


Gatti - hallicrafters *expedition*

TO THE "MOUNTAINS OF THE MOON" 

★ SCIENTIFIC RESEARCH
AND COLLECTIONS ★ FIELD
EXPERIMENTS IN SHORT WAVE
RADIO COMMUNICATIONS IN
CENTRAL AND EAST AFRICA

1947-48

THE Gatti-Hallcrafters Expedition is the result of the merging of the dreams and labors of two men—each in his own way an explorer of the mysteries of the universe.

Attilio Gatti has devoted his life to researches in the African field. William J. Halligan is one of the greatest and best known pioneers in radio short wave communications.

The joining in this venture of these two men will mean new and startling radio experiments. Through the invention and construction of a lot of novel, very precise equipment, it will also make possible never-before-attempted studies, observations and recording of the scenic wonders, of the lives of little known natives and rare animals of the once legendary Mountains of the Moon and surrounding territories.



COMMANDER of the expedition is ATTILIO GATTI

ATTILIO GATTI became interested in Africa and her secrets shortly after the first World War. Before World War II interrupted his activities, he had organized and directed ten scientific expeditions and spent fourteen years on African soil.

His observations, discoveries and collections have brought a valuable contribution to the world's knowledge of Africa in the fields of zoology, anthropology, ethnography and paleontology.

Member or Fellow of several American and European scientific societies, Gatti has discovered a new race of Okapi, captured alive the first Congo Bongo to be taken into captivity and collected record specimens of the Giant Gorilla of the Mountains for the Pretoria Museum, the Royal University of Florence and the Witwatersrand University of Johannesburg.

In the Rhodesias, he discovered Africa's most ancient iron foundry, a new Acrop-

olis, numerous Bushmen rock paintings and great deposits of fossilized remains and Stone Age implements.

Among Gatti's achievements is also the creation of the first nucleus of the Northern Rhodesia Prehistoric Museum. He has donated large collections to the Royal Anthropological Society of Florence, Italy; to the University of Arizona, the New York American Museum of National History and several others.

IN MAGAZINES AND NEWSPAPERS EVERYWHERE THE GATTIS HAVE BROUGHT THE STORY OF TEN PREVIOUS EXPEDITIONS TO MILLIONS





SOME OF THE BOOKS WRITTEN BY ATILIO GATTI AND ELLEN GATTI

Attilio Gatti and his wife, Ellen, are Africa's most enthusiastic and articulate spokesmen. Their reports about that continent's amazingly diversified inhabitants, her flora and fauna, have fascinated the publics of some eleven countries throughout the years.

Now, after more than a year of painstaking preparations, they are about to re-assume their ever-thrilling venture, backed by the sponsorship of The Hallcrafters Company of Chicago, and by all the most advanced electronics and radio equipment developed by the research and engineering departments of this world-famed organization of specialists in the field of high frequency communications.

Once again the Gattis will describe for many popular publications the discover-

ies, observations and incidents of their forthcoming journey to the Mountains of the Moon, and through the least and best known regions of Kenya, Uganda, Tanganyika and Zanzibar.

And while the Gatti-Hallcrafters Expedition, with its wealth of the latest American equipment and with its carefully selected group of American scientists, radio operators, photographers, pilots, engineers, hopes to do its part towards having the United States better known in British East Africa,—so will the numerous writings and photographs to appear in the near future under the name of the Gattis make the marvels of British East Africa better known throughout the United States.



ELLEN GATTI, WHO WILL SHARE WITH HER HUSBAND THE RESPONSIBILITIES OF THE EXPEDITION

These photos are from Hallicrafters great new radio laboratory at Chicago, Ill., U.S.A. Here the latest electronic equipment and the most forward looking radio scientists are brought together to scale new peaks of perfection for "the radio man's radio"



THE HALLICRAFTERS CO. CHICAGO

...where scientists and
electronic equipment
combine to establish
new radio frontiers.

THE Gatti-Hallicrafters Expedition moves toward the Mountains of the Moon with the distinction of being the first completely electronically equipped expedition to grapple with the age-old secrets of Central and Eastern Africa.

What the United States Army Signal Corps calls "the finest radio equipment in existence" will make possible a new ap-

proach to the study and investigation of remote regions, many aspects of which are still unknown to modern man.

Developed superbly to meet the exigencies of war, when mobile radio equipment and tough, sturdy communications receivers and transmitters meant the difference between life and death, the Hallicrafters equipment now makes its contribution to peace-time explorations.

Heart of both the "Shack" in the expedition's base camp and of the "Shack-on-Wheels" that will extend the expedition's radio work through civilized and uncharted parts of Central and East Africa, is the Hallicrafters-built HT4-E, a short wave radio transmitter that has never been equalled for compactness, reliability and long range performance.

In addition to the stationary and the

mobile station, with all their complements of meters, modulators, receivers and a whole battery of other delicate instruments, the expedition will be guided and aided in many of its activities by the most up-to-date applications of electronics. Hallicrafters-built Skyfones, marine radio-telephones and FM Field Units will permit each of the expedition's air, water or land vehicles to keep in constant communication with the others, and with the base camp.

All over the world, Radio Amateurs and short wave radio listeners, who always welcome the new and the unusual, will find ample opportunity to make further experiments with one or the other of these stations, and a special thrill in following, nightly, the progress and adventures of the Gatti-Hallicrafters Expedition.





One of the features of the Hallcrafters new plant is an operating ham shack. From this point Hallcrafters will keep in touch with the expedition on a regular schedule. Shown here is Bill Halligan, W9WZE, president of the company and widely known ham operator.

BILL HALLIGAN, W9WZE

pioneering radio amateur . . . seeks new horizons for ham radio

THE Hallcrafters Company's sponsorship of the Mountains of the Moon expedition is the result of the intense interest of William J. (Bill) Halligan, company founder and president, in the unique opportunities it presents for amateur radio activity.

Bill Halligan has been developing and producing ham radio equipment for many years. He is one of the nation's pioneer radio amateurs. From Ketchikan, Alaska, to Bombay, India, he is known to fellow amateurs as W9WZE.

He visualizes numerous potentialities in the radio experiments which are to be conducted in connection with the expedition and regards the Gatti-Hallcrafters program as an effective means of helping to advance the science of short wave radio.

Bill Halligan's life has been wrapped up in amateur radio. His high regard for amateurs has been richly justified. Most of the great developments in radio communications have been due

to experiments carried out by hams.

The first short wave message was transmitted across the Atlantic by a radio ham. It was an amateur, also, who developed the feed-back circuit which revolutionized radio science by bringing the vacuum tube to its full usefulness.

Radio amateurs are the last line of communications in times of national emergencies—and the backbone of communications during war. These same hams, in peace-time operations, sending their friendly greetings world wide, can be a potent factor in establishing international understanding and continued peace.

Amateur radio now faces a new era of activity. Its forces have been augmented by the many thousands who received communications training during the war. Given opportunities such as this radio venture into Africa, it can continue to extend its record of many noteworthy achievements.



THE GATTIS ARE EQUALLY AT HOME AMONG THEIR OLD FRIENDS THE MAMBUTI PYGMIES, THE GIANT WATUSSI, AND THE PROUD WAMBA



FACTS AND FIGURES ABOUT THE EXPEDITION

THE Gatti-Hallicrafters Expedition expects to be in the field, ready for work, by autumn of 1947.

However, an advance party headed by Gatti will reach British East Africa early in August, in order to clear through customs the enormous amount of equipment which will be waiting in Mombasa, to ship it by train to Kampala, where the railway ends, and from there, by truck, to Fort Portal and beyond.

At some 30 miles W.S.W. from Fort Portal and about 6,500 feet up the eastern

slopes of the Ruwenzori Range, whose Peak Margherita (16,980 ft.) is the highest of the Mountains of the Moon, this advance party will establish the expedition's base camp.

There a large group of thatched-roofed huts will be erected, to house the stationary radio shack, a commodious photographic laboratory, personnel quarters and mess, etc.

At the beginning of October, 1947, the expedition's scientists, radio operators, photographers, pilots and engineers will

fly from the United States, via Cairo, to Entebbe, Uganda's governmental capital on the shores of the Lake Victoria.

From there, the personnel will proceed to the base camp, where each man will find his equipment unpacked, assembled and in place, the camp functioning, the native boys at their jobs,—everything entirely arranged and ready for the immediate beginning of his own particular work.

The base camp will then operate throughout the six or more months of the expedition's stay. From it, at the same



time, will radiate the various mobile contingents, which have been carefully planned to conduct their work either in groups or in self-sufficient, completely independent units.

These mobile units consist of:

The "Shack-on-Wheels," mounted on a six-wheel-drive truck, containing also camping and living facilities for two operators, and pulling in a trailer its own source of power.

The "Rolling Lab," a vast shelter mounted on a similar truck and in-

corporating every necessary convenience for immediate processing of black and white and color negatives. This truck, too, has cots and all supplies for two men and a trailer with a 10,000 Watt, 110 Volt power generator.

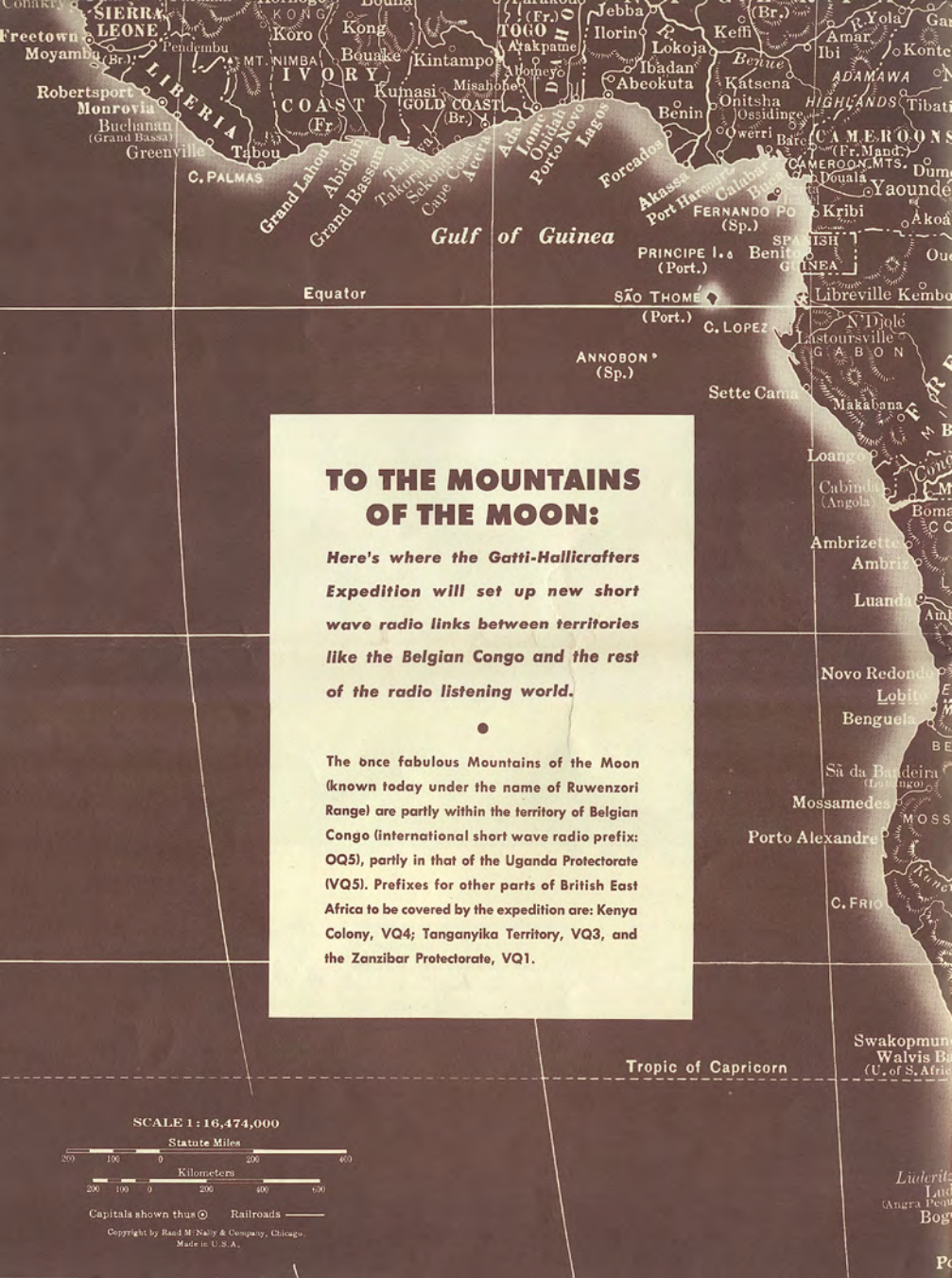
Two general purpose trucks of the same kind, also with trailers, for transportation of equipment, stores, camp material, etc.

A car with trailer.

A motorcycle with sidecar.

The "Humming-Bird," a two-seater helicopter.

Each of these mobile units is supplied with Hallcrafters transmitter and receiver and can therefore keep in daily radio contact, on prearranged schedules, both with the other units and with the base camp. The latter, in its turn, will keep in constant touch with the amateurs of the world and with the "mother station" which Bill Halligan is having built at the new plant of the Hallcrafters Company in Chicago.



TO THE MOUNTAINS OF THE MOON:

Here's where the Gatti-Hallcrafters Expedition will set up new short wave radio links between territories like the Belgian Congo and the rest of the radio listening world.



The once fabulous Mountains of the Moon (known today under the name of Ruwenzori Range) are partly within the territory of Belgian Congo (international short wave radio prefix: OQ5), partly in that of the Uganda Protectorate (VQ5). Prefixes for other parts of British East Africa to be covered by the expedition are: Kenya Colony, VQ4; Tanganyika Territory, VQ3, and the Zanzibar Protectorate, VQ1.

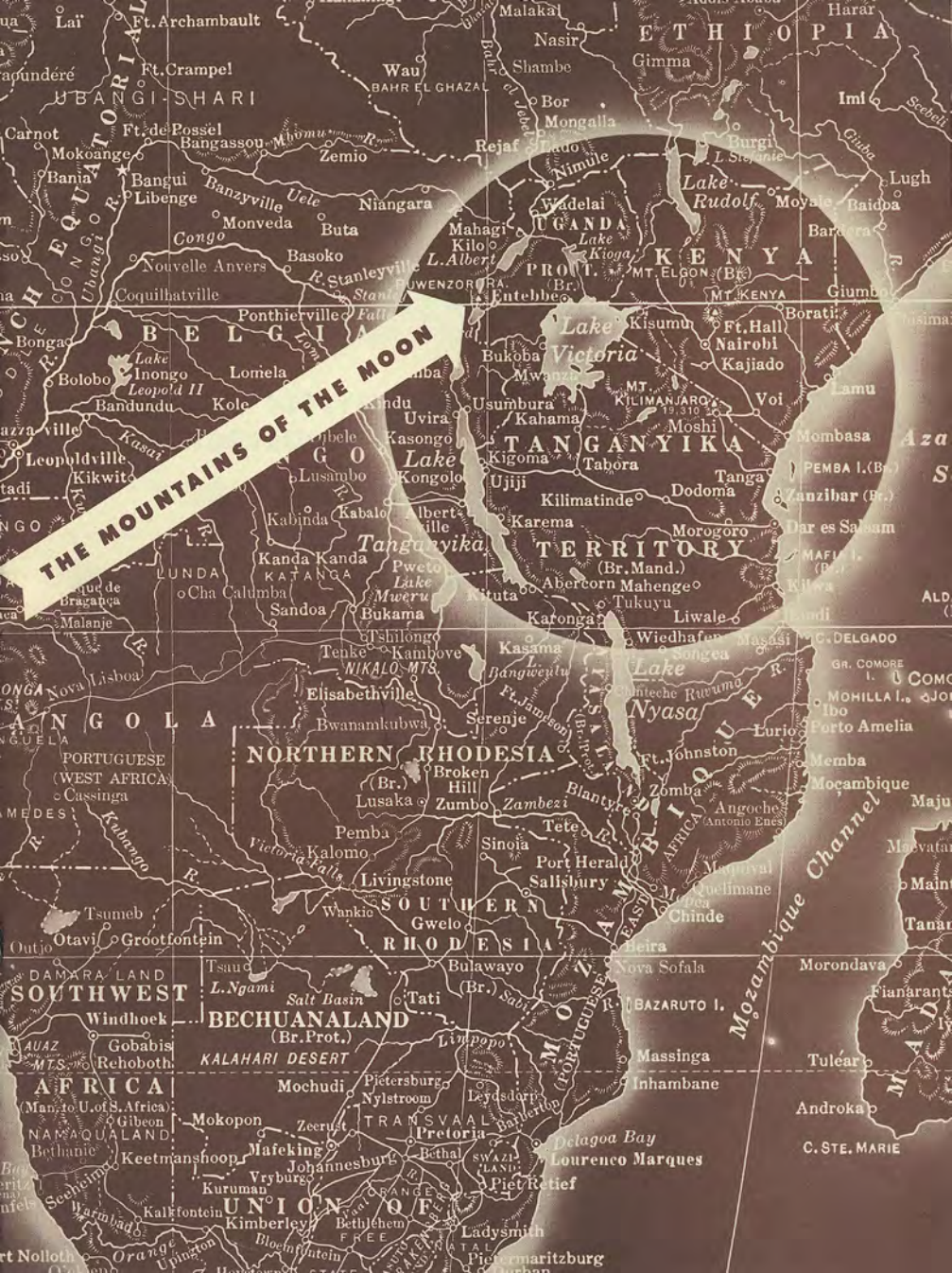
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THE MOUNTAINS OF THE MOON



SCIENTIFIC RESEARCH AND COLLECTIONS

Among the unusual quests which the Gatti-Halliercrafters Expedition will undertake are the following:

- 1 Exploration from the air of inaccessible crater lakes and other virgin sections of the Mountains of the Moon.
- 2 Close aerial observation of unknown life among great herds of elephants, buffaloes, antelopes and other animals, and of occasional gigantic migrations of big game.
- 3 Remote control, electronically-directed photography and sound recording of little known aspects of intimate life among practically unapproachable animals and birds.
- 4 Hitherto impossible remote control detection and recording of life, speech, hunting feats and other little known phases of native life.
- 5 Close quarter observation, sound recording, still and motion picture photography in black-and-white and full colors of teeming bird and animal life on lakes and rivers.
- 6 Exploration of yet unrevealed underwater life of tropical lakes and rivers; first observation of submerged actions of crocodiles and hippos; "freezing" of fastest subaqueous movements, including known and unknown fish life, by stroboscopic speedlight photography.





◁ **"HUMMING BIRD"**—a helicopter modified for exploration of high altitude zones and specially equipped for recording of sounds and for aerial still and motion pictures.

"MAGIC EYE" CAMERAS—which can be set anywhere and will automatically take, whenever a living creature moves between them and their electronic "mirror," one picture every fraction of a second—as predetermined.

▷



Pictures on this page and following ones were taken during the various tests, conducted under conditions simulating as closely as possible those to be faced in the field, to which all the sensitive, newly designed or adapted equipment of the expedition has been subjected.



▷ **"FLOATING ISLAND"**—a silently propelled craft which, entirely camouflaged with fresh branches, can approach the most alert animals and birds as innocently as a clunk of vegetation grabbed by the current from the shore.

◁ **"DIVING EYE"**—an apparatus which can descend 30 feet into tropical waters and permit its crew to take still and motion pictures in monochrome and full colors, as well as precise records of subaqueous sounds.



FIELD EXPERIMENTS ON SHORT WAVE RADIO COMMUNICATIONS

THE Hallicrafters-399 and other war-developed radio and electronic features have been placed at the disposal of the expedition for the purpose of crossing new horizons in communications and for opening up, it is hoped, a new and interesting field for amateur operations.

Well before the first world war, radio hams were busy experimenting, developing, perfecting.

The radio and electronic achievements which wrote a fresh new page in communications warfare during World War II can be attributed in a large degree to much of the pioneering work done over the years by hams who knew the highways and byways of the air as they knew their neighborhood streets.

Once established at its base camp, the expedition will maintain a series of regular schedules of communication with radio hams and short wave listeners. QSL cards, certifying to reception of the expedition's signals, will be issued to all hams who request them.

A continuing communication link will be maintained between the expedition and its various mobile units and the Hallicrafters plant in Chicago. At Chicago, the most advanced ham shack will be set up and placed in operation so that constant touch can be kept with the African arm of radio experimentation.

The possibility has been put forth also that thousands of others, besides the radio hams, may have a chance to follow the various steps of the expedition through a cooperative arrangement with regular broadcasting outlets both here and abroad.

FIELD EXPERIMENTS ON SHORT WAVE RADIO COMMUNICATIONS will include:


1. Noon and midnight radio noise measurements throughout the entire radio spectrum to be conducted daily over a period of six months from equatorial altitudes varying between sea level and 15,000 feet.
2. Regular daily emission of test signals for determining the amount of selective fading and multi-path transmission.
3. Daily experiments, with radio amateurs all over the world participating, to be set up on a regular schedule of transmission from the base camp's main station in Uganda. These experiments will be complemented and rounded up by the expedition's "Shack-on-Wheels," the ultra powerful mobile unit which will periodically operate also from Tanganyika, Kenya, Zanzibar and perhaps the Belgian Congo.




Interior of "Shack-on-Wheels." Two operators at work. Between them is one of the Hallicrafters recording sets, which can pick up with the same high fidelity an entire broadcast, native songs or animal cries.




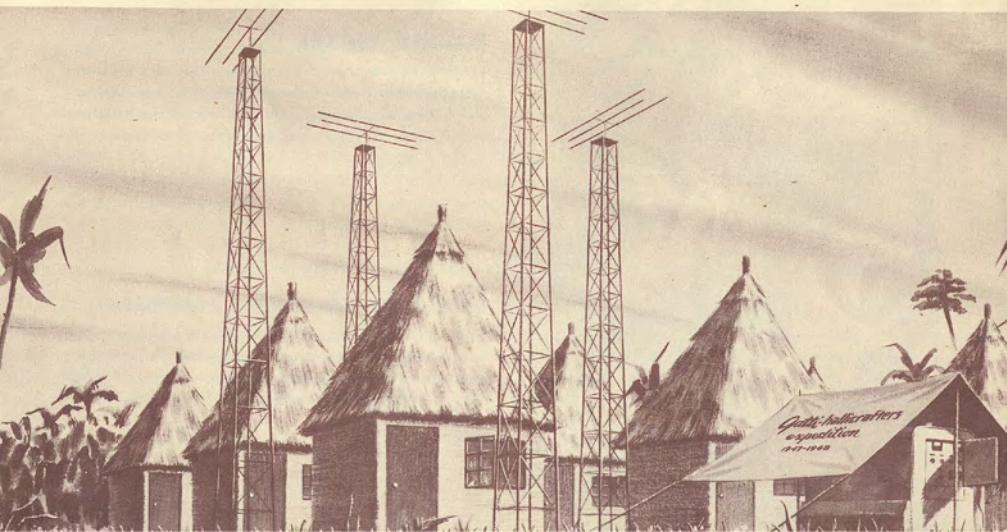
A model, built for testing purposes, of the base camp's permanent "Shack." Operator is directing a bay in adjusting one of the four directional antennae which will allow the station to blanket the entire globe.

Operator installing a tube in the MT-4E transmitter which is the nerve center of the "Shack-on-Wheels." At left, an SX-42, the latest AM-FM-CW Hallicrafters set, which gives the greatest continuous frequency coverage of any communications receiver. 

Partial view of one of the expedition's three fully automatic, 10,000 Watt, 110 Volt power generators, which supply all the "juice" required by the Base Camp, the "Rolling Lab" and (in this photo) by the "Shack-on-Wheels." 



Below, Artist's preview of the huts to be built for the expedition's Base Camp on the eastern slopes of the Mountains of the Moon. In foreground, surrounded by the towers of its four beam antennae, is the permanent "Shack." Protected by a tarpaulin, is a power generating unit. 





FROM THE AIR

Pictures never before taken of herds of big game animals, of mountains, craters and inaccessible crater-lakes. Photograph shows "Humming Bird," Bell Helicopter Model 47B, casually hovering a few feet from ground while long range camera is delivered to photographer.



ON LAND

Game, in small swift groups or rare mass migrations, can be followed and photographed from the roof of the "Rolling Lab." When cameras have ceased to click, films can be instantly developed, thereby defeating the insidious threats of the dampness and heat of the equatorial climate.



ON WATER

Crocodiles, hippos and great birds, believing themselves to be entirely undisturbed in their native haunts, can be filmed at leisure from the perfectly camouflaged, absolutely silent "Floating Island." Note antenna of radio which permits constant communication with shore units.



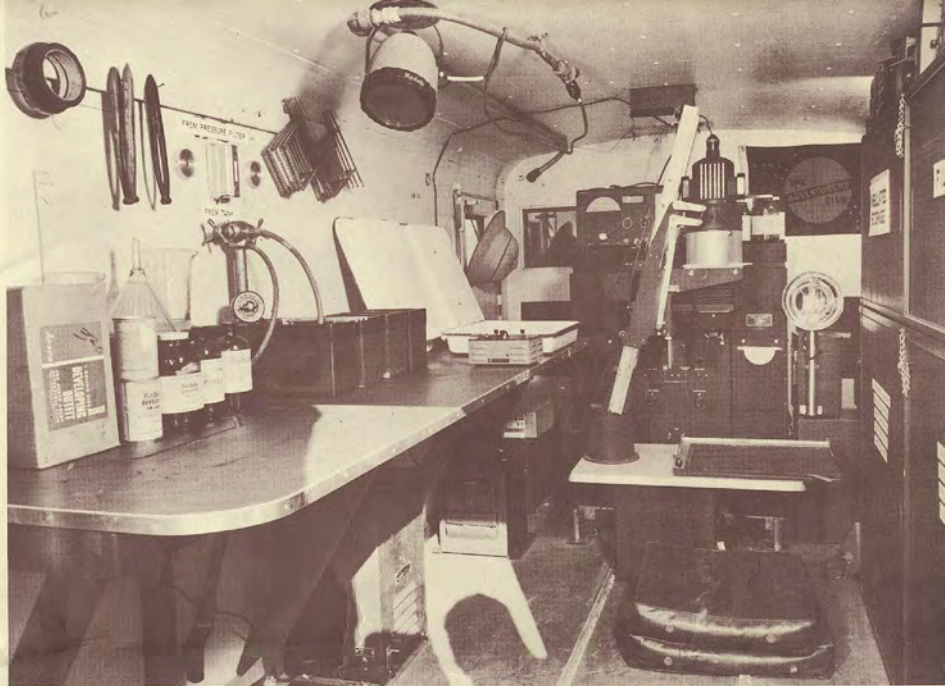
UNDER WATER

Mysteries of underwater life of equatorial lakes and rivers will yield themselves to the "Diving Eye." The "eye" with its oblong shape allows simultaneous use of two cameras. The "eyebrow" is designed for use of giant bulbs, arc light or stroboscopic speedlights.



LATEST PHOTOGRAPHIC EQUIPMENT

From all over the world the very latest and best of photographic materiel has been garnered and adapted for the purposes of the expedition. Photo shows photographer adjusting one of several stroboscopic speedlight portable units.



“Rolling Lab” to help make finest pictorial record of jungle

THIS spacious stateroom-like shelter, developed for mounting on one of the expedition's six-wheel-drive trucks, will maintain at all times within easy reach of the photographers a laboratory as complete and professionally perfect as the most modern installation in a great city.

Visible on left wall are the thermostat which automatically regulates to the exact degree the temperature of water, and the two knobs which control an outside electric pump and the flow of water from pump to tank, via a purifying pressure filter.

On the ceiling is a speaking tube to the driver of the truck. At far end, beyond the enlarger, are the Hallicrafters transmitter and receiver, and above them the flag of the Adventurers' Club of New York of which A. Gatti is a member.

At the right are heavily insulated, electrically desiccated storage cabinets for the preservation of unexposed films and delicate chemicals, and other well-protected cabinets for filing negatives, positives, color transparencies and wire records.

Hot and cold air-blowers, insect-electrocuting screens, reserve filters and racks for special equipment contribute to make the “Rolling Lab” an ideal place where, regardless of even the most

extreme conditions of terrain, climate or weather, any negative can be processed at any time, including Ansco and Ektachrome color films.

As for equipment, the expedition's photographic section disposes of a formidable array of precision instruments and accessories of every kind.

There are Graflex and Speed Graphic cameras, 16 and 35 mm motion picture cameras, Robot cameras, speed cameras, aerial cameras, all with the widest assortment of synchronized flashlights, of filters, lenses and telephoto lenses.

For use in the “Humming Bird” and in the “Floating Island,” there is even a special long distance “photo machine gun” which takes still pictures as fast as the trigger is pulled, or grinds out regular 35 mm movies for as long as the trigger is pressed down.

It is indeed to be expected that, under the experienced direction of the Gattis, the expedition's photographers, carefully selected from among hundreds of candidates, will bring back the finest, most thorough pictorial coverage of all the most striking wonders of British East Africa's unique natives, scenery, flora and fauna.

EDITOR'S NOTE: Much of the equipment shown in this book was necessarily designed experimentally months before the scheduled departure date for the expedition. Some changes will be made in projected equipment before departure and while the expedition is in the field. To meet the exigencies of changing situations certain items of equipment may be altered and improved where needed to assure complete safety of personnel and greatest possible radio, photographic and scientific coverage for the expedition.

How **ELECTRONICS** will guide the expedition along unusual paths of research



High up in the plastic bubble of the "Humming Bird" a member of the expedition can make his report to the base camp or synchronize the helicopter's flight with the movements of other units on the ground, by the use of the Hallicrafters Skyfone.



In the "Shack-on-Wheels," radio operator can pursue his work under difficult conditions of travelling over bad roads or tracks or open plains. During the war it was established that this Hallicrafters unit was able to maintain communications while running at 60 miles an hour over desert roads.



Within the leafy camouflage of the "Floating Island," Gatti can make invaluable use of the Hallicrafters Seafone, announcing his position, giving and receiving reports from shore units, while a companion is on the alert for any threatening croc or rambunctious hippo.



From the "Diving-Eye," blow-by-blow accounts of under-water battles between amphibious monsters will not only be caught by the camera, but can also be instantaneously and faithfully registered by the Hallicrafters magnetic wire recorder, installed above surface on the supporting pontoon.

IN the air, on the ground, on water, under water; in photographing "impossible" subjects, in capturing "unobtainable" sounds, in maintaining radio communications under "hopeless" circumstances—the Gatti-Hallicrafters Expedition will take full advantage of the most recent electronic advances.

With such an extensive employment of war-perfected elec-

tronic control and of precise, versatile, highly sensitive Hallicrafters radio equipment, much of the human element will be removed from several of the expedition's activities—assuring more effective results all around and; at the same time, continuous, reliable communications contact with radio hams and others in the outside world.

Gatti - hallicrafters
expedition

TO THE MOUNTAINS OF THE MOON