more than the primitive ones, have numerous vocations to be filled. Natural selection has made all healthy human beings trainable for the performance of diverse duties. This is, then, a biological adaptation which makes people multiform, not uniform as is sometimes supposed. Educability, the ability to be trained, is consistently fostered in man by natural selection. And yet, the carriers of certain specialized genetic equipments, such as musicians or poets, may excel in the performance of some specialized functions.

Natural selection is active in all human societies, including the most advanced ones (*15*). It must be understood that there is nothing esoteric about the "naturalness" of natural selection. All that "selection" means is that the carriers of different genetic equipments contribute unequally to the gene pool of the succeeding generations. If the relative contributions are decided by human choice, the selection is artificial. If not, it is natural. Natural selection usually maintains or enhances the Darwinian "fitness" or "adaptedness." But "the fittest" is nothing more spectacular than the parent or grandparent of the greatest number of surviving descendants.

It is erroneous to equate Darwinian fitness with excellence in human estimation. Reproductive success may favor genetic equipments which we may hold to be undesirable on other grounds. Selection does not even guarantee that the species will endure; most biological species of the past have become extinct, without issue, and yet their evolution was controlled by natural selection. This is because selection promotes what is immediately useful, even if the change may be fatal in the long run.

The biological evolution of our species continues to be at work. Perhaps no other problem of science is more challenging than the understanding of the biological and cultural evolutions of mankind in their interactions. As pointed out above, evolution in general has no program, and the evolution of man is no exception. No biological law can be relied upon to insure that our species will continue to prosper, or indeed that it will continue to exist. However, man is the sole product of evolution who knows that he has evolved and who has continued to evolve. It is up to man to supply the program for his evolutionary developments which nature has failed to provide. He has gained some knowledge which is a basis of hope that the problem is not impossible of solution.

This is an inspiring task but also a crushing responsibility. Albert Schweitzer once wrote that "our age has discovered how to divorce knowledge from thought, with the result that we have, indeed, a science which is free, but hardly any science left which reflects" (*16*). I hope that these angry words do not accurately describe the situation. We need and we have at least some science which is free and which reflects. It is our primary responsibility as scientists to see to it that such science prospers and bears fruit. Moreover, such science ought not to be a monopoly of some kind of technological elite. People at large, and particularly men of action who make the decisions which control so much in our lives, need not be as woefully ignorant of even the simplest principles of science as they are. At least some of the ideas which guide our work as scientists are not beyond the understanding of people of average intelligence who are not scientists professionally. The idea of evolution is one of them. As expounded by Darwin, it is one hundred years old, but we have barely begun to understand its full consequences (*17*).

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University of Michigan Radiocarbon Dates II

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A list of 109 radiocarbon dates obtained since the time of the last report (*1*) is presented in this paper (*2*). The technical method by which the dates were measured has not been changed in any essential way. Two complete counter systems are in continuous operation. The counters are Geiger counters, filled with carbon dioxide and carbon disulfide at approximately atmospheric pressure. At present the background counting rate is 6.5 counts per minute, and eight additional counts per minute are obtained from carbon of zero age. The duration of the count on each sample is at least 48 hours, and in many cases it is 72 hours. Approximately every fourth sample placed in each counter is of known C^{14} content: CO_2 derived either from 200-year-old wood (by ring count) or from petroleum. There is no detectable secular change in the results of the calibration runs.

The calibration figures used in calculating dates are "moving averages" based upon the last several calibration runs. For this reason, in the calculation of the standard deviation, the calibration figures are treated as if they contained four times as many counts as would be obtained in a 48-hour run. Therefore the major part of the contribution to the standard deviation comes from the run

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on the unknown sample. The standard deviation calculated purely from the numbers of counts on the unknown and on the calibration samples forms a useful minimum figure. The standard deviations for various ages, calculated on the assumption that the run on the unknown is 48 hours and that those on the calibration samples are four times as long, are as follows: for samples of zero age, ± 81 years; for samples of age 5600 years, ± 131 years; for samples of age 11,200 years, ± 235 years; for samples of age 16,800 years, ± 453 years; for samples of age 22,400 years, ± 890 years.

In the date list given in Table 1, the standard deviations given will be found to be greater than those given above, generally by about a factor of two. We know that there are sources of uncertainty in addition to that contributed by the counting statistics, for example, the chemical process, the condition of the original sample, variations in the operation of the counters, and so forth. In each case the excess in the standard deviation above that given in the table represents our best estimate about the additional uncertainties attendant on the measurement of the particular sample. In a few cases there were specific circumstances which could affect the reliability of the measurements; for example, a lack of sufficient material to fill the counter, or the presence of visible rootlets which were not completely removable. In such cases a notation is included with the description of the sample.

Opinions about the reliability, plausibility, or interpretation of dates are to be found in some of the descriptive paragraphs. These are to be attributed to the persons who submitted the samples for dating.

Table 1. Radiocarbon dates.

Description	Sample No.	Age (yr)
I. *Upper Mississippi Valley*		
Sorg Site (21DK1), Minn. Charcoal from a limestone hearth found 19 in. below the surface in excavation unit 1. Cultural materials in the zone from 16 to 36 in. below the surface are in the Sorg focus, unnamed aspect. This is a Middle Woodland period focus with pottery in the Hopewellian tradition. Site excavated by the St. Paul Science Museum; sample submitted by Louis H. Powell.	M-447	800 ± 200
Kolterman Mound 18, Dodge County, Wis. Effigy Mound culture. Charcoal from cremation in heart region of otter effigy mound. Associations: *Madison Cord* impressed type pottery vessel and two chipped-stone implements. Submitted by Warren L. Wittry, State Historical Society of Wisconsin (*3*).	M-398	1180 ± 250
Modoc Rock Shelter, Randolph County, Ill. This site has previously been dated, and human occupation ranging back to 7922 B.C. ± 392 years was indicated (*4*). Samples collected in 1953. They should yield dates later in time and refer to cultural materials belonging to the late Archaic occupations of the site. Collected by Melvin L. Fowler and submitted by Thorne Deuel, Illinois State Museum.		
Charcoal from 7½-ft level in square 35:0. Eight feet above the top samples collected by Matson (C-899 and C-900) which were dated at 5955 ± 235 and 5268 ± 230 yr (*5*).	M-483	4720 ± 300
Charcoal from 9½ to 10½ ft in square 35R5. This sample is 5½ ft above Matson's highest samples (C-899 and C-900) which were dated at 5955 ± 235 and 5268 ± 230 yr (*5*).	M-484	5280 ± 300
Clayton County, Iowa. Samples excavated from Sny-Magill Mound group (*6*), lots 1 and 2, sec. 23, T. 94 N., R. 3 W. Submitted by Paul Beaubien, National Park Service.		
Charcoal from east portion of Mound No. 43. This mound, conical in shape, approximately 78 ft in diameter and 6 ft in height, contained bundle burials, copper beads, "Red Ocher" blades, and several layers of red ocher. The charcoal was collected from a partly consumed pole not in close association with the principal inclusions, but it must have been in place when the mound was formed. Sherds of a later-day pottery type, related to *Madison Cord Impressed,* found in the mound fill closer to the surface than the charcoal and away from the central portion of the mound, apparently were introduced after the original period of mound construction.	M-305	2430 ± 250
Charcoal from Mound No. 24. The small sample for analysis was assembled by collecting very small pieces just below the surface of the mound. The charcoal was not associated with the mound's intentional inclusions. This recent date is not acceptable to determine the age of the mound's primary construction.	M-306	430 ± 200
Charcoal from Mound 27, a bird effigy, found as scattered finds in mound fill from 6 to 18 in. below the surface; could be recent. Collected and submitted by Paul L. Beaubien.	M-307	< 200
Charcoal from the west portion of Mound 43 which produced sample M-305 as given above.	M-308	2500 ± 250
Steuben Mound group, Marshall County, Ill. Collected and submitted by G. D. Morse and Dan F. Morse of Peoria, Ill.		
Ma°202. Charcoal from burned log associated with extended adult male burial No. 43 on the east side of pit D on the floor of the mound. Should date late Hopewell occupation.	M-378	1660 ± 250
Ma°202. Charred bone of burial No. 43.	M-380	1650 ± 250
Cromwell, Noble County, Ind. Tusk fragments of the Richmond mastodon. Submitted by Everett Burmaster, Irving, N.Y., and Irving Reiman, University of Michigan. Compare with sample M-138, which gave a date of 5300 ± 400 on wood said to have been associated with the tusk fragments (*1*, p. 667).	M-139	12,630 ± 1000
Dreckshage site, west of St. Peters, St. Charles County, Mo. Charred house beam overlying late Mississippi Trappist house floor. Collected by Eugene Kozlovich and submitted by J. B. Griffin.	M-323	530 ± 200
Pike County, Ill. Irving Site (Pk 2). Charcoal from square B. Should date late Hopewell or the Irving Late Woodland level. Collected and submitted by J. C. McGregor, University of Illinois.	M-489	1180 ± 250
Platte County, Missouri. Curtiss Mound of Keller-Brenner. Excavated and submitted by J. M. Shippee, University of Missouri.		

Description	Sample No.	Age (yr)
Charcoal from fire-burned area in lower levels of mound. Original number 2f.	M-399	1500 ± 250
Charcoal from deep in the mound and about 2 ft from the edge of the fire-burned area. Original number 3.	M-400	1650 ± 250
Mankato, Blue Earth County, Minn. Wood from the middle till which lies stratigraphically below the youngest till in the Mankato vicinity. The middle till is probably the blue or black pre-Wisconsin till mentioned by Leverett and the "Kansan" drift mentioned in a footnote of the Glacial Map of North America (*7*). Similar samples (W-300 and W-301) submitted to the U.S. Geological Survey laboratory have been dated at more than 35,000 years ago (*8*). Collected and submitted by James H. Zumberge, University of Michigan.	M-412	> 25,000
Raaf Shell Mound (12 Sp 1), Spencer County, Ind. Fresh-water mollusk shells from Archaic shell heap on the north bank of the Ohio River. Collected and submitted by Glenn A. Black, Indiana Historical Society, Newburgh.		
9 ft below surface.	M-196	6600 ± 400
8 ft below surface.	M-197	6150 ± 400
7 ft below surface.	M-198	5940 ± 400
6 ft below surface.	M-199	6170 ± 400
5 ft below surface.	M-200	6000 ± 350
4 ft below surface.	M-201	6250 ± 350
II. *Great Lakes*		
Lenawee County, Mich. American mastodon (*Mammut americanus*) palate (No. 29276 University of Michigan Museum of Paleontology) and tusks from beneath 2 ft 4 in. of muck, resting on a beaver-cut limb of aspen and blue-gray clay containing mollusks in sec. 5, T. 8 S., R. 2 E. Discovered during drainage of a bog area on the J. M. Bruggeman farm. Submitted by Claude Hibbard, University of Michigan.		
Inside portion of mastodon tusk.	M-280	7070 ± 240
Outside portion of mastodon tusk.	M-281	7820 ± 450
Jackson County, Mich. Wood from marl deposit 4 ft below surface and associated with Jefferson mammoth. Site is 11.5 mi southeast of Eaton Rapids. Submitted by R. H. Baker, Michigan State University.	M-507	12,200 ± 700
Peat from top of 30-in. layer of peat near South Haven. Dates the rise in water level from the Chippewa stage to the Nipissing stage (Lake Michigan basin) (Zumberge and Potzger, *9*).	M-291	4000 ± 300 4000 ± 350
Sanilac County, Mich. Submitted by J. H. Zumberge, University of Michigan.		
Hemlock log (10 in. in diam.), south side of Mill Creek, 3 mi south of Lexington, on the shore of Lake Huron. Log is imbedded in 1-ft gravel lens, underlain by 3 ft of laminated clay resting on hard gray till. The gravel layer lies below a few feet of bedded medium-to-fine sand, probably of Nipissing age. The contact of gravel on the underlying clay is uncomformable. The gravel probably represents the deposit of stream flowing into a post-Algonquin low-water stage in the Lake Huron basin prior to the Stanley level.	M-299	7270 ± 450
Wood from the north side of the mouth of Mill Creek on the shore of Lake Huron, 3 mi south of Lexington. This specimen comes from what appears to be the same gravel bed as sample M-299, although the stratigraphic relationships are less clear. The date is not compatible with that of M-299; hence some error is involved, probably in the field interpretation.	M-300	12,336 ± 700
III. *Northeastern United States*		
Snell site, St. Johnsville, Montgomery County, N.Y. Excavated in 1949 by a joint expedition of New York State Museum and Rochester Museum of Arts and Sciences. The site is one of early Owasco culture in eastern New York. Collected and submitted by W. A. Ritchie.		
Charcoal from pit 13. Date shows considerable variance with those of M-28 (*1*, p. 667) and M-492 (see below), yet all pits definitely pertained to the single period of occupation at the site. In comparison with other dated early Owasco sites in eastern New York (M-176, M-177) (*1*, p. 668), the plus value of this sample (A.D. 985) would appear to be the most accurate of all dates obtained for this site.	M-178	1170 ± 200
Charcoal from pit 20. This date seems too recent. However, the plus value of this sample agrees very closely with the minus value of sample M-178, which would appear to be the most accurate of all dates obtained for this site (see M-178 above).	M-492	800 ± 200
Bannerman site, Dutchess County, N.Y. Charcoal from hearth at 45 in. from the surface at the base of an implement-bearing level. This sandy stratum, 2 to 3 ft thick, underlay two undisturbed sterile strata. No pit lines could be detected about the hearth. The cultural materials found throughout the occupied zone are indicative of the Laurentian phase of the middle Archaic and include the ground slate ulo. The sample would seem to date an early Laurentian component in the mid-Hudson valley. Collected by W. A. Ritchie and James Shafer, submitted by W. A. Ritchie.	M-287	4480 ± 300
Castle Creek site, Broome County, N.Y. Charcoal from a pit containing burned stones and potsherds of Castle Creek styles, from a section excavated by the Broome County Historical Society. Late Owasco culture. This sample was sent as a check on sample M-179 (*1*, p. 668), with which it is in general agreement. These late dates tend to support the original interpretation of the site as showing Owasco-Iroquois temporal overlap and cultural interaction. Submitted by Foster Disinger, Binghamton, N.Y., through W. A. Ritchie.	M-493	760 ± 200
Orient #2 site, Suffolk County, N.Y. Charcoal from a fire kindled on the floor of a large burial pit of the Orient culture. This eastern Long Island culture, showing transitional features from late Archaic into early Woodland, is one of the northeastern cultures which participated in a complex, early mortuary ceremonialism. Collected by Roy Latham, Orient, N.Y., and submitted through W. A. Ritchie.	M-494	2900 ± 250
Stony Brook site, Suffolk County, N.Y. Charcoal from sec. W. 5 N. 15, from a dry sand stratum, 22 to 26 in. deep in midden. Orient culture habitation site. Collected and submitted by W. A. Ritchie.	M-587	2900 ± 250

Description	Sample No.	Age (yr)
Charcoal from pit 6, covering portions of sections E. 45 N. 30, 35, and 40, and E. 40 N. 30, 35, and 40. Collected from the lower level of a 5-ft deep pit. Orient culture habitation site. Collected by James V. Wright, submitted by W. A. Ritchie.	M-588	2930 ± 250
Sugar Loaf Hill, Suffolk County, N.Y. Charcoal taken from a depth of 2 to 2½ ft, in direct association with grave goods, from a burial pit of the Orient culture. Collected and submitted by W. A. Ritchie.	M-586	3000 ± 300
Athol, Mass. Poplar log from a road cut through a bog ¾ mi west of Pleasant Street along new Massachusetts Route No. 2. The cut showed 6 ft 3 in. of humified and fibrous peat overlying 2 ft 11 in. of gyttja which in turn lay directly on unweathered stratified sand. The log was imbedded in gyttja 7 ft 8 in. below the bog surface and 1 ft 6 in. above the stratified sand. Pollen analysis of the profile by Margaret Bryan Davis showed the log to be associated with a zone in which spruce pollen percentages are low and deciduous tree and pine percentages are high. In the next overlying zone black spruce attains a maximum; in the underlying zone white or red spruce, or both, was dominant. (Equals sample W-361, dated at 10,800 ± 250 yr, *8*). Submitted by Margaret Bryan Davis, Harvard University.	M-413	10,700 ± 800
IV. *Southeastern United States*		
Chattahoochee River, Fla. Submitted by R. P. Bullen.		
Charcoal from Fort Walton zone at site J-5 in a natural levee of the river. Archeological considerations suggest that the site is middle Fort Walton period in time. The dates seem very satisfactory.	M-392	550 ± 200
Charcoal from fiber-tempered pottery zone at site J-5 in a natural levee of the river. The zone is 5½ ft below that from which sample M- 392 (above) was taken. Since the sherds included 3 St. Johns Incised, 15 St. Johns Plain, and 186 fiber-tempered, it is believed that the date represents the end of the Orange period in Florida. The date, while earlier than anticipated, is reasonable.	M-394	3150 ± 250
Charcoal from site Ja-63 located beside an old channel (?) in bottomlands of river; 862 out of 907 decorated sherds are Kolomoki Complicated Stamped. Balance include Blakely Complicated Stamped and a few Weeden Island types. The date, while early, is not as early as those of samples M-49 and M-50 from the Kolomoki site itself (*1*, p. 667). These dates suggest that the Kolomoki "culture" of southwestern Georgia started relatively early.	M-396	1600 ± 250
St. Johns River, Fla. Animal bones from layer V at the Bluffton shell midden site. The sample was taken from well below the base of a plain, fiber-tempered zone and hence must be late, preceramic, Archaic in date. Since the date is much later than that indicated for plain fiber-tempered in coastal Georgia and also later than that indicated for terminal fiber-tempered in northwest Florida (see sample M-394 above), it seems to be incorrect. Testing was difficult because of the very small amount of carbon remaining in these bones. Believe this date should be disregarded. Submitted by R. P. Bullen.	M-264	2700 ± 500
Clarksville site (44Mc14), Mecklenburg County, Va. John H. Kerr (formerly the Buggs Island) Reservoir. Charcoal sample from a late Middle Woodland hearth area bordering on the transitional Late Woodland horizon. Excavated by Carl F. Miller and submitted by Frank H. H. Roberts, Jr., director, River Basin Surveys, Bureau of American Ethnology.	M-397	850 ± 250
Poverty Point Site, La. Minute fragments of charcoal collected by flotation method from the large ash bed that lay beneath the conical mound "B." Sample dates Poverty Point cultural phase and probably H. N. Fisk's stage C_1 channel positions of the Mississippi River system. Other portions of this sample were submitted to other laboratories: Lamont 272, 2700 ± 100 yr; Humble 66, 3150 ± 120 yr; Schatzman A, 2685 ± 210 yr; Schatzman B, 2339 ± 200 (*10*). Submitted by James A. Ford. The sample contained root fragments.	M-403	2850 ± 250
Calvert County, Md. Charcoal from site 18 An 18. Excavation sample No. 6 from 36 to 42 in. below base line. Submitted by T. L. Ford, Archaeological Society of Maryland.	M-418	1630 ± 400 2030 ± 250
Russell Cave, Jackson County, Ala. (site 1 Ja 181). Collected by Carl F. Miller, Smithsonian Institution.		
Charcoal from a stratum 8.0 to 8.5 ft below the present surface of the cave floor. At this depth the charcoal appears in small pockets and is associated with lithic tools, flint chips, and animal bones. Should equate with Middle Archaic.	M-589	8240 ± 400
Charcoal from a stratum of unctuous clay which lay at a depth of 12 to 13 ft beneath the present surface of the cave floor. The Lamont Laboratory has dated a similar specimen at 8160 ± 300 yr (*11*). This marks the beginning of the Archaic and the end of the Paleo Indian; in other words, the transitional blending of the two cultures.	M-590	8560 ± 400
Charcoal from a hearth area 5.5 ft from present surface. At this depth we are below the pottery-bearing levels, which we term the end of the Archaic. Bones from various animals, bone tools, and stone artifacts occur quite plentifully in this zone of occupation.	M-591	6300 ± 350
V. *Western and southwestern United States*		
Grand Canyon, Ariz. Wood of a split-twig figurine from a dry cave in the Redwall formation on south face of Grand Canyon. The figurine was in a buried cache with others approximately 10 in. below the surface of the cave floor. On the basis of distributional evidence it had been estimated that the figurines were older than A.D. 600. Collected by Douglas W. Schwartz, University of Kentucky, in August 1955.	M-563	3530 ± 300
Sandoval County, N.M. Charcoal from a series of hearths whose lithic artifacts fit into a Cochise-like culture. The area of concentrated hearths was 1000 yd east		

Description	Sample No.	Age (yr)
and west. Submitted by F. C. Hibben, University of New Mexico. Information from F. C. Hibben and George A. Agogino, Syracuse University. Earlier reports on three similar hearths are M-248, M-250 and M-251 (*1*, p. 670).		
Charcoal from a stone-lined hearth 16 ft beneath the present surface. A basalt metate was found in the hearth. This locality is 150 yards south of the site of sample M-248 and in the same arroyo.	M-249	3330 ± 300
Charcoal taken from a peripheral surface hearth located ½ mi to the north and west of the concentrated site area. The hearth was 4 yd across but produced no cultural material.	M-252	2180 ± 250
Charcoal from a surface location in the concentrated site area. This hearth was more than 12 yd in diameter. It was on an eroded hillside within 125 yd of the site of sample M-250 and on the same slope. A large number of tear-drop blades was found at this location.	M-253	2600 ± 300
Charcoal from a deeply buried lens in same arroyo as M-248 and M-249. This hearth is 19 ft below the present surface. No artifacts were found in it.	M-254	2900 ± 250
Stewart Rock Shelter, Clark County, Nev. Rectangle 2-B, 3-C. Mixed wood species. Charcoal taken from fire hearths, as indicated by concentrated charcoal deposits associated with cultural material. Submitted by Dick Shutler, Jr., University of Arizona.		
Feature No. 1. Depth 54 in. Hearth 4 in. thick, 15 in. in diameter. Thermally fractured rock present in hearth.	M-377	3870 ± 250
Feature No. 2. Depth 78 in. Hearth 5 in. thick, 12 in. in diameter, resting on the original ground surface of the shelter.	M-376	4050 ± 300
Santa Fe County, N.M. Charcoal from a firehearth exposed at the base of a 20-ft alluvial terrace of Rio Tesuque. Associated human artifacts indicated occupation by preceramic Basket Makers estimated to date between 1500 and 2500 yr ago. The top few inches of terrace contain pottery dating around A.D. 1200. These dates make possible the computation of the accumulation rate of sediments comprising the 20-ft terrace in this locality. Submitted by Fred Wendorf, Museum of New Mexico, and J. P. Miller, Harvard University.	M-511	2230 ± 250
Snaketown site, Gila River Indian Reservation, Pinal County, Ariz. Cordage and textile found in a pottery vessel, carbonized during the burning of a house. Field number: 6G: House #8, in Vessel #44 (*12*). Collected by staff of Gila Pueblo about 1935. Considered to be of Sacaton phase of Sedentary period.	M-324	700 ± 250
Cave near Kingman, Mohave County, Ariz. Food cache of "mescal" from pottery vessel with lid hermetically sealed with lac. Collected by an amateur archeologist in 1938 and deposited in the Museum of Northern Arizona, catalogue number 1019/L. (*13*). The vessel is apparently of the ware known as Pyramid Gray and was found in the geographical region of the Cerbat Branch of the Pataya Root.	M-381	650 ± 200
San Carlos Indian Reservation, Point of Pines area. Ariz. W:10:112 (Arizona State Museum Survey). Submitted by Emil W. Haury.		
Scattered fragmented charcoal from bed D-1 at a depth of approximately 3 m under valley sediments; associated with Chiricahua stage cultural material.	M-461	2600 ± 250
Fragmented solid charcoal from matrix of pit 3, bed C-2, distributed between cremations. May be derived from crematory fires brought to this location with the ashes. Small sample; run may not be very accurate.	M-462	1140 ± 300
Charcoal highly fragmented, distributed through matrix of bed D-1; two field samples from a 3-m area combined (Univ. of Arizona Carbon-14 Age Determination Laboratory Nos. 21 and 22).	M-540	2400 ± 200
Fragmented charcoal of pine and oak from hearth in bed D-1 at a depth of 2.75 m under valley sediments; associated with Chiricahua stage cultural material. (Univ. of Arizona Carbon-14 Age Determination Laboratory No. 19).	M-541	2530 ± 250
Ten Sleep, Wyo. Charcoal sample from single occupation level of cave about 10 mi south of Ten Sleep. Associated with large complex of Late Middle period perishable and nonperishable artifacts, including atlatls, foreshafted atlatl darts, fire drills, basketry, hafted knives, scrapers, projectile points, and other items. This date probably reflects a period near the end of the Late Middle occupation and fits the previously projected chronology for this manifestation. Submitted by George Frison and William Mulloy, University of Wyoming.	M-433	1725 ± 200
James Allen site near Laramie, Wyo. Burned *Bison occidentalis* bone from abbatoir site on the north side of Boulder Ridge, 16 mi south of Laramie. Associated with a number of *Bison occidentalis* individuals, projectile points which have been variously called Browns Valley points, Oblique Yumas, and so forth, and a complex of stone tools including plano-convex scrapers, ovoid and piriform knives, choppers, retouched flakes, and other items. Represents one of the hitherto unfixed complexes of the Early period. Submitted by William Mulloy, University of Wyoming.	M-304	7900 ± 400
Falcon Reservoir, Starr County, Tex. Site 41-78B9-4. A composite sample of hundreds of minute pieces of charcoal was taken from the hard, brown, adobe matrix of the lowest occupation zone (zone I). This zone was 4 to 7 in. thick at a depth of 8 to 9 ft below the surface. It was primarily a workshop area. Associated deer bone fragments were partly mineralized. Projectile points are large, thinned base, elongate, triangular forms and all of rather uniform size and shape. The site is situated along a major arroyo some 300 yd from its confluence with the Rio Grande River. A date for this carbon should suggest a rate of deposition for this particular Rio Grande terrace as well as a time-span for the cultural materials. Artifacts are similar in zone I to those found in nearby surface sites. A cultural complex here appears to extend from the time of the zone I occupation to relatively recent times with but little change. Collected in March	M-129	4650 ± 300

Description	Sample No.	Age (yr)
1951 by Donald D. Hartle and submitted by Robert L. Stephenson, River Basin Surveys, Smithsonian Institution.		
Temecula, Calif. Carbon from a fireplace on the floor of Ramada 1, at a depth of 30 in. in a Luiseno site of the Shoshonean Culture. Located on a bench above the Temecula River, 1 mi south of Temecula. Submitted by B. E. McCown, San Diego, Calif.	M-245	< 250
Winnemucca caves, Pershing County, Nev. The two dates below are but a small part of the radiocarbon dating being done in the Winnemucca caves of Lake Lahontan. Other dates have been made by Lamont, and while the Michigan measurements do not duplicate any specimens measured by Lamont, they do supplement them. Submitted by Phil C. Orr, Western Speleological Institute, Santa Barbara, Calif.		
Crypt Cave. Twisted bird skin robe from Indian burial, Nevada State Museum No. P3a/127. This is a well preserved mummy, with perishable buckskin and basketry, from a cave on the upper dendritic level of ancient Lake Lahontan. A coiled basket superimposed over the grave was dated by Lamont at 2400 yr (L-289DD) (*14*), under circumstances which suggest a reinterment of the older basket. No conflict of radiocarbon dates is seen. Submitted by Phil C. Orr.	M-436	1510 ± 200
Chimney Cave. Cedar bark matting from burial, Nevada State Museum No. P3b/198. An excellent female mummy flexed, face on side, wrapped in cedar bark robe and animal skins, untanned hair removed. Pubic apron of untanned fringed skin with cordage about the waist. Burial of this body disturbed an older one (No. 3) and was later covered with cactus brought in by rats, representing a second cactus level for the Winnemucca caves. The earliest cactus level is associated with extinct horse bones from nearby Crypt Cave.	M-437	2040 ± 250
Lower Columbia River, Ore. A large midden accumulation near The Dalles. Test trenching has revealed stratigraphy which analysis has shown to have cultural significance. The lower stratum (A) has been disturbed by, presumably, fluvial or near-fluvial action and by pit house building. It contains the remnants of split cedar structures and a culture which appears to have coastal affinities. Stratum B, overlying A, contains a heavy accumulation of artifacts which are Plateau in their cultural character. Projectile points and stone carvings are typical of the latest periods. Collected by Warren Caldwell; submitted by Douglas Osborne, University of Washington.		
Split cedar plank, from a structure intrusive into the oldest levels of the mound (in test trench 3—#44), stratum A.	M-410	1090 ± 200
Charcoal sample from test trench 2 (#32). From same level as the preceding, but not from one of the older, undisturbed pockets of original midden (which have not yielded a datable sample).	M-409	1070 ± 200
Wood post, charred, from test trench 3 (#40), stratum B.	M-407	560 ± 200
Charcoal from test trench 2 (#15), same stratum as preceding.	M-406	900 ± 200

Description	Sample No.	Age (yr)
VI. *Mexico and Guatemala*		
Portales Cave, southwest Tamaulipas, Mexico. Collected by D. Kelley and submitted by R. S. MacNeish, National Museum of Canada.		
Vegetable materials from level 3, square S10 of cave Tm c 248. These were associated with Ocampo culture artifacts as well as gourds, squash (pepo), common beans, and some sort of small lima-like bean. They were definitely above level 7 from an adjacent square dated as 8200 ± 450 yr (M-498) and under materials in a nearby pit from above level 3 dated as 3945 ± 334 yr by the University of Chicago. Ocampo remains from excavations in the cave (Tm c 247) nearby have been dated as 5230 ± 350 yr (M-504) and 4580 ± 350 yr (M-503). Comparable material from the Sierra de Tamaulipas (M-487) is 4445 yr old, and Falcon Dam of Texas (M-129) is 4665 yr old. This is only slightly older than expected.	M-497	5650 ± 350
Vegetable materials from level 7, square S10E10 of Tm c 248. These were associated with Infiernillo artifacts as well as gourds, squash, and some sort of bean (maybe wild). These were under M-497. These are of the same culture as that of M-500 from a nearby cave dated as 8540 ± 450. This is older than expected but in light of its cross-dating and agreement with stratigraphy, as well as the fact that there was nothing underneath it that could contaminate it, one has to accept it as valid.	M-498	8200 ± 450
Diablo Cave, Sierra de Tamaulipas, Mexico. This dates carbon from floor X, layer 5 of square S10E5 of Tm c 81. Associated with floor X were stone tools of the Lerma phase. In cave Tm c 174 Lerma remains were below a sterile layer below vegetable materials dated (M-487) as 4445 yr ago and typologically it seems older than Infiernillo phase in southwest Tamaulipas dated as 8200 and 8540 yr. The date is acceptable. Collected and submitted by R. S. MacNeish.	M-499	9270 ± 500
Ojo de Aqua Cave, southwest Tamaulipas, Mexico. This carbon from the lowest hearth area of square S30E5 in level 11 at a depth of 5.3 ft below the surface of cave Tm c 274. The cultural materials are Infiernillo phase (like M-498) though they are directly under Flacco remains dated as 3945 yr old by the University of Chicago. It is also under Palmillas remains (M-506 and M-568) which underlie San Lorenzo vegetable stuffs (M-501). The date is older than expected but, in light of other dates and stratigraphy, is acceptable. Collected by D. Kelley and submitted by R. S. MacNeish.	M-500	8540 ± 450
Vegetable material from level 1, 0.9 ft below the surface in square N15W5 of cave Tm c 274 and from a layer overlying carbon of M-500. The artifacts are of the latest prehistoric phase of the area, called the San Lorenzo phase, and more or less related to the mixed specimen from the Sierra de Tamaulipas (C-207) dated as 651 years old (*5*, p. 129). It was as expected. Collected and submitted by R. S. MacNeish.	M-501	520 ± 200

Description	Sample No.	Age (yr)
Romero's Cave, southwest Tamaulipas, Mexico. Vegetable materials from level 11, occupation 2, square S30E5 of Tm c 247. The associated artifacts were of the Ocampo phase (see M-497 and M-503), and the sample was under M-503, M-504, M-505, M-506, M-567, and M-568 from the same profile (E5). The date is acceptable in terms of the stratigraphy and other dates for this culture. Collected by P. Grant and R. S. MacNeish and submitted by R. S. MacNeish.	M-502	5230 ± 350
Vegetable materials from level 8, occupation 5, of square S25E5 of Tm c 247. Associated with Ocampo tools. In terms of M-497 and M-504, the date is acceptable. Collected by Peter Grant and R. S. MacNeish and submitted by R. S. MacNeish.	M-503	4580 ± 350
Charcoal and vegetable material (the two samples were combined) from level 6, occupation 7 of square S20E5 of Tm c 247, associated with Guerra phase materials, including Bat Cave type corn. In terms of the stratigraphy, the date is too early. Collected and submitted by R. S. MacNeish. Contained much sand and dirt.	M-504, M-567	4730 ± 300
Vegetable material from top of level 4, occupation 9 or 10 of square S20E5 of Tm c 247. Level 4 was a thick layer in the back of the cave, often divided by a lens of ash into level 4A and 4B. Level 4A contained sherds of the Mesa de Guaje phase and many agricultural products, while Guerra in 4B was preceramic. When there was no middle ash lens, sherds appeared in its upper portion but not in its lower; however, the two parts were not readily distinguishable. These specimens came from the upper portion and should have been deposited by the Mesa de Guaje phase. However, the date is earlier than expected, and I expect that it includes quite a bit of Guerra refuse. This in reality probably represents a maximum date for Mesa de Guaje and a minimum for Guerra. In terms of its stratigraphic position between M-506 and M-503 it seems to fit very nicely. Collected and submitted by R. S. MacNeish.	M-505	3650 ± 250 3440 ± 250
Vegetable materials from level 3, occupation 11, of square S20E5 of Tm c 247. It is associated with Palmillas remains, the cultural and agricultural apogee of the area. It seems to be related to other late Classic remains in Mexico. In terms of the stratigraphy, the date is acceptable but comparatively it seems slightly earlier than expected. Collected and submitted by R. S. MacNeish.	M-568	1720 ± 200
La Venta, Tabasco, Mexico. Samples collected during the 1955 National Geographic Society-Smithsonian Institution-University of California excavations from the rectangular "Ceremonial Court" (Complex A), which lies just north of the Great Pyramid (*15*). Complex A was found to have four major construction (*not* cultural) phases, which were assigned the numerals I (earliest) to IV (latest). The dates obtained from these samples are interpreted as indicating that complex A was constructed and used during the period from approximately 2755 to 2355 yr ago (about 800 B.C. to 400 B.C.), justifying suspicions of the early occurrence of the La Venta–Middle Tres Zapotes period of Olmec culture. The 1955 excavations at La Venta bear out fully Drucker's equation, as based upon pottery analysis of the La Venta site, with Middle Tres Zapotes. Submitted by Robert F. Heizer, University of California.		
Charcoal from phase I floors at northeast corner of southwest platform.	M-535	3110 ± 300
Charcoal from phase I stage of northeast platform.	M-529	2860 ± 300
Charcoal from bottom of phase II pit 68 in. below surface of northwest platform.	M-530	2760 ± 300
Charcoal from artificial fill underlying and contemporaneous with phase I floors in northwest platform.	M-534	2670 ± 300
Charcoal from phase I platform in mound A-2.	M-532	2650 ± 300
Charcoal from leveled base sands underlying and contemporaneous with phase I platform in mound A-2.	M-531	2560 ± 300
Charcoal from lower margin of post-complex A occupation windblown sands lying on phase IV surface west of northeast entryway.	M-528	2400 ± 250
Charcoal from burned area on phase IV surface west of limestone slab paving near northeast entryway. Interpreted as evidence of early post-complex A activity by people other than the builders of the La Venta site.	M-533	2130 ± 300
Charcoal from the bottom of a trench cut into north apron of the Great Pyramid. Should give the date of the early (perhaps the initial) construction of the pyramid.	M-536	2530 ± 300
Chimaltenango Department, Guatemala. Natural charcoal from within and under volcanic ash deposit at the headwaters of Rio Madre Vieja, about 12 km west of Patzun. Submitted by L. C. Stuart, University of Michigan.	M-292	24,000 ± 3000
La Quemada, near Zacatecas, Mexico. Submitted by James B. Griffin, University of Michigan.		
Construction timber, probably a roof beam from unexcavated fill on north side of a room in the east side of the Acropolis.	M-430	890 ± 200
Charcoal selected from a concentration of charred wood against a smoke-stained wall in a room of the Acropolis excavation.	M-431	780 ± 200
Construction timber from upper western section of occupied area.	M-432	1210 ± 200
Frightful Cave (CM68) Coahuila, Mexico. The site is 15 mi southeast of Cuatro Cienegas. Collected and submitted by W. W. Taylor, Jr., Mexico City.		
Miscellaneous wood fragments from middle level.	M-192a	9540 ± 550
Wood fragment W283 from middle level.	M-192b	9300 ± 400
Miscellaneous wood remnants from top level.	M-193	3200 ± 250
VII. *Pacific and Far East.*		
Able Site, Kapyong, Korea. Charcoal sample from a charred log representing the roof structure of a protohistoric pit-dwelling in central Korea. Other material found includes stone tools and ornaments, as well as pottery made both by coiling and on the potters' wheel. The latter pottery appears quite like ware of the Han	M-303	1700 ± 250

Description	Sample No.	Age (yr)
Dynasty of China and probably belongs to the Lolang era in Korea. This sample dates a house of what must have been frontier-living peasants who still used Neolithic tools as well as imported bowls. Scraps of rusted iron tell that this material was known and used as well. The material found is very much like that from house pits of similar age in northern Japan. Submitted by Howard A. MacCord, U.S. Army Engineers.		
Hawaiian Islands. Charcoal samples collected in 1955 by Bernice P. Bishop Museum parties under the direction of K. P. Emory, and submitted by him.		
Charcoal from bluff shelter, Haeleele, Kauai Island, site K 1, square E 32, at the very bottom of a cultural deposit extending from 3 to 42 in. below the surface.	M-477	520 ± 200
Charcoal from large lava-tube shelter named Makalai, South Point, Hawaii Island, site H 2, square S 9, at 48 in. depth in a cultural deposit extending from 3 to 53 in. below the surface.	M-478	300 ± 200
Charcoal from a ground oven apparently under an ancient house floor buried by a sand dune at South Point, Hawaii Island, site H 1, square J 5. The house floor must date not later than A.D. 1800, for no post-European period artifacts were found in it.	M-479	200 ± 200
Charcoal from a bluff shelter, Nihoa Island, 150 mi northwest of Kauai Island, site 60, at 14 to 18 in. below the floor, being sterile above and below this fireplace. Collected by H. Ivan Rainwater.	M-480	520 ± 200
Charcoal from a fireplace under the ancient house floor at South Point, Hawaii Island, site H 1, square L 11, at 14 to 17 in. below the top of the cultural deposit. We believe the probable age of this fireplace to be at least 400 yr, and suspect, as with M-479, contamination through sea-water or rootlets.	M-538	< 200
Yap Island. University of California expedition of 1956, E. W. Gifford and D. S. Gifford, University of California, Berkeley.		
Charcoal from grave of Rugog, Noah of Yapese mythology, Teb village, Tomil municipality. University of California Museum of Anthropology (UCMA) No. 11-32906.	M-626	200 ± 200
Charcoal from depth of 24 to 30 in. at site of Penin, Kanif village, Dalipebinau municipality. Cultural refuse extended to a depth of 30 in. UCMA No. 11-32781.	M-629	200 ± 200
Charcoal from depth of 30 to 42 in. at house site of Boldanig, Malaj village, Kanifay municipality. Cultural refuse extended to a depth of 90 in. UCMA Nos. 11-32794, 32806, 32818, 32830, 32842.	M-631	320 ± 200
Charcoal from depth of 18 to 24 in. at site of Pemrang, Giror village, Galiman municipality. Cultural refuse extended to a depth of 90 in. UCMA No. 11-32894.	M-632	250 + 400, −250
Charcoal from depth of 24 to 30 in. at same site as M-632. UCMA Nos. 11-32862, 32871, 32878, 32886, 32895.	M-633	100 + 200, −100
Charcoal from depth of 48 to 72 in. at same site as M-632. UCMA Nos. 11-32863 to 32866, 32874, 32881, 32887.	M-634	1780 ± 250

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