Preserved remains of manioc (Manihot) from 6 archaeological sites in the Casma Valley of Peru are illustrated and described. The combined collections from these sites total 197 pieces of root, 32 bark fragments, 22 pieces of stem, 4 capsules, and 2 leaf twigs. Based on radiocarbon assays, the specimens range in age from 1800 B.C. to A.D. 1532. This collection of sweet manioc is unique for its age, number, and wealth of different plant parts. A theory on the place of origin and time of domestication of these ancient cultivars is given in the conclusions of this paper.

Manioc (Manihot esculenta Crantz, Euphorbiaceae) is an important plant domesticate of the New World. It is grown to a limited extent for its leaves, which can be boiled and used as a green vegetable, but its chief use lies in its starchy, tuberous roots. These frequently serve as a major food and carbohydrate source for people living in the lowland tropics (Schery, 1947, 1972; Rogers and Milner, 1963; Purseglove, 1974).

Both sweet and bitter cultivars of manioc are known. The bitter types frequently contain sufficiently high concentrations of cyanogenic glycosides to be poisonous. However, the HCN content of these can be reduced to safe levels through the application of either traditional or modern processing techniques (Wurzburg, 1952; Lancaster et al., 1982).

In developing societies, this task of the removal of the poisonous juices of bitter manioc is accomplished with the aid of handmade implements. Grinding boards, sieves, presses, and clay griddles are some of the tools necessary for the manufacture of tapioca and cassava bread (DeBoer, 1975). The juice itself can be further refined and processed to yield a pleasant tasting sauce, a type of beer and ethanol (Cock, 1982). Preparation of the sweet cultivars of manioc, on the other hand, requires nothing more complicated than baking, frying or boiling the roots, as in the manner of the common potato (Solanum tuberosum L.).

Modern-day cultivation of M. esculenta in the New World extends over a wide area of the lowland tropics. Both bitter and sweet cultivars of this species are grown from Mexico and the West Indies to southern Brazil (Renvoize, 1972). In many areas, both types are found growing side by side in the same field, or apart but in neighboring fields. However, in 2 areas of South America, the eastern flanks of the Andes and the arid coast of Peru, the species is represented by sweet cultivars only (Fig. 1).

Little of certainty is known with regard to either the botanical origin or the place of domestication of M. esculenta. This species is not known outside of cultivation (Rogers and Appan, 1973; Rogers and Fleming, 1973). Moreover, it
appears to be more or less related to about a dozen wild species of the genus *Manihot*, any one of which, according to Rogers (1963, 1965), could have been involved in its origin. And, as far as its original place of domestication, this has been variously proposed to have been in the dry scrub lands (*caatinga*) of northeastern Brazil (De Candolle, 1885; Vavilov, 1935; Cutler, 1954), the savannas of Colombia and Venezuela (Sauer, 1952; Willey, 1960), the rainforests of Amazonia (Yacovleff and Herrera, 1934), and the warm, moist lowlands of Mexico and Central America (Rogers, 1963, 1965; Bronson, 1966).

The object of the present study is to review the archaeological evidence for manioc cultivation in Peru. In this connection, a series of well-preserved specimens of *M. esculenta* from the Casma Valley of Peru will be illustrated and described for the first time. These specimens are of botanical interest in that they include the only known archaeological samples of the capsules, stems, twigs, and bark of this species, as well as the largest number of root samples taken from any one given locality. Moreover, as our collections date from the Initial Period (1800–900 B.C.), they are of importance to the overall question of the past distribution