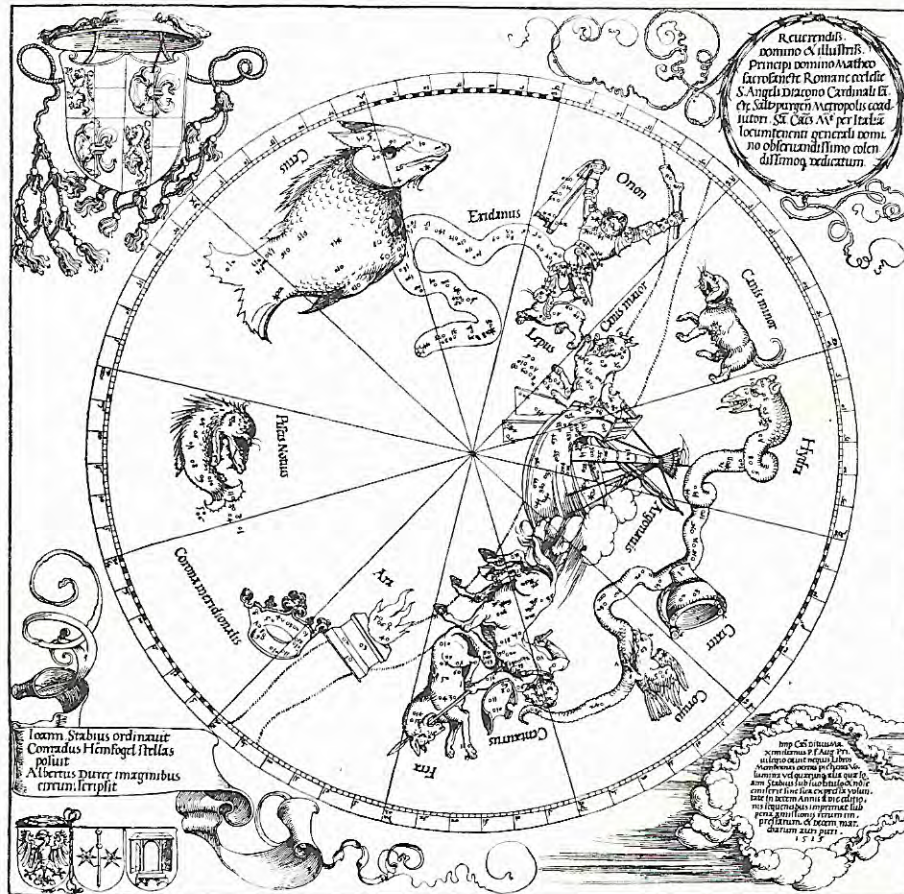


Geocosmic Research Monographs

Ancient Greek Astrology

Monograph Number Three 1982



L'Astrology Grecque

Antoine Bouche-LeClerque

Translated by Emese Soos Lenicheck from the original French, 1899, chapters one through three.

Aristotlianism and Hermeticism In Medieval Astrology

Robert Zoller

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L'Astrology Grecque

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NATIONAL COUNCIL for GEOCOSMIC RESEARCH, INC. 

The *Geocosmic Research Monographs* is a publication of the National Council for Geocosmic Research, Inc.

EDITORIAL: What are the Geocosmic Research Monographs?

For several years the National Council for Geocosmic Research has published the *Journal of Geocosmic Research*. As most members of NCGR are aware, this journal was of quite high quality, but erratic in publication. At the National Conference in Chicago in the fall of 1978, the Board of Directors realized that at this time NCGR does not really have the facilities, the manpower, or the money to continue putting out the kind of polished, professional looking journal that we would all like to have on a regular basis.

Another change that was to be made was one of content. The new publication called the *Geocosmic Research Monographs* will contain not only formal journal articles of the kind previously published, but also useful tables, various bulletins, and on occasion entire short books. Editing will be kept to a minimum and the publication thereby can be produced more frequently. In other words, the new publication will be much more flexible about what will be published. It was then agreed that the best of the material to appear in the *Monographs* can be revised, reedited and republished in a book for sale to the general public. At such a time as resources permit, we may resume the old format of the *Journal of Geocosmic Research*, putting the material that is not suited to that format into another publication.

Objectives of the Monograph Series

1. To provide a publication that establishes *geocosmic studies* as a genuine field of inquiry. Geocosmic research is defined here as the scientific and symbolic study of Earth in relationship to its cosmic environment. We are not interested in proving or disproving astrology as such. While most have identified "geocosmic research" primarily as the scientific investigation of astrology, our particular interest is in any work that demonstrates the interdisciplinary nature of astrological studies. Contributors may draw from any of the following fields to establish this interdisciplinary approach: astrology, astronomy, anthropology, archeology, history, biology, biography, education, geography, geology, mathematics, medicine, meteorology, mythology, philosophy, psychology, psychotherapy, archetypal studies, religion, and statistics and research design.
2. To provide a vehicle for the publication of material that is not compatible with a conventional journal format. Tables of data, formulae, research proposals of other types of material that are not strictly speaking articles will be accepted for publication. In particular, authors are urged to submit calculation techniques, statistical procedures, and computer programs that may be relevant to geocosmic research. Also, as mentioned above, we will be able to publish longer papers and even short books as editions in the *Monograph Series*.
3. To provide a forum for the exchange of ideas, opinions and other communications that are relevant to material that appears in the *Monograph Series* and to other geocosmic research. This will be done through the letters section, which we hope will provide an arena for a spirited exchange of ideas. Although the editor reserves the right to edit letters for length, it will be the policy of the editor to leave the content as is, so long as the material relates to geocosmic research. Personal attacks beyond the realm of constructive criticism will not, however, be published.
4. To provide as rapid a dissemination of an author's ideas as possible. Because of changes in the editorial policy in the monograph, we can now accept papers in which the ideas or work are not absolutely completed so long as those ideas or work are promising and of high quality.
5. To broaden the awareness of the astrological community and other groups concerned with geocosmic research by presenting ideas that are new or controversial — ones that may be at variance with established tradition, but which may have possible merit for the future.
To this end, the *Monograph Series* will not hesitate to publish any idea or work pertinent to geocosmic research so long as it is well thought out.
6. To help authors and workers in the field of geocosmic research to do work of higher quality than has been hitherto possible.
This will be done by providing the authors with feedback of two kinds. First, in working with the authors, the editor will offer suggestions and criticism where necessary. In some cases the editor's or referee's comments may be published along with the paper itself. Second, others in the field are encouraged to use the letters section to comment on the papers published. This means that all of the readers of the *Monograph Series* can engage in a dialogue on geocosmic studies.

Criteria for Acceptance and Publication in the Monograph Series

Not all material submitted for publication will be given equal consideration. Some will be of higher priority than others, although all work of good quality (in the opinion of the editorial board) will be considered. The following are the criteria:

1. The highest priority will be given to original research that demonstrates principles and effects in geocosmic interactions.
2. Articles dealing with the relationship of astrology and other areas of geocosmic study to psychology, mythology, archetypal studies, or any other such study will be welcomed, as will articles exploring the historical or symbolic roots of astrology. It is necessary that the work be original and adequately academic.
3. Tables of formulae, statistical data, or other forms of data that are not, strictly speaking, articles are acceptable so long as they are of general interest and are not readily available from other sources. In this connection, calculation techniques and computer programs are welcome. Computer programs must be provided in hard-copy form that can be reproduced directly.
4. Papers elucidating specific techniques in astrology, or the techniques of particular schools will be accepted, if the papers in question serve to educate the readers concerning these techniques. This means that those papers that discuss more obscure, difficult, or uncommon techniques will be given priority over those that deal with more conventional ones. Case-study papers will be acceptable insofar as they fit these criteria. Case studies that simply purport to demonstrate conventional techniques generally used, understood and accepted will be given low priority.
5. Papers of short-range or topical interest such as astrological investigations of news events are discouraged. Such material, as well as announcements, should be sent to the editor of *Geocosmic News*, the organization's newsletter.

We wish to encourage articles from alternate schools of astrology (such as Uranian, Sidereal, and Hindu) and from authors who are outside the mainstream of astrology, but whose work impinges on geocosmic research. This publication does not represent any one school of astrology or even astrology as such. It is intended to represent the entire field of geocosmic studies.

How to Submit Papers

Any article or paper to be submitted to the *Geocosmic Research Monograph Series* must be typewritten and double-spaced. Handwritten and single-spaced articles cannot be considered. Copy should be in good condition. It is strongly advised that authors keep complete copies of all material submitted. We do not object to receiving photocopies as long as they are sharp, clear, and devoid of dark area and smudges such as copying machines often make.

All papers should as much as possible follow conventional scholarly techniques of citing sources, using footnotes, bibliographies, reference lists, etc. The time and resources of the editorial staff are limited so that we will not be able to clean up such deficiencies in an author's work. Papers may be returned with the request that full and accurate references be provided.

In connection with the above, plagiarism is unacceptable. All work must be original or the sources cited, unless the material refers to principles that cannot be attributed to any one source.

Do not send the only copy that you have of your work. Despite the best of intentions, accidents do happen and things do get lost.

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San Francisco, CA 94114

Articles submitted anywhere else or to any other person will not be considered to be 'submitted' and we can take no responsibility for them.

Concerning Future Monographs

Monographs will be published whenever the material warrants. We have no fixed publication schedule. In the future, if no Monographs appear, it will be because no material has been submitted of sufficient interest or quality.

The length of Monographs will vary according to the material.

Keep in mind that the quality of this series of publications depends on the readership. We can do no more than represent our constituency. -Editor

EDITORIAL NOTES

ANCIENT GREEK ASTROLOGY, the National Council for Geocosmic Research's Third Monograph, marks an important turn in this organization's brief publication history. Up to this time the N.C.G.R., Inc. has concentrated on producing and reporting scientific and statistical research that has attempted to provide evidence for the existence of an "astrological theory." Our JOURNAL FOR GEOCOSMIC RESEARCH was founded in 1974 expressly for this purpose. This is still the primary thrust of astrological research by students, teachers, and practitioners in this country and in Europe. If we could establish rigorous methods to support a scientific basis for astrology, it is thought, it would assume a more legitimate position for its study and use in both academic and professional life.

With the current shift away from analytical proofs and research methodology to one of a synthesis of all the disciplines, it is our aim in these monographs to provide students and scholars with the best material — both ancient and modern — that reflects this multidisciplinary view. The translation of Antoine Bouche-LeClerque's classical work, *LAstrologie Grecque* and Robert Zoller's paper, "Aristotelianism and Hermeticism in Medieval Astrology" go far in these efforts. They contribute to restoring astrology to its once-held position as a central language form that dominated Classical, Medieval, and Renaissance thought.

LAstrologie Grecque by Antoine Bouche-LeClerque was written in French and published in Paris in 1899. It is historically one of the important works in any language on the origins and development of Greek astrology. When a copy of the original French version (800 pages) came into my hands, I contacted Emese Soos Lenicheck, former professor of French literature, Wellesley College, Massachusetts, to conduct the translation of this unknown but important historical work into English.

The preliminary translation of "The Precursors" (Chapter 1), "Chaldean Astrology" (Chapter 2) and "The Doctrines of Astrology" (Chapter 3) of *LAstrologie Grecque* is published here not only to inform students and scholars of some of astrology's fascinating history. But also because it is one of the clearest expositions of the relationship in antiquity of philosophy, psychology, religion, and science with both Western and Oriental astrology. Additionally, the integral place mythology holds in later chapters of the book establishes this work as one of the most important psychological texts of the people of antiquity. Numerous pages of explanatory notes and references had to be omitted from this initial publication due to considerations of space. Greek words have unavoidably been left out but will be included in the final translation.

The shorter work in this monograph is the paper, "Aristotelianism and Hermeticism in Medieval Astrology," presented by Robert Zoller of New York City as a lecture given to the N.C.G.R. in 1983. This paper grew out of the author's desire to translate from Latin the works of Guido Bonatti, particularly the *Liber astronomiae*, now underway. This brief account of the influence on astrology by Aristotle and the Hermeticists is a short introduction to the survival of Greek thought in the Medieval and Renaissance eras. It is our hope that works such as these will bring to the modern student of astrology and history a deeper and richer appreciation of the contributions of the ancient Greeks. -Editor

L'Astrology Grecque

Antoine Bouche-LeClerque

Translated by Emese Soos Lenicheck

Chapter One

The Precursors

(Please note that footnotes are not included)

Astrology is an Oriental religion which took on the guise of a science when it was transplanted into Greece, a country of "physicists" and rational thinkers. As a religion it had an internal logic; then it borrowed the principles, the methods of measuring, and the arithmetical and geometrical speculations of astronomy, also internally coherent but arising from pure reason and no longer from the complex mixture of feelings and ideas, which is the immediate groundwork of religions. From the simultaneous use of these two ways of thinking emerged a hybrid form, fundamentally illogical but endowed with a special logic, which lies in the art of advancing formal proofs, consistent with the methods of science, for imaginary axioms furnished by religion.

This ostensibly unstable combination proved to be, on the contrary, singularly tough, supple and plastic, to the point of adapting to all the doctrines in its proximity, feeding religious sentiment and interesting atheists even more. Although inaccessible to ordinary people, who could understand only its most general tenets, and therefore deprived of the broad support of the masses, attacked even as a science, proscribed as divination and also as magic, called anathema as a religion or the antithesis of religion, astrology withstood everything, arguments, edicts, anathemas; it was even beginning to flower anew in the Renaissance, having made accommodations with existing orthodoxies — a final proof of its flexibility — when the earth caved in under it, literally the earth. The orbital motion of the Earth that reduced it to the status of a planet was the jolt that brought the scaffolding of astrology tumbling down and left only astronomy standing, freed at last from tutelage, formerly a servant, now the keeper of the house.

It was in Greece that astrology with its Oriental soul acquired all its instruments of persuasion, internalized its philosophy, and put on the breastplate of mathematics. From there it made its way through the Graeco-Roman world, a wonder to some, an object of scandal for others but a preoccupation for many, heaped with the most diverse epithets and sufficiently complex to merit them all at the same time, prepared to mingle with all the sciences and encroach on all religions, and everywhere sowing illusions that for a long time gave the impression of being incurable.

Not much more than a century was needed to transform Oriental astrology into Greek astrology, the latter steeped in the former and, as a sign of its origin, still called "Chaldean" or Egyptian. Introduced into the Greek world near the beginning of the third century BC by a Chaldean priest Berosus, Oriental astrology there found a ground fully prepared by a line of precursors. It took root in a preexisting layer of intellectual debris of hastily constructed doctrines, rapidly pulverized by the impact of other systems; and although unable to lay down a scientific conception of the universe, they all recognized certain general principles, saved from the necessity of demonstration by a kind of intrinsic self-evidence and sufficiently vague to help bind together the most incoherent parts of astrology disguised as a science. Basically these principles can all be subsumed under one all-encompassing one: the idea of the essential unity of the world and the mutual interdependence of its parts.

The precursors of Greek astrology are all philosophers. One need waste no time to point out that Homer bears no trace of astrology, and the time has not yet come to show that the calendar of favorable and unfavorable days in Hesiod does not depend on belief in sidereal influences. We also consider it useless to raise the presently insoluble question of knowing to what degree our philosophers were influenced by Oriental traditions, intentionally sought out from available sources or simply present in the cultural environment unbeknownst to them.

I — The Physicists

What we know of Thales, in sum, amounts to very little. His name, like those of other ancestors of science and faith, served as a banner to the forgers of apocryphal writings¹ and foolish legends. Those people unfailingly sought out the most ancient sources and affirmed that Thales had been a disciple of the Egyptians and Chaldeans. Aristotle seems to know the doctrines of Thales only by way of a fairly unreliable tradition. Later, there are references to the ever more numerous works of the Milesian philosopher: he becomes the father of science in general, a mathematician, geometrician, astronomer or astrologer (terms long considered synonymous²), able

to predict an eclipse of the Sun and explain it. His name is invoked most often and his opinions analyzed in greatest detail³ by these commentators and polygraphs of later times. The only doctrinal position attributable with some certainty to Thales is that "everything derives from water;"⁴ or is only water transformed by its own, immanent power of motion. Everything, including the stars. From the beginning, Greek science or "wisdom" affirms the unity of the material substance of the world and its corollary, the interdependence of everything.

It matters little to know if Anaximander, a disciple of Thales, selected a more subtle element, infinite in quality as in quantity, as the sole substance of the world, or even if he assumed it to be a single substance or composed of heterogeneous parts.⁵ His doctrine was basically the same as his predecessor's, but markedly closer to future astrological doctrines. According to Aristotle, he taught that infinite substance "envelops and governs all things;"⁶ This envelope that "governs" is unquestionably the sky in "eternal, incessant motion, the first cause of the birth of all beings."⁷ For Anaximander as for Thales, the stars were the most distant emanations of the cosmic fermentation of which the Earth was the sediment. He likened them, it seems, to circular furnaces, fed by the Earth's exhalations and rolled in space by the current of these same breaths or vapors; this did not prevent his calling them "celestial gods;"⁸ as probably had the Chaldeans. A fusion of science and faith; in it already lies the seed and equivocal language of the astrology to come. We also see an idea appear in Anaximander that was probably not new even then and would later become completely commonplace, for the greater benefit of astrology: that animal species, including man, were engendered amid the moist element by the heat of the Sun, the dispenser and regulator of life.

With a more realistic bent of mind, Anaximenes drew the same conclusions from analogous doctrines. He began to spell out the astrological dogma par excellence, the similarity of man and the world, of the part and the whole, for the world is also a living being whose life is maintained, as is man's, by the ceaseless respiration or circulation of air, the common essence of all things.

The school of Ionian "physicists" remained true to its mechanistic cosmology to the very end. It always asserted the unity of the world's material substance, formed of the same living matter in varying degrees of condensation or rarefaction, and it considered thought, intelligence or will to derive from the groupings and motion of bodies. These first precursors of the natural sciences, in a hurry to come up with metaphysical conclusions, thus produced arguments for mystics, for those who find occult relationships between the most disparate things.

People whose imaginations were smitten by the marvelous got an even bigger boost in the wake of Pythagoras. Neo-Pythagoreans and Neo-Platonists so thoroughly amplified and misrepresented the character, biography and doctrines of Pythagoras, the philosopher of Samos, that it is no longer possible to separate reality from fiction. He seems to have shown up every place where there was something to be learned: he supposedly saw Egyptian, Chaldean, Jewish and Arabic priests, visited the wise men of Persia, the Brahmins of India, the Orphic initiators in Thrace, the Druids of Gaul, so that his philosophy is the synthesis of all imaginable doctrines. The Pythagorean legend also goes overboard concerning the master's entourage and cloaks in a false light this collection of pedantic phantoms, "mathematicians" frozen in the ecstasy of a science learned ((Greek word)).⁹ We are thereby reduced to accept nothing as originating in the Pythagorean school except the propositions discussed by Aristotle, for even Plato's Pythagoreans are first and foremost Platonists.

The basis of the Pythagorean doctrine is the obsessive notion and cult of harmony, proportion, and the interdependence of all the

parts of the universe, a harmony conceived by the intelligence as number and by the senses as music and rhythm, the simultaneous and consonant vibration of the great All. Number is even more than that for the Pythagoreans: it is the real essence of things. What is called matter, spirit, Nature, God, all is number. Unity ((Greek word)) is a constituent element of number and is itself composed of two properties inherent in Being, the even and the odd, properties known also by the names of left and right, feminine and masculine, etc.; thus unity is itself a harmonic relationship and as such is real and living. Who can explain why the even is inferior to the odd, which is the masculine principle, the right as opposed to the left, the curved line as opposed to the straight line, the generator of light and good, while the even produces the opposite states? Old superstitions¹⁰ would better account for these strange axioms than speculations on the finite and infinite, for to pair the finite with the odd number and perfection with infinite is tantamount to substituting one or more questions for the question to be resolved. The Pythagoreans like mysteries, and they took a certain pleasure in turning around the usual meanings of words. To designate the infinite they used imperfect, evil, the word (Greek word) (even), which specifically means "appropriate," in proportion; and to designate the finite, perfect good, the word (Greek word) (uneven), which signifies "superabundant," beyond measure. Nor was it easy to decipher the enigma of the perfection of the number 10, the base of the decimal system. Those who sought it in the tips of their ten fingers were way off base. It was necessary to know that the number 10 is the first number after one to be even-odd ((Greek word)), that is, even as a sum but composed of two odd-numbered halves. The decad is the key to all the mysteries of nature: without it, Philolaos said, "everything would be unlimited, uncertain, invisible."¹¹ It already sounds like an astrologer speaking of the marvelous properties of the decanates (arcs of 10 degrees).

For the adepts of the occult sciences in general and astrology in particular, Pythagoreanism was an inexhaustible mine of contrivances able to intimidate common sense and reduce it to silence.¹² With good reason, this illegitimate progeny of Pythagoras supplanted his authentic disciples and took with their inheritance the title of "mathematicians." The Pythagorean school was bent on turning the world into equations, both arithmetical and geometrical. It covered the sky with numbers and figures, translated into intelligible, sensory, moral, political and theological harmonies, each one more abstruse and startling than the next. To make a celestial lyre of the seven planetary orbs¹³ that sound the seven notes of the scale by virtue of the ratios of their respective distances is the best known and simplest of its inventions. It was more difficult to come up with the ten spheres necessary for the perfection of the universe. We know how these intrepid doctrinaires were able to augment the number of spheres by being the first to dislodge the Earth from its central position and insert in its place an anti-Earth, which revolved together with it around a focal point invisible to us. Just as a badly aimed projectile can reach its target by a fortuitous ricochet, thus this old fantasy encouraged Aristarchus of Samos and later Copernicus to revolt against the doctrine of the Earth's immobility. It occasionally happens that the imagination does the work of science. Columbus would probably not have braved the dangers of the Atlantic had he not been convinced that on the "terrestrial" globe land necessarily occupies more space than water.¹⁴

By constructing a world with theorems, without paying attention to observation, the Pythagoreans were consistently bolder in their assertions than astrology, which seems selective and prudent in comparison. Not only did they attribute special qualities¹⁵ to numbers in themselves and to geometrical figures, but they localized in various parts of the universe the different qualities, types, causes and substances of visible things. Radiating from their places of election in certain proportions and in keeping with mathematical directions,

these living forces created the fabric of concrete realities at the points of intersection and marked them with their imprint.¹⁶ Separation, mixture, opportune moment ((Greek word)), ratios, the whole arsenal of astrological postulates is already there, and the principal tools are already forged. The astrologers merely limited the numbers of calculable combinations and disqualified certain types, like the square, which seemed to them antagonistic to the triangle — the most favorable figure or aspect ((Greek word)) — and the decad, which was hard to defend against the hegemony of the numbers 7 and 12. And we would see reappear much later, in the 36 **Decanates** of astrology first the decanate, which gives them their name, and then the famous Pythagorean “quadrature” ((Greek word)), yet another final cause of things and the “source of eternal Nature.”¹⁷

Astrology perhaps borrowed least from Pythagorean astronomy. The doctrine of the Earth's motion directly contradicted a postulate necessary to astrology, and the natural explanation of eclipses — if indeed it was given by Pythagoras — was more troublesome than not to those who wanted to make of them instruments of revelation. As for metempsychosis and palingenesis, these doctrines were of no consequence to astrology, since it dealt exclusively with the present life and could accommodate itself to any theories concerning other modes of existence.

If the disciples of Pythagoras neglected the Earth a little too much in their preference for the sky, the Eleatic school went too far in the opposite direction to create a climate favorable to the development of astrological ideas. Xenophanes thought that the stars, including the Sun and Moon, must have been simply meteors, vapors exhaled by the Earth which burst into flame on one side of the horizon and gradually were extinguished on the opposite side. The Earth was sufficiently vast to produce several of these flares at the same time, and perhaps each climate had its own. These fireworks, rekindled each day, did not correspond well to the image of the stars required by astrology as the repositories of generative forces, forever identical to themselves, whose effects on the Earth it claimed to calculate.¹⁸ Finally, the primary Eleatic doctrine, that the world is One and immobile to the point that multiplicity and motion are pure appearances, refuted astrological doctrine before the fact.

Taking the opposite principle as his premise, one nearly incomprehensible to the uninitiated, Heraclitus saw in the relative stability of appearances only an illusion that conceals the perpetual flux of matter. Indeed, for Heraclitus nothing exists, since being is not fixed anywhere; rather, everything is in the process of becoming, without ever attaining reality or distinguishing itself from the shifting mass that races through the grid of perceptible forms. Like all the physicists of Ionia, he was in the diverse states of matter or universal substance different degrees of condensation and rarefaction, and it makes little difference if the norm is taken from the center or from an extremity of the spectrum. Heraclitus started with the subtlest state: he considered fire as the principal mobile and motive element, generative and destructive. He held that the stars were braziers maintained high up in the air by virtue of their specific lightness and fed by vapors from the Earth. The Sun, in particular, perhaps the smallest but also the nearest, was regenerated each day, since it was extinguished each night by the Occidental mists.¹⁹ Heraclitus did not want the stars to present some stability in opposition to the universal flux. The Sun nonetheless served to kindle life on Earth: what is called life, soul, reason or intelligence is a fire lit from on high.²⁰ This characteristic trait of the doctrine is a ready-made astrological theorem. The physics of Heraclitus, adopted by the Stoics and purged of the paradox concerning the inconsistency of celestial bodies, is to become one of the strongholds of astrology.

All the philosophers so far reviewed were at odds with common sense, which they disdainfully dubbed opinion ((Greek word)), and those of them who had done an expose of their systems in verse ob-

viously did not count on the readership of the Homeric rhapsodies. Empedocles, on the other hand, converted much of his pride into vanity. He liked to assume the guise of an inspired prophet, and had he known of astrology, it would undoubtedly have made rapid progress in his hands.

The substitution of four different and equally primary elements, earth, air, fire and water, for a single, more or less condensed substance was of interest only to metaphysics, then as now. Nevertheless, by positing plurality as the origin of things, the system of Empedocles was less forced than the monism of his forerunners, and the variety of mixtures possible was no less than the Protean disguises of a single substance. This system had the added advantage that it gave a simple explanation for the proposition of utmost importance in astrology, namely, how bodies exert an effect on each other at a distance. According to Empedocles, they tend to become more similar by reciprocal permeation; and the more similar they are to begin with, the more easily it occurs. He posits effluvia ((Greek word)) or jets of invisible molecules which, guided by elective affinity, leave one body to enter into another through equally invisible pores and tend to produce throughout a mixture of identical proportions and consequently identical properties. For example, light is a flux of matter that takes a certain time to go from the body that emits it to the one that receives it. Impossible to imagine a theory better suited to make intelligible the “influence” of the stars on terrestrial generations,²¹ and also the influence they exert on each other when their paths meet, a kind of action given much importance by astrologers and designated by the words contact ((Greek word)) and defluxion ((Greek word)).

For Empedocles, the world is the product of an indefinite series of mixtures and separations brought about by Love and Hate, attraction and repulsion. Life and motion are born of the struggle of these two primordial forces; when one of them takes the upper hand, it goes on with its work until the intimate intermingling of all the elements or their complete separation produces immobility, the death of Nature. But this rest cannot be final. The victorious force is exhausted by its own effort; the vanquished force is regenerated, and the cosmic pendulum begins to swing in the opposite direction,²² generating a new world, destined to meet its end in the triumph of the energy that gives rise to it. It goes without saying that the present world is the work of Hate and that, having started from the felicitous immobility of the Sphaeros, it is proceeding toward complete dissociation. Empedocles would probably have had trouble in providing proofs other than the memory of the Golden Age; but this poetic cliché was then still tantamount to a revelation of the Muses, especially in the eyes of a poet like him. At any rate, imagination has a greater place in the works of Empedocles than pure logic; he was one to find words easier to come by than rational explanations, and the legend that writes him off as a charlatan only exaggerated a well-marked trait of his character.²³ Without further sifting through his cosmogony to rediscover remnants of old myths, indigenous or foreign in origin, we will merely point out some ideas that were later exploited by the astrologers. Nature's first, inchoate attempts to create resulted in the monsters produced by the chance convergence of disparate limbs and explain the very strange forms that inhabit the constellations,²⁴ much as the memory of mythological dragons, chimeras and centaurs suggested to Empedocles his description of the Earth in labor to give birth. The Earth is no longer the universal Mother. It is indeed in the center of the universe, maintained in equilibrium by the pressure of the celestial orbs that revolve around it; but it did not give birth to the stars and it does not surpass in size the Sun, which is large enough to project its effluvia irresistibly on the Earth.

What Lucretius admires in Empedocles is the precursor of atomistic physics.²⁵ Leucippus and his disciple Democritus introduced

to science the idea of the qualitative unity of universal substance by reducing the four elements to the status of being only groupings of atoms of the same substance, but of different forms and sizes. They nevertheless retain the preeminence of fire as the generator of life and thought, an attribute that astrologers would in time naturally associate with the stars. Unlike the other elements, fire was not a mixture of different molecules, but a stream of homogeneous atoms, the roundest and smallest of all, capable of penetrating into all other bodies, even the most compact ones. The genesis of the world, or rather worlds — for the one we see is only a part of the universe — is held by the atomists to be a mechanical effect of the falling of atoms; this movement subsequently results in collisions that produce oblique ricochets and circular whirls. In each of these whirls, separated from the others by a round shell which forms and becomes stabilized when in contact with resistance in the environment, the atoms sort themselves and stack up according to their density. The heaviest go to the center, where they form the Earth; the others form layers between the center and the circumference, where the lighter and more active ones burst into flame by virtue of their rapid motion.

The logic of the system required that the largest and most active mass of fire, the Sun, be the furthest from the center, and it is indeed this way that Leucippus understood it, for we are told he placed the Moon closest to the Earth; the Sun, to "the outermost" circle; and the stars in between the two.²⁶ But Democritus seems to have come up with the boldest hypotheses to make this doctrine agree with common opinion, with the undeniable fact that we most readily feel the heat of the Sun's rays. This led him to suppose, it is said, that the Sun had first been a kind of Earth, gradually immobilized at the center of the primordial whirl. This first concentrated mass, later supplanted by the faster growth of our Earth, has been pulled by the motion of the heavens to circle around the Earth and, as its speed increased and its orbit grew larger, it became "filled with fire." The Sun stayed within reach of the Earth, which fed it with its vapors in exchange for its light and heat. The same hypothesis accounted for the nearness and the less fiery nature of the Moon.²⁷ In the final analysis, these two stars, that astrologers would call "luminaries" ((Greek words)) to distinguish them from other planets, were separated from the others and bound closely to the Earth, whose molecular composition they shared but with a dose of atoms of fire in addition. This theory was to serve as the basis for certain astrological postulates. No doubt popular opinion also attributed the preponderance of the action to the "luminaries"; but this doctrine of Democritus showed that the action is stronger in quality as well as in quantity, by virtue of greater affinities. Finally, if atomism was not favorable to astrology in every respect and if genuine astrologers had no cause to be pleased with the Epicureans, the heirs of Democritus's physics, on the other hand, Democritus himself became the patron of the alchemists, who were, in sum, only astrologers working not in the observatory but in the laboratory.

Concurrently with the atomists, slightly older than Democritus, Anaxagoras used the endeavors of his predecessors to improvise a cosmogony like theirs, different only in its metaphysical principles. Anaxagoras posited a limitless number of simple bodies in the place of the single essence advocated by the Ionians, Eleatics and atomists, and the four elements of Empedocles; though never completely free of all intermingling, they reveal their specific qualities in compounds in which one element is preponderantly present. He conceived of the creation of the world as the result of the immanent properties of substance; but to the series of causes he deemed it necessary to add an initial cause, an Intelligence ((Greek word)) that had set the machinery in motion. The philosopher's intention was clearly not to defer to common opinion, which explains the work by the worker, nor to simplify his cosmology to the degree found in Oriental cosmogonies. Socrates even reproached him for not having availed

himself of this Intelligence to explain the order of the world and to have substituted for it such details as "air, ether, water and other equally absurd things."²⁸ Others called him the finest "physicist" and "mechanist."²⁹ Because of contradictions in the texts,³⁰ we can no longer distinguish what nature and role Anaxagoras attributed to cosmic Spirit, and perhaps he was not quite sure himself. It is probable that, faithful to his conception of elemental substances, not convertible into each other, he meant by ((Greek word)) the sum total of life and intelligence scattered throughout Nature, but undivided in the beginning. However small may be the difference between "the pure substance" or spirit of Anaxagoras and the intellective fire of Heraclitus, the introduction of this spirit or soul into the world was thought to refute the theory that the universe consists of the automatic play of natural forces; it was a nearly fatal blow to Ionian "physics." It was established that this physics, once so vaunted and credited with the discovery of the ultimate cause of things, had demonstrably failed to pierce the mystery. Its mechanism was not self-sufficient, for the cause of motion had to be sought somewhere other than in the properties of insensate substance, that is, in the realm of spiritual forces or will, a domain closed to science and accessible only to faith. High-flown thinkers, those who cross this line of demarcation without even being aware of it,³¹ were to embark on this newly cleared path and construct in turn a world by offhandedly acting as the confidants and interpreters of the divine plan. A place was prepared for the Demiurge, the planetary gods and Plato's Genii.

Thus, in less than two centuries, Hellenic science seemed to have completed its cycle: it turned back toward its point of departure, religious faith. To use a word that was not yet in vogue, it was accused of bankruptcy. Its badly coordinated efforts had touched on all realms of knowledge at the time; it had declared war on "opinion" and had discredited common sense without replacing it with anything other than unproven affirmations which, from one system to another, undermined each other by their own contradictions. The Sophists concluded that nothing was left standing and everyone was free to deny or affirm at his own whim, regardless of the subject. What is the use of seeking the true, the real, since we perceive only misleading appearances and the evidence of our own senses is what we must the most distrust, as the Eleatics and Heraclitus demonstrated by opposing methods? "Man is the measure of all things," Protagoras used to say; in other words, everyone creates a truth for his own use, in keeping with his own interests, and the one who successfully imposes his on others by eloquence or, if need be, force, without being taken in by his own opinion, is the past master of the art of living.

II — The Socratics

With Socrates a new era opens. Socrates is given credit for having slain the hydra of sophistry and rescued morality in distress. Not that he meant to defend any parcel of science or tradition whatever³² — on the contrary, he succeeded in ruining everything that still resembled an affirmation, including the propositions of the Sophists. Yet, while declaring that he knew nothing, he invited every person of integrity to seek true science and assured them, in the name of a divine revelation, that they would find it and that morality would inhere in it as well. However, he thought human reason's only knowable object is itself and consequently, the new science should refrain from the study of external Nature, a useless research that had led it astray in the first place. If in the eyes of Socrates man was no longer the measure of all things, he remained the measure of those things he could know; the limits of his nature coincided also with the limits of his knowledge.³³ Beyond, as far as the eye can reach, stretched the unknowable, the mystery of the divine which the human mind can penetrate only through Revelation. We know what value Socrates attributed to the sciences without practical applications, and

particularly cosmogonical theories that had so greatly exercised the ingenuity of philosophers. "In general," said Xenophon, "he refrained from paying undue attention to celestial bodies and the laws according to which the deity guides them. He thought these secrets were beyond the ken of men, and it would be displeasing to the gods to want to fathom these mysteries they had not wished to reveal. He said one ran the risk of talking nonsense when immersed in speculations, just as Anaxagoras talked nonsense when he offered his great arguments to explain the ways of the gods."³⁴ All moralists of the Socratic tradition raise this cry. They would dissociate man from Nature and, it would appear that of all the sciences, astronomy seems the most arrogant and the most useless to them. When Horace asked what it profited Archytas "to have scanned the sky, since he had to die,"³⁵ he was no less insistent about it than Bossuet when he exclaimed, "Mortals, miserable and audacious, we measure the course of the stars . . . and, after so much painstaking research, we are strangers to ourselves!"³⁶ Nor was Malebranche, who wrote, "Why bother to know whether Saturn is surrounded by a ring or by a large number of small moons, and why take sides on that issue?"³⁷ Socrates limited the usefulness of astronomy to the establishment of the calendar; for the rest, he mocked people who, even if they were able to learn what was going on up there, could never "make wind or rain at will."³⁸ What reception would he have given astrology, which pretentiously claimed to be applied astronomy, applied to the knowledge of man, moreover, if he had only known of it and been persuaded that it was a revelation?³⁹ We do not know; but it is good to point out that his most faithful disciples, the strictest moralists, the ones most opposed to idle curiosity about useless knowledge, the Stoics, were the ones who introduced astrology into the sanctuary of practical philosophy. If he brought philosophy down from the sky to the Earth, as it has been repeatedly said since Cicero,⁴⁰ it did not take it long to rise back up again.

Great originators were never builders of systems, but men whose energy was all concentrated in a single sentiment, in a powerful will capable of making an impact on the wills of others and leaving its imprint on them. This forward thrust can be diverted into a variety of movements, but the common starting point of the most widely separated directions remains discernible. Following Socrates, anyone who proposed to reach virtue by way of knowledge and to prize science only for its moral efficacy was considered a Socratic.

Left free of any admixture of indiscreet curiosity, Socratic philosophy would have killed any scientific spirit without attaining the desired goal, for morality cannot be the object of science. The exercise of a supposedly free will by definition falls outside the rigid bounds of the natural laws that science seeks to establish. By wanting to associate and even interchange incompatible intellectual modes of thought, the Socratic moralists obstinately claimed to demonstrate the nondemonstrable, and their systems were eventually absorbed by the religious dogmas they had inappropriately replaced.

The vast poetical synthesis into which Plato introduced encyclopedic knowledge converted into moral doctrines was already a religion. After having examined the problems of pure morality, private and public alike, from every angle, Plato wanted to write a treatise on Nature, like other men of learning before him, and he carefully avoided attributing these thoughts to Socrates, here reduced to the role of listening to the Pythagorean philosopher Timaeus.⁴¹ The *Timaeus* is perhaps the last work of Plato. It is also the most mystical; in it he indulges his habit of making assertions without proof and the weakening of his reasoning faculty is most perceptible. No wonder the *Timaeus* later became the breviary of all the adepts of mystical doctrines, sciences and arts, who in turn tortured and denatured it with their endless commentaries. Astrologers were not the last to stock up on arguments from the *Timaeus*. They could pick and choose at will, for the whole system could not have been better suited to support their postulates.

First, there is one world: the Demiurge gathered into its spherical mass all existing matter, the sum total of each of the four elements — differentiated simply by the geometrical forms of their molecules — in such a way as to leave no external obstacles, whether collisions or resistance, that could be a potential cause of disorder or destruction. Moreover, the world is a living being, whose organs are all interdependent and bound together by so perfect a harmony that this vast body is forever "exempt from old age and disease." This living being has as its principle of life and movement a soul, composed of a threefold order of spiritual, corporeal and mixed elements, created prior to the body, which it envelops and permeates. It includes seven primary parts, ordered and subdivided according to the proportions of musical, arithmetical and geometrical harmony. The spiritual essence of the soul moves the outer circle of the world from left to right (diurnal motion), and the material essence imprints on the seven inner circles a motion in the opposite direction around an axis diagonal to the other one; the two motions together cause the bodies to inscribe alternately rising and falling spiral movements at differing speeds. Of the circles or stars in motion (the planets), Plato knows only the Moon, the Sun, Venus and Mercury by name; "of the others, mankind with hardly an exception have not remarked their periods and have no name for them."⁴² The Earth, pierced through as if nailed in place by its stationary axis around which revolves the universe, is alone exempt from the general motion imposed after the fact on the round machine.

All these stars, whether fixed or wandering, and the Earth itself, "the oldest of the divinities born within the boundaries of the sky,"⁴³ are living and immortal gods, for the Demiurge fashioned them, body and soul, in the image of the whole world, which is the greatest of the gods after its maker. As the Demiurge did not want to create perishable works by his own hand, once the stars were created, he delegated the task of completing the world by fashioning human beings to the planet-gods, the "organs of time." To animate these beings, he merely endowed them with souls of an inferior quality and to them he deigned to reveal his plans and justify his Providence, before sending them out to the stars in groups. As far as can be judged despite the text's obscurity, perhaps intentional, the souls spend a period of time in the fixed stars before descending to the lower spheres, where the planet-gods see to it that a material dwelling-place is assembled for them. Doing their best to copy the universal model from which they themselves and the world were already copies, these gods fashioned spherical bodies as dwellings for the souls. Unfortunately, the spherical envelope of the soul needed a vehicle (**Greek word**) to support it and protect it from the jolts it would have sustained while rolling on the surface of the Earth. Lacking a model to copy in this case, the gods imagined a mechanism suitable to the purpose. Plato here revealed how naively he envisioned physiology; he explained how the lung, permeable to air and refreshed by drinking, in turn cools the heart, which it cushions; how the spleen has the function of wiping dry the brightly polished surface of the liver, which the gods use to project on them the images to occupy the soul; and how the intestines doubled back on themselves, lengthen the trajectory of foods in order to give man the time to think. To endow the intellectual soul with life, the gods were obliged to remove from its substance the wherewithal to make two other, more material souls, situated one in the chest, the other in the stomach, and they made sure to separate these three hostesses of the body by barriers: the diaphragm wall and the narrowness of the neck. The sensory organs were not overlooked, and the theory of the perception of external things is more startling than all the rest.

Plato did not see fit to explain whether each planet-god created its own inhabitants, or together they fashioned people to live on Earth. Since Anaxagoras and Philolaos had already placed inhabitants on the Moon, it is probably that Plato had people living on all the planets. But the system of many inhabited worlds never appealed

to astrologers, who need to have all the effects of sidereal energies converge on the Earth. Thus the commentators of the *Timaeus* took advantage of Plato's awkward silences and put forward that he subscribed to the theory most favorable to the premise of astrology, namely, that man on Earth was produced by all the planet-gods in collaboration.

The Platonic myths derive a certain grace from the very vagueness of their contours, and we are free to believe the master himself failed to take them particularly seriously⁴⁴ — but when transformed into doctrine by the pedantic beliefs of Neo-Platonists, they became so puerile as to make us smile. One of them thought that souls descend from the upper regions by the Milky Way, whence they bring the taste for and need of suckling milk.⁴⁵ Another, commenting on the Xth book of the *Republic* which already contains a sketch of the soul's journey, claimed to know where are located the openings through which they pass in their coming and going. They descend by the tropic of Cancer (warm) and return after death by the tropic of Capricorn (cold),⁴⁶ given that they arrive filled with the heat of life and return much cooled. This descent or fall of souls, together with metempsychosis and the theory of reminiscence, marvelously accounted for the action of the planets not only on the human body, assembled wholly by the planets, but also on the soul, which crosses their realms or even stops in each one and thus reaches the Earth laden with everything it assimilated on the way. Likewise, the return of souls to the stars from which they came readily furnished the theme of the play of "catasterism" or transferences in the stars,⁴⁷ which was to become wonderfully topical and, for the greater good of astrologers, turned the sky into a collection of types that fascinate at a distance or suffuse generations of Earthlings with their effluvia.

When the mysticism unleashed by Plato threatened to wash away human reason in its flood, the master was no longer there to temper the fervor of his disciples with his enigmatic smile. His name and Pythagoras's were invoked at every turn by astrologers, magicians, theurgists, alchemists, Cabalists and demonologists of every race: that label served to cover the most egregious idiocies ever produced by minds intoxicated with mystery. All the free-floating souls the Demiurge tossed into the world by the handful were to become genii, acting wills, and their obsessive intrusion would replace the notion of natural law in the minds of those who had regressed to the intellectual level of the primitives.⁴⁸

Let us leave the *Timaeus* and its commentators. Platonism as a whole lends itself well to astrology. Plato's sky is covered with models of all that exists on Earth, the models themselves copied from the divine Ideas. The entire machine is a vast wheel, whose axle, a steel pole, rests on the knees of Necessity, and from there souls fall to Earth already riddled with, selected out and stamped by the motion of the orbs turning inside with a sonorous hum and making them vibrate in unison with their eternal harmony.⁴⁹ Plato already speaks like an astrologer when he says in the *Symposium* that the masculine sex is produced by the Sun, the feminine by the Earth, and the Moon participates in both.⁵⁰

We could readily eliminate Aristotle from the list of the precursors of astrology, if this prince of ancient science had not numbered among those who needed to seek an accommodation with all doctrines. Aristotle was the one who established, for centuries to come, the theory of the elementary properties of matter, a theory that provides the basis of the astrological physics of Ptolemy and allows him to explain scientifically the nature of the influences of the stars. Aristotle accepted the four elements seen as simple bodies by Empedocles, but he considered each to be a pair of sensory qualities chosen among the four revealed by the sense of touch, that is, heat, cold, dryness, and wetness. Thus the union of the hot and dry produces fire; hot and wet, air; cold and wet, water; and cold and dry,

earth. Those are all the possible combinations, for the hot and cold or the dry and wet would result simply in a neutralization of energy. As each of these paired properties separate in order to enter into another binary association, the elements can change into each other⁵¹ — a momentous proposition, for the opposite assertion could have discouraged not the astrologers, who find things to glean in all systems, but the alchemists. Aristotle's cosmography⁵² is on a par with the science of astronomy in his day. He eliminated cosmogony, maintaining that the world had no beginning; for the rest he adopted and touched up as best as he could the system of the spheres, as imagined in bygone days by the physicists of Ionia and developed by Eudoxus and Callipus. He rid it of the musical harmony of the Pythagoreans, and he loosened as much as he could the bonds he found established tying Earthly creation to the stars by rebelling against the tyranny of numbers and geometrical figures and by attributing to all living things a local soul, an individual motor, which justifies its being and pursues its own particular ends. The general spirit of Aristotelian philosophy, which is to substitute wherever possible will for a mechanical cause, a final cause for an efficient one,⁵³ is at bottom the diametrical opposite of the scientific spirit — and in this it is Socratic. As such, it was not favorable to astrology in the form of an exact science, since all spontaneity has the effect of disturbing mathematical calculations; and furthermore, it did not like mystery or the incomprehensible. Theophrastus, one of the first to hear about Chaldean astrology taught by Berossus, apparently did not take it seriously. He found this method of forecasting "each person's life and death, and not simply common things,"⁵⁴ "marvelous," but we know what "marvelous" means in the writing of a Peripatetic. Meanwhile, despite the line the Aristotelian school drew between the higher world, incorruptible and immutable, and the sublunary world, in spite of the "quint essence" or element particular to heavenly bodies, astrologers succeeded in not quarreling with Aristotle. There as elsewhere, they were able to take what was useful to them and overlook the rest.⁵⁵

There is no need to dwell on the physics of the Epicureans, which is nothing other than atomism reduced by the Socratic measure, that is, seen from the perspective of what pertains to man and morality. Let us note only that the Epicureans, who rejected all kinds of divination on the grounds of free will, were never the willing allies of astrology. Its fatalism had no merit to them; besides, they had no understanding of astronomy, and their spirit was completely closed to Pythagorean mathematics.⁵⁶ This brings us to the threshold of another school, the Stoics, also Socratic and moralistic to an excess; for that very reason, it thought it discovered in astrology the greatest usefulness to be found in the science of celestial movements.

In search of a physics readily convertible into morality, the founders of this school, Zeno and Chrysippus, chose the system of Heraclitus, touched up and updated by borrowings from Aristotle.⁵⁷ They took care to exclude Pythagorean abstractions and spiritual essences, associated with bodies by Plato and combined with them by Aristotle. They never tired of repeating, like their Cynic or Epicurean colleagues, that everything that exists is corporeal and is known to us through the sense organs, each of which is set in operation by the particles similar in composition to the sense organ. They took the shortest road to the common meeting ground of all Socratic philosophies: the theory that man is a microcosm, the image and summary of the world, for we would not know the world if we were not like it. For them also, man is the measure of all things. If man resembles the world, the world resembles man. It is thus a living being, endowed with sensitivity and reason, a sensitivity and reason infused in the mass of its being in the form of subtle igneous or aerial molecules, which establish a perfect sympathy among all its members. This sympathy in no way resembles an occult power or a mysterious faculty; it is the mechanical consequence of the fact that Nature has

no void and that motion in any part of Being whatever must have repercussions on the whole world. The doctrine of universal sympathy became unforgettable once a Stoic was heard to say that the raising of a finger modifies the equilibrium of the universe.

It is not our task to explain how the Stoics were able to evolve a very pure morality from this crude realism, by dint of sticking by contradictions and paradoxes with the obstinacy of people who already have a goal in mind. It astonishes only those who, duped by the sounds of words, believe that man's dignity depends on the separateness of two substances endowed with contradictory qualities. It is hard to say that this morality could not be put into practice, for there was an Epictetus and a Marcus Aurelius; and above all, let us not forget that the first Stoics revived Plato's dream and flirted with the hope of imposing their ideas on entire populations by converting kings. At its inception Stoicism was not confined to a school; it attracted considerable attention in the world, a fact that must be remembered to appreciate the sheer quantity of influence it was able to put in the service of astrology. There was a time when those who had successfully carved out kingdoms in Alexander's empire made as if to join the school of the Stoics, and by that sign they attested to the popularity of the Stoics. Antigone Gonatas corresponded with Zeno; he was occasionally present at the philosopher's lessons and, unable to lure the master, he had two of his disciples come to Pella. One of them, Persaeos, became the preceptor of the royal prince Halcyoneus. Sphaeros, a disciple of Cleanthes, had been called to Alexandria by Ptolemy III Evergetus before the former became the adviser of the reformer king Cleomenes of Sparta. These court preachers, in keeping with their belief that the Wise Man knows everything, wrote treatises *On Royalty* to teach the art of governing philosophically.⁵⁸

Into this art entered respect for the people's religion and, above all, for practices held dear by common people, that is, various methods of divination used to enter into communication with the gods. To what degree they were sincere with themselves, we will never be able to say, for if they did not share the simple faith of the populace, they deemed good whatever is useful for morality, and a properly expurgated religion seemed to them the form of teaching best suited to the people's intelligence. Myth, allegory and parable are not lies, they thought as did many others, but only the more or less transparent veil of truth, unacceptable in a naked state. The Stoics worked conscientiously to lift the veil for the initiates, and they made discoveries in the course of their exegesis, once serving as examples and now as excuses for the mythographers of our day. We will call attention only to the explanations of myths of sidereal origin. It probably took them awhile to discover that the battle among the Homeric gods was the distorted memory of the conjunction of seven planets.⁵⁹ But subsequently there was no longer doubt that Apollo was the Sun and Artemis the Moon, or perhaps Athena; that Apollo owed the epithet Loxias as much to the obliqueness of the ecliptic as to the obscurity of his oracles, the epithet Pythios to the putrefaction caused by moist heat and inhibited by dry heat. Quite apart from all allegory, they taught that the stars are living gods, far superior in intelligence to man, and they influence his destiny by virtue of universal sympathy. The Earth was also for them a goddess, the venerable Mother of the Gods, Rhea, Demeter, Hestia. Their faith on this point was so sincere that it became dogmatic. When Aristarchus of Samos decided to maintain that the Earth revolved around the Sun, Cleanthes, Master of the Stoic school at the time, accused him of impiety and tried to have him condemned by the Athenians. We know that though they were indulgent about mythological buffooneries, they were not at all so about "atheists." It was perhaps this outcry that for nearly twenty centuries abrogated the triumph of Aristarchus' ideas and strengthened the basis of all astrological calculations.⁶⁰

But what predestined particularly the Stoics to back astrological speculations and seek logical proofs for them was their unshakable

faith in the legitimacy of divination, of which astrology is only a particular form. They were never willing to step outside a reasoning that their adversaries labeled a vicious circle, a reasoning that went like this: "If the gods exist, they speak; the gods do speak, therefore they exist."⁶¹ The concept of being of a higher intelligence who might have decided against communicating with man seemed nonsensical to them. But whereas the ordinary man seeks to know the future only to shield himself from the predicted dangers and thus falls into the contradiction of pretending to change what is already certain at the time the gods foresee it, the Stoics wore themselves out in vain efforts to reconcile logic, which leads straight to fatalism, with a sense of the practical, which called for divination to provide usable forewarnings. If the future depends on conditions, it cannot be foreseen; it could be foreseen only if those conditions could also be foreseen, in which case there would be no place for free acts, for by definition freedom falls outside the necessity of ending up with a previously established position. This argument, still a torment to today's metaphysicians, acquired a singular energy in the system of universal sympathy. Let a single free act insinuate itself into the series of causes and effects, and the destiny of the world was thus thrown off course and pushed into pathways where even divine intelligence could not precede it but only follow after it.

The Stoics valiantly accepted the consequences of their own principles. They used them to demonstrate the reality of Providence, the certainty of divination, and they waxed ecstatic over the goodly order of the world, dependent on the punctual actualization of a divine plan, as immutable as it is wise. But they were no less determined to reject the moral consequences of fatalism, especially the "idle reasoning" ((**Greek words**)) which always ended by leaving things to inevitable destiny. Chrysippus performed prodigiously ingenious feats to loosen the bonds of Necessity without breaking them, by drawing distinctions between necessity in the strict sense ((**Greek word**)) and predestination ((**Greek word - Greek word**)) between "perfect and principal" causes and auxiliary causes, between things inevitable in and of themselves and things "confatalistic" or inevitable by association; he sought to distinguish, from the standpoint of inevitability, between the past, whose contrary is actually impossible, and the future, whose contrary is also impossible but can be conceived as possible.⁶² In the last analysis, the Stoic school succeeded in saving only the Sage's freedom, which consists of willing freely what the universal Intelligence wills. The better and the sooner the Sage knows the divine plan, the better he can exercise this freedom. Then he can walk, as Seneca says,⁶⁴ instead of being dragged in the way traced by destiny. Astrologers, who catered to a less resigned clientele, showed themselves more accommodating.⁶⁵

But they likewise could not allow themselves to exaggerate the malleability of Destiny without running the risk of making their predictions chancy and problematical. As a last resort against overly pressing objections, they kept in reserve the serene resignation of the Stoics. Ptolemy, the great doctor of astrology, gave a certain leeway to human freedom in matters concerning not absolute necessity but predestination; nevertheless he concluded by saying, "And even when considering things that must necessarily happen, let us not forget that the unexpected brings too much distress or joy; whereas to know in advance habituates and appeases the soul by making it consider a distant future as though it were the present and prepares it to accept peacefully and tranquilly all that must happen."⁶⁶

We will have plenty of time to appreciate the considerable part played by the Stoics in the elaboration of astrological doctrines as they are expounded. It would be harder to estimate in turn the influence exerted on Stoicism by astrology, which was imported into Greece at the very time when that great school of philosophy was just evolving.⁶⁷ But that is a question for historians of philosophy. What is certain is that Chrysippus recognized the "Chaldeans" as allies;

he borrowed from them examples of problems concerning fatalism and restated certain astrological propositions in his own words to make them irrefutable, as for example the one reported by Cicero, "If someone is born when the Dog Star rises, he will not die at sea."⁶⁸ It is remarkable that the popularity of the Stoics, which we alluded to earlier, coincides with the diffusion of the ideas brought from the East by the Chaldean Berosus.

Desired or not, the alliance of astrology and Stoicism happened by the force of things; it was strengthened by the mutual influence

that two doctrines equally preoccupied with knowing and foreseeing could not avoid exerting on each other. Zeno and Berosus were not only contemporaries. If it is true that each one, perhaps while still alive, had a statue dedicated to him in Athens,⁶⁹ it could be said that popular instinct had guessed what we will have to explain with greater difficulty and less grace. ■

Chaldean Astrology

Alexander's conquest broke down the barriers between races and civilizations. Instead of protecting themselves from the curiosity of the Greeks, the ancient peoples he had subdued found consolation for their wounded patriotism in showing off to them the antiquity of their traditions and in treating them like young people with much to learn. The Hellenes willingly lent themselves to this role of neophytes; they genuinely marveled at the vistas opened to them by priestly archives, and their critical spirit rebelled against neither the most baroque legends nor accounts of the most unlikely chronologies. To them all these old matters tasted of newness. They were astonished not to have known earlier the degree to which their most distant memories were recent in comparison to these, and they suspected their wise men and "friends of wisdom" to have drawn on these treasures of accumulated experience without having said so! Egyptian priests had had no trouble, a century earlier, in persuading Herodotus that Greek civilization was grafted from the Egyptian. To teach the Alexandrians and exhort them to be modest, all they had had to do was to set before Herodotus the dazzling sight of hundreds of centuries of history, later recorded by the priest Manethon.

What Manethon was doing for Egypt, at the beginning of the third century BC, his contemporary, the Chaldean priest Berosus, did for Chaldea. He wrote a history of Chaldea in Greek in which, it is said, he paid homage to Antiochus I Soter. In it he probably played up astrology, the science on which his country and his priestly caste prided themselves, the latter being closely bound to history as the counselors of kings and the guardians of the cycles of Babylonian chronology. Right away, for the moment, Chaldea supplanted Egypt in public favor; astrology above all aroused the curiosity of the Greeks to such a pitch that Berosus resettled in Cos in order to teach it to medical students drawn to the country of Hippocrates by the fame of the Aesclepiadae. He opened a school and made disciples, among whom Vitruvius cites Antipater and a certain Achinapoulos (Athenodorus?), who had the idea to apply the methods of genethliology — not to the date of birth, but the date of conception. As we can see, the seed fell into fertile ground: astrology, immobilized during long centuries in a hieratic tradition, was to be subjected to discussions, worked over and transformed by the inventive genius of the Greeks.

About 280 BC is therefore the date we assign to the birth of Greek astrology, without claiming nevertheless that the Greeks had never heard about astrology before the day it was taught them. If the Persians had brought astrologers with them during the war against the Medes, it is at the very least improbable that these Chaldeans made many converts then, in a country laid waste by the Persians.

Only fragments and commentaries of a questionable authenticity remain of Berosus' writings, and it is impossible to delimit even approximately the contribution made by Chaldea to the science that was to preserve its name, despite the competition from Egyptian traditions. Berosus must have circulated all that he was able to draw from the archives of Babylon and Nineveh, from the libraries of baked clay tablets whose debris was recently unearthed. From the modern discoveries can be pieced together an idea of the teaching of the Chaldean. It is clear that, at a time when Greek philosophers had already drawn up plausible systems of cosmography and spaced the celestial spheres at harmonious distances, at the moment when astronomers in Alexandria began their descriptive inventory of the sky and ap-

plied to astronomy the rigorous methodology of geometry, more than one listener must have been tempted to take the lucubrations of the Chaldeans as childish prattle or the babblings of senility, if he had not been intimidated by the enormous mass of observation supposedly substantiating this mishmash of legends. The debate over the respective claims of Chaldeans and Egyptians of priority in cultural matters, a debate still going on today⁷, must have been of great current interest then. If we believe the authors, Berosus crushed all counterclaims under the weight of numbers. He spoke of observations pursued in Chaldea since 490,000 years earlier. Later he even appeared modest, for Epigenes of Byzantium raised the number to 720,000 and Simplicius — at the time when the world sank back into childhood — was not afraid to cite the number 1,400,000⁸. No doubt serious people had reservations. Cicero deems Babylonians to be great braggarts; Diodorus refuses to believe in such a fabled antiquity; and it was assumed, as said Georges le Cyncelle, that Berosus and Manethon were vying to outdo each other to the detriment of common sense.⁹ However, the least credulous remained convinced that they were dealing with a very ancient tradition. Even if Chaldean cosmogony and cosmography appeared backward, the factual observations kept all their value; the delicate point in astrology, as in all divination, was to establish the relationship between the sign and the thing signified. Unless it is revealed, the relationship can be known only by experience, and the experience itself becomes telling only by dint of repetition. If Berosus brought his disciples lists of eclipses like those found at Kuyundijk, with a mention of subsequent events, he must have given them an exalted idea of the time it took to make note of observations of eclipses every day of the year.

By consolidating what we know today of Chaldean astrological doctrines, we can arrive at an approximate idea of what Berosus taught.¹⁰

According to the Chaldeans, the sky and the earth are two halves of Tiamat, a monster of chaos, engendered in a limitless ocean whose waters bathed the top of the sky as well as the bottom of the earth.¹¹ From the body of Tiamat split in two, the demiurge Bel-Marduk made two superimposed arches, the cupola of the sky and the lower arch of the earth, united at their base by a circular dike that prevents the waters of the cosmic ocean from flowing into the intervening space. Like the earth, the sky is motionless, and there are no turning spheres between the two, as the Greeks imagined. The stars are thus balls of fire which, formed in the outer waters of the sky, enter and leave our world by openings in the circumference of the heavenly dome, at the level of the horizon.

The stars move in established courses in the sky, being inhabited and propelled by intelligent deities or being these deities themselves. Most revolve under the eye of Bel, who holds and governs them from the height of the pole, or they belong to the aquatic bands of the god Ea, who reigns over the sea in the south. But among them, there are some that take "the course relative to Anu," the universal Father, seated at the pole of ecliptic, and they hold important posts. They are — beside the two great lights, the god Sin and the god Samas — the five planets or "interpreter" stars, thus named because, unlike the others, they are not tied to a fixed place and a regular trajectory and thus they "announce future events and interpret for mankind the beneficent designs of the gods."¹² These privileged stars are moved by deities: the planet Dapinu (♃) by Marduk, the planet Dilbat (♄)

by the goddess Ishtar, the planet Kaimanu (♄) by Ninib, the planet Bibbu (♂) by Nergal, and the planet Mustabarru-Mutanu (♃) by Nabu.¹³

To give a more detailed account of Chaldean cosmography, we must rely on the questionable aid of Greek writers, especially Diodorus, a guide whose competence Assyriologists would have done well to discredit long ago rather than to try to confirm, by combing through cuneiform inscriptions, the things he was told by "Chaldeans" of his time, i.e., cosmopolitan astrologers, Greeks professing to be Chaldeans.¹⁴

Thus, below (?) the planets,¹⁵ whose movements constitute the very object of astrological calculations, are placed "30 stars, that the Chaldeans call their counselor gods: half of them oversee places on the surface of the earth; the other half, the places beneath the earth, inspecting what happens both among men and in the heavens."¹⁶ Every ten days one of them is sent from the upper to the lower regions as a messenger of the stars, while another rises from subterranean places to above the earth. Their course is regulated in this manner and bound up in a perpetual circulation. Among these gods there are twelve leaders, each of whom presides over a month of the year and a sign of the Zodiac. Among these "stars" move the Sun, Moon, and five planets, each at a different speed. Outside the circle of the Zodiac, they determine the positions of twenty-four stars, half of them in the northern regions and half in the southern: the visible ones are assigned to living beings, the invisible ones to the dead, and they call them judges of the universe. Below all the aforementioned stars revolves the Moon, they say, very close to the Earth on account of its weight, and it completes its course in the shortest time, not because of its rapid motion but because of its short orbit. About the fact that it borrows its light and is eclipsed by the Earth's shadow, they say about the same things as do the Greeks.¹⁷

Let us interrupt the babble of the Chaldeans who informed Diodorus so well and inspired in him such a lofty idea of their knowledge. In the times of Berosus, we know from direct accounts,¹⁸ the Chaldeans still taught that the Moon, the dwelling place of the great god Sin, was a ball with one bright side and one dark side, and this explained the Moon's phases and eclipses. Two centuries later they were pretending to have known from time immemorial what the Greeks had discovered. What Diodorus adds about the "shiplike and hollow"¹⁹ shape of the Earth appears authentic, as well as the ignorance the Chaldeans implicitly admitted to with respect to the forecasting of solar eclipses.²⁰

We make no claim to unscramble the text of Diodorus; we choose rather to strip it of the authority it once commanded by reclassifying it as just an improvisation recorded with no critical sense or sense of chronology, and thus we set it aside. Even less will we bring into account the "Chaldeans" of the second century AD, who made up the "Chaldean oracles" supposedly dating back to very ancient times and replete with divine wisdom. It cannot be repeated too often that relative both to the Chaldeans and the Egyptians, only information drawn from indigenous documents can be given credence.

Chaldean documents tell us that of the two great workers, Nature and Destiny, the Sun and the Moon, it was our satellite, bearing the name Sin and considered masculine, who held the highest rank. The sun-god Samas ranked only second.²¹ The Greeks — like the Egyptians — were of a different persuasion and gave primacy to the Sun; but it is understandable that astrologers took for the principal subject of their observations and the object of their homage the liveliest celestial body, so to speak, the most rapid in its course and the most varied in its metamorphoses. Among the Greeks themselves the Moon and not the Sun regulated the calendar and through the calendar the religious observances.²² Sin was the god of revelation par excellence. When, with its bright face fully lit, it suddenly turned its dark side towards men, its intention of giving men a warning was

obvious. In truth, every eclipse had always been followed by important events such as plagues, famines, wars or earthquakes. However, priests eventually discovered that even these spontaneous movements of the god Sin followed each other in a certain order and formed a closed cycle or *saros*. Every once in awhile, but to the even greater fear of men, the god Samas also veiled his face, without any forewarning of these fearful signs.

The professor of Chaldean astrology must have cited to his bedazzled audience the observations accumulated by the royal astrologers, who addressed their reports to their sovereign from the towers of Borsippa or Nineveh, noting lucky or unlucky days, the approaching conjunction and occultation of planets and stars, and the earthly consequences of these celestial events. In documents painfully deciphered by our Assyriologists, struggling against both the uncertainty of readings and the intentional obscurity of priestly metaphors,²³ mention is made of stars that are "fixed,"²⁴ that "talk" with another star or are in opposition to it,²⁵ and each observation is accompanied by a formula of prognostication: "the harvests of the country prosper;" "joy to the master of the house and country;" or "floods;" "locusts;" "the king spreads his arms over the neighboring country;" "the troops march;" "the citadels are oppressed by armed men;" or, "during this year women give birth to male children;" "justice reigns in the country;" and other affirmations whose equivalents can still be found in our almanacs, but which must have had the charm of novelty for the first adepts of an astrology imported from the East. One grasps here and there in this mishmash some modes of interpretation and certain doctrines which would later be familiar to Hellenized astrology. For example, when the star Manma (♂?) is in opposition to the star Battabba (Twice-great): "good for the King," whose arms will probably strike down the mightiest. If the same star is in opposition with "the Fish star," an abundance of fish is foretold for the country. If the same is in opposition with Mercury (?): the King "stays in his country," perhaps by the equilibrium of two equal and opposite influences. Should there be opposition between Mars and Venus, "this year, for six months, the King stays." If Mars is in opposition to Jupiter, "ruin of the country," through the conflict of two great powers. The astrological doctrine whereby planets derive their sex from their position is affirmed by a telling example; "Venus is female in the west; Venus is male in the Orient" (p. 296).

The prognostications made on the basis of lunar eclipses are particularly numerous. Royal astrologers sometimes seem disappointed in their calculations relative to the syzygies. They remark from time to time, "the Moon arrives other than at the calculated time, an eclipse occurs" (p. 216) Or again: "contrary to the time calculated, the Moon and the Sun were seen together. A strong enemy ravages the countryside; the King of Accad is felled by his enemy" (p. 288) In most of the reports mention is made of the setting of the Moon and the planet "fixed at its place." Thus: "the Moon sets and Mercury is fixed at its place; the king of Phoenicia²⁶ falls and his enemy lays waste the countryside" (p. 221) One tablet (pp. 222-3) contains observations of lunar eclipses for every day of the month of Tammuz, from the first to the fifteenth, with precise details about the progress of the phenomenon. "On the first day, if there is an eclipse and it starts in the south with light (partial eclipse?), a great king will die. In the month of Tammuz, the second day, an eclipse occurring and beginning in the north with light, king against king. In Tammuz, the third day, an eclipse happening and beginning in the east with light, rain and floods. In Tammuz, the fourth day, an eclipse occurring and beginning in the west, the harvests in Phoenicia (are lost?). In Tammuz the fifth day, an eclipse occurs and the great Star is rising: famine in the country. In Tammuz, the sixth day, an eclipse occurs and it is white (?); the Moon (receives) prayers. In Tammuz, the seventh day, an eclipse occurs and it is black: the Moon

(sends) food to Phoenicia. In Tammuz, the eighth day, an eclipse occurs and it is dark blue; a piece of land and field . . . (?) In Tammuz, the ninth day, an eclipse occurs and it is yellow-green: devastation of the enemy territory. In Tammuz, the tenth day, an eclipse occurs and it is pale yellow; Accad is . . . ? . . . In Tammuz, the eleventh day, an eclipse occurs and the Lord of light goes on his way; the treasure of the country (is pillaged?). In Tammuz, the twelfth day, an eclipse occurs and the guard ends. . . In Tammuz, the thirteenth day, an eclipse occurs and moves toward the south. . . In Tammuz, the fourteenth day, an eclipse occurs and moves toward the north. In Tammuz, the fifteenth day, an eclipse occurs and moves toward the east." The general forecast for the entire month is this: "In Tammuz, from the first to the thirtieth day, if an eclipse occurs, the altars are destroyed, the towers leveled, and the king is not at peace."

In the face of this strange document, one wonders if it isn't the work of a mystifier taken in by his own mystification, the king of Chaldea or a modern Assyriologist. The months of the Chaldean year were lunar months, beginning with the New Moon and divided in two halves by the Full Moon.²⁷ At the time of this document, Chaldean astronomers ostensibly had not yet noticed that eclipses take place only at the syzygies, the eclipses of the Moon at the Full Moon or opposition, the eclipses of the Sun at the New Moon or conjunction. In supposing eclipses to be possible every day of the month, they handed themselves a certificate of ignorance,²⁸ surely unknown to the Chaldeans of Diodorus, so expert on the cause of eclipses. Or alternately but amounting to the same if believed, they had regulated the calendar so poorly that the Full Moon, although fixed on the fifteenth, could have occurred any day of the month at different times. The drafter of another report (pp. 239ff.) affirms that the eclipses always occur on the 14, 15, 16, 20 and 21st of the month. He was alas no better than the previous one in understanding the cause of eclipses, although less extreme in his absurdity. If the offending dates were removed from these lists, there would remain a kind of astrological grammar book, a classification of presages ordered according to the color and the progression of the shadow on the lunar disk. If we wish to conjecture, it is perhaps what a first writer wished to do and a copyist misunderstood.²⁹

In the absence of eclipses, lunar halos and the greater or lesser brightness of the crescent Moon's horns served to make forecasts. It also seems that the royal astrologers committed or assumed mistakes in calculations which transformed regular phenomena into prodigious events. We saw how they sometimes found the Moon "out of its time" during one of its eclipses. In a report intended probably for Assurbanipal, an astrologer speaks of a solar eclipse that he had anticipated and did not come to pass.³⁰ Instead, there was a conjunction of the Moon with a planet: "To the king, my lord, his faithful servant Mars-Istar. The 27th day, the moon disappeared. On the 28th, 29th and 30th, we observed the lunar node of the eclipse of the Sun; the time passed and the eclipse failed to occur. The first day, when the day of the New Moon of the month of Tammuz was declining, the Moon was again visible above the planet Jupiter, as I already reported to the king, my master: I was not wrong. In the hour of Anu, it appeared in decline in the circle of Regulus, but its crescent was not clear in the mists of the horizon."³¹ Elsewhere, the "chief astrologer" states in one of his reports: "The Moon is seen on the 28th day as it appears on the first: prosperity for Accad, misfortune for Phoenicia" (p. 228). It is probably a forecast made in consideration of the effect to be produced, at a time when Phoenicia, so often named in our tablets, was perpetually engaged in hostilities with the kings of Babylonia and Nineveh.

Most of the tablets bear a signature without attributes. A certain Nabua calls himself "from Assur," and Istar-nadin-Habal gives his title as "the chief of the astrologers of Arbele." A curious fact

is that it occurs to a certain astrologer from the time of Assurbanipal to insert in his report some observations he claims he restored "in conformity with the terms of a tablet no longer extant" or drawn from "the Illumination of Bel, taken from a no longer extant tablet." Chaldean astrology already had its scholars and lived on its past.

Not one of these ancient documents comes anywhere close to making mention of genethliology or the prediction of an individual's destiny according to the position of the stars at the time of birth. This a *silentio* argument probably cannot invalidate the tradition that attributes the invention of genethliological methods to the Chaldeans; but it confirms us in our opinion that astrology began by making predictions applicable to nations and kings before assuming that the stars had any bearing on every person coming into this world. Perhaps it was Greek logic, rigorous and democratic, that later made it condescend to take a concern for humble individuals; this would accentuate even more the falseness of the Chaldeans' claim to be in possession of observations made over millions of years and to be used "to attempt experiments on children."³² To find a Chaldean birth chart, one must wait until the Arsacid dynasty, that is, the time when the Orientals imitated the Greeks. Even then, the only ones known to us are drawn up so concisely as to bespeak a certain indifference toward this kind of observation: "The year 170 of Demetrius, the month of Adar, the night of the 6th, at the beginning of the night, the Moon in front of the Horn of the North,³³ at an elbow's length. On the morning of the 6th, a little child was born under its sign. The Moon (was) at the beginning of Gemini, the sun in Pisces, Jupiter in Libra, Venus and Mars in Capricorn, Saturn in Leo." Another mention, even more summary: "The year 170, in the month of Nisan 4, equinox: in the house, the birth of a child born under Jupiter is announced,"³⁴ that is, Jupiter was in the sky all night long.

Later we will compare the dryness of these documents with the minute precision of the birth charts drawn up by the Greeks, who disposed of the resources of an art brought to perfection. We must now return to the times and alleged disciples of Berosus, to try to determine the point of intersection of Chaldean and Greek astrology; in other words, to gauge, if possible, what the latter owes to the former over and beyond the general idea and the impulse that gave rise to it. The question is most complex, for the tradition propagated by the Greeks themselves failed to sort it out; they quite simply attributed the origin of all the tools of astrology to the Orientals, Chaldeans or Egyptians. The tradition contains many misconceptions that need to be cleared up although there is textual evidence in their favor; and we will probably not be able to convince the reader right away that nine out of ten of the Chaldeans or Egyptians honored by these texts were simply Greek astrologers parading as the repositories of an archaic doctrine. This demonstration will be made gradually and will appear definitively established, we hope, in the last chapter.³⁵

Let us go straight to the principal question and seek out the origins of the key element of astrological methodology. The zodiac is the foremost instrument of Greek astrology, the map on which the positions of the stars are deployed and the angles of the polygons determining the "aspects" are established; it is the register of houses and other planetary fiefdoms and, most importantly, the repertoire of every kind of influence conveying the qualities and aptitudes symbolized by the signs (signa). It is unquestionable — the chart cited above proves it — that the Chaldeans of the time of the Arsacids used the zodiac as a map; it is less certain and even questionable whether the zodiac was known to the ancient Chaldeans, much less to the Egyptians, traditional competitors in this sphere. To simplify the problem, let us try to examine the claims of the Egyptians and thereby eliminate them.

The origin of the zodiac is a question that has exercised the imaginations at least as much as the knowledge of scholars. The primarily animal figures that compose it; the hieroglyphs that resume these

figures; the discovery of four Egyptian Zodiacs — two at Dendarah, one at Esneh and one at Akhmim — thought to be very ancient; the fact that the Egyptians have had from time immemorial a solar year divided into twelve equal parts and regulated by the rise of constellations; the numerous texts asserting the Egyptians' priority in the invention of astronomy or astrology and notably their having divided the zodiac into twelve equal parts by the use of the clepsydra: all these things at first appeared to sway the debate in favor of the Egyptians. But it was conclusively shown that the Egyptian Zodiacs all date from the Roman period and are imitations of the Greek zodiac; right away the overblown assumptions based on their supposed antiquity crumbled.³⁶ Today, were there no other objections, we could conceivably accept to look back twenty-four hundred years to the supposed date of the zodiacs in which the spring equinox fell in Taurus, due to the calculated precession of the equinoxes; but we smile at the anti-biblical zeal of Dupuis who, performing permutations on equinoxes and solstices, laid claim to the thirteen thousand years needed for the ecliptical to turn 180°. The carelessness of an artist of the Antonin dynasty — the author of the Esneh Zodiac — unleashed this wave of speculation, which troubled biblical scholars and almost transformed the scientific discussion into a religious quarrel.

As for the texts that attribute the invention of the zodiac to the Egyptians, they represent the opinion of scholiasts of a later age, who naively exposed their ignorance. Macrobius explained point by point how the Egyptians went about dividing the zodiacal circle into equal twelfths by the use of the clepsydra,³⁷ with no inkling that his procedure, although fine for measuring twelfths at the equator, would result in very unequal fractions in the zodiac. The calculation of the estimates of the oblique ascensions in degrees of perpendicular ascension is entirely foreign to him. Servius perhaps heard of oblique ascensions, that is, the unequal arcs of the zodiac that rise above the horizon in equal times, but he seems to have confused the actual span with the time of ascension; he asserted that the Egyptians divide the zodiac into twelve equal parts, but the Chaldeans have only eleven signs, so various in size as to range from virtually the same to double.³⁸ At the time of Servius and Macrobius, Greek astrologers had been "Chaldean" or "Egyptian" for six hundred years and such texts could not be attributed to Egyptians from Egypt and Chaldeans from Chaldea.

Egyptologists agree, incidentally, that even if many names of constellations and decanates can be found in documents, or even proof that constellations were circumscribed in figures, these constellations belong to very different parts of the sky and they were noticed, in preference to others, by virtue of their brightness. We know that the regulator of the Egyptian calendar was Sothis or Sirius and his neighbor Orion, not figuring in the zodiac. Likewise the decanates, later introduced into their zodiac by the Greeks, were unevenly and randomly spread along the circumference of the sphere, preferably in the equatorial region. In a word, there was no Egyptian Zodiac; and it is quite conceivable since the Egyptians showed little interest in following the motion of the planets and their oblique trajectories based their calendar year on the rise of equatorial constellations.³⁹

For the opposite reason, the Chaldeans, using a lunisolar year with the Moon as the principal regulator and attributing a preponderant influence to the planets, must have distinguished at an early date those constellations which have the honor of housing the wandering stars. If the Moon was always the principal object of their attention, they must first have noted the stages of its journey while trying to equate the number of these stages with the days of the Moon's *sidereal* revolution. Logic postulates an initial Babylonian zodiac with twenty-eight lunar houses or mansions, like the ones found among the Hindus and the Chinese, a zodiac which would later and additionally have been divided into twelve solar phases.⁴⁰

We cannot say whether or not recent discoveries completely satisfied this logic on this score and in what relationship with a genuine lunar zodiac stand the twenty-eight "standard stars," unequally spaced, on which the Chaldean astronomers of the Arsacid dynasty charted the motion of the planets.⁴¹ What we seek is a solar zodiac in ancient Chaldea.

The Greek Zodiac is composed of two distinct elements: the signs or constellations, scattered in the vicinity of the ecliptic or the Sun's course, irregular in position, unequal in size as well as brightness; and secondly, the artificial distribution of these signs into twelve equal parts. It is clear that if we disregard the latter element, the more important of the two and the distinguishing feature of the Greek Zodiac, we must find in Chaldean and Egyptian uranography allusions to zodiacal constellations under different names and, if need be, different figures. To determine if there was imitation on the part of the Greeks, it will suffice to research whether or not there is an analogy between the characters attributed to corresponding constellations by the former and the latter.

Insofar as the twelfths are concerned, the question seems to have been resolved. Even in the Arsacid dynasty, the Chaldeans, disliking invisible abstractions, had neglected to reduce the zodiacal constellations to equal dimensions.⁴² All the more reason to conclude from this that they were not familiar with uniform dodecatemories at a time when they were free of all Greek influence.

Now for the signs or figures. Contemporary Assyriologists — or at least the most prudent among them — have not yet found in ancient documents a complete series of zodiacal constellations comparable to the Greek; but they report a Ram, a Taurus, the Gemini, a Scorpio, a fish-tailed Goat probably corresponding to Capricorn, and two Fish or fish-men joined by a ligament, like those of the Greek Zodiac. Finally, if there is no constellation of Leo, we find the solar god Nergal whose attribute is the Lion, and the Sheaf of Wheat held by the Greek Virgin (Virgo) is indeed Semitic. The supposed position of these groups of stars around the sphere seems to indicate that their names are metaphors suggested by the temperatures of the corresponding parts of the solar year. Thus, thirty centuries before our time, the spring equinox fell in Taurus. The Bull was then the symbol of Marduk, the springtime sun which rises from the winter's waters and is still half submerged in it.⁴³ The winter signs are all aquatic, starting with Scorpio, which corresponded to the fall equinox at that time. This Scorpio could well have been the Scorpion-Man monster who, according to cosmogonic legends, had helped Tiamat resist the demiurge Bel-Marduk. The epithet of Lion would be most suitable to the furious sun of midsummer. Finally, the Sheaf of Wheat could stand for the sign which rose and smiled at the harvesters as soon as the Sun set, rather than for the sign which the Sun crossed at the time of the harvest.⁴⁴

This initial Chaldean Zodiac was probably subdivided and completed later, perhaps as a consequence of the adoption of a lunisolar, which required at least twelve compartments. The disturbance of the old system brought on by the precession of the equinoxes could also have motivated the revisions. Thus, becoming aware that the equinox no longer fell in Taurus (2450 BC), the Chaldeans probably inserted between Taurus and Pisces a new solar symbol, the Ram, to indicate the spring equinox, and assigned the front part of Scorpio to the autumnal equinox, while its stinger became the prototype of the Greek Sagittarius.

However satisfying these hypotheses may be,⁴⁵ they are not without flaws. The latter fails to explain either the absence of a sign dedicated to the summer solstice, or the nature of this sign, which should have been the model of the Greek Crab (Cancer), that is, an aquatic animal, completely out of place at the point where the Sun attains its greatest power. Neither is the explanation of the sign of Gemini very advanced when one sees these "Great Twins" as

hypostases of the solar god Nergal, symbolizing the variability of spring temperatures.⁴⁶

While combing Chaldean legends for proof of the zodiac's great antiquity, it occurred to ingenious scholars to consider the twelve-part poem of Izdubar (Gilgamesh) as the model or perhaps the interpretation of the zodiacal cycle.⁴⁷ Indeed, the first type to attract attention is the divine bull Marduk, bearing on his head "the horns of sovereignty," and the Bull is also the first sign of the zodiac. The ninth sign, Scorpio, appears in the IXth Canto of the poem, in the place where the solar hero Gilgamesh meets the scorpion-men guarding the door of Mount Masu. The XIth Canto of the poem, the story of the flood, provides an explanation for the sign of Aquarius, the eleventh sign of the zodiac. We would need reasons other than these adventuresome conjectures to convince us that the Chaldeans thought of the hero of the poem as a "prototype" or that the poet dramatized the signs of the zodiac.⁴⁸

All in all, what emerges from this obscurity, for a nonbeliever, is the impression that, because a sufficient cause for the zodiac was not found in civilized Greece with its anthropomorphic religion and because the Greeks themselves recognized the fish of the Euphrates in the sign of that name, the Greeks' borrowing from Chaldea could legitimately be assumed. Probably the initial impulse came from there, the idea to set groups of stars in animal configurations, as if the first inklings of Greek uranography. With their ready, fertile imaginations, the Greeks did the rest: they decorated the sky in their own fashion, no longer knowing nor caring to know to whom they owed what had come to them from elsewhere. Popular instinct first, then the work of mythographers connected all these astrological types to the national mythology and thus blotted out or rendered unrecognizable their foreign precursors which would have betrayed their origin.⁴⁹ Even if all the prototypes of the Greek Zodiac were Chaldean, we would still be indebted to the Greeks for the construction of the zodiacal circle or ring, geometrically traced through the constellations, and the idealized map whose twelve equal sections adopt the names but not the dimensions of the groups of stars along its path.⁵⁰

The construction of the zodiac was the last step of this work of assimilation and invention. Ancient navigators, disciples of the Phoenicians, needed only the rising of the Pleiades as an invitation to go back to sea: they fixed their attention on the pole. Homer mentions only "the Pleiades, the Cowherd slow to set, the Bear, also called the Chariot, which rotates in place while looking at Orion and it alone does not dip into the Ocean." He also knows the star "called Orion's Dog, which is very bright but happens to be a baleful sign, for it brings burning heat to unfortunate mortals." Hesiod, who teaches farmers to know the seasons, is preoccupied by the rise of Arcturus, the Pleiades and Hyades, Orion and Sirius. Whence came these names? Were they indigenous, or transcribed, or translated? The Greeks called Ursa Minor, also named the "Dog's Tail," "Phoenician woman;" but Hesiod already knew the legends that made the Bears and Arcturus, also called Bear-Keeper into prototypal Arcadian heroes. Who made Orion a hunter, with his dog Sirius, in pursuit of the Pleiades and pursued by the Bear and killed by the Scorpion? Cassiopeia bears a Phoenician name; but Sophocles included her with the Nereids and Andromeda in a Greek mythological drama. We will see further on how varied is the mythical tapestry embroidered on the zodiac.⁵¹

The zodiac became necessary to the Greeks when they began to observe more closely the courses of the Sun, Moon and even the planets. They did not adopt it as a finished whole and did not construct it all at once, according to a blueprint. It was finished only in the time of Hipparchus when, in order to have twelve signs, it was decided to separate the Claws from the Scorpion and make of them the sign of Libra. An allusion occurring in Pliny's compilation informs us that toward the end of the sixth century, Cleostratus of

Tenedos introduced the Ram and Sagittarius. We are not told if he was borrowing from Chaldean traditions nor if the zodiac was thereby made complete. The division into twelve equal parts, contrary to nature, could have come only later, when observers were armed with instruments capable of some precision, instruments unknown before the still rudimentary diopter of Eudoxus.⁵²

What is certain is that the Greeks did not wait for Berosus to initiate them into the secrets of astrology; they had already covered the sky with symbolic figures drawn in minute detail. We know that Aratus of Soli, a contemporary of Berosus, permanently established stellar iconography, but he merely versified a treatise with the same title, written nearly a century earlier by Eudoxus of Cnidos. Now this guidebook to the celestial museum indicates in what part of the symbolic body, head, neck, shoulders, right and left eye, etc. are located the stars, and what is the posture of the figure, standing, recumbent, kneeling, turned forward or backward, seen from above or below. The Greek astronomers thus unwittingly prepared all sorts of pretexts for the astrological speculations of future "Chaldeans" of Greek blood.⁵⁴

We will deal more kindly with the rights of the Chaldeans insofar as the planets are concerned. Merely to distinguish the planets from the stars, especially the slow-moving planets, takes greatly prolonged observations, and to have even an approximate idea of their revolutions requires the work of several generations. The Greek philosophers, isolated and makeshift scientists, could borrow from ancient peoples around them only the data on which they constructed their cosmographic systems. Democritus knew that there were wandering stars, but according to Seneca,⁵⁵ he knew neither their number nor their trajectories; which — be it said in passing — casts a suspicion of anachronism on the famous musical octave of the spheres of Pythagoras. Plato knew of the planets; but although all the heavenly regions were furnished with mythological names, the three highest planets were still unnamed. Eudoxus was first, again according to Seneca, to "bring back the tables of planetary movements from Egypt to Greece."⁵⁶

At the time of Seneca, Babylonia and Chaldea has passed into memory, and Egypt, still active and vibrant, pressed its claims to primacy in matters of civilization, thanks primarily to Alexandrian forgers. With respect to astrology, the names Egyptian and Chaldean are still so interchangeable that we can confidently substitute the latter for the former or, to reconcile matters, understand that Eudoxus brought back from Egypt notions previously imported from Chaldea.

What could have been this scientific look, which probably arrived just in time to help Plato construct his cosmogony? Probably something that the Greeks could not improvise, established facts about the motion of the planets, sometimes forward, sometimes retrograde, and the duration of their revolutions. Plato used this source — or perhaps the Pythagoreans before him⁵⁷ — to derive the oldest and most widely accepted order of the planets in Greece, by the application of a very simple principle, namely, that the distances from the planets to the Earth must be in direct proportion to the duration of their revolutions. The Moon was at the bottom and Saturn at the top of the list.

This principle of pure mechanics may or may not have exceeded the knowledge of the Chaldeans and Egyptians, to whom were unfailingly attributed the dispositions adopted by Greek philosophers and astronomers, by virtue of another principle, that is, that the Egyptians and Chaldeans had invented everything. We saw above that the Chaldeans placed the planets in a series whose rationale escapes us, perhaps in the order of dignity or of presumed size. In Egypt, exclusive of the Sun and Moon, as many as eight different arrangements of the five planets were found, none of which coincides with the order of distances.⁵⁸ Could it not be that the notion of distance

tion can only destroy works of faith. Chaldean astrology rests on the primordial foundation of all religions: on animistic logic, that posits that everything is moved by wills, and on feeling, which requires these powers to be principally and perpetually preoccupied with man. The nature of the country, the climate, the existence of a priestly caste curious about things inaccessible to the common man directed this logic and this feeling towards the stars. Religion lodged

its gods therein, spread them out according to the affinities imagined between brightness, color, position, motion, or as I was about to say, the mores of wandering stars, kings of the star people, and the divine types that emerged from the same creative imagination.

Here stops the regressive series of causes. Now we need to devote ourselves solely to the descending series, which begins with the autonomous development of Greek astrology. ■

was foreign to the ancient Chaldeans and Egyptians? Let us go further. Could it not be that this ladder of superpositions between whose rungs Greek science posited enormous intervals, went directly against an essential postulate of astrology, which presupposed an immediate contact of the planets with each other and with the fixed stars, the latter serving them as flocks, mansions or shelters, or variously qualified fiefdoms? Astrology was imagined by people who believed all stars, fixed or mobile, to be at the same distance from the Earth, the latter circulating among the former, exchanging among themselves their sympathies and antipathies, intermingling their influences, watching and waiting for each other, bypassing and heading toward each other from every point along their orbits, in accordance with the rules of a protocol and a ballistics which reach the height of absurdity when transposed into the world as expanded and stratified by the science of astronomy. The most surprising aspect of this study is that belief in astrology was able to take root in Greece and withstand the growing awareness of the sacrifices it imposed on reason.⁵⁹ Religious and reasonable in its own way in Chaldea, this belief remained religious in Greece under its scientific mask, and people no longer dared to find it irrational after the Stoics, half Hellenic and half Oriental, had certified that it was not.

We will have many more opportunities to meet the Chaldeans and Egyptians on our way. To complete the list of borrowings from the Orient for now, we need only seek the list of names given to the planets in Greece. For the zodiac and the constellations in general, astrologers and astronomers use the same nomenclature. The names for Saturn, Jupiter, Mars, Venus, and Mercury, are clearly defined adjectives in Greek. Are they translations of epithets attributed to the Chaldean planetary gods? It is possible, even probable, for the planets other than Venus.⁶⁰ It had always drawn attention by its brightness, and already in Homer it bears that name, also used by Plato.⁶¹ The name Phosphorus is a compromise and must date from the time of the assimilation of the morning star and the evening star, that is, from the time of Pythagoras. Superimposed on these epithets, or rather coupled with them are the names of divinities which — although used by astronomers too — are in fact astrological names, responsible for the kinds of influence and the gender attributed to the planets. What happened was that star worship somehow made its way into Greek theology and a spoliation, as it were, stripped away the human souls from the old mythic types such as Kronos, Zeus, Ares, Aphrodite and Hermes, thereby doing away with the *raison d'être* of the legends recounting their lives. This spoliation occurred slowly and as an offshoot of the initial idea,⁶² which had been to attribute to each of the gods the primary rulership of a planet. Nonetheless, the assimilation of the deity and the star was never so complete as to render obsolete the correct expressions: "star of Kronos," "star of Zeus," etc.⁶³ National mythology resisted the attraction of Chaldean star worship, even after Plato made it compatible with Greek star worship.

If there is cause to suppose that the attribution of the planet Mercury to the god bearing that name (Hermes), an attribution already known by Platon, is due to the influx of Chaldean ideas — even if they arrived by way of Egypt — all the more reason to assume it for the association of Ares, Zeus, and Saturn to the three outermost planets. Ares was never a popular god, and Kronos was held to have retired from the world of the living. Scholars were responsible for searching through Greek mythology to find in it types assimilable to models from other cultures, for making comparisons and drawing analogies. Let us recall that no one deployed as much virtuosity in the exegesis of allegories as the Stoics, who were not only of Asian origin, for the most part, but also the first disciples and collaborators of Berossus. Without belaboring the point, we will admit that the attribution of planets to divinities chosen as approximately equivalent to Chaldean divinities was at least justified by

the Stoics, if not actually made by them, fused with physics and mythology, and, in a word, adapted to the exigencies of scientific astrology.⁶⁴ Istar and Nergal easily found counterparts in Aphrodite and Ares: the assimilation was all the more correct in that Aphrodite herself was an Oriental deity, evolving from Astoreth or Astarte, the Syrian Istar. The planet of Marduk was assigned to Zeus, at the price of an appreciable modification of its character, since the Greeks' moral sense endowed the "father of the gods and men" with a serenity and clemency never possessed by the fearful Babylonian demiurge. The adaptors must have had even more trouble finding types analogous to Nabu and Ninib in the Greek pantheon. How did the god Ninib the irresistible, who unleashes tempests and life-giving winds at will, become the wise and morose Kronos? There are no doubt reasons, probably too many to be clear. Ninib is an ancient solar god, the firstborn of Ea, supplanted as chief deity by Marduk, just as Kronos, a member of the archaic generation of Titans, was supplanted by Zeus. Ninib represented the Sun on the horizon, rising or setting — especially setting — and Kronos was said to dwell in the Blessed Isles, beyond the shores of the Western Ocean.⁶⁵ Finally, Kronos has affinities with the ideas of generation and paternity underscored by his assimilation with the Latin god Saturn, the god of "sowing," and that too brought him together with Ninib, as also the mixing of wisdom and deceit as old men are wont to do. Although probably made lightly, the assimilation of Nabu with Hermes must have been revised and accepted by the Stoics.⁶⁶ Like Ninib, Nabu is a fallen god. Formerly the first at Borsippa, he had had to yield primacy to Marduk, the favorite of the Babylonians. Like Ninib, he too was a fecundating god, but within well-circumscribed limits. Chaldeans held his planet, rarely visible in our climate, to be a firepot and they heaped epithets like "unfavorable," "incendiary," "recalcitrant," "inimical," "evil," "leopard," "fox," etc. on it. The fox is reminiscent of the cunning Hermes; nor must it be forgotten that Hermes as psychopomp, the purveyor of firewood and hell, was much feared; but on the other hand, the Greek astronomers certainly appreciated the Hermes-Mercury type for its premeditated ingenuity and its artful ability to charm through words, abilities that do not go very well with the "Flashing" Chaldean.

Since the characters of the planets, even more than the signs of the zodiac, were the foundation of all astrological inductions, the adaptation of Chaldean theology to Greek mythology had a supreme influence over the doctrine which would emerge from it. The negotiators who succeeded in splicing the two in effect stabilized the horoscope of Hellenic astrology. The map thus drawn up, sufficiently vague and flexible to let astrologers introduce or restore to it all the variants they garnered from their own experience or from hitherto unused traditions from Chaldea and Egypt.

To summarize, before going any further, and to clarify the conclusions to be drawn from these prolegomena: Greek astrology — as a divinatory method using astronomy as a means — Greek astrology, we repeat, was brought into being by Chaldean astrology, which furnished its most indispensable tools, along with all or some of the signs of the zodiac and the planetary types. We can no longer be sure if Chaldean astrology itself, during the time it was grafting its doctrines onto a new stem, had already incorporated Egyptian traditions or if it had been mixed with local traditions in Egypt and thus imported to Greece long before the doctrines coming directly from Chaldea. The cuneiform documents of Tell-el-Amarna prove that already by the fifteenth century BC, there were active contacts between Egypt and Chaldea, but they shed no light on these questions, irremediably muddled by incoherent documentary evidence. It is therefore prudent to stop with Chaldean astrology in the search for origins. If one would form an idea of its genesis, all the fantasmagoria of interminable centuries of observations and experiments claimed by professors of astrology must be laid aside. Experimenta-

Doctrines of Astrology

Oriental astrology, rudimentary and scarcely differentiated from the religion that gave rise to it, did not require a great effort of reasoning. Stars were gods or the vehicles from which the gods watched over the world, and it went without saying that these gods had both the will and the power to intervene in the affairs of the terrestrial world. No difficulty in envisioning how and why these gods acted: they acted because they wanted to and in the way it pleased them. The Oriental mind did not even formulate the problem which stumped the logic of Westerners: the impossibility of converting supposedly free and even capricious wills into natural laws, whose actions are assumed to be necessary and everywhere uniform. Astronomy quite spontaneously gave birth to ideas of order and regularity; and Chaldean priests, who based their predictions of the future precisely on observations, could not remove from their calculations the postulate underpinning them, namely that identical causes must produce identical effects. In any case, they apparently rejected the concessions forcing them to abandon their religious conception of the universe in favor of a scientific and mechanistic one. To them, the movements of the planets were unpredictable to some degree. They did not always arrive on time for their rendezvous with fixed stars, meetings scheduled on the basis of calculations. Even the latter could be recognized to be unchanging in their positions only by precise measurements. Nor did the Chaldeans appear to have made scientific discoveries likely to upset them in their traditional belief. We do not know what dimensions they envisioned for the sky, but most probably they thought themselves considerably nearer to the gods when they located their observatories atop a seven-storied ziggurat! Their religious practices saved them from the subversive theories which in other places enlarged the universe and made the generators of sidereal energies recede very far away, while diminishing man and his planet of residence, the target of all these celestial forces.

Chaldean astrology was presented to the Greeks, a people already conscious of vast perspectives, armed with dialectics, and unused to faith; it was offered as a body of facts verified over a long period and lacking as yet a rational explanation.

Delighting equally in discussions and novelties, the Greeks must have been singularly attracted to astrology, which offered them the pleasure of finding theories for allegedly unimpugnable facts and transforming an imported and jumbled mass of traditions into a rational science. They alone were able to work to satisfy an intellectual need not felt by their predecessors. In their hands astrology became a science, a "mathematics," based on a certain number of fundamental propositions and eventually acquiring the strength of axioms as a result of a kind of universal acceptance. We will later see by what means and how successfully these propositions were defended against counterarguments,² for now it is appropriate to spell out and size up their soundness by measuring the breadth of their foundations.

The most general proposition boils down to the affirmation that the stars exert a preponderant influence on the earth and its inhabitants. The adepts of the mystical philosophy growing out of Pythagoras and Plato required no proof of this assertion. Since the stars were not only gods but gods who created life on earth, only a secondary question remained, that of knowing if this influence could be known and distinguished from all others. Thus put, the question was readily resolved. Divine action could be known even in its diverse forms either by a direct revelation made by the gods themselves or by a natural revelation, that is, the mind's being made aware by

experience. The "physicists," if there still remained a few, were susceptible to an argument based on a cleverly maintained misunderstanding, wholly beneficial to astrology. Didn't everyone agree that the Sun was the regulator of vegetal and animal life? Didn't the Moon, to which ancient traditions attributed all sorts of specific influences besides the ebb and flow of the tides,³ affect all and everything on earth? And why would not something unquestionably true for the Sun and Moon, with due allowances, also hold for the stars, fixed or wandering? The planets were, after all, only smaller suns or more distant moons.⁴ The fixed stars indicated by their heliacal rising and setting the stages of the solar year: their presence accompanied seasonal changes, heat and cold, winds and rain; and whether theoreticians held them to be merely the signs or the causes of these phenomena,⁵ the practical results were the same. Also, even before any hint of the mysteries of Chaldean astrology, the Greeks had spontaneously initiated a science of the higher regions or a **Meteorology**, which must have enabled them to foresee atmospheric variations and accidents. Aristotle had just introduced into this science, also called "Prognostics," the chance predictions to be made from the appearances of comets.⁶ Greek meteorology thus spontaneously took a course that would lead to an encounter with Chaldean astrology, and its contribution was added to the modes of divination recommended by the new doctrine.

Self-evident to mystics, plausible and to a certain degree acceptable to the naturalists, the initial postulate of astrology became dogma to the Stoics, who were both mystics and naturalists. Because they held that the ultimate explanation of things resided in this doctrine, the unshakable foundation of religion and morality, they ceaselessly affirmed it and bolstered it by amassing around it all the comparisons and analogies worthy of serving as demonstrations provided by philosophical and religious systems. The stars' influence on the earth became for them a particular instance of the "sympathy" or solidarity binding together all parts of the universe: not an ideal or moral solidarity, but a material one like the substance of Being, and constantly actualized by an incessant exchange of molecules and movements. The Stoics knew what the Earth was sending to the stars above, these centers of intelligent fire; along with Thales, Parmenides, Heraclitus, they thought the Earth nourished them with her vapors;⁷ the coarsest fed the lower stars while the most subtle rose to the higher spheres. This matter was returned to the Earth in the form of heat and light, celestial effluvia that lit the mysterious flame of life and maintained it on the Earth's surface.

Once the universal solidarity was accepted, it logically followed that the effluvia transmitted also the qualities of the source whence they came and tended to assimilate the destination point with the point of departure. To make the demonstration clearer, they refrained from dispersing their attention to the entire universe⁸ and concentrated on man, who in his own eyes was and ever would be the center of the world. The conclusion quickly followed that man, fashioned by the ceaseless action of cosmic influxes, must resemble the world and indeed be a small world, a **microcosm**. Thus condensed, focused, playing on human egoism, pandering to human pride, projecting man's image onto the entire world — for the proposition can be turned around just like a mathematical equation — the dogma of universal sympathy became the inexhaustible sustenance of faith in astrology and the justification for its most bizarre fantasies. From then on it became permissible to scrutinize the human body and soul to find all sorts of correspondences between the physical members,

the soul's faculties, and the planets or signs of the zodiac. Logic had imprudently strung along its deductions to the point where it forfeited its supervisory right and was forced to compromise with an unbridled imagination.

It can be said that every philosophical system contributed a stone to this central fortress of astrology. We saw where the mechanistic theory of effluvia led; Platonic spiritualism took a more direct route to the same conclusion. Plato had made a doctrine of the imitation of divine types, from the top to the bottom of the chain of being; and Philo took the trouble to amplify Plato's opinion with a biblical passage, according to which God made man in his own image. Man is a copy of the world, which in turn is a copy of God. Besides, all this was already in the *Timaeus*, and we can surmise how zealously mystics developed these ideas, benefiting moreover from the connivance of the "physicists" or materialists, needing to make no effort other than to substitute souls and genii for the molecules of the effluvia, all in ample supply. Finally, the theory of the microcosm also had the advantage of satisfying the pure dialecticians, who conceived of knowledge as an identification — or at least an assimilation — of subject and object.⁹ And that is how a mass of analogies and metaphors, advanced as reasons, many inept and not one conclusive, gave the illusion of a formal demonstration, an illusion all the more tenacious in that there was initially a bit of truth, but turned around and seen the wrong way. This truth is that man made God or the gods in his own image and being unable to conceive of anything other than the human, man subsequently had no difficulty in finding analogies everywhere, for he alone and unconsciously had created them.

Thus, according to Greek philosophers and astrologers, the stars mechanically or by some other means exert influences depending on their own natures and tending to make those under their influence more like their own types. Between this theoretical assertion and its application, an enormous postulate lay hidden, concealed by fine phrases, and once it was accepted, it subsequently paralyzed all rational resistance. The disciple who did not oblige his master to demonstrate the real existence of the many properties used by the doctrine to make up its planetary and zodiacal types, the one who unquestioningly accepted the physical, physiological or psychological makeup of the stars, such a disciple had nothing more to do than follow the line of reasoning. There was no further logical ground on which to question the force of expansion and the power of assimilation of sidereal energy. The effects produced at a distance were better explained to him by the theory of the effluvia than is explained to us the theory of universal attraction or gravity, a force whose effects are known, but not its nature!¹⁰ As a last resort, people with misgivings could be referred to the extensive mass of facts allegedly collected by the Chaldeans, Egyptians, Magi and other fictitious beings to whom Greek astrologers so willingly — and with reason — imputed their own inventions.

Once the big step was taken, the others came more easily. Given the way Oriental astrologers conceived of the star gods, endowed with will, the variable nature of the stars' actions and their dependence on the mood of the moment was readily understandable. The malefic were sometimes softened, the good accidentally corrupted. Minimally corrected by Platonism and handled sympathetically by the Stoics in their religious way, this first conception was to remain the most durable core of Hellenic astrology. But these divine wills needed to be transformed into natural laws, since the Stoics were the heirs of Heraclitus' physics. It was no mean feat to explain how the effect of a given star could be modified or reversed by means of the respective movements, phases, positions, and orientations of each star. Here it was, we believe, that the Greeks were truly original in their work and left their Chaldean masters far behind.

All the reasons cited can be reduced, in sum, to relationships of positions, measured by angles, with due consideration — sec-

ondary, but also important — given to left and right, high and low. The stars stand in continuous relationship to the Earth. Those falling below the horizon can probably be overlooked, but under no angle do they lose all their efficacy. The same is not true of their relationships with each other, relationships that give rise to reciprocal reactions of sympathy or antipathy and profoundly modify their influence on the Earth. The number of planets and signs of the zodiac made it impossible to calculate the relationships of position of each planet and sign with all the others. Astrologers agreed to consider only some of the relationships or "aspects" (**blank-blank-adspectus**) effective and ignore the existence of the others. Less concerned with geometry, Babylonian astrologers apparently stopped with the notations of planetary oppositions and conjunctions. As for the stations or intervening angles, mention was made only — and then implicitly — of the stages of the Moon, for the lunar month was apparently divided into six periods of five days each. The Greeks were surely the ones who imagined regular polygons inscribed in the circle of the zodiac, and who attributed specific properties to the rays according to the angle of emanation, properties whose explanation we are still seeking.¹² This theory of aspects, a singular mixture of refinement and naivete, posits that the planets are placed on the circle of the zodiac itself and when in aspect, they occupy points on the polygon. Naive also, to say the least, is the reason advanced by Porphyry to limit the number of aspects to four (diameter, trine, square, hexagon) or five, counting the conjunction. He could have said, like Ptolemy, that the geometric laws of harmony dictate it thus. Or like the Pseudo-Manethon, he could have invoked revelation. "Ineffable and infinite in the ether are the figures of the stars whose much winding courses cross: I shall explain those chosen by the gods!"¹⁴ Porphyry prefers the assumption that "each star emits seven rays (does he mean only seven?), one straight ahead, three to the right and three to the left!"¹⁵ This is not a theory, it is a dogma thought up after the fact to justify the application of the "aspects" and to honor the number seven. It certainly does not derive from the eight-branched graphic symbol used by the Chaldeans to represent the stars, and it is probably not erroneous to attribute all these geometrical constructs to the influx of Pythagorean doctrines into astrology.

We can see how an adept of astrology could make one concession after another, assuming that whatever was not absurd *a priori* was thereby demonstrated so, and could thus be led to believe with no sense of being at odds with logic. There must have been some mathematicians who took this celestial ballistics quite seriously and found it reasonable to consider the angle of the projected ray as it reached its target!¹⁶ Let us hasten to add that this display of a mystico-mathematical science was wholly a facade. Behind the scientific decor erected by Greek astrologers at a time when a good show was needed for the "physicists," the real workers of destiny were always the living gods, well or ill disposed according to the incidents and chance meetings along their courses. The planets especially were completely anthropomorphized: they "rejoice" in their houses, extend and receive hospitality, they see, hear, pursue, overtake and pass each other; they observe rules called geometrical but in fact psychological, along with a protocol that guarantees them or deprives them of preeminence depending on their positions to the right or left of another planet or that alters their mode of action depending on the planet left behind or accosted, or on their being blocked between two others or their following a leader who is or is not on their side!¹⁷ As the scholars grew fewer, Greek astrology shed some constraints: it abandoned the combinations of hot, cold, dry, and moist in favor of feelings, mechanics in favor of psychology, the science it pretended to be in favor of the religion it really was beneath its borrowed mask.

Whether mechanics or psychology, it had to be applied to its true object, namely divination by the stars or (**blank**). The admiration inspired by "genethialogy," the masterpiece of Greek astrology,

made people forget that this method, the most contrary of all to common sense, could not have been the first application of the principles. No trace of birth charts have yet been found among ancient Chaldean documents, but only predictions bearing on the near future of countries, peoples, and sovereigns (above, pp. (blank)). In all likelihood, starting with this premise and assuming that an individual's destiny depended in part on the influences exerted on their region or nation, astrologers began to respond to clients who asked them if the time was or was not favorable for a given undertaking. Such calculations, known as "Initiatives" ((blank)) or opportunities, constituted the normal occupation and mainstay of popular astrology!⁸ They bear the seed of genethliology, which grew out of them and returned to them in a hybrid state, as we will see in all good time. The fact of being born is indeed an act whose opportunity depends in part on the state of the sky. But since this first act is the foregoing condition of all others and determines them in advance, to the degree that the sex, the inborn strength or weakness, the parents' social condition or fortune determines the future, astrologers were led to focus their attention on the moment of birth and contrive to make all the calculable influences converge on this moment. Thus was formed, with much support from philosophy and reliance on the theory of the microcosm and subtle distinctions between the virtual and the real, what could be called the basic dogma not of astrology in general but of the astrological method called genethliology.

Much reasoning was needed, in truth, to constrain a recalcitrant common sense to admit that every individual's destiny was not merely influenced by the state of the sky at the time of birth, but completely set in advance, even in details, just as wax takes the imprint of a seal or a coin, the stamp of a die. Here astrology itself became divided, for genethliology tended to suppress the system of the ((blank)), which extended along the whole of life a continuous series of causes corresponding to a continuous series of effects. Consequently, of all the propositions advanced by the theoreticians of astrology, the dogma of genethliology was the most constantly attacked and the most poorly defended. Tired of the fray, its advocates would have abandoned it had they found another way to differentiate between the destinies of individuals and to explain how it was that, although the state of the sky was the same for all in a given place at a given time, each person had a different share of fortune and misfortune. The debates engendered by this subject will engage us quite enough further on; for the time being it is important to examine how this dogma was able to take root and what it consists of.

Its first element — as we said above — is the prime importance of birth, as the beginning and orientation of life. Here as nowhere else could be invoked the saying: *principiis omen inest*. Another idea, religious, philosophical, and popular, is that every person is known in advance by divine intelligence and consequently exists in the state of an idea or design before attaining actual life. All of divination rests on this premise, and all the systems of predestination evolved from it. The Platonic system of the ((blank)) or lot chosen by the soul before its incarnation, often cited in support of the dogma of genethliology, probably contributed as much to its formation as later to its defense. Relieved of free choice — a moralist's concern not shared by astrologers — the Platonic ((blank)) represents a fully-developed agenda, assimilable in every respect to a birth chart!⁹ In short, whoever professed predestination — and it was the more or less considered opinion of everyone — accepted the basis of the doctrine, and those who did not insist on a scientific explanation had no further objections to make.

The scientific explanation, on the other hand, must have been rather laborious; that is why astrologers normally replace it with a simple assertion of the fact, assumed to be proven and self-evident. Ptolemy himself said only that the mixture or temperament in our

makeup constitutes our first principle and that this first principle implies at least the general outline of our lives, if not all the details. He compared the action of the stars to an archer's, who in an instantaneous act produces all the consequences of the impact of an arrow reaching its target.²⁰ For him as well as for all astrologers after him, life is a movement whose direction, force and consequently duration depends on the initial impulse or "propulsion" ((blank)), disregarding the resistances encountered along its course. In obscure issues, comparisons turn into reasons, and metaphors take on the value of arguments. The star-archer comparison holds a place of honor in our astrologers' logic. Another one, the earlier mentioned wax seal comparison, forms the core of a reasoning Gregory of Nyssa must have borrowed from some subtle dialectician in order to refute it. The personality or individual is composed of a set of qualities, a unique whole distinct from all others and always identical to itself. However, since the stars are perpetually in motion, they can form a unique and invariable whole only in a single instant. It necessarily follows that "just as the engraved figure is reproduced in the wax by the imprint of the seal, so man's life bears the impression of the properties projected by the stars in motion at the point where it comes into contact with the flux and in keeping with the particular nature of this point; and life becomes the same stuff as that emanating from the portion of effluvia flowing in the instant when life began."²¹ With these big words and the grain of truth peppering any doctrine of determinism at birth, the "genethliologists" acquitted themselves. It can even be said that their adversaries avoided the debate based on purely theoretical grounds. They repeated over and over again that neither conception nor birth is an instantaneous event, and even if they were, astrologers would still be unable to grasp the corresponding state of an ever-changing sky; but they did not address the abstract theorem.

Working from a momentary view of the sky, the "genethliologists" were forced to "observe the hour" and make a note of it on the face of their cosmic chronometer. They chose as the point of orientation on this dial the intersection of the zodiac and the horizon in the East. That was the **horoscope ((blank))**. As the starting point of all other divisions of the birth chart, the horoscope automatically acquires major importance; but scientific astrology did not attribute to it the overriding influence it was given by popular opinion, so great an influence that the word "horoscope" became synonymous with "birth chart." If it may be permitted to advance one more conjecture on a subject already so loaded with them, we would surmise that the practice of making the multiple computations of stellar positions in the framework of a chart cast for a single instant replaced a much simpler religious and popular idea, namely that the child's patron, the master of his destiny, is the star born at the same time as the child, that is, the star rising at the same moment. In the hands of astronomy-trained astrologers, the horoscope became a mathematical abstraction, the "degree indicating the hour" ((blank)). In any case, if the horoscope is the best known of the astrological constructs, it must not be forgotten that it came from a particular methodology not coextensive with the whole of astrology and not necessary to give satisfaction to most of astrology's clientele.

In summary, the principal doctrines of astrology can be reduced to the following propositions:

By virtue of universal sympathy or solidarity, the stars exert an influence over the earth — and especially over man, who has affinities with the whole world — in harmony with their nature and in proportion to their power.

This influence is brought to bear by currents of force or effluvia flowing in a straight line and tending to assimilate the receiver with the agent, the destination point with the starting point.

It depends on the positions of the stars, in relationship either with the Earth or with other stars, in such a way that it is necessarily

complex, modified in quantity and quality by simultaneous influences and possibly even reversed.

The combined effect of the stars at every moment produced various opportunities, which can be put to use as they present themselves (the system of the **(blank)**).

It acts with such intensity at the moment of birth that it irrevocably sets destiny, which is thereafter independent or almost independent of subsequent opportunities (the genethliological system).

These few principles enable us to apprehend the consequences issuing from them and the procedures used in their application.



Aristotelianism and Hermeticism In Medieval Astrology

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The subject is Hermeticism and Aristotelianism in Medieval Astrology. I take as indicative of the general theory and practice of Medieval Astrology the magnum opus of the 13th century Italian astrologer, Guido Bonatti, the *Liber/Astronomiae*. I refer to this text in several places since we find in it the influence of Aristotle's scientific philosophy. The mystical revelation of Hermes, though present, exerts its powerful influence in a veiled and hidden manner. In the obvious presence of Aristotle and the shadowy presence of Hermes (in this great tome of Medieval European astrology) we have an epitome of the roles of these far-reaching and at times competing philosophies. We can take a look at the central ideas in the medieval period on which the Aristotelian and Hermetic doctrines rested and see how they fit into an astrological context. We will not only see something of the history of the Art of astrology but also something of its importance in the development of the western world.

Why I select Bonatti above others is a legitimate question and one which becomes clear once we know who this astrologer was and what his place is in the history of astrology. Bonatti is a shadowy figure. Little is known about him. Salimbene mentions him and he was important enough for Dante to place him in the 8th Circle of the Inferno, the section of Hell reserved for those souls who in life had tried to pry too far into the future and were condemned henceforth to look backwards with turned heads.

We do not have Bonatti's dates, although his *Liber Astronomiae*, which was written sometime after 1277 gives us a floruit for him. Charles Homer Haskins, the great historian, in his *Renaissance of the Twelfth Century*, calls Bonatti, "The most influential astrologer of the 13th century." His *Liber Astronomiae* was an encyclopedia of contemporary astrological practice based on latin translations of Arabic texts which had been in circulation since the re-introduction of astrology along with the New Science, that is, the Arabic-Aristotelian Science in the 12th century. Bonatti's *Liber Astronomiae* became, in fact, the standard text until the 17th century. It was relied upon by many notables. We find it in Pico della Mirandola's library and in John Dee's library as well. Pico quotes from it extensively in his attack against astrology. William Lilly relied upon it and translated and published the 146 considerations of Bonatti found in the fifth tractate of the *Liber Astronomiae*. Historian Lynn Thorndike, in *Magic and Experimental Science* vol II, p.826 calls the *Liber Astronomiae* "The most influential astrological work produced in Latin in the 13th century." It appeared in print in numerous editions and was translated into German (Basel 1592) and survives in Italian in manuscript in the Laurentian Library in Florence.

Bonatti was a practicing astrologer. He advised Guido of Montefeltro by means of his astrological art on military matters in

the latter's war against Pope Martin IV; and was consulted by Holy Roman Emperor Frederick II Hohenstaufen.

Both Hermeticism and Aristotelianism are present in *Liber Astronomiae*. Hermeticism in his quotes from his Arabic sources, notable Abu Ma'shar, who attributes much of his information to Hermes. Aristotelianism is found throughout the book as it forms the cosmological substructure of Bonatti's astrology. It provides him with a scientific language and it is expressly stated in his first tractatus where the author gives the metaphysical arguments in favor of accepting astrology as a science in contemporary terms, i.e., Aristotelian terms, and also the metaphysical exposition of the astrological cosmos. Let us look at this aspect of our questions first and then we can see how an assemblage of this sort fit together into a synthetic and accepted scientific doctrine.

Throughout the book we find Aristotelian concepts. Indeed this is so much the case: Aristotelian logic, cosmology and science forms the substructure of Bonatti's astrological world. An example of his use of technical terms comes to mind immediately, and the one which gives the translator the most trouble, is Bonatti's use of the latin word *esse*. This term is part of the Latin Aristotelian tradition and it has a number of possible translations depending on the context as we shall see. Bonatti uses it continuously. Apart from the *Liber Astronomiae* we find it widely used. Aquinas employed *esse* and it shows up in glossaries of a variety of Aristotelian works. In the purely Aristotelian sense the term *esse* refers to the property of existing as "substance," to be or to exist. *Substantia* was considered by Aristotle to be the basic reality of a thing to which were attached the other categories such as quantity, quality, place, etc. as laid out in his *Categoria*. The great Christian Aristotelian, Aquinas, the man who adapted the Aristotelian philosophy to Christian theology — (called Thomism) — uses the term *esse* in very nearly the same sense. For him it meant the act of existing, that by which a substance is named *ens* (being), the actuality of every form or nature. *Esse* was, for him, "What is innermost in each and every thing, and what is deepest in them all for it is formal in respect of all that is in a thing." It is especially useful to compare Bonatti's use of *esse* with Aquinas'. The latter died in 1274 and Bonatti's *Liber Astronomiae* was written around 1280. Thus, the two men were roughly contemporary and it is possible that Bonatti had been exposed to Thomist ideas directly or indirectly. However, the effect on him must have been superficial since Bonatti's use remains practical and, as we shall see, a bit vague when compared to the great precision of thought of the spiritual Aquinas.

All Bonatti's uses of the term *esse* relate somehow to both the Aristotelian and the Thomist usages, namely "What is innermost

in each and everything." However, when we speak astrologically and apply this term to astrological factors, that which is innermost in a thing, such as an event, is the combination of considerations indicated by a planet's nature, its interaction with the sign it is in, its dispositor, and whatever aspects it may receive from the other planets. In short, its *esse* is what Morinus calls its "Zodiacal State." Unfortunately for readers of Bonatti, while Morinus was exceedingly precise in his language, albeit verbose, Bonatti is both verbose and obscure at the same time. He speaks of the *esse* of a planet — its nature — the *esse* of a ruler (where he must be referring to the ruler's zodiacal state) and even to the *esse* of things ('quality, nature, etc) He even uses the term *esse* in connection with the Arabic parts where he must be referring to the *esse* of the sign in which the part falls. All this means that the translator must be on guard when he reads *Liber Astronomiae* and he must also have a full practical knowledge of astrology in order to interpret the author's intent. Even then things are not clear. But though Bonatti's use of Aristotelian terms is sometimes vague, he and the majority of medieval astrologers, have thoroughly assimilated Aristotelian terminology and Aristotelian Science. Their art is expressed in Aristotelian scientific terminology just as was the best science of their day. This makes the medieval astrologer difficult for a modern not versed in Aristotelian thought.

Having said this much, let us turn to a brief consideration of some of the ideas in Bonatti's first tractatus. In the first tractatus, where Bonatti quotes from Abu Ma'shar's *Greater Introduction to Astrology*, we find the statement that the inferior bodies are composed of the four elements which are corruptible. "But the celestial bodies are comprised of another essence, which is different from the four elements, namely the quintessence, which is incorruptible and does not suffer. For if they [the celestial bodies] were from these four elements, they would suffer and alteration would occur to them and also increase and decrease as it does to the inferior, corruptible bodies." These ideas are perfectly Aristotelian. The reference is to the *de Caelo* (On the Sky), Book One, where the nature and circular motion of the fifth essence is spoken of; and to the second book where it is inferred that as the motion of the celestial bodies is circular, they must be composed of the fifth essence. The discussion of alteration, diminution, and increase of the elements is to be found in the first book of Aristotle's *De generatione et corruptione* (On coming-to-be and passing-away). There is little doubt that Aristotle's science and metaphysics is central to medieval astrology. Those familiar with Aristotle's *Physics* and his other scientific writings will remember that he questioned the simplicity of the elements posited by the other Greek philosophers, especially Empedocles. For Aristotle, the elements were themselves comprised of contrary qualities: hot, cold, wet and dry. By the movement of the Sun, these qualities were altered, increased or decreased; and as this occurred, mutation of the earthly elements took place. (According to Aristotle), this accounted for much of the change in sublunary things. It is not taught today that Aristotle's science had any relation to astrology, but in Bonatti's day this was not the case. Even the Church, which opposed astrological delineation of nativities and questions, admitted that the heavens exerted a powerful influence on the human body. The Church conceded this on the basis of Aristotle's scientific theories, which emphasized this influence. These connections were first recognized by Arab science; later by European science, not only between astrology and science but also even Alchemy and cosmic processes. It was this comprehensive system, this unity of the occult and exoteric sciences which originally captivated medieval Western physicians, scientists and philosophers. Astrology and Aristotle since the Renaissance have parted ways, but in Bonatti's day it was held that you could not possibly understand the causes behind astrological phenomena unless you fully understood Aristotle's science. Even today, it is impossible not to recognize an implicit and often explicit

premise in Aristotle's works which unites the events of the inferior world to the movements of the Sky. This is explicitly stated in *Metaphysics*, Book Lambda 1074a: "The end of every movement must be one of the divine bodies moving in the sky." When one appreciates the importance of the concept of motion in physics — that all things that are moved are moved by something — then what we have here is a clearly astrological concept. By astrological, I do not mean that Aristotle casted horoscopes. What we see here is an astronomical physics. For Aristotle physical things on earth are moved ultimately by astronomical movements. However, we cannot rule out the astrological interpretation entirely, when we turn to Aristotle's concept of the soul and compare it with his physics.

Aristotle was set apart from Plato when the latter held that the soul existed apart from the body. For Aristotle, they could not be separated. Now it follows from this point of view, that whatever effects the body, will also have a very powerful effect on the soul. In *de Anima* (On the Soul), Aristotle says (sec 414b, 1-5) that appetite, desire and sense are all closely related. "If any order of living things has the sensory, it must also have the appetitive; for appetite is the genus of which desire, passion and wish are the species; now all animals have one sense at least, viz. touch, and whatever has a sense has the capacity for pleasure and pain and therefore had pleasant and painful objects presented to it; wherever these are present, there is desire, for desire is just appetition of what is pleasant." He goes on to show that appetite is present throughout the soul; that in some animals, such as man, imagination is found. He tells us that imagination is never found without sense; and that although mind is distinct from appetite, desire, sense, imagination and even soul, mental judgement is frequently influenced by appetite and imagination. Finally, appetite, mind, and imagination are all capable of initiating movement.

The body, according to Aristotle, is directly affected by the sky, especially the sun's warming action. The elements, of which the body is composed, are altered by the heavens. This alteration brings about an alteration in the sensorium of creatures since even the senses are affected. Thus, once the sensorium is affected the imagination is affected and hence behavior is influenced, indirectly, but actually, by the heavens. We could say directly rather than indirectly since the extent to which man is ruled by the sky in this system of thinking is dependent upon the degree he may exert free will. According to Aristotle, there is an exalted state of the soul which is rational and above the necessary influence of the sky. This was disputed in some circles, however, particularly Middle Eastern astrological circles where a more deterministic attitude was held. This attitude emerges with even greater force when we look at the fusion of astrology, Greek Astronomy, and Hermeticism.

The foregoing is a rough sketch of Aristotle's attitudes regarding the earth/sky relationship. His complete point of view actually becomes rather complex, especially when we consider his various causes. You will note, for instance, that the quote from the *Metaphysics*, given above refers to the final cause: he speaks of every movement's *end* being one of the divine bodies moving in the sky. Yet there is no doubt that Aristotle saw the Universe's movement causing generation and corruption and, thus, directly relating not only to the physical changes of this world but also to psychological alterations of human life. Academic commentators on Aristotle desire to see his works in a strictly Greek context devoid of any foreign, i.e., Middle Eastern, astrological influences. The 9th century Arabic commentators and their astrologer contemporaries embraced Aristotle's four causes: the material cause, the thing itself; the formal cause, the shape or nature of the thing; the efficient cause, that which makes it what it is; and the final cause, that for which it exists, its *raison d'être*, its purpose. The universe's motion was clearly both the final cause and the efficient cause in that this motion actually was respon-

sible for generation and corruption of inferior bodies, hence efficient cause, and the end, final cause, toward which they tended. The astrological philosophers of Baghdad in the 9th century also claimed that the motions of the planets were the formal cause as well, at least in so far as the geniture, the birth horoscope of a thing, held its form: both as species and as individual. In so doing these philosophers were in complete agreement with Aristotle in *de Generatione et Corruptione*, 11, 9-10; *Physica*, 1, 6-7; 11, 1-3; and *De Caelo*, III, 3, 6-7. This was a doctrine similar to Agrippa's *De Occulta Philosophia* Book One, a doctrine of occult virtues. This doctrine holds that the various species of things, man, plant, etc., have power or virtue in them according to what they are, *per speciem*, but due to a given species' birth time the virtues the cause of which lay hidden. The life of the individual, then arises from the horoscope or constellation under which it came to be, *virtus per individuum*. The concept of occult virtue was extended to the selection of herbs at a particular time of the month or under particular constellations. Most striking, however is when differences between people are explained in this way. An example one repeatedly meets with in the old literature is the harlot. The whore was considered to be the epitome of fearlessness and boldness. She had these qualities not because she was a human woman, but by virtue of having been born under a constellation which made her a whore. The virtue or power of fearlessness this produced was contagious. One could acquire it by gazing into a mirror which the whore was accustomed to use or by putting on her clothes. Thus, the virtue, or power arising from the horoscope which made an individual different, this is occult virtue, was not just a psychological matter, it was a living, communicable influence.

Another common example is found in the mineral kingdom. The virtue of the lodestone to attract iron was thought to be an example of occult virtue. The possible origin of this belief was that lodestone was iron ore. Not all iron ore was magnetic like the lodestone and that to account for these properties, one was drawn to examine the horoscope under which the lodestone originated. Hence the individual was different from the species by qualities of its geniture.

This doctrine suggests that matter, Aristotle's *Substantia*, produces the genus and the heavens elicit the species and the individual. The occult doctrine, or at least the scientific justification for it, derives from the conflation of Aristotelian concepts with astrological doctrines.

Astrologers flourished in the Middle East and in Greece in Aristotle's day. By the Hellenistic period Greece was familiar with astrologers and eventually a fusion resulted in Greek Science. Although it was several centuries before a clear declaration of a systematic fusion between these early modes of thought was made public, this process was already well advanced in Plato's *Epinomis*. The two figures of central importance here are Al-Kindi and his student Abu Ma'shar. The former is known as the Philosopher of the Arabs. He was a scholar, philosopher, astronomer, astrologer, scientist, magician and probably an alchemist as well. He began his career in Kufah — some say Basrah — and ended it with his death in 870 AD in Baghdad. Baghdad was a city of learning founded by the astrologers al-Naubakht and Mashallah for the calif al-Mansur. Baghdad was also the center of Arabic Science and the best minds in Islam and from many parts of Asia were drawn there. Al-Kindi is credited with having written some 200 titles though only a few have survived. He translated the works of Aristotle, and assimilated that work into a system of his own which rests on Neoplatonic and Aristotelian principles. It is said to have been Al-Kindi who induced his student Abu Ma'shar (d. 886) to study the philosophy of Aristotle if he would understand the causes of the planets' effects on sublunary things. Already a well known astrologer Abu Ma'shar was, upon the assimilation of his master's advice, to become perhaps the

greatest astrologer of all time. In his *Greater Introduction to Astrology* he presents a far reaching philosophical astrology which entirely blends Aristotle, Ptolemy, Hermes and the native Chaldean star lore into a universal system of knowledge.

Let us remember for a moment that Aristotle's work covered not only the scientific fields of physics, biology, and psychology, but also ethics, logic, rhetoric, poetics, politics and metaphysics. Though his works are incomplete some say they are merely notes of his or of his students and show development over time, they are consistent enough to show that his great contribution was in his logical works. Aristotle developed the concept of the dialectic, which he learned from the Platonic Academy where he spent 20 years under Plato, into a scientific method of investigation of nature and thought. Our modern scientific method differs from Aristotle primarily in two ways: the emphasis on empirical data; and the repetition of experiment as a basis of determining reliability of phenomena. Both our mathematics, however, and our logical procedures are really based on Aristotle's *Organon*. Even in the present day the influence of this great philosopher persists in providing basic and far-reaching fundamental concepts without which we would be scientifically and rationally deficient. As always, our achievements are built upon the contributions of those who have gone before us.

Abu Ma'shar's school took the scientific tool, the *Organon* which the Greeks had applied to politics, philosophy, ethics and science, and applied it to astrology. He used the arguments given above in our discussion of Aristotle's scientific opinions as the scientific and metaphysical underpinning to astrology. He took astrology out of the realm of mysticism, shamanism and religion and put it squarely into the scientific realm of his day. But more, he combined the reasoning of Aristotle to the Astronomy of Ptolemy and also to the esotericism of the Hermetic writings. This was unique to its day. The fusion of these doctrines created an extensive system covering all areas of available knowledge. Even medicine was included since the prevailing medicine was Hippocratic — reworked by Avicenna — and this was itself entirely connected to concepts of Greek physics, itself Aristotelian. What is more, the traditional astral lore of the Middle East was essentially an astrological magic. The principles embodied in the Hermetic Corpus linked alchemy and astrology to both cosmology and religion. The result was that the occult sciences — and this may be the first time, judging from actual textual evidence, that we can speak of **occult science** in the West — comprised the cap-stone of a pyramid of exoteric sciences: in short, all knowledge! To appreciate this more fully we must understand what is included in the Hermetic Corpus.

To begin we make a distinction between the *Corpus Hermeticum* translated by Marsilio Ficino in Renaissance Florence for Cosimo Medici, and the vast body of hermetic literature dealing with the subjects of alchemy, magic, and astrology. Many modern scholars deny this latter material in connection with the Corpus proper since they recognize in the latter a significant and exalted philosophical teaching easily relateable to the neoplatonic teachings of the Hellenistic Egypt and Alexandria. The hermetic material other than the Corpus, however, is of a different order. This is obscure, technical and often poorly written, highly magical and occult. It covers a wide variety of subjects, from astrology to medicine, but centers mostly around alchemy, mysticism and the occult arts. Most modern scholars will have nothing to do with this. Yet it is impossible to credit the frequently implied opinion that although the *Corpus Hermeticum* did play an important role in both the Middle Ages and the Renaissance as an underground movement, the other hermetic material did not. Indeed, while this material is notably different from the Corpus' gnostic philosophy, it nevertheless constitutes the practical dimension of Hermeticism taken as a whole. Not only do we have extensive reports and rumors that this material was attended to by many

outstanding figures during the Middle Ages, but we have evidence which certainly seems to confirm this. In Roger Bacon's *Opus Maius* he lays claim to experience in all the occult arts but especially holds astrology to be valid. Moreover, the astrology he advocates is an astrological magic replete with amulets, election of hours, and attempts thereby to reform the world. Bacon also draws on Al-Kindi's magical work *De radiis stellacis, On the Stellar Rays*, and he cites Abu Ma'shar as his authority on astrology. There are also many alchemical works attributed to Bacon. He had a reputation of being an alchemist as well as a magician. Indeed, in one manuscript Bacon showed an understanding of gunpowder and certainly he was familiar with optics, mechanics and occult arts. I say occult arts here in connection with optics and mechanics since in Bacon's day these were considered occult — a fact that serves to point out that the radical separation of esoteric and exoteric which we find in the works of many modern scholars is more the result of a post-Scientific Revolution and Humanistic point of view than a matter of common practice, either in the Middle Ages or now. There are many such examples of alchemical and occult experiments throughout the Middle Ages. Bacon was not unique. These activities were part of the hermetic underground which existed at that time.

Just what is the *Corpus Hermeticum*? The *Corpus Hermeticum* is a collection of teachings attributed to Hermes Trismegistus, a figure alternatively thought to be a philosopher, a god, and sage of Egypt. Actually the *Corpus* is the product of an esoteric school of the early Christian era located in Alexandria or somewhere in Egypt which taught a syncretic doctrine combining neoplatonism, kabbalism, astrological teachings, and elements of other teachings. It was believed to be of immense antiquity throughout the Middle Ages and the Renaissance until Meric Causabon gave it an approximate date to the early centuries of the Christian Era. The first to translate it into Latin from the original Greek, Marsilio Ficino, thought it was this Hermes who first transmitted these teachings to Moses or, possibly, the belief that it represented a link in a chain of teachers that stretched back from the Renaissance to man's earliest revelations. The god Hermes, it was thought, instructed man in Egypt embodying a teaching, called by Ficino, the Ancient Theology or *Prisca Theologia*. At its source were the pagan religions of the ancient Greeks, the Orphic and Eleusinian Mysteries, Zoroastrianism, the Philosophies of Pythagoras, Plato, Aristotle, the Stoics, Neoplatonism and the Christian, Jewish and Islamic Revelations as well. Certainly Abu Ma'shar shared this idea since he was perhaps the most influential man in early Islam to urge an assimilation of the Hermetic teachings to Moslem thought. It was Abu Ma'shar who was responsible for the identification of Hermes with the Antediluvian Prophet Idris. His law, embodied in the *Corpus Hermeticum* was accepted by the early califs as a religion of the Book and accorded an equal status with Christianity and was not suppressed.

The official recognition of Hermeticism and its aura of horary antiquity is significant. It afforded the followers of this philosophical-religious a latitude of safety in which to pursue their studies at a level that did not exist in Europe and gave to them an acceptability which even today those of us in the West pursuing these arts can only envy. In the 13th Century the opposition of the Church in Europe to both astrology and Hermeticism required Bonatti to limit his references to Hermes and to Hermeticism in his *Liber Astronomiae* to merely quotes of his Arabic sources. Thus, while the *Liber Astronomiae* is based to a large degree on Abu Ma'shar's work, the latter being the major proponent of Hermeticism in Islam, it is mainly the Aristotelianism of Abu Ma'shar's *Greater Introduction* that we find, though the Hermetic element is still there and hidden.

What was the aim of this system of thought? The *Corpus Hermeticum* is religious, or in other words, concerns itself with the occult perfection of man. In the *Pymander*, the first book of the

Corpus, and then throughout the remaining texts, the aim is expressed as the attainment of the knowledge of God. The *Pymander* is actually a revelation text similar in structure to the *Revelations* of St. John and *The Book of Enoch*.

This emphasis on occult knowledge which frees man from "ignorance" and bondage to this world marks the *Corpus Hermeticum* as gnostic literature. We see several hallmarks of this. 1) Knowledge, **gnosis** comes to man by revelation; by outside spiritual intervention and by reception of the "Teaching" rather than by man's own action and efforts, although human efforts are important and valued; 2) It involves a detailed understanding of the three-fold relation of Man, Kosmos, God as we shall see in a moment; 3) It adheres to a belief in an escape of the soul from the body up through the spheres of the planets and stars to God; 4) It requires the suppression of the tyranny of the body; especially the sexual appetite as this is considered to be the primary means by which the soul is kept in bondage to the body and the reason why man suffers death; 5) Knowledge of God is "knowledge of the Good," the archetypal "Light" which is the source of all; 6) Attainment of this knowledge is by means of meditation and the study of the occult arts in connection with a scientific study of nature and existence.

This last point is significant: the means by which this extraordinary knowledge is attained is scientific, philosophic, and magical. In *Libellus II* we see a weaving of Aristotelian scientific concepts with mystical revelation and philosophic argument. The theme of *Libellus II* — and of much of the *Corpus Hermeticum* — is that science leads humanity to the knowledge of God. *Libellus II* begins: "Is it not true of everything which is moved, Asclepius, that it is moved in something and is moved by something? Asclepius replies, "Yes, and that in which the thing is moved is greater than the thing moved?" This is quite Aristotelian and therefore scientific in the terms of the day. *Libellus II* concludes that Mind is Space, incorporeal and intangible, immovable, in which all things are moved, and that God is the only Good, and that the Good is so vast that neither body nor soul can contain it, not even the gods. This is an extraordinary blending of scientific philosophy and mysticism.

Meditation plays a role in Hermeticism as a means of achieving this hidden Knowledge. It was the means by which Hermes himself received this knowledge. *Libellus I*, the *Pymander*, begins its description with the words: "Once upon a time when I had begun to think about the things that are, and my thoughts had soared aloft, while my bodily senses had been put under restraint by sleep, yet not such sleep as that of men weighed down by fullness of food or by bodily weariness, methought there came to be a Being of vast and boundless magnitude, who called me by name. . ." The narrator achieves through meditation a state of illumination in which "the mind of the Sovereignty instructs him in the knowledge of the things which are, the understanding of their nature and the knowledge of God." Instruction has a central place in how one attains this **gnosis**, but we are told that while the vice of the soul is Ignorance of God, knowledge of God cannot be taught through speech, nor is it acquired by hearing since knowledge differs greatly from sense perceptions.

Magic, too, occupies a central role in this process. We find references to both astrology and magic throughout the *Corpus Hermeticum*. In the text known as the Asclepius, we hear of statues that move and prophesy for those who have eyes to see. The *Pymander* embodies references to at least four laws of magic.

The cosmos portrayed by the Hermetic Teachings is astrological. Considered physically and scientifically it is not other than the Aristotelian and Ptolemaic cosmos. The *Corpus Hermeticum* adds to this picture another dimension, the spiritual and Hermetic spirituality is gnostic. The key is that Man escapes from ignorance of the physical world by knowledge of the Good, that is, the Archetypal Light or God. The *Tenth Libellus*, called "The Key," informs

us that this gnosis of the things that are, their nature, and the gnosis of the Good makes one divine. Such a man does not talk much, still less does he engage in disputation. The key also seems to be to understand the three-fold relationship of God, Kosmos, Man. All things are administered by the Kosmos and Man, but they are governed by God alone. The Kosmos is subject to God; man to the Kosmos. Creatures without reason are subject to man. The divine forces are as radiations' emitted by God. The forces that underlie birth and growth are the 'radiations' emitted by the Kosmos; the arts and crafts are 'radiations' emitted by man. The divine forces operate by means of the Kosmos and their operation reaches man by means of the Cosmic, i.e. stellar, 'radiations' to which birth and growth are due. The forces underlying birth and growth operate through the material elements. The universe is thus governed by astrological forces uniting material or elemental existence to divine causes.

The Hermetic universe is one which is populated with animals, humans, daemons and gods. The planets and the signs of the Zodiac are divine as are the subdivisions of the signs which, taken collectively, are known as the god Pantomorphos, "all forms." *Libellus XIII*: "This earthly tabernacle, the body. . . is put together by the working of the Zodiac. "The Zodiac also leads men astray. Here we see the idea that the bodies of the individuals, hence species too, are produced by an astrological agency. This idea as developed earlier was elaborated by Abu Ma'shar and his European followers using arguments drawn from Aristotle. We also see the idea that the same cause which produces the physical body also impedes man's spiritual quest, a succinctly gnostic theme. The spiritual direction of Hermeticism is from matter towards God. Reincarnation is taught and the twelve vices emanating from the Zodiac, Ignorance, Grief, Incontinence, Desire, Injustice, Covetousness, Deceitfulness, Envy, Fraud, Anger, Rashfulness and Vice are driven out by 10, or 7, virtues, Knowledge of God, Joy, Continence, Endurance, Justice, Unselfishness, Truth, Good, Life and Light.

The Teachings of the *Corpus Hermeticism* are both ethical and religio-esoteric. They are thoroughly occult involving the arts of astrology and magic, and are favorable to alchemy. Thus it is impossible to credit the absolute separation of the *Corpus Hermeticism* from the less theoretical literature also called Hermetic which deals with the actual practice of astrology, alchemy and magic. As we have seen, Bacon, Al-Kindi and many others certainly studied all of the Hermetic literature as well as the oral tradition.

Nevertheless it is beyond doubt that Hermeticism was highly regarded in the Middle Ages as it was in Islam, though it frequently in Europe was an Underground doctrine. In the Islam world the Sábians could boast among their followers the most advanced astronomers of the day. For instance, Thibet ben Corat, the famous 9th century Harranian who worked in Baghdad, knew of the precession of the equinoxes and had measured them at a time when no one else knew of precession. The reputation of Baghdad as a city of learning was to a large degree shaped by Hermeticists and this prestige no doubt had much to do with the success Abu Ma'shar

had in disseminating his combined teaching of Greek science and philosophy and Hermeticism in Europe. Indeed, as a strong underground current, the Hermetic Tradition proved vitally to Europe a culture reflected for example, in the art of the Middle Ages such as in the depiction of Hermes in the pavement of Sienna Cathedral in Italy.

In summary, Hermeticism formed the esoteric element of Abu Ma'shar's system; Aristotelianism was the exoteric element. Ptolemy's *Almagest* and *Tetrabiblos* were the primary texts. For the ancients Hermeticism provided an answer to the perennial questions of life: We are all moving toward knowledge of God which is the perfection of life and the goal of the wise. Aristotelianism gave its complete scientific consent to this view since it saw God as the final cause as well as the Unmoved Mover who turned; moved the spheres of the cosmos and was the cause of all evolution and change. Astrology was the system which declared to man the will of God as evidenced in the celestial motions. The entire system aimed at enabling the astrologer to be wise in every area of thought, on every subject at all times. Astrology from this perspective is a unified cosmological system in which science and mystical religion were joined. It was especially alluring to the European Christian of the Middle Ages. This vision of a unified world system not only provided the impetus for the later Scientific Revolution, but resulted in other major cultural developments in Western Europe, the Gothic Cathedrals — whole design was based on the church — temple as the physical embodiment of all knowledge — the Encyclopedists of the 12th and 13th Centuries — the re-organization of Christian Doctrine around Aristotle, accomplished by Thomas Aquinas, and the rise of Universities as centers of learning where for the first time in European history one could receive instruction in all areas of knowledge. ■

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