

SCIENCE SPEAKS by Peter W. Stoner

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The attack by critics of the Bible has often come in the name of science. Faith has been threatened because the Bible has been thought to be in serious error. Today, through the efforts of Christian scientists, items of conflict between science and the scriptures are being harmonized. The evidence continues to accumulate in favor of the Bible as the product of Divine intelligence. Science Speaks is an enlightening comparison of Biblical truth and the established scientific data.

Peter Stoner, June 16, 1888 - March 21, 1980

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In this revised edition of Science Speaks Professor Stoner examines the findings of science and the Genesis account of creation. He considers the day by day order of creation and shows the accuracy of Moses' record. The well-accepted principle of probability is applied to Bible prophecy. A fascinating discussion centers around Ezekiel's prophecy concerning Tyre, Micah's predictions about Samaria, and Jeremiah's utterances dealing with Moab, Ammon and Babylon. Attention is given to Old Testament prophecy which finds fulfillment in the life and ministry of Jesus Christ.

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PREFACE

A generation ago (*that is, a "generation" before *Science Speaks* was originally published, in 1952, by Van Kampen Press - Editor*) there were dire discrepancies between Genesis 1 and the findings of science, and especially was this true of astronomy. The attack of the critic came primarily through the sciences, and the faith of many young people was wrecked because they thought the Bible was in serious error and therefore could no longer be trusted.

Since that time, tremendous advances in the sciences have taken place. One by one the items of conflict between science and the Genesis account were harmonized. Today the last serious point of conflict between the Scriptures and science has not only been harmonized, but the findings of science stand ready to supply tremendous evidence that the Bible could not possibly have been written representing the education and culture of that day.

Today, if our young people are properly taught in the churches, there is no possible excuse for losing their faith in college, for everything that they study in the physical sciences will speak of the unerring truth of the bible. If they will stop to consider, it will prove to them that God alone could have been the Author of the Bible.

It is the purpose of this book to lay side by side the findings of the physical sciences and the statements of the Scriptures, so that anyone may observe their miraculous agreement. In setting up these relations, the scriptural statements have been taken exactly as they are given, neither adding to nor subtracting from them. No scriptural statement has been taken out of its context. No wild scientific theory has been introduced to explain a scriptural account. Only the best modern scientific material has been used. This scientific material would be accepted in any college science class.

We might define science as "the result of the attempt of man to determine what God did in the creation and what laws He laid down."

Science is ever advancing, and during the last few years there has been a tremendous acceleration. It is not the thought of the authors that this book is the final word on the correlation of the sciences and the Scriptures. They do believe that, as science advances still more, these correlations will be greatly improved and made still more positive.

It is the intention of the authors to cite only a few of the correlations between science and the Scriptures which they consider to be most vital in establishing the miraculous reliability of the Scriptures. It would require many specialized authors filling many volumes to adequately cover the whole field.

The references given are in no wise inclusive. They are only those which happen to be on the authors' desks, or are most easily available to them. If the reader does not have a good scientific background he should carefully examine all of these or similar references.

INTRODUCTION

ON MY DESK I have Young's General Astronomy (1898). Many changes have taken place in astronomy since this was the standard college text of our country. This book indicates that the heat from the sun comes from its cooling off. Science now believes that the heat of the sun comes from its changing some 4,200,000 tons of matter into energy each second. Young teaches that the solar system was formed according to the Nebular Hypothesis. That is, that our solar system started as a flat disc-shaped body of gas, that it shrank and speeded up as it cooled off, leaving small parts of itself behind to form the planets, and that the main central part became the sun. This theory today is discredited.¹ Young believed the dark spots in the sky to be holes through which we looked into empty outer space. We now know most of these to be dark nebulas. Young tells us that all spiral nebulas are gaseous bodies in our own galaxy. We now know them to be galaxies, great aggregates of stars far out in space from our own galaxy. Young knows of nothing beyond our galaxy but outer empty space. We know now that there are billions and perhaps trillions of other galaxies. In fact Young's book is of relatively little value when it treats of things far from our own solar system.

Texts of astronomy two hundred years old are very entertaining, but in the light of present-day knowledge nearly everything is in error.

Genesis 1 is not just one or two hundred years old; it is several thousand years old. If it were written by man, representing the scientific ideas of that time, we should expect to find most of its definite statements in error. If we find them all verified by the best of our science today, we shall be certain that Genesis does not present the beliefs and culture of the day in which it was written.

AND OLD BATTLEGROUND

Genesis 1 has for generations been the ground for criticism of the Bible and of attacks on its authenticity. Let us carefully examine its statements, for it is in this chapter that God makes His main claims to His acts of creation. It will be necessary to read carefully and to analyze the account just as it is given---neither

reading into the account things that are not there, nor omitting things which are definitely stated.

There are thirteen acts very definitely named in this chapter. God claims in some places to have "created," in other places to have "made," and in still other places He uses the word "let." God also claims to have done these things in a very definite order. We shall be very much concerned with this order, for this account was written long before scientific information was available to guide the writer of Genesis.

There is often disagreement regarding the date of writing Genesis 1. I shall not enter into a discussion of this subject, for while I have very definite ideas on it, the subject can in no way affect the present consideration. None of the scientific evidences which I shall use was established by science even within one thousand years of the latest date ever proposed for the writing of Genesis, and much of the scientific information was not even known as recently as the early 1900s. It is evident, therefore, that if this material in Genesis agrees with modern science, the agreement did not come from scientific knowledge when the Bible was written. Reference to the teachings of Egypt, Babylon, and other ancient civilizations regarding their theories of creation is found here.

CHAPTER 1

CHANGES IN SCIENCE

I Scientific Accuracy

Be ready always to give an answer to every man that asketh you a reason of the hope that is in you - I Peter 3:15.

THIRTEEN DEFINITE CLAIMS

THE FOLLOWING THIRTEEN EVENTS will be found in Genesis 1 as having been accomplished in the order given:

1. "In the beginning God created the heaven and the earth" (v.1).
2. "And the earth was without form, and void; and darkness was upon the face of the deep" (v.2).
3. "And the Spirit of God moved upon the face of the waters" (v.2).
4. "And God said, Let there be light ... and God divided the light from the darkness. And God called the light Day, and the darkness he called Night" (vv. 3-5).
5. "And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament" (v. 7).
6. "And God

said, Let the waters under the heaven be gathered together unto one place" (v. 9). 7. "And let the dry land appear" (v.9). 8. "And God said, Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after his kind" (v. 11). 9. "And God said, Let there be lights in the firmament of the heaven to divide the day from the night; and let them be for signs, and for seasons, and for days, and years... " (vv. 14-18). 10. "And God created great whales, and every living creature that moveth, which the waters brought forth abundantly, after their kind" (v. 21). 11. "And every winged fowl after his kind" (v. 21). 12. "And God said, Let the earth bring forth the living creature after his kind, cattle, and creeping thing and beast of the earth after his kind" (v. 24). 13. "So God created man in his own image" (v. 27). We shall now discuss these claims one by one.

1. The Physical Universe

The first claim of Genesis is that God created the physical universe. In the late 1800s, this was considered absurd. Chemistry taught that matter was eternal; it could neither be destroyed nor created. It taught that you could change the form of matter, forming compounds or breaking down those already formed, but that all of the matter was still in existence as matter. It is clearly seen that if matter can neither be destroyed nor created, a serious question would be thrown on this first verse.

At this same time it was thought that the sun's source of heat came from the sun's cooling off. It was thought that the sun must have started as a very large body. perhaps large enough to include all of the planets and it was cooling off and shrinking in the process of forming the solar system. If the sun even started as large as the whole solar system and was extremely hot it would have cooled down to its present temperature and size in a small fraction of the time that we even then knew as the necessary age of the earth. So we had to look for other sources of the sun's heat.

The possibility of actual combustion taking place in the sun was considered. Possibly the sun was composed of something like anthracite coal and it was burning to produce the sun's heat. But again if the sun were to start as large as the whole solar system and be made of the best coal it would have burned down to its present size in too short a time to be a possible answer.

This forced us to still another consideration. It was known that there were such things as radioactive elements, and that they gave off energy as they changed to other elements. This came into popular favor with Einstein's formula, $E=mc^2$, where E is the energy in ergs, m the mass in grams, and c the velocity of light in centimeters per second. In this formula c equals approximately 3×10^{10} cm/sec., or c^2 equals 9×10^{20} or 9 followed by 20 zeros. Thus a small amount of mass produces a tremendous amount of energy. This formula not only supposes that matter can be changed into energy, but shows the exact amount of energy

produced by a given amount of mass. From this formula the astronomer computed that the sun must be losing about 4,200,000 tons of mass per second in producing the heat which it gives off. This explanation of the source of the sun's heat gave us a plausible explanation of the source of the tremendous amount of heat coming off of the sun continuously.

During World War II atomic physics showed how matter could be changed into energy and the atomic bomb was produced. Today the layman has no question about the ability of matter to be changed into energy. It is just as possible to change energy into matter. This has been demonstrated in our laboratories of atomic physics.

Thus the argument that matter was eternal and there could have been no creation was found to be completely fallacious and has been replaced by the newer proven concept that energy can be changed into matter and matter into energy.

There are many positive evidences that a creation did take place. A few of them follow:

AGE OF THE EARTH Many attempts have been made at determining the age of the earth. The amount of salt in the oceans has been roughly determined and the rate salt is brought down by the rivers determined. The quotient of these was considered a measure of the age of the earth. But too many assumptions were involved. It was assumed that there was no salt in the oceans to start with and no salt in the ocean beds which could have been dissolved by the oceans themselves. It was assumed that the rivers had always brought salt down at their present rate. It was assumed that when salt once entered the oceans it was never removed. All of these assumptions are evidently wrong; consequently, the age of the earth determined by this method can only be the roughest kind of estimate.

The amount of silt in the delta of a river has been measured and the rate at which the river is carrying sediment to the delta has been roughly determined. Again the quotient of these has been taken as a measure of the age of the earth. But we do not know that that river has always existed since the earth began, nor do we know that the river has always carried sediment at its present rate. Nor are we sure that ocean currents have not moved quantities of the sediments forming the delta. Again our estimates are extremely rough.

These methods gave us a few hundred thousand years for the age of the earth. But we have a better method.

The element uranium is radioactive, and after several changes it breaks down into lead and helium which are stable. Under all producible physical conditions of

heat and cold, pressure and vacuum, uranium was found to change at a constant rate and have a half life of 4.51×10^9 years, thus about 1/637th part of uranium changes to lead each ten million years. (*Editor's note: More recently, it has been found that decay rates can be made to vary, by a small fraction of one percent, under pressures exceeding a million pounds per square inch. This small change is not normally significant.*) In the early work of uranium dating, specimens of uranium which has been sealed in igneous rock at the time of crystallization and which seal had never been broken were selected for study. The amount of lead and the amount of uranium were carefully determined and thus the time back to the solidification of the molten rock, containing the uranium, was determined to a fair degree of accuracy. Helium is also developed with the lead so the amount of helium was also measured and the age determined from it. Since it is known that helium will slowly escape through solid rock, the helium dating was a minimum possible age and will not be further considered here.

The oldest sample of uranium so studied indicated an age of nearly four billion years. The earth, of course, is still older, for much time probably elapsed after the creation of the earth before this particular specimen crystallized. A fair estimate of the age of the earth might therefore be roughly set at five billion years.

THE EARTH-MOON SYSTEM The tides produced by the moon on the earth are well known at every beach and harbor, but the tides produced by the earth on the moon are many times greater. These have had such a retarding effect on the moon that it has finally slowed down until it now keeps the same face always turned toward the earth. These tidal effects also cause the earth and moon to move farther apart. The physicists have attempted to compute the age of the earth-moon system on the theory that the earth and moon were originally very close together and the tidal effects have moved them to their present positions. The problem does not have a very definite solution because the depths and extents of the oceans throughout the age of the earth are unknown factors and affect the solution; but by making reasonable assumptions they arrived at an age of four to five billion years. This is in very good agreement with the age of the earth determined above.

THE AGE OF METEORITES We do not really know the source of meteorites but we know they come from outside of the earth. Most of them are believed to originate within our solar system, therefore the determination of their age should give a fair estimate of the age of the solar system. The most recent value for the age of these meteorites is given by Dr. Wood as about 4.5 billion years. ²

THE AGE OF THE SUN Astronomers seem to be agreed in accepting the idea that the heat from the sun comes primarily from the change of hydrogen into a smaller mass of helium and a large amount of energy. This change is thought to take place in the interior of the sun where the temperature is expressed in millions of degrees. An idea of the age of the sun may then be obtained by attempting to determine the amount of helium on the sun by spectroscopical

methods. Then if we assume that the sun has always given off energy at its present rate we could get an estimate of the age of the sun or the length of time required for the sun to generate its present amount of helium. However, we are quite sure that the sun has not always given off radiation at its present rate, and we are sure that our determination of the amount of helium on the sun is very inaccurate. So the result of such a determination can, at best, only give the general magnitude of the age of the sun.

An attempt at this problem has been made and is reported by Cork thus:³ "Some speculation might be made regarding the age of the sun by assuming that all of its present helium has been derived from hydrogen. By combining this with its known present rate of formation an estimate of several billion years results."

Dr. Fowler states: "There is one independent check on the age of the solar system determined by radioactivity in meteorites. Detailed theoretical studies of the structure of the sun, using its known mass and reasonable assumptions about its composition, indicates that it has taken the sun about five billion years to attain its present observed radius and luminosity."

STAR STREAMING Our galaxy is a great aggregate of stars, comprising possibly as many as 100 billion stars, averaging as large as our sun. Our galaxy is disc-shaped, having its greatest diameter about 100,000 light-years, while its thickness is only about 10,000 light-years. This great galaxy has a tendency to revolve in one direction about its center of gravity. However, there is a great variety of motions of the stars other than this revolution. Several attempts at finding the age of our galaxy follow. An attempt to find the age of our galaxy was made by assuming that in the beginning of our galaxy there was no uniformity of motion, then solving the problem: How long would it take to obtain the present degree of uniformity of motion? The answer with the interchange of energy between different types of stars follows.

The Milky Way, one of the Harvard books on astronomy, contains the following statements:⁴ Our galaxy has not been rotating sufficiently long for the interchange of energy between stars of different types to become effective. From our considerations of stellar encounters it would seem very unlikely that the stars would show so much individuality in their motions if our galaxy had existed in its present form for as many as... two billion years. The very fact that we find a fair percentage of all known stars of spectral class A in clusters of various degrees of concentration is the best available proof that our galaxy cannot have existed in its present form much longer than 10 billion years.

Another attack on the problem supposes that the stars of our galaxy at its beginning were nearly in the same plane, and close approaches of these stars gave some of them components of motion at an angle to this plane. So this problem becomes: How long would it take for our galaxy to reach its present width? An answer to this is given by Fowler as ten billion years. ⁵ He prefers,

however, to give the age a range of seven to fifteen billion years. So no matter what method is used to determine the age of our galaxy the results at present lie within reasonable limits and all indicate that our galaxy did have a beginning.

THE AGE OF THE UNIVERSE We have mentioned the age of our own galaxy. The universe consists of many galaxies, probably trillions, in general moving away from us. It is possible to measure the velocities with which these galaxies appear to be receding from us, or the rate at which the universe appears to be expanding. The time it would take each galaxy to reach its present distance from us should be an approximate measure of the age of the universe.

Fig. 1. Spiral Galaxy NGC4565 in Coma Berenices, seen edge on. *Courtesy of Mount Wilson and Palomar observatories. (Editors note: this galaxy was incorrectly identified in previous editions of Science Speaks.)*

The spectrum is composed of light separated according to its wave length, running from the longer wave lengths of red at one end to violet, the shorter waves, at the other. Each element produces light of certain definite wave lengths, which appears in the spectrum as a definite pattern of lines, always at the same place in the spectrum unless the source of light is relatively moving toward or away from the observer. If the source is receding, the pattern of lines for any element will appear farther toward the red than they would if the source were stationary with respect to the observer. This shifting of the spectral lines is used extensively to determine the velocities of planets and stars with respect to the earth. Practically all spectra of galaxies (also called "island universes" in earlier editions of Science Speaks - Ed.) have their lines shifted toward the red. These shifts are very great for the more distant galaxies and less for the closer ones. This shift has become commonly known as the "red shift."

The velocities of the galaxies or "island universes" (figs. 1, 2, and 3), as measured by the red shift, increase nearly proportionally to their distances from us. These velocities are so distributed that if the galaxies were to be traced backward they would appear to have originated from one place at one time, many billions of years ago. The estimate for this time mentioned in Fowler's most recent work would bring all galaxies back to one place about ten billion years ago. Radio astronomy is now considering extending this time up to some fifteen billion years. It makes little difference to the consideration of this book whether the age is five, ten, fifteen or even more billions of years.

The red shift indicates velocities for distant galaxies as high as tens of thousands of miles per second. To many this velocity has seemed to be unreasonable, so attempts have been made to explain the shift in some other way than a measure of velocity.

Fig. 2. Spiral galaxy M81 in Ursa Major. *Courtesy of Mount Wilson and Palomar*

observatories. Editor's note: this galaxy was incorrectly identified in previous editions of Science Speaks.

The idea was advanced that light might change its speed after traveling such great distances, and consequently change the length of its waves. The velocity of light from distant galaxies has been measured and found to be the same as light from a local source, so that idea has been discarded.

Another theory involves the leaking of energy from photons of light. So far this theory has no scientific background in atomic physics.

Dr. Edwin P. Hubble, in the annual Sigma Xi addresses before the American Association for the Advancement of science, states:⁶ It may be stated with confidence that red shifts either are velocity shifts, or they must be referred to some hitherto unrecognized principle in nature... The present distribution of red shifts could be adequately described on the assumption that all the nebulae [galaxies - Ed.] were once jammed together in a small volume of space. Then, at a certain instant, about 1,800 million years ago [this instant is now believed to have been much farther back in time - Ed.], an explosion occurred, the nebulae [galaxies - Ed.] rushing outward in all directions and with all velocities. Today, of course, we find the nebulae [galaxies - Ed.] distributed according to their initial velocities. Those moving most rapidly have reached the greatest distances, while the laggards are still in our vicinity. Although this picture is oversimplified, it suggests the importance attached to the so-called "age of the Universe" --- 1,800 million years.

At present the age of the universe is considered as being between ten and twenty billion years. There are many factors, including local variations in the distribution of the velocities of galaxies, which make this number very difficult to calculate accurately.

Dr. Hubble goes on in his paper to point out that other explanations of the red shift may be forthcoming. He also points out some difficulties involved in the above explanation, including a greater concentration of nebulae at greater distances than at the lesser distances. This problem has not yet been solved. (*Editor's note - The solution came later; space turned out to be much less homogeneous than was originally presumed.*)

THE ELEMENTS It is believed that hydrogen was practically the only element involved in the original creation of matter. The rates of change from one element to another under varying conditions are now quite well understood. Whence the problem: How long would it take to develop our present variety of elements and in the present known quantities? The answer to this question is roughly of the same magnitude as the other ages given above.

ALL STARS HAD A BEGINNING The radiation of our sun is apparently produced by the loss of about 4,200,000 tons of mass a second. Only about

1/200th part of this is recovered. This means that the sun is running down. The same can be said for all of the other stars. If the stars are all running down they must have had a beginning. They could not have always existed, for if four million tons of mass were added to the sun each second for an infinite period of past time you would have an infinite mass and our sun would have started by filling all space. The same can be said for each of the 100 billion stars in every galaxy. This is impossible. Therefore, every star had a beginning.

Fig. 3. Spiral galaxy M51 in Canes Venatici. *Courtesy of Mount Wilson and Palomar observatories*

Genesis 1:1 does not state a time when the universe was created. As far as scriptural evidence is concerned it does not matter whether everything started five or six billion years ago, ten billion years ago, one hundred billion years ago, or any other assigned time. The above eight items are strong evidence that there was a beginning to our universe.

This evidence is so strong that many astronomers are freely talking about the day of creation. They are even forming theories as to how the universe was created. Some speculation seems to hinge about the concept that the universe was created from a tremendous amount of energy, probably in the form of light. One of these theories would have this energy change to matter in a remarkably short time, requiring no longer than one half hour.⁷ (*Editor's note: Newer theories suggest times as short as a very small fraction of a second.*)

Thus Genesis 1:1 is no longer contradictory to science, but completely agrees with both the best facts and theories of science today.

SCIENTIFIC THEORIES A scientific theory is made to fit the known facts. The theory may or may not be true; it may not even be thought to be true by its author. It helps the student to organize the facts in his mind and it often enables the scientist or the engineer to predict future behavior or happenings. When additional facts are secured, the theory is often revised to cover the new facts or it may be replaced by a new theory. This frequent change does not bother the scientist. It means probable progress toward a final true theory.

Once we said the central four thousand miles of the earth were solid steel. This was the theory based on the transmission of certain earthquake vibrations through the center of the earth. According to observations at that time, the vibrations went through the earth as they would if the center were solid nickel steel. Later findings showed that the vibrations did not travel under all conditions as they would in solid steel, but rather as they would in molten steel. So the revised theory is that the center of the earth is molten steel. (*Editor's note: Present theories, based on the precise tracking of seismic waves from thousands of earthquakes, assume a solid inner core and a liquid outer core - both composed of a mixture of iron and nickel.*)

Years ago our interpretation about the composition of matter was that the atom was the smallest particle of material. Now we have broken the atom down so that its nucleus is made up of protons and neutrons, with electrons revolving about the nucleus. This was the state of the interpretation of the smallest units of matter for some time. Now we have many additional types of particles making up matter.

We once had two theories as to what light is; both were taught in all physics classes. One stated that light is only a wave; the other, that light is very small particles, traveling through space. One theory accounted for a part of the known facts about light, but it took the other theory to account for the remaining facts. The two theories together made it possible for the scientist to predict most of the behavior of light and thus design new optical instruments. These two theories have been replaced by a very complicated theory in which light is viewed as a quantum, having both wave and particle properties. In many cases the older theories are still used, as they make the calculations simpler while still sufficiently accurate. Scientific theories may be very useful, whether true, partly true, or even, in some cases, when they are technically false.

2. THE EARLY EARTH

"And the earth was without form, and void; and darkness was upon the face of the deep." This verse has probably received the most serious criticism of all verses in the Bible from cover to cover. The theories of science about the formation of the solar system, in both astronomy and geology, have a long and interesting history.

THE NEBULAR HYPOTHESIS For something like a century the Nebular Hypothesis held absolute sway as being practically a proven fact and not merely a theory. The theory went something like this: Any system like the solar system (the sun with its planets revolving about it) started as a gaseous body, shaped like a flat disc, very hot and rotating slowly. Then as the mass cooled off, it contracted and rotated more rapidly. Finally small parts were left behind and formed the planets, rotating, and revolving around the central body in the same direction that the whole gaseous body originally rotated. The central body formed the sun. This theory seemed plausible; it seemed to agree perfectly with the laws of physics as we understood them. A glance at the solar system showed that it filled the conditions of the theory. The sun rotated in the same direction in which the planets revolved about it; nearly all of the planets rotated on their axes in the same direction; and practically all of the satellites revolved about their planets in this same direction and turned on their axes, still in this same direction. This certainly seemed to indicate that this system developed just as the Nebular Hypothesis indicated.

Then too we had photographic evidences. Photographs of what were then thought to be spiral nebulas shown on edge (Fig. 1) certainly were flat discs.

Others as seen from the side were quite round (Fig. 2). Others apparently showed pieces of material breaking off and forming planets (Fig. 3).

In about 1920, however, a mathematical physicist went to work on the physics of the hypothesis and showed that if we should have such a body of gas, as described in the hypothesis, it could not possibly throw off small bodies of material to form planets to the central body; but if it divided, it would have to divide nearly in the center, making two bodies of nearly equal masses.⁸ This did not at all agree with the solar system where the largest planet has less than 1/1000th the mass of the sun.

It was also shown that such a gaseous body would have difficulty in leaving material behind when it shrank; and if it did, this material could not have collected to make a planet.⁹

GALAXIES It was very disturbing to have such an old hypothesis proved defective, so efforts were quickly made to change the theory enough to overcome the difficulties. They were of little avail, for at about the same time Dr. Hubble, working with the 100-inch telescope of Mt. Wilson, found that the spiral "nebulas" were not nebulous bodies as had always been supposed, but island universes (*presently called "galaxies" - Ed.*), great aggregations of stars. These were shown to be similar to our own galactic system, but the nearest one was about two million light-years away, that is, the distance light will travel in two million years at 186,000 miles each second. (*Editor's note: Recently a much closer spiral galaxy has been discovered. We were not able to see it earlier because it is positioned directly behind the bright core of our own galaxy.*) ¹⁰

Our own galactic system, of which our sun is just one of the stars, contains something like 100 billions of stars, and our sun would be located more than halfway from the center to the outer edge. The edge of the disc as seen from the earth is the Milky Way. The largest diameter of our system is about 100,000 light years. Each spiral galaxy is thought to be a very similar system to our own, to contain on the average about the same number of stars, and to be, at least very roughly, the same size.

THE NEBULAR HYPOTHESES UNSATISFACTORY These findings completely removed the Nebular Hypothesis from being a satisfactory description of the manner in which our solar system, or any other planetary system, could have been formed; for the photographic evidence was shown to consist of photographs of galaxies instead of nebulous bodies, and the theory was proved physically impossible. Today the Nebular Hypothesis is mentioned in books of science only for its historical interest.

Until the Nebular Hypothesis was discarded, science did not agree with Genesis 1:2; in fact it contradicted it in every statement. The Nebular Hypothesis said that in the earlier stage the earth was a disc-shaped body of gas, dense and very hot,

giving off a great amount of light. Genesis says it was without form, void and dark. Thus the two were exact opposites in every statement. During the century of belief in the Nebular Hypothesis, Genesis 1:2 was one of the main points of attack against the Bible. It did not agree with the theory of science, and furthermore its descriptions did not fit any known physical object or astronomical type of body. As a church we said the future developments of science would probably clarify this verse. Or we translated it in a different manner, so that we could give it a different interpretation. None of these attempts produced any convincing argument of the accuracy of the biblical account.

OTHER THEORIES FAULTY Following the Nebular Hypothesis, there sprang up other theories, the most prominent ones being the Planetesimal Theory and the Tidal Theory. These were short-lived, as they were both shown to be defective by Henry Norris Russell in his book, *The Solar System and Its Origin*. *(Editor's note: Although it is accepted that our sun and its planets formed from a dark nebula; some of the details of planetary formation appear to have involved "planetesimal" interaction. From the evidence, in its very early stages, our solar system contained many smaller planets which occasionally collided, resulting in the fewer, larger planets we see today. This better describes some of the irregularities in planetary motion, and the formation of earth's moon.)*

Fig. 4. Horsehead nebula in Orion south of Zeta Orionis. *Courtesy of Mount Wilson and Palomar observatories*

Fig. 5. North American Nebula in Cygnus. *Courtesy of Mount Wilson and Palomar observatories*

A DARK NEBULA But let us come back to this second verse. To what does it refer? What is without form and void and dark? This verse has been quoted by Dr. Alter, Director of Griffith Planetarium, as being the best description of a dark nebula that has ever been written. It is only relatively recently that we have known of the existence of a dark nebula. Before that, all dark nebulas were considered to be merely spots in the sky where there were no stars. Figure 4 shows the photograph which first definitely proved to the astronomers that these were clouds of dark material. On the upper side of the photograph there are large numbers of small stars. These stars extend clear across the picture, but are covered on the lower side by the dark cloud. You can practically see them shining around and illuminating the edge of the nebula. In the center of the photograph, a projection of the nebula extends out from the main body. There can no longer be any doubt about the existence of dark nebulas. They are, perhaps, more prevalent than any other type of astronomical object except stars. Figures 5 and 6 show other dark nebulas in multitudes of shapes. Any recent astronomy text will show you many other shapes of dark nebulas.

The suggestion has been made by science that diffuse nebulas are the source of new stars. Practically every modern theory of the formation of our solar system supposes that our system started from some kind of a diffuse nebula.¹¹ Bright and dark nebulas have the same composition. One has a star close enough to

make it radiate light; the other has no such star and remains dark. There are perhaps 1000 times as much dark nebulosity as bright nebulosity.

THE STELLAR SEQUENCE The sequence of stars, accepted by astronomy, starts the star as a rare gas, only hot enough to give off a faint red light.

The star then contracts, becoming denser and hotter, gradually reaching a high maximum; the temperature then begins to decline and in sufficient time becomes a dead body, giving off no light. The first form of the star, a rare gas only glowing faintly red, differs (in absolute amount) much less from a diffuse nebula than many stars differ among themselves in both density and temperature. If this sequence is followed backward and the big red star becomes still more rare and of lower temperature, the state of the diffuse nebula will eventually be approached. Many authors of astronomy texts start the sequence with the diffuse nebula and have the rare, faint star as the second step. The diffuse nebula is today the most generally accepted starting place for new stars. (*Editor's note: Incipient stars have now been photographed emerging from their birthplace in dark nebulae.*)

ADDITIONAL MEANING On discussing the meaning of the words in the original languages with Nathan J. Stone, of Moody Bible Institute of Chicago, as well as other Hebrew scholars, it was brought out that there are concepts of great magnitude and of commotion involved, as well as the meanings in the King James Version. Inserting these additional meanings, the first part of the verse might read something as follows: "And the earth was shapeless, very rare, and darkness dwelt upon its face. It was of unmeasurable magnitude and in great commotion."

With this translation it seems difficult for this verse to refer to anything except a diffuse dark nebula.

We have been able to find the densities of the diffuse nebulas, and they have been found to be extremely rare; rarer, in fact, than a good vacuum produced in our laboratories. So they are dark, extremely rare, and have been found to be in commotion. Now look at the photographs of dark nebulas and see what shape they are. They fill perfectly the description of Genesis 1:2. They are without form, very rare and dark. So today we know astronomical bodies which perfectly fill this description. It certainly is most probable that the earth came from a dark nebula, as the amount of dark nebulosity is many times the amount of bright nebulosity. A bright nebula is simply a dark nebula excited or illuminated by a nearby star.

THE EARTH WAS ONCE WARM Any theory which develops a planet from a diffuse nebula must have the nebulous material collecting; whether in the nebulous or planetesimal form is immaterial for our purpose. That body must then heat up; whether from original heat in the nebula, radioactivity or otherwise is immaterial. A consideration of early dense vegetation shows a warm humid

earth. It certainly had great amounts of water for an extremely long time.

Henry Norris Russell in *The Solar System and Its Origin* briefly discusses the possibility of our solar system coming from a diffuse nebula and finds no obstacles. Smith and Jacobs also find no obstacles. ¹²

The Stellar Sequence practically demands that any new astronomical body must come from a diffuse nebula.

All of the really new astronomical theories on the origin of the solar system have it as coming from a diffuse nebula. The Magnetic Field Theory of Sir Fred Hoyle of Cambridge University and the Cloudlet Theory of Dr. William McCrea of the University of London are definite proposals which show how our solar system could have developed from a diffuse nebula.

So today we can safely say that all modern thought about the origin of the earth or the solar system is in agreement with Genesis 1:2.

3. EARLIEST LIFE

"And the spirit of God moved upon the face of the waters." This clause lacked meaning for me until the American Standard Version of 1901 changed the word "moved" to "brooded." In discussing the translation further with Nathan J. Stone, I learned that the word normally referred to a dove brooding on her eggs, to bring to maturity the germ of life in them, or to the eagle beating her wings over her nest to drive off an enemy and protect her young. The meaning of the verse then seems to be something like this: And the Spirit of God was gently brooding on the face of the waters, developing and protecting elementary life.

Science claims that life in its earliest primitive forms first appeared in the sea. Nothing could agree better with the last half of this verse. The life spoken of in this verse must be considered to be the elementary, for the more complex types are named at later periods in the following verses.

4. LIGHT

"And God said, Let there be light ... and God divided the light from the darkness. And God called the light Day, and the darkness he called Night." The Stellar Sequence is very well accepted in the astronomical world. For a star to go through this sequence, or even a part of it, the star must have a mass greater than 1/100th part of the mass of the sun; otherwise, it cannot heat up to make a star. Since the mass of the earth is only 1/333,000th part of the mass of the sun it could not have become a star and gone through the Stellar Sequence. The light described in verse 3, therefore, must be considered to have come from the sun,

as it still does, and not to have come from the earth.

This agrees also with the scriptural account in verses 4 and 5: "And God divided the light from the darkness. And God called the light Day, and the darkness he called Night." Now if the earth had been like a star and giving off light, the earth would have been light on all sides. There could there have been day and night upon the earth.

Thus science is in complete accord with verses 3-5. The central body, the sun, gave off light and lighted the earth so that one side was light and the other side dark. There was day and night.

5. THE EARTH COOLS OFF

"And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament." Firmament is better translated "space." So the verse means that there was water on the surface of the earth, a distance or space of air, and dense clouds above. As a planet cools off it must go through this stage. When the temperature of the earth was near the boiling point, there could have been no deposits of water upon it, for the heat would have evaporated all surface water, and all of the water would be covering the earth as extremely dense clouds extending from the surface upward. When the earth got cool enough, some of this water would condense upon the surface of the earth. The cooler it got, the more water we would find deposited on the earth, and the smaller would be the amount suspended in clouds. Yes, this condition of the earth was necessary, and had to follow the condition when the earth was much hotter.¹³

6. THE EARTH WAS COVERED WITH WATER

"And God said, let the waters under the heaven be gathered together unto one place." This certainly indicates that at an early time the earth was well covered with water. The theories of geology very well attest to this early condition.¹⁴

7. THE CONTINENTS WERE FORMED

"And let the dry land appear.": Different theories are given by geology for the rise and fall of continents which have gone on for great lengths of time. But I think all agree that in its earliest geological stages the surface was quite smooth and of nearly uniform height. When forces such as those produced by shrinkage raised parts of the planet above others, the continents rose above the water.¹⁵ *(Editor's note: It has been confirmed that the earth was initially very smooth. Geological forces didn't raise the continents until about two or three billion years ago.)*

8. VEGETATION

"And God said, Let the earth bring forth grass," etc. Chemistry has established the fact that it is impossible for any planet to long have any amount of oxygen in its atmosphere without having large amounts of plants to continually replenish the supply. Otherwise the oxygen would rapidly combine with the rocks and metals of the surface and deplete the atmosphere. It seems quite likely that our atmosphere did not contain enough free oxygen to sustain animal life until it was put there by the plants. Basically, plants are the food of animals. Some animals eat other animals, but in the main they must eat plants or they would exterminate each other. Therefore, we know that plants had to precede animals. We are not discussing very primitive forms of plants and animals, but plants and animals as described in Genesis 1:11-27. Perhaps this account in Genesis parallels the precambrian period in geology, but we shall not attempt to be positive.¹⁶

The time of the advent of vegetation on this earth has been moved back many times. In about 1950 the most primitive known forms of vegetation were from about one billion years ago. Since then, some graphite beds were proved to be of organic origin and were dated at two and one half-billion years old. (*Editor's note: The oldest algae fossils have been dated more than three billion years old. Algae is, of course, not a land plant and is probably not what Genesis addresses here.*)

9. BREAKS APPEAR IN THE CLOUDED SKY

And God said, Let there be lights in the firmament of the heaven to divide the day from the night; and let them be for signs, and for seasons, and for days, and years ... And God made two great lights; the greater light to rule the day, and the lesser light to rule the night(Genesis 1:14-18).

This passage also has been one of the great points of attack of the critic against the Bible. He has said that the Bible could not be true, for this passage says the sun was created after vegetation; and that would be impossible, for vegetation could not grow without the heat and light of the sun. Now it is probably true that vegetation could not grow without the heat and light of the sun, but Genesis does not claim that vegetation was created before the sun. The word used in this passage is not "created" but made. Scofield translates this word as "made to function," and it is a legitimate translation. The account of the creation of the sun and moon is given in verse 1, while the account of making the sun to shine on the earth is given in verses 14-18. In verse 5, the early condition of the earth was described as being completely covered with clouds. With clouds this dense we could not tell the time of day, the season of the year. or any other sign that we read from the sun today. So when God made the sun to function for signs, for seasons, for days and for years, He accomplished this by breaking the clouds and letting the light of the sun shine through.

Suppose that today were a very dark cloudy day, and I should tell you that tomorrow I would make the sun shine on the earth. Would you think I intended to create a new sun and put it in the sky to shine on the earth? Certainly not. You would know that I intended to scatter the clouds so that the sun, which had been there for millions of years, could shine through. Let us be just as reasonable in interpreting our Bible.

There is then no contradiction in vegetation appearing on the earth before the clouds were broken away, so that the sun could shine through directly. Before the clouds were broken there was still considerable internal heat in the earth. Otherwise nearly all of the water in the clouds would have already condensed upon the earth, and the clouds would have broken. It is heat that keeps the water suspended in the atmosphere. This means that just before the clouds were broken we had a hothouse condition on the earth. The clouds above scattered the rays of light from the sun so they would not burn the vegetation, just as does the semiopaque glass over a house. And the interior heat within the earth kept everything quite warm, and vegetation grew at its best. You cannot make a better setup for the advent of vegetation than that given in Genesis 1:11-12 (*Editor's note: It is unlikely that the earth's temperature was the only, or even the primary, controlling factor here. It is more probable that the presence of plants, slowly changing the composition of the atmosphere, was the primary cause.*)

10. FISH WERE CREATED

"And God created great whales (sea monsters), and every living creature that moveth, which the waters brought forth abundantly." If we turn to geology we find the devonian period designated as the period of fish. The ordovician period, 400 million years old, contains some fish and therefore is a more probable beginning time. The creation of fish certainly could not have come after the devonian period.¹⁷

11. BIRDS

"And every winged fowl after his kind." We might suggest the jurassic or cretaceous period as being the most likely time in geology to be ushered in by the creation of birds. Birds are more fragile than most other animals and have left very few fossils. The best age which we can place on birds at the present is 80 to 130 million years. ¹⁸

12. MAMMALS

"And God said, Let the earth bring forth the living creature after his kind, cattle, and creeping thing, and beast of the earth." Here we might suggest that the Cenozoic period best fits the advent of these animals. However, someone may

wish to place it earlier. The appearance of mammals is certainly later than that of birds. Perhaps 60 million years ago.¹⁹

13. MAN WAS CREATED

"God created man in his own image." Modern man's appearance is in the last or Quaternary period. No remains of man are found in an earlier geological layer.²⁰ At present it appears that modern man dates from roughly 100,000 years ago. Other fossils which are categorized as "homo," although not as "modern man," date from about two million years ago. ([more detail here](#))

Thus we find that the thirteen things named in Genesis are in the same order that geology finds them. We must therefore ask the question, from what source did Moses obtain this order? I think there are five possibilities: (1) The information came from the schools of Egypt where Moses was educated. (2) Moses did not write Genesis; it was written at a much later date, such as the Babylonian period of culture. (3) The information came from some other civilization (4) The writer of Genesis just made up the story or sat down and reasoned it out. (5) It came by inspiration of God.

If these are the only possibilities, one of these five must be correct; and if we can prove four to be impossible, we will then have established the fifth. Let us consider them in order.

1) Could this account have come from the schools of Egypt? The answer is no. We have in our libraries accounts taken from tablets of stone, a record of creation as taught by the Egyptians. While it is similar to the account of Genesis in a very few respects, it does not agree in most of its items in the general description of events. It does not agree with present scientific information. Neither Moses nor any other person could have obtained this account in Genesis from Egypt.²¹

2) Could the account have been taken from the schools of Babylon? The answer must be emphatically no. We have a record of the theories of creation as believed by the people of Babylon. The main one is something like this: In the beginning there were two gods. The two gods fought. one slew the other and out of his flesh he made the earth, out of his bones and teeth he made the rocks, and out of his blood he made the oceans and the rivers. No. this certainly is not Moses' source. Other theories from Babylon are as fantastic.²²

Note how very different these stories are throughout from Genesis!

3) We may search every possible source in our libraries, but none gives an account approaching that of Genesis 1.

4) Could Moses have guessed the proper order? If we say yes, the chance is extremely poor. The order of these thirteen items might also be considered satisfactory if items 3 and 4 occupied any place from 3 to 7, inclusive. (Science has not yet advanced far enough to tell exactly where these two items must be.) The probability of Moses guessing and getting the correct order of these items is:

The possible number of satisfactory orders, divided by, The total possible number of orders

In symbols this is ${}^5P_2 / {}_{13}P_{13}$ or $(5!/(5-2)!)/(13!/(13-13)!)$

This is 20/6,227,020,800 or 1/311,351,040

Yes, we could say that Moses just guessed, and while he had only one chance in 311,351,040 he did get it right. But this position would be most unreasonable.

Perhaps you say no. that is not likely, but he may have reasoned it out. This is just as unlikely as the other. Suppose you eliminate from your mind the account of Genesis and absolutely all scientific literature on the subject, and sit down to reason it out. What would you write for the account of creation? I do not know what you would write, but I think I should write something like this: In the beginning man was with God in heaven, but he was a physical being. Heaven was made for spiritual beings so man did not get along very well. God and man talked things over and decided that the thing to do was to make a place which was better suited to human needs. Together they planned the earth so that it would have just the right kind of an atmosphere, etc. Certainly I would not put man down at the very end of the list, no matter what else I did. He must have a place in making this earth the wonderful place that it is. Certainly anyone who watches animals and fish knows that animals learn to swim, but fish do not learn to walk. So we would all put land animals first and have some of them learn to swim so well that they just stayed in the water and became fish. Other animals kept trying to fly until the front pair of legs developed into wings. Perhaps you say that I am trying to be ridiculous. I am not. I believe this is a more logical way to humanly reason it out than the account in Genesis. Yes, of course, we would all have God doing some special things for man, such as creating cows and horses to make the work easier for him and thus place them after man. I do not believe any man can logically reason out the order of creation, or even make a reasonable start at it.

Now this number of 311,351,040 does not tell the whole story. This is only the number of ways in which the thirteen things can be satisfactorily arranged. Where did Moses get the thirteen things to arrange? Did Moses know all about dark nebulas so he could write a perfect description of one in verse 2? That is

absurd, for the greatest of the scientists, having many photographs of dark nebulas, never guessed one existed until about the 1920s. What chance had Moses, as a man, of writing a description of an object to be discovered nearly four thousand years later?

It is certain that at least 1,000,000,000 people lived from the day of Moses until anyone knew what his description meant. We should say, then, that he did not have even one chance in 1 billion of being able to describe a dark nebula. Let's place our estimate at one chance in one billion.

What chance did Moses have of knowing that the earth was once covered with water? I fear that there is no very definite way in which we can answer this question. Surely Moses had a very poor chance of guessing this early condition. Suppose we be conservative and say we will consider that he had one chance in one hundred. What chance did Moses have of guessing that the earth in its earlier stage was completely covered with clouds? Let's consider that his chance this time is one in one thousand. One in one million or more would perhaps be more nearly accurate.

We should ask other questions, such as, What chance did Moses have of knowing that life first appeared in the seas? What chance did Moses have of knowing that light first came from the sun and not the earth? What chance did Moses have of knowing that rain began on the earth between the introduction of plants and the creation of fish? "And the Lord God made the earth and the heavens, and every plant of the field before it was in the earth, and every herb of the field before it grew: for the Lord God had not caused it to rain upon the earth, and there was not a man to till the ground." Most historical geologies will verify this.

We will not evaluate these chances. Our number is large enough already. If you should think that any of the numbers given above are too large, evaluate these three items and you will far more than overcome any reduction made in the earlier numbers.

Now what chance did Moses have when writing this first chapter of getting the thirteen items all accurate and in a satisfactory order? Using the estimates that we have just suggested, we must multiply them all together, and as a result we find that Moses had one chance in 31,135,104,000,000,000,000,000 of getting both the items and the order accurate.

This is an extremely small chance. Let us try to visualize it. Suppose we decide to have a drawing and have this number of tickets printed. In order to get them printed, let us engage more than 8,000,000 presses, each capable of printing 2,000 tickets per minute. And then they would have to run day and night for 5,000,000 years to print this number of tickets. Now let one ticket be marked and the whole mass thoroughly stirred. Then we will blindfold you and let you draw

one ticket. Will you get the right one? Your chance is better than Moses' chance would have been of writing this one chapter from the information known in his day.

Again suppose we try to visualize this chance. Suppose these tickets are one and one-fourth inches square, and they are printed from stock which requires one hundred to make a thickness of an inch. How big would the pile be? It could hardly be called a pile, for the tickets would cover the whole United States from Canada to Mexico and from the Atlantic to the Pacific, one mile deep when piled straight and even. One ticket was marked to start with. Now stir the whole mass thoroughly, from the Atlantic to the Pacific and from Canada to Mexico. They will now be all messed up and reach a few miles high. Put on your blindfold and start out, dig as deep as you wish, travel as many days as you wish to reach the chosen spot, and come up with one ticket and say, "This is it."

Now is it reasonable for us to say we think Moses took that kind of a chance and got it right? Certainly this is absurd.

5) We have now disposed of the other four items as impossible or completely outside the realm of reasonableness. We must, therefore, accept our fifth supposition, that God inspired Moses in the writing of this chapter, as an established fact. We also have the scriptural claim: "All scripture is given by inspiration of god," and this is strong evidence of its truth.

Let us put the argument in another way. Suppose I claim that I built a certain old house, but I have no witnesses, and people will not believe that I was the builder. How can I prove that I built the house? I can prove that I built it if I can tell several of the things which are hidden in the interior construction, which no one can see by just looking at the house. If the house is torn open enough to reveal the things which I described, and the things are all found, I will have established my claim.

Suppose in such a case I should say: "When the cement was being poured I dropped an old nail set in the cement in the northeast corner. In the southeast corner you will find a lot of old wire packed in with the concrete. You will find in the framing that 2x8 floor joists were used instead of 2x6, as is common. The southwest corner was framed by spiking together four studs instead of the common three." And so I go on and tell you thirteen things that went into that house, running from the foundation to the roof. Then suppose you tear that house down and find the thirteen items placed in exact agreement with my description, what conclusion will you draw about my claim as the builder? This evidence would hold in any court in the world. No one would question my claim.

We are in exactly the same position with respect to the verification of these thirteen items in Genesis 1. Though they were written thousands of years before science had any information about any of them, science has proved these thirteen things to be true. Perhaps God wrote such an account in Genesis so that

in these latter days, when science has greatly developed, we would be able to verify His account and know for a certainty that God created this planet and the life on it.

II POWERS OF GOD

RADIATION The sun is a great power plant. If you were to mark off one square yard on the sun you would find that it is giving off 70,000 horsepower of energy continuously. There are a tremendous number of square yards on the sun's surface - more than 10,000 times the number of square yards on the surface of the earth.

Suppose that we decide to buy the energy that the sun gives off for a period of twenty-four hours. Suppose we can buy this energy for one-fourth cent per kilowatt-hour. To pay for this energy in silver dollars would require enough money to cover the United States four miles deep. *(Editor's note: Although the price of energy is now (as of 2004) more like ten cents per kilowatt-hour, the common unit of currency is now paper instead of silver. The price of electricity may have gone up by a factor of forty, but a real silver dollar also costs about forty times what it used to cost. This means the illustration given here is still approximately valid. Just imagine that the entire United States is covered in antique silver dollars, four miles deep.)*

This represents a tremendous amount of energy. Yet when God created the sun, He had to put into that act of creation all of the energy that has come from the sun in the five billion years past and all that which may yet come from the sun in the billions of years yet to come. There is still enough energy in the sun to last for another five billion years.

There are 100 billion stars in our galaxy. So let us multiply our concept of the power of God, as shown by our sun, by 100 billion. But how many are 100 billion?

If you were to count 250 a minute, day and night, it would take you just about one thousand years to count to 100 billion. This gives somewhat of a concept of the power needed for the creation of our galaxy and of the greatness of our galaxy.

Multiply this by about a trillion, the probable number of galaxies, and perhaps you will begin to have a concept of this phase of God's power as demonstrated by the radiation of the stars. If we get this concept, we should understand better what Christ meant when he said, "All power is given unto me."

KINETIC ENERGY Kinetic energy is a measure of the energy represented by a

body in motion. It is proportional to the mass times the square of the velocity.

The great projectiles which we fired during World War II, from the coast artillery, traveled at a maximum speed of about one mile per second. As the earth moves around the sun, it travels at a speed of about eighteen and one-half miles per second. Eighteen squared is more than 300. Therefore, there is more than 300 times the energy in any part of the earth as it travels around the sun than there is in an equal mass of a great coast artillery shell.

The sun with the solar system revolves around the center of our galaxy at a speed of about 134 miles per second. Squared, 134 becomes nearly 18,000. So the solar system has 18,000 times the energy that it would have if it were traveling one mile per second, or in other words if it were just traveling at the speed of a coast artillery shell.

Some galaxies are traveling as fast as 60,000 miles per second. If we think of all of the mass of 100 billion stars, all equal to our sun, all traveling 60,000 miles per second, we have some idea of the nearly unlimited energy represented in the movements of the various parts of the whole universe.

God is still on His throne. How can He be alarmed by the warfare of man, even with his atomic weapons? What a consolation this power of God should be to the Christian!

GRAVITATION Gravitation is an intrinsic part of mass and cannot be separated from it. You may lay two books on the table; there is a gravitational force between those two books attempting to draw them together. The moon and the earth have gravitational forces, and we observe them as tides in the oceans. We observe the gravitation of the earth on the moon by its holding the moon in its orbit around the earth. The gravitation of the sun for the earth is very great. Computation has shown that if you were going to replace the gravitational pull of the sun on the earth by a cable, you would need a cable eight thousand miles in diameter. This gravitational pull equals the limiting strength of this cable. In other words the gravitation of the sun on the earth is a force nearly great enough to snap a steel cable eight thousand miles in diameter.

It would be impossible to replace this pull of gravity with a cable. If such a cable could be constructed to run from the earth to the sun, the heat of the sun would melt the end of it and turn it into a vapor. Suppose in the creation, instead of putting this force we call gravity into existence, God had decided to build cables from the sun to the planets and from each planet to its satellites, so that they would be held in place, what would happen when they started revolving in different planes? It would soon make one tremendous tangle. Imagine that God had run cables from each star in our galaxy to each of the other 100 billion stars to hold them together, and then the whole galaxy is started rotating. The tangle, of course, would be indescribable. So we have in this force of gravity something

not only of the power of god, but of his wisdom.

Gravitation is a power which man cannot alter, nor can he protect himself from it. You may go out on every hot sunny day and by stepping into the shade of a tree, you may get some protection from the radiation of the sun. You may even relieve the heat by carrying a parasol for shade. You would not be so foolish as to put the parasol under your feet to reduce gravitation. Man cannot change the force of gravity, and how thankful we should be, for if in warfare one nation could change the gravitation under the other, the results would be entirely disastrous. If one nation could reduce the gravitation under another to zero, that nation would go floating off into space. If one nation could multiply the gravitation under another by five, every one in that nation would be immobile. Gravitation is indeed one of the great powers of the universe, and we must obtain a concept of it if we would know the power of God.

If we add together the power of radiation, the power of kinetic energy and the power of gravitation, we may have a little concept of the power of God used in the act of creation. But there are still other powers of God.

OTHER POWERS OF GOD I believe that the other powers of God are even greater than the physical powers. Let us list just a few of them:

1. Power to write the Bible. This involves the power to take men from various walks of life, in different ages, and give through them God's message to man and produce one continuous revelation.
2. Power to know the future. Power to predict things that are to happen on this earth thousands of years in the future, and to have them all come true to the last detail.
3. Power to hear and to answer our prayers.
4. Power to keep the believers, so that they need have no concern about their future either in this life or in the life to come.
5. Power to change lives. Power to take the drunkard or the hardest criminal and make of him a child of God.
6. Power to snatch us from the grave and take us to be with Him through all eternity.

No wonder Christ could say, "All power is given unto me in heaven and in earth. Go ye therefore ... and, lo, I am with you always."

when we pray, how often do we:

1. Forget what power God has and ask only for the little things?
2. Wonder if God can hear? How we dwarf His power!
3. Pray for guidance? We need direction in the little things of life as well as in the great decisions.
4. Pray for the lost? We were saved to be epistles and ambassadors. Christ gave His life for others as well as for us.
5. Allow our minds to wander from prayer?

III SCIENTIFIC PROBLEMS DISCUSSED

THE THEORY OF EVOLUTION

There are many theories of evolution, and it is necessary for us to define what theory we are discussing. We shall refer to that particular theory of evolution which supposes that life, in its most simple form, either developed on this earth spontaneously or was transplanted from some external source. All development from there on was spontaneous. Without any act of God, there developed from this extremely simple beginning all the forms of life, both plant and animal, which now inhabit our planet, or which did ever inhabit it.

I feel that the theory of evolution is considered too seriously by the church and elementary scientists. Many professional scientists in biological and geological fields claim the theory of evolution has nothing to do with the origin of the different forms of life but is only concerned with the changes that take place later. As a theory, it is satisfactory to many scientists. The theory of evolution's being satisfactory only requires that the order and similarity of fossils down through the layers of the earth do not contradict it. These orders and similarities do exist, but their existence in no way proves the theory. It only sets it in a place where it deserves serious consideration. No scientist has been able to reproduce the changes in any form of life that are required by the theory of evolution. All have failed completely to produce any major change, in either plant or animal, of an evolutionary nature. *(Editor's note: The field of genetic engineering has recently produced some amazing accomplishments. I suppose these prove that an intelligent designer can indeed modify existing life forms.)*

Let us put the argument in another way. Let us accept every bit of evidence that is used for the theory of evolution. Let us accept the order of the fossils, the similarity of parts of different forms of life, etc. Let us accept as fact that animals, which apparently were identical to start with, but which have been separated for

extremely long periods of time, do show minor differences. Notice carefully that the scriptural account of creation, written thousands of years before science knew anything about the order of the fossils, requires that the order of the fossils be exactly as they are found. This cannot be explained away. Since the same God created at least the basic forms of plants and animals, certainly we would expect to find great similarities of anatomical structure. Life is told in the scriptures to reproduce after its "kind." It is not said in the scriptures that the offspring is to be a carbon copy of the parent. Our only objection comes when the very creative acts of God are ruled out by the theory of evolution. Even the evolutionists argue that the fact that all members of the human race can crossbreed proves that all of the human race had a common ancestry.

Again, if the theory of evolution were true, there could have been no creative acts by God affecting life. In Part I, we produced the evidence that the account of Genesis is accurate, that God did perform acts of creation starting various forms of life on the earth. Since we have proved beyond any reasonable doubt that God did create, the theory of evolution is in error at least in its claim of no creation.

Every act of God affecting life on this planet, as recorded in Genesis, corresponds to a change in the series of fossils. If God has not revealed what He did in creating the universe, the earth and its life; if He had not told us what He did and in what order, thousands of years before science knew anything about the order of fossils; then we might logically wonder if some great freaks of nature occurred which changed one form of life into another. But God has revealed what creative acts He did and in what order He did them, and we have found the revelation to be accurate. The proof of the truth of Genesis 1 is so absolute that no man can ignore it.

A theory must agree with the known facts. Therefore, all theories of evolution must take into account the creative acts of God, else they automatically disqualify themselves.

THE DAYS OF GENESIS

The Hebrew word translated "days" in Genesis can just as well mean "period of time." The words translated "morning" and "evening" may also mean "beginning" and "ending." Thus, "And the evening and the morning were the first day" may also mean "And the beginning and ending of this work was the first period of God's time in creating. [23](#)

These words (day, morning and evening) in the Hebrew are practically the exact equivalents of the same English words. If you look then up in your dictionary you will find that "day" can be a period of time and that "morning" and "evening" can be the beginning and ending of any period of time, as well as the beginning and ending of the twenty-four-hour day. Look up "day" in your Bible concordance and

you will find the same usage.

Psalm 90:5-6 reads thus: "They are as a sleep: in the morning they are like grass which groweth up. In the morning it flourisheth, and groweth up; in the evening it is cut down, and withereth." It is evident that morning and evening here are not used to refer to the morning and evening of a day.

This period of time, day, in Genesis may have been a twenty-four-hour period or it may have been any other period of time, even a fraction of a second or a geological age. Psalm 33:6-9 reads: "By the word of the Lord were the heavens made; and all the hosts of them by the breath of his mouth. He gathereth the waters of the sea together as an heap; he layeth up the depth in storehouses. Let all the earth fear the Lord: Let all the inhabitants of the world stand in awe of him. For he spake, and it was done; he commanded, and it stood fast." This passage seems to indicate that the acts of God occupied very short periods of time.

Furthermore, the periods of time in Genesis may have been separated by other and long periods of time. God is counting periods of time in which He was doing work on this earth. If after the first act of God, the first period of time of creation, a million years elapsed before He again acted, this second act would still occupy the second period of time in God's creation. This interpretation is also borne out in prophecy, where God counts time against Israel. If He predicts that any event will happen to Israel in a certain length of time, that time is counted only while Israel dwells in Palestine as a nation. Is not the sixty-ninth week of Daniel long past, and are we not looking for the beginning of the seventieth week?²⁴

At least three different interpretations of the days of Genesis are in common use: (1) That the days are twenty-four-hour consecutive days. This is at once ruled out by geology. (2) That the days are geological ages (e.g., the Devonian period would be one day). I think that this agrees very well with the facts of science, but it would imply that the creative acts of God were slow directive influence. This does not sound like the passage cited from Psalm 33. (3) That the days are the great changes in the sequence of fossils. There is one of these great changes in the fossil sequence corresponding to every act of God recorded in Genesis. After one of these changes fish appear. after another birds appear. after another mammals, etc. If God made new forms of life at one of these and then made no new forms until the next great change and there again introduced new forms, the time involved in these changes would then be the days of creation. The evidence in the geological layers and fossils seems to decidedly favor the last interpretation.

It is not necessary for one of these explanations to be true and the others false. It is possible for some of the days to be of one type, and some of another.

My own personal belief is that most of the days of Genesis are very short periods of time, separated by extremely long periods. Most of the acts of God, recorded

in Genesis 1 and 2, can each be identified with changes recorded in geology. This with the scriptural statement "He spake and they stood forth" lends strong support to the interpretation that the days of Genesis are, in part at least, short, intensive acts of creation, separated by long geological periods of time. This makes perfect harmony between science and the Scriptures.

Genesis 1:22 reads: "And God blessed them saying, Be fruitful and multiply, and fill the waters in the seas, and let the fowl multiply in the earth." Isn't it reasonable to suppose that God gave these forms of life considerable time to accomplish this end?

THE RELATION OF CHAPTERS 1 AND 2

After finishing the account of creation, which takes all of Genesis 1 and extends to 2:4, God says: "These are the generations of the heavens and of the earth when they were created." In other words, this is the order in which all of these acts of God were done. In the remainder of chapter 2 God enlarges on the things affecting man. There is no contradiction here, merely an expansion.

The second account makes no claim as to order. Many items are left out and the discussions of some of the items occur in a different order. God mentions man then animals. This is logical because He is dealing with man's control of animals. The order here makes no difference. Suppose I should tell you that on a certain day I did a list of things and tell you the order in which I did them. Afterward, if I go back and enlarge on any of the items, must I take them up in the same order in which I enumerated them? Certainly not. You would make no objection to my enlarging on them in any order I might choose. Should we not then give God the same right?

THE ANTIQUITY OF MAN

Some geologists date the advent of modern man as far back as 100,000 years, and "homo" as far back as two million years; others may even go farther back. Ussher dates the advent of man as about six thousand years ago. There is a great difference between these two dates.

There are two variable quantities in this picture. In the first place, Ussher may be in error in his six thousand years. He has carefully computed it from the scriptural genealogies, but it is quite possible that there are some gaps in the genealogies. If these gaps exist, the time back to Adam might be much more than six thousand years. Gaps are suggested in a great number of places, such as where Christ is referred to as the Son of David or the Son of Abraham. Matthew 1:1 states: "Jesus Christ the son of David, the son of Abraham." There can be no question here about "son" meaning "descendant." The other possibility is that the dating of the early remains of man is in error.

At first the dating of the remains of man seemed to be very unreliable. Many of these remains were found in stream beds where sediment had been washed from place to place with and around the bones, and reasonable estimates of age seemed impossible. But later on, a process was worked out to date the remains of either plants or animals by radioactive carbon-14. All living matter has been shown to have nearly a constant concentration of carbon-14. When the plant or animal dies, the carbon-14 starts decomposition into carbon-12. It has a half life of about six thousand years and can be used to date remains older than 50,000 years. Since remains of man have thus been dated in excess of ten thousand years, there are probably errors in Ussher's six thousand years.

Some Hebrew scholars claim that the word "begat" only implies a descendant, a son, a grandson, etc. If this is true it could extend Ussher's six thousand years to nearly any length of time. [25](#)

Skulls, or very small portions of skulls, have been dug up, and the anthropologist has attempted to reconstruct the shape of the man's head. These have been arranged in museums in what is supposed to be the order of their ages. This arrangement would indicate how primitive man was at his advent into the world and what wonderful progress he has made since that time. And yet I have never visited one of these displays of primitive man and walked out on the street without being able to pick out, on the shoulders of passersby, close counterparts to every item of the exhibit. We are apt to classify any skull as primitive if it has a sloping forehead. *(Editor's note: This would seem to be true for at least some of the more "advanced" finds. My father, who was a Caltech graduate, often joked about his sloping forehead and how his skull might look primitive to an archiologist who only had that part of his skull to go by. Other more primitive fossil finds are close enough in appearance to chimpanzees that they could not be mistaken for modern men. By now the fossil record between the chimpanzee-like creatures and modern men is sufficiently well documented that most of the concerns expressed in this section are largely unnecessary. This section has been left mostly intact because it is historically interesting.)*

Professor E.A. Hooton of Harvard University has written:

Some anatomists model reconstructions of fossil skulls by building up the soft parts of the head and face upon a skull case, and thus produce a bust purporting to represent the appearance of the fossil man in life. When, however, we recall the fragmentary condition of most of the skulls, the faces usually being missing, we can readily see that even the reconstruction of the facial skeleton leaves room for a good deal of doubt as to details. The various reconstructions of the skull of Piltdown man by Smith-Woodward, Keith and other experts, differ widely one from another. To attempt to restore the soft parts is an even more hazardous undertaking. The lips, the eyes, the ears, and the nasal tip, leave no clue on the underlying bony parts. You can with equal facility model on a Neanderthal skull the features of a chimpanzee or the lineaments of a philosopher. These alleged

restorations of ancient types of man have very little, if any, scientific value, and are likely only to mislead the public. To model a bust of Pithecanthropus erectus from the skull cap and the two or three teeth is a palpable absurdity. We do not know anything of the minutiae of the appearance of the Pithecanthropus, Heidelberg, Piltdown, or Neanderthal types. We have no knowledge of their hair distribution, pigmentation, and the detail of such features as I have mentioned. So put not your trust in reconstruction. [26](#)

(Editor's note: The difficulty in the case of Piltdown man was considerably worse than Professor Hooton realized. As it turned out, the skull was human and the jaw was from an orangutan. Although better preserved and detailed fossils have been discovered since Professor Hooton wrote this, facial reconstruction still requires considerable use of imagination.)

Some feel that a great antiquity of man is necessary to produce the present population of humans. This apparently is not the case. If the flood did occur 4,300 years ago (and it was probably much earlier), and if only the people in the ark survived on the whole earth, there would still be sufficient time to produce the present population. Even if each two people produced, on the average, only 2.6 children in their lifetime the population of the earth would then double each one hundred years. Doubling the population each one hundred years for 4,300 years would produce a population of 10,000,000,000,000. This is over 1,000 times our present population. No, the population of the earth alone does not require a great antiquity of man.

Editor's note: This section of Science Speaks regarding the fulfillment of prophecy appears to have followed the arguments given in, and relied upon the evidence taken from, a book in Peter Stoner's library titled, Fulfilled Prophecies that Prove the Bible, by George T. B. Davis, The Million Testaments Campaign, 1505 Race Street, Philadelphia, Penna., C 1931.

Many very significant changes have taken place in the mideast since 1931. Of recent interest was the intended rebuilding of Babylon by Saddam Hussain. When I started trying to update Science Speaks, I was cautioned several times that Babylon might be on the verge of being rebuilt. I admit to being somewhat nervous about this. A mere day or two before George W. Bush began his attack, an atheist e-mailed me, warning that the biblical prophecy about Babylon was about to be proven false. While I was mulling over how to reply, the bombs fell and history headed off in a different direction. I worry that the enthusiam in my reply to that atheist may have exceed the limits set by good manners.

The combined causes of liberating the Iraqi people, making the world safer from terrorists, and even eliminating the possible threat of "weapons of mass destruction" (the existance of which seemed to have been unchallenged by

anyone before the war) may have all been important causes; but one has to wonder whether the real reason Saddam Hussain was stopped was simply that God protects his Word. Prophecy must stand.

Another change which concerns me involves the expansion of modern Tyre. I have been unable to obtain good enough information to know what is happening there. Because of all that has happened, Chapter two of Science Speaks is severely in need of updating. Unfortunately, I (Don Stoner) am not personally qualified to accomplish this rework. It is presented here, largely unchanged.

CHAPTER 2

PROPHETIC ACCURACY

Section Contents: .. [Tyre](#) .. [Samaria](#) .. [Gaza and Ashkelon](#) .. [Jerico](#) .. [The Golden Gate](#) .. [Zion Plowed](#) .. [Jerusalem Enlarged](#) .. [Palestine](#) .. [Moab and Ammon](#) .. [Edom](#) .. [Babylon](#) .. [Summary](#)

One jot or one tittle shall in no wise pass from the law, till all be fulfilled - Matthew 5:18

Show the things that are to come hereafter, that we may know that ye are gods - Isaiah 41:23

MUCH HAS BEEN WRITTEN about the fulfillment of biblical prophecies. Many archaeological expeditions have delved into the ruins of old cities referred to in biblical accounts, and have written reports of their findings, showing that the biblical accounts were accurate. Many books have been written showing how prophecies have been fulfilled and are yet being fulfilled. As far as I have been able to find, very little has been written to show just how definitely this fulfillment of prophecy does prove the Bible to be the inspired Word of God.

This chapter is being written so that the person who is in doubt about the inspiration of the Bible may be given strong evidence upon which to anchor his faith. Only a very few of the great number of prophecies which could be considered are being used, and only a very brief account is given of the fulfillment of these prophecies; just sufficient to make evaluation possible. Other books are suggested for more complete treatments. In some cases references are given to histories and other books, so as to facilitate the checking of the facts from sources outside of the Bible.

I am making use of the well-known principle of probability. If the chance of one thing happening is one in M, and the chance of another independent thing happening is one in N, then the chance that they shall both happen is one in M times N. The proof of this theory will be found in any college algebra text. I shall

only illustrate the truth of the principle. Suppose one man in every ten is bald, and one man in 100 has lost a finger, then one man in every 1,000 (the product of 10 and 100) is both bald and has lost a finger. To show the truth of this conclusion, suppose you take 1,000 men at random and sort out all that are bald. Since one in ten is bald you will have just 100 bald men in the 1,000. The other 900 are not bald, therefore cannot both be bald and have lost a finger. f Now go through these 100 bald men and look for men who have lost a finger. Since only one man in 100 has lost a finger, you will find only one in this group. This man then is both bald and has lost a finger, and he is the only man who fills the two conditions. In other words, we could say that the chance of a boy becoming bald is one in ten, and the chance of a boy losing a finger is one in 100. Therefore, the chance that a particular boy shall become bald and lose a finger is one in ten times 100, or one in 1,000. Thus the theory is seen to be true.

If the events are not entirely independent, a somewhat different theory of probability must be used.

If the chance of one thing happening is one in M , and after it happens the chance that a second and related event will happen is one in N , then the chance that both will happen is one in M times N .

Let me illustrate. What is the chance that a young man will eventually lose both his first and second fingers? We cannot find the answer by asking the questions: One man in how many men has lost his second finger? and then multiplying the two results. The loss of the first and second finger is often related. The same accident that takes the second finger is very apt to take the first finger also. We must ask the questions: One man in how many men loses one of his first two fingers? And one man in how many men after losing one of his first two fingers also loses the other? Then we may multiply these results.

This principle will be carefully adhered to throughout this treatment of probability in the following pages.

These theories of probability are the foundation on which the rates are fixed for all kinds of insurance, and its truth has been proved in practice in every application.

The probability of the fulfillment of the items of various prophecies is difficult to arrive at. The abilities used in this treatment are an attempt to give the chance of the prophetic items being fulfilled if they had been written only with human knowledge. The author has used the mean of the estimates given him by some seven hundred college students over a period of more than ten years as a starting point, but he has carefully weighed these and changed all that seemed questionable. In nearly all changes the estimates were made more consecutive. no attempt will be made, however, to defend these estimates. The reader should feel perfectly free to make the estimates which seem reasonable and

conservative to him. He should then compute with his own estimates the probability of the fulfillment of the prophecies. The author believes, however, that the reader may wish to increase as many values as he would decrease and thus make very little change in the final results. At any rate his computed results will be conclusive.

TYRE

Ezekiel 26:3-5, 7, 12, 14, 16 (written 590 B.C.) reads:

Therefore thus saith the Lord God; Behold, I am against thee, O Tyrus, and will cause many nations to come up against thee, as the sea causeth his waves to come up. And they shall destroy the walls of Tyrus, and break down her towers: I will also scrape her dust from her, and make her like the top of a rock. It shall be a place for the spreading of nets ... For thus saith the Lord God; Behold, I will bring upon Tyrus Nebuchadrezzar King of Babylon... and they shall lay thy stones and thy timber and thy dust in the midst of the water... And I will make thee like the top of a rock: thou shalt be a place to spread nets upon; thou shalt be built no more: for I the Lord have spoken it, saith the Lord God ... Then all the princes of the sea shall come down from their thrones, and lay away their robes, and put off their brodered garments: they shall clothe themselves with trembling.

This prophecy predicts the destruction of Tyre and states seven definite things which shall take place:

1. Nebuchadnezzar shall take the city of Tyre. 2. Other nations are to participate in the fulfillment of the prophecy. (Fig 7) 3. The city is to be made flat like the top of a rock. 4. It is to become a place for spreading of nets. 5. Its stones and timber are to be laid in the sea. 6. Other cities are to fear greatly at the fall of Tyre. 7. The old city of Tyre shall never be rebuilt. Tyre was a city on the northern coast of Palestine inhabited by the Phoenicians, a strong maritime people, greatly feared by their enemies. (The king of Tyre supplied timbers of Solomon in the building of the temple.) In 586 B.C., Nebuchadnezzar, king of Babylon, laid siege to the city of Tyre. The siege lasted for thirteen years; and when Nebuchadnezzar took the city in 573 B.C., he found that the Phoenicians had moved everything of value to an island about one-half mile off the coast. Though the city was taken, Nebuchadnezzar profited nothing, and the Phoenicians were not conquered. Nebuchadnezzar could not pursue them to their island position, so he returned to Babylon. Thus the first item of the prophecy was fulfilled: (1) Nebuchadnezzar shall take the city of Tyre.

For 241 years the mainland city of Tyre remained very much as Nebuchadnezzar left it. Later, Alexander the Great started his great conquest. His field of campaign lay to the east, but he feared that the fleet of Tyre might be used against his homeland, so he moved south to take the city of Tyre. In 332 B.C.,

Alexander reached Tyre, but he was unable to take the city at once. So he captured other coastal cities and took over their fleets, but with these combined fleets he was still unable to take Tyre. Alexander finally built a causeway from the mainland to the island. In building the causeway he used all the building materials of old Tyre, and that was not enough. He scraped up all of the soil in and around the old city and with it completed the causeway. After seven months, by a combined attack of land forces marching in over the causeway, and the fleets of conquered cities, he took Tyre. Thus items 2,3, and 5 of the prophecy were fulfilled: (2) Other nations are to participate in the fulfillment of the prophecy. (3) The city is to be made flat like the top of a rock. (5) Its stones and timber are to be laid in the sea.

Fig. 6. Phoenician fortifications and ancient causeway. Tyre, Lebanon. *Courtesy of Moody Institute of Science*

Other neighboring cities were so frightened by the conquest of Tyre that they opened their gates to Alexander without opposition and fulfilled another item: (6) Other cities are to fear greatly at the fall of Tyre.

Today visitors at the old city of Tyre find it is a very popular place for fisherman; they are spreading their nets on this very spot. Thus prediction 4 has been completely fulfilled: (4) It is to become a place for spreading of nets.

The great freshwater springs of Raselain are at the site of the mainland city of Tyre, and no doubt supplied the city with an abundance of fresh water. These springs are still there and still flow, but their water runs into the sea. The flow of these springs was measured by an engineer, and found to be about 10,000,000 gallons daily. It is still an excellent site for a city and would have free water enough for a large modern city, yet it has never been rebuilt. Thus item 7 of the prophecy has stood true for more than 2,500 years: (7) The old city of Tyre shall never be rebuilt.

This prophecy by Ezekiel has been fulfilled to the last item. Let us try to evaluate the evidence of inspiration as supplied by the fulfillment of this prophecy.

History shows that while many of the cities in the vicinity of Tyre were often captured and recaptured by various forces, Tyre usually withstood these attacks and remained a free city. Tyre and Babylon represented two very different military powers--Tyre, naval, and Babylon, a land force. Each had left the other strictly alone. My groups of college students were asked to imagine that Ezekiel was writing from his own human knowledge, and then to give an estimate of the following:

1. Ezekiel had one chance in how many of knowing, or being able to predict, that Nebuchadnezzar would take the city of Tyre? Since Nebuchadnezzar was conquering many cities, and since Tyre was besieged four years after the

prophecy was made, it must have been a reasonable thing to predict.

Nebuchadnezzar might have tried to take Tyre and failed, or he might have succeeded, or he might have never tried. An estimate of one in three was chosen.

2. What chance did Ezekiel have of knowing that Nebuchadnezzar would, in his conquering of Tyre, not completely fulfill the prophecy of destruction, but other nations would later come in and complete the fulfillment? The indications in the time of Ezekiel certainly were that when Nebuchadnezzar took a city he was quite capable of completing the destruction himself, so the estimate was placed at one in five.

3. What chance did Ezekiel have of knowing that Tyre would be made flat like the top of a rock, after it was conquered? How many cities have been made flat like the top of a rock after being conquered? The sites of nearly all ancient cities are marked by mounds of accumulated debris. I do not know of any other city where the ruins have been so completely cleared away, so the estimate of one in five hundred was chosen.

4. What chance did Ezekiel have of knowing that after the city had been completely cleared away it would become a popular place for fishermen? There is really no basis on which to make an estimate. However, taking this site merely as a little stretch of coast, and considering all sections of coasts that size, an estimate of one in ten was chosen.

5. What chance did Ezekiel have of knowing that when Tyre was made flat its building material, and even its dust, was to be laid in the sea? Since the site was to be cleared, the debris had to be disposed of, but it would have been far more likely to have used this material in constructing the buildings of nearby cities, so the estimate was given as one in ten.

6. What chance was there of other cities opening their gates to the conqueror of Tyre without resistance? The estimate was given as one in five.

7. What was the chance that Tyre, after being made flat, should never be rebuilt? Nearly all old cities which had great natural advantages were at some time rebuilt. Tyre is in an excellent location and has an abundant supply of fresh water, so valuable in this land. The estimate chosen for this part of the prophecy was one in twenty.

Having been given these estimates by my students for the probability of the fulfillment of each part of the prophecy, we shall get an estimate of the probability of the fulfillment of the whole prophecy by multiplying all of the estimates together. The chance then of Ezekiel writing this prophecy from his own

knowledge, and having it all come true, is 1 in $3 \times 5 \times 500 \times 10 \times 10 \times 5 \times 20$. This is 1 in 75,000,000. This can be abbreviated as 1 in 7.5×10^7 . The exponent 7 indicates the number of ciphers (digits - or zeros) that are to follow the 7.5.

If Ezekiel had looked at Tyre in his day and had made these seven predictions in human wisdom, these estimates mean that there would have been only one chance in 75,000,000 of their all coming true. They all came true in the minutest detail.²⁷

SAMARIA

"Therefore I will make Samaria as a heap of the field, and as plantings of a vineyard: and I will pour down the stones thereof into the valley, and I will discover the foundations thereof" (Micah 1:6 - written 750 B.C.).

This prophecy makes the following five predictions:

1. Samaria shall be destroyed.
2. It shall become as a heap of the field.
3. Vineyards are to occupy its site.
4. Its stones shall be poured down the sides of the hill on which it stands.
5. Its foundation is to be dug up.

Samaria was still a prominent city 750 years later, in the time of Christ, and is often mentioned in the New Testament. The city was finally destroyed, and became a heap of stones and ruins. Gradually the hill has been cleared; the foundation stones and other rubbish taken to the edge of the hill, and rolled down into the valley. It is now covered with gardens and vineyards.

Then my students considered the following:

1. What chance had Micah of predicting the destruction of the great walled city of Samaria, which was greatly protected by its position on a hill? The estimate was set at one in four.
2. What was the chance that it should then lie as a heap of the field, instead of being rebuilt? Many ancient cities are still just heaps of the field, many others have been rebuilt, so the estimate was given as one in five.
3. What chance was there that it should become a garden spot, a place for

vineyards? What is the chance that the old site of Samaria should be cleared for gardens when much untilled land lay all around? Very few old cities were considered to occupy sites of sufficient agricultural value to clear away all the stones and debris in order to use the ground for gardens, so the estimate was set at one in one hundred.

4. What is the chance that the stones would be rolled down the side of the hill when the ground was cleared, instead of being piled in stacks on the hill, or used for other buildings? Estimate was one in ten.

5. What is the chance that while clearing the ground for the gardens, the workers would be industrious enough to dig down and remove the foundation stones, as well as the surface debris? The estimate was placed at one in two.

If Micah had considered the city of Samaria and made these five predictions regarding it in human wisdom, his chance of having them come true would thus be about 1 in $4 \times 5 \times 100 \times 10 \times 2$. This is 1 in 40,000 or 1 in 4×10^4 .²⁸

GAZA AND ASHKELON

"For Gaza shall be forsaken, and Ashkelon a desolation ... And the sea coast shall be dwellings and cottages for shepherds, and folds for flocks" (Zeph. 2:4, 6 - written 630 B.C.).

"And the remnant of the Philistines shall perish, saith the Lord God" (Amos 1:8 - written 787 B.C.).

"Baldness is come upon Gaza" (Jer. 47:5 - written 600 B.C.).

These prophecies predict four things: 1. The Philistines shall perish. 2. Gaza shall become bald. 3. Ashkelon shall become desolate. 4. The vicinity of ashkelon shall become the dwelling place of shepherds with their sheep.

When these prophecies were made the Philistines were the most powerful race in this country. Palestine means the land of the Philistines, but the Philistines have completely vanished.

A city of Gaza still exists, so for a long time the prophecy with respect to Gaza was thought to be an error. Finally a careful study was made of the location of Gaza, as described in the Bible, and it was found that the new city of Gaza was in the wrong location. A search was made for the old city and it was found buried under the sand dunes. It had indeed become bald. What better description could you give of a city buried under sand dunes than to say that it had become bald?

Ashkelon was one of the main cities of Palestine when the prophecies regarding it were written. It was a prosperous city in the days of Christ. Herod the Great beautifully embellished Ashkelon and established his summer resort there. But in A.D. 1270 sultan Bibars destroyed it, and it has never been rebuilt. The seacoast in this vicinity has become the grazing place for many flocks of sheep. It is dotted with shepherd's huts and sheepfolds.

1. Many races of people have continued from the dates of these prophecies to the present day, but the Philistine has vanished, so the first estimate is placed at one in five.

2. What is the chance that Gaza would become covered with sand (bald)? This is extremely rare, especially in Palestine, so the estimate is set at one in one hundred.

3. The chance that Ashkelon should become desolate was estimated at one in five.

4. What is the chance that after ashkelon was destroyed, it and its surroundings should become a sheep country instead of being put to some other use, or just lying idle, or rebuilt? Estimate, one in five.

Thus the human probability of these four prophecies coming true would be 1 in $5 \times 100 \times 5 \times 5$ or 1.2×10^4 . ²⁹

JERICHO

"And Joshua adjured them at that time, saying, Cursed be the man before the Lord, that riseth up and buildeth this city Jericho: he shall lay the foundation thereof in his firstborn, and in his youngest son shall he set up the gates of it" (Joshua 6:26 - written in 1451 B.C.)

This prophecy makes four predictions:

1. Jericho shall be rebuilt. 2. It shall be rebuilt by one man. 3. The builder's oldest son shall die when the work on the city starts. 4. The probability that his youngest son should die just as the gates were being hung was also estimated, from mortality tables, at one in one hundred.

These give for the whole prophecy a probability of 1 in $2 \times 10 \times 100 \times 100$ or 1 in 2×10^5 .

THE GOLDEN GATE

Then he brought me back the way of the gate of the outward sanctuary which looketh toward the east; and it was shut. Then said the Lord unto me; This gate shall be shut, it shall not be opened, and no man shall enter in by it ... therefore it shall be shut. It is for the prince ... he shall sit in it to eat bread before the Lord: he shall enter by the way of the porch of that gate, and shall go out by the way of the same (Ezek. 44:1-3 - written 574 B.C.). (Fig 9)

Fig. 7. The famous Golden Gate as seen from outside the ancient walled city of Jerusalem. *Courtesy of Moody Institute of Science*

When this prophecy was written the road from the Kidron Valley entered through this gate, called the Golden Gate. This gate was in use at the time of Christ and is thought to be the gate through which He made His triumphal entry. In A.D. 1543, when the walls of Jerusalem were restored by Sultan Suleiman, the road to the Golden Gate was no longer in use. The sultan, seeing no more use for the gate, ordered it closed. Instead of building the wall straight across the place where the gate had been, he restored the gate with its arches and ornaments, and then walled up the gate's openings themselves. Kaiser Wilhelm planned to take Jerusalem and have the Golden Gate opened for his triumphal entry into the city. Apparently the kaiser thought he could tamper with prophecy and forcibly violate it. It looks as if this gate were just waiting for the return of Christ, when it could be reopened and constitute His main entrance to the city. The gate is just beside the site of the temple.

What is the probability that this gate should continue to exist to the present time, and that it should be closed? Estimate, one in one thousand. [30](#)

ZION PLOWED

"Therefore shall Zion for your sake be plowed as a field" (Micah 3:12 - written 750 B.C.)

From the writing of this prophecy to the present time parts of Jerusalem have often been destroyed and rebuilt, but in 1543, when the walls of Jerusalem were rebuilt by Sultan Suleiman, that part known as Zion, the city of David, was left outside the walls. It was--and large parts of it still are--plowed and in grain and other crops. It is the only part of the old city which ever has been plowed.

What is the chance that this particular part of Jerusalem should revert to agriculture? It was the most desirable part of Jerusalem. Solomon's palace was here. Estimate one in one hundred. [31](#)

JERUSALEM ENLARGED

Behold, the days come, saith the Lord, that the city shall be built to the Lord from the tower of hananeel unto the gate of the corner. And the measuring line shall yet go forth over against it upon the hill Gareb, and shall compass about to Goath. And the whole valley of the dead bodies, and of the ashes, and all the fields unto the brook of kidron, unto the corner of the horse gate toward the east, shall be holy unto the Lord; it shall not be plucked up, nor thrown down any more for ever (Jer. 31:38-40 - written 600 B.C.)

Thus nine items were named in the expansion of the city of Jerusalem. First it was prophesied that it would expand, then the order of the expansion.

The accompanying figure shows roughly the shape of the old city, and the location of each of the nine items mentioned. The early growth of the city covers numbers 1 and 2; these are inside of Suleiman's wall. Shortly before 1900 Jerusalem overflowed the wall and started out in the direction of number 3. It has expanded from number to number in turn, until it is now building up about the horse gate at number 9.(diagram showing the expansion of the city of Jerusalem through successive stages in the direction as prophesied.)

It is rather easy to find the number of ways in which the city of Jerusalem might have grown in its first nine steps. There are six definite corners to the old city. Certainly the growth might have started from any one of these corners, to say nothing of the sides. Let us say then, that the first development could have come at any of these six corners. Having built at point number 1 it could have next built at any of the old corners, or gone on in any one of three directions from number 1; thus, the second expansion could have come at any of eight places. Continuing this for the nine points and multiplying the results together, we find that the probability of Jeremiah writing this prophecy, from human knowledge, and having it come true would be about 1 in 8×10^{10} . [32](#)

PALESTINE

"And I will make your cities waste, and bring your sanctuaries unto desolation... And I will bring the land into desolation: and your enemies which dwell therein shall be astonished at it. And I will scatter you among the heathen, and will draw out a sword after you: and your land shall be desolate, and your cities waste" (Lev. 26:31-33 - written 1491 B.C.).

"Thus saith the Lord God; In the day that I shall have cleansed you from all your iniquities I will also cause you to dwell in the cities, and the wastes shall be builded. And the desolate land shall be tilled" (Ezek. 36:33-35 - written 587 B.C.).

These prophecies make seven predictions:

1. The cities of Palestine shall become waste.
2. The sanctuaries shall become

desolate. 3. The land shall become desolate. 4. Enemies shall inhabit the land. 5. The Jews shall be scattered. 6. A sword shall go out after the Jews. 7. The Jews shall return to Palestine; the cities shall be rebuilt, and its land shall be tilled.

Let us consider these predictions in detail.

1. This prophecy was made soon after the Lord had led the children of Israel out of Egypt and into the promised land. It did not seem likely that He would again allow the cities to become waste. Estimate, one in ten.

2. The sanctuaries had been kept active all through the wilderness. What is the probability that they shall become desolate with the cities? Estimate, one in two.

3. Visitors to Palestine, before 1900, reported that very little of the land was tilled; the great mass of it was a total desolation. Probability estimate, one in ten.

4. Palestine became the stronghold of the Muslims, the enemies of the Jews; that they occupied the land cannot be doubted. The estimated probability of this condition was given as one in two.

5. Up to the time of the prophecy, the Jews, even in persecution, had always stayed together, whether in Egypt, Palestine or Sinai. The probability that they would be scattered was estimated one in five.

6. The Jews have been persecuted as no other race on the face of the earth. Their persecution by Hitler, in recent years, is perhaps the cruelest persecution recorded in all history. Estimated probability was one in ten.

7. What is the probability that after being so scattered and persecuted, they would again return and reclaim their country? This reclamation has been accomplished in the last few years. We have all marveled at its speed and the military success of the Jews in retaking Palestine. Estimate, one in ten.

Thus for the fulfillment of the whole prophecy we have a probability of 1 in 2×10^5 .

Note Leviticus 26:8 "And five of you shall chase one hundred, and one hundred of you shall put ten thousand to flight: and your enemies shall fall before you by the sword." This prophecy probably was not originally intended to refer to the 1967 six-day war between Israel and the Arabs. However, the prophecy is fulfilled in a very remarkable way by this war. The total population of Egypt, Jordan and Syria is roughly twenty times the population of Israel, the same ratio as the five to one hundred in the prophecy. And perhaps no army in history has been more completely routed than was the Egyptian army in the Sinai Peninsula,

when the soldiers fled on foot, in tanks and in all types of conveyances, many of which piled up on top of each other trying to get through the mountain passes in their frantic attempted escape from the forces of Israel.

MOAB AND AMMON

And say unto the Ammonities...I will deliver thee to the men of the east for a possession, and they shall set their palaces in thee, and make their dwellings in thee: they shall eat thy fruit, and they shall drink thy milk ... Therefore, behold, I will open the side of Moab ... unto the men of the east (Ezek. 25:3-4,9-10 - written 590 B.C.).

Yet will I bring again the captivity of Moab in the latter days, saith the Lord (Jer. 48:47 - written 600 B.C.).

I will bring again the captivity of the children of Ammon, saith the Lord (Jer. 49:6 - written 600 B.C.).

Three things are predicted in these prophecies:

1. Moab and Ammon shall be taken by men of the east and they shall eat the fruits of the land. 2. The men from the east will build palaces in Ammon. 3. The moabites and Ammonites will eventually be returned and given their land again.

The Arabs repeatedly raided these countries and took the fruits of the land. Eventually they drive out most of the inhabitants, but did little with the land. Palaces which the Arabs built in Ammon are still in use. Recently the British have protected this country against raids. The land is again being tilled and cities are growing at rates never before known in this land.

The estimates for the probable fulfillment of these items were given as: (1) one in five; (2) one in ten; (3) one in twenty.

This gives an estimate for the whole prophecy of 1 in 10^3 . ³³

EDOM

O thou that dwellest in the clefts of the rock ... I will bring thee down from thence, saith the Lord. Also Edom shall be a desolation: every one that goeth by it shall be astonished, and shall hiss at all the plagues thereof ... No man shall abide there, neither shall a son of man dwell in it (Jer. 49:16-18 - written 600 B.C.).

The predictions made in this prophecy are:

1. Edom shall be conquered. 2. Edom shall be desolate. 3. Edom shall not be reinhabited.

At the time of the writing of this prophecy Edom was a very prosperous country. Its soil is considered among the richest in the world. It was on many great trade routes. Its capital city, Petros, was hewn out of solid rock, and perhaps had the best natural defenses of any city in the world. It remained a prosperous city until long after Christ. It was taken by the Muhammadans in A.D. 636. From that day to this it has lain desolate. A National Geographical Society expedition, in traveling through the country, reported that practically no people or animals were found.

The probabilities for the fulfillment of these different items were estimated as follows: (1) one in ten; (2) one in ten; (3) one in one hundred.

This gives a probability for the whole prophecy of 1 in 10^4 . ³⁴

BABYLON

And Babylon ... shall never be inhabited, neither shall it be dwelt in from generation to generation: neither shall the Arabian pitch tent there; neither shall the shepherds make their fold there. But wild beasts of the desert shall lie there; and their houses shall be full of doleful creatures (Isa. 13:19-21 - written 712 B.C.).

And they shall not take of thee a stone for a corner, nor a stone for foundations; but thou shalt be desolate forever, saith the Lord ... Neither doth any son of man pass thereby (Jer. 51:26,43 - written 600 B.C.).

These prophecies state that:

1. Babylon shall be destroyed. 2. It shall never be reinhabited. 3. The Arabs shall not pitch their tents there. 4. There shall be no sheepfolds there. 5. Wild beasts shall occupy the ruins. 6. The stones shall not be taken away for other buildings. 7. Men shall not pass by the ruins.

Babylon was conquered in 538 B.C., having been one of the greatest cities, if not the greatest city of all times. Its walls were 90 feet thick and 300 feet high, with towers rising much higher. The length of the walls was about fourteen miles on each side of the city. A river flowed through the city guaranteeing its water supply. There was enough land within its walls to supply the city with food. It had no fear of a siege.

Though the Arabs will pitch their tents at nearly any spot, they are superstitious about Babylon; and though you hire one as a guide, he will not stay there at

night. The ruined city is uninhabited by humans; jackals and many kinds of wild beasts live in the ruins. There are no sheepfolds about Babylon.

Bricks and building materials of many kinds have been salvaged from the ruins for cities round about, but the rocks, which were imported to Babylon at such great cost, have never been moved.

Though nearly all ancient cities are on prominent tourist routes, Babylon is not, and has very few visitors.

The probable fulfillment of each item was estimated as follows: (1) one in ten; (2) one in one hundred; (3) one in two hundred; (4) one in five; (5) one in five; (6) one in one hundred; (7) one in ten. This makes a probability for the whole prophecy of 1 in 5×10^9 . ³⁵

SUMMARY

Listing the prophecies which we have considered and the probabilities of their fulfillment, we have:

Tyre 1 in 7.5×10^7 Samaria 1 in 4×10^4 Gaza and Ashkelon 1 in 1.2×10^4
Jericho 1 in 2×10^5 The Golden Gate 1 in 10^3 Zion Plowed 1 in 10^2 Jerusalem
Enlarged 1 in 8×10^{10} Palestine 1 in 2×10^5 Moab and Ammon 1 in 10^3 Edom 1
in 10^4 Babylon 1 in 5×10^9

The probability of these eleven prophecies coming true, if written in human wisdom, is now found by multiplying all of these probabilities together, and the result is 1 in 5.76×10^{59}

Some will say that the estimates given in some of these prophecies are too large and should be reduced. Other may say that some of the prophecies are related and should have smaller estimates. That may be true, so I would suggest that such a person go back over the prophecies and make his own estimates. They will be found to be still large enough to be conclusive. He may add to the consideration other prophecies and estimate their probability of fulfillment. Use, for example, such prophecies as those referring to the city of Sidon (Ezek. 28:20-23); Capernaum and Bethsaida (Luke 10:13,15); the highway between Egypt and Assyria (Isa. 19:23-25); changes in Egypt (Ezek. 29:12-15; 30:13). I am sure there are more than enough fulfilled prophecies to establish the probability number given above even when the estimates are taken from the most conservative critic.

Others may say that these accounts in the Bible are not prophecies, but historical accounts written after the events happened. This is absurd, for all of these prophecies are found in the Old Testament, and every one dates its writing long

before Christ. One of these prophecies was completely fulfilled before Christ. Two had small parts fulfilled before Christ, and the remaining parts after Christ. All other prophecies considered were completely fulfilled after Christ. If we were to strike out all estimates given for parts of prophecies fulfilled before Christ our probability number would still be so large that the strength of its argument could not be comprehended.

Let us try to visualize our probability of 1 in 5.76×10^{59} . Let us round this off to 5×10^{59} . Let us suppose that we had that number of silver dollars. What kind of a pile would this be?

The volume of the sun is more than 1,000,000 times that of the earth, yet out of 5×10^{59} silver dollars we could make 10^{28} solid silver balls the size of the sun.

Our group of stars, called our galaxy, comprises all of the stars which stay together in this one group. It is an extremely large group of at least 100,000,000,000 stars, each star averaging as large as our sun. At great distances from our galaxy are other galaxies similar to ours, containing about the same number of stars. If you were to count the 100,000,000,000 stars, counting 250 a minute, it would take you 1,000 years, counting day and night, and you would only have counted the stars in a single galaxy. (Note: All computations are only approximate and all numbers are expressed with only one or two digits.)

It has been estimated that the whole universe contains about two trillion galaxies, each containing about 100 billion stars. From our 5×10^{59} dollars we could make all of the stars, in all of these galaxies, 2×10^5 times.

Suppose we had marked one of these silver dollars, and had stirred it into the whole pile before we had made them into balls the size of the sun. Then suppose we had blindfolded a man and told him to go over all of these great balls and pick up the dollar which he thinks is the right one. What chance would he have of finding the right one? It would be a very great task to look over this mass of dollars. If our blindfolded man were to travel sixty miles per hour, day and night, it would take him five years to go once around a star. This would give him a very poor chance to select what might be the marked dollar from that star, but this amount of time per star would take 500 billion years for each galaxy. Let us suppose our man were extremely speedy, able to look over all of the dollars contained in 100 billion stars each second (instead of 500 billion years), it would still take him about 3×10^9 years to look over the whole mass. This is one half the six billion years back to creation. It is absurd to think that he would have any conceivable chance of picking up the right dollar.

The chance of these eleven prophecies being written in human wisdom, and all coming true, is a similar chance to that which the blindfolded man had of finding the right dollar. But these prophecies, and many more, all came true. We can then draw only one conclusion, and that is that God inspired the writing of every

one of these prophecies. What stronger proof can any man ask for the inspiration of the Bible?

In Isaiah 41:23 the prophet hurled out the challenge to heathen gods: "Show the things that are to come hereafter, that we may know that ye are gods."

God has accepted this challenge. He has predicted multitudes of events to happen in the future. They have come true exactly as predicted, even though in some cases thousands of years were involved for the fulfillment. God has proved that He is our supernatural God with all wisdom. We have no alternative but to believe.

CHAPTER 3

THE CHRIST OF PROPHECY

Search the scriptures; for in them ye think ye have eternal life: and they are they which testify of me - John 5:39.

THE WORD "Scriptures" in this passage refers to the Old Testament. Christ is saying that in the Old Testament we will find the prophecies referring to Himself. It is therefore in these prophecies, and their fulfillment, that we may look if we wish to find evidence that Christ is the Messiah, the Son of God, the saviour of mankind, and everything else which was prophesied of Him, and which He claimed to be.

If we find these prophecies to be fulfilled in Christ, we will establish not only that Christ is the Messiah predicted in the Old Testament, but that those prophecies were given by God Himself. For if they were not given by God, no man would have fulfilled any number of them, as will be evident later in this chapter.

In order to evaluate our evidence we shall use the same principle of probability which was stated and used in the preceding chapter.

In evaluating these prophecies, we shall have to answer this question regarding each prophecy: One man in how many men has fulfilled this prophecy? I realize that some will object to this question, saying that these prophecies were made with respect to Christ, and no other man has, or even can, fulfill them. This, of course, is true when you consider the mass of prophecies regarding Christ, but it is not true of all individual prophecies. It was prophesied, for example, that Christ would be born in Bethlehem; certainly other persons have been born in Bethlehem. It was prophesied that Christ would be crucified; other men have been crucified. I certainly am not trying to be sacrilegious in asking these

questions; but I am trying to look at the evidence entirely unbiased, that I may the better give a clear argument.

The Inter-Varsity Christian Fellowship at Pasadena City College sponsored a class in Christian evidences. One section of the work of this class was to consider the evidence produced by the fulfilled prophecies referring to the first advent of Christ. The students were asked to be very conservative in their probability estimates. They discussed each prophecy at length, bringing out various conditions which might affect the probability of any man fulfilling it. After discussion, the students agreed unanimously on a definite estimate as being both reasonable and conservative. At the end of the evaluations the students expressed their feelings thus: If any one were able to enter into the discussions and help in placing the estimates, as they had done, that person would certainly agree that the estimates were conservative. The estimates used in this chapter are a combination of the estimates given by this class on Christian evidences combined with estimates given me later by some twelve different classes of college students, representing more than 600 students. I have carefully weighed the estimates and have changed some to make them more conservative. If the reader does not agree with the estimates given, he may make his own estimates and then carry them through to their logical conclusions.

We considered the following eight prophecies:

1. "But thou, Bethlehem Ephratah, though thou be little among the thousands of Judah, yet out of thee shall he come forth unto me that is to be ruler in Israel; whose goings forth have been from of old, from everlasting" (Micah 5:2).

This prophecy predicts that the Christ is to be born in Bethlehem. Since this is the first prophecy to be considered there are no previously set restrictions, so our question is: One man in how many, the world over, has been born in Bethlehem?

The best estimate which we can make of this comes from the attempt to find out the average population of Bethlehem, from Micah down to the present time, and divide it by the average population of the earth during the same period. One member of the class was an assistant in the library so he was assigned to get this information. He reported at the next meeting that the best determination of the ratio that he could determine was one to 280,000. Since the probable population of the earth has averaged less than two billion, the population of Bethlehem has averaged less than 7,150. Our answer may be expressed in the form that one man in 7,150/2,000,000,000 or one man in 2.8×10^5 was born in Bethlehem.

2. "Behold, I will send my messenger, and he shall prepare the way before me" (Mal. 3:1).

Our question here is: Of the men who have been born in Bethlehem, one man in how many has had a forerunner to prepare his way? John the Baptist, of course, was the forerunner of Christ. But since there appears to be no material difference between the people born in Bethlehem and those born any other place in the world, the question can just as well be general: One man in how many, the world over, has had a forerunner to prepare his way?

The students said that the prophecy apparently referred to a special messenger of God, whose one duty was to prepare the way for the work of Christ, so there is a further restriction added. The students finally agreed on one in 1,000 as being extremely conservative. Most of the members thought the estimate should be much larger. We will use the estimate as 1 in 10^3 .

3. "Rejoice greatly, O daughter of Zion; shout, O daughter of Jerusalem: behold, thy King cometh unto thee: he is just, and having salvation: lowly, and riding upon ... a colt the foal of an ass" (Zech. 9:9).

Our question then is: One man in how many, who was born in Bethlehem and had a forerunner, did enter Jerusalem as a king riding on a colt the foal of an ass? This becomes so restrictive that we should consider an equivalent question: One man in how many, who has entered Jerusalem as a ruler,

has entered riding on a colt the foal of an ass?

The students said that this was a very hard thing to place an estimate on. They knew of no one but Christ who had so entered. The students thought that at least in more modern times any one entering Jerusalem as a king would use a more dignified means of transportation. They agreed to place an estimate of 1 in 10^4 . We will use 1 in 10^2 .

4. "And one shall say unto him, What are these wounds in thine hands? Then he shall answer, Those with which I was wounded in the house of my friends"(Zech. 13:6).

Christ was betrayed by Judas, one of His disciples, causing Him to be put to death, wounds being made in His hands.

There seems to be no relation between the fulfillment of this prophecy and those which we have previously considered. We may then ask the question: One man in how many, the world over, has been betrayed by a friend, and that betrayal has resulted in his being wounded in his hands?

The students said that it was very rare to be betrayed by a friend, and still rarer for the betrayal to involve wounding in the hands. One in 1,000 was finally agreed upon, though most of the students would have preferred a larger number.

So we will use the 1 in 10^3 .

5. "And I said unto them, If ye think good, give me my price; and if not, forbear. So they weighed for my price thirty pieces of silver" (Zech. 11:12).

The question here is very simple: Of the people who have been betrayed, one in how many has been betrayed for exactly thirty pieces of silver?

The students thought this would be extremely rare and set their estimate as one in 10,000, or 1 in 10^4 . We will use 1 in 10^3 .

6. "And the Lord said unto me, Cast it unto the potter: a goodly price that I was prized at of them. And I took the thirty pieces of silver, and cast them to the potter in the house of the Lord" (Zech. 11:13).

This is extremely specific. All thirty pieces of silver are not to be returned. They are to be cast down in the house of the Lord, and they are to go to the potter. You will recall that Judas in remorse tried to return the thirty pieces of silver, but the chief priest would not accept them. So Judas threw them down on the floor of the temple and went and hanged himself. The chief priest then took the money and bought a field of the potter to bury strangers in. Our question is: One man in how many, after receiving a bribe for the betrayal of a friend, had returned the money, had it refused, had thrown it on the floor in the house of the Lord, and then had it used to purchase a field from the potter?

The students said they doubted if there has ever been another incident involving all of these items, but they agreed on an estimate of one in 100,000. They were very sure that this was conservative. So we use the estimate as 1 in 10^5 .

7. "He was oppressed, and he was afflicted, yet he opened not his mouth: he is brought as a lamb to the slaughter, and as a sheep before her shearers is dumb, so he openeth not his mouth" (Isa. 53:7).

One man in how many, after fulfilling the above prophecies, when he is oppressed and afflicted and is on trial for his life, though innocent, will make no defense for himself?

Again my students said they did not know that this had ever happened in any case other than Christ's. At least it is extremely rare, so they placed their estimate as one in 10,000 or 1 in 10^4 . We will use 1 in 10^3 .

8. "For dogs have compassed me: the assembly of the wicked have inclosed me: they pierced my hands and my feet"(Ps. 22:16).

The Jews are still looking for the coming of Christ; in fact, He might have come

any time after these prophecies were written up to the present time, or even on into the future. So our question is: One man in how many, from the time of David on, has been crucified?

After studying the methods of execution down through the ages and their frequency, the students agreed to estimate this probability at one in 10,000 or 1 in 10^4 , which we will use.

If these estimates are considered fair, one man in how many men, the world over, will fulfill all eight prophecies? This question can be answered by applying our principles of probability. In other words, by multiplying all of our estimates together, or 1 in $2.8 \times 10^5 \times 10^3 \times 10^2 \times 10^3 \times 10^5 \times 10^3 \times 10^4$. This gives 1 in 2.8×10^{28} , where 28 means that we have 28 ciphers following the 2.8. Let us simplify and reduce the number by calling it 1 in 10^{28} . Written out this number is 1 in 10,000,000,000,000,000,000,000,000.

This is the answer to the question: One man in how many men has fulfilled these eight prophecies? But we are really concerned with the answer to the question: What is the chance that any man might have lived from the day of these prophecies down to the present time and have fulfilled all of the eight prophecies? We can answer this question by dividing our 10^{28} by the total number of people who have lived since the time of these prophecies. The best information available indicates the number to be about 88 billion or 8.8×10^{10} .

To simplify the computation let us call the number 10^{11} . By dividing these two numbers we find that the chance that any man might have lived down to the present time and fulfilled all eight prophecies is 1 in 10^{17} .

Editor's note: It is probable that 88 billion or 8.8×10^{10} assumes a growth rate for the earth's population which is much too small - that most of the people who have ever lived are still alive today - suggesting that this number may be too large by a factor of ten. If so, this will affect the final result by the same factor of ten; ten times fewer total people who might have fulfilled these prophecies means only one tenth the chance that one of them might have done it by accident. Our number would become 10^{18} instead of 10^{17} . The number used in this book is very conservative.

Let us try to visualize this chance. If you mark one of ten tickets, and place all of the tickets in a hat, and thoroughly stir them, and then ask a blindfolded man to draw one, his chance of getting the right ticket is one in ten. Suppose that we take 10^{17} silver dollars and lay them on the face of Texas. They will cover all of the state two feet deep. Now mark one of these silver dollars and stir the whole mass thoroughly, all over the state. Blindfold a man and tell him that he can travel as far as he wishes, but he must pick up one silver dollar and say that this is the right one. What chance would he have of getting the right one? Just the same chance that the prophets would have had of writing these eight prophecies and

having them all come true in any one man, from their day to the present time, providing they wrote using their own wisdom.

Now these prophecies were either given by inspiration of God or the prophets just wrote them as they thought they should be. In such a case the prophets had just one chance in 10^{17} of having them come true in any man, but they all came true in Christ.

This means that the fulfillment of these eight prophecies alone proves that God inspired the writing of those prophecies to a definiteness which lacks only one change in 10^{17} of being absolute.

Sometimes we weigh our chances in the business world, and say if an investment has nine chances in ten of being profitable, and only one chance in ten of being a failure, it is safe enough for us to make the investment. Whoever heard of an investment that had only one chance in 10^{17} of failure? The business world has no conception of such an investment. Yet we are offered this investment by God. By the acceptance of Jesus Christ as our Savior we know, from only these eight prophecies which lack only 1 chance in 10^{17} of being an absolute proof, that that investment will yield the wonderful dividend of eternal life with Christ. Can anyone be so unreasonable as to reject Jesus Christ and pin his hope of eternal life on such a slim chance as finding the right silver dollar among this great mass, covering the whole state of Texas two feet deep? It does not seem possible, yet every man who rejects Christ is doing just that. More than three hundred prophecies from the Old Testament which deal with the first advent of Christ have been listed. Every one of them was completely fulfilled by Jesus Christ. Let us see what happens when we take more than eight prophecies.

Suppose we add eight more prophecies to our list, and assume that their chance of fulfillment is the same as the eight just considered. The chance that one man would fulfill all sixteen is $1 \times 10^{28} \times 10^{17}$ or 1 in 10^{45} .

Let us try to visualize this as we did before. Take this number of silver dollars. If you make these into a solid ball, you will have a great sphere with a center at the earth, and extending in all directions more than 30 times as far as from the earth to the sun. (If a train had started from the earth at the time the Declaration of Independence was signed, and had traveled steadily toward the sun at the rate of sixty miles per hour, day and night, it would be about reaching its destination today. But remember that our ball of silver dollars extends thirty times that far in all directions.) If you can imagine the marking of one silver dollar, and then thoroughly stirring it into this great ball, and blindfolding a man and telling him to pick out one dollar, and expect it to be the marked one, you have somewhat of a picture of how absolutely the fulfillment of sixteen prophecies referring to Jesus Christ proves both that He is the Son of God and that our Bible is inspired. Certainly God directed the writing of His Word.

In order to extend this consideration beyond all bounds of human comprehension, let us consider forty-eight prophecies, similar in their human chance of fulfillment to the eight which we originally considered, using a much more conservative number, 1 in 10^{21} . Applying the same principle of probability used so far, we find the chance that any one man fulfilled all forty-eight prophecies to be 1 in 10^{157} .

This is really a large number and it represents an extremely small chance. Let us try to visualize it. The silver dollar, which we have been using, is entirely too large. We must select a smaller object. The electron is about as small an object as we know of. It is so small that it will take 2.5×10^{15} of them laid side by side to make a line, single file, one inch long. If we were going to count the electrons in this line one inch long, and counted 250 each minute, and if we counted day and night, it would take us 19,000,000 years to count just the one-inch line of electrons. If we had a cubic inch of these electrons and we tried to count them, it would take us 1.2×10^{38} years (2×10^{28} times the 6 billion years back to the creation of the solar system).

With this introduction, let us go back to our chance of 1 in 10^{157} . Let us suppose that we are taking this number of electrons, marking one, and thoroughly stirring it into the whole mass, then blindfolding a man and letting him try to find the right one. What chance has he of finding the right one? What kind of a pile will this number of electrons make? They make an inconceivably large volume.

The distance from our system of stars, or galaxy, to the next nearest one is nearly 1,500,000 light-years; that is the distance that light will travel in 1,500,000 years going 186,000 miles each and every second. This distance is so great that if every man, woman and child in the United States, 200,000,000 of them, had a library of 65,000 volumes, and you collected every book in all of these libraries and then started on this journey of 1,500,000 light-years, and decided to place one letter from one of the books on each mile (e.g., if "the" was the first word in the first book you would put "t" on the first mile, "h" on the second mile, and "e" on the third mile; then leave a mile blank without a letter and start the next word in the same manner, etc.), before you complete your journey you will use up every letter in every book of every one of the libraries and have to call for more.

Space, by some authorities, is supposed to extend in all directions to the distance, not of 1,500,000 light-years. but more than 4,000 times that far or 6,000,000,000 light-years. Let us make a solid ball of electrons, extending in all directions from the earth to the distance of six billion light-years. Have we used up our 10^{157} electrons? No, we have made such a small hole in the mass that we cannot see it. We can make this solid ball of electrons, extending in all directions to the distance of six billion light-years 6×10^{28} times.

Suppose again that we had this great amount of electrons, 10^{157} of them, and we were able to make 500 of these tremendous balls, six billion light-years in radius,

each minute. If we worked day and night it would take us 10^{10} times the 6 billion years back to creation to use up our supply of electrons. Now, one of these electrons was marked and thoroughly stirred into the whole mass; blindfold your man and ask him to find the marked electron.

No man could in any way look over this mass of electrons, blindfolded or not blindfolded, and pick out any one electron, let alone the one that had been marked. (The electron, in fact, is so small that it cannot be seen with powerful microscope.)

To the extent, then, that we know this blindfolded man cannot pick out the marked electron, we know that the Bible is inspired. This is not merely evidence. It is proof of the Bible's inspiration by God--proof so definite that the universe is not large enough to hold the evidence. Some will say that our estimates of the probability of the fulfillment of these prophecies are too large and the numbers should be reduced. Ask a man to submit his own estimates, and if they are smaller than these we have used, we shall add a few more prophecies to be evaluated and this same number will be reestablished or perhaps exceeded.

Our Bible students claim that there are more than three hundred prophecies dealing with Christ's first advent. If this number is correct, and it no doubt is, you could set your estimates ridiculously low on the whole three hundred prophecies and still obtain tremendous evidence of inspiration.

For example you may place all of your estimates at one in four. You may say that one man in four has been born in Bethlehem; that one of these children in four was taken to Egypt, to avoid slaughter; that one in four of these came back and made his home in Nazareth; that one in four of these was a carpenter; that one in four of these was betrayed for thirty pieces of silver; that one in four of these has been crucified on a cross; that one in four was then buried in a rich man's tomb; yes, even that one in four rose from the dead on the third day; and so on for all of the three hundred prophecies and from them I will build a number much larger than the one we obtained from the forty-eight prophecies.

Any man who rejects Christ as the Son of God is rejecting a fact proved perhaps more absolutely than any other fact in the world.

CHAPTER 4

CONCLUSIONS

THREE CHAPTERS have been submitted, each giving a different type of evidence of the authenticity of the Bible. Chapter 1 dealt primarily with Genesis 1,

and showed how recent developments in science prove that the account of God's formation of this universe is accurate, and that some of this evidence has come about by development in science within the last few years. Chapter 2 dealt with the fulfillment of geographical prophecies, and used some events which have happened in recent years to complete the fulfillment of many of the prophecies quoted. The evidence in this chapter depends on historic facts, or recent occurrences, the truth of which no man doubts whether he be Christian or non-Christian. Chapter 3 dealt with the fulfillment of prophecies regarding Jesus Christ, the fulfillment of which is recorded in the Bible and to a great extent in profane history. We even date all events today from the birth of Christ (A.D.)

In each chapter the definiteness of the evidence has been stated as a probability. If you wish to know the definiteness for the evidence in the three chapters combined, you will have to multiply all of the individual probabilities together. The result is an astonishingly large number, 1 in 1.5×10^{239} representing evidence so overwhelming that no human mind can make any start at comprehending the definiteness of it.

We have not by any means exhausted the evidence in the Bible. We have only briefly introduced the scientific evidence, there being many references throughout the Bible which give accurate scientific information, written thousands of years before science knew anything about it. We have dealt with only a few of the prophecies regarding geographical places. Many times the number which we have considered could be cited. The studies could all be greatly enlarged, and our numbers representing probabilities could all be tremendously expanded. Neither have we exhausted the types of evidence available. Other chapters could be written dealing with such items as prophecies regarding the Jewish people; the present fulfillment of prophecies heralding Christ's return; evidence of the historical accuracy of the Bible as revealed by archaeological expeditions; changes wrought in the lives of men who were deep in sin, and have accepted Christ as their Savior, and indeed have become new men. When these probabilities were evaluated, they would all have to be multiplied by the probabilities already developed. So the evidence mounts and mounts until we believe it must be accepted by every man who gives it serious consideration.

We have shown that by very recent developments of science Genesis 1 agrees perfectly with all of the sciences concerned. There does not appear to be a contradiction of any magnitude still remaining. There is, however, this extremely strong argument, or proof, for the Bible's truth.

We have shown that prophecies made in various places in the Old Testament have been fulfilled in recent times, often thousands of years after their writing, with such exactness that we must believe that the prophecies were given by God Himself. No human being has ever made predictions which hold any comparison to those we have considered, and had them accurately come true. The span of time between the writing of these prophecies and their fulfillment is so great that

the most severe critic cannot claim that the predictions were made after the events happened.

With the prophetic accuracy of the Old Testament established, we have studied its prophecies with respect to Christ and found that Jesus Christ fulfilled every one of them to the last minute detail. We have shown numerical evidence that this fulfillment proved Jesus Christ to be the Son of God, the promised Savior.

We do not believe that the strength of the argument has been overdrawn in any case, but that in most cases it has been understated. We consider, therefore, that we have produced not only evidence of the inspiration of the Bible but proof of its inspiration.

Since the Bible is true, as we have proved it to be, the Christian must take his Bible seriously. It is the guide to the Christian for his daily conduct, and tells of his responsibility to God and his fellowmen. He should follow its teachings.

God teaches us most emphatically that we have a responsibility to win men to Him. As Christ was going from the Last Supper, over the brook Kidron and up to the Garden of Gethsemane, He was praying, and said: "As thou hast sent me into the world, even so have I sent them into the world" (John 17:18). Just as the salvation of mankind depends on the finished work of Jesus Christ, so the salvation of the world depends on the Christian carrying the gospel to it. If Christ had failed, there would be no salvation. If we fail to carry the message of salvation to the world, it will have no salvation.

On the evening of the day of His resurrection, Christ met His disciples and said: "Peace be unto you: as my Father hath sent me, even so send I you. ... Whose soever sins ye remit, they are remitted unto them; and whose soever sins ye retain, they are retained" (John 20:21,23). Christ is telling His disciples that if they go out and win a man he is saved, and if they do not win that man he will be lost. The responsibility for the salvation of the men and women around us lies on our shoulders.

Again, shortly before His ascension, Christ said to His disciples: "All power is given unto me in heaven and in earth. Go ye therefore, and teach all nations, baptizing them in the name of the Father, and of the Son, and of the Holy Ghost: teaching them to observe all things whatsoever I have commanded you: and, lo, I am with you always, even unto the end of the world" (Matt. 28 18-20). Christ, in this last command to the disciples, strengthens His two earlier statements, telling them again to go, but also telling them that He has all power and that He will go with them. Why should a missionary fear to go to the foreign field when Christ, with all power, is going along? That is much better than if he were accompanied by all the fleets of the world. Why should any man hesitate or fear to speak to his companion, friend or neighbor when Christ goes with him?

Thus Christ's instruction to win men to him was given three times--just before He was taken from His disciples to be crucified; at His first meeting with them after His resurrection; and again just before His ascension. The last instructions you give a friend before leaving, and the first things you tell him when you return are always the things which are uppermost in your mind and of the greatest importance. Likewise, the things which Christ told His disciples just before His death, the first thing after His resurrection and the last thing before His ascension must have been the items of greatest importance to Him. Especially is this true since on these three occasions He gave His disciples the same message. Their job was to win men. Can we not then, as Christians and as the church of Christ, realize that this above all other things is what Christ desires of us? If your church and my church are to be the kind of churches that Christ intended, we must make it our first job to win people to Christ.

Paul takes up the same theme in II Corinthians 5: 18-20:

And all things are of God, who hath reconciled us to himself by Jesus Christ, and hath given to us the ministry of reconciliation; to wit, that God was in Christ, reconciling the world unto himself, not imputing their trespasses unto them; and hath committed unto us the word of reconciliation. Now then we are ambassadors for Christ, as though God did beseech you by us: we pray you in Christ's stead, be ye reconciled to God.

Notice that God reconciled us to Himself and gave to us the ministry of reconciliation. These both occur in the same verse, in the same sentence. We do not have to choose, we do not have the right to choose. God have us this ministry in the same hour that we accepted Him. We are ambassadors for Christ. What an honor that is! It would be an honor to be an ambassador of the United States to some foreign country, but it is an infinitely greater honor to be an ambassador of Jesus Christ. We should not be embarrassed when we speak to a man about Christ. We should feel highly honored to have the opportunity of representing our Lord and Savior. An ambassador must deliver messages from his home country to the country to which he is an ambassador. He should interpret those messages, but he dare not change them. How unfaithful an ambassador would a man be considered, if he received a communication from his home country to be delivered to some official in the country where he had his ambassadorship, and then was too busy with the business or social affairs of that country to deliver it until later! How unfaithful then must God consider us when we have a message from heaven to be delivered to a lost man here on earth, and we say that we are too busy with things of this world and put it off! Our first job must be to fulfill our ambassadorship to God; things of this world must come later.

Paul also tells us that when we speak to a man about Christ, we are doing it in Christ's stead. Christ wishes to speak to this man about his salvation, but He asks us to do it for Him. We ought then to go to that man with all the love with

which Christ would have gone, love enough to die for him. We should not give up if the message is rejected the first time; we should pray for him, and go again and again. (Christ prayed all night.) We should yearn to win this one to Christ. (Christ wept over lost men.)

Paul gives us another picture of our duty to Christ in II Corinthians 3:2-3: "Ye are our epistles written in our hearts, known and read of all men: forasmuch as ye are manifestly declared to be the epistle of Christ ministered by us, written not with ink, but with the Spirit of the living God; not in tables of stone, but in fleshy tables of the heart."

We are the epistles of Christ known and read of all men. We could give a man one of the epistles written by Paul, and he might read it and lay it aside. He might tire of it very quickly. But the Christian is read of all men, continuously and untiringly. The majority of all the people of the world know Christ, not through the Bible, but by reading the Christian as his epistle. You never heard of a man tiring of reading a Christian. He may not like the story written by a certain man's life but he continues to read it--to read his life, his every act and word. How it behooves us as Christians to live lives that will show Christ in His true light, to say and to do things which will make others want to accept Christ as their savior!

As a boy, I knew a man in our neighborhood who always held some office in the church, but the men in the neighborhood said that B----- P----- did not live a Christian life. They said he smoked, occasionally got mad and swore, and they thought he went to town and got drunk. I do not know if any of these things were true. I do know, however, that large numbers of the young men in that vicinity said they would never go to church as long as B----- P----- was a member. Yes, he was an epistle of Christ; he was read untiringly by all who knew him, but the epistle did not tell a story of the redeeming grace of Jesus Christ. It turned people away from Christ instead of drawing them to Him. B----- P----- had a mother, a saint whom everybody loved. She fell and broke her hip and was confined to bed for the rest of her life. During this time the church was unable to support a pastor. Everyone loved Grandma P----- and many called on her regularly, Christian and non-Christian alike. For those three years she made it her habit to give her testimony to everyone who called on her; to read to them from her Bible and pray with them. They went away feeling that they had been close to God. Thus for those three years, Grandma P----- kept up the religious life of a whole community and kept the church alive. Perhaps that church did have a pastor. Yes, Grandma P----- was also an epistle of Christ, and what a glorious message everyone read in her life! What a powerful message a saint of God gives through his life and testimony! I would that the church were full of them.

Since we know that the Bible is God's message to man, every man will be wise to take note of its teachings. When it gives a definite plan of salvation, all men must recognize it and not try to make one of their own and pin their hopes of eternal life to it.

John 5:24 gives us the plan of salvation in a very positive simple way: "Verily, verily, I say unto you He that heareth my word, and believeth on him that sent me, hath everlasting life, and shall not come into condemnation; but is passed from death unto life." Over and over again the plan of salvation is given, and always it is the same--faith in Jesus Christ. We are not saved because of the righteous life that we live or the good that we do. Ephesians 2:8-9 reads: "For by grace are ye saved through faith; and that not of yourselves: it is the gift of God: not of works, lest any man should boast."

HEAVEN OR HELL

This seems to be a hard teaching to many. They say that God is a God of love, and as such they do not believe that God will condemn a man to hell if he is a good man and honest. There is one of two places where we may spend the future eternity: one is heaven and the other hell. Christ is preparing a place for us, wishing us to be with him in heaven. Hell was created for the devil and his angels. If a man accepts Christ he will spend eternity with Him in heaven. If he rejects Christ and thus associates himself with Satan, he will certainly share Satan's future abode in hell.

No, do not accuse God of condemning men to hell, after He has sent Christ into the world and has shown His great love for men by giving Christ to die on the cross for their sins. If you must accuse someone, accuse your pastor; perhaps he has not done all that he could to reach those that are lost. Accuse me, for I know that I have not done all I could. Should you not face the problem honestly and say that you, by your own will, accept Christ and heaven or condemn yourself to hell by rejecting Him? "For the wages of sin is death; but the gift of God is eternal life" (Rom. 6:23).

But you say you are talking about the moral man. Certainly hell cannot be his wages; he has done nothing to deserve it. Let us try to think this thing through. In the sight of our own laws, the man deserving the greatest punishment is the one who has broken the greatest law. Should not the same be true with God? The man who breaks His greatest commandment is the worst sinner.

A man once came to Jesus and asked the question: "Master, which is the great commandment in the law?" Jesus answered: "Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind" (Matt. 22:36-37). Does the moral man who rejects God, love God with all his heart, mind and soul? Certainly not. Then he has broken the greatest law of God and stands before God as the greatest sinner of all. God's reaction to this man is given in John 3:17-18: "For God sent not his Son into the world to condemn the world; but that the world through him might be saved. He that believeth on him is not condemned: but he that believeth not is condemned already, because he hath not believed in the name of the only begotten Son of God." The moral man is not

condemned because of any immoral act, any crime or vice that he is guilty of, but because he has not believed on Christ and has broken the greatest commandment.

Let me tell you a story which has greatly helped me to see this thing clearly. On the night before I left to do graduate work in the University of California, my father and mother and I were sitting around a table reading. My father found an item which he read aloud. As near as I can remember, it was this: Four years earlier in a different part of the country there was another family whose son was ready to go to college; but there was no money available for a college education. The father and mother talked the matter over and said, "Our son has been a very good boy. He has always done well in school and he should have a good education, but how can we send him to college?" They decided that there was only one possible way and that was to sell half of the farm and raise the money. This they did and sent the son to college. The son was a brilliant student, and the college was extremely well pleased with his work. At the end of four years, he completed his course and was ready to graduate with the highest honors, and the highest academic record ever made in that college. The father and mother again held a conference, and felt that it did not seem right for the son to be graduating so far from home without at least one of his parents with him. They sold part of the remaining stock and raised enough money so that a railway ticket was bought for the father to be with his son. But there was not enough money for a new suit of clothes. The father arrived on the campus and, seeing his son with a group of students, rushed up to him and greeted him. The son stared back coldly and said, "No, there is some mistake here. You are not my father, I do not know you."

When my father finished reading, he turned to me and said "Peter, is that what you are going to do when you finish college?" I can never forget that story. But what do you think of that young man? He certainly stooped the lowest that it is possible for a son to stoop in his relation to his father. It would have been better for him to have stolen the money for his education, or to have done anything except to take all that his parents could give, through great sacrifice, and then disown them. What must that father do, if he is a just father? Can he say to that son, "Well, son, that is all right. I will continue to send you your monthly check and the estate will be yours as it always has been"? No, that father must say to the son, "Son, as long as you disown me, I must disown you, but I will ever be looking forward to your coming back and again owning me as your father. Then I will be glad to own you as my son."

As the years have passed, this story has taken on a very different meaning for me. In the place of the son, I see the moral man, the man who has not broken a single law of the land. He has no bad habits, his morals are above reproach, he is looked up to by all of his associates. Then I look at the non-christian country and see its lack of morals, its impossible code of ethics, the treatment of the wives and children, and I realize that my moral man obtained his morality, his

code of ethics, his uprightness, his courtesy to the members of his family and his honesty, from Christianity, or from Christ and God. Then I see the non-christian moral man looking up into the face of God and saying. "This is my code of ethics: this is my own standard of morality; this is my own standard of treatment of my family; it is my own standard of honesty in my business dealings. You have had nothing to do with my life. I will have nothing to do with Christ as my Savior or You as my God." I marvel that God does not answer with fire from heaven and devour that man. Certainly God cannot take him to heaven to dwell with Him eternally. Satan himself has not done worse.

If you are this nonchristian man or woman may I entreat you to accept Christ as your personal savior now? Confess to Him your sin of rejection, recognize Him as your Creator, your God. See Christ upon the cross as a sacrifice for your own sin. See in that sacrifice the great love of God, who gave His only begotten Son that whosoever believes in Him shall not perish but have eternal life. See the love of Christ when He refused to come down from the cross but said, "Father, forgive them, for they know not what they do."

You must either accept Christ as your personal savior or reject Him. There is no middle ground. You are either saved, with your name written down in heaven where you will spend eternity, or you are lost and will spend eternity in hell with Satan and all that is evil.

When the children of Israel strayed from God and began to worship idols, Joshua went out before them and said:

And if it seem evil unto you to serve the Lord, choose you this day whom ye will serve ... but as for me and my house, we will serve the Lord. And the people answered and said, God forbid that we should forsake the Lord, to serve other gods; for the Lord our God, he it is that brought us up and our fathers out of the land of Egypt, from the house of bondage, and which did those great signs in our sight, and preserved us in all the way wherein we went, and among all the people through whom we passed.

Will you not say with Joshua: "As for me and my house, we will serve the Lord"?

consider the two following statements as contracts between yourself and God. One of these contracts is in effect as you finish reading this book. Which one do you now choose?

1. I believe on the Lord Jesus Christ and accept Him as my personal Savior. By this act my sins are all blotted out and I become a son of God, a joint-heir with Jesus Christ. I now have eternal life and shall spend eternity in heaven with Christ.

Signed..... Dated

How shall we escape, if we neglect so great salvation? - Hebrews 2:3

2. I will not accept Jesus Christ as my savior. I realize that this is the greatest sin against God that any man can commit and in so doing I affiliate myself with Satan. I shall live a life in sin against God, and for this decision I shall spend eternity in hell with Satan.

Signed..... Dated

For the wages of sin is death; but the gift of God is eternal life through Jesus Christ our Lord - Romans 6:23

If you have not signed number 1, do not deceive yourself. You must choose this very moment. Look again at number 2, for in the sight of God your name is signed there, even in the rejected blood of His Son, Jesus Christ. It is dated this very moment.

Believe on the Lord Jesus Christ, and thou shalt be saved - Acts 16:31.

Preface to the 1944 edition

Editor's Note: Science Speaks was originally published in 1944, by Moody Press, under the title, From Science to Souls. The original edition contains the following explanation of how the book came to be written:

Preface to Chapter One (from the 1944 edition)

By Peter W. Stoner

More than 25 years ago (*that is, more than twenty-five years before 1944 - Ed.*), there were Chinese government students in the University of California at Berkeley. Twelve of these students went to Dr. McAfee, pastor of the First Presbyterian Church, and asked that they be given a special Sunday school class so that they might obtain information about the Christian religion. These students were sent to this country to become engineers, doctors, etc., and to take this training back to China for the improvement of their country. They said that they considered that the religion of any country had much to do with its development, so they wished to learn what our religion was in order to interpret its effect on our culture.

Dr. McAfee came to me and asked me to take the class. I did not realize what was involved until I had started the work. Then I realized that they had no foundation whatsoever in our religion, nor had they any faith in our God or Jesus Christ.

After much prayer, I felt led to start the study of the Bible from its scientific connections, later to take enough prophecy to show the Bible's accuracy, and finally, to present Christ.

We spent the first winter studying the Bible's relation to science. The students took references to the University library and reported on them as faithfully as they would have, had it been a university course.

When We had Completed the scientific part of the plan, the whole group went to the pastor and told him that they were convinced that our religion was the true religion, for no other religion had such proof of its having God as its author. They all accepted Christ as their Savior and joined the Church.

I have carefully followed the development of science and its relation to the Bible in the years since that time. Today, developments of science have greatly increased the evidence of the inspiration of the Bible. I have attempted to set forth this evidence.

The references given in this chapter are only those that happen to be on my desk or the most easily accessible to me. The reader can find equivalent material in a very great number of different books. These or corresponding references should certainly be read in order to obtain a satisfactory understanding of the subject under consideration.

In [Part III of Chapter One](#) (in From Science to Souls but not in Science Speaks) are treated a few of the theories given by the Church long ago, and which are still in general use. These have tended to open the door to the destruction of the faith of our young people, when they have learned that scientific facts drastically disagree with their earlier teaching in the Church.

It should be clearly understood that Chapter One deals with the correlation between Genesis and science, as science stands today (1944). Tomorrow science may discover new facts and this chapter may need revision. Every development of science in recent years has shown more clearly the truth of the Bible. We may be confident that future developments in science will only add to the evidence here produced.

Editor's Note: At the time of the writing of this preface, the universe was believed to be about 2,000,000,000 years old. In later editions of Science Speaks, this measurement was corrected upwards as measurements improved. Present

estimates are typically in excess of 10,000,000,000 years and sometimes as high as 20,000,000,000 years.

Part III of Chapter One (from the 1944 edition)

OTHER INTERPRETATIONS OF GENESIS

By Peter W. Stoner

Let us consider the explanation which places all of the geological ages between the first and second verses, declares that the earth was created perfect and was wrecked by the casting of Satan down to earth, and claims that the days of Genesis involved only the reformation of the earth and the recreation of the life upon it in days 24 hours long, covering a total length of time of one week.

The Earth Created Perfect

I think God did create the earth perfect, but perfect for His own immediate purpose, not necessarily perfect in the meaning which I would attach to the word. No two of us would likely agree as to what a perfect earth would be. Let us be careful in our interpretations. Not so long ago men were persecuted because they announced that the orbits of the planets were elliptical instead of circular. People then thought that the circle was the perfect curve and therefore God created the planets to move in perfect circles. Today we know that the planets all move in elliptical orbits and we also recognize the ellipse is just as perfect a curve as the circle. Let us be careful about reading into the Bible something that is not there, but which we think ought to be there. Our thoughts are not God's thoughts. We are extremely likely to be wrong. Our Bible does not say that God created the earth perfect. Therefore, we dare not teach children so.

The Fall of Satan

What do we know about an early destruction of the earth by the fall of Satan? Nothing. That is also read into the biblical account. The only effect on this earth caused by the casting of Satan out of heaven seems to be still future. (See Rev. 12:7-12 and Rev. 20:1-3.) These will certainly occur in the Great Tribulation period. Other references which are usually cited are Jer. 4:23-26; Isa. 24:1,5,21-23; Isa. 45:18; Ezek. 28:11-19 and Isa. 14:1,4,9-17. A careful study of all of these passages will show that they have nothing to say about a prehistoric time but refer to the Revelation passage, the casting of Satan out of heaven during the Great Tribulation period or to judgments against Jerusalem. In fact, we are clearly taught that Satan still has access to heaven and is our accuser there.

Yes, there is one passage which is not as clear as the others, that is Luke 10:17,18. Here, after the disciples report that the devils are subject to them, Christ says that he saw Satan fall from heaven like a star. The past tense is used, but so is the past tense used in many of the prophecies throughout the Bible. (In Isaiah 53 you will find several prophecies referring to Christ. Some of these are in the future tense, some in the present but most of them are in the past tense. This passage alone quite conclusively shows that the tense used in prophecies does not necessarily indicate the time when the event will happen or whether it has happened in the past. The number of such prophecies is great but I will mention two more: Ps. 22:18 fulfilled in John 19:23,24; Ps. 34:20 fulfilled in John 19:32-36.) I think this is most likely prophetic, referring to the same event recorded in Revelation. We are told that Satan lost his position as the covering cherub, but we are not told that he was cast down to the earth or that anything on the earth was destroyed at that time.

I shall not further pursue this evidence, for in reality it has little to do with the subject at hand. Even if the earth had been wrecked by the fall of Satan between the first and second verses, there is an abundance of scientific evidence which shows that it could have no relation to the Genesis account.

The Geological Ages

For sake of argument, let us ignore the evidence just cited and see what happens if we place the geological ages between the first two verses. Verse 2 says that the earth *was* without form, void and dark. Translate it *became* if you prefer. In either case, it perfectly describes a dark nebula: the physical condition of a nebula is that it contains no particle larger than the smallest particle of dust and its main composition is separate atoms with many electrons stripped off. Now suppose the geological layers were laid down between these two verses and then the earth was reduced to isolated atoms and reassembled again, would there be any fossils remaining? Not the slightest trace of one. No, according to this translation, the geological ages can not be placed between the first and second verses. Everything on this earth, in rock layers, fossils or anything else, happened after the second verse. Again, suppose that the second verse is changed in its translation so that it does not mean a separation of particles as described above. Let us see what is involved.

This explanation of Genesis is always given to make the Days of Genesis 24-hour days. This then places all of the acts of God, described after the second verse as happening in recent times, approximately, say, in the last 6,000 years, certainly in the last geological period. This introduces several insurmountable difficulties.

Contradictions

1. This would make light first to appear on this planet 6000 years ago. We could not convince any geologist that light first appeared either 6,000 years ago or 60,000,000 years ago. This explanation would make the verses 3 to 5 definitely contradict known facts of science.

2. Verses 6 and 7 would tell us that the earth was completely covered with clouds and there were no oceans until 6,000 years ago. Again, this dramatically contradicts known information of science, as the covering of the earth solidly with clouds pre-dates nearly all geological eras and periods of time.

3. Verse 9 describes the earth as being completely covered with water, and according to this theory no continent rose from the water before some 6,000 years ago. Any geologist can produce definite evidence that it was hundreds of millions of years ago when our continents were formed. So this explanation becomes absurd. Geology has very reliable means of setting approximate dates for many of its periods, best of which is the rate of change of Uranium to lead. This rate cannot be altered by any known means; the percentage of Uranium that changes to lead in a century is well known. In any layer where Uranium is found, the per cent which has changed to lead gives an authentic date to that deposit.

4. Verses 14-18 would, according to this explanation, tell us that the sun never shone through the heavy clouds until 6,000 years ago. This is quite as false as any of the other results above mentioned. (Note: the 6,000 years above mentioned is the time usually taught. Any other comparable age would give the same difficulty.)

I trust I have made it clear that this attempt to explain the first chapter of Genesis contradicts science at many points. These may easily be verified by referring to any available historical geology. We cannot hope to teach our young people this theory and then expect that their faith will not be shaken when they study science.

We accuse the colleges of destroying the faith of our young people. It is often true, but too often it is true because we have given our young people false teachings which are sure to lead them into dangers. Let us make sure that what we teach our children is true to the best information obtainable both from science and from the Bible, then we will not have them slipping away from the faith.

The Canopy Theory

The canopy theory, as often thought [taught? -Ed], would place spherical shells of various kinds of material around the earth, then have the shells, one after the other, break down and fall upon the earth, forming different layers of the earth, and the breaking down of the ice layer cause the flood and the ice age.

So far as I know this theory was never accepted by science. I have not been able to find it or any reference to it, in any science text or encyclopedia. Generations ago it was known to be contrary to the laws of force which act throughout the physical universe. The rings of Saturn have supplied a field for research which has a definite relation to the canopy theory. As early as 1750 the principles involved in a canopy over the earth were quite well understood and by 1850, such a canopy was well known to be impossible. (See Young's *General Astronomy*, pp. 390-395, for a brief discussion of these principles.) I can think of nothing more dangerous than to try to teach such a theory to our younger generation.

May Bible students become more scientific and scientists become better Bible students; then we will be able to overcome the wrecking of the faith of our young people in the colleges.

A Challenge to Critics of Chapter 3

By [Don Stoner](#)

Critics of my grandfather's book have suggested many possible errors. Among these, that the estimates may be too high, or that the events are statistically connected - so that fulfilling one prophecy will virtually guarantee fulfillment of another. Although my grandfather repeatedly invited critics to supply their own estimates and see what happens, I have found that most critics are content to skip the exercise; so, I have included this chapter as an example of what sort of numbers a person playing the devil's advocate might obtain. Every attempt has been made to keep these estimates conservative beyond any reasonable challenge:

1. "But thou, Bethlehem Ephratah, though thou be little among the thousands of Judah, yet out of thee shall he come forth unto me that is to be ruler in Israel; whose goings forth have been from of old, from everlasting" (Micah 5:2).

This prophecy predicts that the Christ will come out of Bethlehem. In Micah 5:3 we learn that Bethlehem is also to be his place of birth. This greatly limits the total number of candidates which could possibly be the Messiah to those who came from Bethlehem. In this passage (particularly Micah 5:4) we also see that the Christ must be male.

The present population of Bethlehem is about 20,000, but the average population of the ancient city stayed well under 10,000. If we assume a very high birth rate of 40 / year / 1000 population (modern Africa averages 41, Asia 24, Europe 11), this means less than 400 individuals per year would have been born in

Bethlehem. Because about half of these would be female, this further restricts the total number of possible Messiah candidates to less than 200 individuals per year.

2. "Know and understand this: From the issuing of the decree to restore and rebuild Jerusalem until the Messiah, the Prince, (Anointed One, the ruler) comes, there will be seven 'sevens', and sixty-two 'sevens.'" Daniel 9:25

In addition to where the Messiah will come from, we are also told when he will come. This will further restrict the candidates from which we can draw.

The clock started in 445 B.C. when Artaxerxes Longimanus issued the decree to "restore and rebuild Jerusalem". From that time we are told to count off 49 (7x7) and 434 (62x7) periods (understood as years in other similar Biblical passages). This puts the Messiah at about 483 years after 445 B.C. or at about A.D. 39 (there being no zero year). Because different calendars were used by different ancient people, the length of these "years" might have been as short as 360 days (very likely the length of the calendar Daniel used in Babylon) or as long as 365.25 days. If the shorter year is assumed, the 483-year span is reduced by 360/365.25 to about 476 years - 7 years less or about A.D. 31 (coincident with the final part of Jesus' ministry - when "his hour had come").

There are many different ways we might understand "when" the Messiah "comes." These might include, when he is born, when he assumes power, or when he is "cut off" (e.g. Daniel 9:26). If we assume the Messiah lives 100 years, in addition to the 7 year uncertainty in our date, we have a 107 year window beginning in 69 B.C. and extending until A.D. 39 for the birth of the Messiah. Taken together with the place of birth, this reduces the number of candidate Messiahs to less than 107 x 200 or less than 21400.

If we allow that there might have been as many as about 25,000 men who could potentially have been considered the Messiah, we are being sufficiently generous that we probably will not be challenged. King Herod, in Matthew 2:16, appears to have felt he had a much tighter window (2 years) than we have assumed here. (Of course, Herod had additional information which we cannot use here.)

3. "Behold, I will send my messenger, and he shall prepare the way before me" (Mal. 3:1).

This prophecy evidently refers to a special messenger of God, whose one duty was to prepare the way for the work of Christ, so there is a further restriction added. Our question here is: Of the men who have been born in Bethlehem during the allowed window, one man in how many has had a forerunner to prepare his way? John the Baptist, of course, was the forerunner of Jesus, but for how many of the other 25,000 might we have allowed that the prophecy had

been adequately fulfilled? This was a time of unrest for Israel and various false prophets of one kind or another were fairly common. Most, of course, were proclaiming themselves. Were there as many as a hundred prophets proclaiming someone other than themselves? A thousand? Of these, how many were featuring a Messiah from Bethlehem?

Let's assume there were 1250 prophets (about one a month) all featuring a Messiah, from Bethlehem, other than themselves. (Assuming one in every 20 candidates had a prophet to "prepare the way".) Surely we are being sufficiently generous. This brings our candidates down to 1250 - one a month from Bethlehem, and with a forerunner.

4. "Rejoice greatly, O daughter of Zion; shout, O daughter of Jerusalem: behold, thy King cometh unto thee: he is just, and having salvation: lowly, and riding upon ... a colt the foal of an ass" (Zech. 9:9).

Our question then is: One man in how many, who was born in Bethlehem and had a forerunner, did enter Jerusalem as a king being lowly and riding on a colt the foal of an ass? If we assume that a plot is afoot to imitate the Messiah for profit or other gain, we might expect the perpetrators to deliberately set this one up. Unlike the "messenger" above, this one requires no lengthy advance planning. And perhaps even a seeker of wealth and power could act lowly long enough to pull this one off.

5. "And one shall say unto him, What are these wounds in thine hands? Then he shall answer, Those with which I was wounded in the house of my friends"(Zech. 13:6).

5b. "For dogs have compassed me: the assembly of the wicked have inclosed me: they pierced my hands and my feet"(Ps. 22:16).

Christ was betrayed by Judas, one of His disciples, causing Him to be put to death, puncture wounds being made in His hands and feet. Betrayal is, by definition, not an element subject to advance planning. Neither is crucifixion something one would deliberately want to include in one's plans. Still, crucifixion was the standard method of execution at this time and betrayal was not too unusual.

Let's assume one man in 10 of those in high profile roles got betrayed and crucified. Now our number of candidates is down to 125. (All from Bethlehem, all with forerunners, and all betrayed and crucified within the critical century.) If this sounds less than generous, remember that the population of Bethlehem is less than 10,000 and we are assuming a crucifixion rate totaling more than 2% of its male population within 107 years (ignoring any additional crucifixions of those not having forerunners - presumably a much greater number).

6. "And I said unto them, If ye think good, give me my price; and if not, forbear. So they weighed for my price thirty pieces of silver" (Zech. 11:12).

The question here is: Of the people who have been betrayed, one in how many has been betrayed for exactly thirty pieces of silver? Remembering that betrayal is not a planned element, this must be left to chance alone. If planning is involved, we must consider the likelihood that the religious leaders of the day might wish to avoid prophesied quantities, such as "30 pieces of silver," in their payoffs.

What motivation causes one friend to betray another? A small amount of money? Not likely. We might expect either a larger amount or different motivation entirely. Perhaps the chances are as good as one in fifty of exactly matching the amount; they are certainly not as good as one chance in 10.

If we assume one in ten, the number of viable candidates are now down to less than 13.

7. "And the Lord said unto me, Cast it unto the potter: a goodly price that I was prized at of them. And I took the thirty pieces of silver, and cast them to the potter in the house of the Lord" (Zech. 11:13).

This is extremely specific. All thirty pieces of silver are not to be either kept or returned. They are to be cast down in the house of the Lord, and they are to go to the potter. You will recall that Judas in remorse tried to return the thirty pieces of silver, but the chief priest would not accept them. So Judas threw them down on the floor of the temple and went and hanged himself. The chief priest then took the money and bought a field of the potter to bury strangers in.

Our question is: One man in how many, after receiving a bribe for the betrayal of a friend, would return the money, have it refused, throw it on the floor in the house of the Lord, and then have it used to purchase a field from the potter? This is also outside of the control of conspirators.

Money is valuable. Most who accept it keep it. Those few who attempt to return it are likely to find willing help. This has to be a one in a hundred shot from the beginning, without including the "temple" and "potter" elements.

Furthermore, if we are allowing for conspiracy, we must remember that the others involved in this drama have their own goals. If the Messiah knows to line up a donkey, we should expect the Jewish priests be motivated to avoid destinations like a "potter" as determinedly as amounts like "thirty." These elements must be considered chance at best. A one in a thousand shot for this prophecy must be considered conservative.

If 13 candidates are each subjected to a one in a thousand chance, there is less than one chance in 75 than even one of them will succeed.

8. "He was oppressed, and he was afflicted, yet he opened not his mouth: he is brought as a lamb to the slaughter, and as a sheep before her shearers is dumb, so he openeth not his mouth" (Isa. 53:7).

One man in how many, after fulfilling the above prophecies, when he is oppressed and afflicted and is on trial for his life, though innocent, will make no defense for himself? It is difficult to imagine why anyone would do this. Any conspiracy theory has to end here - there is nothing left to gain and a great deal to lose. One in a hundred is probably generous. Perhaps a candidate who was mute would fulfill this prophecy; we should not expect it of one who was able to speak. We will assume one in a hundred.

This brings the chances against a candidate fulfilling these prophecies down to less than one in 7500.

9. "They divide my garments among them and cast lots for my clothing." Psalm 22:18

Dividing of garments between attending Roman soldiers was normal at crucifixions, but casting lots was not. We know from John 19:23,24 the reason why this exception was made; one garment was seamless so they decided to cast lots for it instead of tear it. What are the odds against this exception? This seems to have been a rare event since the soldiers had to discuss how to deal with it. Surely it would be conservative to assign a probability of one in twenty-five.

This brings the chances down to one in 187,500.

10. "He was assigned a grave with the wicked and with the rich in his death." Isaiah 53:9

The fact that he was crucified probably takes care of the first half of this prophecy. But how many are buried with the rich? In Matthew 27:57 we find a rich man named Joseph getting the body of Jesus from Pilate and placing it in his own tomb. What odds do we assume here? One in ten? One in six?

If we say one in six, our chances drop to less than one in a million of any man fulfilling these 10 prophecies.

If the odds of the Biblical authors of making these predictions, without divine aid, are as "good" as one in a million, we must still conclude that it was sufficiently improbable as to be unreasonable to assume. We must still conclude the

presence of divine inspiration.

Footnotes:

1. See Henry Norris Russell, *The Solar System and Its Origin* (New York: Macmillan, 1935), p. 26 2. This was Dr. Fowler in an earlier edition *** fix 3. J. M. Cork, *Radioactivity and Nuclear Physics* (New York: Van Nostrand, 1950). 4. B. J. Bok and P. F. Bok, *The Milky Way* (Cambridge: Harvard University, 1957). 5. Fowler, p. 73. 6. Dallas, Texas, December 30, 1941. 7. George Gamow, *The Creation of the Universe* (New York: Mentor Books, 1961). 8. See W.T. Skilling and R.S. Richardson, *Brief Text in Astronomy* (New York: Holt, Rinehart & Winston, 1959), p. 310). 9. See Baker and Fredrick, p. 267, for other difficulties with this theory. 10. Edwin P. Hubble, *The Realm of the Nebulae* (New York: Dover, 1936). 11. Baker and Fredrick, pp. 267-68; Elske Smith and Kenneth Jacobs, *Introductory Astronomy and Astrophysics* (Philadelphia: Saunders, 1973), pp. 108-9; Robert Jastrow and Malcolm Thompson, *Astronomy Fundamentals and Frontiers* (New York: Wiley, 1972), pp 262-68. 12. Russell, pp. 123-26; Smith and Jacobs, pp. 108-11. 13. Lull, pp. 36-38 14. John Joly, *The Evolution of the History of the Earth* (London: Oxford University), Preface; p. 107.) 15. Lull, p. 43 16. William J. Miller, *Introduction to Historical Geology* (New York: Van Nostrand, 1952), p. 70 17. Miller, pp. 137-42 18. Miller, p. 234 19. Miller, pp. 319-27 20. Miller, pp. 327-81. 21. W. Max Muller, *Egyptian Mythology: Mythology of All Races*, XII (New York: Cooper, 1964), pp. 33-127; 173-83; 212-45. 22. Stephen H. Langdon, *Semitic Mythology: Mythology of All Races*, V (New York: Cooper, 1964), pp 277-325. 23. See the comments in the Scofield Bible about day, morning and evening, under Genesis 1. 24. I.R. Dean, *The Time of the End*(Toronto: Evangelical, 1918), pp 19-23; Leon Wood, *A commentary on Daniel* (Grand Rapids: Zondervan, 1973), pp. 257-63 25. William N. Green, "primeval Chronology" in *Classical Evangelical Essays in Old Testament Interpretation*, ed. Walter L. Klaiser (Grand Rapids: Baker, 1972. 26. E.A. Hooton, *Up from the Ape* (New York: Macmillan, 1931), p. 332 27. Historical references to Tyre are scarce. See the following: S. A. Cook, "Fall and Rise of Judah," *Cambridge Ancient History* (Cambridge: Cambridge University, 1954) III 399-402. P.V. Myers, *General History* (Boston: Ginn, 1927), pp. 59, 163 George S. Goodspeed, *History of the Ancient World* (New York: Scribner, 1904), pp. 210-12. H. G. Wells, *outline of history* (New York: Macmillan, 1920), I, 322-24. "Tyre," *Encyclopaedia Britannica*, XXII, 652-53. George T.B. Davis, *Fulfilled Prophecies That Prove the Bible* (Philadelphia: Million Testaments Campaign, 1931), pp. 8-15. 28. George T.B. Davis, *Fulfilled Prophecies That Prove the Bible* (Philadelphia: Million Testaments Campaign, 1931), pp. 30-33. 29. Davis, pp. 34-39 30. *Ibid.* 31. *Ibid.* 32. *Ibid.*, pp. 88-105. 33. *Ibid.*, pp. 56-63 34. *Ibid.*, pp. 72-80 35. Myers, pp. 58-62.

(END)

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