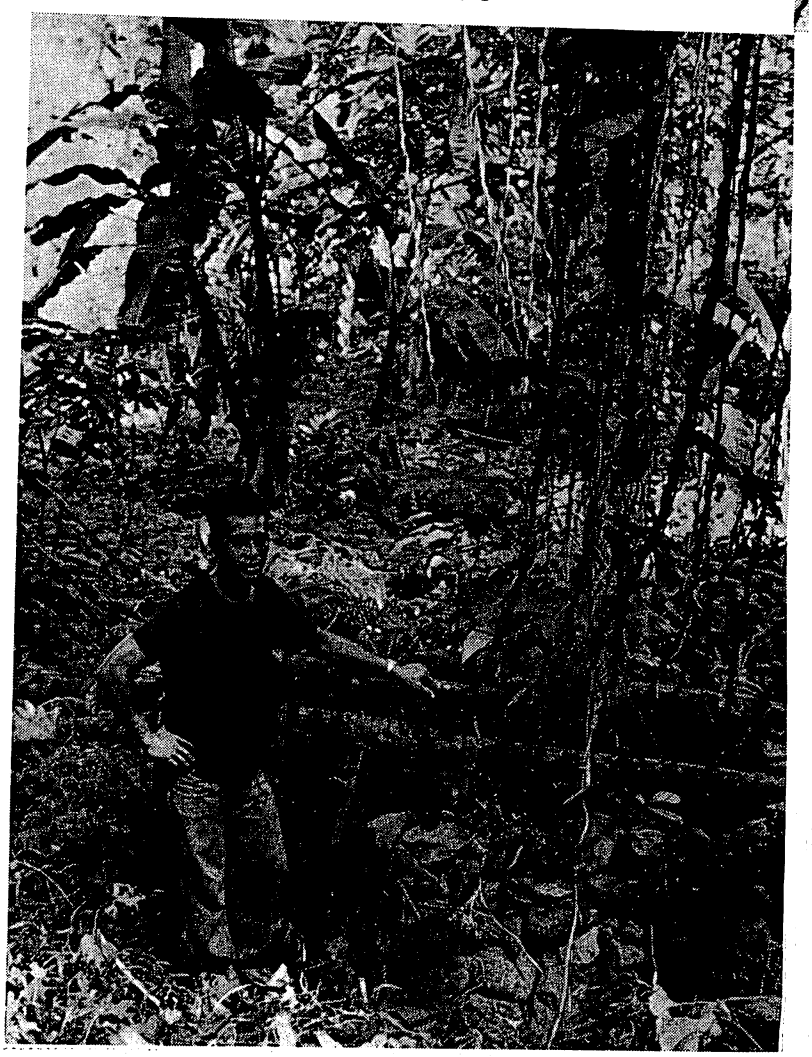
YAMS

INTRODUCTION

The yam is an important starch food crop throughout much of the wetter parts of the tropics. It is also an important subsistence crop in most of the high islands of the Pacific. Its greatest importance in Micronesia is on Ponape Island because of its function in the Ponapean title and feasting system. Yams have a very high prestige and their cultivation is a prestige activity. The larger the yams that a man can grow and the more often that he can contribute them to the traditional feasts the faster he can be expected to move up in the title system.

The Yap and Mariana Districts are the other most important producers of yams in Micronesia. Yams are generally made to grow on man-made trellises in Yap and the Marianas, whereas in Ponape the yams are planted under breadfruit or wild hibiscus trees and the vines are trained to grow up and over the tree. Yams are grown to a lesser extent in the other Districts and, in rare cases, on atolls.

The traditional way of growing yams at Ponape. Note the rock wall to keep out pigs.



VARIETIES

Yams are obtained from several species of the genus *Dioscorea,* a very large genus of climbing plants widely distributed through the tropics.

The vines are ridged, cylindrical, or have spiny stems which may twine either to the left

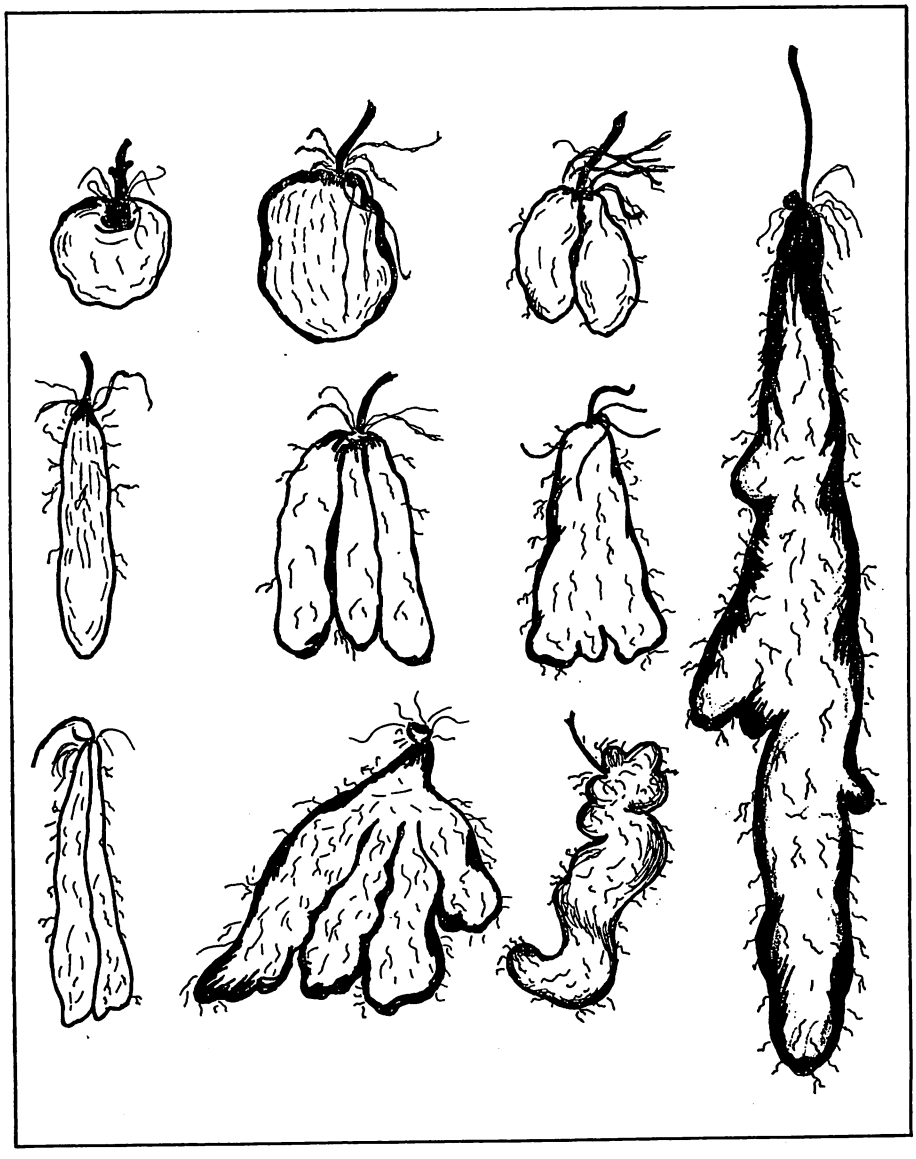
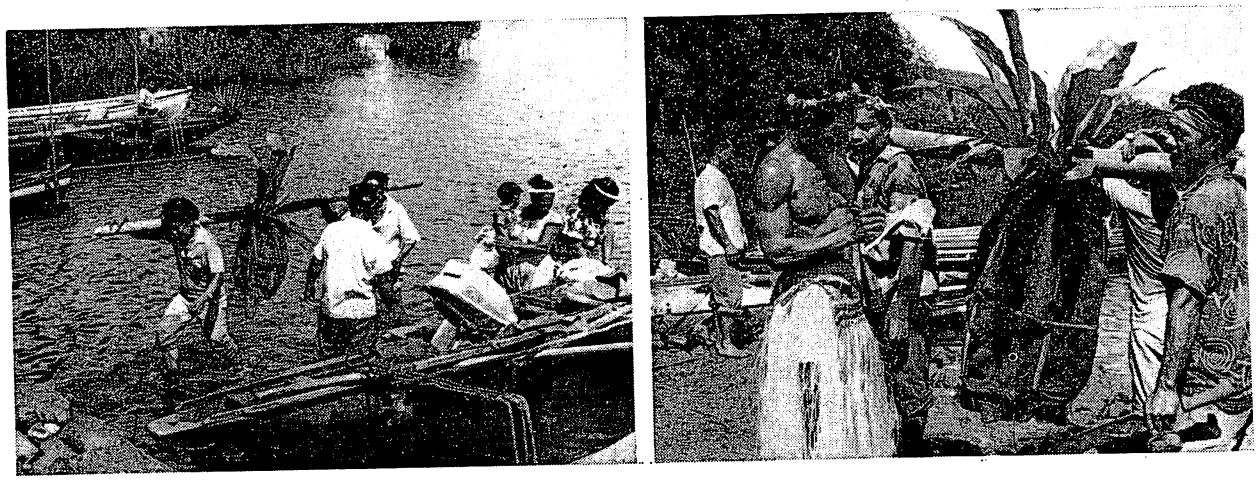


Figure 1—Types of yam tubers.

(*Dioscorea bulbifera*) or to the right (*Dioscorea alata*). Some have aerial tubers which are sometimes eaten if washed and cooked, as they are poisonous otherwise. However, the underground tuber is the main food store. The tubers take many different shapes according to species and variety (see Figure 1). The flesh may be white, ivory, or purple.

Yams now being grown in Micronesia either originated in South-East Asia and were introduced during the early migrations or are local wild yams now domesticated. The numerous yam varieties and species that presently exist—over 200—have never been completely studied and classified.



Left and right—Large "two man" yams are being carried ashore from canoes and are checked in for representation at the traditional yam ceremony.

CLIMATE AND SOILS

The yam needs tropical temperatures of 70° to 85° F and a fairly high rainfall. It can stand more drought than cassava and can be grown in very high rainfall areas, if planted in specially prepared ridges or on hills.

As a rule yams require deep, loose, fertile and well-drained soil. Gener-

Left—The kava plant (Piper mythysticum) which is being uprooted along with large yams plays a dominant role in the ceremonial life of the Ponapeans. Right—An "A"-frame yam trellis after the yams have matured.

ally, these conditions are made by the farmer when preparing the planting site for the yam. Yams have the advantage of easy cultivation, ease of vegetative propagation, are relatively free from disease and insects, and can easily be stored for up to several months.

LAND PREPARATION AND PLANTING

To obtain the greatest yield of yams from a unit of land, the area must be cleared of all trees, grass, weeds, stumps, and rocks. The whole area should be plowed to a depth of 8 inches. If an animal- or tractor-drawn plow is not available, then the soil will have to be loosened with a spading fork.

After the land is plowed and levelled, mark off the field with a line, with rows 10 feet apart; this will be the marker you will follow in digging the trench.

Always make the rows across the slope of the hill to prevent soil erosion. Dig a trench alongside the marker, using a mattock and a shovel. The trench should be about 12 to 18 inches wide and about 15 inches deep (see Figure 2). Now half fill the trench with compost, manure, leguminous plants, wild hibiscus (kalau). When only fresh plant material is used, one large handful of a high nitrogen fertilizer should be applied to every 3 feet of row. Next cover up the trench with soil, making a high planting ridge.

Individual planting holes can be dug and prepared in the same manner. The planting site is now ready to receive the yam 'seed.' The seed piece is usually the top part where the vine was attached, or else the yam tuber can be cut into pieces that weigh about $1\frac{1}{2}$ pounds each.

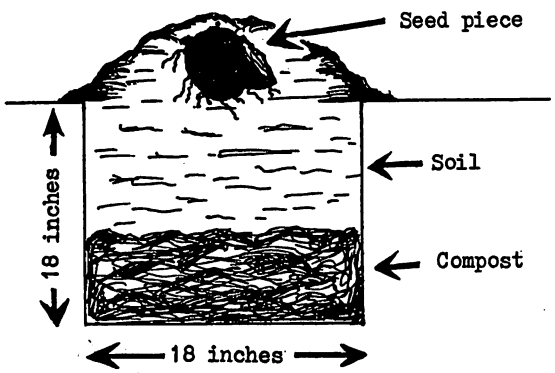
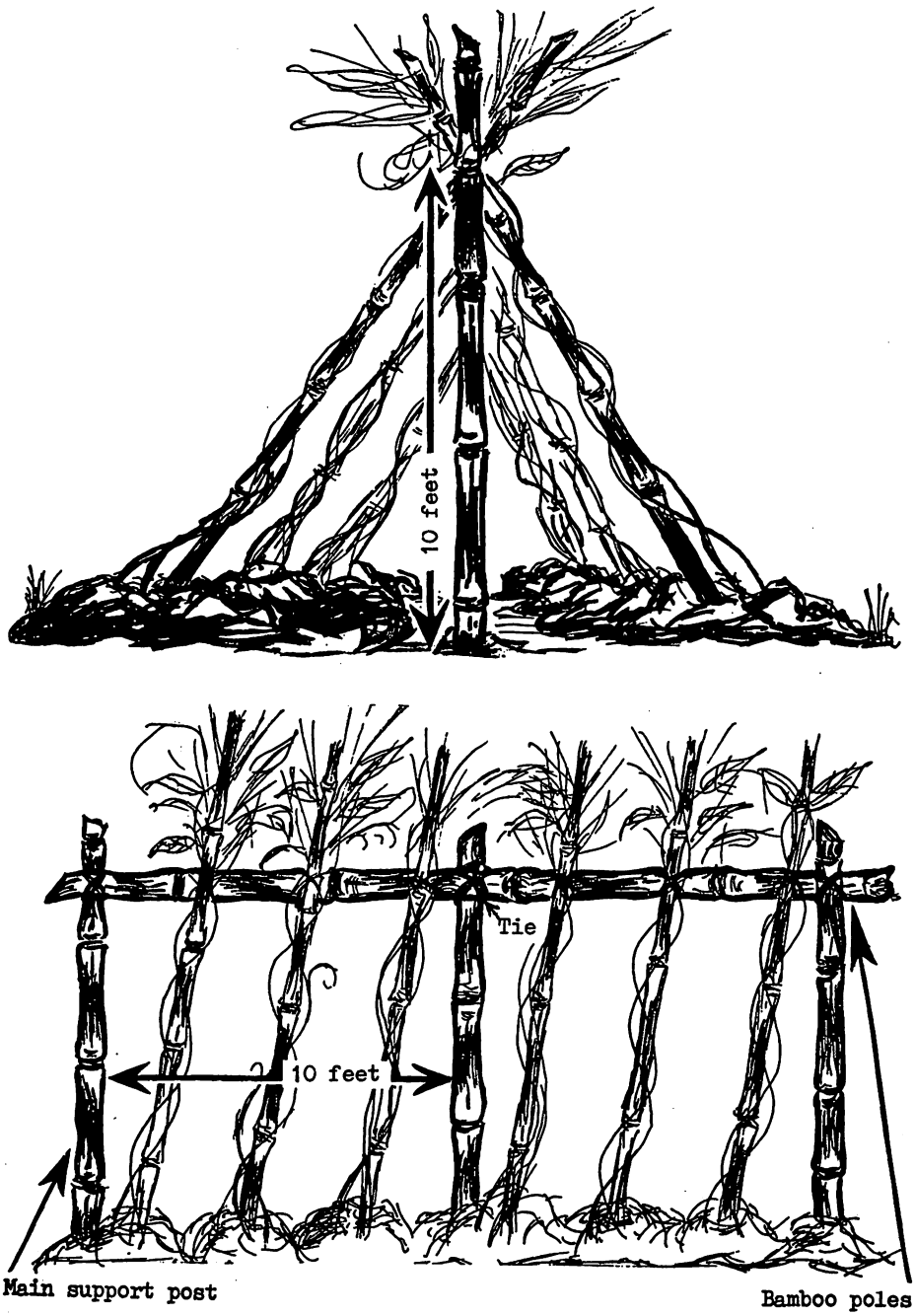
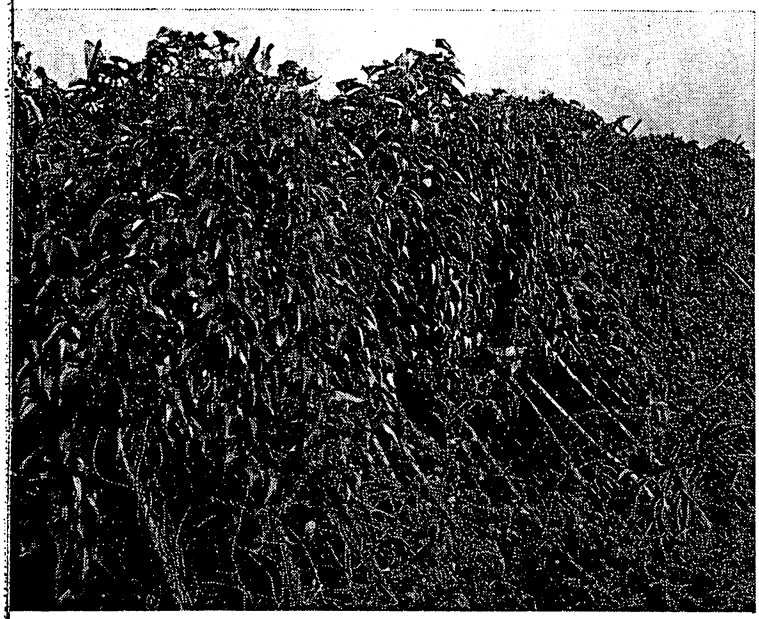


Figure 2—End view of planting trench for yams.

The yam seeds are usually planted about 3 feet apart in the prepared planting ridge, and are buried about 2 to 4 inches deep. After the yams are planted and before the vines are ready to start climbing, the trellis must be constructed. Trellises can take many different forms and be built of different materials, de-



Figures 3a and 3b—Top: End view of "A"-frame trellis for yams. Bottom: Side view of "A"-frame trellis.



Typical system of growing yams in the Mariana Islands.

pending on what is most readily available. The A-frame trellis is explained here.

First, place wooden posts in between two planting ridges. These posts should be about 10 feet apart and stick out of the ground 10 feet. Then tie a strong pole near the top of the posts (see Figures 3a and 3b). After the posts and cross pole are in place, find small bamboo or other small poles and place them against the cross pole making an A-frame. The base of one pole is placed near each yam plant. These small poles should be about 15 to 16 feet long and all the branches should be left on them.

CARE OF YAMS AND FERTILIZING

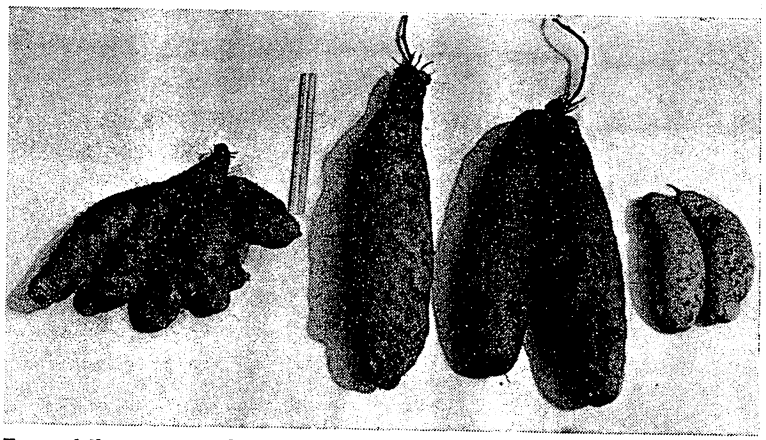
The yam will sprout a few days to several weeks after planting. When the vine is about one foot long, the trellis, as explained above, should be in place. If two or three vines sprout from the yam, more than one pole will have to be used so that all the vines will have a chance to twine up the trellis. The poles for the vines should be at about 45° to 60° angles. Vines that are entwined on poles set vertically or horizontally will end up growing away from the poles, and will fall off towards the ground. The vines should be trained to grow up to the uppermost ends of the poles—the higher the vines grow the larger the tuber will become.

For high yields of yams, a second application of a 10:10:10 fertilizer should be applied when the vines are about 10 feet high. One large handful for each plant, placed in a 2-foot circle and buried a couple of inches deep, is ideal. A third application of fertilizer in the same manner can be made when the yams are about four or five months old.

During the growing season all weeds and grasses must be hoed out from around the yams to reduce competition. In very dry periods a grass mulch should be placed at the base of vines to shade the ground. If there are stray pigs and other animals in the neighborhood a fence will have to be erected to keep the animals from destroying your yam garden.

HARVESTING, STORAGE, AND MARKETING

Yams are a seasonal crop and are planted during the months of November to February. They are ready to harvest from nine to twelve months after planting, or when the vines stop growing and the leaves begin to turn brown and drop off. Yams can be left in the ground until they are ready to be eaten, or they can be harvested and stored.



Four of the many varieties of yams grown in Micronesia.

Left—Note the size of two varieties of yams being held by Kesner Hadley, Agriculture Extension Supervisor of Ponape District. Right—Francisco Tipen, an expert on traditional Ponapean yam culture, is holding another variety of yam.

One variety of yam grows from 6 to 8 feet long if planted on the slope of a hill.

When a fully mature yam is harvested it can be stored in a dry, dark, cool, and well-ventilated place for two to three months.

If yams are properly planted and cared for they should produce 15 to 20-pound tubers per plant, or 10 to 15 tons of tubers per acre. When producing yams for market, they should be carefully harvested to reduce bruises or chips, washed clean of all soil, and displayed and sold as whole pieces of yam rather than being cut or broken into small pieces.