## THE ORIGINS OF AGRICULTURE

In the following hypothetical situation, we will suppose that an archaeologist is undertaking the study of the origins of agriculture in Southeast Asia. She selects a coastal region in which to conduct a survey for sites and to make a few small excavations. The coast has a number of lagoons and estuaries, which contain a variety of shellfish such as oysters and mussels. Inland from the swampy zone, the land rises rapidly to a series of hills. The entire study region is drained by a small river.

The study of modern plants in the area has been done by a botanist. This study resulted in a map showing the distribution of two economically important species of wild plants (Fig. 13.25). Wild rice occurs only at higher elevations in the hills (north of the dotted line on the map). Wild beans grow at the higher elevations as well as lower down, almost to the edge of the swamps (all of the area north of the dashed line). The wild rice and wild beans are the ancestors of the most important domesticated plants in the area today. Because geological evidence indicates that there have been no significant climatic changes here since 10,000 BC, it is assumed that the distribution of wild species has not shifted in that time.

Archaeological survey involved systematically walking back and forth over the entire area looking for artifacts on the ground. The archaeologists were able to make a map of the distribution of prehistoric sites. By analyzing the pottery from these

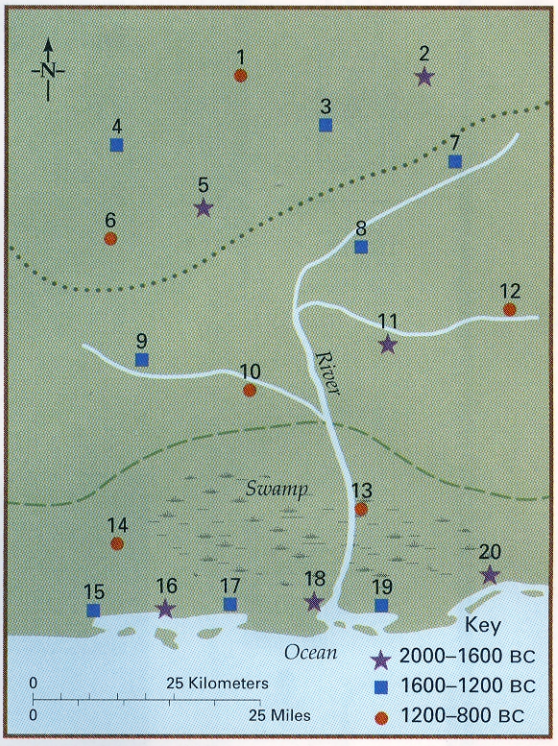


**Fig. 13.25** The study area. The symbols show the earliest date of settlement for each site.

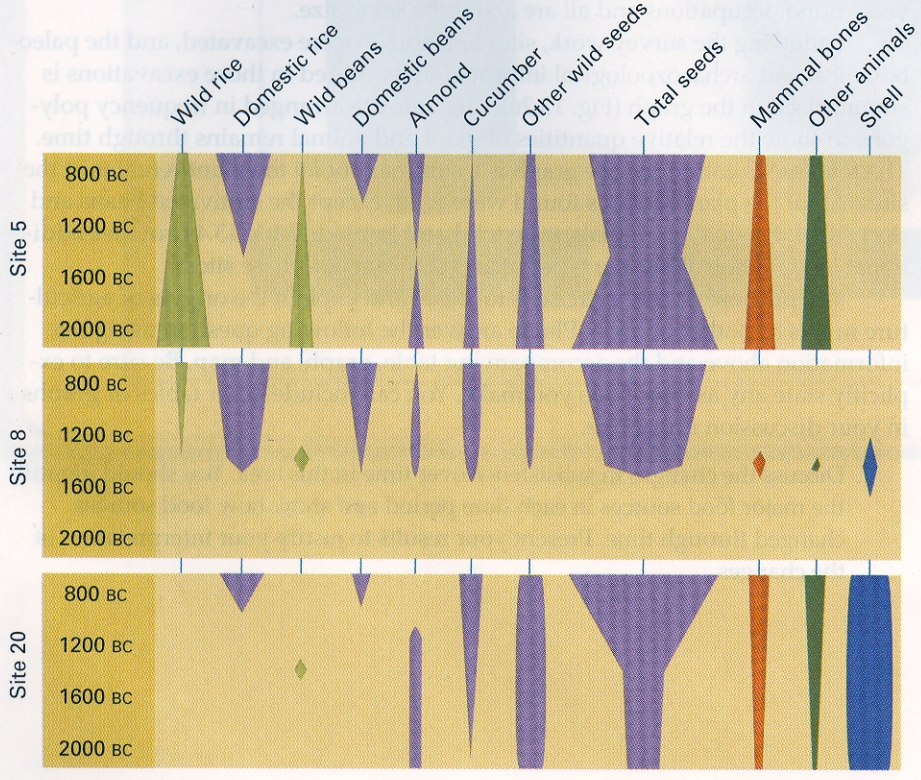


**Fig. 13.26** Percentage graphs of different species in use at different sites through time.

**TABLE 13.4** Artifacts at the excavated sites.

| Site | Period | Artifacts |
|---|---|---|
| 5 | 1200–800 BC | Flake and chopping tools, fragments of slate, much pottery |
| | 1600–1200 BC | Flake and chopping tools, a few potsherds |
| | 2000–1600 BC | Flaked stone tools, small chopping tools, charred bamboo projectile points |
| 8 | 1200–800 BC | Flake and chopping tools, much pottery |
| | 1600–1200 BC | A few potsherds, a slate knife, flake and chopping tools |
| 20 | 1200–800 BC | Flake and chopping tools, pottery, grooved pebbles, fishhooks, shell pendants |
| | 1600–1200 BC | Flake and chopping tools, shell fishhooks |
| | 2000–1600 BC | Flaked stone tools, small chopping tools, grooved pebbles, fishhooks |

sites and using radiocarbon dating, it was possible to assign the sites to various chronological stages. Several sites (indicated by stars) have been occupied continuously from 2000 to 1600 BC. Intermediate period sites (indicated by squares) have been occupied since 1600–1200 BC. Other sites (indicated by circles) have been occupied from 1200 to 800 BC. All of the sites seem to have been sedentary, year-round occupations and all are about the same size.

Following the survey work, sites 5, 8, and 20 were excavated, and the paleobotanical and archaeozoological information recovered in those excavations is summarized in the graph (Fig. 13.26). The data are arranged in frequency polygons to show the relative quantities of plant and animal remains through time. The total seeds column in the graph is a summary of all the plant remains at the sites. All of the plant remains found were wild, except the cultivated beans and rice. All of the small mammals were wild and hunted. Table 13.4 provides additional information about the types of artifacts found at these sites.

The purpose of this exercise is to locate and explain the origins of agriculture in this hypothetical area. Please answer the following question using the information above and the accompanying table, graph, and map. Be sure to explicitly state any assumptions you make. You can include other tables or graphs in your discussion if you like.

1. Discuss the changes in subsistence over time in this area. You should identify the major food sources in each time period and show how food sources changed through time. Present your results to justify your interpretation of the changes.