano is regarded by the foremost musicians as necessary to the proper interpretation of music as the score itself.

The Steinway pianos used by these celebrated men and women are made in various styles and sizes to fit all homes and incomes, and to suit the acoustic conditions of the small apartment or the country home. Each embodies all the Steinway principles and methods. Each has the golden singing tone, and the delicate, quick response that have long distinguished the Instrument of the Immortals.

And though the Steinway is the inevitable choice of the master pianists and the great musicians, it is never beyond *your* reach. It



PERCY GRAINGER
uses the Steinway exclusively

has always been sold at the lowest possible price, and upon the most convenient terms. Some one of the various models may be yours, easily and at once. And afterward . . . you will never want, and you need never buy, another piano.



*There is a Steinway dealer in your community or near you through whom you may purchase a new Steinway piano with a small cash deposit, and the balance will be extended over a period of two years. *Used pianos accepted in partial exchange.*

Prices: \$875 and up ^{plus transportation}

STEINWAY & SONS, STEINWAY HALL
109 W. 57th Street, New York

STEINWAY

THE INSTRUMENT OF THE IMMORTALS



*"... like a statue solid set,
And moulded in colossal calm."*

GENERATIONS of men come and flourish and pass away, but the record of their hearts, written in eternal rock, lives on, imperishable.

In the colossal calm of her workshop of the centuries, Nature has moulded the guardian of memories that must not die. That guardian is granite — and above all, Rock of Ages granite from the Vermont hills — hills rock-ribbed and ancient as the sun.

Rock of Ages, the memorial granite, is famed for its natural blue-gray color and its adaptability to a polished or hammered finish.

When you order a Rock of Ages memorial, secure from your local dealer our Certificate of Perfection, a written guarantee of your enduring satisfaction.

Why not write today for Illustrated Booklet "E"



BOUTWELL, MILNE & VARNUM CORPORATION

Quarriers—Rock of Ages Granite

MONTPELIER, VERMONT

QUARRIES AT BARRÉ, VERMONT





Now Ready!

Handsome Mahogany-finish Bookcase—FREE

New large printing

Encyclopaedia Britannica

New Form

at an *Amazing Reduction in Price*

TODAY you can obtain the Encyclopædia Britannica, printed in large type from the authentic Cambridge plates, complete and unabridged, *at a reduction of 46%*.

This unique opportunity is made possible because we have just completed a large new printing of the Britannica in the New Form, the most popular issue of this or any similar work.

The publication of this New Form marks an epoch in the history of the Britannica. Its success is unprecedented. Within less than twelve months, three huge printings have been sold. Now a fourth printing of 10,000 sets is just being received from the binders.

This means that we can now offer you one of these wonderful complete sets, the latest edition in large easy-to-read type, 46 per cent less than the Cambridge issue which is famous throughout the world.

monthly payments, so small that they will never be missed from your budget.

Seize this opportunity before it is too late! The time is now—it is the opportunity for which you have been waiting—tomorrow may be too late. Make sure of your set.

Send for Interesting 56-page Specimen Book—Free

Send the attached coupon for 56-page booklet (it commits you in no way).

It tells the story of the Britannica in the New Form. Many pages are reproduced. Sweeping reduction in price and easy plan of payment are covered in detail. Send for this free booklet—today—before this bargain offer ends!

Why the Price Is So Low

Our object was to produce the Britannica in a New Form with these specifications—and they have been carried out to the letter:

- 1—Large type, easy to read.
- 2—Complete and latest text. (Nothing omitted, nothing altered)
- 3—Fully illustrated. (All the original plates, maps, etc.)
- 4—Sweeping reduction in price.

Using Britannica Opacity Paper, which is very thin but beautifully white and opaque, made it possible to bind this issue of the Britannica in 16 double volumes instead of 32 single volumes. That one change enabled us to save nearly 50% of the binding cost.

By printing this issue from the plates of the latest, revised Cambridge issue, the famous large page, large type issue Britannica which is known throughout the civilized world and sells for twice as much, it was possible to save the cost of resetting 33,000 pages of type.

The use of these plates is your guarantee that the text is identical with that of the finest de luxe sets.

The Britannica in the New Form is the newest and latest issue, containing not only a full and authoritative account of the World War and its momentous consequences, but all the latest developments in industry, art, science, invention, etc. It contains 49,000,000 words, 33,000 pages and 15,600 illustrations—as much material as 476 books of average size printed on ordinary paper.

The Encyclopædia Britannica is the one book you cannot afford not to own. Within its 33,000 pages you will find the quintessence of the world's knowledge.

Small First Payment Easy Monthly Terms

A very small first payment will put the complete set of 16 double volumes and bookcase in your home immediately and you can pay the balance in easy

THE ENCYCLOPEDIA BRITANNICA, Inc.
342 Madison Avenue, New York NGM5-1A

Please send me, without cost or obligation, a copy of your 56-page book describing the Encyclopædia Britannica in the New Form at the special 46% saving and full details of your plan of small monthly payments.

Name _____

Address _____

Beautiful mahogany-finish bookcase free while this offer lasts!

Mail this Coupon today! →

Two Fascinating Winter Cruises AROUND *the* WORLD

From
New York
OCT. 24, 1925



From
San Francisco
FEB. 9, 1926
(Los Angeles, Feb. 10)



© H. GALLOWAY

on the beautiful —

RESOLUTE

(Queen of Cruising Steamships)

"AS a cruise ship she cannot be surpassed—and the service during the cruise was most excellent"—so a former world traveler on the RESOLUTE writes.

Every means and method known to modern steamship travel have been used to make these the finest of world cruises. In their completeness, their comfort, the manner in which they relieve you of all travel details and their fascinating itinerary, they reflect the ability and forethought of an experienced cruise management.



All the privileges of foreign registry

For three and a half months you will witness an enchanting drama—a drama with an infinite variety of scenes and actors, costumes and settings.

Over, there remain matchless memories—mind pictures which you can cherish for the balance of your life.

Rates \$1500 and up,
including shore excursions

Inquiries invited
Illustrated booklet on request

UNITED AMERICAN LINES

(Harriman Line)

35-39 Broadway, New York

177 North Michigan Ave., Chicago

131 State St., Boston

230 South 15th St., Philadelphia

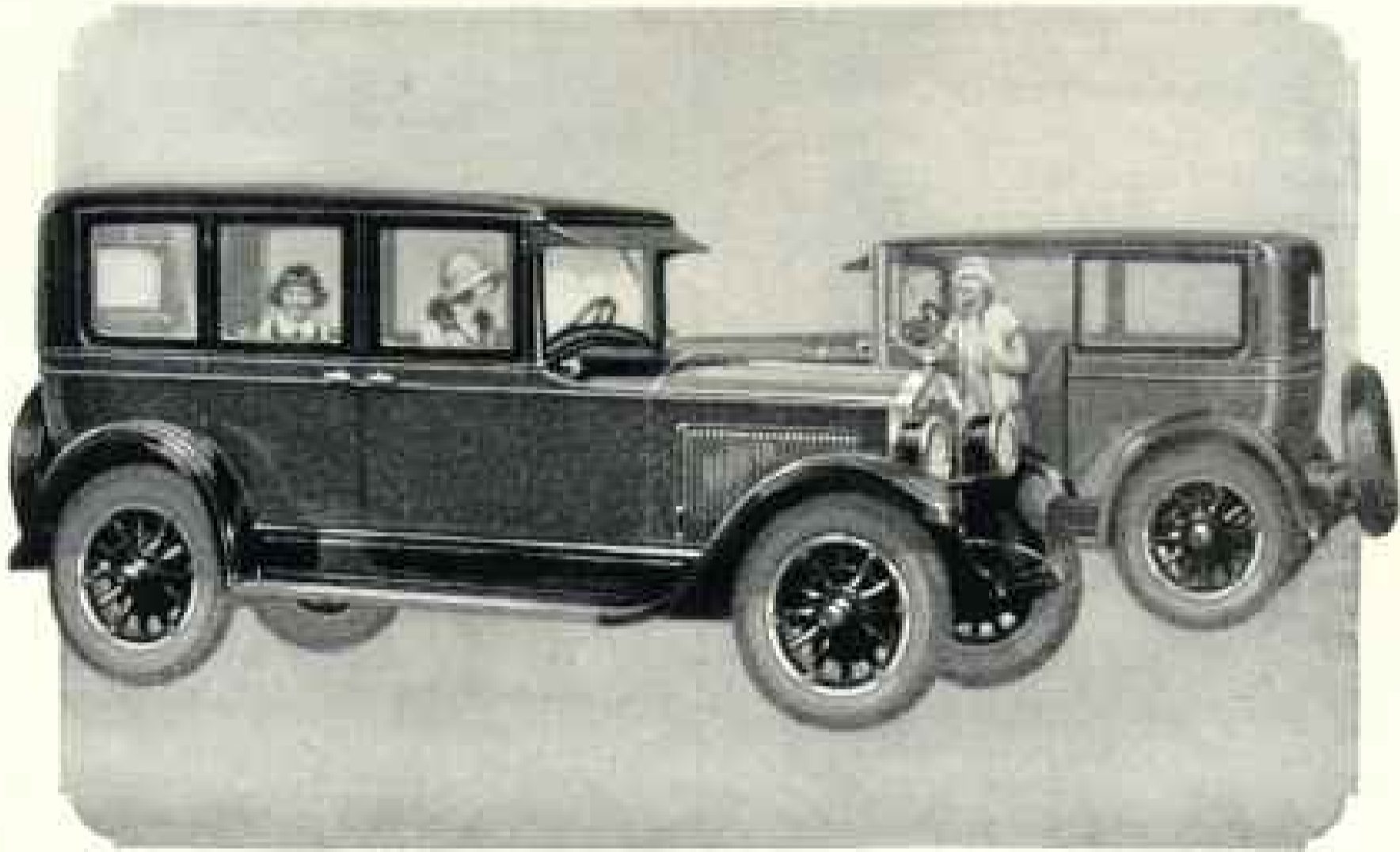
87 St. James St., Montreal

574 Market St., San Francisco

or local steamship and tourist agents

FINALLY

Real Sedans at "Coach" Prices



BUICK builds only *real* sedans on the famous Buick Chassis —with Fisher bodies.

The 4 and 2 door sedans, on either the Master or Standard Buick Chassis, are attractive, quality closed cars.

These Buicks have the better performance — power — speed — endurance — and economy that mark the Better Buick as today's better motor car. Buick could build a cheap closed car and sell it at a cheap price. But Buick chooses to build for the satisfaction of Buick owners. Buick sees to it that owners have cars they are proud to drive for years — cars that have a high resale value when finally traded in.

See these Better Buick Sedans before you spend your money.

B U I C K M O T O R C O M P A N Y

Flint

Division of General Motors Corporation

Michigan

Canadian Factories:

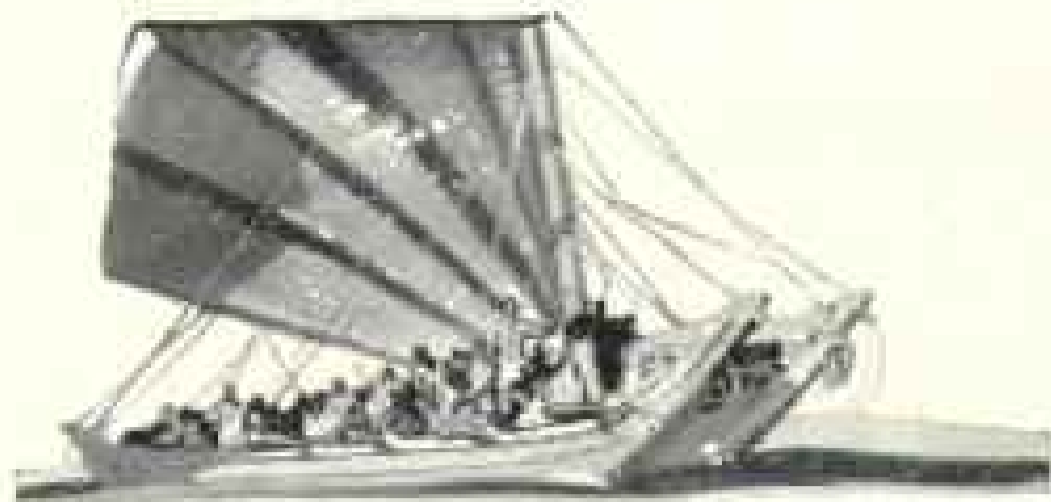
McLAUGHLIN-BUICK,

Oshawa, Ontario

Branches in all Principal
Cities—Dealers Everywhere

Pioneer Builders of
Valve-in-Head Motor Cars

the Better **BUICK**



hawaii

The Discoverers ~ two hundred years before Columbus

From the East they came—according to old Hawaiian tradition—across thousands of miles of open water in their frail canoes.

The leader of this legendary expedition was the chief, Hawaii-loa, who came from some distant land, probably what today is New Zealand.

They brought with them their language, their religious customs, seeds of plants from their native soil, but finest of all, to this land of snowy clouds in azure skies and palm-fringed bays they brought a people of sunny disposition, of open-handed hospitality and native charm.

"The happy isles," Stevenson called them. Here is combined the atmosphere of the Orient and the tropics—all the romance of nights made glorious by a golden tropic moon—days of gentle warmth and incomparable color.

What a spot for a holiday! And how easy to get there. Every week luxurious Matson liners leave for a tour of three perfect weeks in Hawaii. Twelve to fourteen days at sea. Ashore, the finest hotel accommodations to be had anywhere.

About \$270 is the minimum charge, all-inclusive.

The new Matson liner, the MALOLO (Flying Fish), now under construction, will be when completed, the largest, fastest high-powered ship ever built in the United States—the finest ship in the Pacific. The MALOLO will be completed early in 1927.

matson

Navigation Company

Matson Navigation Co.,
221 Market St., San Francisco
I am interested in a trip to Hawaii.
Please send me particulars.

Name _____

Address _____

Literature has been prepared especially for use in schools. If you desire it, check here. []



Summer Smiles this Winter in Hawaii

Come this winter and live among these laughing Hawaiians, true children of the sun.

Here within easy reach lies Eden—for all folk who want rest, warmth and new diversions in a romantic land.

Book through your nearest railway, steamship or travel agency direct to Honolulu. Travel on state liners 5 to 6 days direct from Los Angeles, San Francisco, Seattle, Vancouver or Victoria, B. C.

Surrounded by modern conveniences and comforts, and with moderate living costs, you'll want to enjoy several weeks or months in this smiling territory of the U. S. A. Or make round trip from the Coast in 3 to 4 weeks for \$300 to \$400, including all travel and incidental cost, a week or two in the Islands and a side trip to Hawaii National Park.

Good golf, tennis, motoring, swimming, deep-sea fishing, mountain biking and ample first-class hotels on all islands. Inter-island cruising. If you are thinking of visiting Hawaii this winter and wish descriptive, colored brochure and detailed information, write now—

HAWAII TOURIST BUREAU

212 MONADNOCK BUILDING, SAN FRANCISCO

441 FORT ST., HONOLULU, HAWAII, U. S. A.

YOU WANT THE BEST

Raymond-Whitcomb

WINTER CRUISES

MEDITERRANEAN CRUISE

Sailing January 28, 1926 on the Cunarder "Samarra"—\$925 upward

The Route: Visits Madeira, Gibraltar, Spain, Algiers, the Riviera, Tunis, Sicily, Egypt, the Holy Land, Syria, Turkey, Greece, the Aegean Islands, Jugo-Slavia, Italy, France, and England. 66 days of ideal cruising. 20 stops. Membership limited to 385 persons, insuring uncrowded shore parties.

Features: The only cruise including (at no extra cost) a trip to the Alhambra at Granada, Spain; the only cruise to visit the Riviera in Carnival week; the only cruise to visit Cattaro, Jugo-Slavia and the Greek Islands; also calling at Venice and Syracuse, Sicily, in addition to all traditional ports.

TWO WEST INDIES CRUISES

January 30 and February 25, 1926—\$375 and upward

The Ship: The sumptuous new S. S. "Columbus", 32,000 tons—the largest, fastest and most luxurious vessel ever to make the West Indies Cruise. Unusually large rooms, making for great cruising comfort. Beautiful, airy and spacious public rooms.

The Route: Each cruise is of 24 days, visiting San Juan, Porto Rico; St. Thomas, Virgin Islands; Martinique; Barbadoes; Trinidad; Venezuela (including train trip to Caracas); Panama; Jamaica; and Havana. All shore excursions included in Cruise rates.

SPRING MEDITERRANEAN CRUISE: A shorter cruise on the newest and finest Cunarder "Carinthia"—sailing from New York, April 3, 1926 in time to catch the Mediterranean countries at their best. 41 days. Limited to 400 passengers. \$525 upward.

SOUTH AMERICA: Two tours down the East Coast and up the West Coast and two tours in the reverse direction. Leaving New York, Jan. 7, Jan. 16, Jan. 30, and Feb. 4, 1926.

TOURS ROUND THE WORLD, JAPAN-CHINA,
EUROPE, CALIFORNIA, THE SOUTHWEST

Booklets describing all these services sent on request

Raymond & Whitcomb Co.

26 Beacon Street, Boston

New York

Philadelphia

Chicago

San Francisco

Los Angeles



JOHN DAVEY
Father of Tree Surgery
"Do it right or not at all!"

Forbidden Trees!

*When you can not employ
 Davey Tree Surgeons*

More business is declined every year by Davey Tree Surgeons than they accept. Why? Because it is a fixed policy never to waste the client's money.

You cannot employ Davey Tree Surgeons—

If your trees are too far gone to save, even though they are still living;

Or if you are unwilling to have the work done thoroughly according to Davey standards.

Davey Tree Surgeons have a list of forbidden trees on which only first-aid work is permitted. These are the trees that a quarter of a century of experience has shown will not respond to full treatment or warrant it.

If your trees can be saved and are worth it, Davey Tree Surgeons will save them. They are local to you—live and operate in your vicinity—all thoroughly trained and always under organization discipline.

THE DAVEY TREE EXPERT CO., Inc.
 272 City Bank Building,
 Kent, Ohio

Attach to your letterhead and mail today

THE DAVEY TREE EXPERT CO., Inc.
 272 City Bank Building,
 Kent, Ohio.

Gentlemen: Without cost or obligation to me, please examine my trees and report their condition and needs.

to the **West Indies**
 Via **CUNARD**



PIRATES,
 PIECES OF EIGHT,
 GALLEONS FREIGHTED WITH GOLD!

All the glamor and romance with which tales of the Spanish Main are filled, greets the traveler cruising among the palm-fringed islands of the Caribbean.

Our magnificent new steamer

"CALIFORNIA"

replete with every comfort-feature; electric fans in every room and a unique thermo-tank ventilation system, offers two wonderful opportunities for such a cruise, and will sail from New York

Jan. 23 and Feb. 25, 1926

A most interesting 30-day itinerary covering Havana, Port au Prince, Kingston, Colon, Cartagena, La Guayra, Port of Spain, Barbados, Martinique, Port de France, St. Pierre, St. Thomas, San Juan, Nassau, Bermuda. Comprehensive sightseeing tours ashore under the direction of *Thos. Cook & Son*.

*Cunard Service
 and Cuisine*

apply

CUNARD

AND ANCHOR LINES
 25 Broadway, New York
 or Branches and Agencies





ESSEX COACH

Combined with the supreme advantage of the Super-Six principle, the largest production of 6-cylinder cars in the world makes this quality, price and value exclusive to Essex.

Only among far higher priced cars will you find comparison for Essex quality, performance and riding ease. It is a totally different type. It gives results no other car ever gave. It is low priced without disappointment in looks or reliability. It provides stability and finest roadability without unnecessary weight. It is the most economical car in the world, we believe, to own and operate.

Its enormous and increasing sales success is simply a reflection of high public estimation and it proceeds entirely from what owners themselves say of Essex.

\$795

Freight and Tax Extra

**Never Before a
Value Like This**

Hudson-Essex World's Largest Selling 6-Cylinder Cars

HUDSON MOTOR CAR COMPANY, DETROIT, MICHIGAN

At Last
The Best Encyclopaedia
 At a Price
 Within the Reach of Everyone



The New
Popular-Priced Edition
 of
**THE NEW
 INTERNATIONAL
 ENCYCLOPAEDIA**

Now you may choose between the regular 23-volume edition of The New International and a new 13-volume edition identical in every way with the regular edition except for carefully planned economies in manufacture that make it possible to offer the new edition at an amazingly low figure. As to contents, this is the same great work that is accepted in schools, libraries, and homes as America's greatest reference work. It is printed from the same plates as the regular edition and includes the recent Supplement that has made The New International the most modern and complete encyclopedia in existence. This new edition has been produced to bring financially within the reach of every family in America the work that offers for quick reference all the world's knowledge right down to the present.

FREE—80-Page Booklet

with specimen pages, illustrations, etc., and full information about the regular 23-volume edition and also the new *Popular-Priced Edition* in 13 volumes.

Mail This Coupon

DODD, MEAD & CO.,
 449 Fourth Avenue, New York

Send me, without cost or obligation, your free 80-page booklet and full information about The New International Encyclopaedia and the new *Popular-Priced Edition*. (Geographic 10-25)

Name.....

Address.....



We shall be pleased to send you *Mediterranean Cruise literature*. Address *Cruise Department, No. 1 Broadway, New York.*

This Winter
 the
Mediterranean

Make this winter count—for all time. Experience the fascination, the glamor, the ease and pleasure of a Mediterranean cruise on the Adriatic or Lapland.

The glorious countries where time has piled up fabled treasures. And in supreme comfort all the way. On board—courteous service and luxurious accommodations. On shore—interesting guidance. Every step of the way planned with the expertness of 54 years' travel experience.

White Star liner

Red Star liner

Adriatic

Lapland

Jan. 7 and Feb. 25

Jan. 16 and Mar. 6

Returning 45 days later. Stop-overs permitted from one ship to the other and return via Northern Europe, allowing visits to Paris or London.

Itinerary: New York, Madeira, Gibraltar, Algiers, Monaco, Naples, Athens, Dardanelles, Constantinople, Haifa (for Holy Land), Alexandria, (for Egypt), Syracuse, Naples, Monaco, Gibraltar.

\$690 and up including shore trips

West Indies Cruises: 30-31 Days

White Star liner *Megantia*, Jan. 23 and Feb. 27

WHITE STAR LINE
RED STAR LINE

No 1 Broadway,
 New York City,



our offices elsewhere
 or authorized agents.



Sunshine, Flowers

And "A Little Trip Abroad" Within Your Own United States

There is more than merely climate in Southern California. It has the charm of foreign lands, of broad, wide ocean beaches, of mountains running to the sea, of fishing, hunting, camping, motoring, sight-seeing, dancing, dining, concerts, lectures, art, or simple, quiet rest. Here all requirements are met.

HO! you travelers! They ask you about Southern California and you say you haven't visited that spot?

A land of southern sun and northern air, a rare combination. What is it that you desire to do today?—choose your sport, your recreation, your diversion, and go and revel in it! No matter what it is, it is within a few miles of you—and there are motor roads like city boulevards to take you to it, smoothly, quickly, beautifully, through lovely scenery.

A mountain cabin a mile above sea level, a golf course, or a brilliant dinner-dance—not more than an hour separates them.

And there is travel—a desert like Sahara, giant

sequoia forests, snow-capped mountains and stupendous views, Old Missions, orange groves,—a hundred interests within easy reach in a smooth-running motor or trolley.



At Golf Courses throughout Southern California visitors all the year around.

No, there is no other place that offers such attractions—such spiritual and physical rejuvenation.

Spring, Summer, Fall and Winter—a year 'round resort.

Why not this winter? Ask railroad ticket agents to tell you more, to give you illustrated folders; or mail coupon below to us.

Do it now and plan "a little trip abroad at home" this year with the best of weather for your fun,

Southern California

Year 'Round Vacation Land Supreme

Consider these notable figures of Los Angeles County alone!

Assessed valuation (1925)	\$2,910,076,088
Agricultural production (1924)	\$2,588,993
Bank deposits (1925).....more than...	1,000,000,000
Oil production (1924).....barrels.....	120,000,000

ALL YEAR CLUB OF SOUTHERN CALIFORNIA
Dept. D-10, Chamber of Commerce Building
Los Angeles, California.

I am planning to visit Southern California this winter. Please send me your free booklet about Southern California vacations. Also include letters telling especially of the attractions and opportunities in the counties which I have checked.

Los Angeles
 Orange
 Riverside

San Bernardino
 Santa Barbara
 Ventura

NAME.....

STREET.....

CITY..... State.....

The Great African Cruise

Sailing from New York,
Jan. 19, 1926

On the palatial cruising liner ORCA, to

West Indies	East Africa
Trinidad	Delagoa Bay
	Beira
South America	Mozambique
Rio de Janeiro	Zanzibar
Santos	Mombasa
Montevideo	
Buenos Aires	Egypt
	East Sudan
South Africa	The Nile
Cape Town	Cairo
Port Elizabeth	Alexandria
Durban	
Mediterranean and Europe	
Naples	Gibraltar
The Riviera	Southampton

First to feature Africa!

Sir Francis Drake called Good Hope "the fairest Cape we saw in the whole circumference of the earth."—See it on the Great African Cruise.

You have read of "African lure"—Follow it up the wondrous East Coast, through Durban, Mozambique, Zanzibar, other ports—to enchanting Egypt.

These unique experiences—with wonders and delights of Rio, Buenos Aires, Cairo, the Nile, Naples, many more—combined for you in the most alluring of all cruises—22,600 miles—20 ports—100 glorious days.

Write for illustrated booklet

Rates, including shore
excursions, from \$1250

"The Comfort Route"

ROYAL MAIL

THE ROYAL MAIL STEAM PACKET CO.
New York, Boston, Cleveland, Chicago,
Detroit, Minneapolis, San Francisco, Los
Angeles, Seattle, Atlanta, Vancouver,
Montreal, Toronto, Halifax

Or any office of the
AMERICAN EXPRESS COMPANY
in cooperation with whom this cruise
will be operated

"The Sunshine Belt to the Orient"



Rich Rewards

*for the traveler in Oriental lands
—sailings every Saturday
from San Francisco*

Each day is an adventure, each hour new and different. For Oriental lands are unique, unmatched in interest by any other section in the world.

Hawaii is a picture-land where every scene is painted in gorgeous colors.

Japan is modern and progressive, yet amazingly new in this role. Her ancient customs, quaint architecture and natural beauties promise a delightful visit.

Then on to Shanghai and Hongkong. Everywhere are reminders of a civilization that antedates all others.

The Philippines, Malaya, Ceylon, India—each has its own enchanting atmosphere. Here are mysticism and rare charm.

And in all these lands there are treasures untold for the seeker to find.

Egypt, the Mediterranean, Italy and France follow. A wonder trip indeed.

And the whole may be made aboard palatial President Liners which sail every Saturday from San Francisco for the Orient and Round the World.

Fortnightly sailings from Boston and New York via Havana and Panama. A fortnightly service returning from the Orient to San Francisco.

These magnificent oil-burners are comfortable and luxurious. All rooms are outside deck rooms—those with private bath predominate. The service is courteous, the cuisine world-famous.

For full information communicate with any ticket or tourist agent or with

DOLLAR STEAMSHIP LINE

15 Moore Street, New York City
50 Yamashita Cho, Yokohama
7-A Kaigan Dori, Kobe
29 Nanking Rd., Shanghai
Hongkong & Shanghai Bank Bldg., Hongkong
24 Calle David, Manila
Hugh Mackenzie, G. P. A.
311 California Street, Department M 710
San Francisco, California



This shape does more than add distinctiveness to a man's pocket watch.

Truly a most distinctive watch, the Gruen Pentagon, with its five rounded sides.

Yet distinctiveness is not the only advantage this exclusive shape has to offer in a man's pocket watch.

The Pentagon shape, patented by the Gruen Guild, has a direct bearing on the accuracy of the movement it encloses.

Every good watch, of whatever make, is subject to a slight variation in timekeeping performance as it changes position. It must be thoroughly adjusted by a series of compensations before it leaves the watchmaker's hands.

By keeping the watch at all times upright in the pocket, the Pentagon simplifies this problem of adjustment, thus becoming an important aid to the service the watch will give its owner.

The Pentagon, which has proved the most popular case design in Gruen watches for men, is now for the first time available with an "Ultra-VeriThin" Precision movement.

The result is a watch of rare grace and a timekeeper of unusual dependability, at a price hitherto unheard of for a watch of this thinness and character.

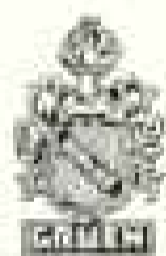
The better jewelers can show you the complete Pentagon line, both in the VeriThin and Ultra-VeriThin movements. Their stores are marked by the Gruen Service emblem.

GRUEN WATCH MAKERS GUILD

Time Hill, CINCINNATI, U. S. A.

Canadian Branch, Toronto

Engaged in the art of fine watchmaking for more than half a century



GRUEN GUILD WATCHES



Wheel train diagram, showing how the four operating planes of the ordinary watch are reduced to three in the Gruen VeriThin and two in the Ultra-VeriThin. Thus thinness is secured without loss in accuracy or durability of parts.



How Does Your English Impress Others?



SHERWIN CODY

You are sized up every day by what you say and write. The words you use, how you use them, your spelling, grammar, pronunciation—these give others the measure of your education.

People quite naturally think you are lacking in culture if you say "between you and I" instead of "between you and me;" if you use "who" for "whom" and "shall" for "will;" if you say "hosPitable," when you should say "HOSpitable," or if you make similar common blunders. Fairly or unfairly, you are

mercilessly judged by the character of the English you use.

Sherwin Cody's New Invention

For the first time in the history of education there is a way to improve your English quickly and surely. Sherwin Cody, perhaps the best-known teacher of practical English, has patented a remarkable device, which will quickly find and correct the mistakes you unconsciously make.

Already over 25,000 individuals in every walk of life have made use of this invention—business men, teachers, physicians, lawyers, ministers, editors—in fact, men and women in every profession, in every trade, and of every age.

This method is so remarkably successful, because it concentrates, not on useless rules, but on the formation of correct habits. There is no hard study. Only fifteen minutes a day is required, over a short period, and the instruction is guaranteed to improve your English to your satisfaction, or it costs you nothing.

FREE "How to Speak and Write Masterly English"

Mr. Cody has prepared a simple 15-minute test which you can take in your own home. The correct answers are given so you can tell at once just where you stand. Write today for this test—it is free. We will also gladly mail you Mr. Cody's new free book, "How to Speak and Write Masterly English." Merely mail the coupon or a postal card. You can never achieve your greatest possibilities until you do master English. Write today.

SHERWIN CODY SCHOOL OF ENGLISH

3810 Searle Building Rochester, N. Y.

Sherwin Cody School of English,
3810 Searle Bldg., Rochester, N. Y.:

Please send me your new free book, "How to Speak and Write Masterly English," and also the 15-minute Test.

Name

Address

City..... State.....

GERMAN ARMY OFFICERS' FIELD GLASSES



8 Power \$9.85 Postpaid

Genuine German War Glasses purchased at exceptionally advantageous rates of exchange.

Manufactured by most prominent of German optical factories. Many were received direct from the Allied Reparations Commission. Conservative \$20.00 value.

Finest astronomical day and night lenses. 40 m. m. objective. Dust and moisture proof. Pupillary adjustment. Built for service regardless of cost according to strictest military standards. All glasses guaranteed in perfect condition. We have sold 40,000 pairs of this model to date.

Shipped promptly upon receipt of check or money order for \$9.85, under positive guarantee of full cash refund for any glasses returned.

Order your field glasses today

HENDERSON BROTHERS

Largest Importers of Field Glasses in America

87 Federal Street

Boston, Mass



HARRISON MEMORIALS

Before deciding on a memorial permit us to offer suggestions. Our experience helps us to appreciate individual needs.

Write for Booklet "C"

Harrison Granite Company, Inc.

Established 1848

4 East 45th Street, at Fifth Avenue New York, N. Y.

OFFICES: Detroit, Chicago, Padua, Minneapolis

Worcester, Barre, Vermont

LA FRANCE CHEZ VOUS!

Her Châteaux, Her Cathedrals, Her Great Men, Her Social Life, Her Arts, Her Literature, and Her Gay Paris

You will find all that in the

Moniteur Franco-Américain

An American Monthly Magazine Published in French for Americans.

Handsomely Illustrated.

Nothing Like It in America

Subscription \$2.00 per year

Moniteur Nat'l Cong. 10-25
Franco-Américain, Inc.
599 Fifth Ave., Dept. N. G.
New York City.

Please enter my subscription

for..... 1981.....

for which I enclose \$.....

Name

Address

Every day Eversharp
and Wahl Pen gain
thousands of new users

[Eversharp and Wahl Pen already
have more than twenty million users]

Eversharp Pencil and Wahl Pen are rapidly increasing a world wide following because they are simple, logical, practical—the finest writing instruments developed by the world's leading producer of fine writing equipment. They are not casual nor incidental inventions but the most dependable devices that man's five thousand years of writing history have produced—refined and perfected by specialists.

Wahl Eversharp and Wahl Pen
Made in U. S. A. by The Wahl Co., Chicago
Made in Canada by The Wahl Co., Ltd., Toronto
Prices same in Canada as U. S.

The New WAHL
EVERSHARP
PERFECTED

and WAHL PEN

Red Top Eversharp Leads are now made in
seven thicknesses—for standard Eversharp
—for "25's"—and for Eversharp shading
pencils. All sizes in black, blue, red,
green, yellow, and purple coloring.

Models
for every need
50¢ to \$6
Also made
in solid gold
This model \$5

Gold or
silver filled
or sterling
\$3 to \$10
Also made
in solid gold
This model \$8

This model Wahl
Pen, length 5 1/2
inches, barrel
silver filled, price
\$5. Other silver filled
models at \$3.

Eversharp "75's"—
length 5 1/2 inches.
"The big pencil with
the big lead." Price
\$1.00.



West Indies Cruise

\$250 for 31 Perfect Days!

Thirty-one days of cruising through the West Indies and along the northern coast of South America—to transform a business-weary person into a zestful and joyous adventurer.

What a cruise! On a delightful ship—the *Megantic*—specially constructed for tropical cruising and operated by a line with over 25 years' experience in West Indies Cruises.

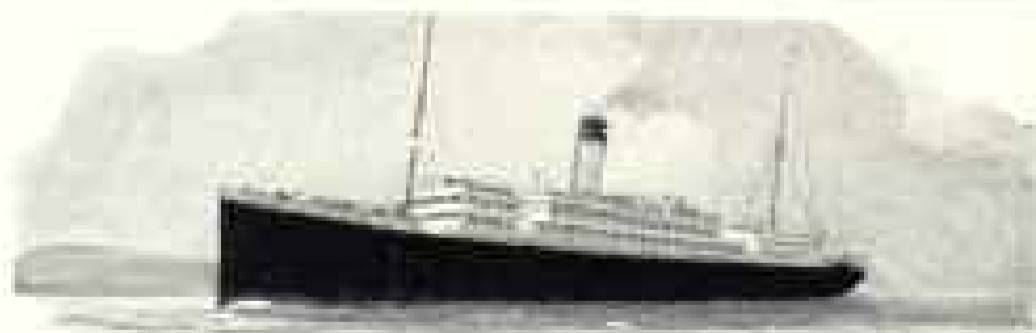
The minimum rate of \$250 means that the trip will cost you about \$8 per day. What sort of a vacation will that buy at a resort? And how does a vacation at any resort compare with such a stirring voyage?

ITINERARY: New York, Havana, Santiago, Port au Prince, Kingston (Port Antonio), Panama Canal, Curaçao, La Guaira (Caracas), Trinidad, Barbados, Martinique (St. Pierre), St. Thomas, San Juan, Nassau, Bermuda.

White Star liner **MEGANTIC** (30-31 days)
Jan. 23; Feb. 27

Use coupon below for illustrated literature.

Four Mediterranean Winter cruises by White Star liner *Adriatic* and Red Star liner *Lapland*—46 days.



WHITE STAR LINE

No. 1 Broadway, New York

Please send me your literature concerning West Indies Cruises.

Name _____

Street Address _____

City _____

SOUTH AMERICA

by the **V-FLEET**
Famous

The voyage to South America is one of never-fading charm and interest. The scenic beauty, delightful climate and superb cities offer a complete change from the beaten paths of travel.

Large, luxuriously appointed steamers that for equipment and comfort rank as the best. Specially built for this Service. All outside rooms. Steward service of the highest type. Menus that equal those of the best hotels.

BARBADOS—RIO DE JANEIRO

MONTEVIDEO—BUENOS AIRES

Calling northbound at SANTOS AND TRINIDAD

45 days, Special Cruise Tours, 58 days,
\$675 all expenses included, \$850
S. S. Voltaire, Jan. 22

Regular Sailings by the

S. S. Voltaire S. S. Vauban
S. S. Vanlyck S. S. Vestris

For illustrated literature, etc., apply *Sunderman & Son, Inc.*, 117 Broadway, N. Y., or your local S. S. or tourist agency.

LAMPOR & HOLT "The Better Way" LINE

CLARK'S FAMOUS CRUISES

By Cunard line, new oil burners

JAN. 30, AROUND THE WORLD CRUISE
westward; 128 days, \$1250 to \$3000,
Featuring 26 days, Japan and China, including Peking.

JAN. 30, MEDITERRANEAN CRUISE
62 days, \$600 to \$1700,
Featuring 15 days, Palestine and Egypt.

JUNE 30, 1926, NORWAY
and Western Mediterranean; 53 days, \$550 to \$1250.

Rates include hotels, drives, guides, fees. Originator of Around the World Cruises. Longest experienced cruise management. Established 30 years.

F. C. CLARK . . . Times Building, New York



THE GLEN SPRINGS

WATKINS GLEN, N. Y., ON SENEGA LAKE
Open All The Year. Wm. E. Leffingwell, Pres.
A Mineral Springs Health Resort and
Hotel. The Pioneer American "cure"
for heart disorders. Sporty golf course.

THIS WAY OF OIL HEATING ENDS ALL DOUBT

SCIENCE has found the right way to heat with oil. And proved it for six years. This way is radically different from the old-fashioned methods. It will interest you to see this oil burner that has solved the problem. You need know nothing of mechanics to understand it.

So far as over 25,000 present owners are concerned, there is no heating problem. Their homes are always exactly the temperature they enjoy. They smell no fumes. They see no dirt or dust. They hear no unpleasant noise. They know that it is absolutely dependable.

You, too, will have this experience when you heat your home this scientific way.

One right way to heat with oil

The four natural laws of oil combustion were first applied by our engineers six years ago to a small, quiet, automatic oil burner. They explained the difficulties others were having in trying to burn oil.

So we built an oil burner in accordance with those laws. For six winters, now, Oil-O-Matic has answered every demand in thousands of homes, large and small.

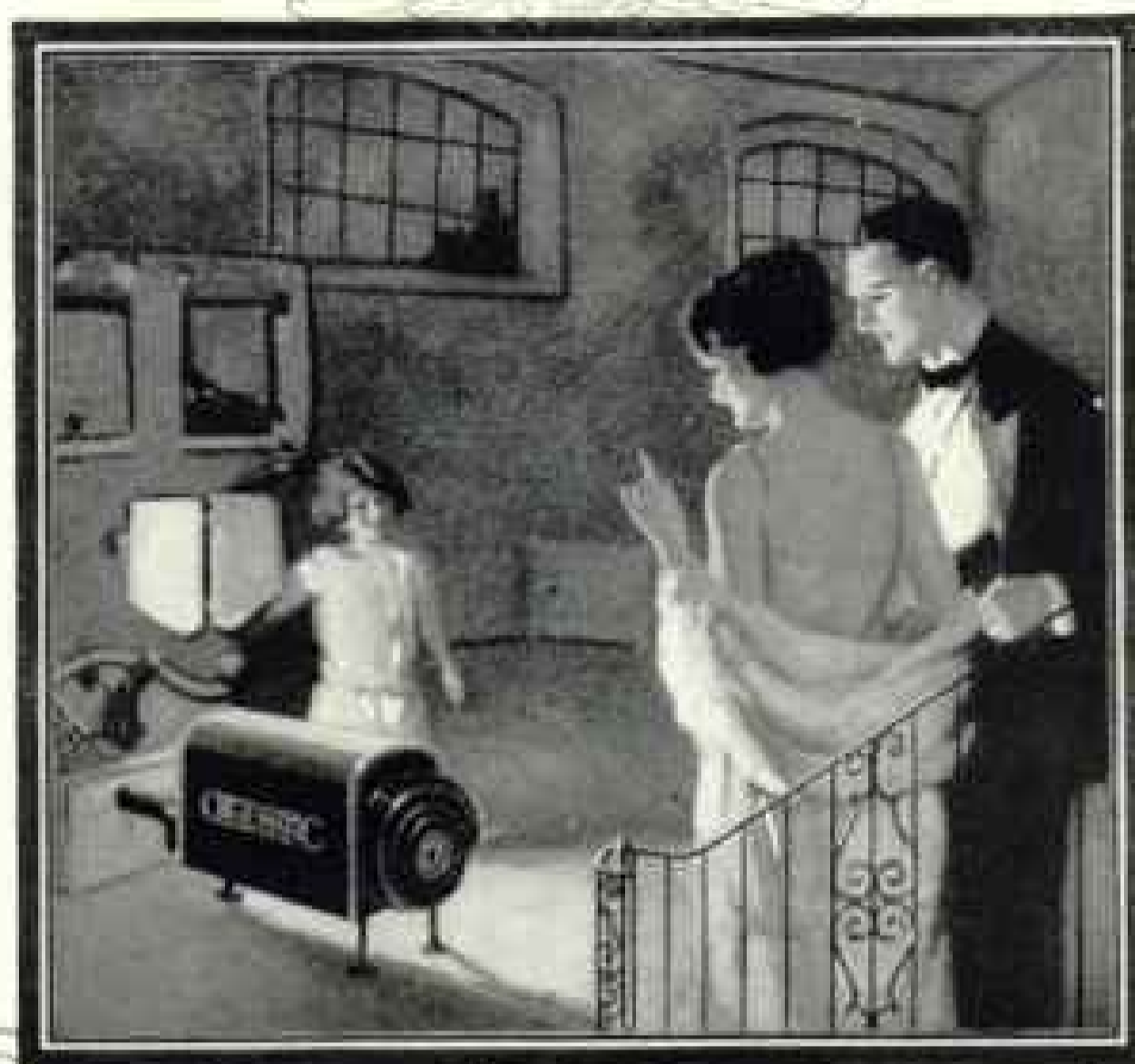
The four famous laws

The first law says that oil must be broken up into a fine mist. All other ways violate this law!

After the oil is broken up, the second law demands that it be burned before it touches anything. Carbon and soot will surely result otherwise. So no plates, pots, chamber or any part of an oil burner should be inside your furnace or boiler.

According to the third law, the amount of air that is mixed with the oil must be exact. Naturally this cannot be left to someone's opening or closing a damper. The oil burner itself must measure the amount of air.

The fourth law is just as im-



WILLIAMS OIL-O-MATIC HEATING

Proved for six years. Every installation guaranteed. Requires no attention. Burns cheap fuel oil. Clean, quiet, odorless. For buildings of any size. Sold on easy terms. Made by the largest producer of automatic oil burners in the world. Dealers everywhere.

portant. Oil cannot burn perfectly without reflected heat. So unless the firebox of your heating plant is lined with brick, it is impossible to get perfect combustion.

It is this way of burning oil that has made the use of fuel oil really successful for heating homes. It is the method found only in Oil-O-Matic.

Note these exclusive features

There are other features that make Oil-O-Matic different from any other device that heats with oil.

We originated and perfected the Williams Thermal Safety Control. It put an end to the open can designed to catch liquid fuel oil. It ended all worry about the oil not lighting or blowing out.

This positive device watches over your entire plant. Oil-O-Matic can't run at all, unless it runs right. Not a drop of oil can

flow. The motor is stopped. Ignition is shut off. This control is the greatest advance in oil burner construction since our application of the four laws.

Works perfectly in any good heating plant

Of course there's no continuous pilot light. That is too wasteful of gas. It has no place on a modern oil burner.

Oil-O-Matic burns a cheap, low-gravity oil instead of expensive kerosene and distillate. This gives you more heat units at a lower cost. There will always be an abundance of low-gravity oil.

So this perfected way, listed as standard by the Underwriters' Laboratories, ends all doubt. Now no one need be without the comforts of oil heating. Oil-O-Matic can be installed in any good heating plant. Steam, hot water, vapor, hot air.

Sold on easy terms—Guaranteed

The men who install and service your Oil-O-Matic are all trained men. Most of them are graduates of the Williams Institute of Heat Research. They have experience, facilities, organization, and financial responsibility. They are backed by the largest producer of automatic oil burners in the world.

Plan now to see a demonstration. Only those who act immediately can be sure of having Oil-O-Matic heating this winter.

MAIL THIS FOR FREE BOOK!

Williams Oil-O-Matic Heating Corp.
Bloomington, Ill. NO 125

Please send me at once your booklet, "New Facts About Oil Heating," giving full information about the Oil-O-Matic, and special basement plans for new homes.

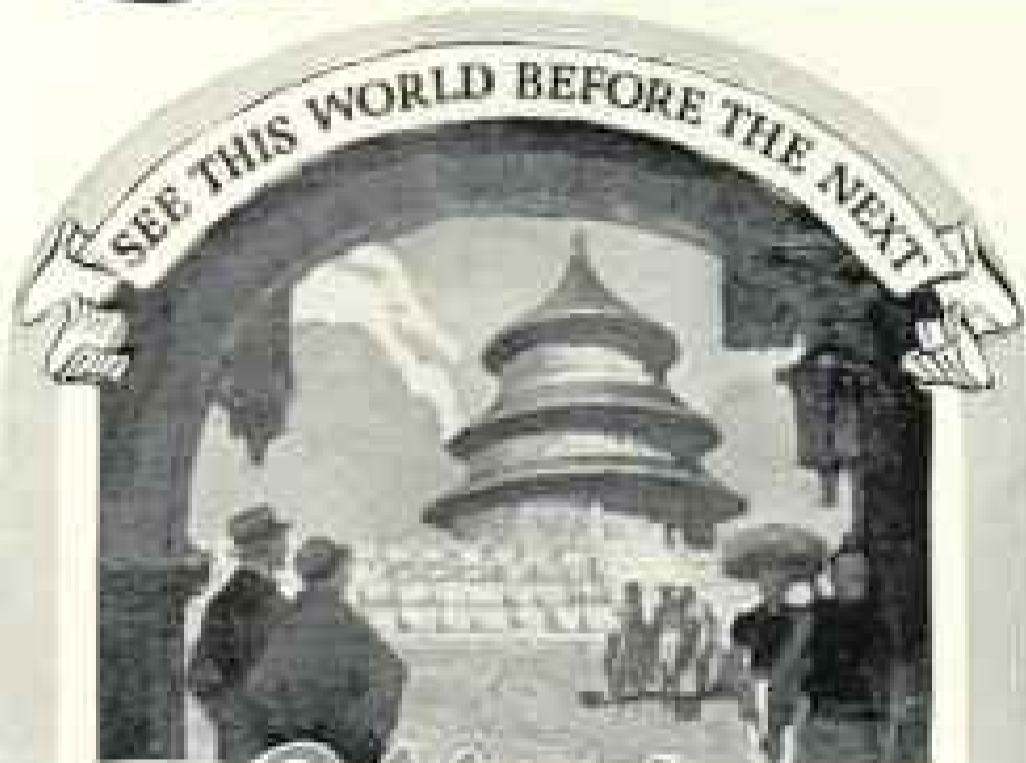
Name _____

Address _____

Our Heating Plant is Steam
Hot Water Vapor Hot Air

DEC. 3RD FROM NEW YORK

WORLD CRUISE



All this

**IF YOU GO WITH THE WORLD'S
GREATEST TRAVEL SYSTEM**

And a revelation it will prove! From its 83 steamships, Canadian Pacific has chosen the great Empress of Scotland—25,000 tons, and a 4-time cruise favorite. From its cruise staff, those men who know their world... It has used its resident agents everywhere, to perfect arrangements,—its rail and hotel connections, to command privileges.... You escape winter by leaving Dec. 5. Reach the Holy Land for Christmas. Get into Cairo for its cosmopolitan New Year's Eve. India in cool January; Japan in plum-blossom time. You come up from Panama and Havana with the Southern exodus, arriving in New York April 10 ... How delightful the picture,—and how reassuring! Cost? Less than you think! Reservations? Time is growing short.

Helpful Literature

Compiled by cruise experts. Inquire your local agent, or nearest Canadian Pacific Agent. New York, 344 Madison Avenue. Chicago, 71 East Jackson Boulevard. Other principal cities. Personal service, if desired.

One management

EMPERESS OF SCOTLAND

ship & shore throughout



25,000 TONS

Canadian Pacific



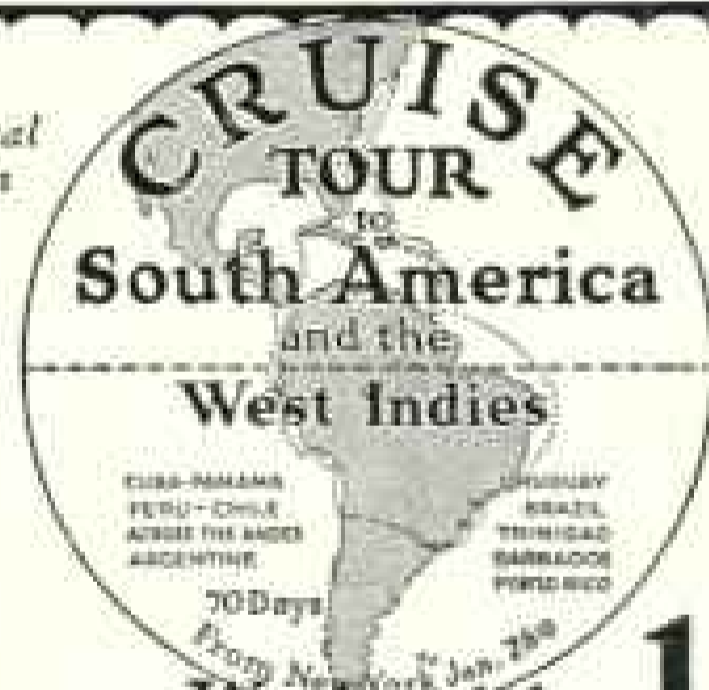
In Chicago

GUESTS in the Main Dining Room of THE DRAKE look out upon the fascinating blue waters of Lake Michigan. The surroundings are so unique for a great metropolitan hotel.

Under THE BLACKSTONE Management



7th Annual
American
Express



2 Wonderful cruises in 1

Seventy happy days—a palatial steamship—sailing away from Winter—through the sunny islands of the West Indies to the gorgeous ports of South America. Through the Panama Canal, over the Andes, along the Spanish Main—you traverse scenes rich in historical and romantic interest. Total cost (including all shore excursions) \$1850 and up. As reservations are made in the order received, and as the party will be strictly limited, you should write at once for Booklet "F" showing deck plans with full itinerary and other details.

American Express Travel Dept.
65 Broadway, New York

Always carry American Express Travelers' Cheques

PACIFIC NORTHWEST



From two to ten days nearer the Orient, the great, modern ports of Washington and Oregon occupy a strategic position in our fast growing trade with the Far East.

Pacific Coast leadership *centers* HERE

On our Pacific Coast the ports of the Pacific Northwest lead in foreign trade by a substantial margin, according to figures of the Department of Commerce.

This is shown by the total value of imports and exports and also by the total net tonnage of vessels entered and cleared, as reported by that Department.

This leadership of the Pacific Northwest has been built upon certain definite, natural trade advantages:

The ports of Washington and Oregon are nearer by several days' sailing to the Orient. That is why 80 per cent of the trans-Pacific mail is handled through the Seattle post office. That is why 70 per cent or more of the raw silk now enters the

United States through the Pacific Northwest.

Savings in time, interest and insurance charges, so strikingly shown in the case of raw silk, are also effected in other commodities. Shippers recognize the Pacific Northwest as the fast and economical route for shipments to the Orient.

Pacific Northwest ports are also nearer by rail to the Atlantic seaboard. They are the doorway to Alaska. And they are endowed with harbor facilities that are unsurpassed.

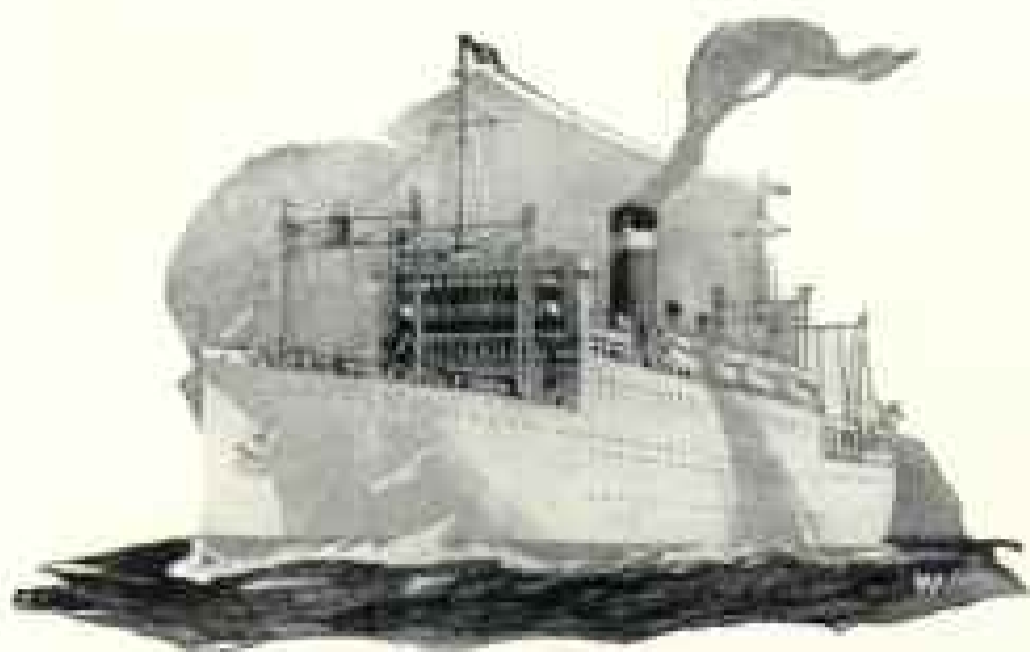
Time can only emphasize these advantages. Nature and "the immutable law of the short haul" have established the dominance of the Pacific Northwest ports in the great and growing commerce of the Pacific Seas—today and in the future.

The Chicago Burlington & Quincy R.R.

The Great Northern Ry.

The Northern Pacific Ry.





SOUTH AMERICA

A Land of Wondrous Beauty

BLESSED with an ideal climate, the thriving city of Rio de Janeiro is as delightful as it is picturesque. Further south—at the foot of the hills—nestles Santos, port of lovely São Paulo.

These are the first two stops in a delightful trip arranged by the Pan America Line of luxurious Government ships—the fastest route to South America. Then on to the golden sands of Montevideo and the gay, beautiful Paris of the West—Buenos Aires.

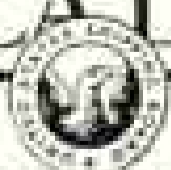
Here are a strange beauty and charm you can never find in the well trodden cities of Europe; a world of wondrous splendor off the beaten path. Travel to this scenic land in one of the modern, 21,000 ton sister ships of your own Government:—

- S. S. American Legion
- S. S. Pan America
- S. S. Southern Cross
- S. S. Western World

Enjoy a real bed—not a berth—in an outside room equipped with a private bath; the best of food skilfully prepared; dancing, entertainment and sports of every kind. Sailings from New York alternate Saturdays. Write for free, descriptive booklet.

PAN AMERICA LINE

Managing Operators



MUNSON STEAMSHIP LINE

67 Wall Street, New York

St. Petersburg

FLORIDA

The Sunshine City

Hospitality and entertainment await you in the Sunshine City. Located between the Gulf of Mexico and Tampa Bay, St. Petersburg has a climate unsurpassed. Golf, bathing, fishing, boating, and other sports. Magnificent hotels and furnished apartments. For booklet and information address:

H. C. DILLMAN
Chamber of
Commerce



The Luxury Cruise to the Mediterranean

PALESTINE — EGYPT



A pleasure cruise exceeding every expectation—Luxurious comfort, perfect service, enjoyable entertainment, on board the "Rotterdam." Scenic splendor, strange and thrilling sights in interesting Old World lands.

By the famous "ROTTERDAM"

5th Cruise

Leaving New York

February 2, 1926

Under the

HOLLAND-AMERICA LINE'S

own management

The "ROTTERDAM"

24,170 tons register

17,190 tons displacement

Has a world-wide reputation

for the magnificence and com-

fort of her appointments, the surpassing excellence of her cuisine and the high standards of service and management on board.

Sixty-seven Days of Delightful Diversion

ITINERARY includes Madeira, Lisbon, Cadix, Seville, Gibraltar, Algiers, Tunis, Athens, Constantinople, the Holy Land and Egypt, Italy and the Riviera. Carefully planned Shore Excursions. Supper in Europe.

Cruise limited to 550 guests

American Express Co. Agents in Charge of Shore Excursions

Illustrated Folder "N" on request

For choice selection of accommodations make reservations NOW

HOLLAND-AMERICA LINE

21-24 State Street, New York

Boston, Philadelphia, Pittsburgh, Chicago, Minneapolis,

St. Louis, Detroit,

Atlanta, Ga., Seattle,

New Orleans, San

Francisco, Mexico

City, Montreal,

Toronto

or any authorized

Steamship Agent

Leaves for the
WEST INDIES
27 days
Holland-America Line
in cooperation with the
Great Western Co.
by the steamer
S.S. VEENDAM
In New York Feb. 14, 1926



HARTMANN
 COLLIER TOP
 WARDROBE
 TRUNKS



AT first glance, wardrobe trunks, like people, look much alike. But—again like people—when we take a second glance we find decided differences. There is in the Hartmann Wardrobe Trunk that subtle air of distinction we are always looking for but seldom find. It's born of forty-eight years in the business—and the Hartmann signature on every Hartmann trunk. Sold only by dealers who believe in unusual quality at usual prices.



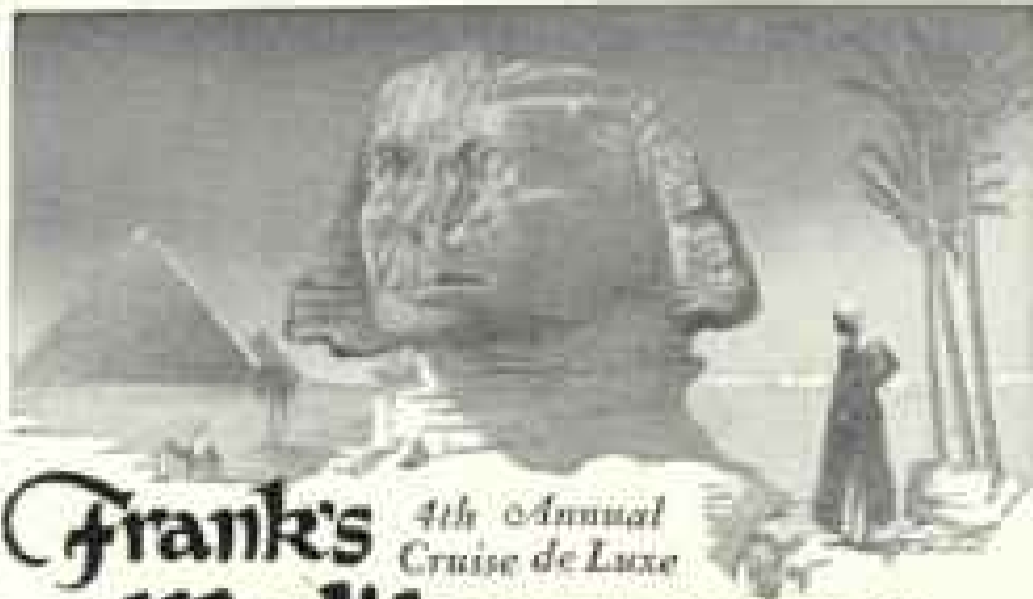
OVER HALF A MILLION IN USE
 QUALITY TELLS

HARTMANN TRUNK COMPANY, *Racine, Wisconsin*
 M. Langmuir Manufacturing Company, Ltd., Toronto
 Licensed Canadian Manufacturers
 J. B. Brooks & Co., Ltd., Great Charles St., Birmingham, Eng.
 Licensed Distributors for Great Britain

HARTMANN
 TRUNKS

BE SURE THE HARTMANN RED ∞ IS ON THE TRUNK YOU BUY

© 1916, by Hartmann Trunk Co.



Frank's 4th Annual
Cruise de Luxe
TO THE **Mediterranean**
Egypt—Palestine

Madeira, Spain, Gibraltar, Algiers, Tunis, Constantinople,
Greece, Italy, Sicily, Riviera, Monte Carlo, France, England.
(Limited to 400 Guests—less than Half Capacity)

By Specially Charters Magnificent New 21,000-Ton

Cunard S. S. "SCYTHIA"

Sailing from New York January 25—67 days
The Cruise of the "Scythia" has become an
annual classic. In every respect it is unsurpassed.

The "Scythia" is a floating palace, with spacious decks,
loggias, veranda cafes, 2 elevators, gymnasium, commo-
dious staterooms with running water and large wardrobe
lockers and cubby with private lockers. The famous
Cunard cuisine and service. (Only one sitting for meals.)
Stop-over privilege in Europe without extra cost, returning via S. S. "Aquila-
na," "Mauretania," "Bismarck," or any Cunard Line Steamer.

Luxury Cruise to WEST INDIES, February 18—27 Days
By Palatial Holland-America Line Steamer "VEERDAM"

FRANK TOURIST CO.

542 Fifth Avenue, New York
At Bank of America, Los Angeles; 582 Market St., San Francisco
1529 Laurel St., Philadelphia
(Est. 1872) Paris—Cairo—London

4 Points for Bond Buyers

Where in the investment field can you find such well-balanced securities as Straus Bonds, combining the merits of security, the best yield consistent with safety—about 6%, diversification, and a good market? Write for full information on these sound bonds. Ask for

BOOKLET J-1508

The Straus Hallmark on a bond stamps it
at once as the premier real estate security.

S. W. STRAUS & CO.

Established 1882 • Investment Bonds • Incorporated

STRAUS BUILDING
365 Fifth Avenue
at 40th St.
NEW YORK

STRAUS BUILDING
Michigan Avenue
at Jackson Blvd.
CHICAGO

43 YEARS WITHOUT LOSS TO
ANY INVESTOR

© 1922—S. W. S. & Co., Inc.

DIFFERENCES THAT PLEASINGLY IMPRESS YOU — NUMBER TWO



Delicious meals are appetizingly served in beautiful new-type dining cars on the

NEW ORIENTAL LIMITED

—commandingly first in favor with travelers through the Northwest. An interesting new way to and from the Pacific Northwest and California. De luxe equipment and service—no extra fare.

From Chicago, via Burlington-Great Northern, daily 11 p. m. From Seattle daily 8 p. m.
A. J. Dickinson, Passenger Traffic Manager, St. Paul, Minn.

GREAT NORTHERN

Route of the New Oriental Limited

Finest Train to and from Pacific Northwest—No Extra Fare

Money's Red Flag

TO the office of a big insurance company come pathetic stories of money lost in speculation and unwise investments. Dismayed men and women, when it is too late, tell their experiences of funds provided by life insurance or saved by thrift, lost in wild-cat schemes promising great returns, sunk in "sure thing" tips from well-meaning friends and relatives, or frittered away in stock speculation.

The pity of it is that the hardest blows often fall on those least able to bear them—on men past the age of self-support, on women with no business experience, on young people trying to get a start in the world.

The Eternal Temptation

Over and over again one hears, "Surely there must be some way that I can get more than 6% on my money with safety. I am promised—practically guaranteed—that a certain stock will pay 10% or more and probably double in value. Only a few people know about this. A friend has just told me and says I must act quickly or lose the chance. Shall I invest?" The answer, in most cases, is "NO"—that is not an investment, it is a speculation.

Records show that in all lines of business, the majority of new enterprises fail. And in the purely speculative ventures the losses are appalling.



DOLLAR PIRATES!

"The first thing to do, Blackie, is to look at the map and pick out a town where smart people have money in banks. Somewhere in this big United States people have been saving up coin for years, just waiting for us to come and get it."

So said J. Rufus (Get-Rich-Quick) Wallingford, smiling and engaging character from the pen of the late George Randolph Chester. So true to life—his counterparts are to be found the world over. Bold in the open and cunning behind cover, they plunder alike the simple, the greedy, the rich and the poor.

According to Postmaster General New, the people of this country are robbed of more than \$1,000,000,000 a year in mail-fraud schemes alone! How much more is lost through other frauds cannot be estimated.

Don't let a Wallingford get your savings!

There is a definite danger line in investing money—and that line is located today at about 6%. This does not mean that everything below 6% is sound, nor that everything above is speculative, but—Money's Red Flag of warning appears at this level. Remember—"the higher the rate the greater the risk." Remember also that those who have but little money can least afford to take chances.

Investing is a Profession

Investing money is a highly specialized profession. None but experts know the comparative and ever changing values of various investments. Safe investments cannot be made on memory of past values.

Go to a bank and ask to be directed to the best man to advise you about investment. You will find yourself

welcome even though you have only a small amount to invest.

The banker of today will try to protect you against fraudulent investments because general prosperity, which includes yours, helps the bank's prosperity.



The United States Government is trying to put out of business and put in jail all investment crooks and especially those who prey upon persons of small means—who can least afford to lose their money. Whenever you receive circulars or pamphlets or letters offering to make you rich over night, turn them over to the Post Office Department so that the Government may investigate, and, if necessary, prosecute.

Better Business Bureaus of various cities, bankers associations, national associations of manufacturers and other groups are issuing warnings against fake stock promoters. Many organizations are joining hands to prevent the stealing of billions

of dollars by these financial tricksters.

Many of the foremost manufacturing plants are trying to protect their workers by issuing warnings in pay envelopes and on Bulletin Boards. Suggestions for notices will be mailed on request to interested executives.

The Metropolitan Life Insurance Company will neither criticize nor advise as to any particular investment but will be glad to mail free a booklet, "How to Invest Your Money" dealing with the general problem of investing which may aid you to avoid financial pitfalls. Send for it.

HALEY FISKE, President.

Published by

METROPOLITAN LIFE INSURANCE COMPANY—NEW YORK

Biggest in the World, More Assets, More Policyholders. More Insurance in force, More new Insurance each year

"Mention the Geographic—It identifies you."

Dressed up for Hallowe'en

A special holiday wrapper on the favorite
Fussy Chocolates



The Fussy Package is a welcome gift at any time. Especially good for Hallowe'en because of its treasures of nuts. Is now furnished in a colorful pictured wrap, to make it exactly fit the occasion.

Probably the first special assortment of chocolates to cater to individual taste of "fastidious folks," the Fussy Package is one of the older members of Whitman's "Quality Group."

It was made for those who prefer firm and "chew-y" chocolates. Nuts, nut caramels and nut nougat, hidden in a heavy coating of that delicious Whitman's vanilla chocolate.

Look for the Fussy Package, with or without the special Hallowe'en wrap, in those selected stores, in almost every neighborhood in the land, that are agencies for Whitman's.



STEPHEN F. WHITMAN & SON, Inc.,
 Philadelphia, U. S. A.

New York

Chicago

San Francisco



The Fussy Package contains chocolate pieces enclosing Almonds, Walnuts, Filberts, Peanuts, Brazil Nuts, Pecans, Double Walnuts, Pecan Caramels, Triple Almonds, Nougat, Nut Brickleis, Nut Brittle, Almond Dates, Double Peanuts, Nougat Caramels, and Almond Caramels. Packed in boxes from half pound to three pounds.

Why your children should eat Tomato Soup!



Red-ripe, luscious tomatoes abound in fruit juices and the "growth vitamins" which are so beneficial in promoting the healthy, sound development of children.

Good tomato soup acts also as a wholesome stimulant and "conditioner" of the digestion. It renews the appetite and helps to keep it strong and vigorous.

Campbell's Tomato Soup contains only the pure tomato juices and luscious tomato "meat" strained to a fine puree, blended with fresh country butter, and deliciously seasoned.



Extra nourishing prepared as a Cream of Tomato according to the simple directions on the label.

Upon my heat we'll find a seat
To pass the time of day,
With zest and zeal from Campbell's meal
I'll shine in all I say!

21 kinds
12 cents a can



Campbell's SOUPS

LOOK FOR THE RED AND WHITE LABEL



Building for America's growth

The early builders of America made their houses of rough hewn logs or of stone or adobe lifted from the earth. Settlements grew to towns, towns to cities. Small stores and shops were built, and these in turn were torn down to make room for bigger ones. Roads, bridges and railways were constructed. Factories and skyscrapers were erected. And so, swiftly, the America of today appeared, still growing.

In the midst of the development came the telephone. No one can

tell how much of the marvelous later growth is due to it—how much it has helped the cities, farms and industries to build. We do know that the telephone became a part of the whole of American life and that it not only grew with the country, but contributed to the country's growth.

Communication by telephone has now become so important that every American activity not only places dependence upon the telephone service of today, but demands even greater service for the growth of tomorrow.



**AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES**

BELL SYSTEM

One Policy, One System, Universal Service

Peace of mind *through coupons*



THE people who are financially able to enjoy ease and comfort are usually those who have been careful in making investments — careful to include in their holdings a diversified group of well-secured bonds. From our broad lists of such bonds you can select issues of various types, yields and maturities. Each issue carries our recommendation as a desirable investment in its class.

THE NATIONAL CITY COMPANY

National City Bank Building, New York

BONDS · ACCEPTANCES
SHORT TERM NOTES



Offices in more than 50 leading
cities throughout the world

Rich, abundant Williams Lather

*from either one
of these*

Shaving Sticks

HERE is the famous Williams shave offered in two stick forms, each convenient to an unusual degree.

Williams Doublecap is the name of the new Williams stick at the right. The covers of this stick are of equal size. One serves as the holder when the stick is in use. Because the holder is half the length of the stick itself, Doublecap gives you a generous, full-hand hold *on metal* that does not vary from the first to the last shave.

Below is Williams Holder Top, probably the best known shaving stick in the world. The soap is fastened securely in a metal ring which in turn screws into a metal holder.

The soap in both Doublecap and Holder Top is *absolutely secure*. It cannot loosen or wobble.

Whatever your choice of holders—Holder Top or Doublecap—you get one lather—



DOUBLECAP

This new but already very popular shaving stick gives you a firm, full-hand hold even when the stick is worn down to a thin wafer.

Williams! Users are constantly telling us that no other shaving soap gives such *shaving* lather as they get from Williams. Quick, thick, lasting, it bulks large from the first few strokes of your brush. It holds its moisture. It penetrates the oil-coating on the beard, softens every hair speedily, thoroughly.

Your Williams-shaved skin is soft and flexible and feels as soothed and refreshed as after a massage.

Ask your dealer to show you the two Williams sticks, Holder Top and Doublecap.

HOLDER TOP

Like Doublecap, the stick is held by a threaded metal ring—no chance of its working loose. There are Refills for both these sticks.



Agua Felva is our newest triumph—a *scientific* after-shaving preparation. A few drops keep the face like velvet all day. We will send a 150-drop test bottle free. Address Dept. 510, The J. B. Williams Co., Glastonbury, Conn. (If you live in Canada, address The J. B. Williams Co., Ltd., St. Patrick Street, Montreal)

Williams

800

Chrysler Cars Per Day

Production of Chrysler quality cars—the Six and the Four—is now proceeding at the amazing total of 800 per day.

Yet even that huge volume falls short of satisfying the public demand for results which only Chrysler can give.

Two weeks after the Chrysler Four was announced, it was on a production schedule of 500 per day.

It is doubtful if any new car has ever been forced to meet such an avalanche of buying orders as immediately descended upon the Chrysler Four.

At the same time, the epoch-making quality, unprecedented results and proved durability of the Chrysler Six were sending its public demand higher and higher month by month.

Today, with the most modern factory facilities and scientific manufacturing processes, world-wide demand for both the Six and the Four has sent them to new peaks of quality production.

You who are justly proud of Chrysler ownership, you scores of thousands who enjoy the new results which only Chrysler can give, have long since learned the soundness and the depth of quality in Chrysler materials and Chrysler craftsmanship. Increasing thousands of buyers enthusiastically acclaim the tremendous advance registered by Chrysler results—in performance, in ride-ability, in compact roominess, in economy.

You will find your nearest Chrysler dealer eager to give you a conclusive demonstration of either the Six or the Four.

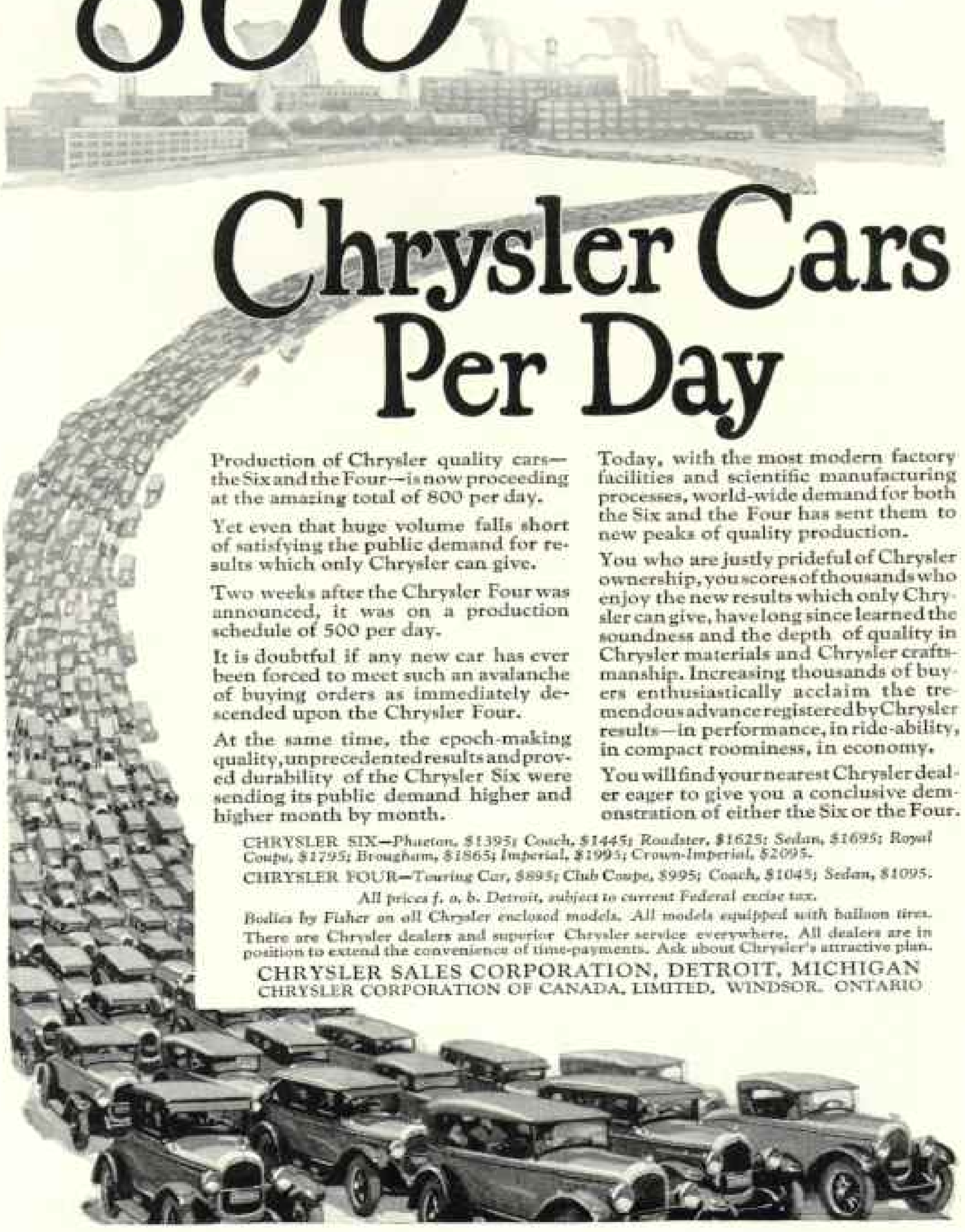
CHRYSLER SIX—Phaeton, \$1395; Coach, \$1445; Roadster, \$1625; Sedan, \$1695; Royal Coupe, \$1795; Brougham, \$1865; Imperial, \$1995; Crown-Imperial, \$2095.

CHRYSLER FOUR—Touring Car, \$895; Club Coupe, \$995; Coach, \$1045; Sedan, \$1095.

All prices f. o. b. Detroit, subject to current Federal excise tax.

Bodies by Fisher on all Chrysler enclosed models. All models equipped with balloon tires. There are Chrysler dealers and superior Chrysler service everywhere. All dealers are in position to extend the convenience of time-payments. Ask about Chrysler's attractive plan.

CHRYSLER SALES CORPORATION, DETROIT, MICHIGAN
CHRYSLER CORPORATION OF CANADA, LIMITED, WINDSOR, ONTARIO



From the House of Banister

The
LEEDS



Know these shoes by the men!

YOU can judge shoes by the wearers. Go to the places where life is at its highest, where business, finance or social activities touch the top marks . . .

There you will find men who wear Banisters—men who are dressed right for the part they play in the scheme of things.

Shoes do not make them big men, of course. But men who do things, who are lifted up by their own merit, instinctively choose the finest things to wear.

So for many, many years—about eighty—Banister Shoes have walked the paths that lead to the rostrums, the executive desks and into the beautiful homes of the country.

Don't you know a shoeman near you who sells Banister Shoes? Inquire from us.

JAMES A. BANISTER CO. Newark, New Jersey



BANISTER
Shoes

Since 1845 the Choice of Gentlemen

*In size • beauty • luxury •
power • price • in sheer
excellence at low cost • this
fine six easily leads its field*

From any viewpoint you may regard it, this fine new Overland Six is a remarkable motor-car . . . characterful in style, delightful in performance . . . richly finished, masterfully engineered . . . handling at all speeds with an ease restful to men and a joy to women.

Within many, many dollars of its price, there is nothing that can compare with this automobile, *for quality* . . . a 38-horsepower engine . . . 112¾ inch wheelbase . . . Larger main bearing surface . . . Pressure feed lubricating system . . . Oil-
Willys-Overland, Inc., Toledo, Ohio

tight universal joints . . . Heavier crown fenders . . . Two-tone polished lacquer finish . . . Genuine carpet floor-coverings . . . very latest finger-type spark and throttle levers . . . Unusual room and comfort.

See this fine, powerful Overland Six . . . a car you will delight to drive . . . a car that you and yours will be proud to go about in. Easy terms. A small amount down. 52 weeks for the balance. Take along your present car to apply as part payment.

Willys-Overland Sales Co., Ltd., Toronto, Canada



OVERLAND SIX

Standard Sedan **\$895** *DeLuxe Sedan* **\$1095**
Prices f.o.b. Toledo

WILLYS • OVERLAND • FINE • MOTOR • CARS

The FIFTH AVENUE BUILDING



The Home Port of a Business Empire

"I could buy a whole carload of Christmas cards here . . . or fifty cases of fine glassware, from Ohio, perhaps . . . if I wanted them I could get doll wigs in wholesale lots . . . or enough machinery to start a pulp mill up in Canada . . ." and so, reading the office directory list in the lobby of The Fifth Avenue Building, you might send your mind still further adventuring. Here is a world market. Those men who pass are merchants of great traffic through the world.

Out-of-town businesses find many advantages in having their New York offices and showrooms in The Fifth Avenue Building. They are located at Broadway and Fifth Avenue at Madison Square, a pleasant place. They enjoy the prestige of a world-

famous address. For many decades this site, 200 Fifth Avenue, was occupied by The Fifth Avenue Hotel, a meeting-place of fashion, world politics, and cosmopolitan importance. Tenants of The Fifth Avenue Building are close to all uptown and downtown New York. From the subway stop, 23rd Street (entered from the building), it is just thirteen minutes to the Grand Central Terminal and ten minutes to the Pennsylvania. All parts of the financial district are as near or nearer. Busses pass the door. Surface cars take you across town on 23rd Street. Two elevated lines are within two blocks.

Small wonder that The Fifth Avenue Building is the home port of an empire of commerce!

Broadway and Fifth Avenue at Madison Square, New York

"More than an office building"

Burroughs



More Than A Machine

is what you get when buying a Burroughs. The Burroughs man brings expert knowledge of modern methods. He analyzes *your* business needs and helps select the right machine for *your* work. He shows how it will make *your* business pay a bigger profit.

BURROUGHS ADDING MACHINE COMPANY
6284 SECOND BOULEVARD DETROIT, MICHIGAN

ADDING · BOOKKEEPING · CALCULATING AND BILLING MACHINES



WYATT
PERLEY

WILLS SAINTE CLAIRE

So impressively superior in stamina and style that first place in exclusive favor can be augured boldly and without reservation.



WILLS SAINTE CLAIRE, INC. . .
Meyersville, Michigan

Pittsburgh
Proof
Products

Glass
Paint-Varnish
Brushes



Mimax Automobile Finish

Like polished marble from everlasting hills

COMPARED with old standards of durability, MIMAX is as enduring as marble.

MIMAX, new type perfected finish, takes an exquisite polish—a glowing, silken lustre, distinguished, distinctive, aristocratic! Responsible refinishing shops have been licensed to use the MIMAX system and have been equipped under factory supervision!

Send back this coupon for estimate of cost
booklet
color card.

Research
Laboratories
Dept. C.
Pittsburgh Plate Glass Co.
Milwaukee, Wis.

Please send me Mimax color card, informing booklet and approximate cost of refinishing my car by the Mimax system.

My Name

Address

City

PITTSBURGH PLATE GLASS CO.

Paint and Varnish Factories — Milwaukee, Wis., Newark, N.J., Portland, Ore., Los Angeles, Cal.



Prevent tooth decay below the gum-line

As the soil nourishes the tree roots, the gums nourish the teeth. And as the tree decays if you bare the roots, so do the teeth decay when gum shrinkage starts in.

This condition—one of the first stages of Pyorrhea—is very common and something that ordinary tooth-pastes are powerless to prevent. If not checked promptly, it will lead to loss of teeth and disease.

If used in time and used consistently twice daily, *Forhan's* will help prevent Pyorrhea or check its progress. It will preserve the gums in their pink, normal, healthy condition, safeguard your health and keep your mouth clean, fresh and wholesome.

Forhan's is more than a tooth paste; it helps to check Pyorrhea. Thousands have found it beneficial for years. For your own sake ask for Forhan's For the Gums. All druggists, 35c and 60c in tubes.

Formula of R. J. Forhan, D. D. S.
Forhan Company, New York

Forhan's

FOR THE GUMS



THE QUALITY RAZOR OF THE WORLD



ITS daily dividends in shaving comfort and a well-groomed look make your investment in Gillette Blades seem infinitely small by comparison. The shaving satisfaction these blades give in daily service is proof positive of their indispensable merits. The finest of blade steel and production processes perfected by the most thorough research and experiment, are, through the practical experience of twenty years of blade-making, responsible for giving the Gillette Blade the finest edge that steel can take.

GILLETTE SAFETY RAZOR CO., Boston, U. S. A.

The Gillette New Standard
In gold plate, \$6.
In silver plate, \$5.



Gillette

SAFETY  RAZOR

BLADES

Whether you have a beard "like wire" or as soft as silk, your GOOD shave will become a PERFECT shave if you read "Three Reasons"—a new shaving booklet just published. A copy on request.

FACTS ABOUT A FAMOUS FAMILY



Testing cars to determine value at the General Motors' Proving Ground, near Detroit. The Proving Ground occupies 1125 acres.

Determining motor car value

General Motors has a car for every purse and purpose and seeks to give the utmost value in each price class.

On the roads of its great Proving Ground, cars are being driven day and night in tests involving speed, power, endurance, acceleration, fuel consumption, hill climbing, braking, riding qualities, etc.

From the facts observed, engineers are determining a standard of performance for each class and are passing on to the factories information which helps them to give *added* value for the price you are asked to pay.

GENERAL MOTORS

BUICK • CADILLAC • CHEVROLET • OAKLAND • OLDSMOBILE • GMC TRUCKS

General Motors cars and trucks may be purchased on the GMAC Payment Plan, which includes fire and theft insurance service.



UNLIKE ANYTHING ELSE
 IT IS DUCO, THE BEAUTIFUL, ENDURING FINISH

*Lasting newness
 now replaces
 the easily marred,
 fleeting finish of a day*

No longer need care free use of the motor-car take tribute of its original beauty.

Duco is enduring . . . a finish that recognizes no marring master. Spots and scars that used to threaten the car's smartness, hold no menace for Duco's lustrous sheen.

The time has passed when an automobile's first crisp newness might not last. With Duco, beauty remains undimmed, asking little care, as months and years roll by.

*New or old, your car deserves Duco
 Insist upon the genuine*



TO secure enduring beauty, be sure that the finish on your car is of genuine DUCO — created and made only by du Pont.

This finish is uninjured by sun, salt air, rain, sleet or snow. Oil and grease can be wiped away readily. It is hard to scratch but easy to keep spotless and bright. Even strong soaps do not harm DUCO. It resists abrasion; mud and dirt have no effect upon its beauty.

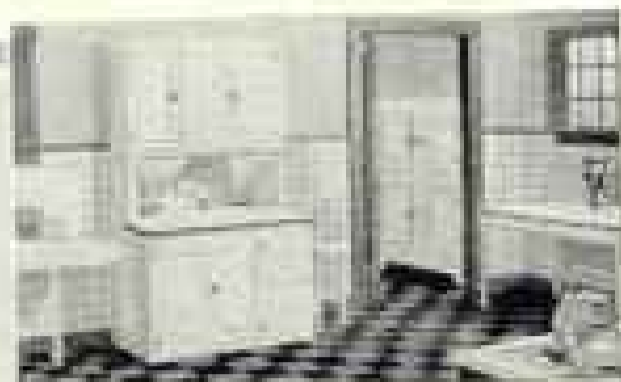
The trade-marks shown above testify to the widespread adoption of Duco by automobile manufacturers whose names are synonymous with high ideals.

Old cars can also be given new beauty and increased in value.

Make certain that only genuine Duco and du Pont undercoatings are used . . . your protection is the official sign displayed by Authorized Duco Refinishing Stations throughout the country, one in every locality.

E. I. du Pont de Nemours & Co., Inc., Chemical Products Division, Purdin, N. J., Flint, Mich., Chicago, Ill., San Francisco, Cal., Everett, Mass., or Flint Paint & Varnish Limited, Toronto, Canada.

There is only ONE Duco — DUPONT Duco



Kitchen walls of Sheet Steel, painted or enameled, are easy to keep always immaculate and sanitary.



Beauty and sanitary cleanliness are provided by bathroom walls of Sheet Steel, painted or enameled in white or delicate tints.



Sheet Steel furniture has beauty that is permanent. Doors and drawers never warp, bind or stick.



Rigid and durable walls and ceilings, with maximum fire protection and elimination of cracks in plaster, are insured by the use of metal lath made from Sheet Steel.

The Finest Homes Are Using Sheet Steel for Construction, Equipment and Furnishing

From roof to basement, the modern home utilizes Sheet Steel for economy, efficiency and added comfort and convenience.

For construction, in the form of roofing, metal lath and walls of bathrooms and kitchens; for equipment, in warm air heating systems, clothes dryers and other modern appliances; for furnishing, in kitchen cabinets, refrigerators and furniture.

Sheet Steel roofing, in the form of the popular Spanish Mission tile, as used on the house illustrated above, combines architectural beauty with economical and enduring protection. Sheet Steel, in the modern warm air heating system, insures healthful warmth with fuel economy. And in furniture and furnishings, this same remarkable material sets new standards of beauty and service.

You will be interested in the illustrated booklet, "The Service of Sheet Steel To The Public." It will suggest to you many ways in which this material of universal adaptability can serve you. Write for it, free.

SHEET STEEL
TRADE EXTENSION COMMITTEE
 OLIVER BUILDING
 PITTSBURGH PENNSYLVANIA



EXCEPTIONAL RIDING COMFORT

The riding comfort of a motor car is not dependent upon its length, weight or cost, any more than the comfort of a home depends upon its size.

If the seats are deep enough and the proper distance from the floor; if the seat backs are correctly pitched for relaxation; if the upholstery is sufficiently stuffed and there is plenty of leg room; above all, if the springs are rightly designed and of proper length, you will have exceptional riding comfort. Otherwise, you will not.

Dodge Brothers, with characteristic thoroughness, studied and experimented with these details for years. Their findings were ultimately incorporated in the design of Dodge Brothers Motor Car—without question now a vehicle that ranks with the first in this vitally important feature.

DODGE BROTHERS, INC. DETROIT

DODGE BROTHERS (CANADA) LIMITED
TORONTO, ONTARIO



TRADE MARK
PATENTED
1905

©D.H.



“—by the judgment of this
great tribunal
of American
people”—LINCOLN



IT was Lincoln's faith that the judgment of this tribunal is right. And so through the years it has proved to be—not only in the great matters of State, but in the thousand choices of daily life. Out of the multitude of things offered to them, the American people have given their marked preference to but a few—and to those few only because they *deserve* it.

Last year, the American public made known its preference in Radio. The most striking feature of its choice is the *continued preference* given to *one set*—the FREED-EISEMANN. Although competing with thirteen other manufacturers of Neutrodyne Receivers, the volume of FREED-EISEMANN sales was more than half of *all* the others combined. Today, FREED-EISEMANN is by far the largest manufacturer of Neutrodyne sets in the world.

Trust FREED-EISEMANN on PERSONAL Responsibility
Mr. Joseph D. R. Freed, Mr. Alexander Eisemann and Mr. Arthur Freed, the executives of the Company, feel personally responsible to you for the performance of their radio set. They have inspired every man in their great plant with the same uncompromising vigilance; the same devotion to an ideal. You will know at the first turn of the dials, that your FREED-EISEMANN has been built by clever, trained, unhurried hands to give you pleasure—now and for years to come.

*You can have a home demonstration without cost or obligation.
Telephone your FREED-EISEMANN dealer today!*

Freed-Eisemann Radio Corporation
MANHATTAN BRIDGE PLAZA, BROOKLYN, N. Y.



The famous NR-20. A de luxe Neutrodyne* Receiver in a handsome mahogany cabinet. \$175

*Licensed by Independent Radio Mfg. Inc., under license issued Nov. 14, 1925, 1926, 1928.



FE-15—A new five-tube storage battery Receiver, licensed and manufactured under a group of the inventor's patents and incorporating special engineering features . . . \$75

FREED-EISEMANN
Mastery in Radio

Mantel in dining room. Made of beautifully matched walnut. The whole room is paneled in Walnut in the Christopher Wren style. Henson residence in Kansas City. Horace La Pierre, architect; woodwork by American Sash and Door Co.



Architects Find Inspiration in
the Natural Beauties of

AMERICAN WALNUT

BBETTER tendencies in home building and furnishing are reflected by the general return to the best classical styles. There is a harking back to the golden age of designing which finds expression in beautiful woodwork and furniture and the almost universal use of American Walnut.

This tendency is not limited to any section or class but is general throughout the country. Our architects and decorators are seeking

their inspiration from the masters who created the finest styles we know. This beautiful mantelpiece of



"THE COOLIDGE CHAIR"

Presented to the President by Minneapolis, when President Coolidge visited that city. A handsome modern chair of solid carved walnut in the Renaissance style.

matched walnut panels is an adaptation of a Christopher Wren mantel in Lord Brownlow's mansion, Belton House. Wren brought interior decoration to its highest peak of dignity and refinement.

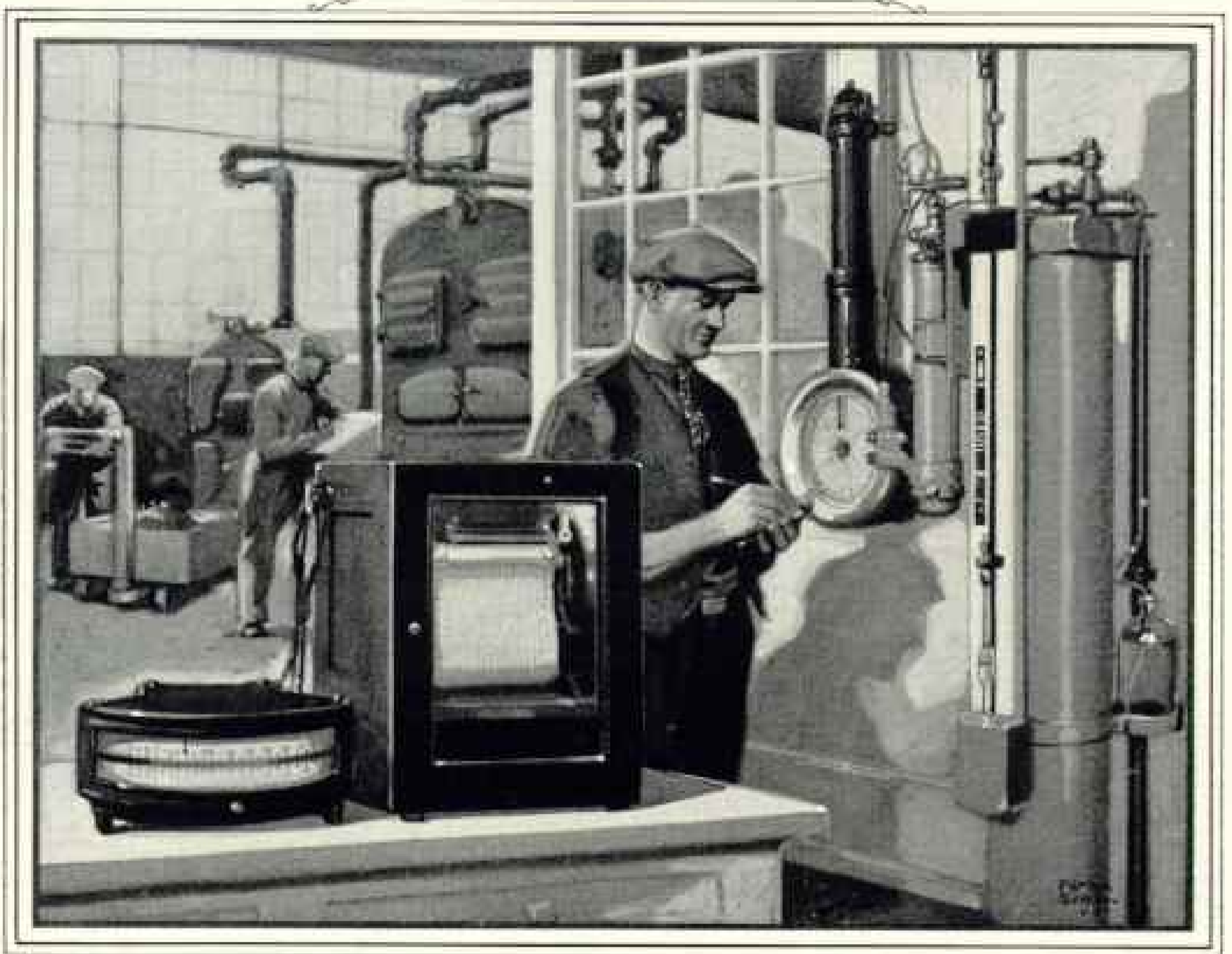
This dining room of a modern home is finished in walnut from which it gains its luxurious charm. The lovely grain, texture and color of the wood is used with rare skill to create an atmosphere of richness and dignified beauty.

American Walnut is not only inherently beautiful by virtue of exquisite patterns and designs, by natural color and ability to take and retain a fine finish, but it is proverbially strong and time-resisting. Everyday use does not lessen walnut's permanent beauty. Age only seems to mellow and enrich it.

IMPORTANT—Be sure when you buy walnut furniture that at least all the exterior parts are walnut, if you would have the permanent satisfaction that walnut gives. Much furniture is made with splendid walnut panels, but with solid framework and legs of an inferior wood, and such pieces should neither be sold or bought as genuine walnut.

Permit us to send you "The Story of American Walnut," a fascinating book full of interesting and valuable information about this wood, its uses, advantages and the part it played in the development of fine furniture. It also tells how to detect imitations. Write for it.

AMERICAN WALNUT MANUFACTURERS' ASSOCIATION
Room 932, 616 S. Michigan Ave., Chicago, Illinois



For more than thirty-five years, United States engineers have tested every new principle and development in the science of heating. Working with the best of laboratory equipment, they have increasingly sought ways and means to extract more heat energy from fuel and increase the general efficiency of United States products.

As a result of this exact and painstaking experimental work, the entire line of Capitol Boilers and United States Radiators is superbly modern. No heating plants can offer greater economies or more convincing records of reliability. Any architect or heating contractor will be glad to confirm these statements from his own experience.

We shall be glad to send you an illustrated booklet which fully explains the modern idea in house heating

UNITED STATES RADIATOR CORPORATION

General Offices, Detroit, Michigan

Capitol Boilers

BRANCH AND SALES OFFICES

Boston • Springfield, Mass. • Portland, Me. • Providence, R.I. • New Haven • Troy, N.Y. • *New York • Brooklyn
 Harrison, N.J. • Philadelphia • Baltimore • *Buffalo • *Pittsburgh • Cleveland • Columbus • Cincinnati • Detroit
 Chicago (No. Side) • Chicago (So. Side) • Milwaukee • Indianapolis • Louisville • St. Paul • St. Louis • Kansas City • Des
 Moines • Omaha • Denver • Seattle • Portland, Ore. • *Warehouse stocks carried at all points except those indicated by star.



AT DIZZY HEIGHTS

he spreads a coat of red-lead

DAILEDY he dangles in mid-air. The steel skeleton of a building that is to be, or a network of bridge cables, is his only foothold. Where he works, breezes become whistling gales striving to tear him from his precarious perch. Below him move many tiny dots, skeltering about like so many ants, all unaware of one of their kind who works at dizzy heights *just to spread a thin red film of lead paint.*

"Why," you ask, "must he do it?" Because upon the thoroughness with which he spreads this red film—upon its ability to protect the surface it covers—rests, in no small measure, the safety of the structure and the lives of thousands.

Protecting the strongest steel

The best protector for metal surfaces used by man today is pure red-lead paint, made from lead.

Such a red-lead is Dutch Boy red-lead, preferred by the United States Navy, eminent engineers, contractors, and builders. Spread over a steel surface, Dutch Boy red-lead seals the pores of the metal and forms a hard yet elastic protecting film that resists

WHY?

moisture and keeps out air. When such a film is properly maintained, it gives complete and lasting protection.

Paint booklet sent free

The "Handy Book on Painting," a storehouse of general paint facts and formulas, will be sent to anyone free. A section of this handbook is devoted to the protection of metal surfaces. It tells how to prepare the surface for painting, how to mix and how to apply the paint.

Besides red-lead, the Dutch Boy line includes flatting oil, linseed oil, solder, babbitt metals and white-lead.

If you have any questions about these products or about the many uses of lead, the wonder metal, write to our nearest branch.



NATIONAL LEAD COMPANY

New York, 111 Broadway; Boston, 131 State Street; Buffalo, 116 Oak Street; Chicago, 900 West 18th Street; Cincinnati, 659 Freeman Avenue; Cleveland, 820 West Superior Avenue; St. Louis, 722 Chestnut Street; San Francisco, 48 1/2 California Street; Pittsburgh, National Lead & Oil Co. of Pa., 316 Fourth Avenue; Philadelphia, John T. Lewis & Bros. Co., 477 Chestnut Street.

FADA Radio



Tune in tonight
with Fada Radio
The Standard of Reception

IF you want to know what radio can be like at its best, 'phone your dealer for a complete demonstration of the Fada Radio in your own home tonight—without obligation to buy.

Discover for yourself tonight the range, the selectivity, the clearness of reception of Fada Radio—with volume, full or gentle, as you prefer. Dial for distance—*real* distance—tuning in the stations you want as precisely and easily as you tune out those you don't want.

Then note: Fada Service guarantees permanent performance at the same high level as the demonstration.

Call up your dealer today. It's the first step towards radio satisfaction.

Most Fada dealers will be glad to arrange convenient terms of payment. Send for the book "Fada Radio—The Standard of Reception."

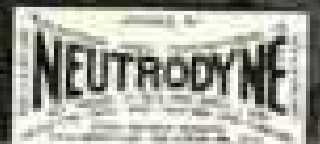
F. A. D. ANDREA, INC.
CHICAGO NEW YORK SAN FRANCISCO

FADA RADIO, LTD.—TORONTO FADA RADIO, LTD.—LONDON

*Manufacturers of TUNED RADIO
FREQUENCY receivers using the highly
efficient NEUTRODYNE principle.*



There is a Fada Radio model for every purse—all 5-tube Neutrodyne sets for dry cell or storage battery tubes, from \$85 to Art Cabinet models up to \$300. Illustrated is the Neutrola-Grand at \$225.





*With a few strokes of
a pen — American
patriots registered
their Independence*

A Waterman's Pen — with one filling — would have written many times the entire Declaration of Independence. It would have startled these patriots into an appreciation of its remarkable efficiency.

IN MILLIONS of homes and offices today it is freeing men and women from pen-discomfort and aiding them in "the pursuit of happiness."

FOR THE sake of independence try a Waterman's. We recommend the model illustrated. Black, mottled or cardinal holders; fitted with pen points that write as you would write.

From \$4 to \$6.50, according to size

Sold and guaranteed by 30,000 merchants

Illustration
is exact size
of #4 model

Waterman's  Ideal Fountain Pen



ANNOUNCEMENT

This is of interest to opera-goers, to lecture and symphony patrons as well as to the dancing set, and to those scientifically interested.

Artistic radio has come with Thorola Islodyne, embodying the *Isolated Power* principle made possible only by Thorola Low-Loss Doughnut Coils. They conquer "pick-up" of unwanted stations, waste of power, uncontrollable "oscillation," complicated wiring, uncertain operation. Radio experimenters know what all this means. Radio listeners no longer need to know!

With Islodyne action any one station wanted is cleanly selected, even in broadcasting centers. Utmost power is *isolated—focused*—on this one set of signals only. The delicate radio impulses do not conflict, neutralize, offset each other. Full tone, unmodified—full volume, full distance at last are possible, at all wave lengths.

With temperamental factors banished, Thorola Islodyne achieves uniform reception. The same stations keep coming in the same. The set your dealer demonstrates tells what your set will do.

Radio reception is unmistakably elevated. Complete Thorola receivers lead their field by far, just as Thorola excels in loud speakers and apparatus.

The Thorola name is surety of radio development not to be eclipsed. The intense interest in the 5-tube Thorola Islodyne at every radio store will tell you where expert opinion centers today. Go and listen.

REICHMANN COMPANY, CHICAGO

Thorola
ISLODYNE

In smart Thorolon Cabinet
the 5-tube Thorola
Islodyne is..... \$85

In stately Burled Walnut
Cabinet with Cirrusian top the
5-tube Thorola
Islodyne..... \$115

Thorola Loud Speakers with
new furnished Bakelite horns
and gold throat-band are even
better in appearance and per-
formance.

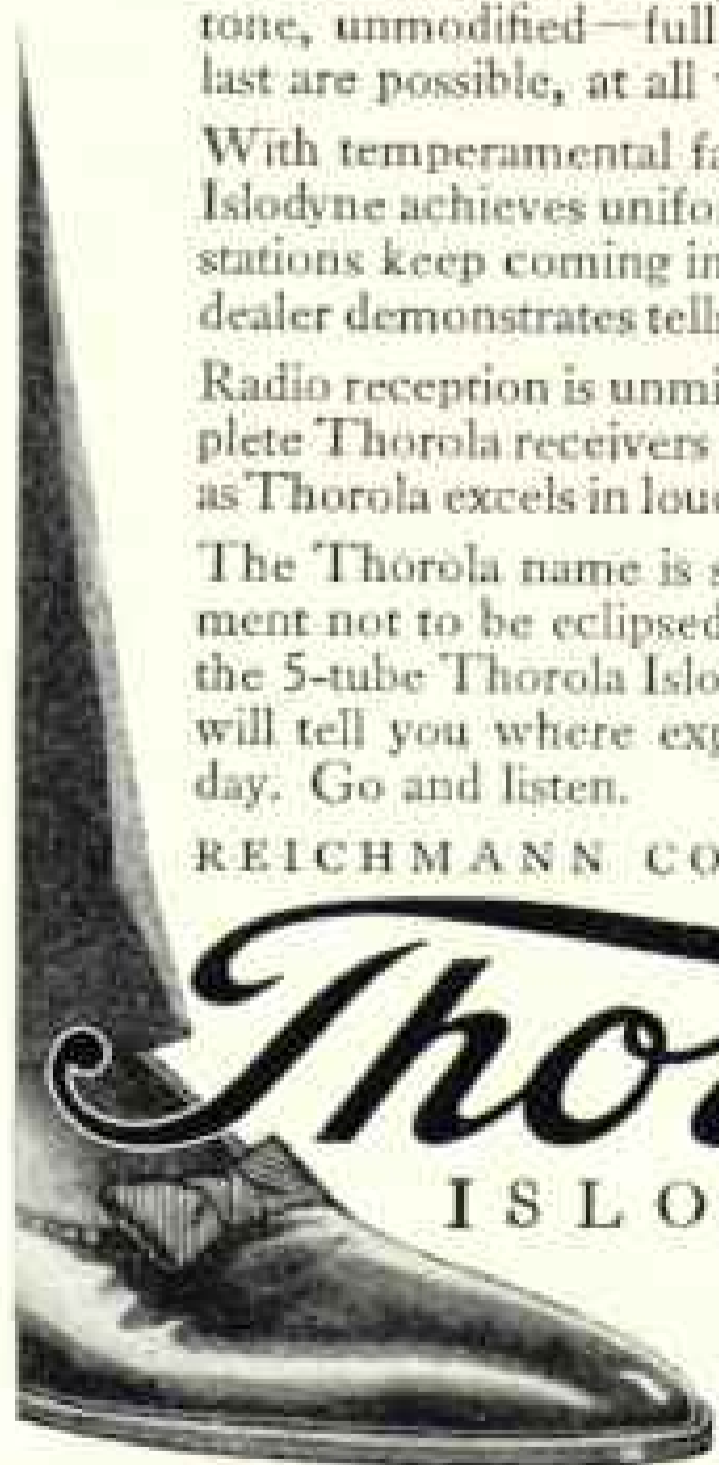
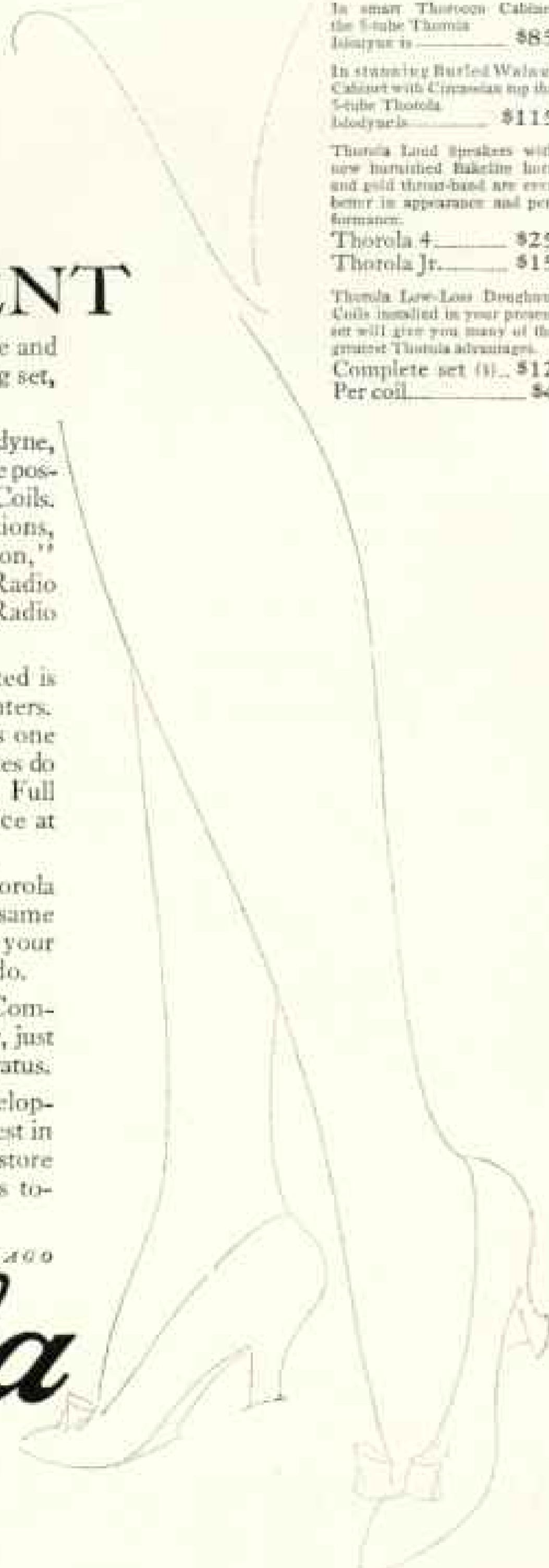
Thorola 4..... \$25

Thorola Jr..... \$15

Thorola Low-Loss Doughnut
Coils installed in your present
set will give you many of the
greatest Thorola advantages.

Complete set (1)..... \$12

Per coil..... \$4



Prevent this

Too tired to
dance.



Bad Teeth May Take
The Joy Out of Life
Patients of Tooth Decay Say
Bodily Strength and Dearest
Good Looks.

It really doesn't seem possible, does it, that happiness can depend on the teeth? But ask your dentist or your physician. You will learn that not only happiness but often health and good looks are lost when teeth start to decay.

Here is a scientific experiment, told recently by John Amid in *Collier's Weekly*, that speaks volumes:

"In the interests of science a bit of the streptococcus culture from one of the extracted teeth (from a human suffering from rheumatism) is injected into the blood of a rabbit. Three weeks and the rabbit is hopelessly deformed."

Preventive dentistry is sweeping the United States. Today it is fully recognized that tooth decay is a menace to the nation's health.

In schools where preventive oral hygiene has been introduced, children have shown striking advance in health and mental vigor, and increased immunity to disease.

Here is a photograph taken in the Dental Clinic of the Heckscher Foundation, New York, where the importance of preventive dentistry is fully realized.



Use Colgate's— It removes causes of tooth decay



Good Teeth—Good Health—Good Times

PEOPLE who care how they look are concerned first of all with their teeth—for the mouth is the front door of personality. Not only are good teeth important to beauty; they are essential to health, to happiness, and sometimes even to life itself.

Because good teeth and good health are so closely related, modern dentists are urging preventive dentistry. Its aim is to combat disease by preventing tooth troubles—to fight tooth decay before it starts. Colgate's Ribbon Dental Cream always has been in the forefront of this scientific move for better teeth and health.

**Colgate's is Safe and
Effective**

Colgate's is a modern dentifrice—widely recommended by modern dentists. It "washes" your teeth thoroughly clean—does not

scratch or scour them. The combined action of its soap and chalk gently removes clinging food particles. Causes of tooth decay thus are safely and effectively removed by Colgate's. It is safe to use for a lifetime.

Tastes Good—Does Good
Take good care of your teeth and they will take good care of you. Brush them after each meal. No matter what kind of tooth brush you like, use Colgate's with it. The taste of Colgate's is pleasant. It is made sensibly, advertised sensibly, and sold at a sensible price, 25c for a large size tube.

Consult your dentist twice a year. It pays.

COLGATE & CO.
Established 1806



Truth in Advertising Implies Honesty in Manufacture

John Roche with
Warner Brothers
Productions



Patrick
DULUTH

Patrick Overcoats are Distinctive!

Because of their deft hand-tailoring, correct design and perfect fit, they have earned their place among the foremost
STYLE COATS OF AMERICA.

Their outstanding feature is the beautiful Patrick Cloth. It is woven in original and exclusive patterns and gives unusually satisfying wear.

Write for samples of this wonderful Cloth—and our interesting Overcoat Style Booklet also name of nearest dealer. Address Desk G-20.

OTHER PATRICK PRODUCTS:

Sweaters and Sport Jackets—Flannel Shirts
Golf and other Hosiery—Leather Garments
Mackinaws, Blankets and Auto Robes



Excellent Quality.

Our Two Brands

Three cloth weights—Heavy, Medium, Light.
Prices \$25 to \$55



Superlative Quality.

F.A. PATRICK & CO. DULUTH
Makers of both Cloth and Garment

"PURE NORTHERN WOOL
from sheep that thrive in the snow"



Hear Ye! Hear Ye!

LOVERS OF COFFEE

THE COFFEE PROBLEM IS SOLVED!

A CUP OF HOT WATER, ONE TEASPOONFUL OF

G. Washington's

DELICIOUS INSTANT COFFEE

SUGAR AND CREAM TO TASTE.

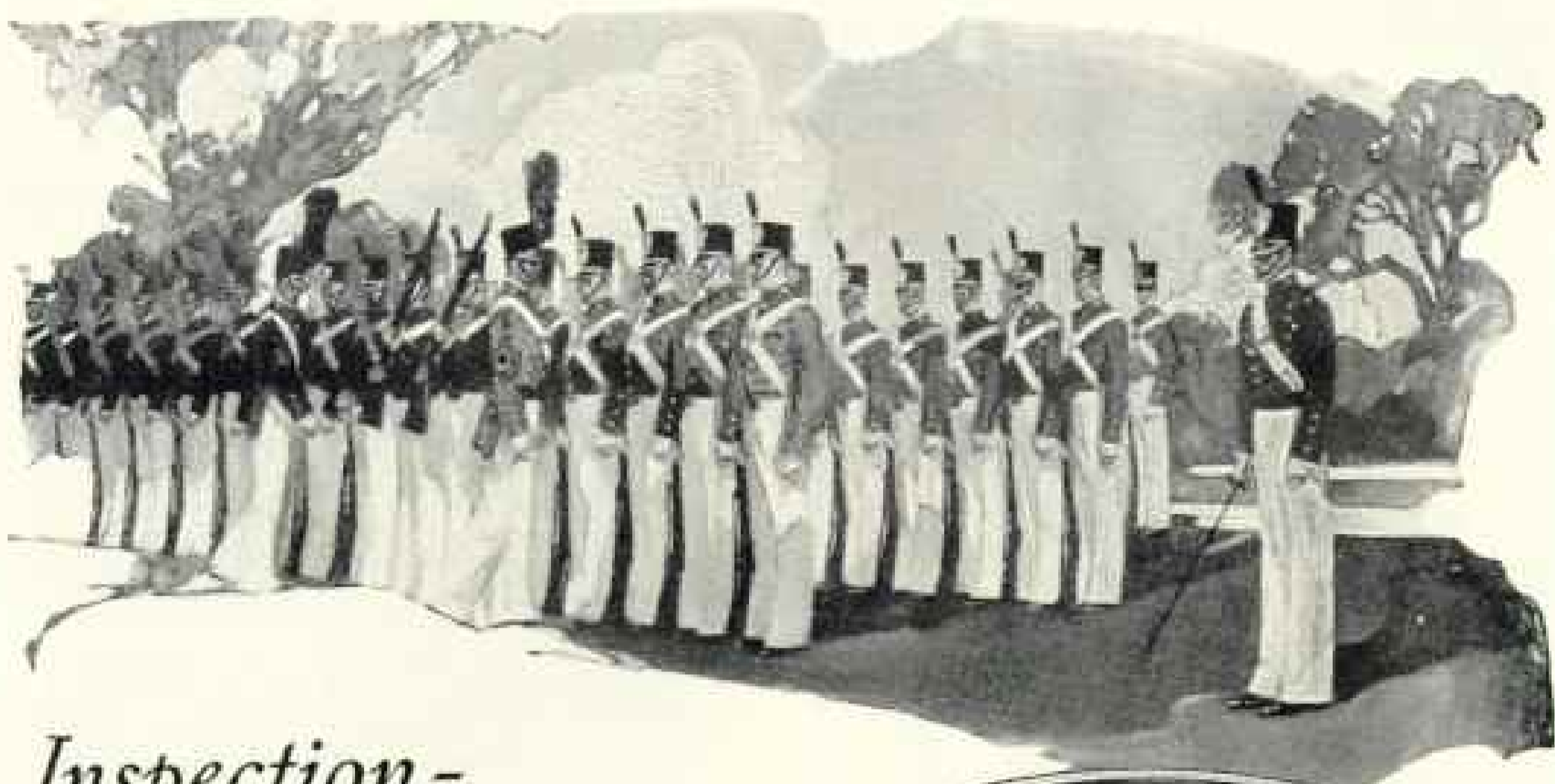
EACH CUP TO ORDER AT TIME OF SERVICE

WITHOUT TROUBLE OR FAILURE.

UNIFORM QUALITY GUARANTEED

Send 10c for Special Trial Size Recipe Booklet Free

G. WASHINGTON COFFEE REFINING CO. 76 Varick Street, New York



*Inspection -
Inspection -
Inspection!*

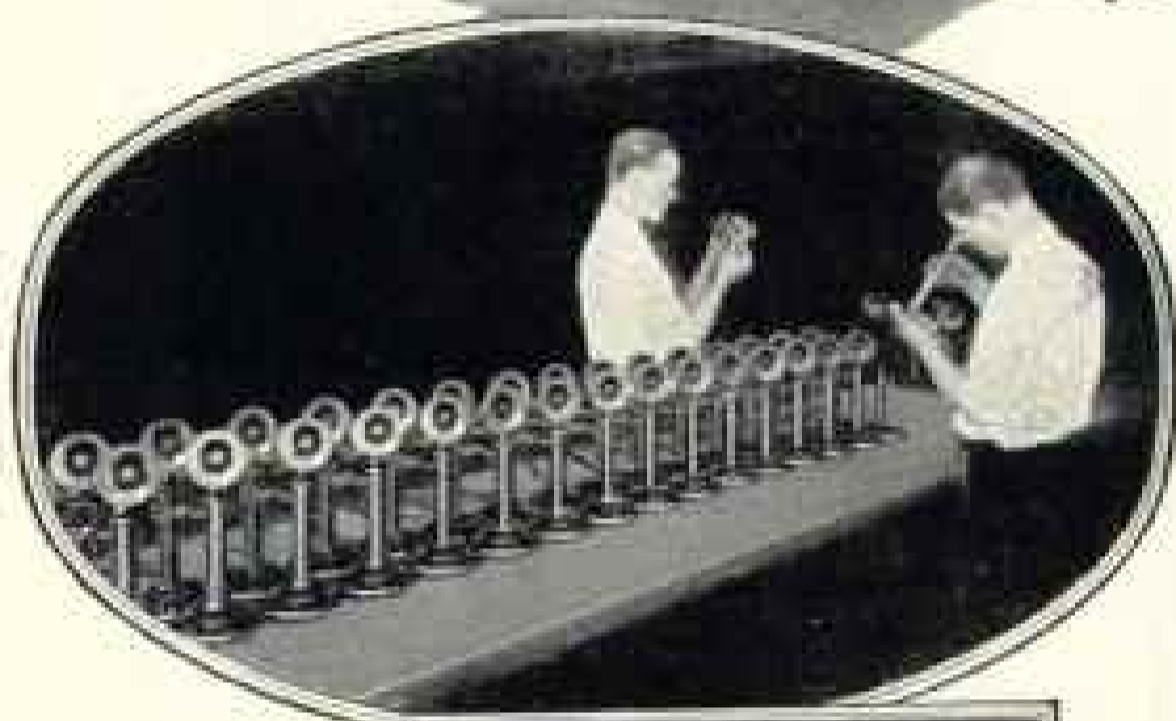
-makes good soldiers
and good telephones

At West Point and Western Electric, the order of the day is the same—inspection, inspection, inspection.

A vast army of small parts must pass muster before they can assemble in telephone formation. And any part found unfit for duty is rejected.

One part must measure up to standards within a thousandth of an inch. Another must be ready to obey the command of a tiny electrical current.

Constant watchfulness is kept over all the apparatus which Western Electric makes. It starts with the careful selection of raw material. It goes through every step of the manufacture. It gives you, finally, a telephone that, like a good soldier, can serve on any front.



Telephones lined up for inspection.



Roll Call. Checking up on tone quality.

Western Electric

SINCE 1869 MAKERS OF ELECTRICAL EQUIPMENT

CORRECT JEWELRY
FOR GENTLEMEN



For formal evening affairs

fashion decrees the full dress suit. It is correct. And, on such occasions, correct jewelry is as important as the dress suit. That is why so many men, when it comes to selecting their evening jewelry, choose Krementz. It is correct. An exclusive feature of Krementz is the easily inserted, sure-holding bodkin-clutch on the back of the studs and vest buttons.

Krementz full dress and tuxedo sets are obtainable at almost any fine store catering to the well dressed man. Each set comes in a handsome gift box without extra charge.

Names of dealers nearest
you upon request.



1061—Links, \$5.50 pair



1062—4 Vest Buttons
\$5.50



1063—3 Studs
\$4.00

Centers are smoked pearl; 14 kt. rolled white gold plate borders. Complete set \$15.

Krementz

Newark, N. J.

SLYKER

METAL

Radiator Furniture



WHEN your living rooms are equipped with SLYKER Radiator Furniture, you have a sense of creature comfort that is entirely lacking without it.

The patented, concealed humidifier keeps the atmosphere normally moist night and day. Health is safe-guarded, colds, and bronchial troubles are avoided. The humidifier also prevents soiling of delicate surfaces near the radiators, and saves frequent cleaning bills.

These cabinets, made entirely of heavy furniture steel, are beautifully modeled and finished to harmonize with other decorative effects. Finished in six coats of oil enamel—each one baked on.

They are made in three styles—Rod or Cane Grille, or Plain Type. Not a luxury, but a modern necessity. Choose the type suited to your requirements.

Sold by the leading stores in many cities. Write us for booklet and further information.

SCHLEICHER, Inc.
Dept. C-28
GARY, INDIANA



SOHMER

EVERY owner of a Sohmer is a satisfied owner. There can be no disappointment with the Sohmer. Into its making enters a sincerity of craftsmanship, experience, knowledge and a tradition of more than half a century of continuous ownership and development by members of the Sohmer family.

The choicest materials from all parts of the world, together with time and patience even to the minutest detail, make the Sohmer an incomparable finished product. The purchase of a Sohmer is the truest economy.

The long years of unalloyed pleasure and service make the slightly greater cost of no consequence while the deferred payment plan spreads the investment over a period of two years or more.

Sohmer pianos are made in various styles and sizes of Grands, Uprights, Players and Reproducing Players, all of our quality. Uprights from \$500 and upward. Grands from and upward. Reproducing Grands from and upward. Special models in Queen Anne, Italian Renaissance, Jacobean, Louis XVI and Spanish Renaissance. Monthly terms of payment if desired.

ILLUSTRATED CATALOGUE MAILED ON REQUEST

SOHMER & CO., 31 West 57th St., New York

Established 1872



“Come on! Your folks will never know!”

When the lure of questionable adventure comes to your boy, will he refuse? Will it be the fear of a whaling that stops him or reluctance to hurt someone who trusts him?

As a boy grows older, he ceases to fear corporal punishment. What then? If you and he slip away from each other, what's left to hold him?

The only difference between you and your boy is judgment, perspective. Both of you have the same instincts and motives. You've learned. He's got to.

For twenty-five years THE AMERICAN BOY has been helping fathers and mothers in this business of handling boys. Under the label of fiction, THE AMERICAN BOY gets them to accept the teachings they seem to resist from parents. In thrilling stories peopled by fellows like himself, your boy sees how effort in every form—work, sport or business—brings results. He learns the value of keeping faith with himself, “shooting straight” in everything he does. And all these things he gets in close relation to the great world outside—the world of business, science, politics—the world he must deal with when he takes up the responsibilities of a man.

Give your boy the same help which 500,000 other boys are receiving. Give him a year's subscription to THE AMERICAN BOY and watch him grow. Send it to that other boy you'd like to see get ahead.

\$2.00 a year by mail, 20c the copy at all news-stands. Subscribe for a year or longer a standing order at your news-dealer's.

The American Boy
 THE SPRAGUE PUBLISHING CO.
 No. 354 American Bldg., Detroit, Mich.

Enclosed find \$2.00, for which send THE AMERICAN BOY for one year, beginning with the nearest issue, to

Name _____

Address _____

Canada \$2.50 Foreign \$2.50

REG. IN U.S. PAT. OFF.

Thermo

Knitted Coats & Vests

Millions of Men Agree
 with the Thermo wearer
 who wrote us this:

“I have worn one of your coats for six years and think there is nothing like it.”

For	golf
“	football
“	hiking
“	radio
“	traveling
“	housecoat
“	work

Just one of many unsolicited letters from men who know by actually wearing

Thermo knitted sport coats that our all virgin wool fabric gives exceptionally long service.

Thermo knitted knickers and vests to match the coats. Thermo knitted coats, vests, and knickers are made in a variety of colors, including the latest popular shades, to suit all tastes.

Look for the Thermo hanger in the garment. If your dealer cannot supply you, write us.

THERMO MILLS, Inc.

345 Broadway, Dept. N

New York



“From Sheep's Back To Yours”



Every Home Study Course Is Adapted to Your Individual Needs

Columbia University Home Study Courses are genuine Columbia courses adapted to the special requirements of home study. They are so prepared as to enable the instructor to adjust all material to the peculiar needs and objective of each individual student. Direct contact is maintained between the student and the instructor personally so that the student may get the greatest benefit from his study.

A few of the courses now offered by the Home Study Department are listed below:

- Applied Grammar*
- Business English*
- Elementary English Composition*
- Fundamentals of Composition*
- Speech Composition*
- Technique of the Short Story*
- Magazine Articles and Newspaper Writing*
- Juvenile Story Writing*
- Dramatic Composition*
- Composition of Lyric Poetry*
- Photoplay Composition*
- French*
- Spanish*
- Italian*
- Roumanian*
- Greek*
- Latin*
- Psychology*
- Religion*
- Astronomy*
- Drafting*
- Accounting*
- First Year*
- Second Year*
- Third Year*
- Cost Accounting*
- Mathematics*
- Economics*
- Banking*
- Business Law*
- Business Administration*

These are but a few of a wide range of subjects now available in Columbia Home Study Courses. If your study needs are not covered in this list, mention them specifically when writing for information. Use the coupon attached.



*If You Can Not Come to Columbia
Columbia Will Come to You.*

Columbia University

has made it possible for qualified men and women everywhere to profit fully by her educational advantages even if personal attendance at the University is impossible. Columbia now offers

Courses for Home Study

which make available for you, *by mail*, every advantage that lies in instruction of University grade, and in the constant guidance, suggestion, and help of regular members of the University teaching staff. This is a carefully considered plan to extend the educational work of Columbia University so that it may be within the reach of all who recognize their cultural or practical need for the benefits of University training but who find it necessary to study at home.

Write to the University For Full Information

A partial list of Columbia courses available for home study is presented in the column to the left. If your particular interests are not covered here, mention your study needs specifically when writing. Fill out and send the coupon below for full information regarding the scope and conduct of the course you may be considering.

Columbia University

University Extension—Home Study Department
New York, N. Y.

Columbia University
University Extension—Home Study Dept.
New York, N. Y.

Please send me full information about Columbia University Home Study Courses and their conduct. I am interested in the following subject:

Name.....
(Geographic 10-25)

Street and Number.....

City and State.....

MFMA Library

Maple Flooring Manufacturers Association
1044 Stock Exchange Bldg., Chicago, Ill.

Please mail to—

Name _____

Address _____

City _____ State _____

—the pamphlets and booklets checked below.

- | | |
|--|--|
| <input type="checkbox"/> The Floor which the Years will make Precious. | <input type="checkbox"/> Color Harmony in Floors. |
| <input type="checkbox"/> The Floors for Your Home. | <input type="checkbox"/> Three Native Hardwoods of Sterling Worth. |
| <input type="checkbox"/> New Floors for Old. | <input type="checkbox"/> Why and Where to Use 1½ Inch Face Flooring. |
| <input type="checkbox"/> What you can do with Wide Face Flooring. | <input type="checkbox"/> How to Lay and Finish Maple, Beech and Birch Floors |

Thousands of Homebuilders write to this "Library"

Perhaps it contains information valuable to you.

More and more, people are asking "What Hardwood?" in the homes they build, rent or buy. There is a tremendously increasing interest in floors. Will their flooring truly be "the wood which outwears stone?" Will their flooring, if stained, be free from fibrous ridges? Will their flooring, when stained, keep the smooth beauty which they wish it to have? How can they make their flooring harmonize with the color plan of the room? How can they have "hardwood carpets," at no more than cloth carpets cost? Many new desires in flooring are met by Maple, Beech and Birch. Before you build or remodel, you should get the information which the "library card" above will bring you. Send for the literature you want. It will be mailed free without any obligation on your part.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1044 Stock Exchange Building, Chicago

Guaranteed Floorings

The letters **MFMA** on Maple, Beech or Birch flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and

grading rules which economically conserve every particle of these remarkable woods. This trademark is for your protection. Look for it on the flooring you buy.

MFMA

Floor with Maple Beech or Birch



This beautiful stall, erected by the Associated Tile Manufacturers as an example of their art, is a setting for a Speakman Mixometer Shower.

THE stall was part of the Associated Tile Manufacturers' exhibit held in New York. The shower selected to be installed was the SPEAKMAN H-952½ Mixometer type, possibly the most widely known shower in the world. The Mixometer controls the water's temperature and the Anyforce head its force.

We'll be glad to furnish you with complete specifications for both this stall and shower. These specifications are complete even to tile characters and colors. We will send at the same time, if you wish, literature giving the opinion of authorities on the health value of shower bathing.

SPEAKMAN COMPANY
WILMINGTON, DELAWARE

SPEAKMAN SHOWERS AND FIXTURES

Good Buildings Deserve Good Hardware



"The Quietest Telephone Booths in Town"

Thanks to Corbin Door Checks these doors close quickly and silently ★

WHAT a joy to shop where even doors quietly welcome you—doors which smoothly swing as you enter, courteously close as you depart. A thousand times a day they must open easily—close silently. And they do wherever Door Checks of Good Hardware—Corbin, are in control.

But by no means should the good influence of Corbin Door Checks

be limited to stores. In homes, great office buildings, churches, schools, theatres and factories Door Checks of Good Hardware—Corbin—quickly put an end to slams and drafts.

It is a joy to live with Good Hardware—Corbin. You can prove it any day with a Corbin Door Check.

"Let Corbin Close the Doors"—an interesting folder on the peace of quiet doors. Write for it.

P. & F. CORBIN INCORPORATED NEW BRITAIN CONNECTICUT
The American Hardware Corporation, Successor
New York Chicago Philadelphia

★ A scene in *James McCreery & Co.*, of Fifth Ave.—one of the many good stores that believe in Good Hardware—Corbin



Oyster meals have that tang-of-the-sea taste

and when served raw on the ice-chilled half-shell, or in an appetizing Cocktail Sauce, they retain their full Phosphorus and Iodine content. Also, for the meal-of-the-day, the delicious hot ones are easily prepared. Oysters are:

- 1—Easily digested.
- 2—Self-sufficient as a diet.
- 3—Rich in Vitamin C, an essential food element.
- 4—200 times stronger in Iodine content than Milk, Eggs, or Beefsteak.
- 5—Nourishing but non-fattening.

Government experts have found 98 ways to easily prepare this health-giving sea delicacy. Mail coupon for free booklet, "Oysters: An Important Health Food."

Order the Oyster
for your health's sake

Oyster Growers & Dealers Ass'n of North America



U. S. Bureau of Fisheries,
Washington, D. C., or
Oyster Growers & Dealers Ass'n,
1115 Conn. Ave. N. W.,
Washington, D. C.

Please mail me free booklet, "98 Ways to Prepare Oysters," or "Oysters: An Important Health Food."

Name.....
Address.....
City..... State.....

FREE
RECIPE
BOOK

98
WAYS TO
PREPARE
OYSTERS

Look Inside the Piano for this Trademark



The Sign of the World Standard Piano Action

You Can Judge Real Piano Quality!

YOU need not be an expert! Judge the piano by the piano action—the very heart of the instrument! Just ask your dealer to show you different makes equipped with the Wessell, Nickel & Gross action. Then buy with confidence, for this famous action is found only in pianos and players of proven excellence.

It is the highest-priced piano action built today. Quite naturally, those who make mediocre instruments cannot afford to give it to you! But leading American piano makers have used it for 32 years! Wessell, Nickel & Gross are the oldest, largest and leading makers of high-grade piano actions. Look for the octagonal trade-mark (shown above).

WESSELL, NICKEL & GROSS
Established 1874 New York City

When you Buy an Upright Grand Player or Reproducing Piano—insist on the Wessell, Nickel & Gross Piano Action.



Italian Leather Bridge Pad

Cover of Italian leather, exquisitely hand tooled. Score sheets of imported paper of beautiful texture, richly decorated with pictures of famous bridges of the world. A most attractive gift for a bridge friend and a truly unusual gift for those perplexing friends who "have everything."

No. 5047 \$4.00



Italian Leather Card Box

Hand tooled in gold like the bridge pad. Holds two packs of cards and makes a delightful gift by itself or as a companion to the bridge pad.

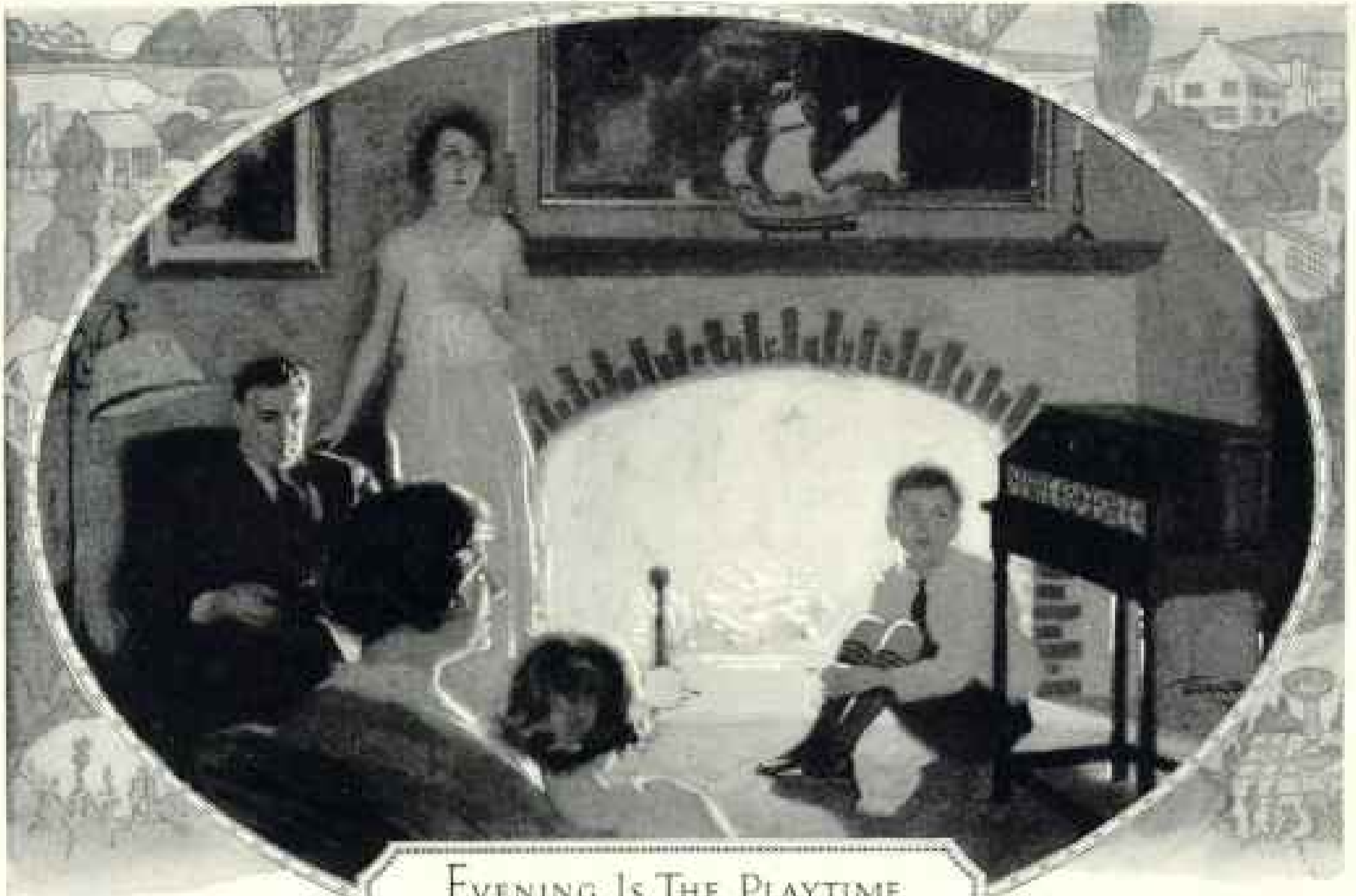
No. 5048 \$4.50

Gift Guide—send for a free copy and do your Christmas shopping comfortably at home.



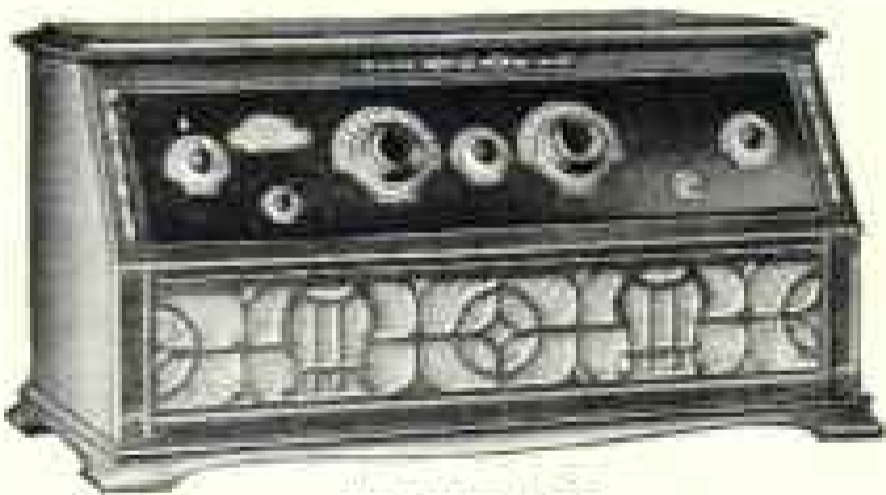
The Pohlsen Gift Shop

Dept. 54 Pawtucket, Rhode Island



EVENING IS THE PLAYTIME
OF THE WORLD

*And in the evening comes Music Master filling
the kindly twilight with the joyous rhythm of
music - the world's universal language.*



TYPE 175

Six tubes, Special Music Master Circuit,
Built-in Music Master Reproducer. Very
selective, long distance, splendid tone
quality. Solid mahogany cab-
inet in brown mahogany or
satin finish. Price

\$175

Ten Models, \$50 to \$460, Guaranteed Unconditionally

(Canadian Prices Slightly Higher)

MUSIC MASTER re-creates the infinite variety of New Era broadcasting with a quality of tone and a fidelity to the original as sung, played or spoken, that makes the mere mechanics of radio vanish under its spell.

Space becomes an illusion and the artist's presence the reality, under the compelling magic of Music Master, the ultimate in Radio—herald of a New Era of supreme reception and reproduction in one superb ensemble.

Music Master Corporation

Makers and Distributors of High-Grade Radio Apparatus

CHICAGO PHILADELPHIA, 128-130 N. Teenth St. MONTREAL
NEW YORK Canadian Factory: Kitchener, Ontario PITTSBURGH

MUSIC  **M**ASTER
RADIO PRODUCTS



Cup No. 3

No harm can come if it's coffee without caffeine

Now all your people can drink coffee to their heart's content. All who are driven to coffee substitutes can have real coffee now, and all they want. People whom coffee keeps awake can drink it at midnight and sleep.

Science has found a way to remove caffeine from coffee. That is the poison drug. Yet every coffee delight remains.

This new-type coffee is called Kaffee Hag. The finest hotels now serve it, because of its delightful blend. Countless connoisseurs have adopted it, just because it typifies the utmost in fine coffee.

We simply open the pores of the raw coffee bean and extract the caffeine. That is a tasteless drug. Expert tasters cannot tell when we remove it.

All the quick bracing effects remain.

Consider what that means. A delicious coffee which no doctor will forbid. No effect on the heart, nerves or kidneys, no wakefulness. No reason at all for a substitute.

If you think someone in your home would enjoy such a coffee, let us supply a ten-cup test. Mail coupon now, with a dime (or stamps).

KAFFEE HAG

1465 Davenport Ave. Cleveland, Ohio

MAIL THIS TODAY TO:

**KAFFEE
HAG**

1465 Davenport Ave.
Cleveland, Ohio

**10 Cups
for 10c**

Name.....

Address.....

Onoto the Ink Pencil

An exceptional writing instrument—

Simple as a pencil, but writes with ink. Has an iridio-platinum point that will write smoothly and clearly for a lifetime. An Onoto never hesitates—writes the instant it touches the paper. May be carried in any position with safety, as it cannot leak. For milady's hand bag and a man's pocket; long or short; black or red; from \$3 to \$5.

At the letter above. Names of those nearest you and illustrated literature sent upon request.

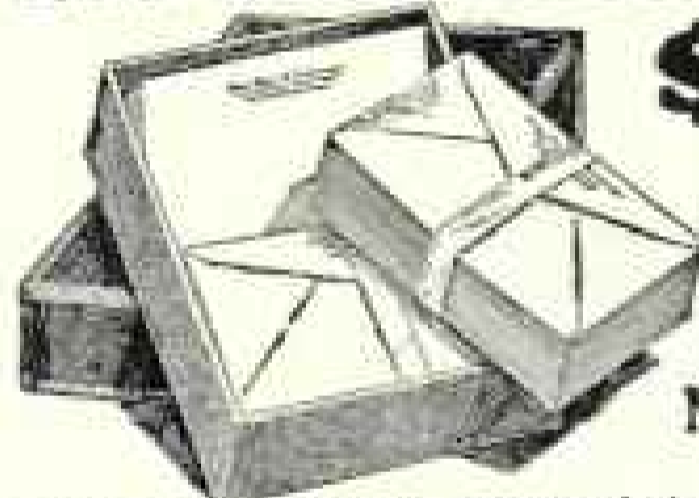
THOMAS DELA RUE & CO., Ltd.
450 Fourth Ave., New York

No ink is quite so good as Onoto Ink!



200 Sheets—100 Envelopes

\$1.00
Post Paid



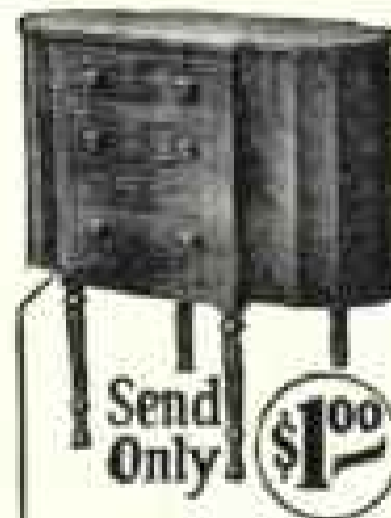
High grade, clear white bond paper—genuinely smooth writing surface. Line 6 1/2 inches with envelopes to match. Has that crisp, crackly "feel" that identifies it to everyone as superior quality stationery.

Name and Address
Printed Free

on every sheet and envelope in rich dark blue, up to 4 lines. Type is Plate Gothic. Selected especially for clearness and good taste. Make a personal stationery you will be delighted to use. An ideal gift with your friend's name. Attractive 3 letter monogram if preferred.

Just send \$1.00 (west of Denver and outside U. S., \$1.10) and this generous supply of stationery will come by return mail, postage prepaid. Satisfactorily packed in a sturdy blue box. Please write or print clearly. Prompt service and satisfaction guaranteed. Money refunded if you are not pleased in every way. Order today!

National Stationery Co., 1557 Lincoln Highway, Batavia, Illinois



The Genuine COWAN MARTHA WASHINGTON Sewing Table

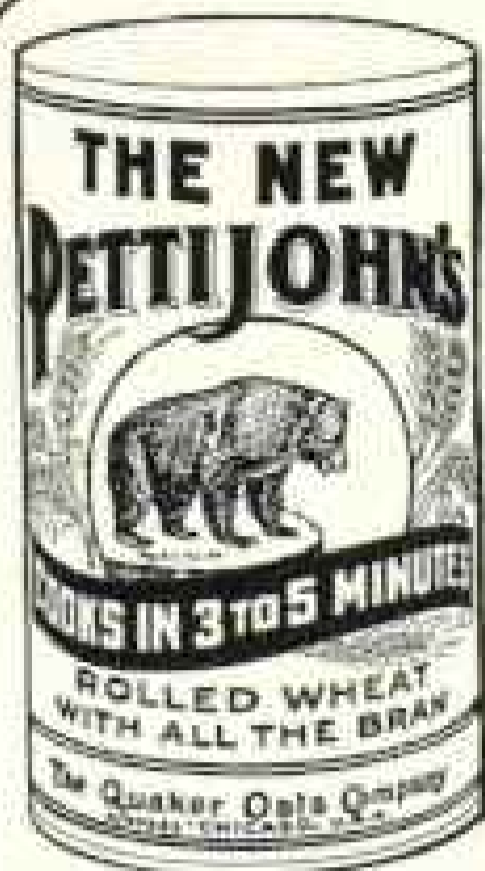
Send
Only \$1.00

FIFTY THOUSAND WOMEN approve and use the Genuine COWAN Martha Washington Sewing Table. Made only by COWAN, of Chicago. Now offered for the first time on easy

payments. Will last a lifetime. Mahogany, beautifully finished. Possesses historical and sentimental value of a high order; thoroughly practical. 21-in. high; 21-in. wide; 14-in. deep; sliding needle tray in top drawer; spool rack in second; deep pockets each side.

Fit a dollar bill or check to your letter; balance \$20.00, at \$4 a month. Delivery charges paid anywhere in U.S. Or ask for free booklet. Money back any time within 90 days if not perfectly satisfied.

COWAN CABINET COMPANY, 837 Rush St., Chicago, Ill.



Facts to help you select a cereal food for all the family

AS the makers of the New Pettijohn's, we ask you to read these facts in the light of all you know about food—

1. The combination of milk and the whole wheat from which New Pettijohn's is made contains all the constituents which go to make up a balanced diet—energy, protein, roughage, water, mineral salts and the vitamins so essential to growth and health.
2. The combination of New Pettijohn's and milk makes an ideal food for the growing child.
3. The New Pettijohn's is easy to digest.

And finally

4. The 25% of natural wheat bran in New Pettijohn's is a very efficient laxative.

These are facts. Every one of them

is proven by independent scientific authority.

Now, as you consider these facts about the scientific side of the New Pettijohn's, remember this—

The New Pettijohn's is a *delicious* food and a *natural* food. The bran in it is natural bran, just as it grows in the wheat. The family *likes* it.

Remember also, from the practical housekeeping standpoint, that the New Pettijohn's qualifies again—it cooks *through and through* in from 3 to 5 minutes.

In brief

The New Pettijohn's is a delicious whole wheat food.

It contains 25% natural bran—with essential Vitamins and Mineral Salts.

With milk it forms what dietitians call a "perfect" food.

It cooks in 3 to 5 minutes.

The New Pettijohn's

WHOLE WHEAT CEREAL

Made by

The Quaker Oats Company

CHICAGO, U.S.A.

Imperial Chests



"What a clever gift!"

said Nan. "I'd love a chest like that myself".

"Yes", agreed Sue, "no end of people admire it".

Imperial Chests and Cabinets are the very smartest thing for the living room this fall.

At your favorite furniture store you will see a tempting collection of original designs, rich in figured woods, lovely in colored decorations, all the handiwork of skilled Grand Rapids craftsmen.

Write Dept. G for our famous table book, free, "Heirlooms of Tomorrow".

IMPERIAL FURNITURE CO.
"World's Largest Table Factory"
GRAND RAPIDS, MICHIGAN

Imperial Tables

Grand Rapids



A tilting top flower stand.

A Good Bookcase

for the price of a good book!



\$2.75 Per Section
without Doors

With Disappearing Glass Doors **\$3.50** Per Section

On Approval - Direct to User

Lundstrom

IT GROWS WITH YOUR LIBRARY
SECTIONAL BOOKCASE

Endorsed by Over 100,000 Users

Made for and universally used in the finest homes and offices throughout the country. Made in sections of different sizes, combining utility, economy and attractive appearance. Price complete as shown above, with top, base and three book sections with **non-binding, disappearing, felt-cushioned glass doors**, beautifully finished in plain golden oak, \$15.00; without doors, \$12.75. In quartered oak, or in imitation mahogany, with doors, \$17.50. In genuine mahogany, with doors, \$23.50. Other styles at correspondingly low prices. **Shipped direct from factory ON APPROVAL** at a considerable saving TO YOU. Write for catalog No. 50.

The C. J. LUNDSTROM MFG. CO., Little Falls, N. Y.
Manufacturers of Sectional Bookcases since 1897



Fasten Up the Maps In Your Study or Office

Geographic maps are useful and valuable, especially if they are available for reference. They are easily fastened to the wall, without injuring either map or plaster, by using

Moore Push-Pins

Glass Heads—Steel Points

For heavy pictures, clocks, etc., use

Moore Push-less Hangers

"The Hanger with the Twist"

10c. Pkts. Everywhere
Moore Push-Pin Co., Philadelphia, Pa.



Crane's CARRILLE



Crane's Linen Lawn

Steps out in a new
and fascinating
shade.

*It is called "Tapestry
Rose" and is as pretty
as it sounds. A pleas-
ing change for those
who like variety but
insist on having the
assured style and
quality of this
famous paper.*

Now it's CARRILLE—The Newest Crane Creation

A paper that is smart, individual, and yet in perfect taste.

Letter sheets in a dainty pattern of self-tone squares with sizes and folds well out of the ordinary; some with wide blue borders.

Envelopes of odd dimensions, with colorful linings, harmonizing in design with the pattern of the paper.

Crane's Carrille is a paper worthy of your personal marking, but even unmarked, Carrille will give your correspondence a smart and artistic touch, dignified by its quality and faultless taste.

EATON, CRANE & PIKE COMPANY, 225 FIFTH AVENUE, NEW YORK

A Garden Full of Darwin Tulips for \$2.00



In anticipation of again placing before our customers a collection of Darwin Tulips we have had a sufficient quantity grown so that we can offer

50 Giant Darwin Tulip Bulbs, Finest Mixed, for \$2.00

selected from fifteen named varieties

Few spring flowering plants rival the Darwin Tulip for brilliance of bloom. Borne on strong stems often exceeding three feet. They are a wonderful addition to the flower garden.

Plant any time before the ground becomes frozen, and they will bloom from the middle of May to Decoration Day

Mail this advertisement, or present at our store, with check, money order, cash or stamps and secure this exceptional collection, sent prepaid to any point in the U. S. east of the Mississippi. For points west and Canada add 25c (\$2.25).

Our 1925 Fall Bulb Catalogue sent on request

Stump & Walter Co

30 and 32 Barclay Street

New York



Most weather strips have a soft spring which does not last. Only Higgin strips have the patented spring which keeps them like new and really keeps the weather out.

When winter grips your home!

Will home be "cold as a barn" in spite of the hungry coal-water in the cellar? Will you have rooms that "can't be heated when the wind's just on"?

Every new home should have Higgin Weather Strips installed when it is built. But Higgin strippers can install weather stripping in your present home now. They cover open windows and protect rugs and furniture with heavy canvas before they start work. Make your home winter-tight.

Write for free booklet and estimate.

The Higgin Mfg. Co., 505 Washington St.,
Newport, Ky.

HIGGIN
ALL METAL
WEATHER STRIPS

DUES

Annual membership in U. S., \$1.00; annual membership abroad, \$4.00; Canada, \$3.50; life membership, \$100. Please make remittances payable to the National Geographic Society, and if at a distance remit by New York draft, postal or express order.

RECOMMENDATION FOR MEMBERSHIP

IN THE

NATIONAL GEOGRAPHIC SOCIETY

The Membership Fee Includes Subscription to the National Geographic Magazine

PLEASE DETACH AND FILL IN BLANK BELOW AND SEND TO THE SECRETARY

192

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

I nominate

Occupation

(This information is important for the records.)

Address

.....
for membership in the Society.

.....
Name and Address of Nominating Member



Six-Room House No. 610

Designed for the Service Department, American Face Brick Association

This is one of the 104 attractive houses in our "Face Brick Bungalow and Small House Plans."

Quality Always Pays

BECAUSE by paying a little more you get much more. Take the Face Brick house. You pay a little more at the start, but that little comes back to you many times over in savings in repairs and painting, in slow depreciation and high resale value, in lower insurance rates and fuel costs. And all the while you have the satisfaction of living in a beautiful, comfortable home. The facts are all given in an attractive, illustrated booklet, "The Story of Brick." Send for your copy today.

Booklets You Ought to Have:

"The Story of Brick" is, as one reader says, "a liberal education in home-building." It gives just the information the prospective builder wants. Sent free.

"Face Brick Bungalow and Small House Plans" in four booklets, showing respectively 3 to 4-room, 5-room, 6-room, and 7 to 8-room houses, in all 104. Unusual and distinctive designs combined with convenient interiors. Any one booklet, 25 cents. The entire set, one dollar.

"The Home of Beauty" shows fifty two-story six-room

houses selected from 350 designs submitted by architects in a nation-wide competition. Sent for 50 cents.

"The Home Fires," a most attractive fireplace book, with many designs, gives full directions for fireplace construction. Sent for 25 cents.

"A New House for the Old" will tell you all about restoring an old house with a beautiful, permanent overcoat of Face Brick. Sent free.

Address, American Face Brick Association, 1737 Peoples Life Building, Chicago, Illinois.



THE VOSE PIANO

is constructed with the most discriminating care to the minutest detail, and is the result of over 70 years of scientific research; an instrument whose thorough construction insures permanency of the world-famed Vose tone. And yet its price is moderate.

WE CHALLENGE COMPARISON

Write for illustrated catalog and easy monthly terms of payment

Vose & Sons Piano Co., 146 Boylston St., Boston

The Copley Prints

Fine Art Reproductions of Distinguished Works of American Art

For 30 years a hall-mark of good taste in pictures

for Gifts, your Home, and Schools

One can live without art—but not so well



THE HOOPLE RACE

BY EFA ROSS

Extensive choice of subjects, including

ARSEY'S HOLY GRAIL

depicting the Triumph of Right Over Evil

Prices from \$1.00 to \$100.00

Pictures for every room in your house

WE SEND PRINTS ON APPROVAL

Send 25c for Illustrated Catalogue

(Send Money Order or Stamps—not Cash)

It is practically a Handbook of American Art

ALSO YOUR OLD FAMILY PORTRAITS

done privately in the Copley Prints from old daguerotypes, faded photographs, tintypes, snapshots, etc. Unique gifts to your relatives. Also portraits on engravings. Originals restored.

Above picture is from a Copley Print copyright by

CURTIS & CAMERON, 150 Harcourt Street, BOSTON

Saleroom: Pierce Building, opposite Public Library

THIS MAGAZINE IS FROM OUR PRESSES

JUDD & DETWEILER, INC.

Master Printers

ECKINGTON PLACE AND FLORIDA AVENUE

WASHINGTON, D. C.



Consult the "Supreme Authority" WEBSTER'S NEW INTERNATIONAL DICTIONARY—The Merriam Webster

Constantly improved and kept up to date, copyright 1924. NEW Words, such as Fascisti, petit point, skookum; NEW Gazetteer with such entries as Kenya, Esthonia, Le Mort Homme.

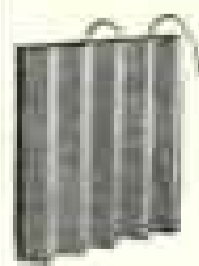
451,000 entries in all—407,000 vocabulary terms; 12,000 biographical entries; 32,000 geographical entries; 6,000 illustrations; 2,700 pages.

Whatever Your Questions about words, people, or places, The New International contains a complete, reliable answer. It is the foundation book for every home library—a necessity for all who read and write.

Ask for specimen pages of Regular and India-Paper Editions, prices, etc. Free Pocket Maps if you mention THE GEOGRAPHIC.

G. & C. MERRIAM COMPANY, Springfield, Mass.

SAVO AIR MOISTENER

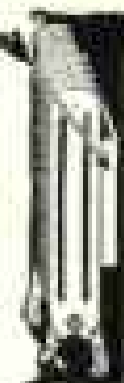


Saves Health, Furniture, Pipes, Fuel, Paintings, Plants, etc.

Fill with water, hang on back of any Radiator out of sight. Orders for all types of Hot Air Furnaces. Tens of thousands in satisfactory use. \$1.50 to \$5. According to size. Write for FREE BOOKLET.

SAVO MANUFACTURING COMPANY

Dept. W-10
111 W. Monroe Street, Chicago, Ill.



SAVO All-Year-Around Steel Flower Box



GROW LARGER, STRONGER HEALTHIER PLANTS

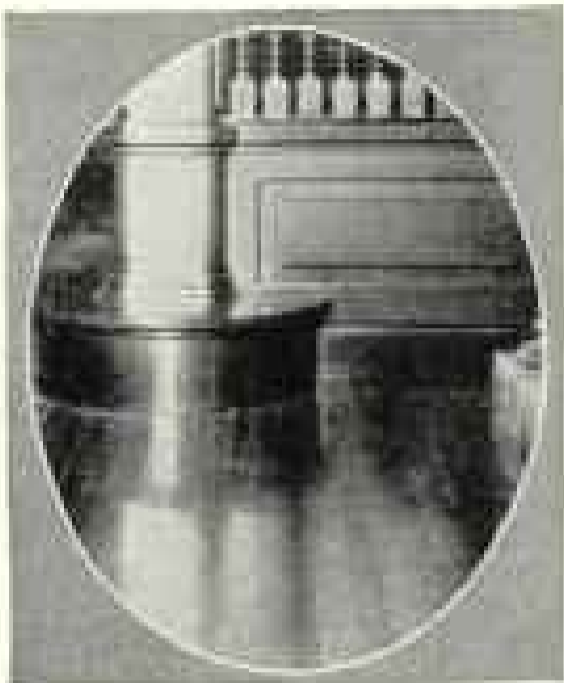
Self-watering and sub-irrigating steel boxes for windows, porches, ledges, sun parlors, etc. Leak proof; rust proof. Perfect air circulation and drainage. Six sizes. Write for FREE catalog.

SAVO MANUFACTURING CO., Dept. B-10
111 W. Monroe Street, Chicago

Here's Proof of the Pudding.



Showing the Beautiful Staircase and (Right) the Reception Hall Floor in the Lancaster, Pennsylvania, Home of John B. Oblinger—Finished 30 Years Ago



The White Oak Woodwork in the Flint, Michigan, Home of William Goodes Is in Perfect Condition after 27 Years of Service. "Liquid Granite is More than Waterproof—It Wears."

Varnished 30 years ago ... Beautiful Today!

WHEN a gallon of varnish is worth \$50 and can be bought for \$5, the fact is worth knowing.

Read This—

In 1895 John B. Oblinger, of Lancaster, Pennsylvania, built the finest residence in town. His architect selected magnificent specimens of walnut, mahogany, hazel, cherry and white oak for the interior trim. It was varnished with Berry Brothers' Luxberry Wood Finish, the original Hard Oil, and rubbed.

Today there are few homes in America that have more beautiful woodwork than this one. In 30 years it has not been touched with a varnish brush. The finish is as perfect as it was in the days before the Spanish-American War.

The floors in this house were finished with Liquid Granite Floor Varnish. Some of them have been refinished in recent years. But the floor in the reception hall, as pictured above, has never been re-varnished and is in beautiful condition today!

Mr. Oblinger's experience with Berry

Brothers' varnishes is neither unusual nor exceptional. There are thousands of home, apartment and building owners in all parts of the world who pay the price for Berry quality in order to save the tremendous accumulative expense of frequent refinishing.

Here Is Another Example—

William Goodes, of Flint, Michigan, built his home in 1898 and finished the white oak woodwork with Liquid Granite. A view of the staircase is pictured above at the right. It shows the original varnish. Even the stair steps have never been refinished. Not a single hairline crack can be found anywhere. The finish is as beautiful today as when the painters completed their work 27 years ago!

Mr. Goodes writes: "Your advertisement, which says, 'Liquid Granite is more than waterproof—it wears!' is certainly true!"

Figure it out for yourself. If Luxberry Wood Finish and Liquid Granite give such service as this, you cannot afford to employ substitutes that sell for the same price or less.



BERRY BROTHERS INC.
Varnishes Enamels Stains
Detroit, Mich. Walkerville, Ont.



Lovely teeth shining white

*But what
would the
X-ray
reveal?*



*THIS X-ray
shows tooth
socket destruc-
tion by pyorrhea*

BEAUTIFUL white teeth, free from decay, are not safe unless the gums are healthy. If pyorrhea attacks your gums, an X-ray would reveal how quickly the infection spreads to the root sockets which hold the teeth in place. If pyorrhea is not checked, your teeth fall out—or must be pulled—because their support is gone.

Tender, bleeding gums —nature's warning of pyorrhea's approach

Dental clinics since 1908 have proved the effectiveness of Pyorrhocide Powder as an aid to correct bleeding gums, strengthen tender gums, harden soft gums.

It keeps the teeth white and clean. Its tonic and stimulating qualities help healthy gums to *keep* healthy. It is medicated with Dentinol, a gum-tissue healing agent widely used by dentists in the treatment of pyorrhea.

Use Pyorrhocide Powder daily—see your dentist regularly—and you can avoid pyorrhea. The economical dollar package contains six months' supply. At all drug-gists. Send for free sample and booklet on causes and prevention of pyorrhea.



FREE Sample

THE DENTINOL & PYORRHOCIDE CO., Inc.
(Sole Distributors)
Dept. B 3, 1480 Broadway, New York City.
Send me free sample of Pyorrhocide Powder and booklet.

Name.....
Address.....

only one
satisfactory
way



Use Sani-Flush. It cleans the toilet bowl and hidden, unhealthy trap quickly and thoroughly.

Removes all marks, stains and incrustations. Leaves the bowl spotlessly white. Destroys all foul odors.

Simply sprinkle a little Sani-Flush into the toilet bowl—follow directions on the can—and flush. Harmless to plumbing connections.

Keep it handy in the bathroom.

Buy Sani-Flush at your grocery, drug or hardware store, or send 25c for a full-size can.

Sani-Flush

Cleans Closet Bowls Without Scouring
THE HYGIENIC PRODUCTS CO., Canton, Ohio

You Need It Every Day—

If you value correctness and scope of vocabulary—accuracy of information about words, people, places—convenience in scanning facts—then you need

WEBSTER'S COLLEGIATE DICTIONARY

—the best abridged dictionary. It is based upon Webster's New International, 105,000 Vocabulary terms; dictionary of Biography; Gazetteer; rules of punctuation, use of capitals, abbreviations; foreign phrases; etc. 1256 pages; 1700 illustrations.

The thin-paper edition is especially handsome and convenient to handle. Art Canvas binding \$3.00; Fabricoid, \$6.00; Leather, \$7.50.

Purchase of your book seller; or send order and remittance direct to us; or write for information. Free specimen pages if you mention *The Geographic*.



**G. & C.
Merriam
Company
Springfield
Mass.**



Does Happiness Cost Too Much?

THERE is no catalog number for "happiness," but we sell it just the same. You'll not find it illustrated, but it appears on every page. The frock for the young lady's first party; the boy's bicycle; dad's radio; mother's new coat. Don't they all mean happiness? And could all of them be had if Sears, Roebuck and Co. wasn't able to sell good merchandise at such low prices?

A customer recently wrote us: "I take great pleasure in showing my furniture to my neighbors. I shall always advertise you, by your honesty and great bargains."

Things like that—and every day's mail contains a great many such letters—make us feel that we are a real factor in the lives of millions of American families. You could hardly blame us for feeling a bit proud in helping these folks to a little happiness they might not otherwise have been able to obtain.

Sears, Roebuck and Co. brings the trading centers of the Old World and the New World as well direct to the doors of our nine million customers; they see in our catalogs, at prices they can afford, the things they need, and the luxuries they have wanted.

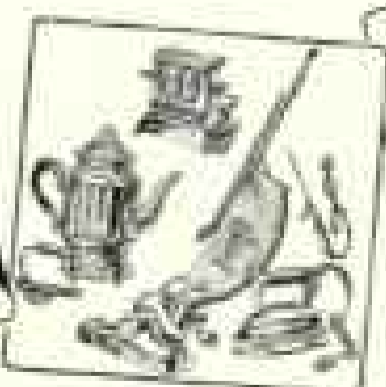
One-fourth of all the families in the United States know that we guarantee them a saving on everything they buy; know we sell only quality merchandise, honestly illustrated and described. They know, too, that we ship all orders in less than 24 hours.

Our New Big Catalog for Fall and Winter is ready. It shows 35,000 bargains on everything needed for the family, the home and the farm. Send for it today.

Sears, Roebuck and Co.
CHICAGO • PHILADELPHIA • KANSAS CITY
DALLAS • SEATTLE



Send for Your FREE Copy
If you haven't a copy of our New Big General Catalog, send for it today. This convenient coupon will bring you our great Fall and Winter book, with its 35,000 bargains.



Mail the coupon TODAY to store nearest you
Sears, Roebuck and Co. 64N84
Chicago • Philadelphia • Kansas City • Dallas • Seattle
Send Latest General Catalog.

Name _____
Postoffice _____
Rural Route _____ Box No. _____
State _____
Street and No. _____

WORLD'S LARGEST STORE

We own and operate Radio Station
W L S. Tune in on 344.6 meters.



Beauty, comfort and value far greater than the money cost, have been added to countless old and new houses by installing in each an extra bathroom. No large amount of space is required. An empty hall-end, a spare room, or a large clothes closet can be transformed at moderate expense into a bathroom complete, convenient and charming. A broad range of Crane fixtures has been designed to econ-

omize room, yet provide faultless service. The *Corwith* bath pictured above may be had in four lengths and the *Nova* lavatory in three sizes. Any responsible plumbing contractor will help you find a place for your extra bathroom and will supply Crane dependable fixtures in styles and sizes to suit your taste and budget. Our free color book on bathroom arrangement will aid you. Write for it today.

CRANE

Address all inquiries to Crane Co., Chicago

GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVENUE, CHICAGO

Branches and Sales Offices in One Hundred and Fifty Cities

National Exhibit Rooms: Chicago, New York, Atlantic City, San Francisco and Montreal

Fields: Chicago, Bridgeport, Birmingham, Chattanooga, Trenton and Montreal

CRANE DEPOT CORPORATION: NEW YORK, SAN FRANCISCO, SHANGHAI

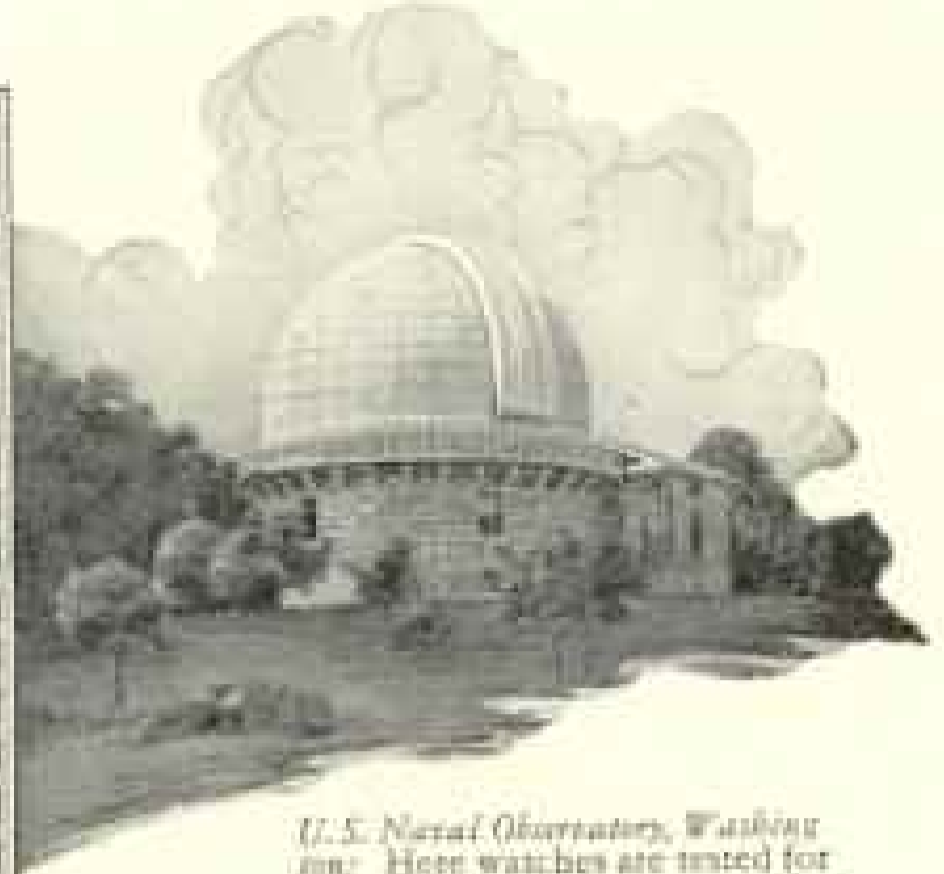
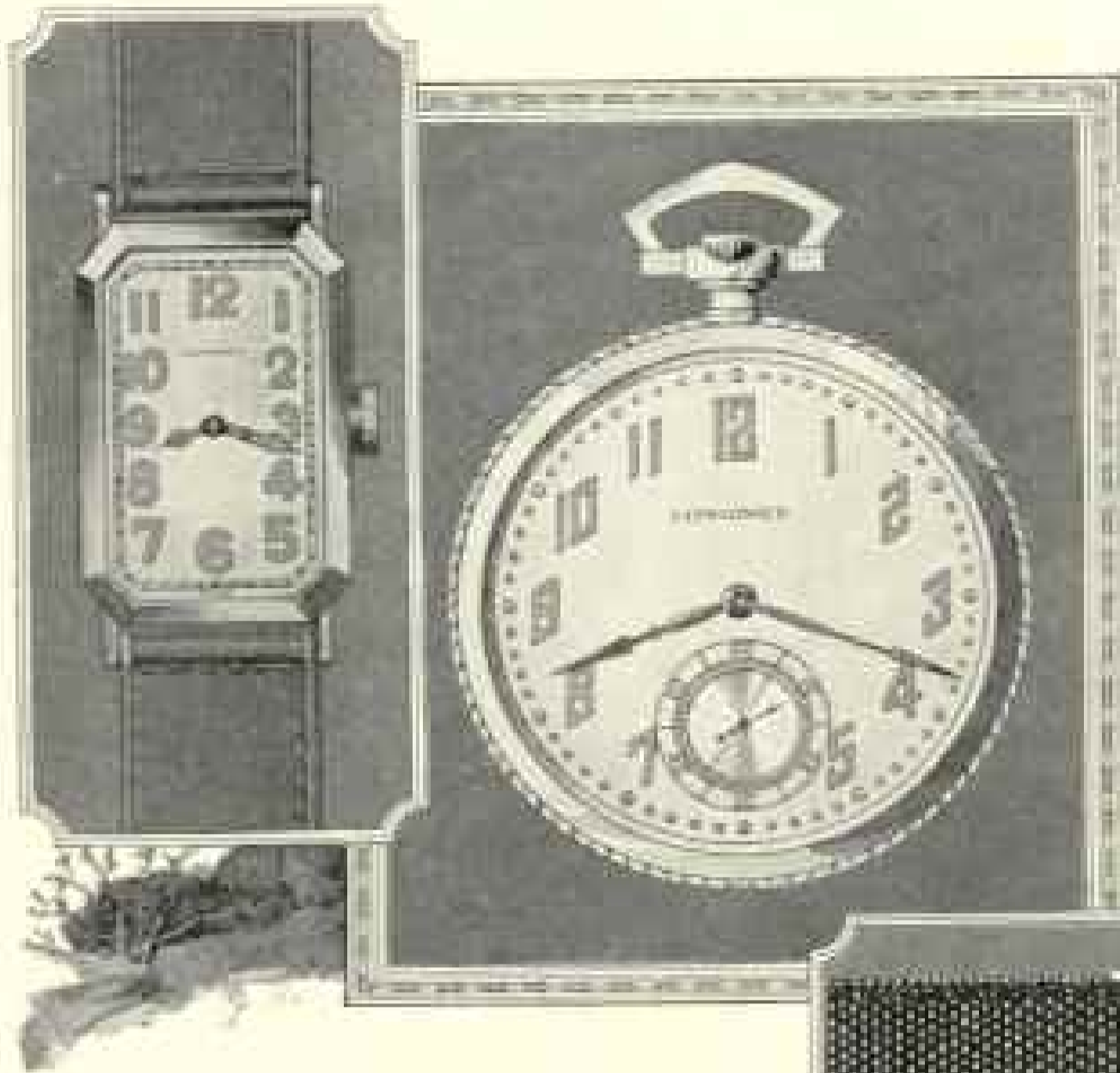
CRANE LIMITED: CRANE BUILDING, 99 BEAVER HALL SQUARE, MONTREAL

CRANE-BENNETT, LTD., LONDON

CRANE: PARIS, NANTES, BRISMALE



1855 • • CRANE VALVES • • 1925



U.S. Naval Observatory, Washington: Here watches are tested for accuracy before acceptance for Government service.

He would say "Longines"

Ask the man in the observatory, who tests timepieces for the Government, which watch has won most honors for accuracy in the severe six months' tests. He would say "Longines".

Go to the finest jewelers in New York, Paris, London—any of the great cities—and ask them about Longines Watches. They will show you Longines Watches and tell you of Longines proved, tested accuracy.

Then ask an owner of a Longines about his watch. Let him tell you of its accuracy, show you its beauty, and explain why it is such a prized possession.

Yet you can buy a Longines for \$35 or up to \$1000. Give us the privilege of sending you a booklet and telling you of a jeweler near you who will show you Longines Watches.

Official Government Observatory Awards

At U. S. Naval Observatory—Washington: Longines have been first in order of merit in all International Trials. Since 1916 more Longines Watches passed six months' Accuracy Trial and were accepted than those of all other competing firms combined.

At Geneva Observatory—Switzerland: This year Longines again obtained first prize of series, duplicating results of 1923 and 1924; also obtained many additional individual prizes.

At Neuchâtel Observatory—Switzerland: 365 awards in Accuracy Contests since 1907. During 1924 Longines received 17 first prizes.

At Erie Taddington Observatory—England: 132 awards in Accuracy Contests since 1910 (1918 year's record for the best performance.) Since 1919 every Longines Watch submitted passed trial with mention "especially good."



The Longines

WATCH

A. WITTNAUER CO., New York, Chicago, Montreal, Geneva

Established 1866



The Shops, Kohler Village

Kohler Village is developing a finer community life just as surely as the great Kohler factories — where enameled plumbing ware and private electric plants are made — are developing an ever finer sense of craftsmanship.

SUMMER may go and winter come, but the water's always fine in this inviting bathroom with its beautiful Kohler fixtures. . . . Let Kohler Ware help you to realize your ideal bathroom, or the additional bathrooms which your family may need. This fine ware is not expensive; it costs no more than any other that you would care to consider. Ask your plumber to show you Kohler fixtures. Look for the name "Kohler" fused in the immaculately white enamel. May we send you Booklet E?

KOHLER CO., *Founded 1873*, KOHLER, WIS.
Shipping Point: Sheboygan, Wis. - Branches in Principal Cities

KOHLER OF KOHLER
Enameled Plumbing Ware