Conclusion

There is thus no solution at present in the uniformitarian viewpoint to the discrepancy between the rate of C^{14} formation (2.5 atoms/cm^2/sec.) and the rate of its decay (1.9 atoms/cm^2/sec.). This discrepancy vanishes if one assumes (as the Bible indicates) that the earth and its atmosphere have both been created quite recently.

According to a recent creation view, one would expect formation of C^{14} to exceed its decay, as the earth's atmosphere would as yet be in the "build-up" phase for C^{14}. Further details regarding C^{14} and recent creation are given in my book, *Prehistory and Earth Models* (Max Parrish and Co., Ltd., 1966).

References

[1]Cook, M. A. 1966. Prehistory and earth models. Max Parrish & Co., Ltd., London.

[2]Cook, M. A. 1968. *Creation Research Society Quarterly,* 5:69-77.

[3]Karlan, J., I. U. Olssen, P. Kalberg, and S. Kilicci. 1964. *Arkiv Geophysik,* 4:465. (This is the reference quoted by Libby in the latest edition of his book, *Radiocarbon Dating.)*

[4]Lingenfelter, R. E. 1963. *Rev. Geophysics,* 1:35.

TIME, LIFE AND HISTORY IN THE LIGHT OF 15,000 RADIOCARBON DATES

ROBERT L. WHITELAW*

In the twenty years since introduction of radiocarbon dating by Libby, some 91 universities and laboratories in 25 different countries have dated over 15,000 independent specimens of once-living matter. Almost every imaginable form of life both recent and ancient is represented, gathered from every corner of the globe, including "prehistoric" man, a wide range of fossil flora and fauna, and even coal, petroleum and natural gas. All such matter is found datable within 50,000 years as published.

When the published dates are corrected for a basic scientific error in the method, they not only point to a recent creation, but they show an unmistakable world-wide disappearance of man and animals for a long period about 5,000 years ago. On the hypothesis that this drop-off corresponds to the Genesis Flood, it is then possible to derive a Carbon-14 production rate variation with time, which in turn leads to a better correction from published to true dates.

When the true dates of 9,671 independent specimens of animals, trees and human culture are then separated into three categories, and their distribution studied from creation to present in 500-year intervals, a most remarkable confirmation of the details of Biblical Creation and Noachian Flood can be seen on fourteen separate counts. This is shown graphically in Figure 3.

The hypothesis employed is thus confirmed! The evolutionary concept of time, life and history stands thoroughly discredited, and the Biblical record of creation and flood just as thoroughly vindicated.

Introduction

A hundred years after Darwin, the theory of total evolution appears to have swept the field of all challengers. The idea that multiform life, order and complexity all arrived on the scene by mere chance from lifeless, lawless chaos is now accepted almost without question. Such an idea pervades the public press; it colors the teaching of history, philosophy and science; and in the life and earth sciences it is the general premise upon which new evidence is analyzed and new research performed.

Without adducing a shred of supporting evidence, a leading scientist[1] can boldly state: "There is no need of explaining the origin of life in terms of the miraculous or the supernatural. Life occurs whenever the conditions are right. It will not only emerge but persist and evolve." Such statements are generally hailed as twentieth century wisdom, while the Biblical record is relegated to folklore.

Perhaps the best expression of the modern rationale for *total* evolution comes from the pen of George Wald:

> The important point is that since the origin of life belongs in the category of at-least-once phenomena, time is on its side. However improbable we regard this event, . . . given enough time it will almost certainly happen at least once . . . Time is in fact the hero of the plot. The time with which we have to deal is of the order of two billion years. What we regard as impossible on the basis of human experience is meaningless here. Given so much time, the "impossible" becomes possible, the

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possible probable, and the probable virtually certain. One has only to wait: time itself performs miracles.[2]

Such an argument contains both a logical fallacy and a philosophical absurdity. If it is true, any incredible event becomes possible *at any instant.* Cinderella's pumpkin easily becomes a chariot; and the resurrection of Jesus Christ should likewise be accepted without cavil!

The argument, however, is advanced for a different purpose. It is satisfying, persuasive, and allays all doubt. And like the speculative "science" of a bygone day, it demands no evidence. Time alone—unlimited, inconceivable, unimaginable—becomes at once a fortress and a weapon with which to demolish opposition. No matter how well attested the evidence against evolution, it must crumble every time before the sweeping premise, "given enough time . . ." For if two billion years proves not enough, who can stop one from making it ten billion? Or ten trillion, if need be!

Such is the real basis of modern evolutionary theory. No matter how disguised as mathematics or science, it is simply **blind faith** that given enough time a miracle will happen. And not one miracle only, but a billion miracles in succession, all in the right place and right order without a single intervening mistake. (For no less a miracle than this is required to account for even a single cell!) Intoxicated with such a faith as this, it is no wonder that evolutionists remain deaf to the best arguments from logic, from evidence and from Scripture. The hero is *time;* and so long as it is inexhaustible, evolution is secure.

Time, however, is also the hero of another plot! It is central to the meaning and validity of the Biblical record. Whereas evolutionists demand immeasurable, purposeless, endless time, the Bible just as unequivocally demands acceptance of a world whose time is measured, purposeful and destined to end; and all in exact accordance with the eternal purpose of a sovereign God, "who worketh all things after the counsel of His own will." The result is that either the Bible stands and evolution falls, or evolution stands and the Bible falls. They cannot stand together.

Nor is there room for part-Bible and part-evolution with regard to concepts of time. For, if the Bible is untrustworthy when it speaks of time in Genesis 1, 5 and 11, it is equally untrustworthy when it speaks of time in Gal. 4:4, Acts 17:31 and Heb. l:l. The challenge of evolution thus compels every scientist and scholar to face up to Biblical chronology as part of its total claim to authority. Is Biblical chronology true or false?

For such a task, modern scientists bring forth a special new tool-radiocarbon dating. Fifteen thousand dates are already published, with thousands more coming in each year. With these it is now possible, as never before, to compare the time-claims of evolution with the chronology of Scripture, and discover where the truth lies.

The Radiocarbon Dating Method

The radiocarbon dating method was first proposed and worked out by Dr. Willard F. Libby for which he received a well-earned Nobel Prize. By painstaking measurements of living matter of every kind all over the world, Libby was able to show that all living cells have the same specific radioactivity by virtue of the presence of approximately 765 atoms of Carbon-14 in every billion atoms of Carbon-12.

So long as a cell lives, this ratio is maintained by the constant cycle occurring between living matter and the carbon dioxide in the air and sea, known as the "carbon exchange reservoir." He then showed by atmospheric measurements at various latitudes and altitudes that the rate at which Carbon-14 (C-14) is being replenished in this reservoir by cosmic rays from outer space is *reasonably* close to the rate at which it is decaying in living matter.

He then *assumed* that these two rates are essentially equal, and that they have been so for many years. Thereupon was "born" the radiocarbon dating method used by scientists ever since, a period now over 20 years.

The validity of the above two assumptions will be considered later. Granting them for the moment, let us see how simple and sure the method is. By measuring the radioactivity of a specimen of once-living matter found today, and comparing it to the activity it had when it died, the elapsed number of years is simple to calculate. After 5,570* years the clicks per minute on a Gieger counter would be half the value at death; after 11,140 years the count would be down to one quarter; after 22,280 years down to a sixteenth, and so on. The only requirement is a pure sample unmixed with any other living or dead matter through all the passing years, *plus* the assumption that the radioactivity the specimen possessed at death was the same as all living matter exhibits today, namely 16.0** disintegrations per minute per gram of total carbon (dpm/g.)

Among the first specimens measured by Libby and his coworkers were some tree rings and relics of "known" date from ancient Egypt. The

*More recent analysis gives 5,730 years as a better "half-life;" a mere 3% error,

**16.2 in sea-shells, but 15.3 in vegetation and living tissue, due to the different ratio of C-12/C-13 in each group.

agreement was quite satisfactory. In 1952 the method was published in book form,[3] along with some 200 dates of both archeological and geological specimens gathered from over 30 widely-scattered sites. A second edition[4] was published in 1955, and special addenda to most chapters were included in a 1965 printing of the second edition.

Once the new radiocarbon clock had been thus established, scientists at universities and research centers all over the world entered the new research field, setting up their own dating laboratories. By the end of 1968 almost 100 laboratories were thus engaged as listed in Table 1. C-14 was recognized widely as a valuable new tool to identify the age of

TABLE 1

RADIOCARBON DATING LABORATORIES

(Radiocarbon, 10, pp. 169-177, 1968)

A	Arizona
ANL	Argonne National Laboratory
ANU	Australian National Univ.
B	Bern
BIRM	Birmingham
BLN	Berlin
BM	British Museum
BONN	Bonn
C	Chicago
CT	Caltech
D	Dublin
DAK	Dakar
FR	Freiberg
FSU	Florida State
G	Goteborg
GAK	Gakushuin Univ.
GD	Gdansk
GIF	Gif-sur-Yvette
GL	Geochronological Laboratory
GRO	Groningen
GRN	
GSC	Ottawa
GSY	Gif-sur-Yvette
GU	Glasgow University
GX	Geochron Lab'y. Inc.
H	Heidelberg
HV	Hannover
I	Isotopes-A Teledyne Co.
II	Isotopes, Inc.
IRPA	Institut Royal Du Patrimoine Artistique
ISGS	Illinois State Geological Survey
IVIC	Caracas
K	Copenhagen
KI	Kiel
KN	Koln
L	Lamont
LE	Leningrad
LJ	Univ. of Calif., San Diego
LP	La Plata
LU	Lund
LV	Heverle Louvain
LY	Univ. of Lyon
M	Michigan
MA	Manitoba
MC	Monaco
ML	Miami
MO	Vernadski Inst. of Geochemistry
MP	Magnolia Petroleum
N	Riken (Tokyo)
NPL	National Physical Laboratory
NS	Nova Scotia
NSW	New South Wales
NY	Nancy
NZ	New Zealand
O	Humble
ORINS	Oak Ridge Associated Univ.
OWU	Ohio Wesleyan Univ.
OX	U.S. Dept. of Agriculture
P	Pennsylvania
PI	Pisa
PR	Prague
Q	Cambridge
R	Rome
RI	Radiochemistry, Inc.
S	Skatchewan
SA	Saclay
SH	Shell
SI	Smithsonian Institution
SL	Sharp Laboratories
SM	Mobil Oil Corporation
SR	Salisburg, Rhodesia
ST	Stockholm
SU	Finland
T	Trondheim
TA	Tartu
TAM	Texas A & M Univ.
TB	Tbilisi
TBNC	Kaman Nuclear
T F	Tata Inst. of Fundamental Research
TK	University of Tokyo
TX	Texas
U	Uppsala
UCLA	Univ. of California, L.A.
UW	Univ. of Washington
V	Vctoria
VRI	Vienna Radium Inst.
W	U.S. Geological Survey
WIS	Wisconsin
WSU	Washington St. Univ.
X	Whitworth College
Y	Yale
PIC	Packard

TABLE 2

DISTRIBUTION OF RADIOCARBON SPECIMENS BY CATEGORIES

ARCHEOLOGICAL SPECIMENS IN CLASS I AND II:

Occupational charcoal, middens, bones, wood and clay artifacts, furnishings, wooden tools and structures, grain, dung, canoes, nests, fossils, barrows, skin, hair, tissue, blood, tusks, shell-mounds, scrolls, burial items, and such.

GEOLOGICAL SPECIMENS OF CLASS III:

Wood, such as stumps, logs, twigs or bark, either fossilized, petrified or natural; charcoal from fires unrelated to human occupation.

SPECIMENS PUT IN CLASS IV:

Seals, whales, fish, coral, shellfish and all other forms of marine life; insects, pollen, calcareous deposits, marl, lacustrine, sandy loam, peat, lignite, coal, petroleum, natural gas, tufa, gyttja, moss, pingo, ferns, seeds (ungathered), caliche, sapropel, carbonate mud, ocean floor sediments, lava, fossil flora, and such.

TABLE 3

DISTRIBUTION OF RADIOCARBON SPECIMENS BY GEOGRAPHY

WESTERN HEMISPHERE SPECIMENS (assigned to Class II)

United States (almost every state included, with most dates from areas of Indian and Eskimo culture), Canada (All provinces, Yukon and N.W.T. represented), Greenland, Mexico, Cuba and most of West Indies, Central America, Easter and Galapagos Is., South America (all countries), Antarctica, Bermuda.

AFRO-EURASIA SPECIMENS (assigned to Class I)

Iceland, Europe (every country), Morocco, Algeria, Libya, Tunis, Egypt, Sudan, Equatorial Africa, Nigeria, Rhodesia, most regions of central and south Africa, Ethiopia, Turkey, Palestine, Mesopotamia and Arabia (especially sites of classical antiquity), Iran, Afghanistan, India, China, Indonesia and southeast Asia, almost every S.S.R. in Siberia and central Asia, Japan, Taiwan, Phillipines, Korea, Madagascar and islands of Indian Ocean, S. Atlantic Islands, Australia.

SPECIMENS FROM OCEANIA (Few in number, divided between Class I and II)

New Zealand, Fiji, Tahiti, and other mid-Pacific islands.

ancient cultural deposits and artifacts, to date pollen, shell deposits, buried trees and vegetation, bones and relics of the past of all kinds.

At the same time it was understood by all concerned that the method could give measurable dates only to about 50,000 years B.P. (before present), since the radioactivity from anything older would be scarcely detectable. Most certainly it was out of the question to expect any datings of fossils, petrified matter, coal, oil, or bones of prehistoric men or animals. Using evolutionary premises, scientists had long since assigned such matter to ages well beyond 100,000, and even in the millions of years. In short, only late Pleistocene and Holocene matter was considered datable. A date from tertiary strata was absolutely unthinkable, and a large number of specimens were fully expected to give "infinite" dates, i.e. too old to be measurable.

What have been the results? In a word, astounding! Astounding to every investigator with evolutionary presuppositions. But even more astounding when compared with the Biblical record—as we shall see.

Ten Amazing Facts Itemized

Commencing with the first group of 206 dates published in Libby's first edition, the list has now grown, and as of the end of 1969, includes over 15,000 dates of independent specimens of every kind gathered from every part of the globe by the 91 laboratories listed in Table 1. The wide distribution of these specimens by category and by geography is given in Tables 2 and 3.

All these dates were published, up to the year 1958, in *Science*, and thereafter in the annual journal, *Radiocarbon*, with extensive details of the subject matter and location of each specimen. In summary, the stockpile of radiocarbon dates is now so numerous and broad, as to age, location and subject matter, that no informed scientist, nor historian, nor educator, nor publisher—no matter how dedicated to evolutionary premises can be excused from examining them and considering their profound implications.

Upon sorting through these dates and after checking the descriptive material, one may detect at least ten amazing facts:

(1) Practically every specimen of once-living material is found to be datable within 50,000 years. Very few are listed up to 60,000, and only three-three out of 15,000—are stated as "infinite;" these being some megapod eggs from a Philippine Islands cave.

(Note: To fully appreciate the significance of this, it must be emphasized that if Lyellian geology and evolutionary "time" are valid, if living matter has been accumulating and dying upon earth over supposed eons of time, then such a world-wide random sampling of buried organic matter should yield 20,000 undatable specimens for each one datable! Granted that

TABLE 4

PUBLISHED DATES OF FOSSILS, EXTINCT FAUNA, AND "PREHISTORIC MAN"

(*Partial* list, selected from 250 specimens identified as such through 1969)

Radiocarbon, vol. 11, 1969: Age. yrs.

GaK-1042: Bone of *Metacurvulus astylodon,* Kei-jima, Ryukyu Is.. 18,800

Gif-774: Molar of *Elephas Primigenius,* Thonon-les-bains, Haute Savoie 14,000

Tb-21: Coaly loam, Uzhgorod 12,050

Y-1163: Skin of *Nothroterium Shastense,* Aden crater, New Mexico 9,840

UCLA-1325: Fossil wood from La Mirada, Cal., below extinct Pleistocene animals of same species as in La Brea tarpits (see UCLA-1292) 8,550

OWU-190: Spruce wood beneath partial mastodon skeleton, Akron, O.. 15,315

UCLA-1319: Mammal bones from Omo R. valley, Ethiopia (compare findings in same locality reported in reference 6 as "Australopithecus," and "dated" by K-Ar date of underlying sediments as "two to four million years old."). 15,500

UCLA-1321: Mammalian bones from Bed V, Olduvai Gorge, Kenya (compare references 5 and 7 which reported similar findings in same locality as nearly two million years old, based on K-Ar dates of sediments, findings by L.S.B. Leakey in 1959) 10,100

It is important to note that Leakey's fossil "Zinjanthropus" was found in Bed I whose strata, *not the fossil skull itself,* was dated by K-Ar at 2.03 million years.

But *Science,* 162:559 (Nov. 1/68) contains the frank admission, "Bed V overlies . . . occasionally even the basaltic lava *underlying* Bed I."

UCLA-1321 here dates the bones themselves in a horizon largely identical to that of *Zinjanthropus.* Also, since radiocarbon dating was well-established in 1959, why date "the various types of tuff associated with the fossil" and then wait 10 years before dating the fossil itself with radiocarbon?

Obviously, the underlying lava bed itself should raise serious doubts in a uniformitarian approach; and in any case K-Ar dating of *any* strata has been shown to be totally inconclusive in reference 14.

Radiocarbon, vol. 10, 1968:

M-1739-1783: Mastodon ulna and tusk; tusk and skull. Michigan. 9,910; 9,250

NY-73: *Homo neanderthalensis* bones.. Jebel Irhoud Cave, Morocco . . . . . >32,000

GSC-611-614: Mastodon bones. Thamesville and Chatham, Ontario 11,380; 8,910

S-246: Mammoth bone, in fossiliferous sand. Kyle, Sask. 12,000

UCLA-1292: Sabre-tooth tiger, r. and l. femur, La Brea tarpits, L.A. Part of extensive analysis of Pleistocene fossil community" 28,000

GIN-7: Fossil bones, 1 m. deep in yellow clay. Molodova, Ukraine 10,590

GIN-93: Mammoth scapula, in Cro-magnon burial site. Kosinski, Siberia. 11,000

TA-121: Mammoth bones. Byzovaya, Konu ASSR (Pleistocene) 18,320

* * * * * *

Radiocarbon, vol. 9, 1967:

A-195-536: Mammoth vertebra, and rib. Naco, Ariz; Clovis, N.M.. . . . . 8,980; 6,370

ANU-9: Fossil wood, beneath tuff and lava. Auckland, N.Z. 31,000

UCLA-1069: Sloth dung. Gypsum Cave, Idaho 10,455

* * * * * *

Radiocarbon, vol. 8, 1966:

I-1149-1150: NATURAL GAS, in cretaceous and eocene formations. Ala. and Miss. 34,000; 30,000

GIF-198-278: Fossil coal; and wood. Spain 5,025; 3,930; 4,250

GX-445: Fossil bone. Wadi Halfa. 6,485

I-622: Mammoth bones and tusks. Dent, Colo.; Rawlings, Wyo. 11,200

MO-334: Coal. Naryn R. Kirgizia. 1,680

MO-3: Fossil tree (salix). Taimyr L.. . . 11,700

UCLA-720-722-723: Fossil bones. Middle Zambezi. 2,520; 2,010; 960

WIS-67-85-113: Fossil sphagnum and sedge peat. Manitoba and NWT. 5,780; 5,600; 2,170

Gak-643: Penguin bone fossils. Antarctica 6,100

N-141-3: Formation containing abundant mammalian fossils, including *Megaceros, Leptobison, Loxodonta,* and extinct flora inc. *Tsuga, Larix, Picea, Picea maximoviczii.* Hanaizumi, Japan 29,300-37,000

TABLE 4 (Continued)

Radiocarbon, vol. 7, 1965:

GX-105: Jawbone of *Nototherium* sp. Boolcunda Cr., Australia 14,000

M-1254,OWU-126: Mastodon bones, Gratiot, Mich., Novelty, Ohio. 10,700; 10,654

UCLA-630: "BROKEN HILL MAN" Rhodesia (incl. animal bones) 9,000

NZ-1: *Diprotodon* molar. New Zealand. 11,100

UCLA-705: Ilium of dwarf mammoth. Santa Rosa Is., Calif. 8,000

* * * * * *

Radiocarbon, vol. 6, 1964:

A-372: Mammoth fossil vertebra. Rawhide Butte, Wyo. 9,600

Lv-17: Fossil wood. Leopoldville, Congo. 7,840

Sa-170: Piston cores, 400 cm. below Mediterranean floor 30,000

Sa-100: Fossil bank; incl. bovines, hippo, catfish. Adrar Bous, Sahara 5,140

Sa-49: *Mylodon manure,* Felt Cave, Chile. 10,200

UCLA-285: Fossil human and animal bones. Tabon Cave, Phill. Is.. 21,000

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Radiocarbon, vol. 5, 1963:

NZ-7: Fossil tree-trunk, rooted. Aramaho, N.Z. 2,400

NZ-206-381: *Diprotodon* jaw and molar. Orroroo, S. Australia 6,700; 11,100

NZ-282: Fossilized herbs, interbedded in sediment. Ngaruawahia, N.Z. 16,300

GrN-2022: Neanderthal mandible. Haua Fteah, Libya. 40,700

GrN-1495: Neanderthal skeleton, Shanidar I Cave, Iraq. 50,600

* * * * * *

Radiocarbon, vol. 4, 1962; and vol. 3, 1961:

Trondheim dates: Fossil shells in Norway. Ten specimens. . . . . .7,250 to 11,200

T-172: Wooly rhinoceros skin. Nochnoj ASSR 38,000

M-1068: Fossil bone in bed of 27 extinct species. Muaco, Venez. 14,300

L-601: Skin and flesh of baby elephant. Fairbanks, Alaska. 21,300

Pi-75: Calcareous petrified wood. Campi Flegrei, Italy 10,090

* * * * * *

Radiocarbon, vol 2, 1960; and vol. 1, 1959:

A-30-31-32-33: Bones of mammoth, horse, tapir, bison, with charcoal and human implements. Lehner Mammoth Site. . . 6,877 to 8,330

M-569: Human bone in fossil breach. Algoma, Mich. 3,170

LJ-55: Wood from tree root packed around with bones of many extinct pleistocene animals. LaBrea tarpits. Los Angeles l4,400

LJ-82: Fossilized (phosphatized) log, 1500' in ocean off Mexico 28,000

* * * * * *

Science, 1957 to 1958:

W-418: Wood, in *Megalodon* beds, with *Megalonyx,* bison, *Equus, Tapirus, Odocoileus.* Evansville, Ind. 9,400

Y-103: Fossil skull, "FLORISBAD MAN," 19' deep. Florsibad, S. Africa with fossil bones of many extinct species.. . . . . >35,000

L-228: Fossil wood interbedded in Miocene sandst. and cong. Wash.. . . . . .>27,000

L-137: Peat and wood *under* muck of early Pleistocene fauna, incl. elephant, horse, bison. Seward Pen., Alaska . . . . 8,800 to 10,200

* * * * * *

Science, 1957 to 1951:

H-145: Mammoth bone. Heidelberg, Germ. (Comment; incredible) 3,370

L-182: HOTU MAN. Charcoal from hearth of skeleton, Iran. 9,500

O-235: Charcoal, 20' deep, with bones of elephant, camel, horse, antelope, glyptodon, etc. Lewisville, Tex. . . . . >37,000

W-169: "KEILOR SKULL" (previously believed to be oldest remains of homo sapiens) Keilor Terr., Victoria 8,500

L-127: Extinct superbison skin and tissue. Fairbanks, Alaska . . . . . >28,000

* * * * * *

Dates in Reference 3 (1952):

C-558: Bison bone in gray sand horizon with elephant and other fossils, followed by diatomaceous earth with *extinct* bison as the most abundant fossil. Lubbock, Tex. 9,883

C-631: Crude oil. 1100' deep in Tulare form. Kern Co., Calif. . . . . >24,000

C-632: Crude oil, upper or middle Pica form. Ventura, Calif. . . . . >27,780

C-822: Charcoal from hearth in Sioux Co., Neb. written up in "Early Man" (Reference 12) as "Pleistocene mammals of Nebraska" 2,049

C-823: Charcoal from 9' level, Burnet Cave, N.M., associated with fossil remains of 62 diff. extinct species, incl. *Antiquus taylori, Preptoceras sinclairi,* giant bear, large horse. 7,432

TABLE 5

RECONSTRUCTION OF BIBLICAL CHRONOLOGY: CREATION TO PRESENT

ERAS		TIME	REFERENCE
I: ANTEDILUVIAN (Creation to Flood)		2000 yrs. (approx.)	Gen. 5 (per original Heb. and LXX texts; deduced from Mas., Sam. Pent., Modern LXX et al.)
II: POSTDILUVIAN OLD TESTAMENT		3000 yrs.	
Flood to Abram	1070		Gen. 11 (as above)
Abram to Exodus	430		Ex. 12:41, Gal. 3:17
Exodus to Temple	580		Judges, 1 Kings 6:1 (LXX)
Temple to Captivity	363		Kings and Chronicles
Babylonian Captivity	70		Jer. 25 and Daniel 9
Emancipation to the Cross	487		Daniel 9, Ezra 1, Luke 3:l also Josephus, *Antiq.*
III: NEW TESTAMENT (Cross to Present)		1940 yrs.	Calendar
		6940 yrs. (approx.)	

NOTE: Apart from the Bible there is *no* reliable means of dating any historical event prior to Christ. Classical dates based on Ptolemy's "canon" plus solar eclipses, and Greek Olympiads are in error by about 80 years. Ancient dates based on Assyrian eponyms, Manetho and Berosus are connected to present via Ptolemy.

many investigators were looking for specific ancient cultures, such as Indian, Mayan, Babylonian, etc. Nevertheless, all were still dated within 50,000 years *to the maximum depth of any deposit!* The great preponderance of samples, moreover, related to vegetation, shells, pollen, peat bogs, buried trees, fossiliferous clay, ocean-bottom cores, buried bones and cultural charcoal beds — *most* of which should have been undatable. Yet, all had measurable radiocarbon activity!)

(2) Samples in strata identified by the investigator as Pleistocene, Pliocene and even Eocene (i.e. 50 million years old to an evolutionist!), and most archeologic findings identified as Paleolithic, are found with dates much younger than 40,000 years.

(3) Even coal, petroleum, natural gas, and lignite are dated within 50,000 years. Yet the accepted Carboniferous period that supposedly produced them was 100,000,000 years ago!

(4) Of the most ancient dates, most belong to buried vegetation of all kinds.

(5) Over 220 dated specimens are identified as "fossil," semi-petrified matter or fossiliferous bed material.

(6) Many dates are of extinct flora, and fauna, hitherto thought to be early and middle Pleistocene, such as mastodon, mylodon, sabretooth tiger, etc. Almost all are dated between 10,000 and 30,000 years.

(7) All "prehistoric" human remains and artifacts are datable within 30,000 years, including such famous cases as Neanderthal Man, Broken Hill Man, Florisbad Man, Heidelberg, Keilor, Hotu, Olduvai Gorge *Zinjanthropus,* and Omo Valley *Australopithecus.* (Note: the latter are the very findings of Leakey, et al, claimed to be "ancient hominids" of two to four million years ago!"[5,6,7]).

(8) Deep ocean deposits and cores from 40 feet below deep ocean beds, supposed to contain the detritus of the most primitive forms of life, are dated within 40,000 years ago.

(9) Ancient artifacts dated by archeology (i.e. in Egypt, Syria, Iran, etc.), in general, show radiocarbon dates up to 500 years younger (according to reference 5), confirming the now-recognized tendency of ancient historians to exaggerate.

(10) The most ancient dates of human culture are found in the near east, while the oldest "human" dates in the western hemisphere are noticeably younger. To bear out the dramatic findings of facts in items (3), (5), (6), and (7) above, Table 4 lists 75 typical dates out of over 220 found in these categories to date.

That these facts have already disturbed some specialists of evolutionary geology and paleontology is shown by a typical statement in *Science* (October, 1956): "as a result of radiocarbon dates, all the previous interpretations of

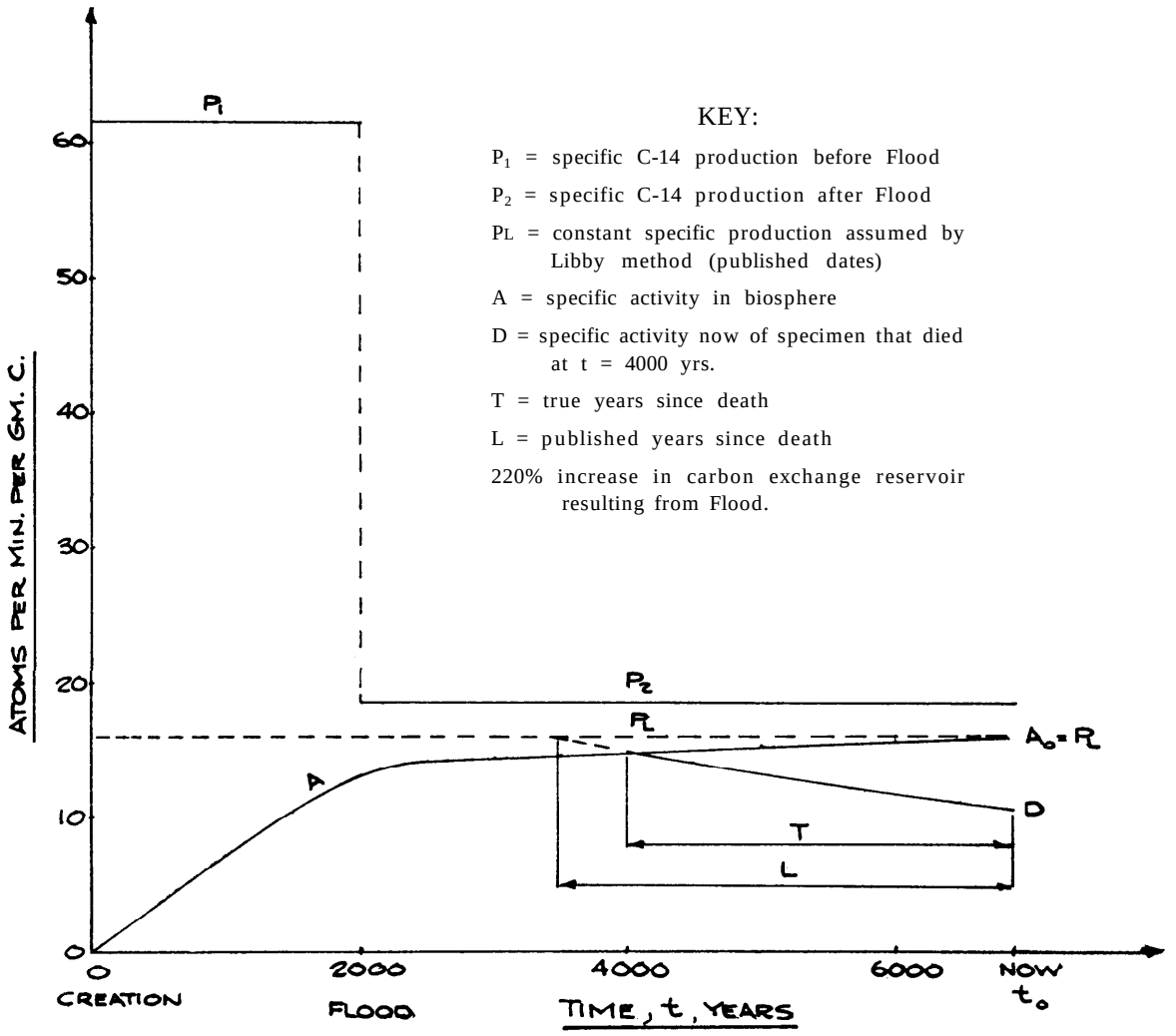

Figure 1.

Pleistocene lake history, depth and position in geologic time must be reassessed." (p. 669) Even more disturbing, however, are the facts that emerge from a more careful analysis of this great harvest of dates.

Here before us, gathered from all parts of the globe and covering almost every once-living form, we now have a sufficient number of death-dates to learn something from their distribution alone. If distributed by age, by location, and by type in accordance with some ancient historical record, it should not be difficult to confirm or refute such a record. Consider a chronology based on the Bible, for example. (See Table 5) It describes a creation a mere 7,000 years ago, followed some 2,060 years later by a world-wide catastrophe that all but extinguished man, animals and birds from the face of the earth. Now that we have a broad sampling of death-dates back to man's earliest beginnings, surely such a strange record can be dismissed once and for all! Or is it just possible it might be confirmed?

Radiocarbon Assumptions Re-examined

First let us consider the date of Biblical creation. At the outset this seems clearly refuted by a host of C-14 dates much older than 7,000 B.P. We recall, however, that the radiocarbon dating system was built on two assumptions; namely, (1) the rate of production of C-14 in the atmosphere by cosmic rays is assumed equal to its rate of decay in living matter, at a value of 16.0 dpm/gm, and (2) this equilibrium is assumed to have been reached eons ago, so that all once-living matter datable by radiocarbon possessed this same activity when it died, namely 16.0 dpm/gm.

As to the first assumption, Libby himself conceded in his first edition (and on p. 7, second

edition) that whereas the specific activity (decay rate) of C-14 in living matter today is about 16.0 dpm/gm, the production rate is more like 19.0, an imbalance of almost 20%. This imbalance, to use Libby's own phrase, points to a recent "turning on" of cosmic radiation:

> If one were to imagine that the cosmic radiation had been turned off until a short while ago, the enormous amount of radiocarbon necessary to the equilibrium state would not have been manufactured, *and the specific radioactivity of living matter would be much less than the rate of production.* . . . (Emphasis added) (p. 7, Second Edition)

Furthermore, a specific calculation of when this "turning on" occurred is easy to make. From the simple law of exponential buildup, $A/P = 1 - e^{(.6931/T)}$, in which we have the specific activity A = 16.0, the production rate P = 19.0, and the half-life of C-14 T = 5,730 yrs. The "turning on" date, T, comes out less than 16,000 years ago!

A second inescapable consequence of this imbalance is that the *true* age, T, of any specimen will always be *less than* the measured age, L, using Libby's assumptions (as published in *Radiocarbon)* since the latter is calculated as if no imbalance exists. The error (L - T) is illustrated in Figure 1 and clearly becomes progressively worse as age increases. Thus the underlying data on which the radiocarbon clock is built compel us to acknowledge (1) a recent creation, and (2) a reduction in all published ages.

At this point an objector will rightly point out that the Biblical creation date is by no means yet confirmed; 16,000 is certainly less than 4,000,000,000; but it is still not near enough to 7,000 to make the Biblical chronology trustworthy.

The answer is not hard to find. There is good reason to believe that the production rate of C-14 has *not* been constant since creation, at Libby's value of 18.8 atoms/min-gm. Several observers"[8,9] would in fact place it higher even today—not realizing perhaps that this would make creation even more recent! But the best clue to the actual value of P in ancient times is derivable from the actual published dates.

Radiocarbon Dates Re-evaluated

First, we compute a *preliminary* set of corrections based on Libby's constant P = 18.8 back to creation, (see appendix A), giving a preliminary true age, T, for each published age, L. Then, out of all the published dates we take the 7,318 independent dates (defined later) pertaining to man and animals and apply the appropriate correction to each. Finally, we distribute these corrected dates into 500-year "boxes" from the present back to 8,500 years, and into l,000-year boxes from 8,500 B.P. to "tentative" creation at 15,700 B.P. When this is done, the distribution of dates appears as follows:

TABLE 6

Corrected Date Span	*Published Date Span*	*Number of Dates*	*Corrected Date Span*	*Published Date Mid-span*	*Number of Dates*
(years B.P., "before present")			(l,000-yr. spans counted from 8,500 back)		
0- 500	0- 580	780	8,500- 9,500	12,150	72
500-1,000	580- 1,160	1,174	9,500-10,500	13,990	65
l,000-1,500	1,160- 1,745	857	10,500-11,500	16,050	52
1,500-2,000	1,745- 2,340	777	11,500-12,500	18,500	41
2,000-2,500	2,340- 2,940	628	12,500-13,500	21,570	39
2,500-3,000	2,940- 3,545	538	13,500-14,500	26,180	51
3,000-3,500	3,545- 4,160	447	14,500-15,500	33,460	127
3,500-4,000	4,160- 4,780	371	15,500-15,700	33,460 to infinity	13
4,000-4,500	4,780- 5,410	290			
4,500-4,950*	5,410- 5,995	86			
4,950-5,500	5,995- 6,805	218			
5,500-6,000	6,805- 7,500	146			
6,000-6,500	7,500- 8,215	133			
6,500-7,000	8,215- 8,950	127			
7,000-7,500	8,950- 9,710	107			
7,500-8,000	9,710-10,500	86			
8,000-8,500	10,500-11,320	66			

*The period 4,500 to 4,950 was arbitrarily contracted from 500 to 450 years in counting dates on grounds that, if it represents the first post-flood period, death dates in 4,950 to 5,000 are flood deaths; and if the flood is fictitious such a minor contraction should make no noticeable difference in column 3.

Two anomalies clearly show up in this distribution. The first anomaly is the drop-off from 127 to 51 dates shortly after 15,700 B.P. The second anomaly is the drop-off from 218 to 86 dates immediately after 4,950 B.P. followed by a steady recovery. With so much data neither drop-off can be dismissed as mere statistical randomness. For the first anomaly we will find a

clue later, but reason for the second anomaly is unmistakeable. We are warrented in assigning the second anomaly, until proven otherwise, to the one great event in history which certainly would have caused it; and the more so when we note that its date, 5,000 B.P., is substantially in accord with the historical record of the Genesis Flood.

For no matter how ignored and dismissed by evolutionists and uniformitarian geologists during the past century, the fact of such a world-wide cataclysm at just such a time has been amply attested by many competent writers.[10, 11, 12, 13]

Method of Radiocarbon Date Correction

We see then that the radiocarbon record, using Libby's own data, gives evidence of a recent creation and of the Genesis Flood, even without knowledge of the exact variation of C-14 production with time, by which to pinpoint the date of each. In such a situation a well-established scientific method can be applied to ascertain the C-14 production rate in time past, thereby the true age of every radiocarbon specimen. The method is as follows:

(a) We state the *hypothesis* that, if the preliminary corrected dates in table 6 above reflect both Biblical Creation and Biblical Flood, then their *true* values would correspond precisely with creation about 7,000 B.P. and the flood close to 4,950 B.P.

(b) Assuming these two dates, we are then able to compute, by the procedure described in Appendix A, the most probable way in which C-14 production has varied.

(c) And given this C-14 production rate the relationship of true age, T, to published age, L, is shown to be as follows:

TABLE 7

True Age	Published Age	True Age	Published Age
1,000	1,155	4,000	4,725
1,500	1,730	4,500	5,350
2,000	2,310	5,000	5,990
2,500	2,900	5,500	8,860
3,000	3,500	6,000	12,530
3,500	4,110	6,500	19,100
		7,000	Infinite

(shown also graphically in Figure 2)

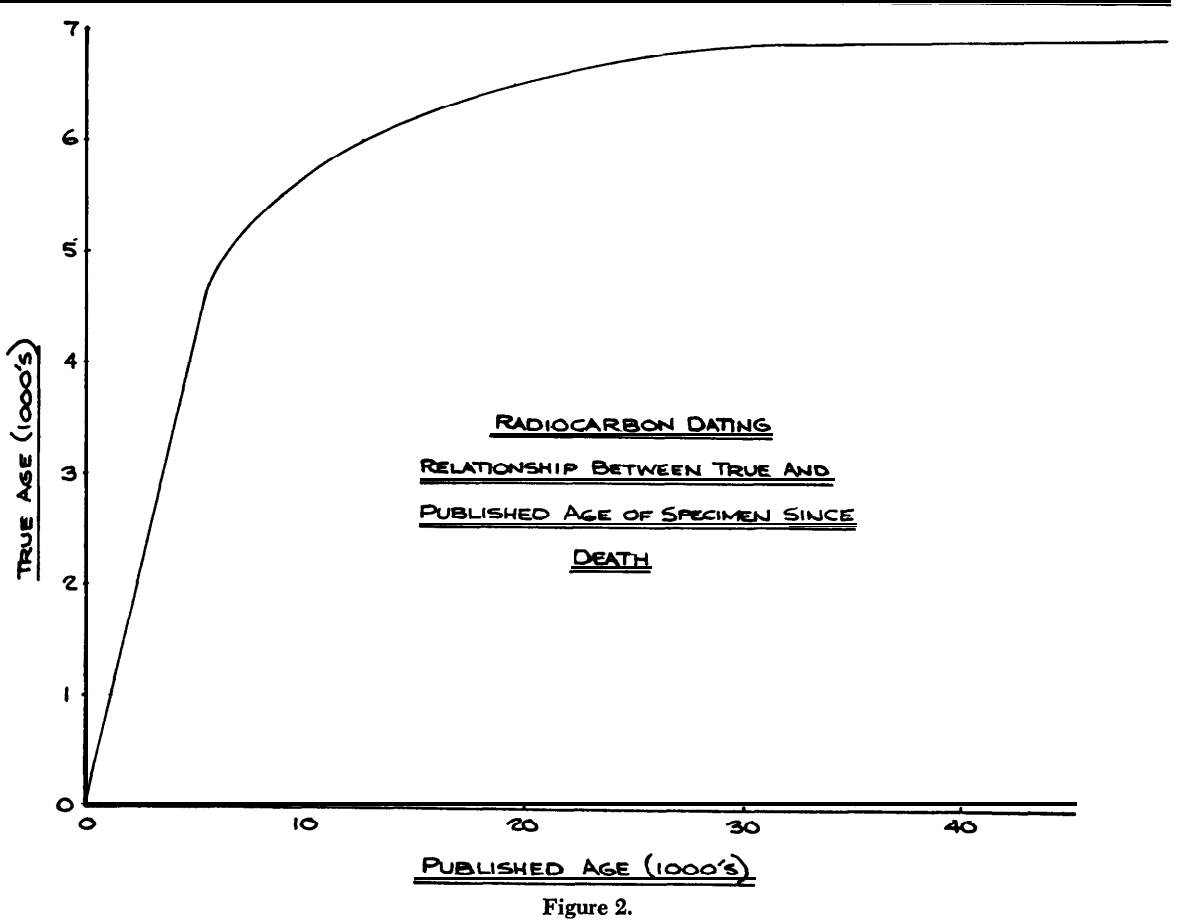

Figure 2.

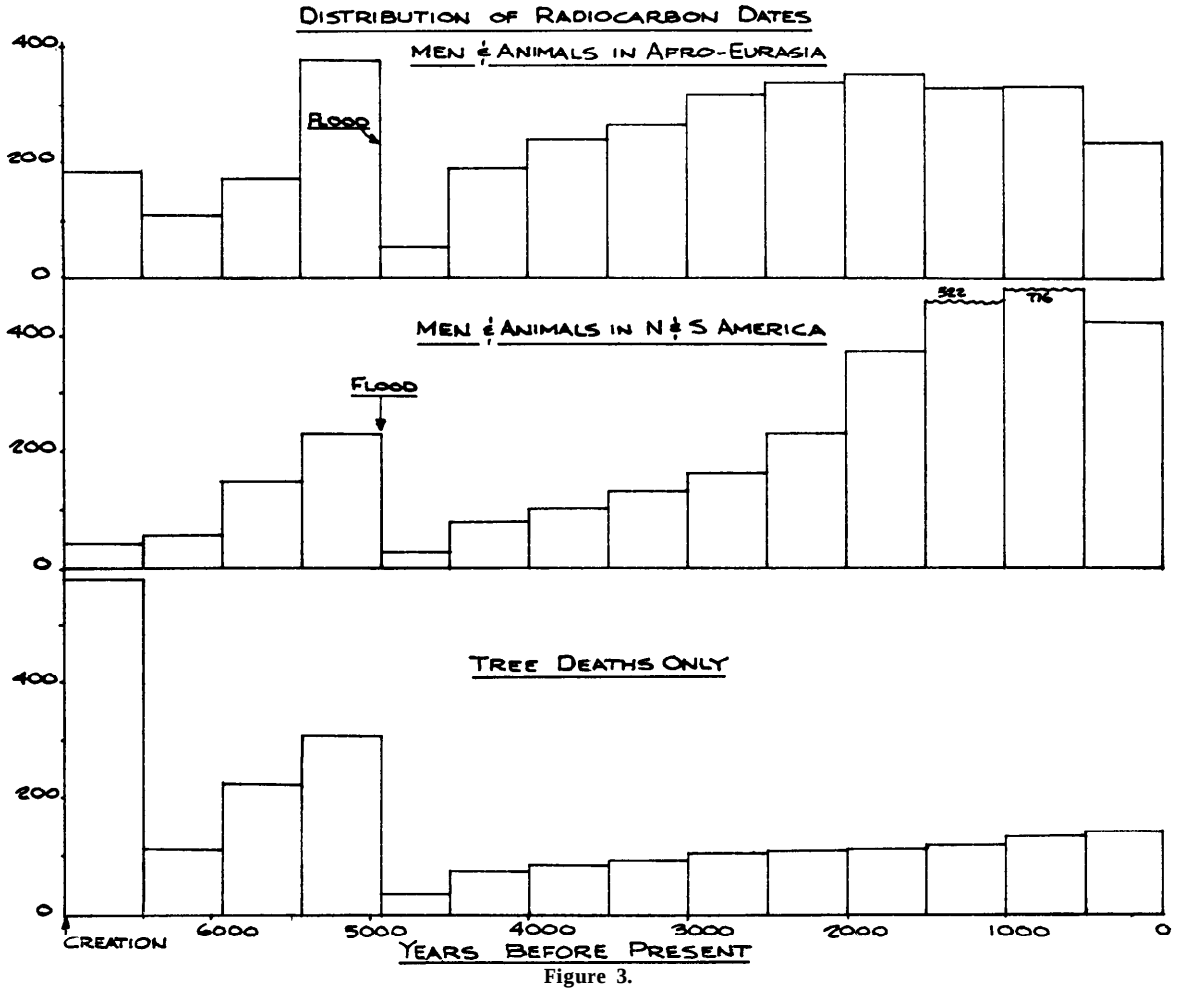

Figure 3.

Note the close correspondence between the true versus published age shown here and the initially corrected versus published age of Table 6, as far back as 5,000 B.P. This comes from the fact that Libby's figure of C-14 production fits the hypothesis quite well back to the flood. Prior to that a radically different production rate is necessary, as presented in Appendix A, which accounts for the rapid divergence of the two tables from 5,000 B.P. back to creation.

So much for the results of the hypothesis. The important thing is to test its truth. To do this, the argument is as follows: If the accumulated radiocarbon dates, corrected to *true* dates as above, disclose details concerning flood and creation that are only found in the Bible and that are in no way implied in the hypothesis itself, it follows that the corrections to true age* in Table 7 are valid, the assumed C-14 production rate* is valid, Biblical Creation and Flood is confirmed, and the hypothesis is sound. This we now proceed to show.

Date Re-valued Hypothesis Verified

All the published dates were first reduced to those that are strictly independent, by eliminating duplications, multiple specimens at the same location, etc. The dates included all lists published, first in Science, and since 1959, in *Radiocarbon*, through volume 11, covering the year 1969, giving a total of over 15,000 dates. These independent dates were then classified as follows:

Class I: Dates pertaining to human occupation and ark-borne** animals found in the Afro-Eurasia land mass (3768 dates)

Class II: Dates pertaining to human occupation and ark-borne** animals found in the Western hemisphere (3550 dates)

*Granting any margin of error that would lead to the same conclusions.

**Ark-borne animals include all those specifically indicated by the Biblical record; i.e. all except sea-life, insects and smaller forms.

TABLE 8

DISTRIBUTION OF RADIOCARBON DATES IN 500-YR. AGE GROUPS SINCE CREATION

PERIOD IN YEARS B.P. (Before Present)	NUMBER OF DATES FOUND IN EACH PERIOD		
	CLASS I	CLASS II	CLASS III
	MAN & ANIMALS IN AFRO-EURASIA	MAN & ANIMALS IN W. HEMISPHERE	TREE DEATHS ONLY
0- 500	276	496*	154
500-1,000	384	803*	150
1,000-1,500	361	540*	119
1,500-2,000	357	391*	108
2,000-2,500	363	253	110
2,500-3,000	344	182	108
3,000-3,500	289	158	102
3,500-4,000	259	114	91
4,000-4,500	198	83	71
4,500-4,950 (Flood)	56	26	35
4,950-5,500	403	249	326
5,500-6,000	185	155	236
6,000-6,500	116	57	119
6,500-7,000 (Creation)	187	43	624
TOTALS	3768	3550	2353

*Dates in these three periods are abnormally numerous because of concentrated research by many universities in American Indian culture.

Class III: Dates pertaining to substantial trees (not low-lying vegetation) regardless of geographical location, but omitting wood associated with human culture, i.e. firewood, implements, etc. (2353 dates)

Class IV: Other dates of matter not clearly affected in time or distribution by a Flood catastrophe; i.e. oceanic flora and fauna, ocean bottom sediments and detritus, marl, loam, peat, tufa, gyttja, caliche, sapropel, leaves, sedge, grass, pollen, etc. (Approx. 5300 dates)

The 9671 dates in Classes I, II, and III were then corrected from published age to true age, in accordance with Table 7, and distributed into age groups, each group spanning 500 years.

In each case the published "mean" date is used, the probable error always being equally plus or minus. Dates published as "greater than 40,009," "greater than 33,090," etc., of which most were in Class III, were put in the next older group.

Finally, since Biblical chronology puts the Genesis Flood almost exactly 3,000 years before the death of Christ, or close to 4,950 years ago, all dates between 4,950 and 5,000 were arbitrarily put in the age group just preceding the flood, i.e. 5,000 to 5,500 B.P. The argument here is that,

(a) If the Biblical record is true as to the flood and its date, these would be death-dates of flora and fauna killed by the flood, and should therefore appear in the age group terminating at the flood, or

(b) If the Biblical record is untrue as to either the flood *or* its date, such an adjustment would be of no consequence to the results, since the deaths in such a 50-year span would be no more than in any other nearby 50 years.

Summarized Results of Data Analysis

Results of this classification are shown in Table 8, and plotted graphically in Figure 3. Even a casual study of this table and graph reveals the following significant facts:

Fact #1: The number of dates in *each* of the three classes shows a sudden drop from a large number in the period preceding the flood, to less than 15% of this number in the period immediately following the flood.

Fact #2: Class I dates (man and animals in Afro-eurasia) commence fairly large (187), fall off to 116 in the next 500 years, and then build up to a peak of 403 just before the flood. After the marked drop-off at the flood, they build up again to a similar peak within the last two millenia.

Fact #3: Class II dates (man and animals in the western hemisphere) are considerably more scarce than Class I dates immediately after both creation and flood, and are slower building up after each event. Unlike Class I dates, they show no drop-off after creation.

Fact #4: Class III dates (tree deaths) are by far most numerous (624) at the beginning, then drop off to 20% in the next period, rise again to 326 before the flood, and then drop to a mere 35. After the flood, these dates slowly build up again, but never are more than 25% of their post-creation value.

Now if we analyze the dates in the periods immediately following creation and flood we discover additional facts of even further significance:

Fact #5: In the first 500 years following creation the dates found in Class I break down as follows: 75% are of animal deaths, 22% are of human culture (i.e. fire-sites and tools, etc.) and only 3% are of human deaths. What is more, the oldest human dates are in the Near East.

Fact #6. In the first 500 years following creation, the 43 dates in Class II are of two kinds only: 90% animal deaths, and 10% human culture. There are no identifiable human death dates.

Fact #7: In the 450 years immediately after the flood, the 56 dates in Class I break down as follows: 37 of animal deaths, 12 of human culture, 7 of human deaths. Again, the Earliest dates are most frequent in the Near East!

Fact #8: In the 450 years following the flood, the mere 26 dates of man and animals in the western hemisphere (Class II) are made up of 20 animal deaths, 5 cultural deposits, and 1 human death date whose margin of error could put it at the flood. (Here we see man's late arrival in the west after the flood, just as Fact #6 suggests his late arrival in the west after creation!)

Fact #9: The 35 tree-death dates (Class III) in the 450 years after the flood are mostly from temperate and tropical zones. Dead trees from polar regions almost exclusively date before the flood, and no redwood (sequoia) deaths are found in the first post-flood period except those associated with volcanic action or lava flow.

Comparison of Facts to Biblical Record

Against these nine facts we now compare the Biblical Record. We read of an original world of evident verdure, beauty and abundance; of animals and reptiles of all kinds, vegetarian in habit, populating the earth undoubtedly in ecological equilibrium; and of a human race commencing with an intelligent man and woman, somewhere in the region of Mesopotamia, to whom the animals were instinctively subservient.

We then read of a "fall" and a "curse" with three physical consequences, principally: as to **fauna,** some animals became carnivorous and preyed upon each other; as to **flora,** thorns and thistles are mentioned, suggesting possible climatic as well as ecological disturbances; and as to **man,** violence and greed appeared, while at the same time he lived to great age, 900 years not being uncommon, so that apart from infection and disease few deaths should appear for the first 500 years.

Over the next 2,000 years we are told particularly of violence, murder and rapacity among mankind; yet there is equal emphasis upon the prolific growth of the human race. Whether the American continents were contiguous with Africa and Europe at this time we cannot tell. Regardless, there was ample time, intelligence and incentive for the human race to spread to the Americas, Australia and the islands of the Pacific, and even develop an "advanced" culture.

The record is not of ignorant or "primitive" men. We read of artificers in brass and iron, of agriculture, of animal husbandry, of tents (suggesting spinning and weaving) and of sophisticated musical instruments such as harp and organ—a far cry from African tom-toms! There is also archeological evidence of written language, numerology, and extensive libraries in clay tablets in this period.

Suddenly we are told of a worldwide cataclysm of awesome and frightful detail; a cataclysm in which **all** of mankind, all land animals and all birds are destroyed, save those uniquely preserved in a great ship previously built by one family at Gods explicit instructions. The cataclysm is clearly described as the rapid inundation of the entire earth, probably by tectonic or volcanic upheaval of the ocean floor ("fountains of the great deep") accompanied by or causing great rain ("windows of heaven").

Vast and violent changes of the earth's surface, stripping of the luxuriant vegetation, and sudden entombment of desperate men and animals must have occurred, all to vanish beneath strata upon strata of sediment and lava, just as the geological record attests. (See References 11, 12, 13).

Only after some 375 days do the waters abate sufficiently to permit the survivors to leave their floating refuge; four men, four women, a male and female pair of each "kind" (not species!) of animal, and in a few special cases, seven of a kind. And from that spot, somewhere in the

mountains of Ararat, those survivors alone repopulated the ravaged earth. At the same time vegetation slowly returned, first the grass and shrub, then the fast-growing saplings, and finally the slow oak and giant sequoia, but now in a world of vastly different climate and terrain.

All of this is a story well-known to many. Yet it bears re-telling here to bring out the dramatic way that the above details and the radiocarbon record correspond. The sophisticated modern mind, no matter how predisposed to dismiss the story as folklore and myth, is thus confronted with the inescapable fact that: (1) the Biblical record is corroborated by each of the nine facts listed above discovered in the distribution of the radiocarbon dates, and (2) *not a single detail* of this record, nor even its chronology, is found in conflict with the age and distribution of the thousands of dates now available.

Further Consideration of Stated Hypothesis

We now return to the hypothesis being tested; the hypothesis that, *knowing* there has been a recent creation, it is probable it occurred when the Bible says it did, i.e. about 7,000 years ago; and secondly that, *knowing* there has been a world-wide catastrophe to man and animals, it is probable it corresponds in date with the Genesis Flood, i.e. about 4,950 years ago,

Making these two assumptions, a C-14 production rate in time past was established. With this rate, a correction from published to true radiocarbon ages was obtained; and with these true ages assigned, the distribution of radiocarbon dates disclosed nine facts. The question before us then is simple. Were the nine facts automatically predetermined regardless of what dates had been chosen for creation and flood; or do the nine facts result *only* if we assume the Biblical date for each of these events?

If the former statement is true, we have merely deceived ourselves with circular reasonings—just as evolutionists have done in assuming evolution to date index fossils to date rocks to date fossils to prove evolution! But clearly this is not so in our case.

There is nothing whatsoever in the choice of the two numbers, 7,000 and 4,950, which predetermined that the radiocarbon dates would distribute themselves so as to correspond with the *details* of both Biblical Creation and Biblical Flood. Yet unmistakably they do.

It follows then that the hypothesis is in accord with the accepted criteria of the scientific method by which one derives a general truth from a particular set of facts by testing the truth against the facts.

It follows also that the hypothesis is confirmed, along: with the details of the Biblical record and Biblical chronology, within the limits of accuracy of the radiocarbon data.

It is granted that a variation in creation date of ±400 years would probably not affect the distribution of dates in a manner out of harmony with the Bible. On the other hand, a variation in the flood date as much as 100 years *older* would show noticeable discrepancies between the date distribution and the details of Scripture. It is also worth noting that the flood date of 4,940 B.P. established from Biblical chronology leads to a date of the Exodus at 3,240 B.P. or 1,470 B.C. agreeing with both radiocarbon dates and other investigators (See Reference 13).

It is also granted that the paucity of unambiguous radiocarbon dates in some of the groups cited in the "nine facts"—as well as the large probable error in many of the older dates—taken by themselves would make solid conclusions difficult. However, by the very laws of statistical data, this is a weakness which must diminish with time as thousands of new dates accumulate each year.

And the thesis of this paper is that the number of good dates already available is sufficient to *point to,* the conclusions now to be drawn; while the number of dates with large uncertainties is insufficient to invalidate these conclusions, particularly when the Bible—a body of evidence not lightly dismissed—supports the same conclusions.

Conclusions

In the light of the above facts and reservations, it is concluded that:

1. Radiocarbon supports the idea of Biblical Creation by pointing unmistakably to a recent beginning of cosmic radiation.

2. Radiocarbon supports a date of creation at approximately 7,000 B.P.

3. Radiocarbon supports the contemporaneous appearance of all forms of living matter at creation. Man and modern animals, along with extinct flora and fauna all appear equally ancient and with equal suddenness, as shown in Table 4.

4. Radiocarbon supports the beginning of the human race from a few ancestors in the vicinity of the Near East.

5. Radiocarbon, on the other hand, indicates the sudden concurrent appearance of the rest of the animal kingdom in larger numbers in every part of the world.

6. Radiocarbon clearly indicates an original world in which both trees and low-lying vegetation were profuse and widespread even throughout present polar regions and deserts. (Facts amply attested by geology and paleontology of

an ancient world uniquely different in climate, in location and elevation of the very continents, and possibly even in the inclination of the Earths axis!)

7. Radiocarbon points to some drastic change, shortly after creation, which depleted both animal world and arboreal vegetation, but without noticeable effect upon the multiplication of man; just such an effect as might be deduced from Genesis 3.

8. Radiocarbon clearly points to a world-wide catastrophe destructive of man, beast and tree, just as described in Genesis 7 and confirmed elsewhere in Scripture, in worldwide human tradition, and in world-wide geological evidence.

9. Radiocarbon supports the date of such catastrophe at about 4,950 B.P. (Compare Tables 5 and 8)

10. Radiocarbon indicates a large and widespread human population in the world just before this catastrophe.

11. Radiocarbon indicates the widespread existence of now-extinct flora and fauna in the world before this catastrophe, including evidence of the gradual extinction-of many forms during the two millenia between it and creation. (Table 8)

12. Radiocarbon indicates that the "re-origin" of both animals and man after this catastrophe was in the vicinity of the Near East, and noticeably later in the western hemisphere.

13. Radiocarbon supports the Biblical chronology of ancient empires and of Israel and exposes suspected exaggerations in Manetho, Berosus, et al.

14. Finally, there is no question as to which concept of Time and History is supported by the radiocarbon record. Is it the endless time and meaningless history postulated by evolution? Or is it a specific span of time marked off by the purposeful acts of a sovereign God, from creation to flood to cross to ultimate consummation, as the Bible portrays?

Fifteen thousand radiocarbon dates, dead voices from the past assembled by scientists from every kind of once-living matter and every corner of the globe, now answer the question unequivocally in favor of the Bible!

APPENDIX A

Analytic Determination of the Variation in C-14 Production Rate, and of the Relationship Between Published and True Radiocarbon Dates.

In the body of the report, grounds were established for the working hypothesis that (a) cosmic radiation commenced about 7,000 B.P. (true date), and (b) the significant drop-off in specimens of man and animals at published dates about 6,000 B.P. actually occurred at a true date about 4,950 B.P. With this hypothesis it is possible to determine the most probable variation in C-14 production rate in time past; and with this variation it is possible to correct published dates to true dates. As shown in the report, the results confirmed the hypothesis.

Here it is necessary to show first the determination of the most probable specific production rate (hereafter called SPR) of C-14, in time past. Three alternatives are considered:

(1) A constant SPR throughout history, such as Libby assumed, but at a value high enough to yield the hypothetical creation date, 7,000 B.P., rather than the 15,700 B.P. which results from Libby's SPR of 18.8 atoms/min-gm. Such an SPR value comes out (using equation 1 below) at 27, for t = 7,000, and was proposed in 1968 by the author.[14] Such a constantly high SPR, leads to unreasonably large corrections to the published dates, as follows:

Published age:

1,800 3,805 5,090 9,020 12,580 19,180

Corrected age:

1,000 2,000 3,000 4,000 4,950 6,000

Equally serious is the objection that the published date corresponding to the flood date of 4,950 would be 12,580, since no noticeable drop-off in published dates of man and animals occurs at this point. Since this does not satisfy the hypothesis, this alternative must be dropped.

(2) An SPR value highest at 7,000 B.P. and decreasing either linearly or exponentially to Libby's value at present. This alternative suffers from the same objections as (1), with the additional objection that no mechanism is evident in the carbon-exchange reservoir, or in cosmic radiation, to account for such a steady decline.

(3) A two-step SPR, as shown in Figure 1, with a constant effective value of P_1 from 7,000 to 4,950 B.P., and a lower value of P_2 from 4,950 to the present.

To determine these two values we apply first the standard equation for buildup of specific activity, A_1, in the biosphere during the time from 7,000 to 4,950 B.P.:

$$A_1/P_1 = (1 - e^{-\lambda t}), \text{ for } 0<t<2050 \quad (1)$$

Then for the second period we apply a similar equation,

$$A_2/P_2 = (1 - e^{-\lambda(t + \Delta)}), \text{ for } t>2050 \quad (2)$$

where λ in both equations is .693/5730, and Δ is the increment of time *before* t = 0, that would have been needed for A_2 to build up under the influence of P_2 to the same value

as A_1 at time t = 2050, i.e. the specific activity of the biosphere at the flood (Note: A_1 and A_2 must fall on a single curve A as shown in Figure 1).

To solve equation (1) and (2) for P_2, P_1 and A, we need three boundary conditions which are: $A_1 = A_2$ at t = 2050; A_2 = 16.0 (today's value) at t = 7,000; and a final condition that the discrepancy between a published age, L, and a true age, T, should be about 1,000 years at t = 2,050 years, since the drop-off apparently caused by the flood (by our hypothesis) occurs in the published dates with that error. Looking again at Figure 1, the two ages, L, and, T, are further defined by:

$$D/A = e^{-\lambda T.} \quad (3)$$

$$D/P_L = e^{-\lambda_L L} \quad (4)$$

where D is the specific activity, dpm/gm., of a specimen today of true age, T; A is its activity when it died, lying on the A curve (Figure 1) T years ago; P_L is 16.0 at/min-gm, the SPR equal to today's specific activity which Libby and all investigators assume to be activity when a specimen died; and λ_L = .693/5570, the original Libby decay constant, still used for dating.

Following the above procedure, the value A came out at 9,400 years, and the two values of SPR, P_1 = 64.4 and P, = 18.6 atoms/min-gm. The latter value is very close to Libby's value for the SPR today, which is as expected.

This third alternative thus fits the conditions required at creation and flood, and the (L - T) corrections that result have been shown in the body of the report (Table 7) to produce remarkably satisfactory confirmation of the hypothesis. Despite this confirmation, there is still need to show what might have caused such a drastic decrease in SPR from 64.4 to 18.6, that is, from SPR of pre-flood to that of post-flood era, respectively.

To account for this decrease it is first noted that Libby determined the value of P_2 = 18.8 atoms/min-gm as the ratio of two other values, each determined experimentally. The numerator is neutron production, via cosmic rays, per unit area at earth's surface, on the showing that each free neutron almost certainly produces an atom of C-14. This numerator value, allowing for altitude and latitude variations, came to 156 atoms/sq. cm.-min.

The denominator of this ratio giving P_2 is the total inventory of *exchange-carbon* per unit area of earth's surface, i.e. the carbon that actively participates in the great carbon-exchange process on earth. This inventory Libby subdivided as follows:

Ocean carbonate	7.25 gm/sq. cm.
Ocean, dissolved organic	.59
Total biosphere	.33
Atmosphere	.12
Total	8.3

Now consider the principal effects of a cataclysm such as the Genesis Flood on the principal items in this inventory. Undoubtedly the Flood demolished the carbon-exchange inventory in the terrestrial biosphere. Moreover, it is clear that the continents, since the flood, have recovered scarcely one-third the wealth of living matter they once had.

Allowing then for the less disturbed inventory of marine life, we may judge the pre-flood biosphere inventory to be .50 gm/cq. cm. Likewise the pre-flood atmospheric carbon inventory would be slightly less than now, say 0.10, due to the enormous competition of vegetation for CO_2.

We must look then for some entirely different action of the flood which would greatly *increase* the carbon-exchange inventory of the oceans, and it is not hard to find. On the verdure-rich continents was the accumulated animal and vegetable detritus of two thousand years, over 99% of it inert to the carbon-exchange cycle.

While much of it entered into formation of coal, peat and oil, the greater mass by far must have been rolled and swept into the world ocean; thus, suddenly "enriching" the sea with organic detritus many times previous concentration, an inventory which in this new environment and at new temperatures could now actively participate in the carbon-exchange process to this very day.

We may thus readily postulate a pre-flood carbon-exchange inventory as follows:

Ocean carbonate	1.70
Ocean dissolved organic	.20
Biosphere	.50
Atmosphere	.10
Total	2.50

The total here of exchangeable carbon before the flood (2.50 gm. per sq. cm.) is significantly lower than the present value indicated by Libby, 8.3 gm/sq. cm. This does not indicate that the flood somehow increased the absolute total amount of carbon on the earth, but that it increased the *exchangeable* carbon.

As suggested previously, the flood might be expected to carry much of the accumulated vege-

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4. The origin of stable, complex, metabolically active systems which were composed of "biologically active" proteins (such as enzymes), nucleic acids, and other metabolically active compounds, such as coenzymes and high energy phosphate compounds.

5. The origin of the first completely independent, stable, self-replicating unit-the first living cell.

Such solutions pose tremendous challenges to evolutionists, even to those who tend to take conjecture and extrapolation too seriously, and who have a tendency to confuse what they are saying with reality. I am personally under the conviction that man will never be able to comprehend how life may have originated. Its creation required a Mind infinitely greater than that of any man.

> Through faith we understand that the worlds were framed by the Word of God, so that things which are seen were not made of things which do appear. (Hebrews 11:3)

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table matter back into the oceans and thereby increase directly the amount of carbon in the carbon cycle. This value of 2.50 cm/sq. cm., divided into a pre-flood C-14 production rate of about 161 atoms/min-cm. (i.e. essentially the same as today) would give the SPR value of 64.4.

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