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# A Look at Current Biblical Cosmologies

By C. GAENSSLE

**T**HE writer has long felt that the cosmological schemes found in standard Bible dictionaries, in many modern commentaries, and elsewhere (including even Webster's International, *s. v. firmament*) call imperatively for a little closer scrutiny. Indeed they are marked by some features so unnatural, in part so utterly fantastic that to anyone who is detached and uncommitted in his thinking they appear more like the product of wild and arbitrary fancy than of calm and objective inquiry. Furthermore, since they are ostensibly based on a Scriptural foundation, the relevant texts to which recourse is had by way of evidence are misinterpreted and misapplied. Then, too, these cosmic schemes assume on occasion an incredible degree of blindness on the part of the Biblical writers with reference to the operations of nature—rainfall, for example, as we shall see presently. In short, a candid examination of this highly important matter is certainly in order, and that is what I have attempted to give in the following article.

## I

In any study of Biblical cosmology the Hebrew word *raqia*, usually rendered "firmament," holds a place of prime importance. A proper understanding of this term is indispensable in forming a true conception of the Hebrew cosmos. Let us see, therefore, what the "authorities" have to say about this word. Gesenius defines *raqia* as follows: *Expansum idque firmum, firmamentum, super quo existit oceanus coelestis apertis firmamenti cancellis pluviam demittens in terram*, that is, an expanse and that solid, a firmament, above which there is the heavenly ocean which when the windows of the firmament are opened, sends down rain upon the earth. Modern cosmologists hold substantially the same view. Dr. Whitehouse in the *Dictionary of the Bible*, edited by Hastings, expresses himself as follows: "Numerous passages may be cited to prove

that the Hebrew Semite regarded the sky as a solid vault or arched dome . . . supported on the loftiest mountains as pillars. It was also provided with windows and gates. Above the solid *raqia* flowed the upper or heavenly waters which descended in rain through these openings." The *Encyclopedia Biblica*, edited by Professor Cheyne of Oxford, uses almost identical language. The heavens form a hollow vault of metallic composition. Rain is drawn from the heavenly reservoirs and sent down to earth through the solid dome of the sky. With these ideas modern commentators are in full accord. Skinner (*International Critical Commentary*) says: "The firmament is the dome of heaven which to the ancients was a material structure supported by pillars. Job 26:11. Above it are the heavenly waters from which rain descends through windows opened and shut by God at his pleasure." In a footnote Skinner is careful to observe that in the dome it "is the idea of *solidity*, not thinness or extension" that is prominent (more on this point later). Similarly Gunkel (Nowack, *Hand-Kommentar*): "The vault of heaven, only an optical illusion, as we know, was to the ancients a solid structure founded on pillars, Job 26:11, and provided with doors and windows. Above the heavens there is an inexhaustible ocean of heavenly waters from which rain descends on earth when God opens sluices." To the same effect Driver (*Commentary on Genesis*) and others.

In some respects an entirely new cosmological theory has been advanced by the Italian astronomer Schiaparelli. Though agreeing in the main with the views just presented, he adds a particularly striking feature which makes his cosmographical picture quite unique. He felt apparently that there was a serious defect in the cosmic schemes of his predecessors inasmuch as they made no provision for preventing the waters from gliding off the convex surface of the vault! But he discovered what others had failed to see. Let us hear Schiaparelli himself. He says in his book *Astronomy in the Old Testament* (English translation), page 32: "Considering the spherical and convex shape of the firmament, the upper waters could not remain above without a second wall to hold them in at the sides and on top. So a second vault above the vault of the firmament closes in, together with the firmament, a space where are the storehouses '*otzaroth* (thesauri) of rain,

hail, and snow." Thus instead of a heavenly ocean above the solid *raqia* we have a "celestial tank," as Warren (*Earliest Cosmologies*) calls it, a closed reservoir formed by two parallel semi-circular vaults to hold the waters in place. The special compartments for the winds, rain, hail, and snow are also a distinctive feature of Schiaparelli's cosmology. Before we proceed, let us pause momentarily to catch our breath, and to take stock briefly. If these fantastic ideas, these puerilities were presented to a Solomon, an Isaiah, or to the author of the book of Job as a scientific representation of the upper part of the Hebrew cosmos, I, for one, strongly suspect that these Old Testament worthies would stare and gasp in speechless amazement or purse their lips in disdainful scorn.

We now proceed to a closer inquiry into the meaning of *raqia*. We may fitly begin with "the windows of heaven," since they are regarded as an integral part of the celestial mechanism and as a proof of the solidity of the vault. If these windows are manipulated by the hand of God and opened in order to allow the waters of the upper ocean to descend as rain upon the earth, we should naturally expect this method of rain production to be mentioned again and again throughout the Old Testament Scriptures. But what are the facts? The facts are that there is not a single instance of this kind of rain-making in the entire record. To appeal to Gen. 7:11 in the deluge account is simply to beg the question. If the appeal is to have any validity, it must be shown beyond all question that the expression "the windows of heaven were opened" *must* be taken in strict literality and that the figurative or metaphorical sense is impossible. A bald assertion or a mere assumption will not prove this. On the contrary, to any unbiased reader the words have all the appearance of a picturesque metaphor. But let us look at the other passages in which the windows of heaven are mentioned. There are only three—for our present purpose only two, since one, Is. 24:18, is plainly an allusion to Gen. 7:11. In 2 Kings 7:2 the prophet Elisha is sneeringly asked whether he expected the Lord to open the windows of heaven and pour down food to alleviate the distress of famine in Samaria. In Mal. 3:10 the Lord promises to open the windows of heaven and pour down abundant blessings. It requires no proof that in these passages

the windows of heaven are purely figures of speech. Is there any compelling reason why the expression should be taken in wooden literalness in the deluge story? In my humble opinion it simply means that torrential rains descended from the heavens. But there is more to be said. If the literal meaning be insisted upon, we must consistently go a step further and—quite absurdly—apply the same exegetical method to numerous other passages where plain common sense protests against it. If the windows of heaven are to be taken literally, why not "the four corners of the earth," Is. 11:12; Ezek. 7:2; or "the cornerstone of the earth," Job 38:6; or "the foundations of the earth," Psalm 104:5; or "the gates of death," Job 38:17; or even "the gates of gehenna" in the New Testament? Nor do I hesitate to include here some passages which our "authorities" take at their face value, as we have seen, such as "the pillars of heaven," Job 26:11; or the storehouses of snow and hail, Job 38:22.

What the Old Testament actually teaches about rain and its source is almost too familiar to mention. We can only express our astonishment how in the face of such passages as Job 26:18 (He binds up the water in thick clouds) or Eccl. 11:3 (when the clouds are full, they pour out rain upon the earth) or Judges 5:4 (the clouds dropped water) and many others like them—how in the face of such passages cosmologists and commentators can still have recourse to a celestial water tank with mechanical sluices to account for the phenomenon of rain. Schiaparelli, though he expressly says that the windows of Gen. 7:11 cannot be explained metaphorically, seems to have realized that the theory he was upholding was rather precarious and not always applicable. At any rate he finds a discrepancy in the theory of rain between "the authors" of Genesis and the book of Job. This can only mean that in his opinion the book of Job represents a more advanced stage of knowledge than the book of Genesis. But such a growth of knowledge is purely imaginary. We find the same expressions for rain in Genesis, Job, and everywhere else. Even according to the critical theory of the historical order of the several books—and Schiaparelli is fully committed to this theory—the words quoted above from the book of Judges would antedate Gen. 7:11, since the song of Deborah, to which the words about the clouds dropping water belong, is con-

sidered by some critical scholars as the oldest monument in Biblical Hebrew.

If, then, as I hope to have shown, these windows of heaven are nothing more than a graphic figure, this alone is sufficient to shake one's confidence in the existence of a solid hemispherical vault overarching the earth. But the *raqia* must be studied for itself, and to this we now turn our attention.

In order to determine the meaning of this much-discussed term it is necessary first of all to study the cognate verb *raqa*. This verb has various meanings, the primary one being to beat or stamp. Thus it may denote a stamping with the foot as a gesture of indignation, Ezek. 6:11, or as a gesture of malicious joy, Ezek. 25:6. It may also mean to trample upon or crush an enemy, as in 2 Sam. 22:43. A more common meaning and one that has a direct bearing on the meaning of the noun *raqia* is to beat metal into thin plates or leaves to be spread over some object by way of adornment. Thus in Num. 17:4 (in English text 16:38) the censers are beaten into thin plates to be used as a covering for the altar. Jer. 10:9 speaks of beaten silver from Tarshish, explained by Gesenius-Buhl as *zu duennem Blech geschlagen*. In one instance the beaten metal is described as so tenuous that the golden leaves are cut into threads to be interwoven with the fabric of a priestly garment, Ex. 39:3. Nowhere do we read of beating gold or silver into a solid mass. Finally there are passages where the idea of beating has vanished from the connotation of our verb entirely, passages where it simply means to spread out or stretch out. Such a passage is Job 37:18: Canst thou with him spread out the skies firm as a molten mirror?<sup>1</sup> In Psalm 136:6 God is said to spread out the earth upon the waters. In Is. 40:19 the goldsmith spreads gold leaf over his idol image.

In the light of these passages—and we have passed all the pertinent ones in review—it is abundantly clear that the usage of our verb does not suggest the idea of solidity, as Skinner and others would have us believe, but rather that of *thinness* or *tenuity*. This already creates a strong presumption against the theory of

<sup>1</sup> The second half of this verse is supposed by some to prove beyond question that the author considered the dome of heaven to be solid. But it is simply a poetic expression descriptive of the peculiar metallic appearance of "the burnished summer skies of the East." (Davidson, *Book of Job*.)

a metallic vault of "great solidity." There are numerous other Scriptures that point unmistakably in the same direction, although they do not use the verb *raqa* but *natab*, which means to stretch or spread out pure and simple. To economize space, I shall just indicate where the passages are found: Is. 42:5; Is. 44:24; Is. 45:12; Is. 51:13; Jer. 10:12; 51:15; Zech. 12:1; Job 9:8. Occasionally to make the image of stretching or spreading out the heavens more graphic and realistic, a comparison is added. Thus in Is. 40:32 the Lord stretches out the heavens like gauze. In Psalm 104:2 the heavens are stretched out like a curtain. In Is. 34:4 the heavens are even rolled up as a scroll. Can anyone with these texts before him seriously and honestly believe that the writers of these words entertained the crude and inept notion of a metallic canopy above their heads?

Finally, we cannot pass by Deut. 28:23: "And thy heaven that is over thy head shall be brass" (bronze). On this Steuernagel comments: "Der eherne Himmel laesst den Regen nicht durch." My own comment is simply this: It is inconceivable that a writer should use the figure of a heaven of brass to indicate drought, if there were a heaven of actual brass (or other metal) above him.

Here we conclude the negative part of our study of the term *raqia*. We have shown, I make bold to say, that according to any rational method of interpreting the pertinent Scriptural material the "solid vault" of heaven is a chimerical delusion.

What, then, is the *raqia*? It would require quite a stout volume to discuss the multifarious opinions and speculations that have been propounded by scholars and scientists in their efforts to explain this vitally important term. St. Basil described the *raqia* as "a substance altogether impalpable and supersensible." O. M. Mitchell, the American astronomer and general, in his *Astronomy of the Bible*, translates the word with "vacuity." Dr. Samuel Pye, in his *Mosaic Theory of the Solar and Planetary System* (1766), favored the rendering *expanse, atmosphere*, but with additional features for which there is no warrant in the Biblical record (see Warren, *Earliest Cosmologies*). Luther discusses the term quite fully in his Commentary on Genesis. So far from assuming the *raqia* to be solid, he expressly says that the word *Ebraeis extensum quiddam significat a verbo raqa, quod expandere et explicare significat*, page 32 of the Erlangen Edition. On the following page

he says that the *raqia* consists of *subtilissima materia* and makes it clear that the translation *Veste*, which to me is an unfortunate translation, does not refer to the substance of the *raqia*, but to its firm and fixed position in the universe. Calvin is in full agreement with Luther as to the essential meaning of the term and rejects the rendering στερέωμα of the Septuagint and of course the corresponding Latin *firmamentum* of the Vulgate. He says: "I know not why the Greeks chose to render the word (*raqia*) στερέωμα, for it literally means *expanse*."<sup>2</sup> J. H. Kurtz, the eminent church historian, in his *Bibel und Astronomie* (1853) explains our term as "the atmospheric air enveloping our planet." This to me sounds sane and sensible. Almost identical language is used by Keil in his commentary on Genesis and in the Pulpit Commentary, which described the *raqia* as "an immense gaseous ocean called the atmosphere by which the earth is encircled." Finally Milton, no mean Hebraist, gives poetic expression to the same view when he speaks in *Paradise Lost* of "the firmament, expanse of liquid, pure, transparent, elemental air diffused in circuit to the uttermost convex of this great round" (i. e., orb). This in my judgment is not only good poetry, but sound interpretation.

Such, then, is the nature of the *raqia* according to what I consider the only sound application of the texts involved. But there is still one aspect of the question that calls for a final remark. If the *raqia* is an atmospheric envelope enclosing the earth, it is of course not to be conceived, in accord with its illusory appearance, as beginning somewhere in the infinite blue depths above, but as everywhere touching the earth below. Hence — with some hesitation — I venture the conclusion that "the waters above the firmament" may very well mean the vaporous clouds that float in the higher regions of the atmosphere."<sup>3</sup>

<sup>2</sup> *Mutatis mutandis* one might say today: I know not why the translators persist in using the misleading term *firmament*. Among the various translations in the writer's possession there is only one that deviates from the customary pattern, and that is the French Protestant version of Martin, which has *étendue*, *expanse*.

<sup>3</sup> Luther frankly confesses his inability to find a satisfactory explanation of "the waters above the firmament." He says (*op. cit.*, p. 34): *Moses manifestis verbis aquas supra — firmamentum esse dicit. Quare captivo hic pensum meum et assentior verbo, etiamsi non assequar.*



## II

We have now to consider the lower half of the Biblical cosmos as conceived by the cosmologists we are investigating. Here it is important to remember that in recent times Babylonian ideas have exerted a strong, in some cases a decisive, influence upon the thinking of many Biblical scholars. As the Babylonian universe includes a vast subterranean ocean called *Apsu*, so, it is maintained, the Hebrew world has an exact counterpart in *tehom*. Summing up his position on this matter, Schiaparelli in the work previously mentioned says: "The Hebrews thought of an immense mass of subterranean waters . . . in distinction from the upper waters, assumed to be above the firmament. These subterranean waters rose in part to the dry surface of the earth by means of channels and caverns producing springs and rivers, in part they penetrated to the depths of the oceans and lakes, maintaining their water level, by means of apertures and canals at the bottom. . . . That the lower waters should overcome the natural law of gravity and rise from subterranean depths to the surface was considered as a result of the omnipotence of God.<sup>4</sup>

Now let us look at the Scriptural basis on which this subterranean-ocean theory ostensibly rests. On Psalm 135:6: "The Lord does whatsoever He pleases, whether in the heavens or on the earth, in the seas and all depths (*t-homoth*)," the Italian astronomer remarks that "the abysses (*t-homoth*) are here counted as a distinct part of the universe." But it is much more natural, it seems to us, to consider the depths or abysses as synonymous with the preceding seas (*yammim*). Delitzsch simply translates *Wassertiefen*; Baethgen *Tiefen*, with no suggestion of a subterranean ocean. On Psalm 33:7: "He lays up *t-homoth* in store-houses," Schiaparelli comments that these words suggest to us a vast subterranean hollow, etc. To any unbiased reader the words in my opinion suggest first of all that the Psalmist is using figurative language with no thought of an underearthy reservoir "from which proceed the springs and sources of rivers." The words of personified Wisdom in Prov. 8:24 ("When

<sup>4</sup> One cannot but wonder why the divine omnipotence was not invoked to keep the waters from flowing off the convex surface of the vault, thus avoiding the necessity of a second vault to hold them in place.

there were no depths (*t-homoth*), was I brought forth," etc.) are thought to furnish conclusive proof in favor of the theory. Schiaparelli confidently declares that "the analogy between these waters of the abyss and the subterranean ocean of the Babylonians is evident." Toy in his commentary on Proverbs takes the same view, though with a little less assurance. The same thought is found by the exponents of the theory in Prov. 3:20. Delitzsch, on the other hand, maintained that in both passages "*die unterhimmlischen Wasser*" are meant by *t-homoth*, depths. Nor is there any valid reason against this view.

There are, however, a few passages in the Old Testament which at first glance seem to declare unequivocally in favor of a subterranean ocean. Most familiar among these is Ex. 20:4: "Thou shalt not carve for thyself an image of anything . . . that is in the *waters under the earth*." But decisive as these words apparently are, a little reflection will show that as part of a prohibition against the making of idol images they would be really ludicrous and preposterous. For one thing, this hypothetical ocean would be wholly invisible to the Israelites, and if it existed, they could not possibly know what creatures, if any, inhabited those unseen waters. How, then, could they be warned against making images of anything in them? Gunkel, to be sure, solves the difficulty to his own satisfaction. He asks in *Schoepfung und Chaos*, p. 140, "What is under the earth?" And he answers, "There are the dragons, the helpers of Rahab, that is, according to Babylonian conceptions, the signs of the zodiac." Just in passing, we wonder how much the average Israelite knew or cared about the zodiac. But why go so far afield and resort to Babylonian myths when a simple, easy, and natural explanation lies right on our doorstep, so to speak? The whole theory of a subterranean ocean, so far as this verse is concerned, springs from a misunderstanding of the preposition *under*. Does the Hebrew *tachath* always mean *directly* beneath, as the theory implies? A glance at Deut. 3:17 shows that the word has a wider scope. There it is said that the Salt Sea, i. e., the Dead Sea, lies *under* the slopes of Mount Pisgah on the Moabite shore. Consequently, just as the Dead Sea lies *under* Mount Pisgah and the land of Moab, so the *terrestrial* ocean and all earthly waters lie *under* the earth, that is, at a lower level than the land areas. This

is the only meaning that *tachath* will bear in Ex. 20:4. The correctness of this interpretation is placed beyond all doubt by the parallel passage, Deut. 4:18, where the Israelites are forbidden to make an image of any fish that is in the waters under the earth. So the subterranean ocean with its dragons and mythical monsters turns out to be just another cosmological chimera.

There are two passages in the Psalms that call for a brief discussion, namely, 24:2 and 136:6, where the earth is declared to be *upon* the waters. Baethgen comments on the latter passage, "die Erde ist als eine auf dem Wasser liegende Flaechе gedacht." Here again as in Ex. 20:4 the exegesis hinges chiefly on the preposition, in this case *al*, over, above, upon. The question is whether this preposition necessarily and always means that what is said to be over or above something must lie or rest directly upon what is below. Needless to say, the word is not thus limited in its connotation. In Num. 24:6 we read of cedars by (lit. *over*) the water, since the latter is at a lower level than the surface of the earth. The Israelites, Ex. 14:2, encamped by (lit. *over*) the sea, Vulgate: *super mare*, French: *sur la mer*. Even in German we have an exact parallel in Rothenburg *ob der Tauber*, because the city is over or above the stream that winds in the valley below. Without multiplying examples, the use of *al* is very frequently quite identical with that of the English *on*. The states of our eastern seaboard are on the Atlantic Ocean, Milwaukee on Lake Michigan, St. Louis on the Mississippi. Consequently, when the earth is said to be founded on the seas and spread out upon the waters, there is no reason to assume that the Psalmist is singing of an invisible ocean on which the earth rests or is spread out, but only of earthly waters on which the earth touches and over which it is elevated.

A few concluding remarks on *tehom* itself. There is no suggestion anywhere that the term denotes a vast subterranean reservoir of water. Apart from Gen. 1:2, where it is applied to the primeval chaos, it is very frequently an obvious synonym of *maym*, water, or *yam*, sea. The following passages will illustrate the point: Ezek. 26:19; 31:4; Is. 51:10; Psalm 104:6, etc. Without discussing all these texts individually, I feel that I ought to pause just a moment with the first Ezekiel passage on account of the artificial and gratuitous way in which it is made to serve the subterranean ocean

theory. The words in question belong to the prophecy against Tyre, which is to become a desolate waste, when the Lord brings "the deep (*tehom*) over you and the mighty waters cover you." *Tehom* and *hammaym harabbim* are plainly synonymous terms, but Kretzschmar makes a distinction, maintaining that "*Tehom*, the primeval ocean, lies still deeper than the empirical *jam* which it feeds with its waters." We see no need whatever for going deeper than the "empirical *jam*." To assume two bodies of water here, a visible and an invisible one, seems to me the very height of unnatural artificiality. Elsewhere *tehom* is associated with waterfalls, Psalm 43:8; it utters its voice, Hab. 3:10, plainly the roaring of the sea; it even congeals or freezes, Job 38:30; in short, it simply means water. But there is one passage that calls for some particular attention. In Gen. 49:25 the blessings of Joseph include "the blessings of *tehom* that couches (or crouches) beneath." "Ein Stueck aus einem fremden Weltbild," says Stade. Alfred Jeremias (*Das Alte Testament im Lichte des Alten Orients*, p. 175) observes: "Der Ozean ist nicht nur um die Erde, sondern auch unter der Erde, und nach I Mos. 49:25 kommt die Segensfuelle aus der *tehom*, die darunter lagert, wie vom Himmel droben." Gunkel maintains that the use of the verb *rabbats*, if more convenient, couch, is reminiscent of the fact that *tehom* was once a huge monster. In other words, the expression is supposed to be an echo of the Babylonian myth of *Tiamat*, a female monster who engaged in a fierce conflict with Marduk, the god of light. For this there is no proof whatever. It is true that the verb *rabbats* is used in the sense of crouching like a beast of prey. In Gen. 4:7 sin is said to be lying or lurking at the door. This is the only instance of the kind, and the figure is easily explained. Elsewhere the verb denotes a peaceful lying down, of sheep for example, Gen. 29:2; of the leopard and the kid, the cow and the bear lying down together in the Messianic Age, Is. 11:6-7; even of human beings in calm repose, Job 11:19. Furthermore, even if *tehom* be taken as a crouching monster in our passage, this would simply be a case of personification, as with sin in Gen. 4:7, with no necessary allusion to the Babylonian or any other cosmogonic myth. This, moreover, would be quite in keeping with what is elsewhere said of the sea as a rebellious and refractory element which requires the restraining

hand of the Omnipotent to hold it in check. Thus Job complains: Am I a sea that thou settest a watch over me (7:12)? Compare also Job 38:8; Psalm 104:9. In any case there is no indication of an invisible ocean directly underneath the earth. The upper, terrestrial ocean satisfies all requirements, and it lies below or beneath in the same sense as the Dead Sea lies under Mount Pisgah and the land of Moab. Finally, it is interesting to note that Ball (SBOT) explains the blessings of *tehom* in our verse as referring to the springs and streams of the hill country of Ephraim, with no hint of a great subterranean ocean.

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#### WHO'S WHO AMONG THE CONTRIBUTORS

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