

Ticuna Indians in the Upper Amazon region of Brazil. As would have been predicted by Robert Williams's work, all three groups appear to be descended from the same ancestral (Paleo-Indian) population.

- F** There are two other kinds of research that have thrown some light on the origins of the Native American population; they involve the study of teeth and of languages. The biological anthropologist Christy Turner is an expert in the analysis of changing physical characteristics in human teeth. He argues that tooth crowns and roots⁵ have a high genetic component, minimally affected by environmental and other factors. Studies carried out by Turner of many thousands of New and Old World specimens, both ancient and modern, suggest that the majority of prehistoric Americans are linked to Northern Asian populations by crown and root traits such as incisor⁶ shoveling (a scooping out on one or both surfaces of the tooth), single-rooted upper first premolars⁶ and triple-rooted lower first molars⁶.

According to Turner, this ties in with the idea of a single Paleo-Indian migration out of North Asia, which he sets at before 14,000 years ago by calibrating rates of dental micro-evolution. Tooth analyses also suggest that there were two later migrations of Na-Denes and Eskimo-Aleut.

- G** The linguist Joseph Greenberg has, since the 1950s, argued that all Native American languages belong to a single 'Amerind' family, except for Na-Dene and Eskimo-Aleut – a view that gives credence to the idea of three main migrations. Greenberg is in a minority among fellow linguists, most of whom favour the notion of a great many waves of migration to account for the more than 1,000 languages spoken at one time by American Indians. But there is no doubt that the new genetic and dental evidence provides strong backing for Greenberg's view. Dates given for the migrations should nevertheless be treated with caution, except where supported by hard archaeological evidence.

⁵ crown/root: parts of the tooth

⁶ incisor/premolar/molar: kinds of teeth