THE FUNDAMENTAL theory of this paper is: Gravitation is an electromagnetic phenomenon. There is no primary motion inherent in planets and satellites. Electric attraction, repulsion, and electromagnetic circumduction\(^1\) govern their movements. The moon does not “fall,” attracted to the earth from an assumed inertial motion along a straight line, nor is the phenomenon of objects falling in the terrestrial atmosphere comparable with the “falling effect” in the movement of the moon, a conjecture which is the basic element of the Newtonian theory of gravitation.

Aside from several important facts discovered in the study of cosmic upheavals, which are not illuminated here and only enumerated at the end of this paper, and which are discussed at length in a work of research entitled Worlds In Collision now being prepared for publication, the following facts are incompatible with the theory of gravitation:

1. The ingredients of the air—oxygen, nitrogen, argon and other gases—though not in a compound but in a mixture, are found in equal proportions at various levels of the atmosphere despite great differences in specific weights. The explanation accepted in science is this: “Swift winds keep the gases thoroughly mixed, so that except for water-vapor the composition of the atmosphere is the same throughout the troposphere to a high degree of

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\(^1\) The usual term “rotation” may be misleading, as it is the phenomenon of planetary revolution, not rotation, to which it is here referred.
approximation.” This explanation cannot be true. If it were true, then the moment the wind subsides, the nitrogen should stream upward, and the oxygen should drop, preceded by the argon. If winds are caused by a difference in weight between warm and cold air, the difference in weight between heavy gases high in the atmosphere and light gases at the lower levels should create storms, which would subside only after they had carried each gas to its natural place in accordance with its gravity or specific weight. But nothing of the kind happens.

When some aviators expressed the belief that “pockets of noxious gas” are in the air, the scientists replied:

“There are no ‘pockets of noxious gas.’ No single gas, and no other likely mixture of gases, has, at ordinary temperatures and pressures, the same density as atmospheric air. Therefore, a pocket of foreign gas in that atmosphere would almost certainly either bob up like a balloon, or sink like a stone in water.”

Why, then, do not the atmospheric gases separate and stay apart in accordance with the specific gravities?

2. Ozone, though heavier than oxygen, is absent in the lower layers of the atmosphere, is present in the upper layers, and is not subject to the “mixing effect of the wind.” The presence of ozone high in the atmosphere suggests that oxygen must be still higher: “As oxygen is less dense than ozone, it will tend to rise to even greater heights.”

Nowhere is it asked why ozone does not descend of its own weight or at least why it is not mixed by the wind with other gases.

3. Water, though eight hundred times heavier than air, is held in droplets, by the millions of tons, miles above the ground. Clouds and mist are composed of droplets which defy gravitation.

4. Even if perfect elasticity is a quality of the molecules of all gases, the motion of the molecules, if effected by a mechanical cause, must subside because of the gravitational attraction between the particles and also because of the gravitational pull of the earth. There should also be a loss of momentum as the result of the transformation of a part of the energy of motion into vibration of molecules hit in the collisions. But since the molecules of a gas at a constant temperature (or in a perfect insulator) do not stop moving, it is obvious that a force generated in collisions drives them. The molecules of gases try to escape one another. Repulsion between the particles of gases and vapors counteracts the attraction.

5. The weight of the atmosphere is constantly changing as the changing barometric pressure indicates. Low pressure areas are not necessarily encircled by high pressure belts. The semidiurnal changes in barometric pressure are not explainable by the mechanistic principles of gravitation and the heat effect of solar radiation. The cause of these variations is unknown.

“It has been known now for two and a half centuries, that there are more or less daily variations in the height of the barometer, culminating in two maxima and two minima during the course of 24 hours. Since Dr. Beal’s discovery (1664-65), the same observation has been made and puzzled over at every station at which pressure records were kept and studied, but without success in finding for it the complete physical explanation. In speaking of the diurnal and semidiurnal variations of the barometer, Lord Rayleigh says: ‘The relative magnitude of the latter [semidiurnal variations], as observed at most parts of the earth’s surface, is still a

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2 E.O. Hulburt in Fleming’s *Terrestrial Magnetism and Electricity*, 1939, p. 492.
mystery, all the attempted explanations being illusory.”

One maximum is at 10 a.m., the other at 10 p.m.; the two minima are at 4 a.m. and 4 p.m. The heating effect of the sun can explain neither the time when the maxima appear nor the time of the minima of these semidiurnal variations. If the pressure becomes lower without the air becoming lighter through a lateral expansion due to heat, this must mean that the same mass of air gravitates with changing force at different hours.

The lowest pressure is near the equator, in the belt of the doldrums. Yet the troposphere is highest at the equator, being on the average about 18 km. high there; it is lower in the moderate latitudes, and only 6 km. high above the ground at the poles.

6. Laplace, pondering the shape of the atmospheric envelope of the earth, came to the conclusion that the atmosphere, which rotates with the same angular velocity as the earth and which behaves like a fluid, must be lenticular in form; its polar and equatorial axes must be about 35,000 and 52,000 miles respectively; at the equator the atmosphere must extend more than 21,000 miles above the ground. At these distances from the ground the gravitational force of the earth is just equal to the centrifugal force due to rotation.

From the measurement of the pressure of the earth’s atmosphere, measurement based also on the principles of gravitation, it has been deduced that the atmosphere is but 17 (not 21,000) miles high.

Observations of the flight of meteorites and of the polar auroras lead to the conjecture that the atmosphere reaches to a height of 130 miles (meteorites) or over 400 miles (polar auroras). Radio measurements yield about 200 miles for the upper layer recognizable through this method of investigation.

Two computations, both based on the principle of gravitation, differ in the proportion of 17 and 21,000. Direct observations do not justify either of the computed figures.

7. Cyclones, characterized by low pressure and by winds blowing toward their centers, move counterclockwise in the northern hemisphere and clockwise in the southern hemisphere. This movement of air currents in cyclonic vortices is generally explained as the effect of the earth’s rotation.

Anticyclones, characterized by high pressure and by winds blowing from their centers move clockwise in the northern hemisphere and counterclockwise in the southern hemisphere. The movement of anticyclones has not been explained and is regarded as enigmatic.

Cyclones and anticyclones are considered a problem of fluidal motion with highest or lowest pressure in the center. As the movement of anticyclones cannot be explained by the mechanistic principles of gravitation and rotation, it must be concluded that the rotation of cyclones is also unexplained.

8. The area of land in the northern hemisphere of the earth is to the area of land in the southern hemisphere as three is to one. The mean weight of the land is two and three-quarter times heavier than that of water; assuming the depth of the seas in both hemispheres to be equal, the northern hemisphere up to sea level is heavier than the southern hemisphere, if judged by sea and land distribution; the earth masses above sea level are additional heavy loads. But this unequal distribution of masses does not affect the position of the earth, as it does not place the northern hemisphere with its face to the sun. A “dead force” like gravitation could not keep the unequally loaded earth in equilibrium. Also, the seasonal distribution of ice and snow, shifting in a distillation process from one hemisphere to the other, should interfere with the equilibrium of the earth, but fails to do so.

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6 W.J. Humphreys, op. cit., p. 240. Lord Rayleigh is quoted from the Philos. Mag., May 29, 1890.
9. Mountainous masses do not exert the gravitational pull expected by the theory of gravitation. The influence of the largest mass on the earth, the Himalaya, was carefully investigated with plumb line on the Indian side. The plumb line is not deflected as calculated in advance.\(^7\) “The attraction of the mountain-ground thus computed on the theory of gravitation, is considerably greater than is necessary to explain the anomalies observed. This singular conclusion, I confess, at first surprised me very much.” (G. B. Airy).\(^8\) Out of this embarrassment grew the idea of isostasy. This hypothesis explains the lack of gravitational pull by the mountains in the following way. The interior of the globe is supposed to be fluid, and the crust is supposed to float on it. The inner fluid or magma is heavier or denser, the crust is lighter. Where there is a mountainous elevation, there must also be a protuberance beneath the mountains, this immersed protuberance being of lesser mass than the magma of equal volume. The way seismic waves travel, and computations of the elasticity of the interior of the earth, force the conclusion that the earth must be as rigid as steel; but if the earth is solid for only 2000 miles from the surface, the crust must be more rigid than steel. These conclusions are not reconcilable with the principle of isostasy, which presupposes a fluid magma less than 60 miles below the surface of the earth. There remains “a contradiction between isostasy and geophysical data.”\(^9\)

10. Over the oceans, the gravitational pull is greater than over the continents, though according to the theory of gravitation the reverse should be true; the hypothesis of isostasy also is unable to explain this phenomenon.\(^10\) The gravitational pull drops at the coast line of the continents. Furthermore, the distribution of gravitation in the sea often has the peculiarity of being stronger where the water is deeper. “In the whole Gulf and Caribbean region the generalization seems to hold that the deeper the water, the more strongly positive the anomalies.”\(^11\) As far as observations could establish, the sea tides do not influence the plumb line, which is contrary to what is expected. Observations on reservoirs of water, where the mass of water could be increased and decreased, gave none of the results anticipated on the basis of the theory of gravitation.\(^12\)

11. The atmospheric pressure of the sun, instead of being 27.47 times greater than the atmospheric pressure of the earth (as expected because of the gravitational pull of the large solar mass), is much smaller: the pressure there varies according to the layers of the atmosphere from one-tenth to one-thousandth of the barometric pressure on the earth;\(^13\) at the base of the reversing layer the pressure is 0.005 of the atmospheric pressure at sea level on the earth;\(^14\) in the sunspots, the pressure drops to one ten-thousandth of the pressure on the earth.

The pressure of light is sometimes referred to as to explain the low atmospheric pressure on the sun. At the surface of the sun, the pressure of light must be 2.75 milligrams per square centimeter; a cubic centimeter of one gram weight at the surface of the earth would weigh

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\(^8\) On the computation of the effect of the attraction of mountain-masses, 1855.


\(^10\) Vening Meinesz; see Fleming, *Terrestrial Magnetism*, p. 33.

\(^11\) The Navy-Princeton Gravity Expedition to the West Indies in 1932.


27.47 grams at the surface of the sun. Thus the attraction by the solar mass is 10,000 times greater than the repulsion of the solar light. Recourse is taken to the supposition that if the pull and the pressure are calculated for very small masses, the pressure exceeds the pull, one acting in proportion to the surface, the other in proportion to the volume. But if this is so, why is the lowest pressure of the solar atmosphere observed over the sunspots where the light pressure is least?

12. Because of its swift rotation, the gaseous sun should have the latitudinal axis greater than the longitudinal, but it does not have it. The sun is one million times larger than the earth, and its day is but twenty-six times longer than the terrestrial day; the swiftness of its rotation at its equator is over 125 km. per minute; at the poles, the velocity approaches zero. Yet the solar disk is not oval but round: the majority of observers even find a small excess in the longitudinal axis of the sun. The planets act in the same manner as the rotation of the sun, imposing a latitudinal pull on the luminary. Gravitation that acts in all directions equally leaves unexplained the spherical shape of the sun. As we saw in the preceding section, the gases of the solar atmosphere are not under a strong pressure, but under a very weak one. Therefore, the computation, according to which the ellipsoidity of the sun, that is lacking, should be slight, is not correct either. Since the gases are under a very low gravitational pressure, the centrifugal force of rotation must have formed quite a flat sun. Near the polar regions of the sun, streamers of the corona are observed, which prolong still more the axial length of the sun.

13. If planets and satellites were once molten masses, as cosmological theories assume, they would not have been able to obtain a spherical form, especially those which do not rotate, as Mercury or the moon (with respect to its primary).

14. The Harmonic Law of Kepler views the movements of the planets as depending only on their distance from the sun. According to Newton, the masses of the sun and the planets must also enter the formulas. The Newtonian orbits differ from the Keplerian, found empirically. The Newtonian formula has a sum of masses (instead of a product of masses), and in view of the largeness of the sun, the Newtonian orbits are supposed to not deviate substantially from the Keplerian.

15. Perturbations of planets due to their reciprocal action are pronounced in repulsion as well as attraction. A perturbation displacing a planet or a satellite by a few seconds of arc must direct it from its orbit. It is assumed that the orbits of all planets and satellites did not change because of perturbations. A regulating force emanating from the primary appears to act. In the gravitational system there is no place left for such regulating forces.

16. The perturbing activity appears unstable in the major planets, Jupiter and Saturn: Between the minimum of the year 1898-99 and the maximum of the 1916-17 there was found an 18 percent difference. As these planets did not increase in mass in the meantime, this change is not understandable from the point of view of the theory of gravitation, which includes the principle of the immutable gravitational constant.

17. The pressure of light emanating from the sun should slowly change the orbits of the satellites, pushing them more than the primaries, and acting constantly, this pressure should have the

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16 Comp. Ch. L. Poor, Gravitation versus Relativity, 1922, p. 98.
17 Comp. P. Duhem, La Théorie Physique, 2nd ed., 1914, pp. 293 ff.
effect of acceleration: the pressure of light per unit of mass is greater in relation to the satellites than in relation to their primaries. But this change fails to materialize; a regulating force seems to overcome this unequal light pressure on primaries and secondaries.

18. The sun moves in space at a velocity of about twenty kilometers a second (in relation to the nearby stars). This motion, according to Lodge, must change the eccentricities of some of the planetary orbits to an extent which far exceeds the observed values.\(^{19}\)

19. The motion of the perihelia of Mercury and Mars and of the nodes of Venus differ from what is computed with the help of the Newtonian law of gravitation. Einstein showed how his theory can account for the anomaly of Mercury; however, the smaller irregularities in the movements of Venus and Mars cannot be accounted for by Einstein’s formulas.

20. Unaccounted for fluctuations in the lunar mean motion were calculated from the records of lunar eclipses of many centuries and from modern observations. These fluctuations were studied by S. Newcomb, who wrote: “I regard these fluctuations as the most enigmatic phenomenon presented by the celestial motions, being so difficult to account for by the action of any known causes, that we cannot but suspect them to arise from some action in nature hitherto unknown.”\(^{20}\) They are not explainable by the forces of gravitation which emanate from the sun and the planets.

21. It was found that “the strength of radio reception was nearly doubled with the passing of the moon from overhead to underneath the observer ... It does not appear reasonable that the relatively small gravitational tide in the earth’s atmosphere, which changes the barometric pressure by less than half of one percent, could account for a sufficient change in altitude of the ionized layer to produce such marked changes in the intensity of reception.”\(^{21}\) The lifting of the ionosphere generally results in better radio reception, and the small tidal action by the moon when overhead should improve reception a little, not impair it; in any event, the moon cannot have a marked effect on the ionosphere without being itself a charged body. But if the moon is charged, it cannot behave in its motion as though the gravitational force alone acts between it and the earth.

22. The tails of the comets do not obey the principle of gravitation and are repelled by the sun. “There is beyond question some profound secret and mystery of nature concerned in the phenomenon of their tails”; enormous sweep which it (the tail) makes rounds the sun in perihelion, in the manner of a straight and rigid rod, is in defiance of the law of gravitation, nay, even of the recorded laws of motion” (J. Herschel).\(^{22}\) “What has puzzled astronomers since the time of Newton, is the fact that while all other bodies in the sidereal universe, as far as we are aware, obey the law of gravitation, comets’ tails are clearly subject to some strong repulsive force, which drives the matter composing them away from the sun with enormously high velocities” (W.H. Pickering).

23. The change in the angular velocity of comets (especially of the comet Encke) is not in accord with the theoretical computations based on the theory of gravitation.\(^{23}\)

24. Meteors, after entering the terrestrial atmosphere at about 200 km. above the ground, are violently displaced toward the east. These displacements of the meteors are usually ascribed to winds blowing in the upper atmosphere.\(^{24}\) The atmospheric pressure at a height of 45 km. is

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\(^{19}\) Lodge, *Philos. Mag.*, Feb. 19, 1918.
\(^{23}\) J. Zenneck, *Gravitation*, p. 36.
\(^{24}\) Hulburt, *The Upper Atmosphere*, p. 492.
supposed to be but “a small fraction of one millimeter of mercury.” On the other hand, the velocity with which the meteors approach the earth is between 15 and 75 km. per second, on the average about 40 km. per second or over 140,000 km. per hour. If winds of 150 km. per hour velocity were permanently blowing at the height where the meteors become visible, it would not be possible for such winds of rarefied atmosphere to visibly deflect stones falling at the rate of 140,000 km. per hour.

Approaching the earth, the meteorites suddenly slow down and turn aside, and some are even repelled into space. “A few meteors give the appearance of penetrating into our atmosphere and then leaving it, ricocheting as it were.”

The earth is a huge magnet; it has electric currents in the ground and is enveloped by a number of layers of electrified ionosphere. The sun possesses an electric charge and magnetic poles; also the sunspots are found to be powerful magnets. The ionosphere is permanently charged by particles arriving from the sun; sunspots actively influence terrestrial magnetism, ground currents, the ionosphere’s charge, and auroras. As the principle of gravitation leaves no room for the participation of other forces in the ordinary movements of the celestial mechanism, these obvious and permanent influences of the electromagnetic state of the sun on the magnetic field of the earth, the ionosphere, the auroras, and the earth currents are not allowed to have more than zero effect on the astronomical position of the earth, and this for the sake of maintaining the integrity of the gravitational principle.

Sun and moon, comets, planets, satellites, and meteorites - all the heavenly host - air and water, mountain massifs and sea tides, each and all of them disobey the “law of laws” which is supposed to know no exception.

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To the empirical evidences of the fallacy of the law of gravitation four well known difficulties of the gravitational theory can be added:

a. Gravitation acts in no time. Laplace calculated that, in order to keep the solar system together, the gravitational pull must propagate with a velocity at least fifty million times greater than the velocity of light. A physical agent requires time to cover distance. Gravitation defies time.

b. Matter acts where it is not, or in abstentia, through no physical agent. This is a defiance of space. Newton was aware of this difficulty when he wrote in a letter to Bentley: “That gravity should be innate, inherent, and essential to matter, so that one body can act upon another at a distance through a vacuum without the mediation of anything else, by and through which their action and force may be conveyed from one to another, is to me so great an absurdity that I believe no man, who has in philosophical matters a competent faculty of thinking, can ever fall into it.” Leibnitz opposed the theory of gravitation for this very reason.

c. Gravitational force is unchangeable by any and all agents or by any medium through which it passes, always propagating as the inverse square of the distances. “Gravitation is entirely independent of everything that influences other natural phenomena” (De Sitter). This is a defiance of the principles governing other energies.

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27 The ancients assumed that the flame is not attracted to the ground. No experiment is known where this assertion had been subjected to experimental verification.
28 *Kosmos*, (1932) p. 106.
d. Every particle in the universe must be under a tendency to be pulled apart because of the infinite mass in the universe: it is pulled to all sides by all the matter in space.

A few additional remarks about the motion of bodies in the universe which bear upon the theory of gravitation are added here:

1. The notion of the tangential escape or inertia of the primary motion of the planets and satellites, being adopted by all cosmogonical theories of post-Newtonian days, led all of them into insurmountable difficulties. The retrograde motion of some satellites is one of these difficulties.

2. The principle of gravitation demands an ultimate balling of all matter in the cosmos. This is not in harmony with spectral observations, which suggest even an “expanding universe”.

3. “An atom differs from the solar system by the fact that it is not gravitation that makes the electrons go round the nucleus, but electricity.” (B. Russell). Different principles are supposed to govern the motion of the planetary bodies in the macrocosm and microcosm.

Newton explained the principle underlying the motion of the planets and the satellites by the example of a stone thrown horizontally from a mountain with such force that gravitation bends its flight so that it revolves around the earth, coming back to exactly the same place, once again to repeat the course of its flight. But he admits, “It is not to be conceived that mere mechanical causes could give birth to so many regular motions,” and invokes an act of Providence in providing each satellite with a tangential push of a strength which, together with the pull of the primary, creates an orbit. (General Scholium to Book III of the Principia) The inertia of the tangential (instantaneous) push has not exhausted itself in all the eons despite the tidal friction between a satellite and its primary, or the sun pulling the satellite away from the primary, or the resistance of matter (meteorites) in space, though all these forces act permanently and therefore with acceleration.

Newton’s gravitational theory is regarded as proved by the action of the tides. But studying the tides, Newton came to the conclusion that the moon has a mass equal to one fortieth of the earth. Modern calculations, based on the theory of gravitation (but not on the action of the tides), ascribe to the moon a mass equal to 1/81 of the earth’s mass.

The greatest triumph of the theory of gravitation was the discovery of the planet Neptune, the position of which was calculated simultaneously by Adams and Leverrier from the perturbations experienced by Uranus. But in the controversy which ensued concerning the priority in announcing the existence of Neptune, it was stressed that neither of the two scholars was the real discoverer, as both of them calculated very erroneously the distance of Neptune from the orbit of

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29 Strangely enough, the movements of the electrons around the nucleus are ascribed to the electrical attraction between these bodies plus an infinitesimal gravitational attraction and to the inertia with which the electrons are trying to overcome these two pulls.

Uranus. Yet, even if the computations were correct, there would be no proof that gravitation and not another energy acts between Uranus and Neptune. The gravitational pull decreases as the square of the distance. Electricity and magnetism act in the same way. Newton was mistaken when he ascribed to magnetism a decrease that follows the cube of the distance.

Building his System of the World, Newton put before his readers “Rules of Reasoning in Philosophy.” The First Rule is: “We are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances.” Rule II is: “Therefore, to the same natural effects we must, as far as possible, assign the same causes.”

II

Thorough theoretical and experimental investigations will be necessary to build a new theory in place of the now accepted theory of gravitation. For the present we shall offer only general suggestions.

1. **Attraction between two neutral atoms.** Each atom is made up of positive and negative electricity and, though neutral as a whole, may form an electric dipole when subjected to an electric force. Thus, in the theory presented here, this attraction is not due to “inherent gravitational” properties of mass, but instead to the well known electrical properties of attraction. Two dipoles arrange themselves so that the attraction is stronger than their mutual repulsion.

2. **Inertia, or the passive property of matter.** “The equality of active and passive, or gravitational and inertial mass was in Newton’s system a most remarkable accidental coincidence, something like a miracle. Newton himself decidedly felt it as such” (W. DeSitter).

   In Einstein’s explanation, inertia and gravitation are not two different properties, but one and the same property viewed from different points in space. According to his illustration, a man in an elevator that is being continuously pulled up by a rope invisible to the man will feel his feet pressed against the bottom of the elevator and will think that he gravitates toward the floor. But someone else observing the situation from the outside in space will judge that there is a fact of inertia; the pulled elevator has to overcome the inertia of the man standing on its floor. If the man in the elevator lets an object fall from his hand, it will approach the floor at an accelerated speed because the elevator is being continuously pulled upward; to the observer on the outside it rises with acceleration.

   By this illustration Einstein tried to explain the equivalence of inertia and gravitation. But it is impossible to adopt this explanation for the gravitational effect of the globe: the observer from outside cannot perceive the globe as moving simultaneously in all directions. Einstein sees the difficulty and says: “It is, for instance, impossible to choose a body of reference such that, as judged from it, the gravitational field of the earth (in its entirety) vanishes.”

   In our explanation the active property is due to one kind of charge in the atom - the attracting (attracted) charge; the passive property, to the opposite charge, which repels (is repelled).

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31 Since Adams and Leverrier expected to find a planet of the size of Uranus ca. 1,750,000,000 miles beyond the orbit of Uranus, and it was found ca. 1,000,000,000 miles beyond Uranus, the mass of Neptune was overestimated by a factor of three.

32 *Principia*, Book III, Proposition V, Corr. V.

33 *Kosmos*, 1932, p. 107.

Both exist in equal quantities in a neutral atom; this explains the equality of the gravitating and inertial properties of matter.

However, the charges must arrange themselves in such a manner that attraction proceeds: the attracting force overcomes the repelling force because the attracting poles of the dipoles are closer to one another than the repelling poles; when the repelling poles are closer, the atoms (or their combinations in molecules) repel each other, as is the case with gases.

A charged body attracts more strongly than a neutral body because of the presence of free electrons; in dipoles the charges rearrange themselves only a little, but free electrons can rearrange themselves much more.

3. **Attraction of bodies toward the earth.** The ionosphere is strongly charged with respect to the “neutral” earth; a potential difference of 100 volts per meter altitude exists near the ground, or a difference in potentials which forces the current through the electric lamps. Does any relation exist between the difference in voltage in the lower atmosphere and the difference in weight (“at the ceiling of a room 3 meters high a kilogram weighs about one milligram less than at the floor”)?

With the altitude a voltage difference per meter is not the same as near the ground, but it accumulates to a high figure: “Between a point ten miles high and the surface of the earth there is an electrical pressure difference of about a hundred and fifty thousand volts.”

Neutral bodies consist of both positive and negative charges. Neutral atoms form dipoles along the lines of force of the electric field with poles turned toward the earth and the ionosphere. Is the fall of objects due to their “dipole attraction” and to their movement in an electrical field as dipoles? The proximity to the ground gives its action preference over that of the ionosphere as far as the attracting force is concerned, since the distance between the opposite electric poles of the atomic dipole is much smaller in comparison to its total distance from the ionosphere than from the ground. This means, however, that when objects reach a certain altitude, they would be attracted upward. Meteorites, repelled into space, are apparently charged identically with the upper layer of the ionosphere.

This part of the theory (concerning falling bodies) requires experimentation and exact calculation. It is probable that besides carrying a charge, the ground turns all of its atoms as dipoles toward the ionosphere.

4. “In contrast to electric and magnetic fields, the gravitational field exhibits a most remarkable property, which is of fundamental importance... Bodies which are moving under the sole influence of a gravitational field receive an acceleration, which does not in the least depend either on the material or the physical state of the body.” (Einstein)

This law is supposed to hold with great accuracy. The velocity of the fall is generally explored with the help of a pendulum; it appears to us that a charged object must fall with a different velocity than a neutral object. This is generally denied. But the denial is based on the

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36 In connection with this, attention should be paid to the following: “When measurements of the earth’s magnetic field are used to evaluate the magnetic line-integral around any chosen area on the earth’s surface, the result generally differs from zero. This, according to a fundamental principle of electromagnetism, is to be taken as evidence that an electric current flows vertically across the area... The average current-density is about 10,000 times that of the air-earth current that is derived from atmospheric-electricity measurements, so that it seems inadmissible to interpret either this aspect of the earth’s magnetism or the currents observed in telegraph-lines of mountain slopes as manifestations of vertical electrical currents in the atmosphere unless there is involved here some principle or some mode of electrical transport that is yet unknown to physics... A problem that may be of fundamental importance to physical science.” O.H. Gish, “Atmospheric electricity”, in Fleming, op.cit.
observation that there is no difference in the number of swings of a pendulum in a unit of
time, in the case where a charged or neutral bob is used. This method may produce inaccurate
results. In an accurate method, the falling time and the time of ascent of the pendulum must
be measured separately. In the case of a charged body, the increase in the velocity of descent
of the pendulum may be accompanied by a decrease in the velocity of ascent, and thus the
number of swings in a unit of time would remain the same for charged and non-charged bobs.
In a charged body the attracting and the inertial properties are not equal.
It appears also that the weight of a body increases after it is charged. An experiment made
with a piece of hard rubber (ten grams), neutral and again charged by rubbing, on a scale with
a sensitivity of one-tenth of a milligram, showed a change in weight of over ten milligrams.
This appears to be the result of an induced charge in the bottom (ebony) of the balance
(placed on a thick plate of glass). A grounded wire held over the scale with the charged
rubber raises the scale. If “gravitation” is an electrical phenomenon, attraction by induced
electricity is not an entirely different phenomenon. Nevertheless, this experiment cannot be
regarded as conclusive for the present problem.
In the oil-drop experiment the action of the charges may be made equal to the “gravitational”
pull: One and the same action is ascribed to two fundamentally different principles.
A photograph may provide the answer to the question of how much a charged drop revolving
around a pole of a magnet is influenced by the terrestrial pull.
Would a metal container filled with gas fall (in a vacuum) with the same velocity as a solid
piece of metal?

III

Attraction, repulsion, and electromagnetic circumduction act in the solar system. Sun, planets,
satellites, comets are charged bodies. As charged bodies they are interdependent.

The solar surface is charged negatively in relation to the charge of the earth, as the spectral lines
(with the dominant red line in the spectrum of hydrogen) reveal. The sun carries a charge and
rotates: it is an electromagnet.

The spots of the sun are magnetic, and the filaments of hydrogen on the sun’s surface arrange
themselves as iron particles in a magnetic field.\textsuperscript{38} Besides the spots, the sun as a whole is a
magnet. “The form of the corona and the motion of the prominences suggest that it is a magnet,”
wrote G.E. Hale when he undertook to detect the Zeeman effect.\textsuperscript{39} The Zeeman effect proved to
be most pronounced at 45° in both hemispheres of the sun; Hale found the displacement of lines
decreases to zero at the equator and near the poles of rotation; and also that “a first approximate
value for the vertical intensity of the sun’s general field at the poles is 50 gausses.” Thus, it was
confirmed that the sun is a magnet, but the magnetic field was found not to be strong.

This result is questioned here. The lines of the corona suggested the existence of a magnetic field
on the sun to the scholar who discovered it. But the form of the corona suggests a powerful
magnetic field.\textsuperscript{40} Visible coronal bands and streamers reach a distance equal to ten and more

\textsuperscript{39} Preliminary results of an attempt to detect the general magnetic field of the sun, Contr. M. Wilson Sol. Obs N. 71,
1913.
\textsuperscript{40} F.H. Bigelow, Circulation and rotation in the atmosphere of the earth and of the sun, 1915.
diameters from the disc of the sun—Mercury is only forty solar diameters from the sun and Earth 108 solar diameters. More recent investigation by Stevens, who photographed the streamers from 25,000 feet, disclose a globular corona more extensive than any known from ground photographs.

Disturbances in filaments and vortices of the sun affect the ionosphere of the earth and prove the existence of a powerful charge on the sun; rotating at the speed of the solar rotation, a strong charge must produce a strong magnetic field.

A revised investigation of the magnetic power of the field around the sun is here suggested. It should be kept in mind that the observations have been made from the solar magnetic field, in which the earth is embedded, if our concept is correct. It is possible also that the strongest Zeeman effect will show itself in latitudes higher than 45°. As is well known, the angle of observation must be taken into consideration in observing the Zeeman effect.

The sun is a rotating charged body, and it creates a magnetic field. We assume the solar charge to be large enough to produce a magnetic field with lines of force reaching the orbit of Pluto. The charged planets move at right angles to the sun’s magnetic lines of force and describe the usual circular motion to which moving charged bodies are subjected in a magnetic field. Satellites, in turn, revolve in smaller magnetic fields produced by the rotation of the charged planets. The non-rotating planets have no satellites, for they do not produce magnetic fields. If there are rotating satellites, they may be able to revolve trabants around them.

“The origin of the earth’s main magnetic field has so far defied all attempts of solution.” The cause of the earth’s magnetic field is in (1) the magnetic field of the sun, and (2) the rotation of the charged earth around its axis.

It has been calculated that if the earth is a magnet because of the rotating charge on its surface, the charge must be so great as to “enter as a serious factor in planetary perturbations,” and therefore the theory was dropped. But this is exactly what happens: the electromagnetic fields of the earth and of other planets are the causes of the planetary perturbations.

We have constructed a theory according to which the members of the solar system are charged bodies; electric attraction and repulsion, and electromagnetic circumduction act in the system; the origin of the magnetic field around the sun is in its charge—the sun is an electromagnet; planetary motion is due to the electromagnetic force exerted on the planets by the sun. The planets as charged bodies create magnetic fields by their rotation. It follows that (a) gravity, depending on electrical charge, varies with the charge, (b) the masses of the planets are inaccurately calculated, (c) the positive and negative charges are manifested only in relation to the charge of the earth.

One of the differences between the conception of celestial mechanism expounded here and the theories of gravitation of Newton and Einstein is that in our understanding the revolution of the moon is a process of a different order from that of the falling of objects near the terrestrial ground. The revolution of the moon is a phenomenon of circumduction of a charge by a magnetic

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41 A.G. McNish, *op. cit.*
43 Hale, *Preliminary results*, p. 3.
field and is not a fall combined with inertia; the primary motion of planets and satellites along a straight line is a fallacious notion. At the distance of the moon the electromagnetic field of the earth causes circumduction while in the terrestrial atmosphere the electric field between the earth and the ionosphere causes the movement of the dipoles. Like the moon, the earth and other planets and satellites are subject to electromagnetic circumduction.

IV

“Universal gravitation” is an electromagnetic phenomenon, in which the charges in the atoms, the free charges, the magnetic fields of the sun and the planets play their parts.

In the frame of this theory the following phenomena become explainable:

1. All planets revolve in approximately one plane. They revolve in a plane perpendicular to the lines of force of the sun’s magnetic field.
2. The planets have a greater aggregate energy of motion than the sun. The revolution of the planets did not originate in the angular velocity of rotation of the sun; the magnetic field of the sun effected their revolution. Also, the fact that one of the satellites of Mars revolves with an angular speed greater than that of the rotation of this planet is explained here by electromagnetic circumduction.
3. The retrograde revolution of a number of satellites. It is due either to retrograde rotation of the primary with inversed magnetic poles or to a difference of charges. The fact that the retrograde satellites of Jupiter and Saturn are the most remote from their primaries poses the problem whether their remoteness from the primaries and their relative closeness to the sun play a role in their being of a presumably different charge than the other satellites of Jupiter and Saturn.44

In the case of Uranus, the retrograde revolution of its satellites follows the retrograde rotation of the planet and its magnetic field. (One of the magnetic poles of Uranus can be readily investigated because it faces the ecliptic.)
4. The rotation of the earth. The tidal theory fails to account for the rotation of the planets. The position of the magnetic poles of the earth at a distance of about 20 degrees from the geographical poles may be related to the rotation of the earth. Once each day the magnetic poles of the earth occupy the southernmost and the northernmost positions in the lines of the magnetic field of the sun.
5. Perturbations among the members of the solar system are actions of attraction as well as of repulsion and depend on the charges of the planets and satellites and their magnetic properties. The fact that after perturbations, the planets resume their normal courses is due to the regulating action of the sun’s magnetic field. Similarly, the satellites are regulated in their motion by the electromagnetic fields of the primaries.
6. The anomalies in the motion of Mercury and other planets. The velocities of revolution of the planets depend on their charges. A strongly charged body is carried across the lines of the magnetic field more swiftly than a weakly charged body. If the charge of a planet increases, the velocity of revolution of such a planet must increase too. Positive as well as negative

44 The sixth and seventh satellites of Jupiter are 7,114,000 and 7,292,000 miles (mean distance) from the planet, and have a direct revolution. The eighth and ninth satellites, with retrograde revolution, are 14,6000,000 and 14,900,000 miles distant. The farthest satellite of Saturn, with direct revolution, 2,210,000 miles away from the planet; the only satellite with retrograde revolution is 8,034,000 miles away from the primary.
charges arrive from the sun in an uninterrupted flow. The planet Mercury moves faster and faster. This must be the result of an increasing charge of the planet. Also, the anomalies in the motion of other inner planets may be attributed to a changing charge; other irregularities in the motion of the planets can be attributed to the fact that the electrical charge of the sun is not equally distributed on the solar surface.

7. The deflection of a ray of light passing close to the sun. Before attributing the deflection to the gravitational field of the sun, the influence of the magnetic field of the sun on the rotation of light should be calculated. (The influence of the moon on a ray of light by creating a ripple in the atmosphere during a solar eclipse must not be overlooked; an investigation of the trajectory of a stellar ray passing close to the moon in a lunar eclipse is suggested here.)

8. The repulsion of a comet’s tail by the sun. The head of a comet and its tail are charged under a great potential difference, accounting for the manifest repulsion of the tail and attraction of the head. The neck of the comet is probably composed of positive and negative elements in equal proportion, thus forming a neutral zone between the head and the tail. Under the influence of the temperature in space the charges change and the comet returns on its orbit.

9. The displacement of the meteorites in the higher atmosphere. It is caused not by the winds, but by the electromagnetic effect of the ionosphere. The light of the meteorites is caused by electric discharges. Consequently, the passage of meteorites disturbs radio reception.

10. The influence of the moon on radio reception. The charged moon on its hourly stations exerts an attracting-repelling action on the electrified layers of the atmosphere (ionosphere) to a greater degree than on the “insulating layer” of the earth’s atmosphere.

11. The semi-diurnal variations of the barometric pressure. These variations with maxima at 10 a.m. and 10 p.m. have their cause in the semi-diurnal changes of the charge of the ionosphere at the same hours, 10 a.m. and 10 p.m. The barometric pressure reflects the degree of attraction exerted by the ground and the ionosphere on the gaseous envelope.

12. The defiance of gravity by water and cloud building. The ground and the ionosphere induce secondary charge-layers in the atmosphere. In such a secondary layer cloud-building takes place. Generation of electricity in clouds is due not to the friction of neutral clouds on mountain ridges, or to the friction of neutral clouds among themselves, or to the friction of droplets by the gravitational pull on them, but to the fact that droplets rise already charged toward the charged layer of the atmosphere, and clouds are further subjected to induction by the ground and the ionosphere. This explains also the segregation of the charges in the upper and lower levels of the clouds.

13. Defiance of gravity experienced in the cumulo-nimbus clouds. This defiance recorded by airplane pilots is the result of charges and electromagnetic effects prevailing in these clouds.

14. The direction of the cyclonic and anticyclonic whirls. Their direction on the earth, as well as on the sun, depends on the electromagnetic fields and not on the rotation of these bodies.

15. Increased gravity over the sea. The increase of gravity over the sea as compared with that over the continent may be explained by the higher charge of salt water.

* * *

There were a few attempts made to unite the electromagnetic and gravitational field theories; but as far as I know nobody has tried to solve the problem of planetary movement around the sun as a motion of charged bodies in a magnetic field; my explanation implies that the measurement of the solar magnetic field by Hale is not correct.
If the sun has a sufficiently strong magnetic field so as to reach the farthest of the planets, the quantitative elements are dictated by the charge of the sun, the strength of its magnetic field, and the charge of the planets.

* * *

The theory of the Cosmos without Gravitation given here in synopsis is written also in a comprehensive form (1941-43). I arrived at this concept early in 1941 as a result of my research in the history of cosmic upheavals as they affected the earth and other members of the solar system. A number of facts proved to me that the sun, the earth and other planets, the satellites, and the comets, are charged bodies, that the planets and their satellites have changed their orbits repeatedly and radically, and that gravitational attraction or the weight of objects has changed during human history. I thus recognized the fact that not gravitation, but electric attraction and repulsion and electromagnetic circumduction govern the solar system.

In construction the electromagnetic theory of the solar system, I am indebted to Miss Shulamith Velikovsky for valuable suggestions on the dipole explanation of attraction between the atoms and the dipole concept of inertia.
THESES FOR THE RECONSTRUCTION OF ANCIENT HISTORY

FROM THE END OF THE MIDDLE KINGDOM IN EGYPT TO THE ADVENT OF ALEXANDER THE GREAT

BY

IMMANUEL VELIKOVSKY

1945

INTRODUCTION

The written history of the ancient world is composed without correct synchronization of the histories of different peoples of antiquity: a discrepancy of about six hundred years exists between the Hebrew and Egyptian histories as they are conventionally written; since the histories of other peoples are synchronized both with the Hebrew and the Egyptian past, they are completely distorted.

The ground plan for a redesigning of ancient history was ready in its main features in the spring 1940. During the years 1940-1944, I wrote and completed a Reconstruction of ancient history from the end of the Middle Kingdom in Egypt to the advent of Alexander the Great. Due to war conditions and their interference with the printing of extensive scientific works, the publication of “Ages in Chaos” had to be postponed. This short paper is intended to bring together in concise form most of the innovations of my work; I present them in the form of theses; the manifold proofs which underlie the Reconstruction and the numerous collations of historical material are reserved for the work itself.

New York, June 10, 1945.

I

1. Ancient History before the advent of Alexander the Great is written in a chaotic manner. It is entirely confused, and is a disarray of centuries, kingdoms and persons.

2. The cause of this confusion lies in an incorrect representation of the Egyptian past; and since the history of Egypt is chosen to serve for orientation in compiling the histories of other peoples of antiquity, the histories of these other peoples are brought into disorder as well. The error in Egyptian history consists of six to seven and, in some places, eight centuries of retardation.

3. Histories of Palestine, Syria, Babylonia, Assyria, Mycenae, Classical Greece, Chaldea, Phoenicia, and Caria, are written in duplicate form, with the same events repeated after a period
of six or seven centuries. The confusion of centuries makes the life of many personages double; descendants are transformed into ancestors, and entire peoples and empires are invented.

4. The Egyptian and Jewish histories, as they are written, are devoid of a single synchronism in a period of many hundreds of years. Exodus, an event which concerns both peoples, is presumably not mentioned in the Egyptian documents of the past. The establishing of the time of the Exodus must help to synchronize the histories of these two peoples.

5. The literal meaning of many passages in the Scriptures which relate to the time of the Exodus, imply that there was a great natural cataclysm of enormous dimensions.

6. The synchronous moment between the Egyptian and Jewish histories can be established if the same catastrophe can also be traced in Egyptian literature.

7. The Papyrus Ipuwer describes a natural catastrophe and not merely a social revolution, as is supposed. A juxtaposition of many passages of this papyrus (edited by A. Gardiner, under the name “Admonitions of an Egyptian Sage”, 1909) with passages from the Scriptures dealing with the story of the plagues and the escape from Egypt, proves that both sources describe the same events.

8. The Papyrus Ipuwer comprises a text which originated shortly after the close of the Middle Kingdom; the original text was written by an eyewitness to the plagues and the Exodus.

9. The plagues were the forerunners and aftermaths of a great cataclysm the nature of which will be discussed in a work dealing with the natural history of the world. Earthquakes, eruptions of volcanoes, changes of the sea profile, were some of the results of that catastrophe.

10. The tenth plague, during which the houses were struck down, was an earthquake. The clay huts of the “dwellers of the marshes” suffered less than the structures of stone.

11. The “firstborn” (b’khorim) is erroneously used instead of the original “chosen” (b’chorim), and the tenth plague originally narrated the destruction of all the choice people among the Egyptians.

12. The naos (shrine) of el-Arish, now in the Museum of Ismailia, describes the plague of darkness and the death of the pharaoh in a whirlpool. The place of the last event is at Pi-Kharoti, which is Pi-ha-Kiroth of the Book of Exodus.

13. Tom-Taoui-Toth was the Pharaoh of the Exodus.

14. The Exodus took place at the close of the Middle Kingdom: the natural catastrophe caused the end of this period in the history of Egypt. This was in the middle of the second millennium before the present era.

15. The Israelites left Egypt a few days before the invasion of the Hyksos (Amu).
16. The Israelites met the Hyksos (Amu) on their way from Egypt. The Hyksos were the Amalekites.

17. The Arabic authors of the Middle Ages related traditions which reflect actual historical events, about the Amalekites who left Mekka amidst catastrophes and plagues, the invasion of Palestine and Egypt by the Amalekites, and the Amalekite pharaohs.

18. The catastrophes and plagues of these traditions are part of the cataclysm which is described in the Scriptures, the Papyrus Ipuwer, and the naos of el-Arish. The flood, which drowned many Amalekites who escaped from Arabia, was simultaneous with the upheaval of the sea on the day of the Passage.

19. Because of the occupation of southern Palestine (Negeb) by the Hyksos, the Israelites escaping from Egypt were forced to roam in the desert. The Desert of the Wanderings stretched deep into the Arab Peninsula.

20. The Hyksos stronghold Auaris was situated at the el-Arish of today. (Its other names are Tharu and Rhinocorura).

21. Its builder Latis, mentioned in the Arabic sources, is identical with the Hyksos King Salitis of Josephus-Manetho.

22. The Hyksos King whose name is read Apop (I) is the Agog (I) of the Scriptures. Similarly Apop II is the biblical Agog II.

23. Amalekite fortresses were built in Palestine. One of them was at Pirathon in Ephraim.

24. The Amalekites employed the same tactics in their devastating raids on Palestine and Egypt, choosing the time before the harvest.

25. The process of the conquest of Palestine by the Israelites was slowed down and reversed when the Canaanites allied themselves with the Hyksos-Amalekites. The wars of the Judges were intended to free the people from the yoke of the Hyksos.

26. The cataclysm which caused a migration of peoples brought the Philistines from Cyprus to the shores of Palestine. They intermarried with the Amalekites and produced a hybrid nation.

27. The Manethonian tradition about the later Hyksos Dynasty of a “Hellenic” origin reflects the period when the Philistine element became rather dominant in the Amalekite Empire.

28. The “Amalekite city” which was captured by Saul was Auaris.

29. As the result of his victory at Auaris, Saul freed Egypt and the entire Near East.
30. In the siege of Auaris, Saul was assisted by Kamose and Ahmose, the vassal princes of Thebes.

31. Manetho’s story about the Hyksos leaving Auaris by agreement reflects the scriptural incident concerning the Kenites leaving the besieged Amalekite fortress.

32. The invasion of southern Palestine by the escaping remnants of the Hyksos is reflected in I Samuel 30; and their further destruction at Sheruhen, in the Talmudic story of Joab’s war against the capital of the Amalekites.

33. This last bastion of the Amalekites was probably on one of the rocks of Petra.

34. Manetho confused Sheruhen with Jerusalem, and the Israelites, the redeemers of Egypt, with the Hyksos.

35. This confusion spread in the Ptolemaic time and became the cause of the rise of anti-Semitism which, fed from different channels, survived until today.

36. The period of the Wanderings in the Desert, of Joshua, and of the Judges, corresponds to the time of Hyksos domination in Egypt and the Near East. The period of the Hyksos lasted for more than four hundred years. The archaeological findings of the Hyksos period in Palestine appertain to the time of the Conquest and the Judges.

III

37. Two kingdoms rose on the ruins of the Hyksos Empire: the kingdom of Israel under David, and the New Kingdom of Egypt under the Eighteenth Dynasty. The beginnings of these two dynasties are not separated by six centuries; they started simultaneously.

38. The Egyptian Queen Tahpenes, the sister-in-law of Hadad the Edomite, was a wife of Ahmose.

39. Thutmose I attacked Gezer of the Philistines and gave it to Solomon, his son-in-law.

40. Queen Sheba is identical with Queen Hatshepsu.

41. The information of Josephus that the queen-guest ruled Egypt and Abyssinia, is correct.

42. The theories which place Punt and God’s Land in either South Arabia or Africa are equally wrong. Hatshepsu’s expedition, pictured in the temple of Deir el Bahari near Thebes, went to Palestine-Phoenicia.

43. By the time of the Old Kingdom, Palestine was already known as God’s Land or Holy Land. The tribe of Menashe lived in Palestine already at the time of the Old Kingdom in Egypt.

44. A preliminary expedition dispatched by Hatshepsu to prepare the way for the main expedition, was met by Peruha, the biblical Paruah, governor of Ezion-Geber.
45. The correction of the verses I Kings 4, 16-17 which place Aloth in the domain of the son of Paruah, is well founded.

46. Queen Hatshepsu participated personally in the main expedition to Ezion-Geber, Jerusalem, and Phoenicia. Her intention was to see what she had known “by hearsay” only.

47. The return voyage was made by sea from the Palestinian shore to Thebes on the Nile, and a second fleet was used. In the days of Hatshepsu there was no canal connecting the Nile with the Red Sea.

48. Jewish officers in the service of Solomon are portrayed on the walls of Deir El Bahari.

49. Exotic animals and plants, including the algum-trees “never seen before”, which Queen Hatshepsu received as gifts in God’s Land, had been brought by the navy of Hiram and Solomon from Ophir. They are seen in the pictures of the expedition.

50. Gifts were also presented to Hatshepsu by messengers of Hiram.

51. Solomon was not an obscure prince, as he is often represented. The riches of his kingdom astounded the Egyptians under their most magnificent monarch.

52. Silver-covered floors in the Jerusalem of Solomon were an actual feature; such floors were also built in the palaces of the viziers of Hatshepsu.

53. The architecture and ordinances of the Temple of Solomon were copied in the Temple of Amon at Deir El Bahari. The plan of this structure and its terraces can help in the reconstruction of the plan of the Temple of Solomon.

54. The Songs of Mounting, which are included among the Psalms, were sung by priests while ascending the terraces.

55. The office of High Priest was introduced into the Egyptian service in imitation of a similar post in the service in Jerusalem. The word pontifex is derived ultimately from the word Punt. The last word means Phoenicia.

56. The Abyssinian tradition preserved the name of the Queen of the South as Makeda, which is derived from the personal name of Hatshepsu (Make-Ra).

57. The Arabic claim that Queen Sheba was their Queen Bilkis, is unfounded.

58. The traditional origin of some Hebrew legends concerning Queen Sheba can be traced in the life and appearance of Hatshepsu.

IV
59. Thutmose III is the scriptural Shishak; he lived not during the fifteenth, but during the latter part of the tenth and the beginning of the ninth century.

60. Thutmose III refers in his inscription in Karnak to the state of disagreement and war among the Jewish tribes of Palestine after the death of Solomon.

61. The disintegration of the empire of Solomon was planned for by Thutmose III and carried out by him. He was also the author of the division of Palestine into two kingdoms.

62. Jeroboam, the first king of the ten tribes, is pictured during his stay in Egypt on a bas-relief in Thebes, together with a small son of his, as the prince of Dunip (Tunip), which is Dan.

63. Baalbek is the ancient Dan.

64. The list of the Palestinian cities inscribed by Thutmose III in Karnak comprises the names of the cities of Rehoboam in his fifth year. The city-fortresses built or fortified by Rehoboam, Etam, Beth-Zur, Shocco, Gath, Ziph, and Adoraim, can be identified in their Egyptian transcription.

65. The chief fortress besieged and captured before the Pharaoh came to Jerusalem, was Megiddo. Megiddo was defended by Rehoboam personally, and he eluded captivity when the fortress fell.

66. The city Kadesh, the most important among the Palestinian cities, and the first in the list of Thutmose III, is Jerusalem.

67. The submission of Rehoboam and the princes of the land, and their “becoming servants” to the Pharaoh is described in the annals of Thutmose III.

68. The vessels and furniture of the Temple of Solomon sacked by Thutmose III, are pictured on a bas-relief of Karnak. They can be seen in detail: altars, tables, candlesticks, etc.

69. The ornaments of “a crown of gold round about”, “buds among flowers” and “lily-work” described in the Scriptures, are shown on the bas-relief.

70. The showbreads had a conical form. The candlesticks had three branches on either side of the stem, or seven branches on either side[45] [altogether]. The fountains for perfume were vessels ornamented with figures of animals.

71. The copper covered doors and chains of gold were actual features of the Temple of Solomon.

72. Golden chariots, like those mentioned in the Song of Songs, were carried from Palestine as tribute, and are pictured in the sepulchral chambers of Rekhmire, the vizier of Thutmose III.

73. The theory about the supreme artisanship of the Canaanites in the pre-Israelite period is without foundation.

[45] “on either side” is doorgestreept.
74. Jewish artists brought to Egypt introduced their fine arts and influenced the aesthetic conceptions of the Egyptians.

75. Animals and plants of Palestine of the days of Rehoboam are pictured in the temple of Karnak. They comprise the collections of Solomon.

76. "Arzenu" (our land), by which the Scriptures mean Palestine, was its name in the Egyptian tongue ("Rezenu"), a geographical equivalent of the name "God’s Land".

77. The name of Israel is found in the annals of Thutmose III as that of a people bringing tribute. The assertion that the name of Israel is met for the first and only time in the inscription of Marneptah is wrong.

78. Rehoboam, "the king of Kadesh", is pictured on a bas-relief in the tomb of Menkheperre in Thebes.

79. The people of Genubath in the inscription of Thutmose III, is the people of the scriptural Genubath, son of Hadad the Edomite.

80. Sosenk, the Pharaoh of the Libyan dynasty, was not Shishak of the Scriptures.

81. Amenhotep II lived not in the fifteenth but in the ninth century, and was the scriptural Zerah.

82. The theory that the Ethiopian Zerah came from Arabia is wrong; equally wrong is the theory that he is a mythological figure.

83. The battle of Ain-Reshet, referred to by Amenhotep II, is the battle of Mareshet-Gath, which was lost by Amenhotep II and won by Asa.

84. This intrusion of Amenhotep II-Zerah is also narrated in the poem of Keret found in Ras Shamra.

85. The theory that Terah of the Poem, who invaded the south of Palestine with millions of soldiers, is the father of Abraham, is wrong.

86. The Shemesh-Edom of the war-annals of Amenhotep II is the Edomite city of Shapesh (Shemesh) referred to in the Poem of Keret.

87. In the days of Thutmose IV, Palestine again became a protectorate of Egypt in fear of a menacing conquest by Assurnasirpal (885-860), father of Shalmanassar.

88. Shishak mentioned in the Ras Shamra texts is Thutmose IV.

89. The texts found in Ras Shamra are not of the fifteenth, but of the ninth century.
90. The close resemblance of the texts of Ras Shamra with diverse books of the Scriptures repudiates most of the assertions of the Bible criticism (late origin of the texts), as well as the modern theory about the Canaanite heritage in the Scriptures (early origin of the texts).

91. The theory that alphabetic writing was perfected in the sixteenth century cannot be supported by the Ras Shamra texts of the ninth century.

92. As the alphabetic writing of Hebrew in cuneiform of Ras Shamra is contemporaneous with the stela of Mesha written in Hebrew alphabetic characters, the alphabet most probably did not originate in Phoenicia but in Palestine.

93. The theory that the Ras Shamra texts contain mention of Ionians, and of their city Didyme, is correct, but it concerns the ninth century Ionians.

94. The Khar of the Egyptian and Ras Shamra texts were not Hurrites or Troglodytes, but Carians.

95. The statement by classical authors that the Carians migrated from Crete is corroborated by the name of Keret of the Ras Shamra texts.

96. The Khari (Cari) of the Scriptures were the Khar or Carians from Ras Shamra.

97. The Carian language is studied in the disguise of the Hurrian (or Hurrite) language. The reading of the cuneiform Khar can be helped by a comparative study of the Carian inscriptions in Greek letters found in Egypt.

98. The reading of Carian will contribute to the decipherment of the Cyprian and Cretan hieroglyphics and may aid in reconstructing the early history of the West.

99. The name of the city Ugarit (Ras Shamra) is probably the equivalent of Euagoras, the Carian-Ionian name of a number of Cyprian kings.

100. The name Nikmed of the Ras Shamra texts is the Ionian-Carian name Nikomed(es).

101. The city of Ras Shamra was destroyed in the days of the King Nikmed by Shalmanassar (in 856 B. C. E). Its destruction is recorded by Shalmanassar and the city is called “the city of Nikdem”. A proclamation telling about the expulsion of Nikmed, found in the city, refers to the same event.

102. It is highly probable that King Nikmed (Nikdem) fled to Greece, and that this man of learning there introduced alphabetic writing. Therefore, he might have been Cadmos of the Greek tradition.

103. Minoan inscriptions of the Mycenaean Age may comprise alphabetic writings following in principle the cuneiform alphabet of Ras Shamra Hebrew.
104. The vaults of the necropolis of Ras Shamra and similar vaults in Cyprus are contemporaneous, and not separated by six centuries.

105. The tombs of Enkomi on Cyprus, excavated by A. S. Murray in 1896, were correctly assigned by him to the eighth-seventh century.

106. The time table of the Minoan and Mycenaean culture is distorted by almost six hundred years, because it is dependent upon the wrong Egyptian chronology.

107. No “Dark Age” of six centuries duration intervened in Greece between the Mycenaean Age and the Ionian Age of the seventh century.

108. The large buildings and fortifications of Mycenae and Tiryns in the Argive Plain date from the time of the Argive Tyrants, who lived in the eighth century.

109. The Heraion of Olympia was built in the “Mycenaean” age, in the first millennium

110. The so-called Mycenaean ware was mainly of Cypriote (Phoenician) manufacture. It dates from the tenth to the sixth century.

111. The so-called Geometric ware is not a later product than the Mycenaean ware; they were products of the same age.

112. The entire archaeology of the eastern Mediterranean, based upon the assumption that the Mycenaean culture belongs to the fifteenth-thirteenth centuries, is built upon a misleading principle.

VI

113. The el-Amarna Letters were written not in the fifteenth-fourteenth century, but in the middle of the ninth century.

114. Among the correspondents of Amenhotep III and Akhnaton are biblical personages: Jehoshaphat (Abdi-Hiba), King of Jerusalem; Ahab (Rib Addi), King of Samaria; Ben-Hadad (Abdi-Ashirta), King of Damascus; Hazael (Azaru), King of Damascus; Aman (Aman-appa), Governor of Samaria; Adaja (Adaja), Adna (Adadanu), Amasia, son of Zihri (son of Zuhru), Jehozabad (Jahzibada), military governors of Jehoshaphat; Obadia, the chief of Jezreel; Obadia (Widia), a city governor in Judea; the Great Lady of Shunem (Baalath Nesse); Naaman (Janhama), the captain of Damascus; and others. Arza (Arzaja), the courtier in Samaria, is referred to in a letter.

115. Mesha, King of Moab, is often mentioned in the Letters by his name (Mesh). The omission of the name of the rebel king by the translators of the Letters is not warranted.

116. The King of Hatti, who for years invaded and harassed Syria, was Assurnasirpal and after him Shalmanassar.
117. The following correspondents of Amenhotep and Akhnaton are known from the inscriptions of Shalmanassar; Adima, Prince of Siana and I irqata; Mut-Balu (Matinu-Bali), Prince of Arvad.

118. Burnaburias is the Babylonian name of Shalmanassar, and under this name he corresponded with Amenhotep III and Akhnaton. In the Letters he is also referred to as Shalmajati.

119. The military chief who opposed Shalmanassar at Karkar was the governor of Megiddo Biridri (Biridia), one of the Pharaohs correspondents. The identification of Ben Hadad with Biridri is wrong.

120. Sumur of the Letters is Samaria; Gubia is Jezreel. The new residence of the king of Israel was named in honor of his wife Jezebel.

121. Jarimuta or Rimuta of the Letters is Ramoth in Gilead; Sigati is Sukkoth; Ambi - Moab; Durnui - Edom; Rubuti - Raboth in Ammon; Kilti - vadi Kelt.

122. “Elippe” in a number of el-Amarna Letters means “a man over a thousand” or a chief, and not a “ship”. Several cities (Sumur being one of them) are incorrectly located on the seashore because of the mention of “elippe”.

123. The scriptural penman also confused “elippe”, the chief, with the same word meaning a thousand, and thus a correction of the text is required in the story of twenty-seven thousands killed by the wall of Aphek.

124. Ahab was faithful to the Egyptian protectorate. Ben Hadad, supported by Shalmanassar, inspired Mesha to revolt.

125. The capture of Ben Hadad and a covenant signed between him and the King of Samaria are events also related in the Letters.

126. The sieges of Samaria, the negotiation about sending Egyptian detachments, and the flight of the Syrians at the spreading of a rumor about the arrival of the Egyptian troops, can also be read in the Letters.

127. King Ahab was not killed at Ramoth in Gilead, but merely wounded. He survived Jehoshaphat by two years. The version 2 Kings 3, 2 is erroneous, and the rival version 2 Kings 1, 17 is correct.

128. Many events ascribed by the Scriptures to Jehoram, son of Ahab, or to the undefined “king of Israel”, happened in the days of Ahab. Ahab is the author of more than sixty letters found in the el-Amarna collection.

129. Jehoram of Israel and Jehoram of Judea were probably one and the same person, a son-in-law of Ahab.

130. The insurrection of Mesha took place during the life-time of Ahab, after the defeat at Ramoth in Gilead.

Velikovsky, *Cosmos without Gravitation (and other early writings)* (PDF Cor Hendriks, febr. 2018)
131. The K-r-k-h (the capital) of the Mesha Stela means Samaria. The Moabites succeeded in entering Samaria. The Ophel of K-r-k-h is the Ophel of Samaria. The fall of Samaria signified the “everlasting humiliation” and the “great indignation” in the Scriptures and the Stela.

132. By “cuttings” of K-r-k-h, the ivory work of the palace of Samaria is meant.

133. Samaria was the center of the Egyptian administration in Palestine. Possessing and building it was the privilege of the first among the chiefs.

134. Jehoshaphat’s position was of comparative independence, as there was no permanent Egyptian governor in Jerusalem. Adaja was the deputy over Edom and he was subordinate to Jehoshaphat.

135. The expedition of three kings against Moab preceded the invasion of Palestine by tribes of Transjordan and Seir. The sequence in Josephus is wrong.


137. The prayer of Jehoshaphat is authentic, being similar in spirit and content to his letters addressed to the Pharaoh.

138. The monotheism of Jehoshaphat is proved by his letters. The notion that Akhnaton was a monotheist (“the first monotheist”) is wrong.

139. The letters of Jehoshaphat’s generals and city-chiefs substantiate the complaint of the scriptural writer that idolatry was not eradicated in Judea in the days of Jehoshaphat.

140. The el-Amarna Letters provide ample material for elucidation of the feudal system in Palestine in the ninth century.

141. The failing of water sources, the drought and the great famine of seven years duration in Israel are described in many of the letters of the King of Samaria.

142. Ramoth in Gilead was a subject of rivalry because it was not afflicted by drought and famine.

143. The existence of a Great Lady of Sunem called Baalat Nesse (“Wonder occurred to her”), throws a side-light on the life and acts of Elisha.

144. The change in the attitude of Janhama, the captain of Damascus, toward the King of Samaria, throws another sidelight on the biblical narrative about Elisha.

145. The story about sending assassins against Ahab and about his repeated escapes is also narrated in the Letters.
146. The sickness of Ben Hadad, and his being killed while sick, is confirmed by the Letters. Hazael, his murderer, was his son by a harem woman.

147. The biblical dialogue of Hazael is truly transmitted, as his letters and letters about him prove. In his writing, he used the very same expressions ascribed to him in the Scriptures.

148. Hazael burnt the towns of Israel and occupied most of their land; this is verified by the Letters.

149. Hazael, after leaning toward Shalmanassar, was acknowledged King of Damascus by Akhnaton on the condition that he oppose Shalmanassar.

150. Shalmanassar’s inscriptions and the letters of Hazael (Azaru) give coordinated records about their war and other conditions in Syria.

151. The theory of a Mizri kingdom in Syria is wrong. The soldiers of Mizri at Karkar were Egyptians. The gifts sent by the King of Mizri to Shalmanassar are those enumerated by Akhnaton in his letter to the King of Hatti.

152. Ahab, under pressure from Hazael, went to Beirut. He was not permitted by his brother to return to Jezreel. He went from Beirut to Sidon, to the family of his wife Jezebel. In his lifetime, rumors about his death were spread, and they contributed to the confusion of later chronographers.

153. Sawardatta of the Letters was a prince of the Sodomites who lived at Vadi-Kelt.

154. Labaja of the Letters was a rebellious prince of Libna.

155. The letter addressed by Subliliuma to Hurria does not belong to the el-Amarna collection. It was written in the seventh century and addressed to Tirhaka-Hurria, the Ethiopian. It should be a matter of further investigation, whether any other letters are wrongly ascribed to the el-Amarna archive.

156. The ivories of Samaria of the time of Ahab are not late imitations of the ivories of the time of Amenhotep III, Akhnaton and Tuthenhamon, but are contemporaneous products.

VII

157. Between the Eighteenth and the Nineteenth Dynasties there was a period of about 150 years, during which Egypt was ruled by the Libyans and the Ethiopians (Twenty-second to Twenty-fifth Dynasties).

158. The period of the Libyans in Egypt lasted not over 200 years but about 100 years only, and its termination is correctly fixed at the end of the eighth century.

159. The only period of ancient Egypt which is correctly placed in time, is the short Ethiopian period. But this retention of its proper place at the end of the eighth and the beginning of the
seventh century caused a still greater chaos in historiography; generations which actually followed became progenitors, ancestors became descendants.

160. Osorkon I was not Zerah of the Scriptures, nor did he invade Palestine. Osorkon II was not a contemporary of Omri and Ahab.

161. Hebrew letters on the statues of Osorkon and Sosenk made by the Phoenician kings Elibaal and Abibaal represent the characters of the eighth century, not the tenth century.

162. The ostraca of Samaria were not written in the days of Ahab, but close to the end of the kingdom of Israel, in the days of Jehoram [Jeroboam] II. These ostraca, written in characters similar to those of the Siloam inscription of Hezekiah, do not signify an abnormal development of the Hebrew script.

163. Pharaoh So who received gifts from Hoshea was Sosenk IV, and his bas-relief scene pictures this tribute. Sosenk regularly placed as I (first) was IV (last).

164. Osorkon, the priest who caused a civil war and was expelled from Egypt, was the historical prototype of Osarsiph of Manetho, whom he wrongly identified with Moses.

165. After the battle of Eiteka, Egypt became a vassalage of Sennacherib.

166. Psammetich-Seti I, King of Egypt and an ally of the Ethiopians, was deposed by his brother Haremhab, who was in charge of the government during the king’s absence because of the war. Haremhab went over to the Assyrians. The legend about Harmais (Josephus-Manetho), who deceived his brother, is the story of Haremhab.

167. Haremhab was King of Egypt under Sennacherib, and in this service made war against the Ethiopians. His laws were made on the Assyrian model, as were also the punishments involved.

168. Harsiese, the priest of Ammon at the end of the Libyan Dynasty, was the man who reared Haremhab.

169. Haremhab was expelled by Tirhaka, the Ethiopian, and probably fled to Cyprus.

170. The 59th year of some reckoning mentioned in a document written in [referring to] the days of Haremhab, is the 59th year of the era of Nabonassar, which started in 747 B. C.E.

171. A cartouche of Haremhab on the inner wall of a sepulchral chamber cut in the days of the Ethiopians, does not constitute an enigma.

VIII

172. The so-called Nineteenth and Twenty-sixth Dynasties are substantially one and the same.

46 ‘Jehoram’ is doorgestreept.
47 ‘written in’ is doorgestreept.
173. Ramses I is identical with, Necho I. He was one of the viceroys under Essarhadon. After the death of Essarhadon, when the viceroys took sides with Tirhaka the Ethiopian and were killed by Assurbanipal, Ramses I, pardoned by the Assyrian King, was installed by him as the king of Egypt.

174. Shamash Shum Ukin, King of Babylon, and brother of Assurbanipal, corresponded with Tirhaka and allied himself with him.

175. Psammetich-Seti II, son of Ramses I, rose from vassal to the position of an ally of Assurbanipal in his war against Shamash Shum Ukin.

176. Psammetich-Seti II (Seti the Great) repeatedly invaded northern Palestine. He mentions smaller conflicts with Manasseh, referring to the latter by his name.

177. The city Pekanon to which he laid siege and which he captured was a fortress-capital of Peka, King of Israel, who lived two generations earlier. Being a capital, it was probably Samaria.

178. Beth-Shan-Scythopolis was the city where Seti met the vanguard of the Scythians. He occupied the city, as he reported on his stela found there.

179. Seti built a fortress on the Oronteg, at Tell Nebi Mend; it is Riblah of the Scriptures.

180. Seti participated in the war in the valley of the Euphrates on the side of Assurbanipal and against Nabopolassar. The Egyptian army referred to by Nabopolassar in his annals was that of Seti.

181. Greek soldiers sent by Gyges of Sardis to Egypt in the days of Seti became the first Greek settlers there.

IX

182. There was no Empire of the Hittites in the fourteenth-thirteenth centuries. The archive found at Boghazkoi belongs in its larger part to the Neo-Babylonian Empire of the seventh-sixth centuries.

183. These documents reflect the political, religious and juridical activities of the Chaldeans.

184. In the seventh century the Chaldeans were centered in Asia Minor, in an area bounded by the Black Sea, the Euphrates, and the Halys.

185. The “Hittite” hieroglyphics are the Chaldean script.

186. The presumed “Hittite” art of the fourteenth-thirteenth centuries is the Chaldean art of the seventh-sixth centuries, and is coeval with and subsequent to late Phrygian art. The bas-relief of Yasilikaya dates from the time of the Neo-Babylonian Empire. Greek sculptures with “Hittite” (Chaldean) signs present no problem, neither does the silence of Greek authors about the “Hittites” of the “post-Empire” period.
187. The “Hittite” stela in the palace of Nebukhadnezar in Babylon is a contemporary Chaldean document. The lead tablets from Asaur with “Hittite” hieroglyphics, date from the last centuries before the present era.

188. The succession of the kings of the Neo-Babylonian Empire was: Nabopolassar, Nergilissar, Labash-Marduk, Nebukhadnezar, Evil Marduk, Nabonides. Berosus, according to whom Nergilissar and his son followed Nebukhadnezar, is wrong.\(^{48}\)

189. The treaties of Subliliumas with Azaru of Damascus, with a patricide prince of Mitanni, and with the widow of Tirhaka, make plausible his identity with Shamash Shum Ukin. This would signify also that Nabopolassar was a son of Shamash Shum Ukin.

190. The people and the kingdom of Mitanni did not “disappear” in the thirteenth century. Mitanni is another name for Medes; the northwest part of Medes retained this name as Matiane (Herodotus).

191. Mursilis of the Boghazkoi texts (Merosar of the Egyptian texts), also known as Bijassili, is Nabopolassar of the Babylonian texts, Belesys of Diodorus or Bussalossor of Abydenos. Bel-shum-iskun is another name of Nabopolassar.

192. The annals of Nabopolassar from his tenth until his seventeenth year (now in the British Museum), can be supplemented by the “Hittite” annals of his from the first to the tenth year (two variants) and from the nineteenth year on, as they survived in the Boghazkoi archive.

193. The presence of the Scythians (Umman-Manda) in Asia Minor, who in the days of Essarhaddon arrived from behind the Caucasus, is also reflected in the Boghazkoi texts dealing with the Umman-Manda.

194. The Assyro-Egyptian alliance against which Mursilis conducted a long war in the valley of the Euphrates, was the alliance of Assurbanipal and Seti (see §180).

195. Assuruballit in Harran, against whom Mursilis marched, was the younger brother of Assurbanipal.

196. The capture of Manassehand his release are recorded in the annals of Mursilis.

197. The Median prince and ally of Mursilis-Nabopolassar was his brother-in-law, known in the texts by the name of Mattiuza.

198. The sickness of Nabopolassar, his subsequent inability to head the army, his invalid condition and his death, as described by Berosus, find their confirmation in the report of Mursilis-Nabopolassar about the first and second strokes of paralysis that befell him.

\(^{48}\) Velikovsky later concluded that there were two Nergilissars, the second reigning after Evil Marduk.
199. Nergilissar who called himself son of Bel-shum-ishkun, King of Babylon, was a son of Nabopolassar. He was the second son of Nabopolassar; his elder brother died before being crowned.

200. Nergilissar followed the policy of his father in signing international protective treaties, with Chaldea playing the part of the protector.

201. The name of one of his allies, Alexandus (Alexandos) of Wilusa, who came to Alasia (Cyprus), does not imply that the name Alexandos or Alexandros was already in use in the fourteenth century. (Alexandus of Wilusa might have been identical with Alexandros, son of Akamas and father of Chytros, who was connected with the city of Chitroi on Cyprus.)

202. The Aiavolos mentioned in the Boghazkoi texts and identified as Aioles, and connected in the texts with Lesbos, were the colonists from Boeothia on Lesbos (Thukidides I, 12ff.). This process of migration is reflected in the Boghazkoi texts.

203. Nebukhadnezar left an autobiography found among the Boghazkoi texts (the autobiography of Hattusilis-Khetasar). Like other documents of Boghazkoi it is incorrectly ascribed to a period seven centuries earlier.

204. Nebukhadnezar was the third son of Nabopolassar. Of feeble health, he was reared in a temple of Ishtar. When his elder brother died, he was given the name of the deceased.

205. Nergilissar appointed Nebukhadnezar as chief of the army and governor of Assyria. In this capacity he battled the Egyptians under Ramses II, in the second year of the latter; in the fifth year of Ramses II, raised to the station of King of Assyria, Nebukhadnezar again battled the Egyptians, at Kadesh-Carchemish.

206. Ramses II (of the Nineteenth Dynasty) and Pharaoh-Necho (of the Twenty-sixth Dynasty) of the Scriptures or Necos of Herodotus are one and the same person.

207. The theories that make Ramses II the Pharaoh of Oppression or the Exodus are wrong.

208. For nineteen years Ramses II was in a state of war with Nebu-khadnezar.

209. The defeat of Josiah is portrayed in a mural fragment, now in the Metropolitan Museum of Art.

210. The tribute imposed upon Judea and the imprisonment of Jehoahaz are referred to on an obelisk of Tanis.

211. The first march of Necho-Ramses II toward the Euphrates is related on the obelisk of Tanis and on the rock inscription of Nahr el Kalb near Beirut, written in his second year. The rock inscriptions of Ramses II are not as old as that of Essarhadon on the same rock.
212. The second campaign which Ramses II led toward the Euphrates is narrated in his annals and in the Pentaur-poem and has a parallel record in Jeremiah 46.

213. The Shardana mercenaries were the people of Sardis (Lydians), and not of Sardinia.

214. The city Kadesh the Old of the battle was Carchemish.

215. The remnants of the fortifications and the double moats of Kadesh-Carchemish pictured by Ramses II are recognizable in situ.

216. Hieropolis the Old was situated on the site of Carchemish.

217. The river ‘N-r-t or ‘R-n-t was the Egyptian name of the Euphrates.

218. Bab and Aranime mentioned by Ramses II in the course of the battle are Bab and Arime on the road from Aleppo to Carchemish.

219. At the beginning of the battle, Ramses II, with the division of Amon, was northwest of Carchemish; the division of Re was between Sadjur and Carchemish; the division of Ptah and Sutekh were south of Bab. The army of Re was driven northward away from its base, and, together with the division of Amon, was thrown into the Euphrates.

220. After the defeat at Carchemish, Ramses II lost dominion over Syria and Palestine for three years, until the eighth year of Jehoiakim.

221. A fragment of a clay tablet, dealing with the battle of Carchemish, is preserved in the archive of Boghazkoi.

222. Nebukhadnezar returned from the pursuit of Ramses II because he was accused before Nergilissar of intending to usurp the imperial crown.

223. The person of his accuser, Arma, a very aged relative, whom he ultimately put to death, is intimated in the rabbinical literature and in the Fathers of the Church as that of Hiram, King of Tyre, old relative and accuser of Nebukhadnezar.

224. Nergilissar exacted an oath from Nebukhadnezar that he would be faithful to his son and heir, Labash-Marduk (Lamash or Labu in the Boghazkoi texts). After Nergilissar’s death, Nebukhadnezar crowned his nephew, but nine months later, he arrested him. A letter of Nebukhadnezar (Hattusilis) to his minor nephew, containing a denunciation, is preserved.

225. The repairs of the palace and the temple of Ezagila in Babylon made by Nergilissar antedate those made by Nebukhadnezar.

226. The queen of Nebukadnezzar was a daughter of a priest of Ishtar. She was not an Egyptian or Median princess, as related by early authors.

227. Nebukadnezzar became King of Babylon five years after Ramses II became King of Egypt.
228. In his ninth year Ramses II occupied Askalon and the Philistine shore. Marching through the valley of Jezreel, his troops reached Beth Shan.

229. In the twelfth year of Ramses II, Palestine was again subdued by Nebukhadnezer.

230. During the interval between two sieges of Jerusalem in the days of Zedekiah, a treaty was concluded between Ramses II and Nebukhadnezer; its text is extant.

231. Jewish fugitives in Egypt were extradited in accordance with the treaty.

232. The “Fossae Temple” of Lachish was built in the days of Solomon and rebuilt in the days of Jehoshaphat and Amenhotep III; the city was captured by Sennacherib, and destroyed by Nebukhadnezer. The “Fossae Temple”, burnt in the days of Ramses II, and the city-walls, burnt in the days of Nebukhadnezer, are remains of one and the same fire.

233. Nebukhadnezer did not invade Egypt. The only historical inscription which is ascribed to Nebukhadnezer and which deals with a march toward Egypt, has a counterpart in the Marriage Stela of Ramses II.

234. Ramses II married a daughter of Nebukhadnezer. The bas-relief of Abu-Simbel portrays the visit of Nebukhadnezer bringing his daughter to Ramses II.

235. “Bit-Niku” outside the wall of Babylon was the palace built for Ramses II who used to visit there.

236. Nebukhadnezer’s daughter had a palace at Daphneh-Tahpanhes.

237. Red baked bricks of the Ramses period in Tahpanhes were an innovation introduced from the Babylon of Nebukhadnezer.

238. The Bentresh Stela deals with the mental disease of the elder daughter of Nebukhadnezer, and was written by the priest of Khons a few decades thereafter. This daughter was married to a prince of Damascus.

239. The paranoiac character of Nebukhadnezer is fully reflected by his autobiography and other texts of Boghazkoi, notably dealing with exorcisms. The biblical record about his suffering from nightmares and about his mental disease is substantiated.

240. The tomb of Ahiram found at Byblos dates not from the thirteenth century, but from about 600 B.C.E. The Cyprian pottery of the end of the seventh century and the vases of Ramses II found in this grave are contemporaneous.

241. Itobaal, son of Ahiram, the builder of the tomb, was probably the defender of Tyre against Nebukhadnezer, as mentioned by Josephus.
242. The inscriptions of Ahiram’s tomb are of the same age as the ostraca of Lachish. The development of the Hebrew letters went through a normal process without falling into archaisms.

243. The dispute as to whether Ramses II or Necho built the canal connecting the Mediterranean with the Red Sea, deals with a spurious problem.

244. Greek armor found in Daphneh (Daphnoi), as well as iron tools and ingots, are coeval with the temple of Ramses II there, and are products of the Greek mercenaries in the service of the pharaohs of the Nineteenth (Twenty-sixth) Dynasty.

245. Tiles of buildings erected by Ramses II (in Kantir) which have Greek letters on the back, are products of Greek laborers in the service of the pharaoh. The letters are genuine Greek letters of the sixth century.

XI

246. Pharaoh Marneptah is the biblical Hophra and Apries of the Greek authors. Marneptah was not the Pharaoh of the Exodus, but the Pharaoh of the Exile. His royal name usually read Hotephirma, must be read Hophra-Mat.

247. That part of the population of Palestine which escaped deportation to Babylon, went to Egypt, and this migration through the fortress city of Takhu was recorded by the officials of Marneptah.

248. The fortress and palace station Takhu on the frontier, is the biblical Tahpanhes (Daphnoi).

249. The mention of Israel in the “Israel Stela” of Marneptah as an unsettled people refers to their status of exiles.

250. Marneptah used metaphors similar to Jeremiah’s in describing the plight of Palestine and Israel.

251. The incursion of Marneptah into Syria is echoed in Diodorus I, 68. This could have taken place during the mental illness of Nebukhadnezzar.

252. The city Kaditis in Palestine, referred to by Herodotus, is Jerusalem, and not Gaza.

253. The Libyan campaign of Marneptah was caused by the migration of the Greeks to Cyrenae. It was not an archaic invasion of Hellenic peoples in the thirteenth century, but the mass migration encouraged by the Pythian oracle and described by Herodotus (IV, 159).

254. Amasis deposed Marneptah. There were not seven centuries between Marneptah and Amasis; the latter was a general in the service of the former. Amasis kept his prisoner for a while as co-ruler on the throne.

255. The violent death of Apries-Marneptah at the hands of the assassins was caused by a lethal wound of the head, as the perforation of the scull of his mummy ghows.
256. The overthrow of Egypt, which Ramses III referred to as having occurred a number of
generations before his own days, is the conquest of Egypt by Cambyses in the year of Amasis’
death.

257. The Palestinian Irsa who taxed Egypt is Ezra, the scribe; he taxed Egypt in accordance with
the decree of Artaxerxes.\textsuperscript{49}

258. Ramses III is identical with Nectanebo I of the Greek authors. He lived not in the twelfth but
in the fourth century.

259. In Herodotus there can be no reference to Ramses III, because the historian lived before the
pharaoh. The history of Egypt by Herodotus, though defective in details, is more nearly accurate
than that of the later and modern historians, because he placed the history of the Eighteenth, the
Ethiopian, and the Nineteenth Dynasties in fairly accurate order.

260. “Invasion of Egypt by the archaic Greeks” in the twelfth century is a fallacy. The Greeks
who participated in the wars of Ramses III and who are shown as changing sides, were at first
soldiers of Chabrias, assisting Egypt, and then troops of Iphicrates, opposing Ramses III.

261. Agesilaus, the King of Sparta, had already arrived in Egypt in the days of Nectanebo I
(Ramses III),\textsuperscript{50} [\textit{Tachos (Ramses IV)}] and Ramses III, who referred to his arrival, mentioned also
his notably small stature.

262. The Pereset, with whom Ramses III was at war, were the Persians of Artaxerxes II under the
satrap Pharnambazus, and not the Philistines.

263. The war described by Ramses III, and by Diodorus and other classical authors (the war of
Nectanebo I), is one and the same war of 374 BCE

264. A camp was set up by Pharnambazus in Acco in preparation for an attack against the Egypt
of Ramses III.

265. A naval invasion against Egypt was undertaken by forcing the Mendesian mouth of the Nile,
fortified by Ramses III.

266. Flame throwers were used on the Persian ships forty years before their use by the Tyrians at
the siege of Tyre by Alexander.

267. The Egyptian bas-reliefs of the temple at Medinet Habu show Sidonian ships and Persian
carriages comparable to the pictures of ships and carriages on the Sidonian coins minted during
the years of the invasion.

\textsuperscript{49} Velikovsky later rejected Irsa being Ezra, and identified him as the Persian official Arsames. Cf. \textit{Peoples of the
Sea}, n. 8 on page 27.

\textsuperscript{50} Nectanebo I (Ramses III) is doorgestreept.
268. The bas-reliefs of Medinet Habu show the reform of Iphicrates in lengthening the swords and spears and reducing the armor intended for defense.

269. The Jewish military colony at Elephantine still existed in 374 BCE and participated in the defense of the eastern border of Egypt. These professional soldiers were called Marienu by Ramses III, which is the Aramaic Marenu.

270. Semitic languages and the Palestinian cult of Baal made headway in Egypt at the time of Ramses III.

271. The Greek letters of classical form incised on the tiles of Ramses III during the process of manufacture (found at Tell-el-Yahudieh in the Delta) present no problem. They are Greek letters of the fourth century.

272. The inlay work and glazing of the tiles of Ramses III are innovations introduced from Persia.

273. The hunting motifs in the art of Ramses III were inspired by Assyrian and Persian bas-reliefs; some motifs of the Greek art also made their influence felt in the murals of Ramses III.

274. Other kings known by the name of Ramses, from Ramses IV to Ramses XII, are identical with the kings of the Twenty-ninth and Thirtieth Dynasties and their order of succession is confused.

275. The papyrus of Wenamon describes the conditions in Syria during the late Persian or early Greek times. In the days when the Testament of Naphtali was composed, the Barakel Shipowners Company mentioned in this papyrus was still in existence and owned by a son of Barakel.

276. The so-called Twenty-first Dynasty flourished not in the twelfth-eleventh century, but in the fifth-fourth century; it was established by the Persians as a dynasty of priestly princes in the oases of the Libyan desert for strategic purposes. It existed before, during and after the Twentieth (Twenty-ninth and Thirtieth) Dynasty.

277. The so-called Stela of the Exiled is the Egyptian record of the visit of Alexander the Great to the oracle of Amon in the oasis. The question about the exiles refers to the exiles from Chios; the question about the punishment of the murderers refers to the murderers of Philip.

278. The narration of Greek and Latin authors concerning this visit of Alexander is historical and true in many details; such is, e. g., the episode of the priest applying the word “son” to Alexander, or the oracle’s manner of answering questions by nodding.

XIII
279. The history of the ancient world, confused for a period of over one thousand years, reaches the end of its confusion with the time of Alexander the Great. Since then it is rendered in a synchronized form.\textsuperscript{51}

280. The problem of the beginning of the Iron Age in diverse countries is confused by wrong chronology. The Iron Age developed simultaneously in Egypt and Palestine.

281. The often made assumption that the royal signs (scarabs with cartouches) of the Egyptian kings do not present a valid argument for the time valuation of the strata in which they are found, is erroneous. In most cases they were neither heirlooms deposited at a later date, nor late counterfeits, but genuine gems as old as the strata in which they are found.

282. Archaeological work in the Near East is misled by the erroneous chronology of Egypt. In the excavations where the strata were carefully distinguished, as in Beth Shan, no strata of the Israelite period above the stratum of Rames II could be found.

283. The astronomical computation of chronology made by calculation of the Sothic periods is entirely arbitrary in many aspects. The Egyptian New Year followed the planet Isis, which is Venus, and not Sirius. The Canopus Decree of the priests of Ptolemy III Euergetes was concerned with the transfer of the New Year from the heliacal rising of Venus to a date regulated by the rising of Sirius (Sothis).

284. After the end of the Middle Kingdom, a change in cosmic scenery caused a reform in the calendar. During the time of the Libyan Dynasty (between the Eighteenth and Nineteenth Dynasties) another change was made in the calendar.

\textsuperscript{51} Velikovsky later found that the confusion persists until the time of Ptolemy II. Cf. Peoples of the Sea.
Affidavit

This exposé on nine pages I brought last week, on Tuesday 24th of this November 1942, to the National Academy of Sciences, 2101 Constitution Avenue, Washington, D.C., at approximately 3:45 p.m. I applied there to Mr. P. Brockett, the curator, asking to accept from me for secure keeping the nine pages which I proposed to put in an envelope, after he would, (if he likes) to inspect them. To introduce myself I showed my publications ‘Scripta Academica’. I waived in advance any responsibility on the part of the Academy, in case my exposé would be destroyed by fire, by an enemy action or be lost otherwise. I explained that the results of my research are of a far reaching importance for many fields of science. The curator refused to my asking, telling me that this is not the duty of the Academy, and such procedure is unknown. I insisted, explaining that this courtesy would be a logical duty of an academy; I do not ask printing in Proceedings, nor bringing my paper before a meeting; I am interested in securing my priority for the results of my research. I asked whether he would like hear an opinion of the President or Secretary of the Academy. He answered me that he himself is the Executive Secretary of the Academy. He suggested to me that I shall apply to the National Archiv. I replied that I understand that the suggested Institution is serving only as the Governmental Archiv, and would not accept a paper of a scholarly character brought by a private person. I was asked why I should not read about my research in a scientific society. I explained that the research with all its material is very large (The Mens now is well over five hundred pages, and it will take probably one or two years before it will be printed; another another book will precede in publication), and to bring the results without the material which served as proofs, would be unadvisable, especially because of the extraordinary character of my results. There can’t be nothing in the Statutes of the Academy, why my envelope should not be accepted. How would he act, if not my humble personality, but a Copernicus or Newton would apply with a similar asking? - But in spite of all arguments - I could not be more eloquent, and to keep better the exact measure in all respects, - I did no succeed in this long and friendly conversation. Then I asked him to write me his refusal, and he noticed my address in N.Y. But up till to day I did not receive any notice.

signed before Notary

Rose Richardson Mandel, Dec. 5, 1942

certified by Supreme Court Clerk DC. 11, 1942

I present here some results of my research based upon inquiry in different material, historical, geological, physical, geophysical, pertaining to folklore and to history of religions. A full description of results of my research will appear in book form, and there the material will be presented in full.
The results to which I arrived, appear to be of fundamental importance to science in all its branches.

To begin with, our Earth collided (contacted) in the fifteenth century before this era with a comet. The head of the comet exchanged violent electrical discharges with our planet, and also with its own tail. The Earth changed the poles, south becoming north, changed axis, changed the orbit of revolution changed speed. As a result, the year that consisted previously of 260 became 360 days (our orbit was approximately that of Venus today). The moon changed its orbit, and the month of 20 days became of 36. Iron previously neared to the core of the Earth, appeared in upper layers. Nefit poured from sky and built the present deposit. Meteorites fell in abundance. Harras in desert of Arabia are meteorites fields. Lava streamed on the surface of the Earth not only from volcanoes, but also from clefts. Continents and seas changed places. Rivers disappeared, others appeared, still others inversed their direction (i.e. Jordan, that flow previously to the Mediterraneum, Dead sea being not in existence). A major part of human kind perished. A double tide of immense high swept seas and continents. In general conflagration woods burned down, rivers boiled; magnetic storms reached degree hurtful to bioplasma; immense hurricane accompanied the change of rotation of the Earth. In places struck by electrical contact with the comet nitogren was converted into (deposits) of saltpeter. Air became filled with clouds of carbons or hydrocarbons, and Earth was enveloped in them during a number of years. These compounds of carbon precipitated slowly in the process of cooling.

South pole which was approximately between Greenland and Northern America, or in North America, changed its place by approximately 159 degrees. Its former place might be found by locating the center of the later ice-age-cover; ice age did came to close at that moment. The magnetic pole previous to that contact, or still earlier was probably coinciding with the geographic pole,

The comet changed its path too after the electrical contact with the Earth, its orbit became a stretched ellipse, and was semi-planet semi-comet. After 50 or 52 years it contacted for the second time with the Earth, and the Earth was brought out of rotation. This encounter in the fourteenth century before the present era, had similar effects as the previous contact. But there was no permanent change of direction of rotation, nor change of north and south. Since 34 centuries the sun rises in the East. After the second encounter the Earth was endangered every 50-52 years by this new planet of the solar system: this is the planet Venus. The above recorded calendar changes are effects of the first and the second encounter.

In the ninth century Venus moving on a stretched ellipse contacted with Mars, brought Mars out of its path, and repeated this contact for a number of times, and since then has Venus occupied approximately its present position in the solar system, and ceased to endanger the Earth. But Mars brought out of its orbit became the dangerous neighbour of the Earth. In -747 the Earth contacted with Mars. The peril of contact repeated itself every fifteen years. At midnight March 23, -687, Earth contacted again with Mars. The catastrophe was of lesser dimensions than that of 14th or 15th century. Still Earth was brought out of its rotation, changed its orbit from one of 360 days to 365 and a quarter somewhat different days; the moon changed its orbit from 36 days to 29 days. Poles were displaced, Europe moving to the South, but the north and south poles did not

52 CH: Naphtha.
exchange direction. Mars took its present position in the solar system. In contacts with Venus and Earth, Mars lost most of its organic life; it acquired some of the atmosphere of Venus (carbohydrate) and lost some of its atmosphere to our planet (probably argon and neon). Mars should be examined as to the presence of these rare gases. As a result of these contacts Earth, but also Venus and Mars are warmer than the solar radiation can account for. Anomaly in movement of Mercury, as well as the precession of the earth can have their origin in these displacements of planets.

Before contacts with Venus and Mars, our Earth suffered a number of cataclysmic contacts. One of the earliest was when the Earth attracted the Moon, still in memory of human kind. Thereafter passing in Saturn atmosphere the Earth was drowned in hydrogen, which drifting through oxygen of the Earth, became water. Thereafter Earth suffered heavily when Saturn and Jupiter collided, and the Earth passed dangerous close to Jupiter. Electrical contacts, change of calender (year, month, day) happened already at that times, in the fourth (?) and third millenia before the present era. Gigantic forms of life which existed at that time, only in few exemplars survived these catastrophes, but were still in existence 34 centuries ago, at the contact-cataclysm caused by Venus. The teaching of Darwin which supposes but slow changes in life-forms is wrong. Gigantic reptilia ceased to exist not tens of millions of years ago, but they lived still a few thousand years ago; they perished in catastrophes, and those that survived could not exist in new conditions, especially because of changed weight of all objects, and of their large bodies, not capable to move, esp. during gravity. Brontosaurus was not a reptile, as it is thought, but a mammal. Humankind survived in races of small kind. Gigants were exterminated. The buildings of cyclopic size-stones were possible chiefly because of different weight of all objects before the contacts. The theories of slowly development of mountains and valleys under causes like rain and wind, are wrong. The earthquakes are the post-effects of the contacts and are readjustments of displaced masses and twisted strata.

This my research is based not upon speculations but primarily on historical data; its results, better to say the results of the cataclysms can be proven by many different ways, astronomical, geological, physical, historical. As to the last it should be taken in consideration that the world (political) history of the thousand years, starting with the catastrophe of Venus is entirely confused. This catastrophe caused the end of the Middle Kingdom in Egypt. The Reconstruction of the Millenium which closed with arrival of Alexander into Egypt is prepared for print under the name ‘A chimerical millenium’. The manuscript dealing with the here recounted cosmic revolutions is written and bears the name ‘Worlds in collision’. The other research was conceived in its all main features April 1940; the present research in October 1940; Some results, (concerning Mars) and also the concrete formulating of the fallibility of Newton’s teaching of gravitation were brought to clarity in March 1942.

As to this here mentioned fruit of my research I like to point out: the planetary bodies at contacts were not crushed (this possibility is not excluded), but exchanged electrical discharges. The bipolarity is well balanced in the planets; bipolarity of comets is divided in tail and head. This is the cause of approach and retreat of comets to and from the sun.

The behaviour of our earth, Mars, Venus, Moon, and other planets at contacts, shows clearly that there is no such phenomenon as gravitation. The mathematical proofs of Newton are completely erroneous. He admitted a primary push or pull that brought the moon into motion on a straight
line; he admitted gravitation force of the Earth that tries to remove the Moon from the straight line motion. An object falls near the surface of the Earth with the initial mean speed of 16,1 feet in the first second. The moon is remote from the Earth’s centre sixty times the distance of an object on the Earth surface from Earth’s center (Earth’s radius). The initial velocity of fall at the distance of the moon should be 60 times slower, 16,1 feet in a minute. 15,43 feet in a minute is the ‘fall’ of the moon from the tangent of its orbit. The approximity of these two figures 16,1 and 15,4 is but accidental. There is no logical reason to count the velocity of fall by seconds, which are but human, not in nature preexisting time measure. Reckoning by two seconds the velocity of fall would be 48,3 feet here, and the same amount in the two minutes at the distance of the moon; and the fall from the tangent line is but 30,8 feet.

The fallacity of Newton’s scheme is obvient also in terms of mechanics. The primarily force was not infinite in its strength as pull or push. It does not act anymore. The Earth on the other side pulls permanently. In many different elementar ways it is possible to show that under such conditions the permanently acting force of gravitation would let the Moon approach the Earth in a quick spiral.

As the computation concerning the Moon caused Newton to postulate a general law concerning the whole solar system and the whole Universe, it, the law of gravitation is wrong in all its applications. Velocities and masses computed with its help are probably wrong in many instances.

There exist attraction and repulsion. Electrical phenomena are responsible for attraction and for repulsion. To explain the fact that objects close to the surface of the Earth are more attracted than repulsed, we owe to admit that a high layer in the atmosphere repulses what the solid portion of the Earth attracts. The phenomenon of the tail of the comets repulsed from the sun, of polar light, of zodiacal light will find here their explanation. The phenomenon (why not questioned at all?) that Nitrogen lighter than Oxygen does not move to the higher level in the atmosphere, though the air is a mixture and not a compound, is another fact of disobedience to the ‘law’ of gravitation. Also water, in small drops, is lifted then dropped by electrical charges and discharges. The radio-layer in the atmosphere is probably the attracting and repelling medium acting contrary to the ground. The moving of negative electricity into the ground does is due to the charge of the Earth. At near distances special law acts in magnetism (also electrical phenomenon) and electricity. Levitation is conceivable. Perpetuum mobile theroretically possible. Discharge from upper layer might be exploited, also with destructive purposes. A flight to interplanetary space in defiance of gravitation is thinkable.

Electrical charges in the Earth and its atmosphere are chiefly induced and sent by the Sun. Sun sends two kinds of charges, positive and negative. Heat and light are transformations; (transformation into heat is achieved by passing media [through?] coolness of summits, but the heating of Moon surface must be accounted for, before accepting the last hypothesis.) Cosmical rays which reach the Earth have probably their origin in the Sun (and also in other cosmical bodies). They arrive during the night or during sun-eclipse, because they are moving not in straight lines. (Their efficiency on malign tumors should be explored by sending sick persons to a mountanous sanatorium near the southern (or northern) magnetic pole.)
Whether elements mutated under influence of electrical contacts of cosmic dimensions (in cataclysms) is difficult to ascertain or to deny and laboratory work will give reply.

The building of the solar system as revealed by grandious experiments exhibited by the nature in sight of the historical man, is composed of a two fold process: distributing of (solar) energy and arrival of new members from interstellar space, collisions, violent discharges. If an atom is built as a microcosmical model of a solar system, elements arriving from interatomic space, also travelling from one atom to another must be in existence. Contacts between elements, increase in numbers of electrones, polarities, change of orbits, all must take place. Change of orbits and emitting of energy at these moments were supposed by Bohr.

This statement I like to have guarded by an Academy of Sciences. I wrote it the night before leaving at an early hour for Washington where I shall try to leave it at the office of the Academy (there) As the largest part of this statement I wrote directly by the typewriter, I concede that a better shape might be given to the results of my research and to the physical conclusions deducted from those results. The few lines about heat had not to be written at all, at present. In the Mns the research is put in many hundreds of pages, and the physical deductions, meanwhile, are put on some tens of pages. There are problems esp. concerning ‘weight’, ‘attraction and repulsion’, magnetism, cosmic rays, heat, and I would like to experiment as to come to farther answers.

November 23th, [19]42
[signed] Dr. Im. Velikovsky
Chronicles of Discovery

Marked June 25, 1940

June 20. First time told Elisheva (on Riverside Drive walk) of my idea that coming toward the Israelites leaving Egypt, the conquering Hyksos. The same evening, in the library, I ascertained that this is true. The history must be moved by 700-800 years.

June 21. Read Josephus Flavius Against Apion.

June 22. In Metropol. Mus. of Art Library. Found in Gauthier the name of Tahpanheth. Looked for the first time in T. El Amarna letters by Knudtzon. The name of Abdi-Ashirta, called also Rib-Addi.

June 23. Till afternoon made lists from O.T. Afternoon in the library. Became satisfied from Kutdtzon T A that the time is of Jehoshaphat, as also expected.

June 24. With Elisheva in the Hebrew Division of the Library (42nd Str.). The Amalekites were summoning the Israelites to slavery (upon becoming masters of Egypt).

June 25. Afternoon from 3 to 9:45 in the library. I found what I also thought the evening before. Haremhab was placed at the head of Egypt by Sennacherib. I also found confirmed what I thought that either Sethos or Ramses is Necho. By comparing the material about Nebkadnezzar and about Ramses, that Ramses is Necho. The name is mentioned also in Assyrian documents and also in Egypt. “From Exodus to Exile” (the name of the book to write).

June 26. In the library till 3 pm (forgotten to go to dentist) I met Federn. Did not tell him the subject of my work. I completed the search. Now to classify the material. Cuneiform in the letter of El Amarna understandable because this was the time of Assyrian advance toward Egypt.

June 27. Queen of Seba (=Hatshepsut). At once lookup in Encycl—acc. to Jospehus, she was queen of Egypt. And what kind of theories. See Koran—I was depressed today and I was weary. Now I read a chapter in Psalms. — It was given me to solve also this riddle (Q. Sheba) and to know that I am building on a firm ground.

June 28. We have sent the children to a camp. In the evening I came afoot to the library and Elisheva also came. On the way I thought that the letter of the widow of Smenkhkare fits with the story of the Seven Against Thebes and so I learned to know who fought against Thebes. In the Library, Elisheva found the text of the travel of Hatshepsut to Solomon. This evening we shall not forget. Like drunken [on] wine we sat the evening in the Central Park on our way from the library.

“To remain here till the morning, and in the morning to go again to the library,” said Elisheva. “The life was not easy with you but I can say as Wilkie’s wife (he was nominated that day and nothing to envy her) that the life with you was an adventure.”
We spoke about my father and mother. We felt as if the world opened itself before us. It was fated that we remained on the sixth of April here. Who would believe that in one week all this research was made.

Not to tarry even for a day. To return respect (glory) to the nation. Sheilok situation. We have suffered for [being identified as] Amalek.

Nov. 7, 9:40
Less than two weeks ago I was reading the book of Joshua, as I undertook to read (a part of the chapters possible for the first time, or for the first time since childhood) up to Sam. II incl. for the chapter Hyksos-Amalekites.

As I came to the chapter 10 of Joshua, the reading instantly caused the association: the sun and moon staying at the sky and the stones which fell—a celestial body passed near by.

I read once that in Koran there is a legend that hot stones fall on sinners (with inscribed names)—I brought this in connection.

I read about Harras in Arabia, scorched by fire, I brought this in connection.

I decided: a change of the movement is possible at an impact like this. And I thought about the ice age. I knew quite nothing about it. I read about ice age. My supposition was right. When it was, why it had the shape (Am. & Eur. but not Asia), why it ceased—no satis. explanation. I measured the center. I found it to be near the Baffine. Then I thought—and where are the magnetic poles? Are they not in vicinity. I went again to the atlas and I found them in vicinity. I explained to myself that the sun is magnetizing the earth, so the poles are the result of the previous age. And now? Must be some other point—between the pole (or the point near the pole where the sun just reaches) and the magnetic pole. Thus exists at 78 degrees n. larg. (Maybe this was the ground of complicated influence?) The pole was previously in America.

At the same time I looked for comets in the old time. The list (Roscher or Wissowa) comets in ancient time started with a later time. I looked in the legends of all nations, the Sacred Books of Orient, Golden Bough—no mention of meteorites. Something in China but later. But I knew I must find it—because at the time the sun stopped, the night side of the earth had to experience the hardest blow and be in vicinity of our earth. In the legends of the redskin Indians I found about the hot stones falling from the sky. It looked like a description of a comet.

I had to look in the old description from the time before Columbus. I knew nothing about the Indians, but always was interested to have in future a chance to know what was their culture at the time Columbus came. I looked at the catalogue. Thousands books. I chose a list of them. I got nothing interesting. Next day I ordered another book of my list. It was Brasseur de Bourbourg. I found what I knew I must find. The traditions of the Mexicans from before Columbus are full of memories about great catastrophes.

The idea that meanwhile came to me that some—possibly 65—years before the earthquake and eruptions at Exodus were due to the same cause: now the comet returned to continue the destruction. (That an earthquake was at the Red Sea I found since April; together with the idea of new appearance of the Dead Sea it was the beginning of my paper; then I looked for traces in
Egypt, up to - after denials on the part of the Egyptologist that any earthquake was—I found Ipuwer witness).

In Mexican sources I found that there were three catastrophes. Their identification as I possess from Brasseur de Bourbourg has satisfied my desire to find these witnesses. I have to read the sources. Meanwhile I write the chapter.

The sky had to change the constellation-view. I found it in Mexican legends. I looked at Job and found it too.

The time-measure underwent a change together with the new order in the axis, orbit, swiftness. This could be the cause why the age of the patriarchs and their contemporaries was longer and just with Joshua this age over 100 ceases. A year was shorter. Maybe under new influences the life is really shorter?

This issue may be the cause of the mistake of some 600 years in the chronology, which I discovered previously, and which let me identify: Hyksos-Amalekites. Saul freeing Egypt from slavery, Queen Seba-Hatshepsut, Shisha-Thutmosis III, El Amarna letters-letter of Jehoshaphat and Ahab or Joram, Sanherib and the time of Horemhab his soldier, Ramses and Necho, etc., etc.

Now the Atlantide disappeared at one of these two catastrophes. Arabia and Africa ceased to be lands of cultivation. Now I knew that hot ... in Arabia-Gulf was the center of the catastrophe.

And neft? May be it was sprayed by the comet?

That Europe and N. America have culture— they owe to the comet.

That we have still a moon and the happy circumstance that at the first catastrophe was full moon, (and in Mexico was day, at the second, it was beginning of the month (moon afternoon).

The reading of the book of Brasseur de Bourbourg brought me to the idea that Solomon and Hiram were sending their ships to America (Tarshish). I read about Ophir and Tarshish. Would it be at Arabia or in India, they had sent caravans; things and animals that were brought from there exercised the same astonishing effect as the things and animals brought by the conquerors of America. And silver, peacocks (maybe brought just by Phoen. from America are now in Africa) apes (on the pictures of Hat-shep-sut I hoped to differentiate what ape this was from O.W or from the N.W.)

Dec. 8. 940.

More than a week ago, when two parts of the chapter about paleont. were already written, I took the liberty to say and repeat: not all of the huge animals in the hall of reptilia (extinct) are reptilia, there must be (the Brontosaurus) mammalia. As the destruction was in historical times they must not be animals of millions years ago. I saw these animals only twice more than a year ago. The story of mutation in Indian tales was in my eyes a reflect of the history. So I told to Elisheva and children I am sure to find in Brontosaurus signs of mammalia.

I met with Elisheva and Ruth in the museum, Saturday a week ago. The pelvis, the jaw and the legs— without that I read any book about zoology at all or knew the signs of mammalia— from
the common sense only—were for me the signs I found. Now I wrote the chapter about Brontos.
(another animal too) as mammalia.
During the week I read a chapter in one of the encyclopedias that there are extinct mammalia—
mammoth and mastodon. Mammoths that were found frozen and in condition of preservation in
N.E. Siberia—I could instantly explain: they were killed by the comet and their bodies were few
hours later brought into the new polar circle.
I read that Mastodont is a name given by Cuvier. I went to the geol. library and read Cuvier, one
chapter. Thus he begins: Mammoths were found in North, their corpses did not decay; they were
killed just before their bodies were frozen. But they could not live in a cold desert. A common
ground was for the killing and the change of temperature—a catastrophe.
He is right! Now there is also found by me the cause of all this; the cause that killed (possibly
asphyxiated) the animals and turned the land to be cold. —I suppose in N.E. of Siberia rich
remnants of culture may be found.
Since the second part of October (about 20) when I read the book of Jehoshua and at once
returned to read two lines before the “sun stopped” about the stones that fell, I realized that...

Dec. 8. 1940.
Since Friday a week ago it became clear that 7 days of a week are 7 ages; the meaning of a rest
from creation—that the creation went through all the time up to Exodus. The changes in the
world were the days (Mex.= the suns) of creation (for this reason all history before exodus—in
Breshith). But it came a new catastrophe (in the days of Jehoshua)—this was neglected, just
because it was promised, no new catastrophe will come (in Aggada—the stones of Red Sea were
suspended and fall in the days of Jeshua). The prayer of Saturday evening expresses the idea:
Sabbath is the rememberance of the Exodus, of the new calendar, of the Creation. What it means?
All the three started together.

Also in Saturday evening prayer (Hardala) the same idea is expressed.

Now I realize that it could really be a double tide—due to the influence of the comet-gravitation.
If so—the Jews have all the right to think themselves a chosen people: they were rescued from
salvery and from peril at one time. Would the sea at Dunkirk open itself before the British and
drown the Nazis—would not the British had the right to believe they are chosen.

In some 10 days a comet will appear in the sky. Who knows whether she will not strike with
stones all over Germany? This would be a Divine participation in this struggle.

I know what can happen to our earth from a comet. I would like to have the possibility to write
my book to the end.

One or two days during this week I read the legends of creation of Jews. Now the stories of huge
animals, fishes and birds seen by travellers have a true part.

The whole idea of very slow development is not exact, because this theory (Darwin) never reckon
the catastrophes. The piece of coal must not be of millions of years; because it could burn 3400
years ago. New conditions had to produce new forms. And then the idea of a reserve in the
plasma (and in seed) came to me.
Amusant is the story in Agada that the Brontosaurus (Behemoth) in pregnancy the “last year”
could not go on feet. This what I expected when I wrote few days before that due to the increase
in weight these huge animals had to perish.

Also the story of a mortal battle battle between Brontosaurus (Behemoth) and the bird Ziz
remembered me the scene I saw in Museum last Saturday as one extinct devoured another one.

These animals were remnants of a previous epoch, just as the giants the spies found in Palestine;
the immigrants of Mexico found there; and recalled by other peoples too.

Geology is “writing and arithmetic.” The millions of years—as Cuvier says—“a century is of no
value.”

(Darwin I have not read. I shall read him now.)

Dec. 8. 940.
Since two or three days I told Elisheva that it seems to me as if the planet Venus is the head of
the comet that struck our earth many times and after one collision turned to go through the sun
and became a planet. What was the suggestion? In different sagas I found the same idea. (Beside
the snaring of the sun)—a stone is thrown in the sun, and a crown, or a piece or an eye (Egypt)
falls. It was mere supposition. For the new star in the horizon of Mexico and Egypt could be
Sirius, after the horizon moved southward. But already the confusion in Mexico and in Egypt
between Sirius and Venus was a problem. Venus fumed—I found it twice. At first I thought the
comet passed through Venus too, and later I came to the above idea.

Yesterday morning I remembered that there exists a legend that a goddess came out of the head
of Zeus. I thought it was Aphrodite, in any way I concluded: this is the same story, the goddess is
the new planet. Now I was sure. Then I asked Shulamith, she shall be reading the Bible (she was
read the moment) look to find about a new star. She told me at once about the passage of Isaiah:
Hillel Ben Shahar wished to be over the world and fell: the explanation she learned: it was the
morning star (Ben-Shahar). So I had the new proof; I was without doubt. I said to Elisheva: I
suppose the light of Venus must be not at all reflected, in any way Venus must be hot, after only
3400 years passed since she went through the sun. I went to the library and in Encyclop. Brit. I
could read (Venus, Planets) that she emits heat, and the explanation I found (possibly she turns
quick?, or she turns once a year?) was not plausible. Now our earth—similar to Venus—has done
the same development.

One moment is a problem for me. When occurred this going through the sun, and “break up” of
the sun? After Exodus, or after Jehoshua? In first case in days of Jehoshua the comet was already
without its head.

I hope to find the answer in the story of forlorn eye of Osiris (I have not yet read it) or in other
sagas.

Since one or two days I intend to think that what happened before the Exodus and in the high day
at Red Sea were two impacts with the same comet—one descending to the sun and one on her
return.

Velikovsky, *Cosmos without Gravitation (and other early writings)* (PDF Cor Hendriks, febr. 2018)
The spots on the Sun—are they not smokes from nafta burning, but not escaping, some process there return the composition to nafta once more?

The semi-darkness during 25? years (Mexico)—Desert (no sun in some variant)—due possibly to the same effect.

It is good that the planet Venus is smaller (a little smaller) than our earth. It disturbed the way of our moon, but could not capture it.

Dec. 8. 940.

Today I think about the second rule of Kepler I read yesterday. How may it be that the mass and the speed of planets (of this system?) are in an invariable ration, without regard to the magnetic forces and the place of the axis and the magnetic poles? I suppose the rule may be good only for a planet in her first age.

Since weeks I was eager to find in Hebrew sources an allusion to sun going from West to East. I was directed by the book of Thomson to Gaster; I went to 42str—but the two allusions were of no value. I wrote from Concord. west & east;

Today I asked Shulamith, (I was encouraged by her yesterday’s answer) whether by reading Bible she will look to an allusion to sun rising from west. Few hours later I found in the legends of Jews—when I already was disappointed to find an allusion to what I looked for, that—the last week before the Deluge the Sun rose in the West. And it good that it is written—the deluge was combined with disruption of the run of the earth. I am under my finding done few minutes ago—and already announced to Elisheva, Shulamith & Ruth.

Dec. 8. 940.

Two days ago reading about Typhon that he ruled in the days of great perturbances; and that he was smitten by Zeus and is drowned in the sea; I came to the idea (an idea came to me) that typhon is possibly the name of the pharaoh who was smitten and drowned in the sea. The struggle between the God and the pharaoh; and the struggle between the sun and the comet were identified in the mythus. So Typhon became the name of the devil of storm, comet, volcano; but it was originally the name of the pharaoh. Now I have to find in the lists of the pharaohs of the time of Exodus this name. “Tymoetheus” begins the story of Manetho-Josephus. He was possibly the next pharaoh, as the invasion of Hyksos followed the drowning of pharaoh? Or this is the other version of the name? The other thing I understood was: the last change in the direction of movement was during the comet of Exodus. Zeus in his struggle with Typhon has the time to rob Europe from Phoenicia. Europe-Erev-Evening. It was not alight hear on the side of Zeus: the west turned to east. Kadmus—the brother of Europe—came to Hellas; this is the time of general migration. The new dwellers of Hellas were from Phoenicia.
How I Arrived at My Concepts

I have often been asked to explain how I arrived at the concepts expressed in my books. I shall try to tell the story as briefly as possible.

I think that it was at my fortieth birthday (1935) that my father gave me as a present the Hebrew book by Bar-Droma, Negeb (“The South”). Busy as I was with medical practice, I did not read the book, and only opened it at a few places and chanced to read that according to somebody’s view, Mt. Sinai was a volcano.

In the summer of 1937 I was in Paris to read a paper at the International Psychological Congress. In the Bibliotheque Nationale I read the articles of Freud in Imago about Moses. When in the Spring of 1939 the articles appeared as a book, Moses and Monotheism, I bought a copy in a Tel-Aviv bookstore. The reading of this book brought me to the surmise that pharaoh Akhnaton, who Freud thought to be the originator of monotheism and a teacher of Moses, was in fact the prototype of Oedipus of the Greek legend. In a few weeks I had a rather convincing list of supporting evidence, but the meager Tel-Aviv library did not suffice for the kind of research I needed to do. I planned a sabbatical year in the United States to write a book on “Freud and his Heroes.” I arrived there with my family on the eve of World War II. The next eight months I spent in the Public Library on Forty-second Street in New York, reading on the subject, mostly the Egyptological material on the el-Amarna period. At the very beginning of these efforts, the Egyptologist Otto Ranke (whom I met at the Metropolitan Museum of Art in New York) gave me some guidance, yet tried strongly to dissuade me from pursuing my subject. However, I persisted.

At the beginning of April, 1940, we intended to return to Palestine, but at the last moment decided to remain a little longer. About that time, discussing with Dr. Gruenbaum, a rabbinical scholar who came to see me at our home on the fifth floor of 5 Riverside Drive, I came upon the idea that the Dead Sea might be of recent origin, because in the story of Sodom and Gomorrah the place is referred to as a plain. The idea had already visited me while still in Palestine, and at that time a check in the Encyclopaedia Britannica led me to an article by W. Irwin in the Geological Journal, printed in England. The calculation of the age of the sea based on the accumulation of salts in it showed that the sea, actually a lake, was not a million years old (the Tertiary period), but only fifty thousand years. Revising these figures (taking as a base for calculation different salts and considering other sources of accretion besides the Jordan), I came to an even more recent age for the Sea. During the discussion that took place with the visiting scholar, I remembered that in some passage dealing with the Exodus the Dead Sea was referred to as recently created. I also remembered the sentence I had read in Bar Droma’s book on the Sinai and surmised that the Exodus took place in catastrophic circumstances. The story of the plagues and of the passage of the sea appeared to me as a description of some calamities in nature.

We decided to extend our stay in the United States. I looked for an Egyptian reference to natural catastrophes. In the textbooks on Egyptian history nothing was mentioned. I read the pamphlet of Charles Beke53 (the author of the idea referred to by Bar Droma), who maintained that Mount Sinai was a volcano. At the occasion of a small social gathering at the home of Dr. Paul Federn,
the renowned psychologist, I put the question before a visitor, an Egyptologist from Vienna, and before Dr. Walter Federn, also an Egyptologist, the son of Paul Federn. The former asked the latter—where is the reference about the Nile turning to blood? (I did not wish to disclose my thesis and was all ears). Walter Federn referred me to a book by Junker (under whom he studied) and Delaporte. The next day in the library on Forty-second Street I read the passage: it referred to words of one Ipuwer. Next I needed to find who Ipuwer was and locate the complete text.

At the Metropolitan Museum of Art I asked the help of Dr. W. C. Hayes. For over an hour he searched in the staff library room and, finally, I myself found on the shelves the text and translation of a papyrus stored in Leyden, Holland, since the early nineteenth century, published by Alan H. Gardiner in 1909 under the title “Admonitions of an Egyptian Sage.” Studying the text, I became convinced that I had before me not just a story of a social revolution, but the Egyptian version of the plagues described by an eyewitness, and it was surprising to me that Gardiner had not observed these similarities between the Ipuwer text and the Biblical account of the plagues accompanying the Exodus. Even the wording is similar in both texts—later, in *Ages in Chaos*, I published a detailed comparison of the two sources. This was about April 20, 1940. But the true advance came a few weeks later when I realized that the Amu, who were described as having invaded Egypt while the country lay prostrate, were the Amalekites, met by the Israelites moving out of Egypt, as narrated in the Scriptures. A book on the Amalekites by Noeldeke was not in the Forty-second Street Library (one of the greatest in the world) and I went for the first time to the Columbia University Library. From Noeldeke I learned that the Arab authors of the Golden Age of Arab literature claimed that the Amalekites, coming from Mecca, had invaded Egypt and ruled over the country for several centuries at some ancient time. Noeldeke disbelieved this persistent tradition, but for me it was a strong support to what I considered a breakthrough.

This was in June 1940, and in a few days the entire plan of *Ages in Chaos* was born in my mind. I am myself surprised when looking through my one-line notes made in the excitement of the discovery, that in a couple of days I had already concluded not only that the Eighteenth Dynasty in Egypt must be contemporary with the kings of David’s Dynasty, but arrived even to such a detail as that Haremhab, assumed to be the last of the Eighteenth Dynasty, was actually an appointee of King Sennacherib, the Assyrian king—a difference of over six hundred years between the accepted chronology and my new time table.

I knew of course of the el-Amarna tablets, found in King Akhnaton’s short-lived capital, that contain the royal correspondence of the late Eighteenth Dynasty, but I had never read the text of the tablets. I remember going to the library of the Metropolitan Museum of Art with the expectation of finding in those tablets letters of king Jehoshaphat of Jerusalem, of king Ahab of Samaria, and of the kings Ben-Hadad and Hazael of Damascus—and I found them there. Similarly I went to the library on Forty-second Street, and Elisheva, my wife, who participated with me in my searches, brought from the shelves the description of the “Punt” expedition of Queen Hatshepshe (Hatshepsut) who, according to my calculations, must have been the Biblical Queen of Sheba. The historian Josephus Flavius described her as the queen “of Egypt and Ethiopia.” I expected to see in the reliefs reproduced in that book how the Israelites of the

54 T. Nöldeke, *Über die Amalekiter* (Göttingen, 1864).
55 I edited and published in 1923 *Scripta Universitatis*, that served as the beginning of the Hebrew University, and there was a scholarly article by Mahler of Vienna on the chronology of the el-Amarna period.
time of Solomon looked, and almost with trepidation I opened the volume. Next I expected to see the treasures of Solomon’s temple as the booty of Thutmose III, who followed Hatshepsut on the throne, and in the historical atlas of Egyptian archaeology by Wreszinski I saw pictures of the sacred furniture and utensils of Solomon’s temple, even in the same numbers as described in the Scriptures. All these finds were made by me in a matter of days in June 1940. At that time I thought to call the book “From Exodus to Exile” since the reconstruction at that time reached the fall of Jerusalem and the Babylonian Exile. But I had already realized that the “Forgotten Empire” of the Hittites was but the story of the Chaldean kingdom. I thought that I would finish the book in a matter of a few months.

Early in the fall of 1940 we moved to 525 Riverside Drive to a small apartment on the twelfth floor, overlooking the Hudson.

There on about October 20, in the afternoon, sitting at the window of the kitchenette, I read in the book of Joshuah. I was struck by the fact that the verse in which the sun and moon are described as disrupted in their motion was preceded by a verse telling of great stones falling from the sky. In the library of Columbia University, which I visited several times each day for the next ten or twelve years, I made a list of books on Chinese and Mexican lore—east and west—to find out whether a disruption in the motion of the sun is mentioned there. From the long list made, one of the first books chosen was by Etienne Brasseur de Bourbourg, a missionary of the last century, and the first decipherer of a few Mayan hieroglyphics. A passage in the book attracted my special attention—it told that St. Augustine wrote that Varro (a learned Roman of Caesar’s time whose books are not extant) referred to two authorities who claimed that in the time of Ogyges Venus changed its form and orbit. It was not more than two weeks, probably less, from the time that I realized that the catastrophes of the times of Moses and Joshua must have been not local but global, that I also realized that Venus must have played a decisive role in the events: I already understood that Ogyges was the Biblical Agog, the king of the Amalekites, mentioned in the blessing of Israel by Balaam in the days of the conquest by Joshuah. For the next ten years I worked simultaneously on *Ages in Chaos* (a reconstruction of ancient political and cultural history) and *Worlds in Collision* (a reconstruction of natural events).

Early in my work I became convinced that not only is the cosmology of the solar system very different from what is thought, but also the celestial mechanics that claims that only inertia and gravitation participate in the spheres above will need re-examination and so also the Darwinian evolution based on the principle of uniformitarianism or gradualism.

Soon I became aware that I had precursors—one was William Whiston, successor to Newton at Cambridge, who at the end of the 17th century claimed that the Deluge had been caused by a comet that was seen in 1680. The “miracle of Joshuah” however, Whiston dismissed as a worthless piece of folk fantasy. He considered that prior to the Deluge the Earth’s axis of rotation had been perpendicular to the ecliptic, and therefore there were no seasons and that the year had exactly 360 days. Ignatius Donnelly, a member of the House of Representatives, in the later part of the 19th century wrote a book, *Ragnarok*, in which he claimed that in prehistoric times a comet had passed near the Earth and showered till over that part of the globe that happened to be turned toward it. A. Olrik, a Scandinavian author, wrote another book under the same title. Neither one

56 The book has the title *S’il existe les sources de l’histoire …*
of these two gave any indication of being aware of the work of Whiston. Georges Cuvier, the famous paleontologist, claimed catastrophic interruptions in the history of the globe but made sarcastic remarks about Whiston. Dr. Walter Federn drew my attention to the work of the Viennese engineer Hoerbiger who claimed that thin ice pervades the universe, causes shifts in orbits, the repeated captures of successive moons, and their disintegration millions of years later.  

With Whiston I agreed as to the Deluge having been caused by a comet; but I had much more to say: Saturn was disrupted by the close approach of Jupiter, and exploded; the explosion of Saturn engulfed the Earth and other planets. This is the story of Tammuz of the Babylonians and of Osiris of the Egyptians, and of Kronos of the Greeks. Centuries later Venus was born by the fission of Jupiter, which collected much of the material dispersed by Saturn. I concluded that Saturn must be made up largely of hydrogen, a fact I soon found confirmed. From Donnelly and from Bellamy, a follower of Hoerbiger, I used a few literary references to the age of darkness and gave credit in each case.

Ages in Chaos occupied most of my time: soon I revised the chronology of ancient history up to the time of Alexander of Macedon’s arrival in Egypt. For a year and a half I did not tell Walter Federn of my thesis. I showed it to Dr. Schwartz of the Oriental Department of the Public Library, Forty-second Street, and he thought me wrong; besides, he advised me to write in some language I knew well, rather than in my ferocious English. I discussed my work with Ralph Marcus, translator of Josephus Flavius, in his office at Columbia University, and he, though very friendly, advised me, too, to return to my profession and leave history alone. I corresponded with Prof. Harry Wolfson of Harvard and sent to him an early version of Ages in Chaos and he gave it to Prof. Robert Pfeiffer. Next I came to see both, and Pfeiffer discussed with me my history and found me knowledgeable, yet reserved judgment.

One winter night, I think it was in January 1942, I told Walter Federn of my reconstruction, and from that time on he was of great assistance to me with his knowledge of the immense literature on Egyptology. He opposed me consistently but never refused information. I had no similar help from any scholar in cuneiform, though Prof. I. J. Gelb of the Chicago Oriental Institute wrote answers to occasional inquiries.

One morning in 1942 I typed (in erroneous English) a number of pages, and went to Washington D.C. There I had a discussion with Prof. F. R. Moulton, co-author with T. C. Chamberlin of the tidal theory of origin of the solar system, and at the National Academy I tried in vain to persuade the Secretary of the Academy to accept my essay for safekeeping. Returning home I had my essay notarized, and in the court downtown had the court clerk authenticate the notary’s signature.  

I also devised an experiment to find whether the velocity of light would be influenced by the motion of the illuminating or of the illuminated body. I sent it to Prof. Paul Epstein of the California Institute of Technology, but he assured me, though he did not persuade me, that the issue is settled without an experiment.

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57 See I. Velikovsky, “Precursors,” Kronos VII.1, 48-55.
58 See I. Velikovsky, “Affidavit.”
Occasionally I would find that some other author had already come to one of the aspects of my theory. Once, I remember, in the library on Forty-second Street, I read the book of an author who advanced the idea that the Pyramids were built to serve as shelters against natural catastrophes, an idea I had already put into writing several years earlier.

In 1945 I put together *Theses for the Reconstruction of Ancient History* and gave it that summer to a printer in Canaan, Connecticut. I published it as a monograph in *Scripta Academica*, a series I started with the funds of my father while still in Palestine and to which Chaim Weizmann and E. Bergmann contributed the first monograph and Prof. A. Fodor, of the Hebrew University, the second. Of the 284 statements in the “Theses,” I would today correct only a very few.

Nine publishers rejected *Ages in Chaos* though Prof. Pfeiffer tried to help. Eight publishers rejected *Worlds in Collision*, mostly because of the many footnotes, believing that the book should be brought out by some subsidized academic (University) press. It was contracted by Macmillan in 1947 and published in 1950. The history of its reception is not dealt with here and is partly known.⁵⁹

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