provide for the more distant future.

HOME GROWN RUBBER TRIED OUT BY GOVERNMENT EXPERTS

All the schemes to take a belated stitch inthe American rubber dilemma which resulted when Great Britain pulled in her supply are beset by difficulties. One of the least known of these schemes, although not necessarily the most unpromising, is that for growing rubber right here at home, under the semi-tropical sum of Florida and California.

The U. S. Department of Agriculture has been trying out seeds and plants of various rubber-producing species in experimental gardens, but as it takes a long time for the plants to mature and produce latex, officials have as yet no information to give out, and they are advising enthusiastic investors not to put any money as yet into Florida or California rubber.

Botanists name a long list of plants which will produce the milky sap containing rubber. The most important of these today is the Para rubber tree, Hevea guianensis. It grew originally in the Amazon Valley but was bootlegged out more than half a century ago by British planters who tried it out in Kew Gardens, London, and in Ceylon, to see if it would grow outside of Brazil. Then it was used to start the vast plantations in the East Indies that are now supplying the world with most of its rubber.

"Healthy seedlings of the Para rubber tree have been grown at the U. S. plant introduction gardens near Miami, and are being transplanted to different conditions of soil and exposure," Dr. W. A. Taylor, chief of the Bureau of Plant Industry, stated in his annual report to Congress. "The collection of rubber plants now growing at Miami includes altogether about twenty different types.

"Rubber plants that are natives of dry regions are being tested in California, in the coast regions as well as in the interior valleys," he continued. "Several dry-country rubber plants are known in Mexico, while others are reported in South America, Africa, and Madagascar. The production of rubber from the Mexican guayule plant has been investigated by a private corporation and the stage of agricultural practicability is believed to have been reached in California.

"Desert types of rubber plants are being grown in the lower valley of the Colorado River, and the possibilities of one of the common milkweeds are being studied because it grows well on waste lands and produces a large quantity of rubber-bearing material readily andcheaply. Cultivation might extend over large areas if ways of utilizing the substance were perfected.

"This plant is widely scattered in southern Arizona and the desert regions of Sonora and southern California, and it also grows in small ravines and gullies of barren hillsides a few miles from the coast of Lower California. Some of the plants grow so large that they form dense masses more than six feet high and ten feet across."

If any of the rubber-bearing species does show a willingness to produce

rubber in the United States in worth while quantities, many economic problems would still have to be solved before rubber growing could be done on a commercial scale.

Para rubber, if that should be chosen, would not have the even rainfall it has in the East Indies because Florida has distinct wet and dry seasons. With even rainfall, rubber trees may be tapped the year around, but with an uneven one, tapping would have to be seasonal. This would involve labor complications, because at certain times a great number of laborers would be needed, and at others only a few.

Even if that problem could be satisfactorily solved by secondary crops, there would still be a labor problem. East Indian rubber planters can get cheaper labor than Florida or California planters can ever hope to get. Therefore, some other means would have to be found to reduce the cost of producing the rubber in order to compete with England's East Indian product in price.

The research chemist would have to work out new means of getting the rubber out of the latex, certainly a cheaper and better way. In case one or more of the lesser known plants were to be used, for which no method of extraction is now known, a brand new method would have to be developed. On top of it all, the chemists might come along any day with a cheap synthetic rubber that would stretch as far as the best of nature's product.

NO EFFORT AT ALL FOR CHICK TO WALK

How can a newly hatched chick flutter out of its shell and run away from it, while a human infant must slowly learn to walk with many falls and bumps?

The answer is that the ability to stay right side up and well balanced is essentially automatic in the chicken, according to Drs. N. Kleitman and T. Koppanyi, of the University of Chicago. Many European scientists are devoting attention to the mechanisms by which a body rights itself. The experimental methods used by these Chicago physiologists were introduced from Holland.

Walking in human beings is really controlled by the brain , though the go, stop, and turn signals are so well known that the process seems to require no conscious effort, But in a chicken the position and movement of the body are automatic from the day it cracks the shell, and thus it can stand up unaided, the experiments show.

When a chicken's body is pushed from side to side, its head will remain in the vertical plane, with its beak pointing down, Dr. Kleitman explains. This is an automatic adjustment of position which depends on the labyrinth of the inner ear. When the bird is moved suddenly through the air, its wings and tail adjust themselves as steadying influences and to help it in landing on the ground. This is a reflex, or automatic adjustment, of movement.

"These different reflexes take place even when the brain is lacking, providing the labyrinths are intact," said Dr. Kleitman.
