

Die „Sintflut“ laut schriftlichen & naturkundlichen Zeugnissen

Seit alters her gibt es jede Menge Szenarien über die im AT erwähnte Wasserflut. Sie reichen von religiös-gläubiger Ehrfurcht vor dem Mahnfinger Gottes über philosophisierendes Negieren eines tatsächlichen Hintergrundes bis hin zum wissenschaftlich einerseits verniedlichenden Hinweis auf schlechtes Wetter & andererseits modischen Katastrophenschwärmereien über Bolideneinschläge.

Nur das Eine vermögen all diese Romantiker nicht, nämlich einen sich sowohl an der Geschichts- als auch an der Naturkunde orientierenden tatsächlichen Ereignisrahmen aufzuzeigen & damit auch zu erklären, woher & aufgrund welcher Vorgänge denn eigentlich dieser Wasserschwall überhaupt die Erde traf & was seine Folgen waren.

Die vorliegende Darstellung des heute noch rekonstruierbaren Szenarios bringt alle bekannten Beobachtungen unter ein & denselben Hut & widerspricht in keiner einzigen Einzelheit den von der RMNG gezeigten Sachlagen.

"Denn nach sieben Tage, dann lasse ich auf die Erde regnen vierzig Tage und vierzig Nächte und wische alles Bestehende, das ich machte, weg von dem Antlitz des Ackers... Nach dem Tagsiebtent war's, da waren die Wasser der Flut über der Erde. Im Jahr der sechshundert Jahre des Lebens Noachs, in der zweiten Mondneung, am siebzehnten Tage auf die Neung, an diesem Tag aufbrachen die Quellen des grossen Wirbels, und die Luken des Himmels öffneten sich. Der Schwall geschah vierzig Tage, vierzig Nächte auf die Erde... Die Wasser stiegen und trugen den Kasten, er hoch sich weg über die Erde. Die Wasser wuchsen und stiegen mehr über der Erde, der Kasten fuhr über das Antlitz des Wassers. Mehr und mehr wuchsen die Wasser über der Erde, alle hohen Berge waren zugehüllt unter allem Himmel. Fünfzehn Ellen obenauf wuchsen die Wasser, so waren die Berge zugehüllt... Da verschied alles Fleisch, das auf Erden sich regt, Vogel, Herdentier, Wildlebendes und alles Gewimmel, das auf Erden wimmelt, und alle Menschen, Alles, das Hauch, Braus des Lebens in seinen Nasenlöchern hatte, was alles auf dem Festland war, es starb. Er wischte alles Bestehende weg, das auf dem Antlitz des Ackers war, vom Menschen bis zum Tier, bis zum Kriechgerige, und bis zum Vogel des Himmels, weggewischt wurden sie von der Erde. Noach allein blieb übrig und was mit ihm in dem Kasten war. Die Wasser wuchsen über der Erde hundertundfünfzig Tage. Gott gedachte Noachs und alles Lebendigen, alles Getiers, das mit ihm in dem Kasten war. Gott führte einen Windbraus quer über die Erde, und die Wasser duckten sich. Verstopft wurden die Quellen des Wirbels und die Luken des Himmels, und der Schwall vom Himmel wurde gehemmt. Das Wasser kehrte, ein Gehn, ein Kehren, weg von der Erde, das Wasser wich am Ende von hundertundfünfzig Tagen. Der Kasten ruhte in der siebenten Mondneung, am siebzehnten Tag auf die Neung, auf dem Gebirge Ararat. Des Wassers war ein Gehen und ein Weichen bis an die zehnte Neung. In der zehnten, am ersten Tag auf die Neung, waren die Häupter der Berge zu sehen... Im sechshundertundersten Jahr, im Anfangsmonat, am ersten Tag auf die Neung liess das Wasser Festland auf der Erde. Noach tat die Decke vom Kasten ab und sah sich um: wohl, fest war das Antlitz des Ackers. In der zweiten Mondneung aber, am siebenundzwanzigsten Tag auf die Neung, war die Erde ausgetrocknet."

On Saturn and the Flood

Worlds in Collision comprises only the last two acts of a cosmic drama – one that occurred in the middle of the second millennium before the present era; the other during the eighth and early part of the seventh century before the present era. Prior to the events described in *World in Collision*, Venus – following its expulsion from Jupiter – was on a highly eccentric orbit for a period of time measured certainly by centuries, perhaps millennia, before its near-encounters with the Earth.

While the actual beginning of the drama is shrouded in the mist of grey antiquity and difficult to pinpoint with exactitude, there is a point at which a clearer picture emerges. This is the time when the two giant planets – Saturn and Jupiter – approached each other closely. Possibly they were close for a long period of time, passing near one another as they travelled along orbital paths quite dissimilar to those of today.

Saturn and Jupiter are so often associated in cosmological history that sometimes I even considered the possibility that they may have constituted a double star system, of which there are many in the universe. I said that Saturn and Jupiter were stars, though today we know them as planets. Actually, in *Worlds in Collision*, in the last chapter, I also used the word “star” in referring to the two giant planets. There I wrote, with respect to the future, that “some dark star, like Jupiter or Saturn, may be in the path of the sun, and may be attracted to the system and cause havoc in it”.¹ At that time it was aid that they were planets, or stars,

¹ Immanuel Velikovsky *Worlds in Collision* Chapter 9 Section „The End“ (1950).

while today it is known that Jupiter and Saturn, too, are star-like, producing several times the amount of heat they receive from the Sun.²

Today Jupiter moves on an orbit of twelve terrestrial years and is about half a billion miles away from the Sun, whereas we are some ninety-three million miles distant. Saturn is much farther: it is the next planet beyond Jupiter, approximately another half billion miles outside Jupiter's orbit. They are presently not of the same size or volume. Jupiter is more than three hundred times more massive than the Earth, but Saturn only ninety-five times. In volume, Jupiter is about thirteen hundred times that of the Earth, whereas Saturn is only about eight hundred times that of the Earth. Today Jupiter is actually more massive than all the other planets, Saturn and the rest, put together.

The cosmological thought of ancient peoples conceived of the history of the Earth as divided into periods of time, each ruled by a different planet. Of these the epoch of Saturn, or Kronos, was remembered as a time of bliss, and it was made to precede the period during which Jupiter was the dominant deity. Insofar as I could understand the physical events that affected the globe in times preceding the Middle Kingdom of Egypt, I was able to explain them as the results of a disturbance in which both Jupiter and Saturn participated. Various peoples witnessed the events and described them, as a celestial-human drama in different forms: the Greeks, for example, had Jupiter-Zeus, the son of Saturn-Kronos, dethrone his father and banish him, and take his place to become the supreme deity. In Egyptian folklore or religion the participants in the drama are said to be Osiris-Saturn, brother and husband of Isis-Jupiter. And it is not that the wife dethrones the husband, nothing of the kind – there is, instead, a fight going on in the sky in which some body, described as Seth, attacks Osiris and kills, actually dismembers him; and after this Isis travels in search of the dismembered parts of Osiris. You see how the dramas are hardly at all alike. I believe that my long experience in interpreting dreams and associations of my fellow men probably was of help to me to see similarities where the similarities were not easily seen.

An Egyptologist, one of the most prominent Egyptologists of the last forty years (he died several years ago), Sir Alan Gardiner, wrote – and I read it twice in his writings³ – that he could not understand who Osiris was. Osiris occupied an extremely important role in the religion, folklore, and rites of Egypt. But who was he? Was he a king who had been killed? – Gardiner could not figure it out. He did not understand that Osiris represented a planet, Saturn, as did Tammuz in Babylon. Sir James Frazer, author of *The Golden Bough*, describes in the volume *Adonis, Osiris, Attis* the great lamentations and crying for the fate of Tammuz. Similar rites were observed in Egypt for Osiris; and it should be understood that these lamentations were actually for Saturn, because the time of Saturn – the Golden Age of Saturn, or Kronos – came to its end when the supreme god of that period, the planet Saturn, was broken up.

I have already discussed the statement, contained in the Tractate Brakhot of the Babylonian Talmud, which points to the celestial body of Khima as the source of the Deluge; and I have shown why Khima is to be identified with Saturn.⁴

Hindu sources also provide information which links the planet Saturn with the Deluge. This catastrophe is said to have taken place during the Satya yuga, in the reign of Satyavrata, who is usually identified as Saturn. Actually, it becomes apparent that the whole epoch named Satya yuga was the Age of Saturn as well as of the Deluge. Sir William Jones, who occupied himself mainly with comparative linguistics and with Hindu lore, expressed this very thought. He wrote that the Satya yuga meant the Saturnian Age, and that this was the Age of the Flood.⁵

Also in the Mexican codices it is said that the first world age, at the end of which the Earth was destroyed by a universal deluge, and which was therefore called “the sun of water” or Atonatiuh, was presided over by Ce-acatl, or Saturn.⁶

The ancient sources all point to Saturn; but how did Saturn cause the Deluge? What did really happen?

Suppose that two bodies, such as Jupiter and Saturn, were to approach one another rather closely, so as to cause violent perturbations and huge tidal effects in each other's atmospheres. As a double star, or binary, they might interact to the extent that, under certain conditions, the interaction of the members of such a pair will lead to a stellar explosion, or nova. A nova is thought to result from an instability in a star, generated by a sudden influx of matter, usually derived from its companion in a binary system. If what today we call

² D. McNALLY „Are the Jovian Planets ‚Failed‘ Stars?“ *Nature* 244 (August 1973) 424-426; R. F. LOEWENSTEIN *et al* „Far Infrared and Submillimeter Observations of the Planets“ *Icarus* 31 (1977) 315. Cf *Astrophysical Journal* 157 169ff. Also see *Science News* 109 (Jan 17 1976) 42-43; *American Scientist* 63 (Nov-Dec 1975) 638; *Science News* 166 (Sept 15 1979) 181; *Pensée IVR I* (May 1972) 12.

³ *Journal of Egyptian Archaeology* 46 (1960) 104; *Egypt of the Pharaohs* (Oxford University Press 1961) 424.

⁴ „Khima and Kesil“ in *Kronos III:4* (1978) 19-23.

⁵ „On the Gods of Greece, Italy and India“ in *Asiatic Researches I* (1799) 234. Cf E. MOOR *The Hindu Pantheon* (1864) 108. Also see *Larousse World Mythology* ed by Pierre GRIMAL (New York 1965) 244.

⁶ E. SELER *Gesammelte Anhandlungen II* 798. Also see *Mythology of the Americas* (New York 1968) 180-181.

Jupiter and Saturn are the products of such a sequence of events, their appearance and respective masses must formerly have been quite different.

Such a scenario would explain the prominence of Saturn prior to its cataclysmic disruption and dismemberment – it must have exceeded Jupiter in size. At some point, during a close approach to Jupiter, Saturn became unstable; and, as a result of the influx of extraneous material, it exploded, flaring as a nova which, after subsiding, left a remnant that the ancients still recognised as Saturn, even though it was but a fraction of the size of the celestial body of earlier days.

In Saturn's explosion much of the matter absorbed earlier was thrown off into space. Saturn was greatly reduced in size and removed to a distant orbit – the binary system was broken up and Jupiter took over the dominant role in the sky. The ancient Greeks saw this as Zeus, victorious over his father, forcing him to release the children he earlier had swallowed, and banishing him to the outer reaches of the sky. In Egyptian eyes it was Horus-Jupiter assuming royal power, leaving Osiris to reign over the kingdom of the dead.

My conclusion that, as a result of its interplay with Jupiter, Saturn became a nova,⁷ I found confirmed in many ancient sources, in which Saturn is regularly associated with brilliant light; but I was led to this idea first of all by a certain clue contained in the Biblical account of the Deluge. The story as found in the book of Genesis starts with these words: "And it came to pass after seven days, that the waters of the Flood were upon the earth" (7:10). It is not explained, after seven days of what? Some words seem to be missing here from our text of the Old Testament. It is clear, however, that Isaiah refers to the same seven days in his description of the messianic age to come, when "the light of the moon shall be as the light of the sun, and the light of the sun shall be sevenfold, as the light of the seven days..." (30:36). This memory of the seven days of light preceding the Deluge⁸ is a most important indication of the physical cause of the catastrophe. The intense light, filling the sky, points to a source in a nova within the solar system.

If, as all evidence indicates, the nova was in fact Saturn, we may obtain an estimate of the Earth's distance from the source of the illumination in the following way: The light from Saturn's explosion probably reached the Earth in a matter of minutes, practically simultaneously with the beginning of the nova phase; but the waters followed seven days later. Though ejected in the same catastrophic disruption, the Saturnian gases or filaments took a week to reach the Earth. If we can estimate the initial ejection speed of this material⁹ and fix with some approximation the length of the day at that time, it may be possible to get an idea of how far removed the Earth was, at that time, from the focus of the cataclysm. It is conceivable that the Earth was, at that time, a satellite of Saturn, afterwards possible becoming a satellite of Jupiter.

With the end of the seven days of light the Earth became enveloped in waters of cosmic origin, whether coming directly from Saturn – and Saturn is known to contain water¹⁰ – or formed from clouds of hydrogen gas ejected by the nova, which combined, by means of powerful electrical discharges, with the Earth's own free oxygen. There are definite indications of a drastic drop in the atmospheric oxygen at the time of the Deluge – for instance, the survivors of the catastrophe are said in many sources to have been unable to light fires. The Midrashim and other ancient sources describe the waters of the Flood as being warm;¹¹ in addition the waters may have been rich in chlorine, an element which in combination with sodium forms common salt. Marine geologists are unable to trace the origin of the huge amounts of chlorine locked in the salt of the Earth's oceans, the Earth's rocks being rather poor in this element and incapable of supplying it in the needed quantities. Chlorine may thus be of extraneous origin; being a very active element, it could possibly be present in some different combination on Saturn.

The effects of nearby supernovae on the biosphere have been the object of intensive study by geologists in recent years,¹² in an attempt to account for abrupt changes in the history of life on this planet. Sudden extinctions were followed by the reappearance of new species, quite different from those preceding them in

⁷ Cf. the remarks by William MULLEN in *Pensée IVR* III (Winter 1973) 14 – „Velikovsky has suggested that as a result of disruption Saturn went through a short nova-like phase in which its light would have obscured everything else visible from earth; the deluge followed shortly thereafter”.

⁸ Similar memories are to be found in Babylonian and Hindu sources; an intense light flooded the Earth just prior to the Deluge.

⁹ The usual range of the velocities is between 1'300 and 2'500 km/sec. See *Science News* 110 (October 16 1976) 251.

¹⁰ See T. FERTÉ „A Record of Success“ in *Pensée IVR* (May 1972) 23 under the entry „Saturn“. Velikovsky correctly claimed that „Saturn contains (or consists of) water... The Saturnian rings consist of ice“. Pioneer 11 indicated that Saturn's core is „wrapped in a compressed blanket of such materials as water, methane and ammonia extending to about 0.23 percent of Saturn's radius“. Furthermore, „many researchers have assumed that the ring particles are composed largely of water ice, and the new data seem supportive“ *Science News* (9/15/79) 181.

¹¹ See sources in L. GINZBERG *The Legends of the Jews* V (Philadelphia 1925) 178.

¹² The first proponent of the supernova hypothesis was O. H. SCHINDEWOLF in his *Der Zeitfaktor in Geologie und Palaeontologie* (Stuttgart 1950); see also idem, „Über die möglichen Ursachen der grossen erdgeschichtlichen Faunenschnitte“ in *Neuer Jahresbericht der Geologie und Palaeontologie* Abh 10 457-465; V. I. KRASOVSKY and I. S. SHKLOVSKY „Supernova explosions and their possible effect on the evolution of life on the Earth“ in *Dokl. Ac. Sci. USSR* 116 (2) 197-199; L. J. SALOP „Glaciations, Biologic Crises and Supernovae“ in *Catastrophis Geology* 2/2 (1977) 22-41.

the stratigraphic record. In a relatively brief interval whole genera were annihilated, giving way to new creatures of radically different aspects, having little in common with the earlier forms they replaced.¹³ Thus, over the past two or three decades, many geologists and paleontologists have found themselves increasingly drawn to the view that the observed abrupt changes in the biosphere, such as that which marked the end of the Mesozoic and is thought to have brought with it the extinction of the dinosaurs,¹⁴ among other animal groups, could best be explained by the exposure of the then living organisms to massive doses of radiation coming from a nearby supernova. The radiation would annihilate many species, especially those whose representatives, whether because of their large size or for other reasons, were unable to shield themselves from the powerful rays; at the same time, new organisms would be created through mutations, or “macro-evolution”.¹⁵ Animals would suffer much more severely than plants – on plants the principle effect would be mutagenic.¹⁶

After the Deluge many new forms of life came into being, especially plant life. Thus it happened that Saturn was later called a god of vegetation. Frazer in his *Golden Bough* considered Osiris and Tammuz to be nothing more than vegetation gods – so strong was Saturn’s connection with the new forms in the plant kingdom that appeared following the Deluge.

There is one important phenomenon which the supernova theory does not explain, however, namely the geological upheavals that accompanied the great extinctions. The Midrashim sources relate that, during the Deluge, all volcanoes erupted (*Sefer Hajashar*); and other ancient accounts assert the same. Changes took place in the lithosphere as well as in the biosphere. Most pronounced, however, were the changes in the hydrosphere – the volume of water on the Earth was vastly increased. And it is of interest that the Atlantic Ocean was called by the ancients “the sea of Kronos”¹⁷ – indicating that it came to be only after the Deluge.

The memory of these stupendous events survived for millennia and vestiges of the cult of Saturn persist even today. One of these memorials is the feast of light, celebrated in mid-winter: Hanukah or Christmas, both stemming from the Roman Saturnalia. These are all festivals of light, of seven days’ duration, and they commemorate the dazzling light in which the world was bathed for the seven days preceding the Deluge; in their original form these festivals were a remembrance and a symbolic re-enactment of the Age of Saturn. It was said that in that age there had been no distinction between masters and servants – thus in Rome, for the duration of the Saturnalia festival, the household slaves were freed, and were actually waited on by their masters. Also the statue of Saturn which used to stand in the Roman Forum was for a time released from its bonds. This statue, which had bands around its feet, represented the planet Saturn with its rings – it was understood that it was Jupiter that had bound Saturn with these bonds after he had overthrown Saturn. Astronomers are unable to explain their origin, but they must have formed in that event in which Jupiter disrupted Saturn.¹⁸

There is evidence that the ancient Maoris of New Zealand were also aware of the rings around Saturn. They called the planet Parearau, which means “her band quite surrounds her”.¹⁹

Saturn was the chief deity of, among other peoples, the Phoenicians and the Scythians – in cuneiform sources the Scythians are called Umman-Manda, or “the people of Saturn”. The Phoenicians used to bring human sacrifices to the planet, calling it Moloch, or “king”. Usually children were the victims, consumed by Moloch, as Saturn devoured his own children. Porphyry records the persistence in some cities of the Greek world of human sacrifices to Saturn well into Roman times.²⁰

¹³ See N. D. NEWELL „Revolutions in the History of Life“ *Geological Society of America Special Papers* 89 68-91.

¹⁴ But see my article in *Kronos* II:2 „Were All Dinosaurs Reptiles?“ (Nov 1976) 91-100.

¹⁵ See my comments in *Pensée IVR* IV „The Pitfalls of Radiocarbon Dating“ (Spring-Summer 1973) 13 – „... in the catastrophe of the Deluge, which I ascribe to Saturn exploding as a nova, the cosmic rays must have been very abundant to cause massive mutations among all species of life...“ In 1963, in a letter to H. H. Hess, I suggested that „tests should be devised for detection of low energy cosmic rays emanating from Saturn, especially during the weeks before and after a conjunction of Earth-Jupiter-Saturn“ (see *Pensée IVR* II Fall 1972 28; *Velikovsky Reconsidered* „H. H. Hess and My Memoranda“ (New York 1976) 49. Besides cosmic rays, I have suggested that Saturn emits X-rays (see *Pensée IVR* I May 1972 23).

¹⁶ K. D. TERRY and W. H. TUCKER „Biologic Effects of Supernovae“ in *Science* 159 (1968) 421-423.

¹⁷ See for example Plutarch *Isis and Osiris* 32; Clement of Alexandria *Stromata* 8 360; Aristotle, fragment 196.

¹⁸ For a possible explanation of the mechanics of the formation of the Saturnian rings, cf H. FRIEDMAN „Cosmic X-ray sources: A progress report“ in *Science* 181 (3 August 1973) 396.

¹⁹ E. BEST *The Astronomical Knowledge of the Maori, Genuine and Empirical*: New Zealand Dominion Museum Monograph (Wellington 1922) 35.

²⁰ Porphyry *On the Abstinence from Animal Food* transl by Th. TAYLOR (Centaur Press UK 1965) 81 (II.27) 102 (II.54).

Khima and Kesil

In the Tractate Brakhot of the Babylonian Talmud it is said that the Deluge was caused by two stars that fell from Khima toward the Earth. The statement reads:

“When the Holy One decided to bring the Deluge on the Earth, He took two stars from Khima and [hurling them against the Earth] brought the Deluge on the Earth.”²¹

The sentence is said in the name of Rabbi Samuel. This Rabbi Samuel was regarded as a great authority in the field of astronomy, actually as *the* Talmudic authority in this science.

The Tractate Brakhot so explicitly points to the cause of the Deluge that, before classifying the narrative of in *Genesis* in its entirety as folkloristic imagery (which in part it most certainly is), we ought to inquire: Which celestial body is Khima?

In the rabbinical literature Khima is referred to as Mazal Khima.²² Mazal is “planet”. Then which planet is Khima?

In the Old Testament there are several instances where Khima is mentioned. In Job (9:5-9), the Lord is He who “removes mountains... overturns them... shakes the earth out of her place... which commands the sun and it rises not... which alone spreads the heaven... Which makes Ash, Kesil, and Khima and the Chambers of the South...” In the King James Version these names are translated as Arcturus, Orion, and Pleiades. “Chambers of the South” are usually explained as constellations of the south.

Khima and Kesil are also named in Job 38:31, here again in a text that deals with violent acts to which Earth was once subjected: “... Who shut up the sea with doors [barriers] when it broke forth...” Who could command the dawn “that it might take hold of the ends of the earth, that the wicked might be shaken out of it.” The Lord asks Job: “Canst thou bind the chains (fetters) of Khima or loosen the reins of Kesil? Canst thou lead forth the Mazzaroth in its season...?” The Cambridge Bible wonders at the meaning of this passage. Like the King James version it translates Pleiades for Khima, and Orion for Kesil. Mazzaroth is left untranslated.

In Amos (5:8) once more Khima and Kesil are mentioned in a verse that reveals the great acts of the Lord who “maketh Khima and Kesil, and turneth the shadow of death into the morning, and maketh the day dark with night: that calleth for the waters of the sea, and poureth them upon the face of the earth...”

Hieronymus (St. Jerome), the fourth century author of the Latin version (translation) of the Old Testament – Vulgate – translates Khima as Arcturus in one instance (Amos 5:8), as Pleiades in another (Job 38:31), and as Hyades in the third (Job 9:9).

Similarly, Kesil was translated by the Greek version (the Septuagint of the third century before the present era) as Hesperus, or the Evening Star, and in another instance as Orion. The confusion of the translators may be illustrated by the following tables:

The renderings found in the Vulgate are as follows:				And these are the translations of the Septuagint:			
	Khima	Kesil	Ash		Khima	Kesil	Ash
Job 9:9	Hyades	Orion	Arcturus	Job 9:9	Arcturus	Hesperus	Pleiades
Job 38:31	Pleiades	Arcturus		Job 38:31	Pleiades	Orion	
Amos 5:8	Arcturus	Orion		Amos 5:8	not given	not given	

Obviously, the true meaning of these names was lost: one and the same authority in various instances used different constellations or planets (Evening Star) for each of them: Kesil, Khima, Mazzaroth and Aish (Ash). Later interpreters groped in the dark, so Calmet, the eminent French commentator and exegete of the early eighteenth century translated Khima (in Amos) as Great Bear.²³

The interpreters were especially intrigued by the description in Job 38:31. The Lord proves to Job his impotence by asking him whether he can bind the bonds of Khima or loosen the reins of Kesil. “The word in the second clause is from a root always meaning ‘to draw’...”²⁴ Which star is in bonds? And which star is drawn by reins, as if by horses?

The identities of Khima and Kesil, Ash and Mazzaroth, were of lesser importance when it amounted to finding their meaning for their own sake in the poetical sentences of Amos and Job. But such identification, especially of Khima, grows in importance if the quoted sentence from the Tractate Brakhot may contribute to an understanding of the etiology of the Deluge as the ancients knew it, or thought to know it.

²¹ Tractate Brakhot, Fol. 59.

²² Jacob LEVY *Wörterbuch über die Talmudim und Midrashim* (2nd ed., Berlin and Vienna 1924): entry „Khima“.

²³ Augustin CALMET *Commentaire littéral sur tous les livres de l'ancien et du nouveau Testament* ‘Les VII petits prophètes’ (Paris 1715).

²⁴ A. B. DAVIDSON suppl. by H. C. LANCHESTER, to Job 38:31 in *The Cambridge Bible* (1926).

In *Worlds in Collision* I have already explained that Mazzaroth signifies the Morning (Evening) Star: the Vulgate has Lucifer for Mazzaroth, and the Septuagint reads: Canst thou bring Mazzaroth in his season and guide the Evening Star by his long hair? I have shown why the Morning-Evening-Star was described as having hair or coma and why Venus did not appear in its seasons.

Kesil means in Hebrew "fool". From the Biblical texts it is not apparent why one of the planets received this adverse name, or why, if such was the case, the word "fool" was derived from the name of the planet.²⁵

Pallas-Athena said to him: "Fool, not even yet hast thou learned how much mightier than thou I avow me to be, that thou matchest thy strength with mine."²⁶ These words explain also why Mars was called "fool": it clashed repeatedly with the planet-comet Venus, much more massive and stronger than itself. To the peoples of the world this prolonged combat must have appeared as a very valiant action of Mars, not resting, but coming up again and again to attack the stupendous Venus, or it must have appeared as a foolish action of going again and again against the stronger planet. Homer described the celestial battles as actions of foolishness on the part of Mars.

Thus Kesil, or "fool", among the planets named in the Old Testament is most probably Mars.

"If not for the heat of Kesil the world would not fare well, because it counterbalances the cooling effect of Khima." This sentence is found, too, in the Tractate Brakhot of the Babylonian Talmud.²⁷

In Pliny we find a sentence which reads: "The star Mars has a fiery glow; owing to its excessive heat and Saturn's frost, Jupiter being situated between them combines the influence of each and renders it healthy."²⁸

The heating effect ascribed in the Talmud to Kesil is ascribed by Pliny to Mars, and the cooling effect of Khima to Saturn. With this sentence of Pliny we are strengthened in our identification of Kesil as the planet Mars; it corroborates the conclusion just made with the help of the *Iliad*. But what is even more important, Pliny helps identify "planet Khima": it is Saturn.

Cicero wrote similarly with Pliny: "While the furthest [of the five planets], that of Saturn, has a cooling influence, and the middle planet, that of Mars, has a heating influence, the planet Jupiter, which is situated between these two, has an illuminating and moderating influence."²⁹ Other statements to the same effect are found in Vitruvius³⁰ a contemporary of Cicero, and in the neo-Platonists Porphyry,³¹ Plotinus,³² (both of the third century) and Proclus³³ (who flourished in the fifth century). In these sentences, as in those of Pliny and of the Talmud, Mars is regarded as being a fiery planet,³⁴ Saturn as being a cold planet.

The passage in the book of Job (38:31) can now be read: "Canst thou bind the bonds of Saturn or loosen the reins of Mars?" The bonds of Saturn can be seen even today with a small telescope. The reins of Kesil I discussed in *Worlds in Collision*, Section "The Steeds of Mars". The two small moons of Mars, Phobos and Deimos, were known to Homer³⁵ and are mentioned by Vergil.³⁶ They were regarded by the peoples of antiquity as steeds yoked to Mars' chariot; Job was asked whether he could loosen their reins.

The passage in the Talmud that makes the planet Khima responsible for the Deluge means: "Two stars erupted from the planet Saturn and caused the Deluge."

²⁵ S. R. DRIVER to Amos 5:8 in *The Cambridge Bible* (1918).

²⁶ The *Iliad*, book XXI, 400.

²⁷ Tractate Brakhot, Fol. 58b.

²⁸ PLINY *Natural History* II.34: „Saturni sidus gelidae ac rigentis esse naturae... tertium Martis ignei, ardentis a solis vicinitate... ideoque hujus ardore nimio et rigore Saturni, interjectum duobus ex utroque temperari Jovem salutaremque fieri...“

²⁹ CICERO *De Natura Deorum* II. xlvi. 112-113: "cum summa Saturni refrigeret, media Martis incendat his interjecta Jovis illustret et temperet."

³⁰ VITRUVIUS *De Architectura* IX. 1, par. 16: "... in quibus locis habet cursum Martis stella, itaque fervens ab ardore solis efficitur. Saturni autem quod est proxima in extremo mundo et tangit congelatas caeli regiones, vehementer est frigida. ex eo Iovis cum inter utriusque circumitiones habeat cursum, a refrigeratione caloreque earum medio convenientes temperatissimosque habere videtur effectus. »

³¹ L. THORNDYKE *A History of Magic and Experimental Science* Vol. I (New York 1920) p. 43.

³² PLOTINUS *Is Astrology of Value?* transl. by K. Guthrie (Loeb Classical Library 1918): "When the cold planet (Saturn) is in opposition to the warm planet (Mars), both become harmful."

³³ PROCLUS DIADOCHUS *Commentaire sur le Timée* transl. by A. J. Festugière (Paris 1967) vol. IV, p. 92: "Les Astres" iii.1.: "... Il y a une autre triade, où Saturne et Mars sont les extrêmes et en opposition l'un a l'autre, selon que l'un est cause de connexion, l'autre de séparation, l'un principe de refroidissement, l'autre d'échauffement, et ou Jupiter tient le milieu et porte a un heureux mélange les activités créatrice des deux autres."

³⁴ The other name for Mars in rabbinical Hebrew, *maadim*, signifies "red" or "reddening". Mars has a reddish color.

³⁵ *Iliad* XV 119-120.

³⁶ *Georgica* III.91: "Martis equi biuges."