

and other world populations. Usually, the compared samples are of late Holocene or modern age. Examples of this approach are the works of Turner (1971, 1979, 1983a,b, 1985a,b, 1986a,b, 1987, 1989), who compared relatively recent world populations on the basis of discrete characters of dentition, Brace and colleagues (Brace and Nagai 1982; Brace et al. 1984; Brace and Hunt 1990), who compared Asian populations on the basis of linear dimensions of the face, and Ossenberrg (1969, 1974, 1976, 1977, 1986), who compared predominantly Asian populations on the basis of discrete traits of the skeleton. In general, these researchers compared populations without consideration of the relative antiquity of the samples. Two presumptions underlie this approach. One is that little biological change has occurred since North American Indians first entered the New World. The second presumption is that gene flow has not affected the structural differences observed between recent populations; thus the structural differences accurately reflect how long the populations have been separated from one another. Turner (1983a) and Turner and Bird (1981) have attempted to include older samples to provide some temporal perspective, but their analyses have been restricted to teeth and need to be substantiated by analyses of other structural features.

Comparison of recent and relatively recent American Indians to other world populations has clearly documented that American Indians are most structurally similar to Asian populations, particularly northern Asians (Howells 1973; Rogers 1963; Turner 1971, 1979, 1985a, 1986a,b, 1989; Gilbert and Gill 1990). It is also commonly proposed that the range of structural variation within and between various American Indian populations is modest, considering the vast geographic space over which the populations are distributed. This view is usually substantiated by reference to superficial features of the body, such as hair color and form, skin color, and presence of epicanthic fold [e.g., Stewart and Newman (1951) and Stewart (1973)], rather than to osteological and dental features that to some scholars indicate a more variable American Indian population (Hrdlička 1937; Stewart and Newman 1951; Comas 1960; Sciulli 1990).

Given these perceptions, physical anthropologists consistently conclude that modern American Indians evolved from one or more anatomically modern human populations from northern Asia and that they have been separated from this ancestral population for a relatively short time. [For a review of older multiracial models, see Comas (1960).] Our purpose here is to determine whether the craniofacial features of the earliest human remains from North America resemble more recent North American and Asian populations and whether there are any features in these oldest remains that suggest that the founding populations differed in any respect from more recent American Indians and northern Asians.

Archeologically, two competing theories have been proposed for the peopling of the New World. The first and more commonly held theory is that the first colonizers, who became the makers of Clovis projectile points, entered Beringia sometime about 14,500 years B.P. and appeared south of the Canadian ice sheets about 11,500 years B.P. [e.g., Greenberg et al. (1986). Haynes (1969, 1982), and Martin (1967, 1973, 1984)]. The alternative theory is that the first colonizers arrived south of the ice sheets some time before the Clovis peoples; these groups carried with them a pebble tool tradition similar to Lower Paleolithic assemblages of Asia, which are difficult to recognize in the archeological record [e.g., Carter (1978). Gruhn (1986, 1987, 1988), and Simpson et al. (1986)]. Unlike the first theory, there is minimal consensus among the adherents of the pre-Clovis viewpoint regarding the timing of the first colonization. Some researchers have suggested a colonization of the Americas as early as 80,000 years B.P. (Carter 1978) or earlier (Simpson 1978; Simpson et al. 1986). Others envision the first colonizers following a coastal route, slipping southward along the Pacific coast by 35,000 years B.P. or possibly earlier (Fladmark 1978, 1983; Gruhn 1988). Still others envision a terminal Pleistocene colonization, but one that predates Clovis [e.g., Adovasio et al. (1983) and Dillehay (1986)].

In this analysis we evaluate the known Paleo-Indian sample against three models for the peopling of the New World that encompass both the Clovis and pre-Clovis theories: (1) an Early Paleo-Indian Period entry (usually identified as before 28,000 years B.P.), (2) a Middle Paleo-Indian Period entry (between 11,500 and 28,000 years B.P.), and (3) a Late Paleo-Indian Period entry, the time that the first fluted point lithic assemblage appears in the archeological record (c. 11,500 years B.P.). This tripartite division of the times of possible entry into the New World fits the traditional archeologist's way of examining the time of first colonization (Haynes 1969), but the actual times associated with each period are rather arbitrary. Haynes (1969), the first to use this division, stated that it was one of convenience, with the boundaries selected to correspond with time-stratigraphic subdivisions of the Wisconsinan stage of the Pleistocene. Subsequent researchers have followed Haynes's lead [e.g., Fagan (1989, 1991) and Waters (1985)].

Although an examination of the earliest dated human remains from the Americas is not going to immediately resolve the issues of when the first colonization occurred and how many distinct colonizing events there were, such an examination may provide corroborative evidence of one or another of the models and more appropriately provide a clearer perspective of the physical features of the earlier populations. For this review the observations are restricted to North American remains because these are the best known and reported—the ones whose antiquity is bet-