

HYDROPONICS

New Soilless Gardens

Are now in production in British Guiana Air Base to provide fresh vegetables for AAF personnel. Constitute largest project of kind.

► SOILLESS gardening to produce green vegetables for AAF men still overseas in the tropics is going into production on the largest scale yet undertaken, at Atkinson Field in British Guiana. One hundred standard hydroponic beds, each 300 feet long, three feet wide and eight inches deep, are growing tomatoes, lettuce, radishes, cucumbers and green peppers rooted in sterile washed gravel through which a solution of nutrient mineral salts in water is flowed at 48-hour intervals. The project is described in some detail by Lt. Allen E. Pripps, C.A.C., in the *Military Engineer* (Nov.).

In charge of this and all other soilless gardening projects under the Air Corps Quartermaster is Kendrick W. Blodgett, a civilian horticulturist, who has AAF officers and men as his aides. First project on a large scale was set up less than a year ago on Ascension island, mid-Atlantic air base just south of the equator. It has proved so successful that new installations of the same kind were planned. The new project is four times the size of the original one on Ascension island. Two others are now being set up in the Pacific, on Coconut island and Iwo Jima.

Because of the ending of the war and the cutting down of the number of men to be supplied locally, the Atkinson Field project turned out a surplus of lettuce from the beginning. This, Mr. Blodgett states, is being shipped to other bases in French and Dutch Guiana, Trinidad, Brazil and Puerto Rico. The same will be done with tomatoes when the expected surplus of these vegetables develops.

In general, it has been the Army's policy to grow vegetables in the ordinary type of gardens where soil and other conditions make it possible, and to resort to soilless gardening where conventional horticultural methods are impracticable. Thus, Ascension island is a desert mass of volcanic cinders, with neither soil nor water—all the water used for all purposes, including the garden, has to be distilled from sea water. At Atkinson Field there is rainfall enough, but the soil is a dense, barren red hardpan.

Coconut island consists mainly of sterile white coral sand and rock. Iwo Jima is very much like Ascension island, except that Iwo's volcanoes haven't stopped smoking yet. So if the boys are to have their tomatoes and radishes, they'll have to raise them hydroponically.

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ELECTRONICS

"Racon" May Guide Ships Safely Through Dense Fog

► SHIPS near land may proceed with safety through fogs so dense that lighthouse flashes cannot be seen, with the help of radar equipment on board and radar beacons on shore. The radar beacon, called "racon" for short, is another scientific war development from which the lid is now lifted. It did an important war job, and now promises to play an important part in the peacetime safety of commercial shipping.

Racon is an electronic beacon placed ashore at selected positions to serve both surface and air ships. When radar signals from transmitters aboard ship are received by the beacon, its transmitter is triggered and it gives out automatically

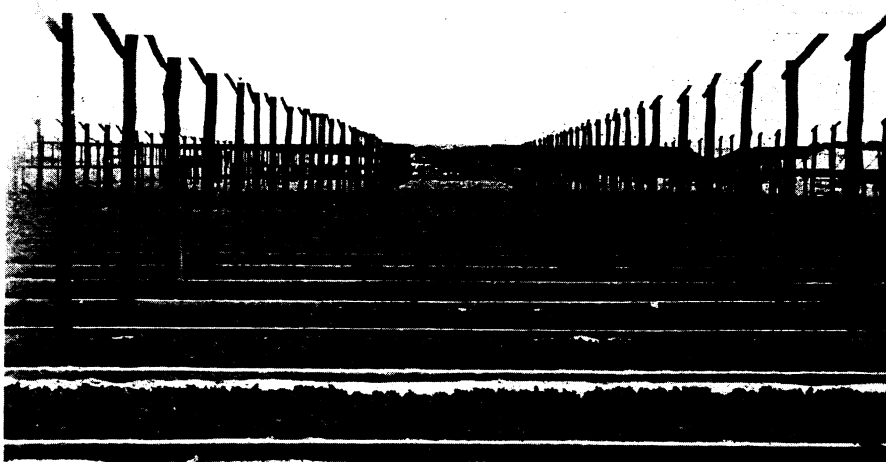
an answering signal in code. The code is its station identification. A navigator is able to fix his position in relation to the beacon by means of a simultaneous plot of both range and bearing of the beacon from the ship on the scope of his radar.

One of the first war uses made of the radar beacon was in the English-developed IFF apparatus, the letters standing for "identification, friend or foe." The responding equipment was installed in planes. It operated only when actuated by an interrogating set on the ground or in another plane. The response was automatic and was given in the particular code set for the day. The pilot was unaware of the waves of the interrogating set and also of the response. If an approaching plane failed to give an answer, and the right answer, it was regarded with suspicion.

While the IFF was a British development, it was improved in America and practically all instruments used by the Allies were made in this country. Wider uses of the principles employed in the IFF were developed at the Radiation Laboratory in Cambridge, where the greater part of the government's research and development of radio and radar was carried out.

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The *mung bean*, source of tender sprouts used in chop suey, is now grown in considerable quantities in the United States as a result of war conditions; the former supply came from China, India and Japan.



NO SOIL—Soilless gardens such as this one are in production at a British Guiana Air Base. These beds are growing lettuce.