

AGRICULTURE

Smaller Chocolate Bar

Crisis in chocolate supply as well as in coffee faces the U. S., although for different causes. Virus disease and monopoly are blamed for the shrinking nickel bar.

► THE NATION faces a chocolate situation somewhat like the coffee crisis. Monopoly and a virus have been blamed for the shrinking nickel chocolate bar. Flavor of the chocolate also has been shrinking, but for a different cause.

Basic cause of the smaller bar is a poor crop of cacao coupled with rising world demand. As a result the price of cacao, or cocoa, beans from which chocolate is made has almost doubled in the last year.

The Association of Cocoa and Chocolate Manufacturers of the United States has charged that marketing boards in some cocoa producing countries have used "cartel-like or monopolistic" selling policies to make the price artificially high.

Representatives of the Gold Coast, a British African colony which markets all its cocoa through a single board, put the blame for their short crop on a virus disease of cocoa trees. Ordinarily, the Gold Coast supplies about 40% of the world's demand for cocoa beans.

Swollen shoot virus disease has cut production in some Gold Coast areas by as much as three-quarters. The only way of combating the disease is to destroy an infected tree immediately after the disease is noted. The colonial government pays the farmers for the destroyed trees.

The disease is spread by mealybugs which feed on tree sap. An estimated 10% or more of the trees in the Gold Coast are affected by the disease.

An additional problem plaguing chocolate manufacturers is the long-term gradual decline in chocolate flavor. Some people have been saying for years that "chocolate doesn't taste as good as it used to." They are right.

The change has been slow and chocolate manufacturers have juggled their recipes to hide the flavor decline, but they have about reached the end of the recipe rope.

Root of this difficulty is that while all cocoa beans produce chocolate of about equal nutritive value, there is only a small amount of beans of high quality and flavor. Around 1910, producing areas started abandoning the trees giving the flavor beans and concentrated on trees with higher yields but less flavorful beans.

So extensive has been this shift to non-flavor cocoas that chocolate now contains about 20% of flavor beans instead of the 70% that was once used.

Another factor has been the lack of care in preparing beans for market. Cocoa beans are seeds in pods on the trees. The pods are cut open, and the beans removed and fermented before roasting. If the beans are immature or little care is taken in fermenta-

tion, the result is an inferior chocolate. Fermentation usually lasts for six full days. After fermentation the beans are dried in the sun.

In recent years, chocolate manufacturers have joined with governments in sponsoring research to bring back flavor cocoas. Much of this work has been done at the Inter-American Institute of Agricultural Sciences at Turrialba, Costa Rica, and at the experiment station run by the government of Ecuador.

Manufacturers have also sent specialists to producing countries to help improve the processing of cocoa. This work has been done in Brazil, which normally supplies 20% of the world demand, second only to the Gold Coast.

Efforts to develop high quality cocoa trees with high yields have started, but there are many difficulties in this project. It takes four years for a tree to produce its first fruit, and a tree's quality can be tested only

by sampling the chocolate produced from its beans.

When the beans reach the factory for processing, they are roasted in revolving drums. The roasted beans are then cracked between rollers and the outer shell winnowed out. The remaining "nib" is ground into cocoa butter.

In an attempt to solve two problems at once, the U. S. Department of Agriculture recently sold some of its surplus butter to chocolate manufacturers to be used in extending short supplies of cocoa butter.

Science News Letter, March 13, 1954

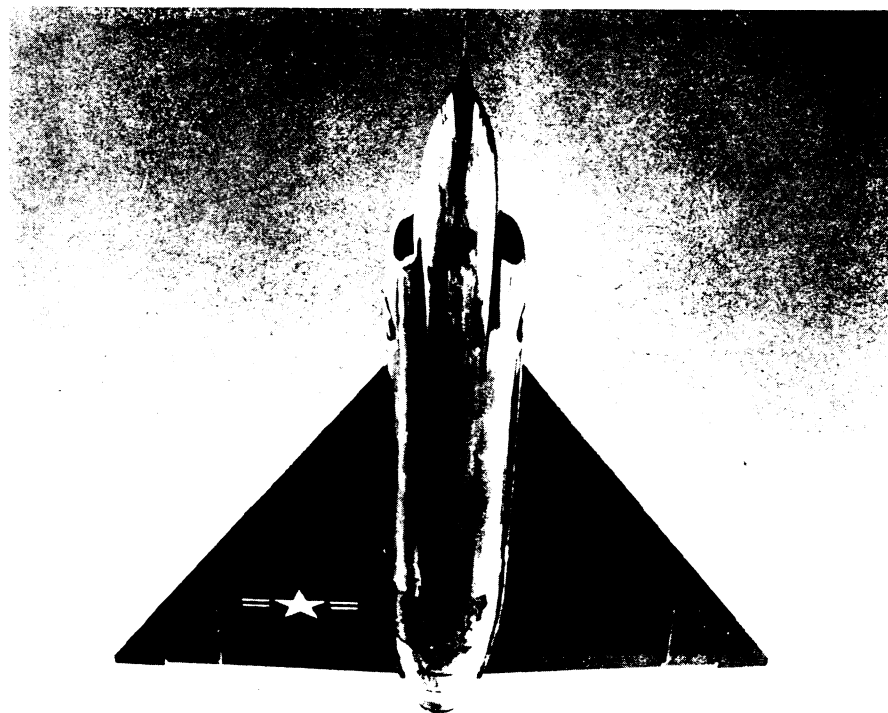
MARINE BIOLOGY

Fish Crosses Pacific Only to End Up on Hook

► AN ALBACORE with a real urge to travel swam 4,900 miles across the Pacific Ocean only to end up on a hook. The California Department of Fish and Game has received a marking tag from Japanese fishermen who caught the albacore 550 miles south of Tokyo.

The fish had been tagged 324 days before the catch 18 miles south of Los Angeles. It covered the distance making a little better than 15 miles a day. The Department said this was the first authentic record of an albacore crossing the Pacific.

Science News Letter, March 13, 1954



DELTA WING INTERCEPTOR—Performance details of the U. S. Air Force's new supersonic, delta wing interceptor are still secret, but the first exterior photographs of the F-102 have now been made public. The one above shows its severely swept back wings as well as its lack of the conventional tail assembly. The predecessor of the F-102 was the experimental XF-92, completed in 1948.