Archaeological excavations at High Rolls Cave, sponsored by the New Mexico Department of Transportation and conducted by the Museum of New Mexico Office of Archaeological Studies, exposed deeply stratified deposits, diagnostic artifacts, floors, and associated features. Material remains include bone, lithic, and fiber artifacts (cordage, sandals, blanket and basket fragments, snares, knots). There were also shell beads from the Pacific coast and the Gulf of Mexico. Faunal remains include deer, antelope, bighorn sheep, large and small mammals, a few turkey bones, and a variety of feathers. Lithic artifacts include stone tools and debitage. Diagnostic projectile points include San Pedro, Hueco, and Shumla types, and a variety of Archaic dart points from other traditions. Eighty-seven radiocarbon dates were obtained, ranging between 1510 B.C. and A.D. 250, with an average standard deviation of ± 58.4 years. The botanical remains include cultivated and stored amaranth (indirectly and directly dated at 1040 B.C. ± 40), tobacco (Nicotiana rustica indirectly and directly dated at 1040 B.C. ± 40), corn (indirectly dated at between 1310 B.C. ± 40 and 940 B.C. ± 40), acorns, piñon nuts, giant dropseed grass, sunflower, yucca, agave, mesquite, and sotol. The artifact assemblage also includes a feather bundle, urinary calculi, and tobacco leaves rolled into cigarettes. With the discovery of early maize, High Rolls Cave joins the ranks of other early corn sites in the Southwest. Radiocarbon data for the cultivated tobacco and amaranth shows that they predate by several centuries similar discoveries.