

C. Smith

Astronomy and the Bible

RECONCILED.

A PLAIN DISCOURSE

UPON THE SUBJECT OF THE

EARTH,

SUN, MOON AND STARS;

SHOWING THE POSITION THE EARTH OCCUPIES IN

CREATION.

BY

VOX.

AUTHOR OF

("A CHRISTIAN HISTORICAL POEM: QUEEN VICTORIA.")

EXTRACTS AND ILLUSTRATIVE DIAGRAMS FROM

"PARALLAX,"

AND OTHER WRITERS.

NEW EDITION.

ASTRONOMY AND THE BIBLE RECONCILED.

"Firm stands the foot
That treads the solid ground of Scripture."

It is really magnificent to contemplate with what despatch God does His work. In the beginning of creation He has a multitude of glorious thoughts in His mind, and a host of things to do with His hands; He sets to work, and in six days all is finished!

DIALOGUE.

A.—Sir, I have been taught from my earliest days that the earth is a globe—a planet—rotating upon its own axis, and travelling round the sun at an enormous rate;* that the sun is the centre of the solar system, itself stationary, while all the planets and other heavenly bodies are moving in their orbits round it. But, as I am told you object to all this, I shall be glad to hear your objections and have your opinions.

B.—Before entering upon this interesting subject, then, I inquire—Do you accept the Bible as Divine authority? For that is my royal warrant and sheet-anchor.

A.—I profess to do so.

B.—Well then, formerly I believed as you do, and with no better reason than that which you render—namely, because I was in that way taught. Nevertheless, theoretic astronomy has always presented an insurmountable difficulty to my implicit reception of it, on account of its total inability to reconcile its conclusions with the revealed Word of God. This it was that ultimately determined me to lay aside all preconceptions, and to form my judgment anew from the plain statements made upon the subject of the Creation in the inspired writings. Sceptics make the daring assertion that "the Bible is not true, because (they say) it contradicts science." To this it may be replied that a reputed science presuming to contradict the Word of God is, in reality, not science at all, but is "falsely so called." For brilliant ideas I admit that modern astronomy is a splendid system. Notwithstanding, if it be not really true, then it is but a "splendid lie" palmed upon poor, credulous mankind.

A.—Allow me here to ask you a question, although you may justly consider it somewhat aside from the subject before us.

* 600 miles per hour is the supposed velocity in the latitude of England.

B.—Certainly. Yet it is advisable to keep to the point as much as possible. What is the question?

A.—Have you obtained from the Scriptures any reasonable idea as to when God created the angels?

B.—The Bible does not give what may be called creative dates. Yet we may learn from its contents that when the Almighty, in the eternal counsels, had decreed creation, He created all things. Let us then begin with the statement that God created "the deep," which is the opening scene for the operations of the Creator, described in Genesis i., 1, thus:—"In the beginning God created the heaven and the earth." And I would suggest to you that the heaven here spoken of is not the same as that mentioned in v. 8, for the reason that *this* was created "In the beginning," and *that* was made on the second day. The heaven in v. 1, then, I conceive to be the *third* heaven, or Paradise, with all its living hosts.* In Nehemiah ix., 5-6, we read:—"Blessed be Thy glorious name, which is exalted above all blessing and praise. Thou, even Thou, art Lord alone; Thou hast made heaven, the heaven of heavens, with all their host, the earth and all things that are therein, the seas and all that there is therein, and Thou preservest them all; and the host of heaven worshippeth Thee." The host here referred to is evidently a host of intelligent beings—angels, capable of worshipping Jehovah. This brings me to your question as to "when God created the angels?" The answer, inferentially, is—at, or "in the beginning" of His work of creation.

A.—I imagine there was a long duration between the creation of the third heaven and the creation of the earth, although these distinct creations are stated in one short verse.

B.—Indeed it may be so, for the Spirit of God in His narrative passes on very rapidly, and to say much in a few words is a scriptural characteristic. I would now at once call your attention to Genesis i., 2-5, and ask you to get in your own mind, a clear, distinct idea of the "deep" there spoken of. The great, vast deep. It is a historical fact that the actual position of the earth, at its first stage of creation, was *beneath* the surface of the waters; created in the womb of the "deep," and awaiting the full time to be brought forth.

A.—And its primeval condition was—?

B.—Well, as to its shape, so to speak, it was shapeless; a chaos, unfit, as it was and *where* it was, for organic life, animal or vegetable. It contained no "fulness;" that is, it was empty—"without form and void." Darkness was upon the "deep," and the Spirit of God moved upon the face of the waters, and God said, "Let there be light, and there was light." Now, it is a circumstance worthy of notice that the darkness is not all dissipated; but just where the Spirit moved, there light was created, and only there. The idea is, an inner circle of light and an outer circle of darkness. Of course, God is over the darkness as well, to the utmost limit of creation. He is omnipresent

* That there are three heavens is evident, for Paul says:—He "was caught up to the third heaven."—II. Corinthians xii., 2.

according to Psalm cxxxix.; but I mean, the Spirit, within an inner circle only, moved with creative energy. For where He did not move, darkness remained. Thus we are told, in Job xxxviii., 9, that "thick darkness is a swaddling band for the sea." And God, co-operating with the Spirit, divides the light from the darkness.

A.—Some philosophers think that light proceeds from a point, while others believe it is an undulating ether.

B.—Yes; "so many men, so many opinions." But observe, if you please, the order of creation thus far: First, the third heaven; secondly, the earth; and thirdly, light.

A.—I perceive that natural light—that is, daylight—is created before the sun, as a vessel of light, exists.

B.—It is so. But let us be brief. The work of the first day is finished, and we come to the second. "And God said, let there be a firmament."* That is, the air we breathe, and upward. And mark, where does God make the firmament, or, as we shall call it, the first heaven? Is it made above the "deep"? No, but in the middle of it—"in the midst of the waters." In thinking of this passage, the action of God seems to be, that He puts His almighty arms deep down into the waters, and raises the upper half of the great deep, and places it a long way off over our heads. And with this material He appears to shape the sky, which becomes, in the words of Job xxxvii., 18, "strong, and as a molten looking-glass." And the sky is, I suggest, the second heaven, and the framework of all the luminaries. It may be that those waters are the source of the "fruitful rain from heaven." It is, however, admitted that vapours arise from the waters below, and from the earth, and descend again in the form of rain. I may be told that this is speculative, and I allow it is. But, passing over this instance, it is my aim, in this discourse, to deal more with matters of fact.

A.—Do the Scriptures anywhere state that there are waters above?

B.—Yes; in Jeremiah x., 13, it is written, "There is a multitude of waters in the heavens." Further observe, that by means of the "expansion" God divides the waters *under* the firmament from the waters *above* the firmament. And God called the expansion "Heaven; and the evening and the morning were the second day."

A.—Am I to understand you to mean that the earth was created below the surface of the "deep"?

B.—Exactly so, for God divided the waters in the "midst," and yet the earth was not visible.

A.—Proceed, I am attentive.

B.—God's next work appears to be to separate the waters that were before mingled and mixed. He, as it were, passes through, or by the way of, the paths of the "deep," and, in

* Hebrew, *an expansion*.

the appropriate language of Psalm xxxiii, 7, "He layeth up the deep in storehouses"—or, as some translate, "in bags"—and, shall I say, localises the salt water and the fresh, and we have given them names. And, mark, sir, it is now for the first time that the earth is *seen*, when God says, "Let the dry land appear." And thus "He bringeth forth the hidden things of darkness."

A.—The earth, you say then, appears on or in the waters?

B.—I do. It is stretched out upon the deep.* That is the position the earth occupies in the Creation.

A.—It just occurs to my memory that somewhere in Scripture it says, "He hangeth the earth upon nothing."

B.—Yes, it is in Job xxvi, 7; but they who are learned say that it is an incorrect rendering. Dr. Adam Clarke, for instance, in his commentary on this passage says, the literal translation is: "He layeth the earth upon the waters, nothing sustaining it." And this reading, you will perceive, harmonizes with the passages already quoted.

A.—I think in the *Book of Common Prayer* there is the expression "the round world."

B.—There is. But then, as you know, the *Book of Common Prayer* is not the Bible, and it is *that* we have to face. Now, by a very simple illustration, I think you will perceive that the doctrine of the rotundity of the earth is at variance with, and curiously inconsistent with, the general language of the Prophets and Apostles. I will suppose that I have an orange in my hand, and am engaged in describing its shape. Would you not deem the language inconsistent with the object described were I to speak of its length, breadth, and ends?

A.—I should think you would choose the words "circumference" and "diameter" as more properly applying.

B.—Certainly. And tell me, is not the Holy Spirit, think you, consistent in the choice of words?

A.—That is not to be questioned.

B.—The Bible, as a matter of fact, never uses the words "circumference" and "diameter" in speaking of the earth. It does, however, speak of the "length, breadth, and ends of the earth." In short, the assertion that the earth is a sphere is a mere assumption, worse than useless in a Scriptural sense; it is a stumbling-block to many who desire to be rightly guided. Both the Bible and sound common sense point equally in the opposite direction. The popular idea that, in the "Land of Topsy-turveydom," as it is called, the Antipodes are walking with their feet opposite to ours, or, in other words, with their heads downwards, is ridiculous in the extreme; and the law of gravitation is an unsatisfactory explanation of the supposed phenomenon. It is beyond doubt scientifically demonstrable, as well as scripturally evident, that this

* Not as represented on our globes, but stretched out without reference to it being a spherical body.

firm earth on which we "live, move, and have our being" really rests in, or on, the waters; and beneath the gigantic weight of which, with all its rocks, mountains, hills, plains, and valleys, the great deep "couches as a lion." In proof of this assertion we cite Psalm xxiv, 1, 2: "The earth is the Lord's; He hath founded it upon the seas, and established it upon the floods." Again, in Deuteronomy v., 8:—"Thou shalt not make thee any graven image, or any likeness of anything that is in heaven above, or that is in the earth beneath, or that is in the waters beneath the earth." And again we read: O give thanks to Him "that stretcheth out the earth above the waters" (Psalm cxxxvi, 6).

A.—You say, then, that the earth does not roll in an orbit round the sun?

B.—In my opinion—an opinion arrived at after years of careful study of the Word of God, on this and other subjects—the true figure of the earth is that of a plane, without axial or orbital motion. It is fixed, or has only a slight fluctuation, a slow sinking and rising in the waters, thereby causing the tides to ebb and flow. Whereas, the sun is not fixed but actually travels; as the sweet psalmist of Israel sang: "It is as a bridegroom coming out of his chamber, and rejoiceth as a strong man to run a race. His going forth is from the end of the heaven, and his circuit unto the ends of it" (Psalm xix, 5—6). On one occasion the Lord permitted His servant Joshua to arrest its course. Joshua said, in the sight of Israel, "Sun, stand thou still upon Gibeon; and the sun stood still in the midst of heaven, and hasted not to go down about a whole day" (Joshua x, 12, 13). On another, the Lord himself, without the agency of man, turned the sun back again in its own path; which thing was indicated by the shadow returning ten degrees in the sundial of Ahaz. (Isaiah xxxviii, 8.)

A.—Is there not, think you, a strong probability that God spoke on these matters according to appearances and the then ignorance of men?

B.—Such a presumption is, I consider, without foundation. No; it has been the fashion of the time to call the earth a globe, and men have employed their genius in foolishly deranging nature's plans. In fact, our sciences have deceived us and we must turn again to the Scriptures and to first principles. Error may, for a time, obscure truth, but cannot annihilate it.

A.—I confess that this argument is working a revolution in my astronomical ideas.

B.—My dear friend, let me here ask you a simple question. If, as the Newtonians say, the sun is the centre of the solar system, and the earth revolves round the sun, what, in the name of reason, did the earth revolve round before the sun was made? For the earth was created "in the beginning," and the sun was not made till the fourth day!

A.—For my own part, I am at a loss to answer. The query, indeed, seems to me to place the Newtonians in a dilemma, though doubtless their ingenuity will find a way of escape.

B.—A way of escape? Yes, some of our leading scientific men, when they find the Holy Scriptures cross their pet theories, have an easy way of setting the Scriptures aside altogether. Others, not liking to do this, turn and twist their meaning to suit their own purpose. Thus, the mind of God and the mind of man on scientific subjects—especially astronomical—take different views and opposite directions. Is it ever hinted in the Scriptures that God, having “founded the earth upon the seas, and established it upon the floods,” afterwards lifted it from its original position and threw it out into infinite space to revolve in a plane round the sun? Or that He plucked the sun from its first place and dashed it into the sea in order to repulse the earth to a distance of over ninety millions of miles away? How is it that there is no mention of so marvellous a feat, if ever performed?

A.—Let us now refer to the moon. Do you deny that she is an opaque body? That is, has no light of her own, but is, as it is said, a reflector of the light of the sun. Do you, I say, deny this?

B.—If the moon were a mere reflector it is only reasonable to conclude that she would reflect whatever she received. That is to say, if she received heat, she would throw off heat; whereas her beams are proverbially cold. Therefore, her light, which is her own, is different in its nature from that of the sun. The moon is self-luminous, and, according to Genesis i., 16, she is “a great light,” that, as a poet says, “warms not but illumines.”

A.—How about the stars? Are not some of these worlds, like our own?

B.—Whoever holds the theory of the plurality of worlds is undoubtedly “wise above what is written” in Scripture. The plain declaration is, that God made the sun, moon and stars lights, and “set them in the heavens to give light on the earth.”

A.—O, but the Apostle Paul, in his Epistle to the Hebrews, speaks of the plurality of worlds. For instance, “By whom also He made the worlds” (i., 2); and again, “The worlds were framed by the word of God” (xi., 3). How do you account for that?

B.—I account for it in this way. Prior to the introduction of the Copernican system of astronomy, the word in the original Greek which is now translated by the plural noun, “worlds” was then translated in the singular number, “world.” And it is interesting to note that the Roman Catholics continue to render the word in the singular in their Latin Testament, as follows:—

Per quem etiam mundum conditit.—Hebrews i., 2.
Per fidem intelligimus constructum fuisse mundum
verbo Dei.—Hebrews xi., 3.

And also in the French thus:—

Par lequel aussi il a fait le monde.—Hebrews i., 2.
Le monde a été fait par la parole de Dieu.—Hebrews
xi., 3.

And the same word is translated by some “age.” It follows, then, that the new reading was probably introduced in deference to the new theory—a theory in which our opponents are totally mistaken in their unwarrantable assumptions. And the disgrace incurred by a partiality shown for their own conceits at the expense of truth, and a proper regard for the written Word of God, will be acutely felt when their delusive theories vanish like bubbles in the air, which they surely will do sooner or later. It is claimed for the Bible that it is the grandest group of writings in the world, and it is accepted by the purest minds as Divine authority. And all, whose minds are open, are here appealed to “to search the Scriptures” as to the probable shape of the earth, and its position in the universe; and to accept their simple, sober teaching in preference to the teaching of uninspired men, however learned and clever they may be. Glad indeed are we to know that there are Christians who are courageous enough to reject the ingenious but fallacious astronomical presentations of the age, and to accept the simple, yet beautiful account of the Creation given in the pages of inspiration. There is an incommunicable secret between the heart of God and the obedient Christian, and the latter knows that, whatever modern astronomy, or her sister-science geology, may assert, the light of all the sciences in the world put together is less reliable than the teaching of the “good old Book.” And let the pious student but drink in its unpolluted truth, as it were, into the system of the new man, and the effect must be to brace up the human soul, and make it valiant for his Master.

This little paper is written with the full conviction that the alleged antagonism between the Scriptures and true science is erroneous—the discrepancies arising from a false mode of reasoning, admitting as facts things unproved, and that have no foundation in truth. The Zetetic* process, advocated in this pamphlet, is one demanding that propositions shall be *proved*. The statement that the *surface of all standing water is horizontal* is one that has been *proved*, and therefore it is admitted as stating a veritable fact. It should be remarked too, that the results of numerous practical experiments, with this mode of procedure, have confirmed all the statements contained in the Holy Scriptures as to the earth’s position. With these results before us, having the weight of proof, it is absolutely safe to affirm, that this method is in reality the only known, simple, and natural way of RECONCILING ASTRONOMY WITH THE BIBLE.

Though treating this subject briefly and decisively, the author has been desirous to avoid the use of language, or manifest a spirit, that might be considered objectionable while advancing these opinions; deeming it becoming to regard the educational prejudices of our opponents with consideration and respect. Abuse and sarcasm are not the weapons we like, nor are these necessary to the argument. We quarrel with no man, but with the “methods” and “systems” of some, and “thrice is he armed that hath his quarrel just.”

* Zetetic, from the Greek verb, *Zetco*, to seek, to search, to examine.

ASTRONOMY OR THE BIBLE?

If error is opposed to truth, if darkness is opposed to light, then it may be easily shown that, in letter and in spirit, Astronomy and the Bible are strangely opposed to each other. The Infidel knows this as a fact, and plumes himself upon it. Yet it may be logically maintained that the truths of science, if pursued upon purely zetetic principles—that is, the method of simple inquiry—and the creatorial truths of the Bible, do not controvert each other, but, side by side, like telegraph wires, they run in parallel lines. It is utterly impossible to reconcile the hypotheses of Newton with the Bible. Let the sciences be pursued without the admission of fanciful data, facts proved, and nothing *assumed* “for the sake of argument,” then mountains of difficulties will be removed, and the path made easy to the understanding of each, with due honour to both. But our opponents ask—“What has astronomy to do with the Bible, or *vice versa*?” This seemingly extraordinary question may be answered thus: Inasmuch as astronomy treats of God’s creation, by so much the Bible justly claims the right to criticise astronomical teaching. The book of Genesis unequivocally states, that the earth was first created in the “deep;” that afterwards, it was “founded upon the seas, and established upon the floods.” Psalm civ. declares it “should not be removed;” and the II. Peter, iii., 5, speaks of the earth “standing out of the water and in the water,” as it were, like a ship at anchor. On the contrary, the Newtonians conceive the earth a globe, and hurl it out into infinite space, there to travel round the sun at a rate of over 1,000 miles a minute.* Now, since these two classes of ideas are contradictory of each other, they cannot both be true. And Satan uses these conflicting statements to damage simple souls, to agitate the minds of Biblical students, to diminish the comfort of believers, and shake, if not destroy, their accustomed confidence in the Word of God. Is it not surprising that really pious and intelligent Christians should be so mistaken as to countenance a theory, a declared ignorance of which has been made the subject of an attack upon the personal divinity of our blessed Lord Himself? In a lecture, delivered before a large audience, in the Masonic Hall, Birmingham, and reported in the *Birmingham Daily Gazette*, May 2nd, 1871, the Rev. C. Voysey said: “A being so necessarily unacquainted with the laws of nature as Christ was could not have been the Lord of Nature; and one that did not even know the earth was a globe could scarcely have been its omnipotent Creator.” Such sentiments as these, uttered by a professedly religious teacher, in total disregard of the assurance of Job xxxvi., 4, that “He is perfect in knowledge,” to say the least, shock the sensibilities of that divine nature which every true Christian possesses. Christians feel keenly the insults offered, in this too scientific age, to the memory of Christ, whose heart they know to have been the truest and tenderest that ever throbbed, and his mind the most comprehensive, and the purest of the pure. Jesus Christ once, speaking of heaven, calls it “God’s throne, and the earth God’s footstool.” Would

* The earth travels at the rate of 68,000 miles an hour.—*Chambers’ Information for the People*, vol. I., p. 12.

he have used this language of the earth if it had been a globe rolling away in space? * Certainly not. We say, with the good M. St. Pierre, that “we respect Newton for his genius and virtues, but we respect truth much more. The Bible contains ideas of a much sounder philosophy.” But it is refreshing to be assured that all erroneous ideas will ultimately give place to truth, according to the word of Jesus when He said: “Every plant, which my heavenly Father hath not planted shall be rooted up.” Truly the language of Scripture is inconsistent with the notion of the earth being a revolving globe, but it is quite consistent with the idea of its being a nearly motionless plane. Which then, gentle reader, will you decide for—NEWTONIAN ASTRONOMY OR THE BIBLE?

Mr. Gladstone has lately added his weighty testimony to the sad truthfulness of our statement, that some of our sciences and no little of our current literature have done much to bring the Holy Scriptures into contempt in the popular mind. That distinguished author, in an article in *Good Words*,† says that, “the conclusions of science, as to natural objects, have shaken or destroyed the assertions of the early Scriptures.”

WHY DOES A SHIP’S HULL DISAPPEAR
BEFORE THE MAST?

This is simply explained by the natural and everywhere visible law of perspective. In a case, such as the one referred to in Job xxxvii., 10., when “by the breath of God frost is given, and the breadth of the waters is straightened,” the icy surface would undoubtedly be *horizontal*, not convex.

In a work on “The Lighthouses of the World,” there is the following remark:—“The light on the Spurn Point Lighthouse, at the mouth of the Humber, has been seen thirty miles off.” Now, according to the theory of curvature, the light would be, allowing for all deductions, 323 feet below the horizon! A still more startling statement appeared in the *St. James’s Gazette* of July, 1886. “A nearly extinct volcano which, capped with eternal snow, towers over Teheran, may be seen at a distance of 200 miles!” It is almost superfluous to state that these accounts are utterly at variance with the globular theory.

In the *Girls’ Own Paper*, February 13th, 1886, under the heading “Educational,” the Editor notices a paper sent to him by an “Enquirer” unknown to us, “calling in question the spherical shape of the earth.” The Editor, apparently a little puffed up by a fancied possession of a superior knowledge, says: “If this tract had not been professedly Christian, and our correspondent one who would appeal to the divinely-inspired Scriptures, we should take no notice of either. But as one simple text, in support of the facts above named, is not supposed by the writer to exist in the Bible, we must refer him to Isaiah xl., 22, ‘It is he that sitteth

* “The earth’s orbit is 514,800,000 miles. Its speed is therefore 18¼ miles per second: forty-five times that of a cannon ball. The sun is 1¼ million times the size of the earth.” These are some of the inconceivable, bewildering figures of modern astronomy.

† April, 1890.

on the circle of the earth." Did the learned Editor really think we were ignorant of this passage? Why did he not also quote v. 28 of the same chapter? "The Lord, the Creator of the ends of the earth." Evidently it was because he knew any reference to the "ends of the earth" would spoil his own *scientific* interpretation of v. 22, for a circle has no "ends." It did not strike the Editor that a circle is not necessarily a globe! The luminaries describe circles in the heavens, the rainbow too, though we rarely see more than an arc of it. The sun's motion also, being concentric with the polar centre, describes a circle upon the earth beneath. Judging from the context, the meaning of the text quoted is more—He is the supreme sovereign ruler of the earth, possessing attributes that cannot be adequately represented. The Editor then, overflowing with wit, "recommends his friends to take a few voyages round the world, and observe the constellations above them changing, and reappearing as they return to each starting point." But his argument proves nothing, because it is well known that *similar* appearances would occur upon a plane! He next inquires for "what the Yankees call the jumping-off place." Now, the adventurous Editor may find a convenient spot for a "jumping-off" experiment in the Antarctic Ocean, called "Termination Land." There is nothing hurtful in his criticism; in fact, it is a little amusing.

The antediluvian earth was considered by the ancients to have been a smooth, uniform plane, without mountains. Whether this was the case or not, it is remarkable that no mountains are spoken of till the time of the Flood. This even plane, they say, was broken into pieces at the Deluge, and sank into the abyss, when "all the fountains of the great deep were opened." Further, that when the earth, in its altered form, again rose to the surface, it had its present deformities and incommodiousness. And these will remain, subject to volcanic eruptions, till the great conflagration (II. Peter, iii., 10) that will precede the "consummation devoutly to be wished"—the bringing in of another and happier order of things—"new heavens and a new earth." Christ, little esteemed now in the world, will then be "the joy of the whole earth."

The zetetic process—which means, inquiry before conclusion, and is the only course that can lead to simple, unalterable truth—is ably set forth in a remarkable book written by a gentleman and scholar under the *non de plume* of "Parallax," a copy of which should be in every Public Library. The work is entitled—"EARTH NOT A GLOBE."

EXTRACTS AND ILLUSTRATIVE DIAGRAMS FROM "PARALLAX" AND OTHER WRITERS.

"Parallax" says: If the earth is a globe, and is 25,000 English statute miles in circumference, the surface of all standing water must have a certain degree of convexity—every part must be an arc of a circle. From the summit of any such arc there will exist a curvature or declination of 8 inches in the first statute mile. In the second mile the fall will be 32 inches; in the third 72 inches, or six feet. In every mile, after the first, the curvature downwards from the summit of an arc increases as the square of the distance multiplied by 8 inches. The rule, however, requires to be modified

after the first thousand miles.* The following table will show, at a glance, the amount of curvature, in round numbers, in different distances up to 1,000 miles:—

Curvature in 1 statute mile, 8 inches.	
"	2 " 32 "
"	3 " 6 feet.
"	4 " 10 "
"	5 " 16 "
"	6 " 24 "
"	7 " 32 "
"	8 " 42 "
"	9 " 54 "
"	10 " 66 "
"	20 " 266 "
"	30 " 600 "
"	40 " 1,066 "
"	50 " 1,666 "
"	60 " 2,400 "
"	70 " 3,266 "
"	80 " 4,266 "
"	90 " 5,400 "
"	100 " 6,666 "

Many instances could be given of lights being visible at sea for distances which would be impossible upon a globular surface of 25,000 miles in circumference. The following is one example:—The coal fire (which was once used) on the Spurn Point Lighthouse, at the mouth of the Humber, which was constructed on a good principle for burning, has been seen thirty miles off.

Allowing 16 feet for the altitude of the observer (which is more than is considered necessary, † 10 feet being the standard; but 6 feet may be added for the height of the eye above the deck), 5 miles must be taken from the 30 miles, as the distance of the horizon. The square of 5 miles, multiplied by 8 inches, gives 416 feet; deducting the altitude of the light (93 feet), we have 323 feet as the amount this light should be *below the horizon*. The above calculation is made on the supposition that statute miles are intended, but it is very probable that nautical measure is understood, and if so, the light would be depressed fully 600 feet (pp. 29, 30).

The completion of the great ship canal, which connects the Mediterranean Sea with the Gulf of Suez, on the Red Sea, furnishes another instance of entire discrepancy between the earth's rotundity and the results of practical engineering. The canal is 100 English statute miles in length, and is entirely without locks; so that the water within it is really a continuation of the Mediterranean Sea to the Red Sea. "The average level of the Mediterranean is six inches above the Red Sea; but the flood tides in the Red Sea rise four feet above the highest, and its ebbs fall nearly three feet below the lowest, in the Mediterranean." The *datum* line is twenty-six feet below the level of the Mediterranean, and is continued horizontally

* Any work on geometry or geodesy will furnish proofs of this declination.

† By all the figures given is meant the minimum distance from which the light can be seen in clear weather from a height of 10 feet above the sea level.—*Lighthouses of the World*, pp. 9 and 32. Laurie, London.

from one sea to the other ; and throughout the whole length of the work the surface of the water runs parallel with this *datum*, as shown in the following section, published by the authorities.

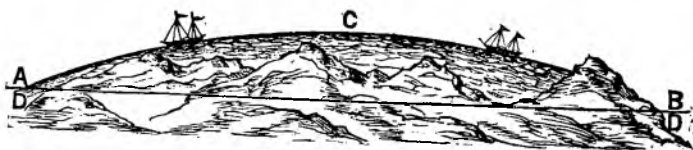
FIG. 1



A A A, is the surface of the canal, passing through several lakes, from one sea to the other ; D D, the bed of the canal, or horizontal *datum* line to which the various elevations of land, &c., are referred, but parallel to which stands the surface of the water throughout the entire length of the canal ; thus proving that the half-tide level of the Red Sea, the 100 miles of water in the canal, and the surface of the Mediterranean Sea, are a continuation of one and the same horizontal line.

If the earth is globular, the water in the centre of the canal, being fifty miles from each end, would be the summit of an arc of a circle, and would stand at more than 1,600 feet above the Mediterranean and Red Sea ($50^2 \times 8 \text{ inches} = 1,600 \text{ feet } 8 \text{ inches}$), as shown in diagram.

FIG. 2.



A, the Mediterranean Sea ; B, the Red Sea ; and A C B, the arc of water connecting them ; D D, the horizontal *datum* which, if the earth is globular, would really be the chord of the arc A C B.

Right lines, running parallel with each other, appear to approach in the distance.

The eye-line, and the surface of the earth and sky, run parallel with each other ;

Ergo, the earth and sky appear to approach in the distance.

Lines which appear to approach in the distance are parallel lines.

The surface of the earth appears to approach the eye-line ;

Ergo, the surface of the earth is parallel with the eye-line.

The eye-line is a right line.

The surface of the earth is parallel, or equi-distant ;

Ergo, the surface of the earth is a *right line*—a plane.

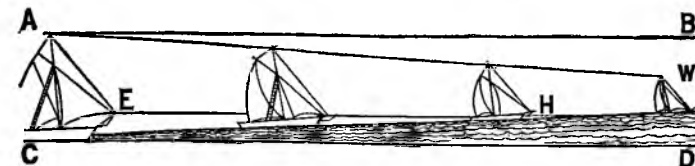
That part of any receding body which is nearest to the surface upon which it moves, contracts, and becomes invisible before the parts which are further away from such surface.

The hull of a ship is nearer to the water—the surface on which it moves—than the mast-head ;

Ergo, the hull of an outward-bound ship, must be the first to disappear.

This will be seen mathematically in the following diagram—

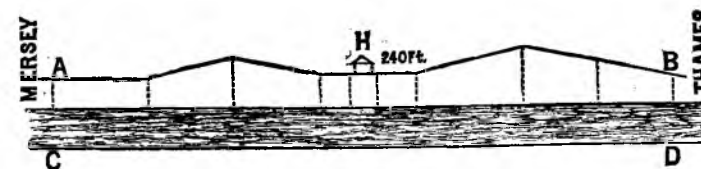
FIG. 3.



The line A B represents the altitude of the mast-head ; E H, of the observer ; and C D, of the horizontal surface of the sea. By the law of perspective, the surface of the water appears to ascend towards the eye-line, meeting it at the point H, which is the horizon. The ship appears to ascend the inclined plane C H, the hull gradually becoming less until, on arriving at the horizon H, it is apparently so small that its vertical depth subtends an angle, at the eye of the observer, of less than one minute of a degree, and it is therefore invisible ; whilst the angle subtended by the space between the mast-head and the surface of the water is considerably more than one minute, and therefore, although the hull has disappeared in the horizon as the vanishing point, the mast-head is still visible *above* the horizon. But the vessel continuing to sail, the mast-head gradually descends in the direction of the line A W, until at length it forms the same angle of one minute at the eye of the observer, and then becomes invisible.

The following outline sketch represents a contracted section of the London and North-Western Railway from London to Liverpool, through Birmingham.

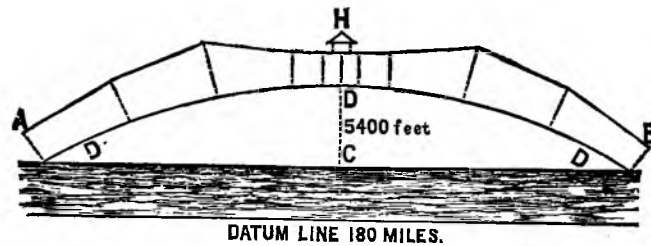
FIG. 4.



The line A B is the surface, with its various inclines and altitudes, and C D is the *datum* line, from which all the elevations are measured ; H is the station at Birmingham, the elevation of which is 240 feet above the *datum* line C D, which line is a continuation of the level of the river Thames at D, to the level of the river Mersey at C. The direct length of the line is 180 miles ; and it is a right or absolutely straight line, in a vertical sense, from London to Liverpool. Therefore, the station at Birmingham is 240 feet above the level of the Thames, continued in a right line

throughout the whole length of the railway. But, if the earth is a globe, the *datum* line will be the *chord* of the arc DDD,

FIG. 5.



and the summit of the arc at D, will be 5,400 feet above the *chord* C; added to the altitude of the station H, (240 feet), the Birmingham station (H) would be, if the earth is a globe, 5,640 feet above the horizontal *datum* DD, or vertically above the Trinity high-water mark at London Bridge.

It is found practically, and in fact, not to be more than 240 feet; hence, the theory of rotundity must be a fallacy. Sections of all other railways will give similar proofs that the earth is in reality a plane (p. 47).

GREAT CIRCLE SAILING.

Among landmen a great amount of misconception prevails as to what is really meant by the so-called "great circle sailing," and notwithstanding that the subject is very imperfectly understood, the "project" or hypothesis—for it is nothing more—is often very earnestly advanced as an additional proof of the earth's rotundity. But, like all the other "proofs" which have been given, there is no necessary connection between the facts adduced and the theory sought to be proved. Although professional mariners are familiar with several modes of navigation, "parallel sailing," "plane sailing," "traverse sailing," "middle latitude sailing," "Mercator sailing," and "great circle sailing," the "Mercator" and "great circle" methods are now the favourites. Many persons suppose that the words "great circle sailing" simply mean that the mariner, instead of sailing in a direct line from one place to another, on the same latitude, takes a circuitous path to the south or north of this direct line, where the degrees of longitude being smaller, the distance passed over, although apparently greater, is actually *less*. It is then falsely argued that, as "the greatest distance round is the nearest path," the degrees of longitude *must* be smaller, and therefore the earth *must* be a globe. This is another instance of the self-deception practised by many of the advocates of rotundity. The contraction or convergence of the degrees of longitude beyond the equator is unproved; and again, if they were convergent there could not be a single inch of gain in taking a so-called great circle course between any two places east and west of each other. Let the following experiment be tried in proof of this statement:—On an artificial globe mark out a great circle path, between, say, Cape Town and Sydney, or Valparaiso and Cape Town. Take a strip of sheet

lead, and bend it to the form of this path; and, after making it straight, measure its length as compared with the parallel of latitude between the places. The result will fully satisfy the experimenter that *this* view of great circle sailing is contrary to known geometrical principles. The great circle sailing is not the shortest route possible, but merely shorter than several other routes which have been theoretically suggested and adopted; and to affirm that the results are confirmatory or demonstrative of the earth's rotundity is in the highest degree illogical (pp. 269-284).

STATIONS AND DISTANCES

The author of "Lessons in Elementary Astronomy" says (p. 15)—"The most complete proof that the earth is a globe consists in the fact that travellers over the surface, whether by sea or land, always find the distance between different stations exactly such as agree with the calculated distances."

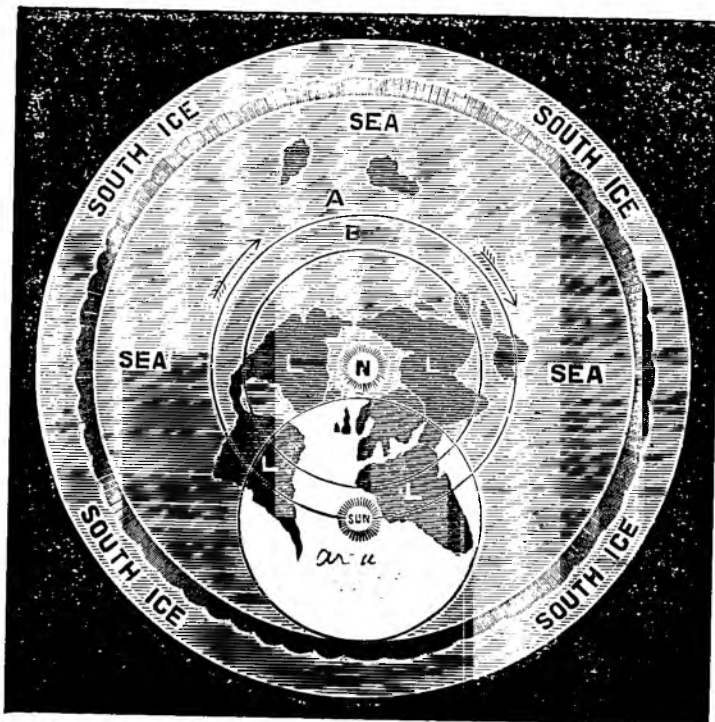
The above sentence is such a compound of childish fable, and either unwarrantable assurance or ignorance, that were it not that the author is an ardent and extensive but not a careful or over-scrupulous writer, in defence of the Newtonian astronomy, it would really be unworthy of criticism. It is one of those utterances which indicate a desperate determination to support a cause at all hazards, and without regard to any evidence but such as agrees with a foregone conclusion. So great is the number of those who advocate the earth's rotundity, who do not hesitate to show the same spirit, that it is really a difficult thing to feel that respect for them which persons who merely differ in opinion ought at all times to show and feel towards each other. What can be more misleading, or illogical, or even more the reverse of fact, than to say that "travellers always find the distance between different stations exactly such as agree with the calculated distances, and therefore the earth is a globe?" A mariner at sea, coming in contact with new land, immediately ascertains the latitude by taking the sun's altitude at noon, and the longitude by the local meridian time in relation to the meridian time at Greenwich. Neither the altitude of the sun, nor the time by chronometer, has any logical connection with the shape of the earth. It is true elements connected with the supposition of the earth's rotundity may be mixed up with the mode of finding latitude and fixing longitude; and anyone may afterwards readily find the places again by sailing until the sun's altitude and the time by chronometer are the same as those first published, when, of course, they must have arrived at the same position, whether the earth is a globe or a plane. It is altogether wrong to say that places, either on land or sea, are found by calculation, except that when places have already been found, and their latitudes and longitudes given, calculation—which is merely the use of formulæ resulting from previous observation—may be used to find them again. But, primarily and essentially, places are found by observation, and not by calculation. If any one will read the reports of the leading circumnavigators and travellers of different countries, they will find many instances where calculation has failed to agree with observations, and where renewed observations have had to be made before anything like the proper position of places in the maps could be fixed. In the majority of instances, where calculations, even when mixed up with some amount of observation, have been relied on, errors have

been found. The following passage is quoted from "South Sea Voyages," by Captain Ross; vol. 1., p. 285:—"By noon (March 9th, 1840) we were in latitude $64^{\circ} 20'$ S., and longitude $164^{\circ} 20'$ E., and therefore about seventy miles north of the land laid down by Lieutenant Wilkes, and not far from the spot from which he must have supposed he saw it; but having now searched for it at a distance varying from fifty to seventy miles from it, to the north, south, east, and west, as well as having sailed directly over its assigned position, we were compelled to infer that it has no real existence."

THE SUN'S PATH EXPANDS AND CONTRACTS DAILY FOR SIX MONTHS ALTERNATELY. This is a matter of absolute certainty, proved by what is called, in technical language, the northern and southern declination, which is simply saying that the sun's path is nearest the polar centre in summer, and farthest away from it in winter. Thus, day and night, long and short days and nights, morning and evening twilight, winter and summer, the long periods of alternate light and darkness at the northern or polar centre of the earth, arise from the expansion and contraction of the sun's path; and are all a part of one and the same general phenomenon (pp. 108—115).

Fig. 6.

Showing the earth a plane surrounded by ice and the sun moving over it.



The sun describes the circle A on the 21st of December in one day, or 24 hours. Hence, in that period, mid-day and mid-night, and morning and evening twilight, occur to every part of the earth, *except within the arctic circle*, N. There it is more or less in darkness for several months in succession, or until the sun, by gradually coming nearer to the inner circle, throws his light more and more over the centre. At every place underneath a line drawn across the circle of the sun's light (which radiates equally in all directions) it is noonday; and beyond the northern centre, on the same line, it is midnight. From the 21st of December the sun's path begins to contract every day for six months, until the 21st of June, when it reaches the inner circle B, and it is evident that the same extent of sunlight as that which radiates from the outer circle A, will reach over or beyond the northern centre N, when morning, noon, evening, and night occur as before; but the light continuing, during the daily motion of the sun, to reach over the northern centre, that centre will be continually illuminated for several months together, as before it was in constant darkness.

THE TRUE DISTANCE OF THE SUN may be readily and most accurately ascertained by the simplest possible process. The operation is one in plane trigonometry, which admits of no uncertainty, and requires no modification or allowance for probable influences. This method of measuring distances applies equally to the moon and stars; and it is easy to demonstrate, to place it beyond the possibility of error, so long as assumed premises are excluded, that the moon is nearer to the earth than the sun, and that all the visible luminaries in the firmament are contained within a vertical distance of 1,000 statute miles.

From which it unavoidably follows that the magnitude of the sun, moon, stars, and comets is comparatively small—much smaller than the earth from which they are measured, and to which, therefore, they must of necessity be secondary and subservient. They cannot, indeed, be anything more than "centres of action," throwing down light and chemical products upon the earth (pp. 99—104).

QUERY:—HOW IS IT THE EARTH IS NOT AT ALL TIMES ILLUMINATED ALL OVER ITS SURFACE?—First, if no atmosphere existed no doubt the light of the sun would diffuse over the whole earth at once, and alternations of light and darkness could not exist. Secondly, as the earth is covered with an atmosphere of many miles in depth, the density of which gradually increases downwards to the surface, all the rays of the light, except those which are vertical, as they enter the upper stratum of air, are arrested in their course of diffusion, and by refraction bent downwards towards the earth; and as this takes place in all directions round the sun—equally where density and other conditions are equal, and *vice versa*—the effect is a comparatively distinct disc of sunlight (p. 123).

It has been demonstrated that the earth is a plane, the surface-centre of which is immediately underneath the star called, "Polaris;" and the extremities of the earth are bounded by a vast region of ice and water, and irregular masses of land, which

bear evidence of fiery origin and action. The whole terminates in fog and darkness, where snow and driving hail-piercing sleet and boisterous winds, howling storms, madly mounting waves, and clashing icebergs are almost constant (p. 177).

Vasco de Gama says, in his "Voyages to the South"—The waves rise like mountains in height; ships are heaved up to the clouds, and apparently precipitated by circling whirlpools to the bed of the ocean. The winds are piercing cold, and so boisterous that the pilot's voice can seldom be heard, whilst a dismal and almost continual darkness adds greatly to the danger."

How far in the gloom and darkness of the south this wilderness of storm and battling elements extends there is at present no evidence. All that we can say is that man, with all his mightiest daring and power of endurance, has only succeeded in reaching the threshold of this restless, dark, and forbidding region of the material world. The earth rests upon and within the waters of the "great deep." It is a vast floating island, buoyed up by the waters, and held in its place by long "spurs" of land shooting into the icy barriers of the southern circumference. Geological researches demonstrate that it was originally a stratified structure, definite and regular in form and extent, and that all the confused and irregular formations observable in every part have resulted from internal convulsions (pp. 179-180).

The southern region of the earth is not central, but circumferential; and therefore there is no southern pole, no south polar star, and no southern circumpolar constellations. All statements to the contrary are doubtful, inconsistent with known facts, and therefore not admissible as evidence (p. 290).

Mr. Elliott, an American aeronaut, in a letter giving an account of his ascension from Baltimore, thus speaks of the appearance of the earth from a balloon:—"I don't know that I ever hinted heretofore that the aeronaut may well be the most sceptical man about the rotundity of the earth. Philosophy imposes the truth upon us; but the view of the earth from the elevation of a balloon is that of an immense terrestrial basin, the deeper part of which is that directly under one's feet. As we ascend, the earth beneath us seems to recede, while the horizon gradually and gracefully lifts a diversified slope, stretching away farther and farther to a line that, at the highest elevation, seems to close with the sky. Thus, upon a clear day, the aeronaut feels as if suspended at about an equal distance between the vast blue oceanic concave above, and the equally expanded terrestrial basin below."

The zetetic process forbids that, because an assumption of the earth's rotundity and diurnal motion seem to explain certain phenomena, therefore the assumption becomes, and must be admitted to be, a fact. This is intolerable, even in an abstract sense, but in practice must be unconditionally repudiated.

ANALOGY IN FAVOUR OF ROTUNDITY CRITICISED.

To those who are not strictly logical, a favourite "argument" in support of the earth's globular form is "that as all the heavenly bodies are worlds, and visibly round, may not the earth be so necessarily, seeing it is one of the same category?" This is only seemingly plausible. In reality it is a piece of self-deception. It must be *proved* that the stars are worlds; and to do this, or to make it even possible that they are so, it must be proved that they are millions of miles distant from the earth, and from each other, and hundreds or thousands of miles in diameter. By plane trigonometry, in special connection with carefully *measured* base lines, it has been *demonstrated*—placed beyond all power of doubt—that the sun, moon, stars, comets, and meteors of every kind, are all within a distance of a few thousand miles from the sea level of the earth; that therefore they are very small objects, therefore, not worlds, and therefore, from analogy, offer no logical reason or pretext for concluding that this world is globular (p. 300.)

The Copernican or Newtonian theory of astronomy is an "absurd composition of truth and error;" and as admitted by its founder, "not necessarily true, nor even probable;" that instead of its being a general conclusion derived from known and admitted facts, it is a heterogeneous compound of assumed premises, isolated truths, and variable appearances in nature. Its advocates are challenged to show a single instance wherein a phenomenon is explained, a calculation made, or a conclusion advanced, without the aid of an avowed or implied assumption! The very construction of a theory at all, but especially such as the Copernican, is a complete violation of that natural and legitimate mode of investigation to which the term "Zetetic" has been applied. The doctrine of the universality of gravitation is a pure assumption, made only in accordance with that "pride and ambition which has led philosophers to think it beneath them to offer anything less to the world than a complete and finished system of nature." It was said, in effect, by Newton, and has ever since been insisted upon by his disciples: "Allow us, without proof, which is impossible, the existence of two universal forces—centrifugal and centripetal, or attraction and repulsion—and we will construct a theory which shall explain all the leading phenomena and mysteries of nature." An apple falling from a tree, or a stone rolling downwards, and a pail of water tied to a string and set in motion, were assumed to be types of the relations existing among all the bodies in the universe. The moon was assumed to have a tendency to fall towards the earth, and the earth and moon together towards the sun. The same relation was assumed to exist between all the smaller and larger luminaries in the firmament; and it soon became necessary to extend these assumptions to affinity. The universe was parcelled out into systems—co-existent and illimitable. Suns, planets, satellites, and comets were assumed to exist infinite in number and boundless in extent; and to enable the theorists to explain alternating and constantly recurring phenomena, which were everywhere observable, these numberless and for-ever-extending objects were assumed to be spheres. The earth we inhabit was called a *planet*, and because it was thought to be reasonable that the luminous objects in the firmament, which were

called planets, were spherical and had motion, so it was only reasonable to suppose that as the earth was a planet it must also be spherical and have motion—*ergo*, the earth is a globe, and moves upon axes and in an orbit round the sun! And as the earth is a globe and is inhabited, so again it is only reasonable to conclude that the planets are worlds like the earth, and are inhabited by sentient beings. What reasoning! What shameful perversion of intellectual gifts! The very foundation of this complicated theory is false, incapable of proof, and contrary to known possibilities. The human mind cannot possibly conceive of its truth and application. To assume the existence of two opposite, equal, universal forces is to seek to make true things or ideas which are necessarily contradictory; to make black and white, hot and cold, up and down, life and death, and truth and falsehood, one and the same. Can anyone by any known possibility conceive of two opposite equal powers, acting simultaneously, producing change of position or motion in that which is thus acted upon? Do not two opposite forces, when equal in intensity and operating at the same moment, neutralize each other? There is nothing in practical science to gainsay this conclusion; and in the earliest days of the Newtonian astronomy this contradiction was quickly perceived, but as the assumption was an essential part of the system it was not rejected. An attempt was made to overcome the fatal objection that from two opposite equal forces, acting simultaneously on the earth, *no motion whatever* could arise, by the further assumption that when the earth was first made, the Creator threw it out into space, at right angles to the two forces which had been assumed to exist universally, and that, then the conjoint action of attraction and repulsion, with the “primitive impulse,” resulted in a parabolic orbit round the sun (pp. 347—349).

It will scarcely be believed that La Place (La Place le Grand) actually entered into an elaborate calculation with a view to determine at what particular point the Creator held the earth at the time of giving the grand push, and that, after a most profound investigation he arrived at the sublime and never-to-be-forgotten conclusion, that, when the primitive impulse was imparted, the earth was held exactly twenty-five miles from the centre; “and hence,” quoth La Place, “the earth revolved upon her axis in twenty-four hours.” If she had been held a little nearer to the centre, our days would have been longer, and if a little further off, she would have revolved with greater velocity, and our days would have been shorter.—*Electrical Theory of the Universe*, by T. S. Mackintosh.

For the learning, the patience, the perseverance, and devotion for which philosophers have ever been examples, honour and applause need not be withheld; but their false reasoning, the advantages they have taken of the general ignorance of mankind in respect to astronomical subjects, and the unfounded theories they have advanced and defended, cannot be otherwise than regretted, and ought to be by every possible means uprooted (p. 351).

To those who possess a copy of “Parallax”’s book it is, as the author himself says, “most important to the reader that he should thoroughly understand the bearings of the various explanations which have been given of the phenomena which the Newtonian philosophers have hitherto relied on as proofs of their hypotheses. They have assumed certain conditions to exist in order to explain certain phenomena; and because the explanations of such phenomena have appeared plausible, they have thought themselves justified in concluding that their assumptions must be looked upon as veritable facts. The contrary, or Zetetic process, has necessitated that the foundations be demonstrated; that the earth be proved by special and direct experiments to be a plane, irrespective of all consequences, regardless of whether numerous or any phenomena can be understood in connection with it or not. * * Wherever doubt shall exist as to the sufficiency of the phenomenal explanations offered, the mind must at once fall back upon the grand reserved proposition that *water is horizontal*, and, therefore, any want of satisfaction in explaining phenomena must be met by further efforts in that direction, and not by the mentally suicidal process of denouncing a proved foundation.”

The precision of astronomy arises, not from theories, but from prolonged observations, and the regularity of the motions, or the ascertained uniformity of their irregularities.—*Million of Facts*, by Sir Richard Phillips (p. 358).

No particular theory is required to calculate eclipses; and the calculations may be made with great accuracy *independent of every theory*.—*Somerville’s Physical Sciences* (p. 46).

The flat earth floating tremulously on the sea, the sun moving always over it, giving day when near enough, and night when too far off; the self-luminous moon, with a semi-transparent invisible moon created to give her an eclipse now and then; the new law of perspective, by which the vanishing of the hull before the mast, usually thought to prove the earth globular, *really proves it flat*; all these and other things are well fitted to form exercises in learning the elements of astronomy. “Parallax,” though confident in the extreme, neither impeaches the honesty of those whose opinions he assails, nor allots them any future inconvenience.—Augustus de Morgan, Professor of Mathematics in Cambridge University, President of the Royal Astronomical Society, *F.R.A.S. Athenæum Journal*, October 12th, 1872.

In Christian circles it is acknowledged that there is no real harmony between Modern Astronomy and the Holy Scriptures, while the “Zetetic Philosophy” is steadily gaining favour with the people.