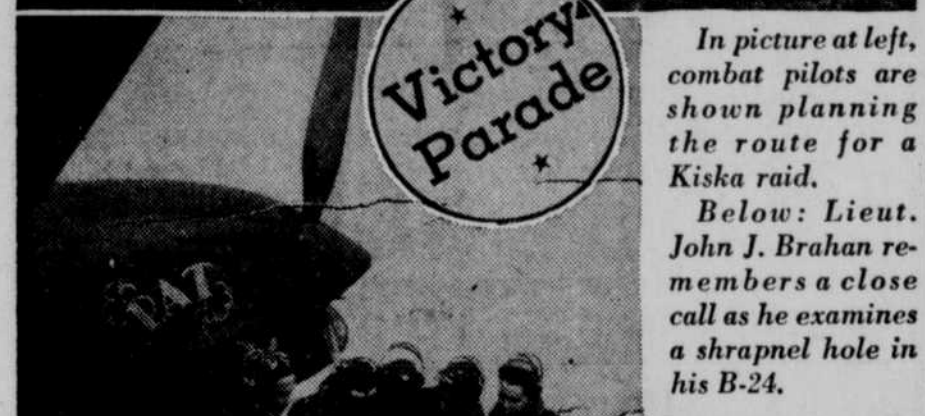


## U. S. Army Air Forces Stab at Aleutian Isles

Making life as miserable as possible for the Jap invaders of the Aleutians at their Kiska and Attu island bases is the continuing task of the Eleventh United States Air Force. Working from the Andreanof islands, under weather conditions literally the worst in the world, hazardous missions over Arctic seas and desolate islands are the routine of these fliers. These pictures show how one of these missions is undertaken.



Below: Pilots stream out of alert shack.



Victory Parade

In picture at left, combat pilots are shown planning the route for a Kiska raid.

Below: Lieut. John J. Brahan remembers a close call as he examines a shrapnel hole in his B-24.



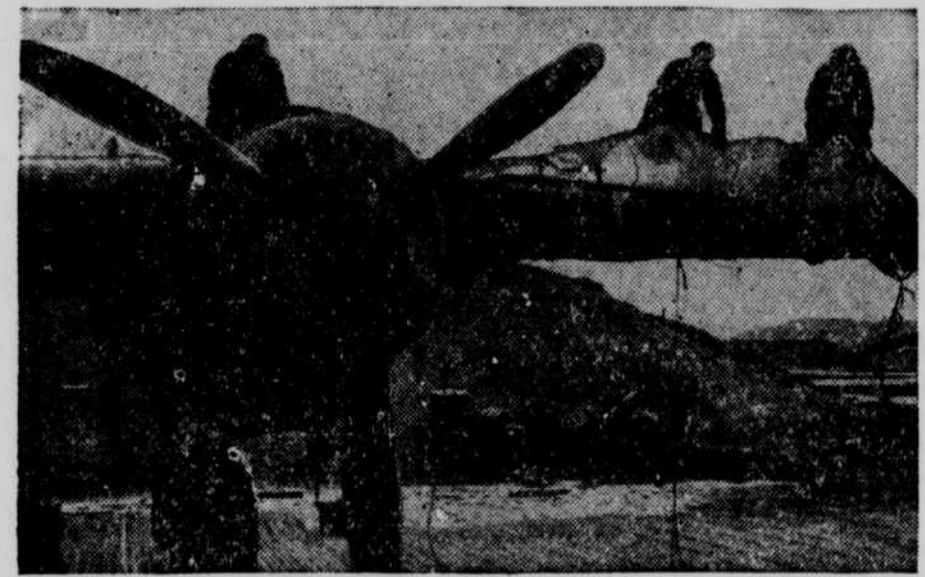
Lotting bombs in plane. This is part of the ground crews' contribution to the job.



Sgt. Clark E. Hillard of Minn. Colo., cleans up the empty shells from the bombardier's compartment after a raid, beginning routine following mission.



Maj. Gen. William O. Butler, commanding 11th U. S. Air Force, awards the air medal to Capt. Morgan Griffin "somewhere in the Andreanofs."



These men are putting a B-25 to bed by covering the wings. This precaution is very necessary for protection of the big planes.



Waiting pilots eagerly scan the skies for their returning "buddies."

## South American Jungles Throb With New Rubber Boom; Scientific Methods Are Used to Protect Native Harvesters

Old Industry Revived in Neighboring Tropics; Transportation Biggest Problem as Countries Lack Rails and Roads; U. S. Grows Rubber in Miami.

In this crucial year of 1943, Latin America will have contributed more than 50,000 tons of natural rubber to the United States war industry stockpile, according to estimates compiled from official sources. In 1944, natural rubber production south of the Rio Grande will have doubled, or perhaps exceed 100,000 tons. At the same time U. S. horticulturists announced success in growing the Hevea rubber tree in the experimental station at Miami, Fla.

Fourteen American republics, besides British Guiana and Trinidad, have signed agreements with the United States, calling for a substantial increase in the cultivation and collection of natural rubber. These nations are Bolivia, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Peru and Venezuela. In Brazil alone, about 50,000 workers have been recruited for the purpose of extracting the milky sap from wild rubber trees.

In order to get natural rubber out of trackless jungles and remote places, new transportation systems making use of donkeys, canoes, steamboats, airplanes, human carriers, etc., have been organized. Medical stations along the routes have lessened, but not eliminated, the hazards which threaten every man who works in the jungles.

The natural rubber needed by United States tanks, airplanes, jeeps, artillery, etc., must be extracted from wild and cultivated trees scattered over an area encompassing hundreds of thousands of square miles.

In order to protect rubber harvesters against fevers, animals, and insects, the Latin American countries, aided by United States government health officials, have created modern sanitary centers, where preventive medicine is taught and treatment given to rubber collectors and their families.

Once Rubber Center. Brazil forests, of course, yield most of this hemisphere's present supply of natural rubber. There, in the Amazon valley, natives first found the gummy substance that plays such an important part in modern war. Before seedlings of "Hevea Brasiliensis" had been exported from Brazil and exploited commercially in the Dutch East Indies and the British Malay Straits Settlements, the Brazilian industry enjoyed a heyday. In order to market their natural rubber, Brazilian promoters had built the costliest railroad in the world. When rubber was a Brazilian monopoly, it fetched as high as three dollars per pound.

However, not even in its balmy days did Brazil produce as much rubber (42,400 tons) as it is contributing in 1943 to a United Nations victory. According to the coordinator of Brazilian economy, Joao Alberto Lins de Barros, Brazil in 1943 will produce 45,000 tons of natural rubber; and 1944's estimates call for 75,000 tons.

The future holds even greater promise for rubber from South America's largest country. That is because commercial plantations, similar to those in the Orient, are well on their way to production, and it is anticipated that by 1945 these plantations will yield more rubber than the millions of wild rubber trees in the Amazon valley produce at present.

Some Brazilian rubber is transported by airplane from jungle depots to the Atlantic port of Belem, whence it is shipped northward. With the exception of eight or ten thousand tons which Brazil requires for domestic industry, the entire production is exported to the United States.

Among South American rubber-producing nations, Ecuador ranks second. The figures of 1942 production have not been announced, but in 1941, when Brazil produced 17,500 tons, Ecuador yielded 1,500 tons.

Indians Want Beads. The Yumbo Indians, a source of rubber workers in the Ecuadorian forest, are not attracted by money in any form. On the other hand, they covet colored beads and machetes. The Ecuadorian Development corporation understands native tastes and is now supplying the Yumbos with trinkets and useful articles, like scissors, razors, salt, mirrors, and even rifles.

Colombian forests are already yielding two tons of rubber daily, all trans-shipped by the same airplanes which supply the workers with their needs.

In Colombia, rubber exploitation is supervised by a committee made up of representatives of the Colombian government, the United States embassy, and the Rubber Reserve corporation.

A service of floating hospitals and dispensaries has been organized to look after the rubber workers in the Colombian jungles. This is in cooperation with the Institute of Inter-American Affairs in Washington which aids local authorities in the work of hygiene and sanitation. The same procedure has been followed in other countries.

Last February an agreement between the United States and Peru provided that South American republic with an airway system for transporting rubber from the forests to river and seaports.

By the end of 1944 it is expected that Haiti will be producing 10,000 tons of natural rubber per annum, which will be marketed by SHADA (Societe Haitiano-Americaine de Developpement Agricole), an organization set up by the governments of the United States and Haiti. One hundred thousand acres have been sown with "cryptostegia," a rubber-producing plant that grows very rapidly. Thousands of Haitians have



Workers tap the Hevea rubber tree at the U. S. agricultural experimental station at Miami, Fla. The U. S. has experimented with 2,000 species, and satisfactory results have been obtained.

been engaged to attend the plantations.

Combat Leaf Blight. Dr. E. W. Brandes of the U. S. department of agriculture is enthusiastic about the progress made by the Americas in combating rubber plant diseases. The South American leaf blight, he said, is being conquered by development of disease-resistant trees. These hardy trees in turn are being crossed by hand pollination with high-yielding Oriental rubber trees further to improve yields.

Victory over the leaf disease is a great forward step in the hemisphere's rubber expansion program, said Dr. Brandes.

On one of the Ford plantations in Brazil, a million trees fell victim to its ravages, but it was observed that a few full, leafy canopies of healthy trees stood out sharply against a background of pest-ridden neighbors. This meant that the blight, carried from tree to tree by wind-blown spores, had not infected them. They were immune.

Scientists then bud-grafted the immune tops to other trunks and produced a high-yielding, disease-resistant plant. The work of developing the resistant tree by the system of cross pollination is an arduous task, but it is ultimately the best solution to the problem. It is being done on a large scale in Brazil, where lies the hemisphere's greatest potential supply of latex.

Meanwhile horticulturists at the Federal Plant Introduction Garden, Miami, Fla., have been experimenting with "home-grown" rubber trees.

Proof that progress has been made was demonstrated recently by the Bureau of Standards in Washington, D. C., which produced a pair of rubber heels from the latex of "Hevea Brasiliensis" trees growing in Florida. The experiment cost the department of agriculture 17 years of research and thousands of dollars but government chemists reported the quality of the latex compared favorably with East Indian.

In this promising test-tube rubber plantation are growing more than 2,000 Hevea from Haiti, Puerto Rico, Mexico and the East Indies. It is the only rubber project on plantation scale ever attempted outside the tropics. Some of the trees are 35 feet high and ten inches in diameter.

Tree Survives Florida Climate.

For a tree whose natural habitat is in the region of the equator, the Hevea's endurance and adaptability to temperate climate has amazed scientists. Periodic measurements have shown that its early growth has been as rapid in Miami as in Haiti and Mexico. Its resistance to cold weather has been incredible, surviving temperatures as low as 28 degrees. Like many northern trees it has been found to shed its leaves in winter, reducing frost danger and making it particularly well-suited to Florida cultivation.

The entire rubber reserve has sprouted from seeds, many of which were sown nearly two decades ago. After sprouting from seedbeds the young trees were transplanted into deep depressions near the water-table so the tap roots could find permanent moisture. The creamy, white latex tapped recently was a welcome sight to the botanists who had cared for them so long.

Experts have found that trees

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### Gardener Should Only Cultivate to Kill Weeds

Some of the grief in gardening can be escaped if the gardener realizes that cultivation is needed only to kill weeds, break soil crusts, and to permit water to enter the soil. If the garden is cultivated or hoed often enough to kill the weeds, the other two factors will be automatically accomplished.

The weeding job can be done with less labor if cultivation begins when the weeds are small. The ground should be disturbed little near the

plant rows, but the cultivation may go deeper between rows where tramping is likely to pack the soil. Pulling a garden rake lightly across plant rows will help eliminate weeds but some hand work will be required to get all of them.

The frequency of cultivation required is determined by the rate of weed growth. In periods of frequent rains and in warm weather, more cultivation is needed. No result other than exercise is obtained from

stirring dry, weedless soil. Cultivation should not begin too soon after a rain because moisture will evaporate faster, and lack of water often is a limiting factor in plant growth.

Any one of several types of hoes is satisfactory for garden work, and, sometimes it is an advantage to have more than one type. Heavy hoes are best for chopping weeds out of heavy soil, and the pointed hoes are better adapted for opening furrows for planting seed.