

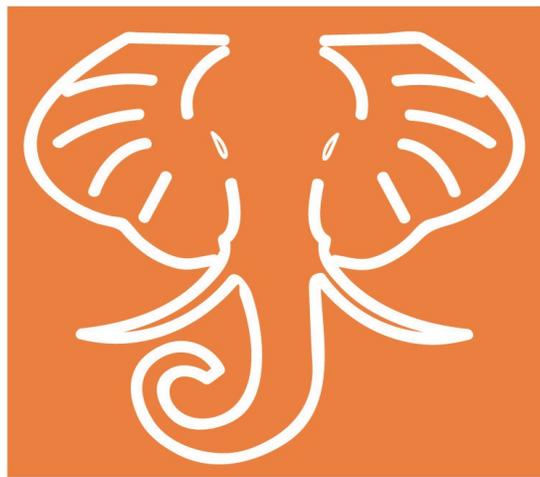
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ANDREW EFRON

THE SACRED TREE SCRIPT

NEW HAVEN 1941

THE SACRED TREE SCRIPT

The Esoteric Foundation of Plato's Wisdom

By

ANDREW EFRON

COWLES FELLOW, YALE UNIVERSITY

THE TUTTLE, MOREHOUSE & TAYLOR COMPANY
NEW HAVEN, CONNECTICUT

1941

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TO JULIA, TO ANNETTE

TO MY FRIEND

DIMITRII PAVLOVICH KRYNINE

PREFACE

The reader should not be surprised to find in this volume a discussion of various problems which from the outset may appear uncombinable. They were combined in the past. I will show that such distant problems as that of the esoteric basis of Plato's science of numbers, that of the origin of the Runic script, that of the origin of some legends of the Old Testament, that of the historical implications of Plato's metaphors are all intimately related to each other. The choice of the problems is not accidental. There is no other way leading to truth.

The task of finding the scientific foundation of ancient wisdom prescribes a rational attitude and a rational procedure. Plato's philosophy and the sacred tradition which we are used to call the Old Testament have both common roots. They both are emanations of the ancient mind. They both are rational. Moreover, they both determine the main current of ancient thought. Let us approach them from a strictly scientific angle.

It is almost incredible that the very nucleus of this wisdom could not be made accessible to a rational analysis and that the great secret of the ancient thinkers remained undisclosed. The solution which I am advancing is simple. It might be accepted by unprejudiced people. Scholars of the classical type will have difficulties in admitting the validity of my methodological views. I hope that the method is justified by some of the results obtained.

Too often historians are inclined to neglect "indirect evidences." They do not like the shaky ground of scientific hypotheses. Nevertheless, history does not differ from any other science. In this particular case we are obliged to interpolate a "secret tree script," a symbol, which formed the very basis of ancient wisdom. It was known only to the "initiates." Plato was one of them. For reasons which I hope to have clarified in my study this secret could not be revealed to Plato's disciples. Aristotle did not know it. The tradition was broken and the secret was lost. Only one

source still contains the initial symbol—the Runic stone of Kylfver. This symbol may be called a universal key to “ancient knowledge”—counting, script, logics and ethics. It is the “monad” of the Greek mathematicians—the very kernel of their science.

The ancient thinkers knew how to conceal their esoteric doctrine from the laics. In order to get access to their treasury we must pass through Plato. Many additional questions had to be answered before the chief problem could be sufficiently clarified. Many new problems may arise later. The peculiarities of the ancient mind have not been studied as yet quite adequately. The logic of the “pre-logical” period is in itself a new and a fascinating problem. A new research technique had to be invented ad hoc, which, I hope, will—finally—be accepted by the learned world.

I am very much indebted to all those who have sincerely encouraged my work and facilitated the publication of the present volume. It is a pleasure for me to mention the name of Professor George Woodbine, of Yale University, who was the first to read this book and who found it possible to suggest its immediate publication. I deeply appreciate his frank support. I would like also to express my very sincere gratitude to Professor Charles M. Bakewell, of Yale University, for having examined the manuscript of my book and kindly sponsored my thesis. His numerous constructive criticisms seemed to me particularly welcome.

I thank Professor Oystein Ore for his kind attention to my work and for his very suggestive critical remarks. I am particularly glad to state that I found in Professor Filmer S. C. Northrop a benevolent reader of the manuscript of my book. I appreciate his kindness and his interest in my work. I would like also to stress the fact that I owe the chance of having been able to complete the present study to the friendly attitude of Dean Edgar S. Furniss and to the kindness of Professor Francis W. Coker, chairman of the Department of Government, Yale University.

My very sincere sympathy is due to Mr. P. I. Prentice, Vice-President of “Time,” Inc., who on several occasions expressed personal interest in my work, and to Mr. C. J. Lalumia, of the Associated Press, who was the first to write on my “findings” in

the daily press, because he believed in them and did not hesitate to disclose his confidence to the readers of the Associated Press bulletins. I like his attitude, which one does not find often enough. I thank Dr. Hjalmar R. Holand for having authorized me to make quotations from his excellent book on the Kensington Stone ("Westward From Greenland").

My cordial thanks are addressed to my friend, Professor D. P. Krynine, of Yale University, who stimulated my work and proved able to find encouraging words when everything seemed "lost"—and for ever. Plato—Plato is the chief hero of my book—was himself "a scholar and a gentleman," and such was his "idea" of a "true philosopher"—of a "true pilot." I am delighted to state that in no sense does Plato's idea of scholarship differ from what one may now find in the academic and in the journalistic world—in spite of the obvious "going down" of all previous moral standards which seems to revive the farthest past of humanity—the time of "sulphur—and fire-rain"—the time of punishment coming from God—provoked by man's wickedness and vice.

It is possible that the exposition of my thesis will be found not quite compatible with the prevailing scholastic tradition. In this case, however, I decided to take the reader into my laboratory and to reproduce—sincerely and faithfully—the general line and the occasional situations of my own thought.

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THE SACRED TREE SCRIPT

INTRODUCTORY REMARKS

Plato's philosophy has many as yet undisclosed corners. This darkness is certainly not due to a lack of knowledge on the part of those who were interested in the works of the great Greek thinker. The "eternal" Plato is known. There is nothing substantial which could be added to the eloquent interpretations of a Ritter or of a Paul Shorey. But this aspect of Plato's philosophy does not attract me, nor should it allure my readers. We must deal with an unknown, an "esoteric" Plato. The concealed Plato suggests an entirely new approach. One has to follow certain devices which seem now to be "leading" in philosophy. The mind of Plato is the real key to his writings and to the entire "Weltanschauung" of his time. That means that the "unconscious" Plato must occupy a place of honour in a work which is devoted to a description of his "mental attitude." The unconscious or "subconscious" Plato shall lead us to the esoteric foundation of his science.

It is still a mystery to me whether Plato actually knew the initial source of all his inspirations. Was it intuition or schooling which led him to his "vision" of the cultural past of humanity? I apply the word "mind" to the complex whole of pure intuition, acquired knowledge, imagination. These elements are inseparably combined in Plato's mind. They have an equal share in all that his mind has produced. The personality of Plato is a crossing of all capacities which a philosopher may call his own. That makes our task particularly delicate. It is hard to "reach" Plato.

Nevertheless, one sometimes has to assume such risks and responsibilities. An intensive training in mediaeval history should facilitate the realization of the project. The early Middle Ages are much closer to antiquity than to the kind of reasoning which we have inherited from the so-called Renaissance. The "barbarians" were cultivating a different type of thinking which may be defined as "pre-logical." It certainly is "pre-Aristotelian" and "non-Roman." I have attempted to describe its main features in a separate work (Etiudy, Part I, Brussels, 1939). It is scarcely necessary to start our exposé with a detailed definition of all peculiarities of this ancient and mediaeval reasoning. Plato's

“science” contains many elements of what one may call “ancient wisdom.” We will discover them while discussing some fundamental problems of the Platonic philosophy.

Plato is the last representative of the ancient period of the European civilization. His thinking is deeply rooted in the human past. Our own logic is mainly due to Aristotle. Perhaps, it would be correct to assume that our “lucid” thinking must be ascribed to the fact that Aristotle’s education was entirely different from that of Plato. Aristotle did not know the secret science of the “initiates.” His mind remained free from any irrational tradition. His father was a physician. That might have strengthened his empiricist feelings and might have prevented Plato from disclosing to him the very foundation of the “science” which a priori was utterly unacceptable for a positivist of the type of Aristotle. Aristotle’s “ignorance”—from the viewpoint of the “initiates” Aristotle certainly was an “ignorant,” a laic—seems, therefore, to be the actual cause of our own enlightened rationalism. Aristotelianism, together with Roman law and stoicism, defined a last break of the ancient tradition which was still living in the “barbarian” zone of Europe. In Eastern Europe this ancient tradition was preserved up to the XVI Century, whereas the reception of Roman law by the Western-European nations had led to an early defeat of “barbarism” in the more civilized part of the continent. However, the “wise men” of the barbarian nations proved unable to originate an elaborate exposé of the ancient tradition which they were maintaining and following. The only clear evidence of their “initiation” is the Runic stone of Kylfver and, partly, the Old-Russian “Dove’s Book” which seems, however, to be an adaptation of the Gothic “encyclopedia” of Kylfver. We are therefore fully entitled to consider Plato as the last exponent and philosophic interpreter of “ancient wisdom.” We will see that the very foundation of his philosophy is intimately connected with the Pythagorean thought and with the initial layer of the Genesis, which had been later worked over by the “wise men” of various Semitic nations.

Since the “eternal” aspect of Plato’s philosophy has had many competent interpreters, it seems admissible to concentrate on those problems which have been left in the dark. The time-conditioned

peculiarities of his thought can be easily opposed to the usual "humanitarian" tradition which later admirers have inserted into the original content of his philosophy. The historical Plato—Plato the Greek and the Indoeuropean—is almost unknown. I do not mean by that that his biography had been neglected or that the Athenian history of his time cannot be adequately restored. Both problems have been solved, and the remaining holes are not important at all. Plato's "historicity" involves entirely different questions. Platonists of all times should not be surprised to find that Plato was much more a historian than a philosopher. His face was turned to the past. His vision of the future can be understood and interpreted only in terms of a cultural-historical past which he was virtually recapitulating in his political suggestions and in his "philosophy of ideas" as well.

Plato's attitude toward the world can be disclosed only by way of a searching analysis of his very reasoning. This world—Greece of the IV Century B. C.—Plato was "visualizing" in terms of a complicated philosophical theory. He was neither describing it, nor was he trying to rub it off by means of malevolent, destructive criticisms. He sublimized the Greek "city" and was anxious to find an utterly purified rational basis for its existence. Of course, his conception of rationality was different from ours. He sought and he found a solution in the divine tradition handed down by the ancients. Pythagoras' science of numbers was a chief source of Plato's rationalism. I doubt, however, whether Plato himself was fully aware of the real source of his inspirations. He was a Pythagorean. But that does not exhaust the tremendous complexity of his thought. He had a singular intuition for cultural history as such. Knowledge and intuition were constantly overlapping each other in Plato's mind. I do not think that it would be an exaggeration to say that Plato was very much a historian malgré lui. He did not care for history. Nevertheless, his dreams and speculations are reviving the most significant stages of cultural history.

Plato refers to the past mainly in the form of legends and myths. He condemns the ancient myth-makers and calls them "liars." His own myths are supposed to be different from the stories which professional myth-makers are composing and by

which they falsify the real past of the Greek nation. It is obvious that this distinction is based on a deep understanding of all cultural-historical implications which myths may contain. Not all myths and legends are lies. There is, at least, one tradition—"a gift from heaven to mankind"—which is true. It has been handed down by the ancients who were "superior to us and dwelt nearer to the gods." This gift reached mankind "through the agency of some Prometheus." The "divine man" of this revelation is Pythagoras, the first great "rationalist" of our civilization. We will see later that Pythagoras was in no sense the initiator of the "divine tradition." Its real roots have to be sought in the prehistoric past of humanity—in the first cultural experiences of mankind. Pythagoras' personal contribution seems to consist mainly of some purely mathematical elaborations of the previously known cultural and scientific material. His "science of numbers" is not original. It is contained in the "Genesis" and, moreover, it cannot have a single author. "Ancient wisdom" is nothing else than crystallized cultural history. It seems to be a common product of all Indoeuropean nations. Plato is simplifying the problem by ascribing the revelation to Pythagoras. Of course Plato owes his mathematical knowledge to Pythagorean schooling. For him Pythagoras had to be the "divine agent" who was chosen to transmit to mankind "a gift from heaven." This Pythagorean orientation of Plato's mind determined once for ever his entire "Weltanschauung." His rationalism is essentially mathematical. Numbers are "the first things in nature as a whole." Plato identifies "ideas" and "numbers." Numbers express the "rational principle" in nature. We find an exquisite characteristic of the Pythagorean approach in Aristotle's "Metaphysics":

"Bred in the study of mathematics, which they were the first to advance, they thought that the principles of mathematics are the first principles of all things. Of these principles numbers are by nature the first; and in numbers, rather than in fire or earth or water, they found many resemblances to things that exist and come into being . . . Further, they saw that the properties and ratios of musical scales were expressible in numbers. Since, then, all other things seemed in their whole nature to be modeled after numbers, and numbers seemed to be the first things in Nature as

a whole, they supposed that the elements of numbers are the elements of all things, and that the whole Heaven is a musical scale or number." (Met. A, 985b, 23; cf. F. M. Cornford, *Plato and Parmenides*, London, 1939, p. 4.)

Aristotle seems to have been quite convinced that Plato's "ideal numbers" are deprived of any rational basis. Since the numbers mentioned in the "Republic" and in other dialogues are not "intelligible," the only possible conclusion would be that Plato was intentionally trying to stress his "superiority" over his "non-initiated" pupils. A "faking Plato" is, however, a sure impossibility. He was himself too passionately interested in truth. His entire philosophy is nothing else than "a way of truth" which he himself considered to be the only way leading to "true knowledge." The mystery of the "ideal numbers" is far from being undisclosable. Aristotle's positivism was an unsurmountable handicap. As to the contemporary "Platonists," they are too much involved in the discussion of the "eternal" aspects of his philosophy and their mind is therefore moving along traditional lines. We have to detach our thought from the usual "scholarly" approach to Plato. A new "optic" must be found which eventually would be closer to the historical personality of Plato and to the historical implications of his dreams and visions.

Of course, Plato was a mathematician of the Pythagorean school. He was not only manipulating all sorts of abstract numerical symbols, but was primarily concerned with the intrinsic meaning of numbers. The emphasis was put on interpretation. Our task would be much easier, if Pythagoras' "Science of Numbers" could have been preserved up to our days. Unfortunately, the Pythagorean bible, which is supposed to have been written by Pythagoras himself, is lost forever. I even think that it had never been written. The "ancient wisdom," which Pythagoras might have completed and renovated, was esoteric, i.e., known only to a close group of "initiates." Plato became acquainted with the Pythagorean philosophy during his first journey to Sicily. He might have touched Egypt which was an important educational center. Pythagoras himself is said to have studied in Egypt under the guidance of Egyptian "Magi." I hope, however, to show that the "oriental" wisdom is itself a complicated product

of Indoeuropean thought and of Semitic interpretation. It is too easy to ascribe all esoterism to oriental magicians. In fact, the "magic" of Plato and of his "divine" teacher, Pythagoras, is rational and even scientific. It is a "science"—altogether a crystallized product of human experience and a first "rationalization" of the main phases of cultural developments. It is "history" presented in the form of a gnoseological system.

In any case, Plato did not pretend to be a "Magus," and he would be highly indignant, if somebody would dare to ascribe to his "way of truth" an irrational character. Unfortunately, he confounded two things—rationality and historicity. He himself was utterly unaware of that fundamental confusion. His philosophy of ideas is nothing else than a history of ideas—a history of several most important acquisitions of human reason. Plato's thought is deeply rooted in the human—particularly in the Indoeuropean—past. His real environment seems to be Indoeuropean prehistory—the first and fundamental "genetic situations" which were particularly favorable to a spontaneous offspring of new ideas. Thus, the pre-logical period of human civilization is most adequately revealed in the "detached" speculations of a philosopher. That seems to be a warning addressed to historians and to the learned world as a whole.

/ Plato's works are not the only source of "ancient wisdom." A direct connection between Plato's visions and the legends of the Old Testament has now become traceable. However, the main proof of the actual possibility of such a relationship has to be sought elsewhere. I think I have detected it in a Runic inscription which is known to many scholars. The Runic stone of Kylfver contains a symbol which gives us a key to the esoteric science of the ancients. This symbol represents a tree. We will find a "tree" in the "ideal city" of Plato. Later we will find an "ideal city" in the Bible, together with the "tree of knowledge," to which the ancients ascribe their knowledge, and to which we ourselves owe our present enlightenment. As I said earlier, we have to follow and to investigate the chief current of human civilization. Plato's "Republic" is one of the most significant manifestations of ancient wisdom, but certainly not the only one. The "Genesis" seems to possess the privilege of priority. The

Gothic "encyclopedia" of Kylfver represents the simplest and the most economic expression of the ancient science. The Old-Russian "Dove's Book" seems to contain some precious additional indications. Finally, Sanskrit—Sanskrit words and concepts—have to be taken into account. A true solution of all these cultural-historical problems can only be found in the depth of human pre-history. A confrontation of the sources of ancient wisdom will lead us to a complete reconsideration of their content and of their significance.

The symbol to which I was referring happens to be a counting system of a new type. It is an octaval system. The chief unit of this system is the number "eight." The Babylonian system is "sexagesimal." Our contemporary counting system is "decimal." Plato's science of numbers includes and amalgamates these three numerical systems. Moreover, Plato confers to that amalgamation a metaphysical significance similar to the almost unconceivable mathematical sophistications which we will find in the "Genesis." Here, too, Plato was following the "divine tradition." His personal contribution has to be sought elsewhere—in his philosophy of ideas, which seems virtually to revive the history of the birth and of the earliest development of several most important ideas or conceptions. It is a unique contribution which no other historian has been able to equalize. However, his science of numbers is far from being a simple adaptation of the Pythagorean doctrine to the specific features of his own philosophy. Plato goes farther than that. The numbers and the "science of numbers" serve to establish a rational basis on which the various products of his philosophical speculation can be fixed so as to conceal their fantastic nature from the eyes of the laymen. Plato's mathematism was "constructive"—or, at least, was supposed to be so. The application of the same "science" in the Bible has an entirely different effect; the Biblical mathematicians decided to create ten patriarchs (cf. the ten mythical kings of the Babylonians)—from Adam "down" to Noah—and to calculate the age of each patriarch. This purpose actually had been achieved in a most ingenious way. I do not dare, however, to apply the word "constructive" to these innocent, though altogether significant, mathematical exercises.

On the contrary, Plato's "ideal numbers" are used in a much more intelligible way. The "rationality" of his calculations succeeded in duping even his incredulous pupil, Aristotle. Plato gave to his "ideal city" a population of 5040 citizens—no more and no less. Aristotle is not quite satisfied with this number of citizens and makes other suggestions. He utterly misunderstands the very foundation of Plato's calculation which becomes explainable only in terms of the octaval system. There is no question of the number 5040 being too large or too small. No other number would fit into the "ideal system" which Plato has ascribed to the city of his dreams.

The second problem, which, too, cannot be detached from the main roots of Plato's philosophy, is the well known, and often discussed, metaphor of "The Ship of State." This comparison seems to connect Plato's political views with some specific features of Greek, particularly of Athenian, life. Athens' glory was due to her superiority on the sea. It would be difficult to find a more congenial image. The ship, the crew, the pilot—all these words and concepts were self-speaking. Once more, however, we are facing here a cultural-historical problem of great significance. Plato's metaphors are not only mere reflections of the people's life and language. They involve other questions, too. The image of the Ship of State is an illuminating explanation of the very origin of political life as such. We will see that Plato's approach is very close to that of the "Genesis." It has the advantage of being much clearer and preciser. Still, I am far from assuming that Plato actually intended to revive a significant moment in the history of human thought. The "subconscious" strata of Plato's mind or, if one prefers to call it so, his intuition, was an inexhaustible source of true, sound, historically justifiable, inspiration. What he himself might have interpreted as a free creation of a philosophic or of an artistic mind was, in fact, history—"the" history of an idea or of a series of ideas. The "subconscious" Plato is a most striking refutation of the skepticism of a David Hume. The commensurability between "facts" and human reason becomes clearly establishable. Plato thinks in terms of cultural-historical events. There is a bridge connecting his mind with

the main happenings of the cultural past. History becomes reason itself.

The picture which Plato is painting in his "Republic" was born in his mind even before he could know what painting is. It is impossible to understand the political program of the "Republic" without taking into account Plato's aristocratic origin, his education, family traditions and the entire ambiance of his youth. His mind was led toward an aristocratic, a selectionist type of state-organization. The "Republic" is frankly aristocratic. However, Plato's conception of the ruling class has nothing in common with the dry conservatism of an English Tory. His aristocracy is that of natural ability and of superior knowledge. The "ideal city" is ruled by philosophers. The metaphor of the Ship of State induces Plato to broaden the content of the comparison: philosophers are "true pilots" who are entitled to lead the Ship of State and whose authority must necessarily be respected by the entire crew. The deeper implications of Plato's allegory become understandable only in the light of a confrontation with the legend on the deluge and on Noah's Ark. The Biblical cosmogony finds in Plato a most congenial interpreter. Of course, this ideological similarity does not imply any imitation on Plato's part. On the contrary, Plato's "interpretation" permits to reestablish the oldest layer of the Biblical legends which seem to have originated in pre-Semitic times. The oriental mind adopted the "Japhethite" cosmogony and appropriated it to its own particular needs. The initial content of the legends becomes visible after their comparison with Plato's "Republic." I am therefore inclined to think that Plato's "Republic" is very close to the earliest content of the "divine tradition" to which Plato himself is referring in "Philebus," 16c,—closer than the Hebrew redaction of the "Genesis" or any other ancient source.

In no sense would I suggest that Plato actually knew the Hebrew—or an Aramean—version of the Old Testament. However, the two very unusual interpolations, to which the readers should entitle me after a careful study of my argumentation, will make the content of both chief-sources of ancient wisdom almost identical. Both, the problems and the solutions, are surprisingly analogous. The "Genesis" and the "Republic" seem to complete

each other. They are both elaborations of a cultural-historical material which has determined the main route of human civilization. They both are based on a secret script—a most ancient tree script which is closely related to the so-called Runes. In fact, the key to the “holy script” is revealed to us by an ancient “runologist,” by a Goth, whose name is supposed to be “Eus” (horse). It might be painful to owe our knowledge to a man with such a discriminating name, but we cannot do anything about it.

Those who feel themselves initiated will certainly be surprised by the omission of the name of Plato’s much respected teacher, “Socrates.” Of course, Socrates should have been mentioned earlier. His influence on Plato cannot be denied. Plato’s method of presenting his arguments seems to be entirely due to the Socratic technique. The form of Plato’s works revives the endless discussions which his master was accustomed to lead surrounded by a group of attentive followers and adversaries. Socrates was a perfect dialectician. Moreover, he was a great thinker. All in all, Socrates was a magnificent product of Greek leisure. He spent his time in intellectual duels, without leaving a single line of written works. Plato’s “Apology” attempts to fill up this hole in the Socratic tradition. It is difficult, however, to make an adequate estimate of Socrates’ actual merits. I do not think that Plato’s “Republic” follows the lines of Socratic thought. Socrates was a non-traditionalist, a free-thinker. On the contrary, the “Republic” seems to be utterly merged in the past. It has been often stressed that Plato and Aristotle were both incapable of detaching their minds from the archaic city-state form of Greek political life. This accusation is justified in the case of Aristotle who survived the creation of the Macedonian empire by his disciple, Alexander the Great. I do not see why Plato should be made responsible for Aristotle’s lack of clairvoyance. Plato’s “ideal city” was in no sense an archaism. It was primarily a philosophic interpretation of political life as such. The “ideal city” is an idea—a crossing of cultural history, of philosophic speculation, of “divine revelation.” Moreover, it had been destined to be the end-point of an old tradition. This tradition cannot be revived any more, but it must be studied.

SECTION I
THE IDEAL NUMBERS

CHAPTER I

PLATO AND PYTHAGORAS. THE DELPHIC MYSTERIES

The "ideal numbers" have a primary importance for the understanding of Plato's philosophy of ideas. Hence, many scholars were obliged to study the problem of the so-called ideal numbers in spite of their own critical attitude. Plato's archaic Pythagoreanism seemed to be a deviation from the general line of his reasoning. Such was Aristotle's opinion, and his authority determined the approach of all contemporary scholars.

Nevertheless, a discussion of the ideal numbers could not be avoided. In his later years, Plato completely identified numbers and ideas. This peculiar archaism must have an intelligible foundation. Attempts have been made to clarify the philosophical implications of Plato's "science of numbers." However, it was first necessary to study some individual problems. Many numbers are presented in the form of fascinating riddles. The so-called "nuptial number"—a particularly sophisticated riddle—has attracted the mind of several outstanding scholars. Its solution seemed to be almost impossible. In fact, Aristotle's attempt to solve the mystery of the "nuptial number" ended with a complete fiasco. Other scholars—James Adam, Kafka, Hultsch—were more successful. However, the American Platonist, Paul Shorey, seems to be quite correct in saying that "the riddle of the nuptial number that determines the beginning of the decline (of the ideal-state) has never been solved to the satisfaction of a majority of competent critics."¹ Shorey himself made a vain attempt to interpret Plato's mathematism. His conclusion is similar to Emerson's final judgment: "He (Plato) sometimes throws a little mathematical dust into our eyes."² K. Vering speaks of a "Zahlenmystik,"³ although he himself goes so far as to trace an analogy between Mendel's principles of heredity and Plato's ingenious guess "dass es zahlenmässig darstellbare Vererbungsgesetze geben müsse . . ."⁴ There seems to prevail a curious uncertainty as to the real significance of the

Platonian numerology. Shorey's frank skepticism is unable to seduce "a majority of competent critics" who still continue to work on the problem of the so-called "ideal numbers." Of course, no scholar would easily admit a defeat, as long as there is a chance that the others may fail, too. Moreover, these efforts were not all made in vain. A distinguished English philosopher, James Adam,⁵ has actually found an arithmetical solution of the "nuptial number."⁶ His well known monograph is a disarming example of human perseverance. Plato seems to have intentionally chosen such a sophisticated way of expressing his thought that the usual methods prove to be utterly inappropriate to the supernatural task. Even the traditional obscure terminology of the ancient Greek mathematicians appears lucid, if compared to Plato's foggy definition of the "nuptial number." Moreover, the usual terminology cannot be applied to the "nuptial number." The definition is given in terms of an entirely different—of a secret system. "Plato hat seine Worte in ein Dunkel gehüllt, das auch dann nicht völlig gelöst wird, wenn man den gesamten, streng technischen Sprachgebrauch der griechischen Mathematiker zur Vergleichung heranzieht."⁷ Kafka's opinion is particularly interesting, because he is one of those few scholars who came very near to a correct solution of Plato's chief riddle. Dupuis, a French scholar, has advanced two different interpretations of the "nuptial number" (which is also called "Plato's geometrical number"). His efforts resulted in the edition of a "troisième mémoire" which, above all, is a fine example of scholastic enthusiasm.

Of course, there was another—a less painful—issue. It seemed possible to find a refuge in pompous, meaningless general statements. Joseph Souilhé would like to stress Plato's predisposition to a mathematical solution of moral problems: "C'est bien l'effort constant de transporter aussi directement que possible, la mesure mathématique, dans les notions morales. . . ."⁸ J. Souilhé does not explain, however, Plato's way of reasoning. How could Plato come to the idea of expressing moral concepts in terms of a detached mathematical symbolism? One might refer to his Pythagorean "schooling." But the Pythagorean mentality itself requires an adequate explanation and a thorough analysis of its psychological background. J. Souilhé adds a second "general

statement" to the first definition: Plato wishes "to express in a rigorously scientific formula something which is more relevant to art (than to science)." ⁹ I do not think that such a "broad" approach to Plato's mathematism can help to elucidate the mysteries of Plato's science of numbers. Plato—the moralist, Plato—the artist, Plato—the mathematician or scientist—all these aspects of his personality are altogether present in his thought. But the peculiarities of his mental attitude cannot be clarified and explained by means of mingling together the most significant features of his personality. We will see that Plato had an all-embracing theory of knowledge similar to that which is found in the "Genesis"—in the legend on the "tree of knowledge."

Gaston Milhaud is primarily interested in the relationship between "numbers" and "ideas." He emphasizes the element of "scientific determination" in Plato's mathematical approach to the world. This "scientific determination" seems to condition and to explain "the functional nature of Plato's numbers." "N'avons-nous pas dit en effet que les Idées se pénètrent, qu'elles se mélangent, qu'elles participent nécessairement les unes aux autres? Il suffit de vouloir que ces mélanges, ces pénétrations, ces dépendances réciproques se prêtent à une rigoureuse précision, à une détermination scientifique . . . pour songer à la fonction, au nombre de chaque idée." . . . ¹⁰ It is astounding, how significant a "general statement" may become, if it is expressed in French. There seems to be a unique suggestiveness in the French language as such. I doubt, however, whether Milhaud's verbosity helps to understand Plato's "ideal numbers," although he seems to be very close to some of Plato's implications. Milhaud's main weakness is his "method": he tries to explain an undisclosed Plato without disclosing him. I give my preference to the "empiricist" efforts of a James Adam who was anxious to replace phrases by solutions, and general characteristics by detailed research.

In recent years a new attempt has been made to find out a "true Plato" behind the traditional interpretations which obviously had succeeded in obscuring the "historical" Plato by stressing the eternal aspect of his philosophy. The reverend Emile Schuré is not a historian and, moreover, he is not a philosopher. He might be called an author, a "publicist." One has to recognize that

despite the absence of any formal scholastic qualifications Emile Schuré is nearer to truth than a great majority of professional Platonists. E. Schuré believes in the existence of an "esoteric science." "Nothing is easier than to recognize the different parts of the (?) esoteric doctrine in Plato and, at the same time, to discover the sources from which he has obtained them. The doctrine of the ideal-types of things, as set forth in Phaedrus, is a corollary to the doctrine of the Sacred Number of Pythagoras."¹¹

This statement would be upmost significant, if E. Schuré would actually know the "doctrine of the Sacred Number of Pythagoras." Unfortunately, as he himself tells us, the "science of numbers" which Pythagoras is said to have formulated in a book called "hieros logos" did not come down to us. E. Schuré simply states that "we are acquainted with its principles from the subsequent writings of the Pythagoreans, Philologus, Archytos, and Hierocles, the dialogues of Plato. . . ."¹² He is entirely correct in defending the existence of a secret science and in attributing to this fact a particular significance. However, his assumption leads us back to the same point from which we started—to "the dialogues of Plato." The only "constructive" suggestion, which can be found in the works of Schuré, is his conviction that the key to this esoteric doctrine can be found in the East: "The reason they (the principles of the esoteric tradition) have remained a dead letter for modern philosophers is that their meaning and bearing can only be understood by comparison with all the esoteric doctrines of the East."¹³

If we would have to follow Schuré's advice, our task would become very difficult. "The esoteric doctrines of the East" are inaccessible to our rational mind, because they are mostly detached from their initial rational and empirical basis. They are symbolical and, moreover, the symbols themselves form an own, abstract, conventional system. Schuré knows that. The "Orient," however, has a singular appeal for him and for many other amateurs of "esoterism." Hence, he merges Plato and Pythagoreanism as such in the bottomless well of "Oriental wisdom." It might be true that Pythagoras went through Egyptian schooling. We will find traces of Babylonian wisdom in Plato. But it is impossible to ascribe almost everything to the influence of Egyptian "Magi"

without giving any indication as to the real content of their "esoteric doctrine." It is not sufficient to repeat the "esoteric" terms which the Pythagoreans were using. The origin of this terminology, its meaning, its application have necessarily to be explained in a rational way. The "gift from heaven," to which Plato is referring in *Philebus* 16c, might well have been brought from the Orient. However, Schuré should make an attempt to prove that himself.

The learned world was even in Pythagoras time interested in discussion and cultural contact. Pythagoras undoubtedly had many occasions to meet the Eastern Magi of Babylonian, Chaldean, Persian descent. He is supposed to have come to Croton about 530 B. C., after many years of study in several centers of ancient education. Schuré calls him a "Magus" of the fourth, i. e., of the highest, degree. That is possible. Of course, he could be counted to the "wise men" independently of the fact what his formal title was. The "Magi" formed the priestly caste of the Medes and Persians. Later, the "title" Magi became a generic designation of the "wise men" of the Orient.

In Croton, Pythagoras' activity soon led to very significant consequences. His Academy—a prototype of the Platonic Academy in Athens—became one of the most reputed centers of scientific education. Among his pupils we find Parmenides whose philosophical system seems to have had a profound influence on Plato. The Pythagorean school, moreover, had many followers in Southern Italy. It is hard to determine the year in which Plato became first acquainted with the Pythagorean philosophy. It seems that his visit to Sicily in 388/7 was particularly important for his further philosophical development. In Sicily, Plato could easily get in touch with the Pythagoreans of the Italian school whose philosophic principles seem to have determined the main content of his own "science of numbers." "The fundamental distinction between the two main traditions, Ionian and Italian, is that whereas the Ionian sought the nature of things in some kind of matter, the Italian laid stress on the principle of limit or form, which first appears as geometrical shape and number." (F. M. Cornford, *Plato and Parmenides*, p. 3.) We will find these characteristics of the Italian branch of Pythagoreanism clearly

expressed in Plato. That does not mean, however, that Plato was utterly subjected to Pythagorean thought. He developed the Pythagorean doctrine. But as a member of the Pythagorean school, he was bound to secrecy. Moreover, he was obliged to keep the fundamental principles of the school.

It is interesting to notice that Plato does not name his fellow-Pythagoreans. F. M. Cornford stresses the fact that Plato "never attributes any doctrine to an individual, with the exception of Philologus" (o.c., p. 2). Of course, he consecrates an entire dialogue to Parmenides, but Parmenides was a dissident who seems to have broken with the Pythagorean school. Plato's silence is quite understandable: he belonged to a limited group of "initiates." Not only their "secret science," but even their names had to remain concealed from the eyes and ears of the laymen.

One might see in this secrecy an Oriental impregnation. The "initiates" formed a cast of their own as did the Medean and Persian "Magi." Only, in such a case, the term "Oriental" becomes utterly indefinite. It seems much more adequate to distinguish a Semitic cultural world and a non-Semitic—potentially an "Indoeuropean world." In fact, there are some evidences that the "heavenly gift" or "the divine tradition" did not come from the "Orient"—at least not from the Semites. It seems to be Indo-European—partly Indo-German, partly Indic.

E. Schuré himself indicates in his works another possible source of Pythagorean wisdom. The "Delphic mysteries" seem to explain much better some peculiarities of Pythagoras' and Plato's "science." There seems to be a national and even a racial tradition in the Pythagorean thought. I should mention, first of all, the passion for knowledge which Plato himself declares to be essentially Greek. Pythagoras, Parmenides, Plato, Aristotle—it suffices to name those four giants of ancient scholarship in order to understand the amplitude of Greek achievements in knowledge. It would be dangerous to assume that the very roots of their science ought to be sought somewhere in the great centers of "Oriental wisdom." The mind of the Greek philosophers might have often turned toward the East in quest of new discoveries made by other nations. The Platonic "astrology" seems partly to be based on such a knowledge acquired from outside. Nevertheless, the main current

of ancient wisdom—and the peculiar passion for knowledge which alone could create such a mighty stream—could only have originated in a Greek or Indoeuropean cultural area. Let us recall the Semitic version of the origin of “knowledge” as such. It is presented as a sin, as a crime. Obedience to God’s will replaces in the Semitic mind the Greek idea of “true knowledge.” On the contrary, knowledge is called by Plato a “gift from heaven” which “the ancients” have handed down to us “through the agency of some Prometheus.” I doubt whether Plato would have applied these words to a borrowed science, and the term “ancients”—who, moreover, “were superior to us and dwelt nearer to the gods”—to E. Schuré’s “Oriental Magi.”

This sacred tradition has necessarily to be “national.” The “agency of some Prometheus” seems to reveal an active rôle of Pythagoras in the formulation of an ancient tradition. F. M. Cornford and O. Gilbert are both inclined to identify Prometheus with the “divine man,” Pythagoras. I think, their guess is partly justified. As to the tradition itself, Plato gives us a precious additional indication: this tradition tells “that all things are said to exist of a One and of a Many and contain in themselves the connate principles of Limit and Unlimitedness.” I will later show that this definition is perfectly applicable to the “tree symbol” of Kylfver.

Pythagoras’ and Plato’s acquaintance with the “Delphic mysteries” seems to be far more important than their connections with the Oriental, Semitic, thought. Curiously enough, the most eloquent narrator of Pythagoras’ very peculiar experiences in Delphi is once more the reverend Emile Schuré. Even Pythagoras’ conception and birth are somehow connected with this national Greek religious center. Nobody else than the Pythoness of Delphi promised to the young married parents of Pythagoras “a son who would be useful to all men and throughout all time.” If one has to accept this not very reliable information, Pythagoras would seem to have been consecrated to the worship of Apollo, i.e., to the worship of the god of light and of wisdom. Of course, Apollo could hardly find a more congenial servitor. The “solar god,” Apollo, was the God of Greece par excellence. “The fame of Delphi,” says Schuré, “dates from Apollo.”¹⁴ Apollo was the

“Solar God,” the “Solar Logos” of the Greeks. “The worship of Aryan humanity from the beginning of civilization was directed towards the sun as the source of light, heat and life.”¹⁵

A Delphic origin of the Pythagorean “science of numbers” would seem quite possible. It is not excluded that the initial symbol of a tree which we will find in Plato’s “Republic” and in the “Genesis” as well actually belonged to the relics of an ancient Indoeuropean culture. Apollo—the Solar God—was a pan-Indoeuropean deity. The Vishnu of the Hindu and the Mithras of the Persians were his direct equivalents. Why should not the “tree of knowledge” have a similar pan-Aryan significance? Plato’s “Republic” is full of solar conceptions and solar metaphors. In a unique way, the worship of the sun is combined in the “Republic” with a “science of numbers” relying on a tree symbol. One should not deny the eventuality that this amalgamation of religious representations and symbols did already exist in the very center of Greek religious tradition—in Delphi. It is, of course, not easy to decide whether Plato has had a direct access to the “Delphic mysteries.” His initiation is probably due to the Pythagoreans of the Italian school. Nevertheless, he might have penetrated some of the Delphic traditions alone and later used his personal knowledge in order to develop the initial doctrine of the “divine man,” Pythagoras. The “ideal numbers” are undoubtedly Pythagorean. Their application, however, is—partly—an own creation of Plato’s “science.”¹⁶ The number 5040, which designates the number of citizens in the “ideal city,” is an invention of Plato. Its octaval basis, however, is Pythagorean and even “pre-Pythagorean.” We will find an octaval system in the “Genesis.” It was born in a prehistorical age.

This octaval tree system seems to have played an enormous rôle in the esoteric system of the Pythagoreans. I doubt whether Pythagoras could have disclosed it in his “book” which he allegedly “wrote with his own hand.” This symbol of a tree is the central figure of the esoteric science of the Pythagoreans. It is not quite understandable, how E. Schuré hopes to succeed in combining his dogma of absolute secrecy with an obvious indiscretion which he would like to ascribe to the head of the school himself. Plato is a drastic example of Pythagorean reservation in matters

of "esoterism." Not a single word reveals the actual basis of his calculations. We find a similar secrecy in the "Genesis." The ancient conspirators were real masters of their art. They knew how to conceal the most significant parts of their system, while presenting the material in such a form as to inspire full confidence to the laymen who were consuming it.

In Plato's philosophy the octaval system seems to occupy a place of honour. It symbolizes the earthly, empirical basis of life, whereas the "ideal" life, i.e., the "real" life as Plato calls it, is expressed in terms of a decimal system. Such a peculiar distinction can be made intelligible only in the light of a tradition. In fact, we will find a similar "dualism" in the "Genesis." The decimal system, which we are now alone using, was not immediately given to the human mind. It had to be "found," "imagined." The decimalization of the preceding counting systems was considered to be an enormous achievement—a revelation, a disclosure of a new world.

The idea of Plato using two numerical systems is not entirely new. The "nuptial number" to which I referred in a previous context is a skilful combination of a decimal system with the Babylonian sexagesimal system. The sexagesimal system seems to have been used by Plato for astrological purposes. The "Genesis" uses it, too. The creation myth is basically "sextal" and can therefore be connected with the Babylonian tradition ($6 \times 10 = 60$).

The presence of two numerical systems in Plato's "nuptial number" has already been stressed by Kafka. The arithmetical solution of the "nuptial number" which we owe to James Adam leads us to a number 12960000. This number is essentially Babylonian, because 12960000 years form a Babylonian "world year"¹⁷: "Die Zahl 12960000 regiert das Weltall, denn 12960000 . . . sind 36000 Jahren gleich, die einen babylonischen Cyclus bilden und ein Weltjahr darstellen. . . ."

The Babylonian system has been applied by Plato to one of his most important "ideal numbers"—to the age of the citizens of his "ideal city": "Wir wissen aus einer anderen Stelle der Republik, dass Plato die Dauer des menschlichen Lebens mit 100 Jahren oder $100 \times 360 = 36000$ Tagen ansetzt. Daraus folgt, dass ein

Tag im Leben des Menschen einen Jahr im Leben des Weltalls entspricht."¹⁸ These "interdependences" and "participations" are amazing. Moreover, the decimal system represented by the number "one hundred" is here skilfully combined with the Babylonian sexagesimal system which operates with the initial unit of "sixty."

It is true that the Babylonian system "participates" in Plato's "science of numbers." We will see, however, that it can be reduced—and Plato actually does it—to an octaval system whose chief unit is the number "eight." In fact, Plato combines three counting systems in his "science of numbers," and each of them is used in a specific philosophical sense. The "Genesis" makes a very similar use of the three systems, but in a less completed way. Plato's "mathematics" are superior to the art of his predecessors. The most significant implication of this "triple-counting" will be discussed later. It suffices to indicate that the octaval system plays the rôle of an "empirical" system in Plato and the rôle of a "real" system in the "Genesis." One of the most important Platonic numbers—the number 5040 which represents the number of citizens in Plato's "ideal city"—is relevant to the octaval system. Similarly, the ages of the ten "patriarchs"—from Adam to Noah—become "real" or intelligible, if they are expressed in terms of an octaval system. The decimal system is used in the "Genesis" as a veil which helps to conceal the secret "science of numbers" from the eyes of the laymen. One has to admit that the "Magi" were surprisingly successful in their peculiar enterprise. For more than two thousand years their science remained undisclosed.

Kafka has been lucky in finding out an important distinction which Plato is trying to express and to exemplify in his "nuptial number." The nuptial number, as we know, determines the birth and the decay of the "ideal city." In the "Genesis," the combination of the two counting systems—of the octaval and of the decimal—serves to determine the birth and the "decay," i.e., the death, of each of the then patriarchs. Both sources seem to operate with the concept of a "nuptial number." Only the details of this amazing operation differ from each other. The main channel of thought is obviously the same. It is pre-Pythagorean, but—as we will see it later—strikingly close to the very basis of the Pythagorean "science of numbers."

Kafka makes another interesting attempt to clarify the distinction between the decimal and the sexagesimal system which, however, is less convincing. He starts with the assumption that the numbers "ten" and "four" are both "perfect numbers" of the Pythagorean system of numbers. Hence, their presence in the "nuptial number" might have a particular metaphysical significance. Both introductory statements are quite correct. As Kafka rightly points out, "galt bei den Pythagoräern als arithmos teleios (perfect number) in erster Linie 10, in zweiter Linie 4."¹⁹ In fact, the first four numbers—one, two, three, four—were all "perfect numbers," because all other numbers could be deduced from them. Moreover, their addition leads us to the most perfect number "ten": $1 + 2 + 3 + 4 = 10$. The decad "contains the whole nature of number," as well as "all the consonances." "The tetractys," says F. M. Cornford, "was a symbol of great significance and, like the other symbols, capable of many interpretations." We will see later that a peculiar combination of the four numbers of the "tetractys" (the word "tetractys" is derived from Greek "tettares"—"four") is found in the "Genesis," too. Hence, we should not be surprised to find an application of these sacred numerical symbols in the "nuptial number." That would confirm Kafka's assumption.

Since the numbers 10 and 4 were both considered to be "arithmoi teleioi" (perfect numbers), "müsste also," thinks Kafka, "die Zahl 10000 als 10^4 in noch höherem Masse als vollkommene Zahl erscheinen." That is a reasonable statement. In fact, the ancient mathematicians were primarily interested in preserving the sacred numbers, i.e., in applying them to all significant occasions. What combination had to be or could be used—that was a more or less irrelevant question. In the "Genesis" the four sacred numbers appear in the total formed by the addition of the ages of the ten patriarchs. In the "nuptial number" of Plato's "Republic" the "perfect numbers" could well have been presented in the form suggested by Kafka, i.e., as 10^4 . "Wenn man daher bedenkt," Kafka continues, "das Plato die Zahl 10000 als eine für die Seele besonders wichtige Zahl betrachtet (Phaedr. 248 Cff, Resp. X 615 A ff), so wäre es nicht unmöglich, dass er an dieser Stelle beabsichtigt hatte, dem 'göttlichen Erzeugten,' also

“wohl dem Unsterblichen, der Seele Verwandtem, die Zahl 10^4 , dem ‘menschlichen Erzeugten,’ Sterblichen oder Materiellen dagegen die Zahl 60^4 als ‘Regenten’ zuzuweisen und damit einen metaphysischen Wertunterschied zwischen dem Dezimal—und Sexagesimalsystem aufzustellen. . . .”

That is an ingenious guess. I am inclined to believe that the number 10^4 or 10000 actually contains the idea of “eternity.” It is found in ancient legal documents (in Uigurian contracts) as a symbol of “unlimited” possession and of unconditional ownership. It might well have a similar meaning in Plato’s “nuptial number” as signifying the absence of a time-limit and the “presence” of a different world—of an “ideal-world.” As to the interpretation of the sexagesimal system, however, I would disagree with Kafka. The Babylonian system exemplifies a third category. It expresses the cosmic and astrological element in the Platonic “science of numbers.” The “empirical world” as such is represented by the octaval system which, of course, Kafka did not know, when he was writing his most illuminating article. Hence, I propose to replace the sexagesimal system by the octaval in Kafka’s conclusion, too: “In ihren praktischen Konsequenzen mochte diese Unterscheidung etwa zu der Forderung führen, sich des Sexagesimalsystems nur in der ‘empirischen’ oder angewandten, in der reinen Mathematik dagegen sich nur des Dezimalsystems zu bedienen.”²¹ The entire emphasis should be put on the octaval system. The sexagesimal system is here, as I will try to show it later, a peculiar elaboration of the initial and basic octaval system. However, it seems probable that Plato was far from being the first Pythagorean mathematician who succeeded in combining in one formula all three counting systems. Once more, the “Genesis” can assume the privilege of priority. We must never forget that we are moving within the main stream line of “ancient wisdom.” It is almost impossible to fix and to qualify the personal contribution of each of the ancient thinkers and mathematicians. It is not surprising that Plato himself did never attribute any doctrine to an individual. The Pythagoreans were following an ancient “divine tradition” whose main characteristics must be sought in the prehistorical stage of human civilization. Plato’s “prophane” disciple, Aristotle, seems to be utterly unaware

of all these complicated "participations" and "interdependences." He states that the "perfectness" of the number "ten" is due to the fact that "all nations count up to 10 and then begin again." The opposite of that assumption would reflect much better the "state of mind" of the ancient thinkers. Their entire "science" was based on a distinction between various systems of counting. Most important philosophic problems were "solved" in terms of this almost incredible numerology. We will see later that this archaic conception of science and knowledge was far from being absurd. It has a historical foundation and a rational content. One should apply the word "human" to these first curious errata of the mind. The art of reasoning had to be learned. It was not immediately given to mankind.

Of course, Kafka did not touch the specific question of the very origin of the notion of "perfect numbers." This problem can be solved only in terms of the octaval tree system, which as yet has never been described. We must now turn our attention to this system and to the main symbol of the system which will give us a key to the "esoteric science" of the ancient "initiates." The survey of literature has helped us to clarify the problems. They are complicated, but in no sense insolvable.

CHAPTER II

THE FIR TREE SYMBOL OF KYLFVER

The octaval system is not described in any ancient source. It has to be constructed on the basis of various indirect indications of its existence. Its most accomplished expression can be found in a Runic inscription. The Gothic stone of Kylfver contains the entire Gothic alphabet, a magic word (“sueus”) and a miniscule sign which has the aspect of a tree (Figure 1) :



Figure 1

The magic word “sueus” has a complicated history which cannot be discussed in the present context.²³ It suffices to indicate that it seems to be an equivalent of the swastika sign which is often found in Old-Gothic inscriptions. According to Mastrander and Novotny, the word “sueus” contains the name of the author of the inscription—Eus (horse). It is true that a later Slavic jurist extracted the word “eus”—horse—from the initial magic term together with three other words (suus-ueus-eus-us—“his own sacred—or military—horse perished”). But it seems risky to conclude that the word “eus” was at the same time the name of the author of the inscription of Kylfver. I should add that the above-mentioned scholars did not know the connection between the “magic” word “sueus” and its later Slavic interpretation. Otherwise they would have eventually changed their view.

The tree symbol is placed so as to inspire the idea of its relative insignificance. In fact, when I first wrote a paper on the Runic Stone of Kylfver, the importance of the symbol did not occur to me at all. I accepted the interpretation which K. A. Novotny had

Let us call the script of St. Gallen somewhat conventionally a "deer script." It has, of course, a certain similarity with the horns of a deer. On the other hand, the deer was a much venerated representative of the European fauna. It should not surprise us to find that the environment has had such an extraordinary influence on the ancient mind. The fir tree and the horns of a deer seem to express the idea of a natural regularity; and, of course, this idea of regularity implies the idea of "counting." The twigs of a tree and the horns of a deer indicate their respective age and hence inspire the idea of counting. The origin of science seems necessarily to be connected with such observations, which, at first, were upmost empirical: each observation seemed to be applicable only to a specific thing. Though the idea of a "kind" of things must have originated relatively early, the power of "abstraction" was, in fact, very limited. A new impulse arose, when a thing became detachable from its brutally empirical existence in the form of a primitive picture—of an image or symbol. It seems to me that the art of drawing lies at the very bottom of what we nowadays call "logic." We will see that Plato's philosophy of ideas is nothing else than a philosophic interpretation of this initial cultural achievement of the human mind.

The environment and the material forms of primitive life were natural sources of "scientific reasoning." The tree script and the deer script are natural products of primitive observation. Hence, they could easily become the first systematic expressions of "order." Their naturalness was an important additional factor which strengthened the idea of their sanctity. They seemed to be "given," not invented or made by man's hands. The correspondent symbols could be quite adequately interpreted as a "gift from heaven to mankind." As to the empirical sources of these inspirations, they became sacred, too. In fact, we find a sacred deer in the European tales which, moreover, is orned by a fir tree growing between its horns. That is, of course, a most significant coincidence which seems to illustrate a possible connection between all these symbols. The fir tree as such is a particularly venerated symbol. We find it even nowadays among the symbolic attributes of Christianity. The image of a deer is a common symbol of almost all Gothic remains. The German tribes—the Goths, the

Franks—seem to have started the domestication of deer from time immemorial. The Salic law contains several important laws protecting domesticated deer from being killed by game hunters. Such domesticated deer was marked by a special “signum” (sign) which distinguished it from wild deer. One of the most important purposes of domestication was, of course, hunting. Domesticated deer helped to allure wild deer. It is obvious that a taboo concept can be easily mixed up with religious representations. That seems actually to have happened in the case of the domestication of deer. An important additional element complicated the situation even more: the marking of domesticated deer became connected with symbols relevant to the worship of the sun.,

In fact, according to the results of my previous research work the above-mentioned “signum” was nothing else than a symbolic representation of the sun. It had the form of a circle. One might call it a round spot. The branding of such a “signum” conferred to the deer the privilege of being “sacred,” untouchable. I should add that the whole procedure and its symbolic attributes are quite understandable, if one takes into account the well known fact that the ancient Germans were worshipping the sun. The Gothic talismans²⁵ contain a magic formula—lathu, laukaR, gaukaR, (h)alu—which seems to express the main qualities of sunlight. Moreover, the Gothic relics are often orned by a swastika sign which, too, is a symbol of the sun, of sunlight and, possibly, of fire. The complex ideology which unites all these signs and symbols may be defined as an amalgamation of hunting, of sun worship and of what we may call “symbolic logic,” though this “Gothic” type of “logic” might be called extremely primitive.

There is scarcely anything very original in the Gothic variant of the Indoeuropean pre-culture. Its connection with the Greek cultus is obvious. A common source has necessarily to be supposed, and the symbols seem to confirm the initial homogeneity of the Indoeuropean culture. Of course, the Goths were still keeping the main symbols of the hunting stage. These symbols, however, gradually became reinterpreted and accommodated to the changing face of their life. Thus the “wolf” became a “dog,” the “raven” was transformed into a “falcon.” Odin himself ceased to be a

divine hunter or shepherd and espoused the more appropriated rôle of a military chieftain. But the religious background remained almost intact. The sun continued to determine the main symbols and rites, and the initial compact of religious representations did not fade away at once. We will find a much more salient archaism in Plato's worship of the sun. It is hard to determine, to what extent Plato's sun-worship had become a mere manipulating with traditional symbols and allegories and how much religious "feeling" was left in his metaphors. What is nowadays the significance of the Biblical idyll in our own eyes? The answer is not easy.

The worship of the sun is pan-Aryan. We find it among the Hindu, the Persians, the Greeks, the Goths, the Slavs. There is one significant feature in this worship—it could not have originated in those areas in which the sun is much more a source of disaster than of benediction. Despite the fact that we find gods of the sun almost everywhere—among all nations of the world—we have to seek the origin of the cultus in an area which may be called the most congenial and the most "adequate." That is, of course, the North. Eskimo religion centers in the divination of the sun. The supremacy of this heavenly body is so evident, so self-speaking, that the Eskimo does not feel it necessary to give any verbal precision to the hymn which he devotes to the sun. Few words occur in this hymn. It is a single, endless claim.

Hence, nobody should be surprised to find a Northern ambiance in the solar cultus of the Aryans. It suffices to recall the myth on the "Hyperboreans" which is an essential part of the Apollonian tradition. Does this myth contain an indication as to the first prehistorical seat of the Greeks and of related nations? The Apollonian myth tells us that the solar god "returns in autumn to his own land, the home of the Hyperboreans."²⁶ Apollo . . . "returns to Delphi every spring, when poems and hymns are song in his honour. . . ."²⁷ Apollo's "home" is in the North: "Here (in his own land, the home of the Hyperboreans) are his beloved priestesses, his true priests." The myth as such is very ancient. It contains some features of the farthest past. Apollo is said to have pierced with his arrows "a monstrous serpent which was ravaging and laying waste land, have purified the country and

established the temple at Delphi.”²⁸ The horror which the prehistorical reptiles must have inspired to man is here revealed to us in a dramatic form. The coldest regions of our planet might have been the best natural refuge which man was obliged to accept as the only possible escape. The “serpent episode” in the Apollonian myth is a proof of its antiquity. The same theme has been later revived in the legend on the heavenly knight, St. George. This mediaeval legend seems to combine an account of the exploits of the Hebraic hero Elisha, some parcels of the Apollonian myth, and some other traditions. The Pope Gelasius, when asked about the authenticity of the saint, finds a way out in saying that St. George belongs to those saints who are more known to God than to man. I mention that fact, because it has been asked—and the reverend Emile Schuré is one of the interested persons—whether Apollo himself is not an authentic, i.e., a historical personality. I do not think that an answer is really expected, but if so, I would like to refer to Gelasius.

The Apollonian myth is one of the few keys to the “Delphic mysteries.” We know that the image of the “Solar God” embraced the concepts of “light, heat, life.” One should add those of “wisdom” and of “beauty”—of “perfectness in form” and “harmony.” Apollo exemplified the Greek ideal of “completeness” and of “ordered beauty.” Hence, the extent of the traditions which were kept at Delphi must have been considerable. Certainly, primitive science—the art of knowing what is or what may be rendered beautiful, completed, ordered—formed an essential part of this primitive, indifferenced wisdom. Its origin can be only guessed and not defined. One might feel induced to connect it with the Northern features of the Apollonian myth. In such a case, the “Delphic mysteries” might well have contained the most initial among all initial Indoeuropean or pan-Aryan symbols. Delphi, of course, was not the only depository of ancient wisdom. On the contrary, the Gothic stone of Kylfver seems to prove that even the half-wild Goths had their “science” which was rooted in the common cultural past of the Indoeuropeans. However, the “Delphic mysteries” undoubtedly covered a larger period of cultural developments. They might have combined Indoeuropeanism with the specific achievements of the Eastern-Mediterranean area.

That was their advantage and, at the same time, their possible weakness. One may feel induced to assume that the primitive Gothic "science" had remained closer to the initial content of ancient Indoeuropean wisdom. It might even contain a relatively pure expression of the first "Northern" step of the Indoeuropean civilization, the traces of which are reflected in the Hyperborean myth and in the entire Northern ambiance of the solar cultus of the Greeks.

We should not be surprised to find that the so-called Runes possibly represent the oldest Indoeuropean system of ordering sounds by indicating the position of each sound in a row of signs which themselves might be rightly called "numbers." As I said it earlier, the Goths had a considerable chance of having preserved the most ancient achievement of the Indoeuropean mind.²⁹ On the other hand, we will be certainly amazed to find that the fir tree symbol of Kylfver seems to contain in a concealed form one of the most significant theorems of the Pythagorean "science of numbers." The "wise men" of the Goths, could they really have had any connection with Pythagoras' followers or did their knowledge date from earlier times? We will try to elucidate some of these questions after a closer analysis of the octaval fir tree system. Let us now turn back to the symbol, which we found in a lost corner of the Runic inscription of Kylfver (Figure 4):

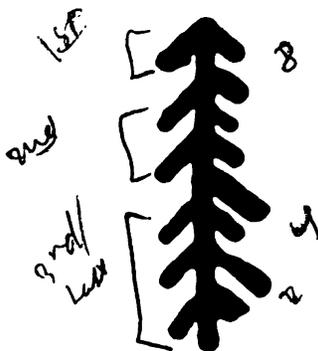


Figure 4

This image of a fir tree is characterized by a curious ambiguity. It is evident that the symbol represents a consistent whole—a system, a "One." At the same time, this "whole" has some peculiar irregularities. It is an arrangement of certain irregularities

which are explainable only in terms of the "whole." The "ordered disorder" must be clarified by way of analyzing each individual anomaly. First of all, the number of twigs on both sides of the tree is unequal. Moreover, the twigs of the right side differ in their length. Some of the twigs seem to be thicker than the other. The upper part of the symbol is different from its lower part. There are some additional peculiarities which will be discussed later.

Since the fir tree sign is marked in the same line as the letters of the Gothic alphabet (of the so-called "futhark"), it would be quite logical to connect it with the alphabet as such. In fact, Karl Anton Novotny, a German scholar who is specialized in problems of German antiquity, has already made a very successful attempt to solve the mystery of the fir tree symbol.⁸⁰ He succeeded in finding out one of the possible applications of the tree symbol by means of a confrontation of this sign with the "deer script" of the manuscript of St. Gallen.⁸¹ We will see that his explanation is correct, but far from being sufficient.

Let us first concentrate on Novotny's hypothesis. The number of twigs on the left side of the tree seems to correspond to the designation of the three "families" of the Gothic alphabet. Under each "family" we understand a group of eight letters. The whole alphabet consists of 24 letters. Hence, we have three "families" in the Gothic alphabet, and each family has eight letters: $3 \times 8 = 24$. The twigs on the left side are designating the respective "family." The first three twigs should therefore correspond to the third and last "family." In fact, they represent the first "family," because the ancient runologists were interested in preserving the secrecy of the script and in making it as little understandable as possible. The following two "left side twigs" mark the second "family," i.e., the letters 8 — 16 (hnijep Rs). The one remaining twig corresponds to the third "family"— 17 — 24 (tbemlngod; the sound "ng" forms a single letter). Thus, the twigs on the left side of the tree permit us to designate the "family" or group of eight letters to which each letter belongs. The first "family," which, as we know, is designated by three twigs, embraces the letters futharkgw ("th" is a single sound, like in English). The use of the left side of the symbol is now utterly clarified.

The right side gives an important additional indication. Each twig on the right side of the tree symbol indicates the place of a letter within a "family." There are eight letters in each "family." Hence, one twig represents the first letter within a given "family," two twigs designate the second letter, etc. The first letter of the Gothic alphabet would therefore have the following form (Figure 4a):



Figure 4a

The three twigs on the left side indicate that the letter "f" which happens to be the first letter of the Gothic alphabet belongs to the first "family" (three twigs). The one twig on the right side shows that this letter is the first letter within its "family" or group. It is in no sense difficult to construct all letters of the "futhark" on the basis which is revealed in the manuscript of St. Gallen. The same letter "f," if expressed in terms of the "deer script" of St. Gallen, would have the following form (Figure 4b):



Figure 4b

Only the direction of the twigs is different. The principles of designation of letters is quite identical.⁸² A single look at the scheme presented in the manuscript of St. Gallen makes the subject quite clear (Figure 5):

Novotny's explanation would mean that the fir tree symbol of Kylfver was nothing else than a key to a secret script which practically doubled the normal Gothic alphabet. The manuscript of St. Gallen seems to confirm this supposition. Of course, I do not deny that such a secret script of the St. Gallen type could have existed

and did actually exist. The St. Gallen scheme can hardly be due to pure imagination. But it seems to me that this secret script of the St. Gallen type is a later reinterpretation of a previous system which has a far more complicated origin and a much greater significance.

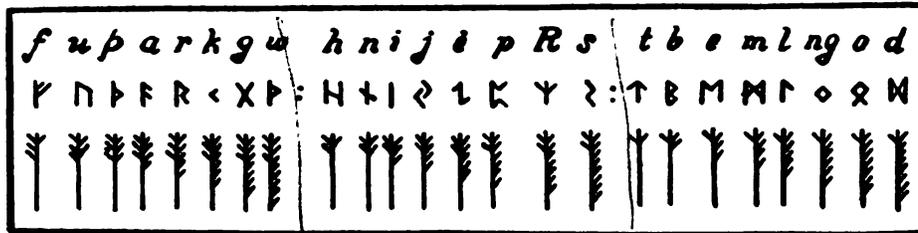


Figure 5

The hypothesis advanced by Novotny—and suggested in the St. Gallen script as such—does not throw any light on the most curious irregularities of the fir tree symbol. Let us assume that Novotny has found an adequate explanation of the number of twigs on both sides of the tree. However, the differences in length, the peculiar thickness of some of the right side twigs, the even more remarkable unusual arrangement of the twigs—all that remains without any explanation, because Novotny did not find any plausible indication in the only source which he happened to have consulted—in the manuscript of St. Gallen. Everything seemed clear to him as soon as he found a “direct evidence” of a possible application of the Kylfver symbol in terms of the “deer script” of St. Gallen. One should not blame Novotny too much for his omissions. He is a victim of scholastic routine, and probably not the last one. I can assure my readers that the methodological prerequisites of a great majority of contemporary historians are utterly outdated. The so-called hypothetical ground is far less dangerous than people usually admit. It is often the only way leading to “true knowledge.” Moreover, we will see that Plato’s great metaphor of the Ship of State is nothing else than a magnificent hypothesis of the historical origin of the “Idea of State” as such. Cultural history may become explainable in terms of philosophical speculation. Plato’s example—Plato’s “method” is encouraging.

The following treatment of the problems involved by some outstanding irregularities of the tree symbol is, of course, "hypothetical." I assume, first of all, that this symbol is an "octaval system"; second, that this system has been adopted and developed by the Pythagoreans; third, that the tree system is intimately related to the legendary material of the "Genesis." It gives us a key to the understanding of the very origin of script and of number. In particular, the origin as well as the significance of the Runic script receive a clear explanation. The connection between all these cultural-historical problems and Plato's philosophy of ideas is an additional theme which completes the general picture. It is a hypothesis. But it seems to me that the ground is firm.

Let us start with a discussion of the octaval nature of the tree symbol (Figure 6):



Figure 6

The number "eight" is the basic unit of an "octaval system." What right have we to assume that the fir tree symbol of Kylfver is "octaval?"

Already the division of the Gothic alphabet into three groups

of eight letters seems to be a precious indication. The Gothic alphabet is "octaval" in its very essence. The "futhark" has $3 \times 8 = 24$ letters. Each "family" contains eight letters. Moreover, when the earlier "futhark" became changed, the new abbreviated alphabet did not lose its octaval basis: the number of letters was reduced to sixteen— $2 \times 8 = 16$. Even the temporary "futhark" of twenty-one letters might be, too, reduced to an octaval basis, because—as we will see it later—the number "seven" is a very significant element of the octaval system of the Kylfver type, and $21 = 3 \times 7$. Hence, all changes did not destroy the basic octaval characteristics of the Gothic alphabet. /

A confirmation might be seen in the fact that the tree symbol has eight twigs on the right side. Of course, that is a logical consequence of the division of the alphabet into three groups of eight letters. The secret script of the St. Gallen type obviously requires this number of twigs. But that does not explain the division of the Gothic alphabet into three groups of eight letters. How can we explain the origin of that division? Is it a mere accident or a simple consequence of the fact that the Goths were using 24 sounds in their speech? However, the Goths did change the number of letters in the later variants of the "futhark." Since the number of sounds which the Goths were actually using could hardly alone determine the changes in the number of signs, we can assume that there was no absolute correspondence between sounds and signs. Hence, the striking octaval characteristics of the "futhark" must be due to a very particular reason. The same "reason" must have logically determined the number of twigs in the tree symbol which, as Novotny has proved it in his interesting article, could and had been used in the Middle Ages as a secret variant of the normal "futhark."

It is not easy to find an adequate answer. We have to look for a key, and the only place where it may be found are, of course, the sacred Gothic symbols. The fir tree is one of those symbols. Hence, another symbol might eventually contain a key to the octaval basis of the Gothic alphabet and of the fir tree symbol as well. The most significant symbol is, of course, the swastika sign. It is a pan-Indoeuropean symbol and, moreover, one of the most ancient symbols which humanity has ever imagined and used. We find



it pictured on a bracteate, i.e., a Gothic talisman, together with four words of a magic formula—lathu, laukaR, gaukaR, (h)alu. Let us approach the swastika symbol, as well as the magic formula, from a somewhat unexpected—from a “numerical” point of view. The result should appear surprising. The magic formula, which, as I said previously, is a prayer addressed to the sun, contains four words. The number “four” is, of course, a precious key to the “octaval” nature of the other main attributes of the Gothic culture. It would be strange to find a numerical discrepancy in the various sacred aggregates of the Gothic cultus. As Novotny points out, all Gothic remains seem to have quite similar features.³³ They are closely related to each other. In fact, we find almost everywhere the above-mentioned magic words—or at least two of them—as well as the swastika sign and the usual images of a hunter (Odin), of a deer, of a raven, of a wolf. These themes and symbols were absolutely dominating. It suffices to say that the four words of the magic formula later determine the content of many legal norms and institutions.³⁴ It was a unique and a universal source of primitive conceptual reasoning. We might ascribe even a greater “universality” to the most ancient and,



Figure 7

The bracteate of Schonon

hence, the most sacred of all symbols—to the so-called swastika sign (Figure 7):

The swastika sign has four “arms.” How did they originate? We might suppose that the swastika sign is the result of a division of a more primitive symbol—of a circle which, presumably, was the initial and the most simple “image” of the sun. The swastika sign pre-supposes the division of a circle, first, into four equal sectors and then into eight sectors (Figure 8):



Figure 8

Finally, a previously “octavalized” circle is transformed into a square (Figure 9):

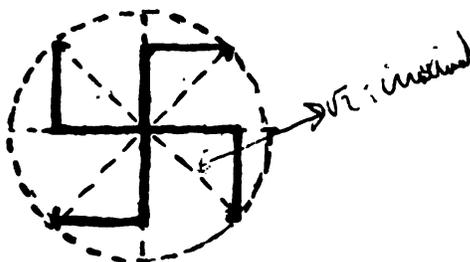


Figure 9

We find, of course, even more sophisticated representations of the swastika sign with additional circular lines, with various ornamentations, etc. But we are here primarily interested in stressing the “numerical idea” which seems to be inherent to the swastika sign. Moreover, the Gothic swastika sign is clear and modest in its appearance and does not involve any additional commentaries.

It seems to me that the “numerical idea” which characterizes both, the swastika sign and the four worded incantation, could have actually determined the octaval basis of “counting” and its respective symbols. The “numerical idea” as such means “order.” An octaval basis of “order” is a logical consequence of the actual use of “octaval” or “quartal” symbols. The swastika symbol implies an octaval characteristic of the very procedure of “ordering.” This procedure was achieved by means of a second import-

ant initial symbol—that of a tree which necessarily had also to be “octavalized.” A combination of symbols—of particularly ancient and sacred symbols—might well have determined the octaval nature of “order” in its most significant manifestations. Of course, script—letters and numerals—was the most important application of “order” or of the very “idea” of order. Hence, the entire “order”—all its individual manifestations—had to be octaval.

It seems to me that the sacredness of the first four numbers, which had been always stressed by the Pythagoreans, might well have had a very similar origin. Symbols—ancient sacred symbols—were guiding the mind of the early Indoeuropean thinkers. The contemplation of these signs developed their power of abstraction and gave them an endless series of inspirations and of new “ideas.” By combining some of these symbols the ancient scientists gradually came to more complicated representations. The fir tree symbol of Kylfver seems to be one of the most significant achievements of ancient thought. We will see that even the “perfectness” of the Pythagorean and Platonic numbers is a result of the use of the “octaval system of Kylfver.”⁸⁵

The main point of our discussion seems now to be clarified. At least, it has been possible to find a theory which might explain the origin of the octaval “Weltanschauung” of the Goths. Counting as such was inspired by the natural regularity of a fir tree. The “limit” was determined by the intrinsic numerical idea of a sacred symbol. A combination of primitive representations led to an octaval conception of “order” as such. Finally, the application of the idea of “order” resulted in the creation of a basically “octaval” alphabetic order of letters. It would seem that the fir tree symbol was octaval, because the alphabet as such was octaval. That is Novotny’s silent assumption. We are now entitled to defend the opposite thesis. The Gothic alphabet had to be necessarily octaval, because the underlying idea of “order” and of “ordering” was octaval. From the basic symbols this idea was transferred to the product of its practical application, i.e., to the alphabet. The registration of sounds followed the general “octaval conception” of order. This transmission needed, of course, a medium. It is not difficult to determine which symbol did actu-

ally play the rôle of a medium. It was the fir tree sign which alone could help to form the necessary signs—numbers and—I should say “or”—letters. It is much more plausible to suppose that the individual signs were deduced from an initial complex symbol than to assume that this unifying symbol was an artificial combination or a “rationalization” of individual signs. The “whole,” the “system” as such, is prior to its parts or fractions. The “whole” does not only embrace the parts—it determines them and defines their form. The fir tree symbol became octaval, because the Gothic conception of “order” was octaval. Hence the entire alphabetic order had to be octaval, and each individual designation was simply deduced from the initial “octaval” symbol of a fir tree.

That, of course, is a far-reaching statement which requires an adequate analysis of the tree symbol as such. Moreover, we would have to prove that the letters of the normal “futhark” are themselves deduced from the tree symbol. That was easy to do in the case of the “secret script” of the St. Gallen type. But the letters of the normal “futhark” seem to differ very much from the sacred fir tree symbol of the Kylfver inscription.

The answer must be sought in the salient irregularities of the tree symbol (Figure 10):



Figure 10

Let us start our analysis with the shortest and thickest twig of the whole collection, i.e., with the eighth twig on the right side of the tree symbol. We know that in the secret script of the St. Gallen type its meaning was quite analogous to that of all other twigs. It determined the place of a letter within a given “family.” The eighth letter within each group had necessarily to have eight

twigs on its right side. However, that surely does not explain either its thickness or its peculiar shortness. These phenomena must have their own justification.

It seems to me that the shortness of the eighth twig might express its subsidiary or supplementary character. It seems that the eighth twig, despite the fact that it was absolutely necessary for the use of the secret script of the St. Gallen type, did not belong to the main system. In the main system only seven right-side twigs were actually needed. However, it is not excluded that in some specific cases this eighth twig had to be used even in the main system. In fact, the form of the Runic sign for the number "one hundred" presupposes the existence of an eighth twig on the right side of the tree. But that is an exceptional case, which seems even to confirm the auxiliary character of the eighth twig. As to its peculiar thickness, an entirely different speculation might be tried. The eighth twig is twice as thick as the other twigs on the right side of the tree. That suggests the idea that the eighth twig could eventually be used in an "enlarged function"—as two separate twigs.⁸⁶ In such a case we would have nine twigs instead of only eight. I am inclined to consider this eventuality as an expression of a possible "decimalization" of the initial octaval system.⁸⁷ Nine twigs on the right side of the tree designate the number in a decimalized tree system. It seems logical to assume that the most important—the "crucial"—number of such a decimalized system should be expressible in terms of the same tree system. Hence, we have to admit that for that specific purpose the ancient mathematician could have used the left side of the fir tree symbol (Figure 11):

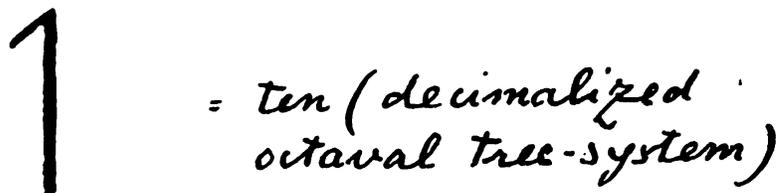


Figure 11

In fact, we will see that this supposition is confirmed by the form of the number "ten" in Runic.

If we apply a similar reasoning to the hypothetical octaval system—and we know that many facts suggest the existence of an octaval system—its main features become quite understandable. The end number of the first series of numbers is the number “seven.” The relative length of the seventh twig would be thus justified. The length expresses the idea of “finality.” In fact, the seventh twig is “final”—but only in an octaval system of the Kylfver type. As to the number “eight,” the answer seems to be given. The number “eight” is designated by one twig on the left side of the tree. That seems to give a key to the entire system. The twigs on the right side have each the meaning of “one.” Hence, the number “one” is designated by one twig, the number “two” by two twigs, the number “three” by three twigs, etc. The highest number of this series is the number “seven” (Figure 12):



Figure 12

As to the left side of the tree, we find that each twig has the meaning of “eight.” The number “eight” is designated by one twig, the number “sixteen” by two twigs, etc. It is in no sense difficult to construct the entire series of numerical designations which would have the following aspect (Figure 13):

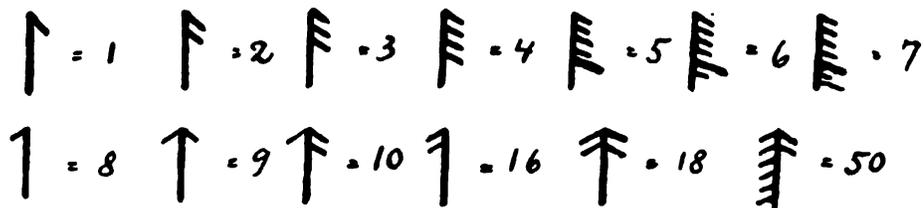


Figure 13

This guess is indirectly supported by a very analogous use of the left side in the secret script of St. Gallen. There, too, the

left side was used for the designation of units of different, "higher" type. The twigs designated "families," i.e., groups of eight letters (Figure 14):

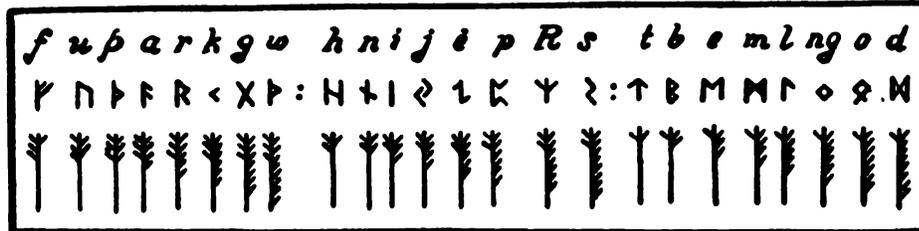


Figure 14

In the version of St. Gallen each twig on the left side is used for the counting of "families": one twig represents, as we know, the third "family" (it should, of course, represent the first "family," but the wise men of the Goths were anxious to conceal their system from the laics and used one twig for the designation of the third "family" and three twigs for the designation of the first family), two twigs represent the second "family" and three twigs represent the first "family." Although each group contains eight letters and each twig on the left side, therefore, represents a unit of a different and of a higher type, both sides of the tree symbol are here disconnected. The left side is used in a very peculiar way. It is practically detached from the counting system as such. The counting of groups is something entirely different from the counting of units. But the St. Gallen script still fulfils its very limited purpose. Within the alphabetic system as such each letter has its own clear designation. Unfortunately, the St. Gallen system cannot be used as a general pattern, because already the first series of numbers—from one to eight—would have a "group mark" on the left side and that could easily lead to a terrific confusion. Thus, in the St. Gallen system the twigs on the left side are not "numbers," but "group marks." The system which I am advancing, has the advantage of being entirely consistent and unified. Moreover, its real existence is confirmed by the fact that the seventh twig is particularly long. My explanation is the only one which justifies this peculiarity. One should not, however, exclude the possibility that the "group marking system" of the St. Gallen

*the cyphers
inversion*

type is even older than the octaval system of the Kylfver type. It is more primitive and more "empirical"—less "rationalized."

In the counting system of the Kylfver type, which we are now studying, the twigs on both sides form an accomplished and entirely rationalized system. It is a "positional" system. The value of a twig depends on its position. Its form is identical to that of all other twigs. The Kylfver system is positional and, moreover, it is octaval. It operates with two units—with the unit "one" and with a second, "higher" unit of "eight." The "ones" are marked on the right side of the tree, the "eights" are designated on the left side of the symbol.⁸⁸ The system is homogeneous, and the connection between both ranges of numbers is determined by the existence of the tree symbol as such. The "whole" determines all its "parts." Each number is expressible in terms of the "whole," i.e., of the system as such. The system is octaval and hence quite congenial to the octaval "Weltanschauung" of the Goths. Aristotle's assumption seems to be refuted. Not all nations "count up to 10 and then begin again." The Goths counted up to eight and then started again. They were compelled to adopt such a system, because their initial sacred symbols implicitly contained an octaval idea. Their "science" was congenial to the very source of all their inspirations.

This octaval system has never been described by any ancient author. It is "hypothetical." There are no direct evidences of its existence. We are restricted to the use of indirect indications. The form of the symbol as such and its peculiar irregularities gave us some precious hints. The symbol could be used as a numerical system. It is necessary to prove that it actually had been used as a counting system. We should be able to show that the fir tree symbol of the inscription of Kylfver was actually conceived and applied as a counting system.

Let us once more consider the inscription on the Gothic stone of Kylfver (Figure 15):



Figure 15

What is the real significance of that inscription? It contains, first, the entire Gothic (Runic) alphabet. Second, it contains a magic word "sueus" which seems to be upmost meaningful. It is a "key word." Its direct meaning seems to be close to Latin "suus"—"his" or "his own." We know that Mastrander and Novotny³⁹ are both of the opinion that the key word "sueus" conceals the name of the author of the inscription—Eus (horse; cf. the registered form "eiz"—"horse" in S. Feist's Gothic dictionary).⁴⁰ A "horse" seems actually to be present in "sueus," since a later Slavic interpreter⁴¹ found it there and transformed the key word into a sentence which represents the first part of an important legal norm of the so-called "Russkaia Pravda."⁴² On the other hand, the key word "sueus" might have been used as a verbal equivalent of the sacred swastika sign.⁴³ This question has been already discussed in a previous context. The key word seems, however, to contain an important additional idea. It indicates the method which the ancient Goths were applying in their writings. The letters of the alphabet indicated what symbols could be used for purposes of writing. The sacred key word helped to compose words and even sentences by using a minimum number of those signs. The ingenuity of the Slavic jurist was in no sense accidental. It was the performance of a "learned man." Moreover, the key word "sueus" could be read, with an equal effect, from left to right and from right to left.⁴⁴ That, too, was a tip—a didactic hint. The key word "sueus" seems to include and to disclose the chief "instrumentalities" of the ancient Gothic "scientists." Their art of concealing is here exemplified in a very conclusive manner. It actually is an "art." A contemporary composer of charades, riddles, anagrams, may consider himself as a direct successor of these ancient Gothic professional riddle-makers. We will see later that one of the hints contained in the magic key word of the Kylfver inscription gives us a precious key to the reading of the Gothic alphabet as such.

Since the didactic content of the inscription is more or less obvious, it would be entirely logical to admit that the art of counting had necessarily to be included in this primitive manual of writing and reading. The art of counting is, in fact, revealed in the sacred fir tree symbol. This symbol gives us a key to the

system

the inscription

use of the secret script of the St. Gallen type. We already know that. Moreover, the tree symbol can be used as a counting table. It is a primitive text-book on arithmetic. For that specific purpose the striking irregularities were absolutely necessary. They would not be marked, if the three symbol would only represent a key to the secret script of the St. Gallen type. We know in what the octaval Kylfver system differs from the very analogous "deer script" of St. Gallen. The counting system is entirely rationalized and both sides of the symbol form a coherent and homogeneous whole.

The Gothic stone of Kylfver is nothing else than a primitive "encyclopaedia."⁴⁵ It is, of course, "primitive," but altogether upmost sophisticated. The Gothic "Magi" were great masters in the art of "concealing." Their tricks may appear childish to our developed mind. The ancient mind, however, was different from ours. "Ancient wisdom" had its own purposes and was using its own means, which were far more appropriated to the ancient conception of "knowledge." Symbols, images, drawings were dominating the reason of the ancient thinkers. Their "imagination" had necessarily to move within the limits which the "images" themselves were determining. The "power of abstraction" was almost inexistent. The only "abstraction" which the ancient mind could make were these very symbols and images. Hence, these symbols were applied everywhere. They seemed to contain the solution of all problems which arose in the mind of the ancient thinkers.

CHAPTER III

THE MUSICAL SCALE. DIGAMMA. THE NUMBER "SEVEN"

The existence of an octaval system seems to be a natural result of the entire "Weltanschauung" of the Goths. Its main characteristics could be described in connection with the Gothic "encyclopaedia" of Kylfver. The fir tree symbol gave us a first key to the problem of the octaval system. Other indirect indications seem to confirm the existence and the importance of the octaval system. The musical scale and its schematic simplification—the "octave"—is a precious additional source of information. It is difficult to determine, when, where and how the musical scale became adapted to an octaval scheme. Perhaps, the musical scale was octaval from the very beginning.⁴⁶ Since the octaval system might well have been the initial "order" of the Indoeuropeans (cf. the swastika sign), the same "order" had to be applied everywhere. There is, however, a fundamental difficulty which we are facing here and in many other cases. The initial octaval concept of order seems to have been abandoned and replaced by different other systems of measuring and counting. At a certain moment, however, this ancient system was revived. It is hard to say whether this revival of an ancient tradition was merely a local phenomenon. It might have been local—Greek, Ionian. It scarcely can be called strictly "Pythagorean." Its presence is revealed in the numbers of "Genesis." In any case, the artificial re-octavalization of the concept of "order" was prior to Pythagoreanism as such. That does not exclude the possibility that the octavalization of the musical scale took place much later and, possibly, under a direct influence of the Pythagorean "science of numbers." We have some evidences that the Pythagorean thought was strongly influenced by musical conceptions. The Pythagoreans "saw that the properties and ratios of musical scales were expressible in numbers," says Aristotle. "Since then," Aristotle continues, "All other things seemed in their whole nature to be modelled after numbers, and numbers seemed to be the first things in Nature as a whole, they supposed that the elements of numbers are the elements of all things, and

the whole Heaven is a musical scale or number." (Met. A, V, 985b, 23.)

Aristotle's testimony must be taken cum magno grano salis. He tries to ascribe to the Pythagoreans something which obviously preceded the Pythagorean thought. A numerical concept of "order" is inherent to the most ancient sacred Indoeuropean symbols. This concept is "octaval." It is far more probable that a pre-existing octaval system became applied to music. Aristotle assumes exactly the opposite. Of course, the mind of the Pythagorean thinkers might have been deeply impressed by some peculiarities of the musical harmony and by the possibility to express these peculiarities in terms of their "science of numbers." F. M. Cornford thinks that the Pythagorean pan-mathematism might have been "prompted and confirmed by the discovery that the perfect consonances which formed the framework of all musical scales (harmoniai) were expressible in terms of ratios between the numbers 1, 2, 3, 4: the octave being 2: 1, the fifth 3: 2, the fourth 4: 3. These four numbers are the tetractys of the decad: $1 + 2 + 3 + 4 = 10$. The decad contains the whole nature of numbers . . . as well as all the consonances" (o. c., p. 2). This explanation seems acceptable. The analogies with musical phenomena were particularly welcome to the Pythagorean thought. But music was far from being the real and unique source of their mathematical conception of the world. They seem to have known—and to have developed—a very old Indoeuropean tradition, the main features of which have been partly discussed in connection with the Gothic stone of Kylfver. Symbols and the resulting scheme—an octaval scheme—determined their reasoning and all applications which could be derived from this ancient "science."

Of course, we will have to prove that the Pythagoreans were actually using an octaval system. If we assume, however, that they did know it, we would be led to the further assumption that the Pythagoreans contributed very much to a rationalization and "octavilization" of music. In fact, the fir tree symbol of Kylfver can be interpreted as a "scale." If the Pythagoreans were using a similar tree system, they could very easily come to the idea of applying the same "order" to music. As soon as they found a natural congeniality between the laws of harmony and their octa-

77 *synchord/diatex*

val scheme, all problems seemed to be solved at once. Their enthusiasm simply became "limitless," and "numbers seemed to be the first things in Nature as a whole."

In any case, the octaval system as such cannot be a Pythagorean invention, in spite of the fact that it actually has, as we will see it later, a Pythagorean impregnation. It is not impossible that the Gothic intellectuals partly belonged to the Pythagorean school. But the origin of their traditions probably was not only pre-Pythagorean, but even pre-historical. On the other hand, the octaval nature of the numbers which we find in the "Genesis" can also scarcely be attributed to Pythagoras and to his followers. It is intimately connected with the myth on the tree of knowledge which, of course, is also pre-Pythagorean.

An interesting problem arises in connection with the usual designation of the musical scale—"gamma." The Greek letter "gamma" occupies the third place in the Greek alphabet. It is not clear why this term could be applied to the entire scale.⁴⁷ In the Gothic alphabet, however,—and that seems significant—the sound "g" occupies the seventh place. That seems to be much closer to the meaning of "gamma"—scale. Is it a mere coincidence? I do not think so. The Greek alphabet which we know is certainly not the original alphabet of the Greeks. It is a Semitic, or a strongly Semiticised alphabet which the Greeks presumably took over from the Phoenicians. The existence of an archaic national alphabet can and must be supposed. It might have been later completely forgotten, but its existence is very probable. There is one letter in the Greek alphabet which seems to belong to this ancient alphabetic system. This letter is called "digamma." It is an archaic sign which later was used only as a number. Curiously enough, this sign is very close to the Runic letter "f," to the Latin "f" and to the Arabic sign for "seven" (Figure 16):

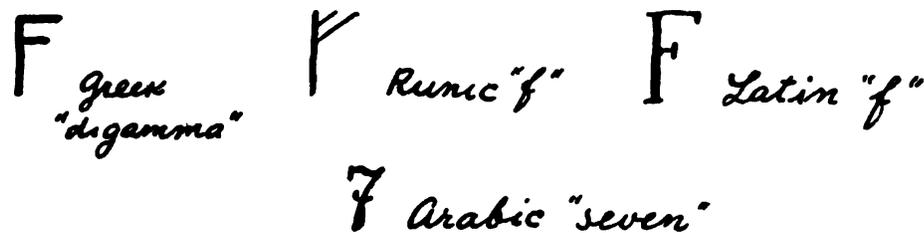


Figure 16

All these symbols have a striking similarity. They are, moreover, very close to an abbreviated form of the Runic sign for "seven" (Figure 17):



Figure 17

We will see later that abbreviations were used very often in Runic. We are therefore fully entitled to operate with an abbreviated sign. Particularly amazing is the similarity between the Runic letter "f" and the Runic number "seven." Only the "direction" of the twigs seems to be inverted (Figure 18):



Figure 18

These confrontations lead us to a series of very risky, but absolutely natural, assumptions. It seems, first, that the designation "gamma"—scale—is derived from a non-Semiticized alphabet—possibly from the Greek alphabet, but before its Phoenicization. Second, it seems that the Runic numbers and the Runic letters formed originally one single system. Actually, as we will see it later, letters were nothing else than "numeralized" sounds. Letters were "registered sounds," and, of course, the simplest way of registering them was their counting. Third, the fact that a very similar sign had the meaning of "six" and, simultaneously, that of "seven" must have created a dangerous ambiguity. In fact, such an ambiguity has existed. We are now suffering its consequences. The ancients did it, too. As to the name "digamma" which means "a doubled gamma," it does not contradict the previous statements. This name originated after the Semiticization of the Greek alphabet when the sound "g" had occupied the third place in the alphabet. The sixth sign then became "a doubled gamma." The name as such has no relation whatsoever to the sound which it should represent. The

letter "digamma" was pronounced like a "v" or, eventually, as an "f." (Cf. the Gothic sound "f.") Hence, its connection with a Gothic-Runic "f" is quite possible. That would mean that the archaic Greek alphabet could have contained Runic signs. At least, one archaic letter seems to confirm that eventuality. In fact, we will gradually come to the conclusion that the Runic script probably was the oldest script of the Indoeuropeans. The sacred tree script probably formed the initial "knowledge" of all Indoeuropean nations. The fact that this tree script exists in the "Genesis" does not refute these assumptions. It is prior to the Semitic commentaries which cover it and make it almost invisible. The "tree of knowledge" is a product of ancient Indoeuropean wisdom.

It seems to me that the Arabic sign for "seven" which we still are using is a late expression of the same octaval tree system. The number "seven" played a very important rôle in the octaval system. It was a "final"—the first final number of this system. Moreover, its "finality" was the result of an enormous inspiration: a much more developed counting system originated, when the eighth twig began to be marked on the left side of the tree symbol. The number "seven" was an utmost significant number. It was a permanent expression of an inspiration which actually had occurred—a crystal of human thought interpreted as a "divine revelation." Of course, this theological explanation emphasized the significance of the number "seven" even more. It became a divine number par excellence. The Pythagoreans called the number seven "the union of man and divinity." They found an additional justification of its perfectness in the fact that "seven" is the result of the addition of "three" and of "four." "Three" was a "human" number. In fact, the last patriarch, Noah, had three sons. The new order after the deluge was, of course, strictly "human." We will see later that the ages of Shem and of his descendants are also "human" and therefore are also characterized by the number "three." "Four" was a "perfect" number and expressed a "divine" nature. Hence, it plays an important rôle in the "Genesis." The ages of the patriarchs—the "true ages which I will indicate in the last part of this study—are conceived in terms of this number. I think, however, that the sanctity of the number

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"octaval" counting. It is, however, no
coincidences strengthened the "sanctity" of t
The concept of a "period of seven years" charac
changes—biological or physiological—would seem to be a p
terior application of a principle of counting which had already
been found elsewhere—in the first abstractions of the human mind.
Such coincidences were, of course, very welcome. The number
"seven" became soon a symbol expressing the "law of evolution,"
"life" as such, etc. In fact, it was a "lucky number" from its very
beginning.

As soon as the octaval system became applied to music, the num
ber "seven" received a predominant significance. An immediate
consequence was the Greek "heptachord." (From Greek "hepta"
—seven.) It was possible to conceive a musical scale either as
a combination of two "tetrachords (a "tetrachord" embraces four
tones) or as a single "heptachord." The second solution is, too,
essentially octaval. In fact, the line of musical evolution—the
"heptachord"—contributed to make the number "seven" even
more significant than it was before. The idea of an octaval order
thus assumed a universal importance. It is almost impossible to
understand how under such circumstances the octaval system
could be kept secret. Nevertheless, it remained secret, for more
than two thousand years.

The Greek "heptachord" seems to confirm the supposition that
the musical scale—the "gamma"—was essentially octaval. The
term "gamma" as such becomes, however, understandable only, if
we admit a previous connection between the archaic Greek alpha-

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 moniai) were expressible in terms of
 1, 2, 3, 4 the octave being 2 : 1, the
 n 4 : 3." That would mean that the Pythag-
 a the so-called "monochord"—the instrument by
 vibrations of tunes can be measured. Once more, one might
 be skeptical as to the real merit of the Pythagoreans. We never
 know, when they were making their own contributions to science
 and when they were using the "esoteric science" or the "divine
 tradition" which they had received "through the agency of some
 Prometheus." In any case, we should not be surprised to find
 that these harmonic proportions are marked—though in a very
 discreet way—on the fir tree symbol of Kylfver. These propor-
 tions could be calculated by way of tending a tune with the help
 of weights attached to one of the ends of a tune. The changes—
 addition of weights and vice versa—permitted to establish definite
 numerical proportions. A monochord is a relatively very simple
 instrument (Figure 19) :

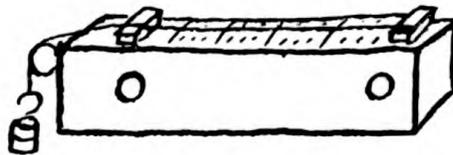


Figure 19

Let us now look at the fir tree symbol of Kylfver (Figure 20) :
 In the upper part of the symbol the first three twigs on the left
 side are placed so as to correspond to four twigs on the right side.
 Is this arrangement accidental? I do not think so. The draft

is far too carefully made. This "proportion" seems to correspond to the monochord formula of the "fourth." The lower part gives us the formula of the "fifth"—3 : 2. In fact, three twigs on the left side have only two "opponents." The eighth twig, as we know, has no special meaning. Let us say that it is the "weight"



Figure 20

of a monochord. This guess may appear fantastic. We will see, however, that it is easily justifiable. The symbol contains some other far more sophisticated secrets. The tree symbol was conceived as a complete expression of order. All "harmonies," all manifestations of "order" as such had necessarily to be included into this symbol. As to the "octave," it seems to be clearly expressed in the division of the right side of the symbol in two parts—two "tetrachords." In fact, the fifth twig cuts the stem exactly in the middle. Curious, of course, is this idea of considering the tree symbol as a recipient of all expressions of "order" which occurred to the ancient mind. Nevertheless, such was the way by which the ancient mind tried to embrace the world and to "order" it according to the laws of reasoning which the ancient scientists thought to have detected.

CHAPTER IV

THE GOTHIC "MAGI." THE PERFECT NUMBER "FOUR"

A brief consideration of the Greek scale seems to have shown that the octaval system, which the wise men of the Goths had known and carefully preserved, occupied an important place in "ancient wisdom." The sacred fir tree symbol is an elaborate, even a sophisticated, product of "scientific" reasoning. These later elaborations, however, should not conceal from us the real simple origin of the fir tree symbol. The regularity which characterizes the form of a fir tree must have given a first impulse to the ancient mind. The idea of "order" was implicitly contained in the image of a fir tree. A first abstraction in the form of a primitive picture of a fir tree led to a first idea of regularity and order. Everything was more or less "initial" in this procedure. The immediate result of such a contemplation and rationalization was, however, utmost significant. The idea of "order" became a medium between the external world and the human mind. Hence, everything was conceived as being expressible in terms of this idea and of the particular form which this idea had espoused. Everything reasonable and reasoned ought to be relevant to the sacred octaval fir tree symbol. It was—at least in the eyes of the Goths—a real "tree of knowledge," i.e., the same "tree" to which the Bible is referring in its most significant part—in the "Genesis."

Should we assume a Northern origin of this conception of "order"? The very existence of a Gothic "encyclopaedia" seems to confirm the Northern origin of primitive science—at least, of the science which we are now studying and to which we owe our own knowledge. Writing, reading, counting—these self-evident attributes of knowledge seem to be a genial product of "active contemplation." A searching mind has necessarily to be supposed which was capable to extract "ideas" from the different elements of "nature" forming the material environment of mankind. Not fear, but "creative contemplation" of things and of their first schemes and symbols seems to be the actual root of this particular

—Indoeuropean—version of human culture. One of the most important results of such an active attitude toward nature was the birth of the art of counting. The newly obtained concept of “order” became combined with some initial religious symbols which themselves became rationalized and numeralized. Thus, the octaval counting system came into being. The rest was relatively easy. The “order” became applied to all fields of human contemplation and reasoning. Its final expression, and probably its purest expression, is the Gothic encyclopaedia of Kylfver. It might be called a crystalized product of primitive scientific thinking. It is simple and altogether upmost complicated and elaborate. It bears the stamp of ancient wisdom and that of all its technical sophistications. The initiates of that time, the priests and probably the ruling class as a whole, had succeeded in preserving some of the most ancient traditions of their race. Later, in the early Middle Ages, their technique became extraordinary refined and even overdeveloped. As we know, a Slavic expert proved able to transform the magic word “sueus” into four and even five words (one of the words got two utterly independent meanings) forming a quite intelligible legal norm. The motto of all such artful interpretations was the obvious desire to put as much meaning as possible in each word, each sign, and each curve of a sign. The archaic methods of writing, the extreme inadequacy of the material—inscriptions were usually chiselled on stones—were an important factor which undoubtedly have strongly influenced the peculiar art of the ancient intellectuals. Soon, however, their knowledge became an art of concealing their wisdom from the non-initiates, from the laymen. There seems to be a striking similarity between these Northern “Magi” and their “Oriental” colleagues. “The priests of Egypt, so say the Greek authors, had three ways of expressing their thought. The first was clear and simple, the second symbolical and figurative, the third sacred and hieroglyphic. The same word assumed, at their will, either the literal, the figurative, or the transcendental meaning. Such was the genius of their language. Heraclites well expressed this difference when he designated this language as being speaking, signifying and concealing.”⁴⁸

The Gothic “Magi”—the ancient “runologists”—seem to have

developed a very similar technique. If we apply Heraclite's definition to the inscription on the stone of Kylfver, the answer is quite obvious. The fir tree symbol, of course, is "speaking"—it is primarily a "tree" and everybody understands that. Moreover, it is a key to the Runic alphabet of the St. Gallen type. Here, of course, we are facing the "symbolic" or "figurative" meaning of the tree. But its real significance remains concealed from those who do not realize the octaval nature of the symbol which opens the way to an adequate understanding of the entire "esoteric science" of the Gothic "Magi." This last element is the most important. Historically, this "last" element might well have also been the latest. The three "meanings" seem to reflect three stages in the development of human thought. May one therefore suppose that the last—the "esoteric"—element actually was the oldest, and that the esoteric science as such was based on the true, the initial, meaning of a word or of an image? I do not think so. On the contrary, the concealed meaning usually was the most elaborate and the most sophisticated. Not the real meaning, but the interpretation as such had to be concealed, because it would be otherwise impossible to preserve the very art of interpretation from the intervention of the laymen. Primitive science was, of course, nothing else than such an interpretation of ancient symbols. Even if these symbols were accompanied by words which either explained or completed them, the words themselves were often treated as images or symbols—particularly, if these words had been written down. The signs composing these words dominated their logical content. Hence, they could be easily brought together with utterly unrelated words which had, however, a similar "external" appearance. Phonetic closeness favored such confrontations which resulted in an undisputed rule of what we may call "false etymology."

If one has to trust the fir tree symbol of Kylfver, tree worship might have determined the initial layer of the primitive science. Combined with the worship of the sun, it gave birth to a first form of "knowledge," which practically was based on a contemplation and "rationalization" of pictures. We will see later that the Pythagoreans and Plato himself were still reasoning in terms of this cultural past. They were maintaining a tradition which they

thought to be "reality" itself revealed by God. The tradition was a "gift from heaven to mankind,"—the only key to the understanding of the world. Its most significant product was the secret tree symbol which, though mentioned in the Bible where it is called a "tree of knowledge," remained undisclosed until a Gothic "Magus" came to the idea of picturing it on a stone together with other attributes of ancient Gothic wisdom. We know that the octaval characteristics of the tree symbol are due to the rationalization of sacred symbols relevant to sun worship. A circle might have been the starting point of this "solar symbolism" which was pre-destined to become the very basis of "science." The division of a circle into four sectors—quadrants—helped to discover the sacred symbol of the cross. The reiteration of a similar division created the swastika sign. An additional rationalization of the preceding achievements led to a squaring of the initial circular symbols. Thus, the ancient science received its first and fundamental "formal" expression. (Figure 21):



Figure 21

These symbols were significant manifestations of a growing power of "abstraction." In fact, they seem to have determined Pythagoras "science of numbers" and the Gothic science as well. The cross—a result of the first division of a circle into four quadrants—seems to be the basic cause of the sanctity of the number "four." The sacred "tetrad" was "in reality a universal key. One can understand why the Pythagoreans swore by this great symbol. I swear it by him who has transmitted into our souls the Sacred Quaternion, the source of nature, whose cause is eternal."⁴⁹ The teaching of numbers was carried by Pythagoras so far, as to define in each of them "a principle, a law, an active force of the universe." As Aristotle points it out in his sarcastic definition of Pythagoreanism, "all . . . things seemed in their whole nature to be modelled after numbers. . . . They supposed that the whole Heaven is a musical scale or number." Pythagoras assumed, however, that "the essential principles are contained in the first four

numbers, since all others are found by adding or multiplying them . . ." We know that "seven, the compound of three and four, signifies the union of man and divinity."⁵⁰

Much of this material is a late sophisticated reinterpretation of an earlier "science" which seems to be closer to the very source of all mathematical inspirations. I think that the sign of the cross explains the "perfectness" of the number "four," and its "divine" nature. Pythagoras might have been glad to find out that the numerical expression of the cross—the "tetrad," i.e., the first four numbers—can be considered as a "crossing" of all numbers. However, it scarcely could have been his own discovery. The sacred "tetrad" dominates the "Genesis": the addition of the "octavalized" ages of the ten patriarchs (we will see later how this octavalization must be carried out) leads us directly to the sacred "tetrad." It would be logical to conclude that the authors of this phenomenal performance were interested in figuring a cross there where we actually find its numerical equivalent. A direct connection between the sign of the cross and the notion of the sacred "tetrad" seems to be given. Of course, different sophistications were later added. Pythagoras presumably was a great master of such a kind of "numerical interpretation." But the main features of this science has been determined long ago. Pythagoras himself seems to have particularly stressed the significance of the "tetragram." That, of course, was a comprehensible consequence of the use of sacred symbols for "scientific" purposes. The notion of a tetragram is implicitly contained in the symbol of the swastika (squaring of an initial circular symbol). It is, nevertheless, quite significant that the Pythagoreans "found in the Tetragram not only the principles of sciences, the law of beings and their mode of evolution, but also the very reason of the different religions and their superior unity."⁵¹ I do not think that this statement is a result of any "comparative esoteric studies" which the reverend Emile Schuré is recommending to his readers. The Pythagorean view is determined by the chief symbols which the Pythagoreans were applying to all scientific problems as soon as they arose in their mind. Of course, these symbols were universally known. Hence their interpretation, too, could easily receive a universal significance.

There is a simple way of combining the notion of the "perfect" number "four" with the secret octaval counting. I do not mean by that that a simple "doubling" of the sacred number explains this relationship. That again would be a sophistication of the Pythagorean type, by which the Pythagorean initiates were developing their own "science of numbers," and, partly, fooling the laymen. In fact, the relation between "four" and "eight" is given in the relation between the two main symbols—that of the cross and that of the swastika. The latter symbol virtually formed the "Great Secret" of the ancient science of numbers. Its nature is "octaval." Hence, it was a key to all esoteric calculations of the Bible, of the Pythagoreans, of Plato and of the anonymous author of the Gothic inscription of Kylfver.

We must now turn our attention for a moment to the "Gothic Tetrad," i.e., to the magic formula "lathu, laukaR, gaukaR, (h)alu."⁵² It occurs on many Gothic remains and its significance can hardly be over-estimated. It actually determined a series of important legal concepts and norms. The Anglo-Saxons used it as an oath formula, the Slavs transformed it into a legal code regulating the relations between a lord and his hireling or mercenary. The Norseman took it over as a legal formula expressing "just," legal possession. We find it in a Runic inscription found in Greenland, in which the "tetrad" is carefully combined with other entirely unrelated, but phonetically close, words. However, when the inscription is read, the formula reappears. The "sacred sounds" express the principle of legality and of regulation and order as such.

The Gothic "tetrad" seems to have been first inspired by the conditions of primitive life during the hunting stage of the Gothic civilization. Nevertheless, the same formula had an entirely different application, too. It is hard to say which meaning was the initial one. We will have to touch this problem later, in a different context. This second meaning of the four magic words is very close to the pan-Aryan glorification of the sun and can be expressed in the following four concepts: "agreeable, lightening, healing, nourishing." The whole is a prayer addressed to the sun which is the source of all these primary qualities.⁵³

It is significant that this prayer is found together with the

sacred swastika sign which itself is one of the symbols representing the sun—probably the last and the most “scientific” of all symbols. Once more we are facing here the problems of a fundamental connection between symbols, concepts, rational elaborations of a pre-logical mind, which altogether formed the very basis of ancient wisdom. We know to what significant achievements the contemplation and rationalization of the sacred symbols have actually led the ancient mind. A first result was the creation of an “ordered” and “octavalized” tree symbol. Since the symbols which nourished the ancient thought were the same in Greece, in the Eastern-Mediterranean area, as well as in the “Hyperborean” area of the Goths, a fundamental unity of the ancient Indoeuropean thought might easily be admitted. We should not be surprised to find traces of an octaval tree counting in Plato, and even in much earlier sources—in the Pythagorean “science of numbers” and in the “Genesis.” It is, of course, difficult to determine, from where Pythagoras could actually have acquired the notion of the esoteric fir tree script. Did he know the pre-Semitic sheet of the Biblican legends? He, probably, did, and so did Plato. Let us apply to that mysterious source of their inspirations a term which in fact might be much more contentful than it sounds. Let us call this source, together with Emile Schuré, the “Delphic mysteries.”

CHAPTER V

THE ESOTERIC TREE SCRIPT AND THE RUNES

A fundamental difficulty, which from the outset would seem to be unsurmountable, is the absolute absence of any "direct evidence" of the real existence of an esoteric tree script. The fir tree symbol of Kylfver is a unique source of all assumptions which determine the content of my hypothesis. A renewed contemplation of that symbol may eventually give us some additional hints (Figure 22) :



Figure 22

Neither the Runic numerals, nor the Runic letters seem to contain any indication as to the use of the left side of the fir tree symbol. The "deer script" of St. Gallen consecrates the left side not to numbers as such, but to "group marks." The Runic numerals use only the right side of the tree. There is, however, one very significant exception: the Runic sign for "one hundred" is conceived so, as to suggest the idea that the left side of the tree had actually been used—at least, in some specific cases (Figure 23) :



Figure 23

This number “one hundred” is a problem in itself. Its solution will be given later. It is obvious that the very fact that the number “one hundred” is a “decimalized” number which seemingly does not fit in an octaval system renders the solution of the problem particularly difficult. However, this number indicates that the left side of the tree could and had been used for numerical designations. Moreover, this sign seems to confirm that the “auxiliary” eighth twig had, too, its justification. All in all, the sign for “one hundred” suggests a detailed analysis.

A second exception might be seen in the Runic sign for “nineteen” (Figure 24) :



Figure 24

Here, too, the left side is used, though in a somewhat peculiar way. We will try to solve this mystery in connection with a general discussion of the origin of the Runic numerals.

These two exceptions, of course, are important arguments in favor of the existence of a numerical system of the type which I am advancing. If we consider that the octaval nature of the Gothic alphabet as such presupposes the existence of a correspondent counting system—at least, the “deer script” of St. Gallen seems to be one of the possible expressions of an octaval conception of “order,”—our thesis should appear far from being arbitrary. On the contrary it seems to be rooted in the very “nature of things.” Moreover, a long series of “indirect evidences” will be found elsewhere—not only in the Runes themselves, but also in the “science of numbers” of the authors of “Genesis” and in the doctrine of the Pythagorean school.

Let us examine once more the right side of the fir tree symbol of Kylfver (Figure 25) :

According to our assumption, each twig of the left side represents the number “eight.” All six twigs of the left side, there-

fore, are equally long and equally thick. On the contrary, the right side of the tree is full of curious irregularities. One of them had been already studied. The particular shortness of the eighth twig seems to demonstrate that in the advanced octaval system this



Figure 25

twig was needed only in some specific cases, as in the case of the number "one hundred." Its thickness seems to imply the possibility of using the same tree system as a "decimal" system. In such a case, the eighth twig could be interpreted as being composed of two separate twigs—an eighth and a ninth twig. The number "ten" would have in this case the same aspect, as the number "eight" in our hypothetical octaval system (Figure 26):

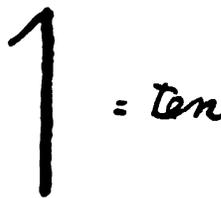


Figure 26

It is not impossible to suppose that the eight twigs of the right side originated from an entirely different—much more primitive—system of counting, which was not directly connected with the tree system as such. I would call it a "stick system." We can easily represent us the eight twigs of the right side forming a row of sticks or a "fence" (Figure 27):

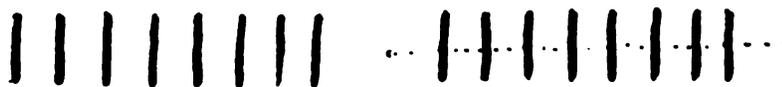


Figure 27

Such a range of sticks may be found in the Old Roman numerical system :

I one, II two, III three, IIII four, later replaced by IV (five minus one).

In this "stick conception" the left side of the tree, and even the tree itself, are not needed. The "stem" of the tree could eventually have been used simply as a line which helped to straighten the row of sticks. Nicomachus makes an illuminating remark which seems to clarify the very idea of the stick system: "the use of numerical symbols . . ." he says, "is a mere human convention . . ." "The natural, unsophisticated, and simplest way of representing them is to set out the units in each number side by side." Another Greek mathematician, Iamblichus, adds that this is the older method (F. M. Cornford, *o.c.*, p. 8). In fact, this method is extraordinary primitive and might therefore have appeared to be the oldest method of numeration. It is, however, less "natural" than the tree system, because it is not found in nature as such. It presupposes the use of "sticks." The "idea" of counting as such might be supposed to be prior to the use of sticks for purposes of counting. As I said it earlier, the idea of counting might well have been inspired by the "natural regularity" of the very form of a tree, as it is found in nature. Let us simply assume that the stick system had an independent origin. It could be, of course, combined with the tree system. Thus, a crossing of these two systems seems to be exemplified in the script of the St. Gallen type. It might have always coexisted with a tree script. A crossing of ideas, and of their expressions, is not only a frequent phenomenon, but even a general rule. Cultural phenomena—even if they seem to be very simple—are always crossings, "ideological compounds."

It is thinkable that the stick system and the tree system of the earliest type were, or could be, combined in a system which one may call a "fence system." Let us represent the twigs on both sides of the tree straightened and placed horizontally. The resulting form may be called a "fence." Here, of course, all twigs have presumably a similar numerical meaning. Moreover, it is probable that each twig on the upper part forms a single whole with the correspondent twig of the lower part. This system, of course,

could not run very far. We will find traces of that conception in the "Genesis." Its origin seems to be Indic. In any case, this "fence-script" which plays an important rôle in the legends of the "Genesis," and which presumably was called "sa" (Sanskrit "sa" has several meanings: fence, musical abbreviation, knowledge, serpent, wind, bird), is already detached from the octaval fir tree system of the developed bilateral type in which we are here primarily interested. Its traces might still be seen in the script of St. Gallen. But it seems to be more adequate to suppose here—in the St. Gallen script and in the Novotny version of the Kylfver script—the presence of a one-sided stick system. The shortness of the eighth twig seems to emphasize its subsidiary, complementary character. As I said, it seems to have been used only in some specific cases (number "one hundred") and, of course, in the secret script of the St. Gallen type, which actually needed an eighth twig for the eighth letter in each of the three "families" of the Gothic "futhark." Expressed in terms of these different systems the number eight would have the following aspect (Figure 28) :



Figure 28

The developed octaval system of the Kylfver type puts the entire emphasis on the number "seven." It is the "crucial" number of the whole system, and we know that the sanctity of the number "seven" is very much due to its position in the octaval system. As soon as it had become the "final" number of the first series of numbers the entire counting system was utterly changed and enormously improved. The seventh twig of the Kylfver symbol has an external mark of importance and of "finality." It is particularly long. We know its extraordinary significance in the Pythagorean "science of numbers": "The number seven . . . is the figure of the adepts (of Pythagoras' esoteric science), of the great initiates, and, since it expresses the complete realization in all things through seven degrees, it represents the law of evolu-

tion."⁵⁴ This definition becomes understandable only in terms of the octaval system. Each twig on the right side actually represents a "next degree" in the scale of numbers. It is an arithmetical progression, beginning with the number "one" and ending with "seven," in which $d = \text{one}$. The "law of evolution" has a conspicuous arithmetical basis. The use of numbers and of a relatively developed esoteric numerical system seems to have inspired to the ancients many magnificent dreams. We will see that in the "Genesis" purely arithmetical phenomena are even accompanied and "explained" by deep theological commentaries. Of course, here again I must stress that the interpretation of numbers is pre-Pythagorean. Particularly important is the use which Plato makes of the number "seven" in the "ideal-numbers" of the "Republic." We will attack this problem in discussing the Platonic approach.

The remaining twigs of the right side have, too, some peculiar characteristics. The second twig is not long, but very thick, if compared to the modest and thin third twig. This thickness, of course, must have its own significance. If we construct two very important numbers of the whole system—the numbers "ten" and "fifty"—according to the hypothetical principles which had been already formulated earlier, we come to the following symbols (Figure 29):



Figure 29

Since both numbers must have played an important rôle in practical counting, it is quite understandable that the second twig of the right side had to be well memorized. Its particular thickness, therefore, has a very realistic purpose. Moreover, this striking accentuation of a twig which was relevant to two important numbers of a decimal type ("ten" and "fifty") seems to prove that the entire Kylfver system is already well accommodated to a decimal counting. We have stated that already earlier, in connection with

the thickness of the eighth twig which thus could be eventually interpreted as combining two numbers—"eight" and "nine." The phenomenon of "decimalization" is, moreover, revealed by the peculiar characteristics of the fifth twig of the right side of the symbol (Figure 30):



Figure 30

The fifth twig is long and thick. Moreover, it is placed exactly in the middle of the stem of the tree. That seems to reveal an advanced decimalization of the octaval system. Though remaining octaval, it could be easily accommodated—in fact, it was already accommodated—to a decimal counting. Of course, the use of the number five was frequent even in times of a purely octaval counting. The five fingers of man's hand might have first suggested an accentuation of the sign of "five." The fingers and the hand as such were an important empirical "system" of counting. The written counting system certainly reflected practical needs and habits. The decimalization gave to these practical habits and considerations a "theoretical" and scriptural basis. An additional motive might be here stressed, too. We will see that the signs could be used and actually had been used, in an abbreviated form. Hence, the number "five" could be eventually marked by a single twig on the right side. But it had to be long, thick, and placed so as to start from the middle of the stem. In any case, the fir tree system of Kylfver already possesses several distinct indications of an advanced decimalization of an initial octaval system. This decimalization is expressed by the peculiarities of the second, of the fifth and of the eighth twig. The numbers "five," "ten," "fifty," and the "potential" numbers "eight" and "nine," are illuminating examples of this decimalization (Figure 31):

The number "fifty" is particularly interesting. If we assume

that the usual maximum number of twigs on the left side was six, as we actually find it in the fir tree symbol of Kylfver, the final number of the entire octaval tree system might well have been the number "fifty." Let us say that it was the usual maximum.



Figure 31

It was, of course, possible to go further—up to "fifty five." But this number, as well as all other numbers from fifty-one to ninety-nine, could be easily expressed by a combination of two numerals. "Fifty" and "five" placed side by side formed together the number "fifty five." The other numbers could be written in a similar way.

Such was the usual system. We find, however, traces of a "continuation" of the initial system by means of adding two supplementary twigs to the six twigs of the left side. If we assume that the whole aspect of the numerals of this tree system had necessarily to remain octaval, the number of twigs which could be eventually added to the usual number of twigs on the left side would be two. Hence, the resulting number would be "seventy one." If we add the "auxiliary" eighth twig to the seven twigs of the right side, we get the number "seventy two," which has remarkable features of "finality." The eight twigs on each side symbolize "completeness" and "perfectness" of the very form of this "final" sign and, hence, the "perfectness" and "harmony" of the system as such. In fact, we will see that the number "seventy two" plays an outstanding rôle in "Genesis" and in Plato. Moreover, the number of experts who performed the revision of the Bible was "seventy two." This "Synedrion" was obviously formed in accordance with some underlying numerical traditions. Numbers, as we know, were considered to be full of meaning—they were "fateful" and determined everything—growth and decay, life and death. Let us look at this significant sign (Figure 32):

Since this sign was probably the final sign of the enlarged octa-

val system (enlarged by a possible addition of two twigs to the usual number of six left-side-twigs), it may be compared to the Runic sign for "one hundred." The latter, of course, could have



Figure 32

eventually originated from a further "enlargement" of the initial system. We know that the twigs on the right side of the Kylfver tree—particularly the eighth twig—imply a complete decimalization of the octaval system. That could eventually mean that the number of twigs on the left side could be also augmented—up to nine. The resulting figure would have the following aspect (Figure 33):

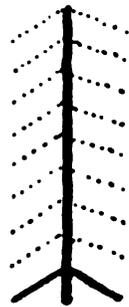


Figure 33

Since this sign would be the end number of the decimalized system, it easily could be abbreviated in order to avoid a possible confusion with other numbers. Thus, we come to the Runic sign for "one hundred" (Figure 34):



Figure 34

Nevertheless, this sign could be still confused with the number “ninety nine” which, too, would have both “last” twigs on both sides of the decimalized tree. Of course, this confusion could easily be avoided, if we assume that the number “ninety nine” was never written in an abbreviated way. Such a consideration might well have occurred to the mind of the ancient runologists. Hence, the sign for “one hundred” seems actually to be quite compatible with the decimalized octaval fir tree system. An important additional speculation has undoubtedly favored the decimalization of the very “meaning” of this sign which, as we know, should be interpreted rather as a sign for “seventy two,” in the octaval system and as a sign for “ninety nine” in the decimalized octaval system. In fact, the eight twigs on the left side represent the number “sixty four” (in the octaval system). The eight twigs on the right side, if added to those of the left side, would form altogether the number “seventy two.” However, if we count together the “numerical values” of the eight twigs on the right side, we arrive to a total of “thirty six”: $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 = 36$. “Sixty four” and “thirty six” make together exactly “one hundred.” That is significant. The number “seventy two,” if expressed in terms of the tree script contains the “idea” of a number “one hundred.” It is therefore quite possible that the sign for “one hundred” originated directly from the octaval number “seventy two.” Since the octaval tree system of the Kylfver type seems to have used, as a rule, one single symbol for each number of the series from “one” to “fifty” and two signs for each number of the series from “fifty one” to “ninety nine,” the sign for “seventy two,” which virtually belonged to an “enlarged octaval system,” could be easily accommodated to a specific purpose—that of designating the number “one hundred.” The idea of a transition from an octaval number to a decimal—from “seventy two” to “one hundred”—by means of an addition of all numerical “values” of all twigs might have been considered as a “divine advice,” as a most significant inspiration which, of course, strengthened the “perfectness” of the whole system. Thus, the ideal “issue” of the octaval system was found in a most significant element of the decimal system—in the number “one hundred.” Was it not divine providence which revealed itself to mankind in

this particular form of a "decimal issue" implicitly contained in the final number of the octaval system? Of course, it was divine providence. The decimalization of an octaval number, independently of the particular technique which was used for this specific purpose, was interpreted as a "detaching" from the empirical world and as a passage to heaven. The metaphysical implications of the decimal system had been already clarified in connection with Kafka's interpretation of Plato's "nuptial number." We will find a curious confirmation of this conception in the "Genesis," too.

As I said it earlier, the number "fifty" was a significant number of the non-enlarged octaval fir tree system of the Kylfver type. "Fifty" was an end number. Moreover, it probably was often used in practical counting. That should justify the particular thickness of the second twig of the right side of the tree symbol.

A surprising confirmation of the specific characteristics of the octaval tree sign for "fifty"—and hence a significant argument in favor of the actual existence of an octaval system of the Kylfver type—might be found in Plato's "Republic." In the "nuptial number" Plato uses the number "fourty eight." He does not, however, mention this number *expressis verbis*. On the contrary, the number "forty eight" is presented in the form of a curious subtraction—"fifty minus two." How could Plato come to such an extravagant idea? Instead of using one symbol, Plato actually uses two numbers—"fifty" and "two." What was the idea behind the equation $50 - 2 = 48$?

This problem can be easily solved in terms of the octaval system. The fir tree sign for "fifty" contains all three elements of the equation $50 - 2 = 48$. In fact, the symbol as a whole means "fifty (Figure 35):

$$\begin{array}{ccccccc}
 \begin{array}{c} \text{Tree with 10 twigs} \\ \text{50} \end{array} & - & \begin{array}{c} \text{Tree with 2 twigs} \\ \text{2} \end{array} & = & \begin{array}{c} \text{Tree with 8 twigs} \\ \text{48} \end{array} \\
 \end{array}$$

Figure 35

The right side represents "two," the left side—"fourty eight." All three elements are present, and their presence is justified. Plato's extravagance becomes quite intelligible, if we assume that he was actually using the octaval tree system of the Kylfver type. In fact, he was using it. We will find many other traces of Plato's acquaintance with the esoteric tree script—with the same script which we will find in the Bible and which we have already found in the inscription of Kylfver. I do not know whether an additional hint may be seen in the well-known Roman designation of certain numerals—of the last two numerals within each series of ten (beginning with the second series) : *duodeviginta*—"twenty minus two," etc. That is doubtful. One would be obliged to assume that such a designation was first used in the case of the number "fourty eight"—"*duodequinquaginta*"—and that later it became applied to all analogous cases. That is not impossible, but sounds artificial.

Plato's curious equation ($50 - 2 = 48$) is a precious indirect evidence of the actual existence of the octaval tree system. In our collection of indirect evidences Plato's equation occupies a place of honour. It seems to confirm the very form of the number "fifty." That, of course, would be an important confirmation of the fact that both sides of the tree had actually been used for purposes of counting. There is only one direct evidence of the use of both sides—the Runic number "one hundred" which, as we know, is the result of an addition of all numerical values of the twigs on both sides of the tree.

It should not be surprising to find that individual numbers or numerical concepts are presented in the form of arithmetical operations. It is obvious that the octaval fir tree system as such implies a perfect knowledge of all elementary operations. It practically represents a "manual of arithmetics." This peculiarity undoubtedly was considered to be an outstanding feature of the "science of numbers" as such. Let us remember Pythagoras' definition of the "tetrad": all other numbers, he says, can be derived from the first four numbers—one, two, three, four—"through addition or multiplication." Plato's "ideal numbers" are, too, characterized by their specific "operation" content. The number 5040, which designates the number of citizens in Plato's "ideal city," seems to

be particularly important and meaningful, because—as Plato himself states—“it can be divided by forty four different numbers.” That happens to be true. Of course, we will see that this fact is far from explaining the real origin of the number 5040. But in Plato’s eyes this extreme “divisibility”—the “operational content” of 5040—was an outstanding quality of this number. He must have been delighted to find it out after having already chosen this number for utterly different reasons.

Let us look once more at the “manual of arithmetics” of Kylfver (Figure 36):



Figure 36

The system as such seems to contain implicitly the idea (and to require the practical application) of all primary operations. It is quite obvious that the right side of the tree gives a perfect demonstration of “addition” and of “subtraction.” The left side exemplifies addition, combined with the two remaining operations—that of multiplication and of division. The relationship between addition and multiplication is demonstrated in a quite illuminating way. The use of the symbol requires a very advanced acquaintance with all operations and with all numbers (from “one” to “fifty” or “seventy two”). It is an excellent manual. The Arabic system, which we nowadays are using, does not contain anything of the kind. It is, as Nicomachus would say, “a mere human convention.” On the contrary, there is nothing more accomplished in the arithmetical sense than the octaval fir tree system of Kylfver. We should not be surprised to find that the ancients were most enthusiastic about their “science.” They idolized it in a naïve, but perfectly understandable and excusable way by calling

it "knowledge" as such. The tree symbolized knowledge and, of course, it was much more than a mere symbol, a "human convention"—it was knowledge itself, "a divine gift from heaven to mankind"—the central point of the esoteric ancient wisdom. The ancient mind placed the "tree of knowledge" in the very center of the Paradise and tried to conceal it from "man," from the layman, the "non-initiate." It remained almost unknown for centuries, praised without being disclosed. Finally, a barbarian came to the idea of picturing it on a stone. That happened in the III or IV Century, A.D. From that Gothic "Prometheus" the "divine gift" came to the laymen, in a time when no "divine gifts" are tolerated any more and when the whole world seems to be hopelessly "octavalized."

CHAPTER VI

THE ESOTERIC TREE SCRIPT AND THE RUNES

(Continued)

A last problem, which necessarily arises in connection with the fir tree script of *Kylfver*, is that of the probable "abbreviation" of signs. It had been already stressed that the ancient intellectuals were often obliged to use a very inadequate material. Inscriptions sometimes were chiselled on stones, if they were particularly significant. Wood—wooden tables—also could and had been used. But this material, too, was clumsy enough. It was therefore necessary to economize both, place and effort. Hence, the problem of abbreviation was as such quite natural and important. Its solution, however, was far from being easy. Of course, the Greek mathematicians did not face the same difficulties. Their Northern colleagues, however,—and, of course, the Indoeuropean ancestors of the Greek scientists—had to find an efficient remedy. They actually found it, and the number "hundred," which we have already discussed in an earlier context, is an excellent illustration of their success. But it took time to work out the principles of abbreviation. The Runic letters and the Runic numerals both seem to reflect several efforts to find a solution which had been made at various times. Moreover, the peculiar conditions of writing, together with an obvious desire on the part of the initiates to keep the art of writing secret, resulted in creating an esoteric art of writing, of reading, and of interpreting Runic symbols, which soon became extremely sophisticated, overdeveloped. Of course, the ancient experts had probably no trouble in disclosing the meaning of such particularly condensed terms and symbols. To us a Runic inscription may often appear to be an unsolvable charad. There are, however, no unsolvable problems as long as the basis of these problems can be supposed to be "rational." They all necessarily have a "key."

The problem of abbreviation can only be studied in a close connection with Runic numbers and letters. Although Norse-Runes

designating numbers, as a rule, seem to use only the right side of the symbol, they have such a pronounced similarity with the signs of the tree script that the question of abbreviation becomes much clearer, if one takes into consideration the particular technique of the Scandinavian scribes. The Runic numerals were somewhat neglected by the contemporary runologists. However, during the well known controversies on the authenticity of a Runic inscription found in Kensington, Minnesota, in 1898, the question of the Runic numerals had been successfully clarified chiefly through the efforts of Dr. Hjalmar R. Holand whose important monograph⁵⁵ has been recently re-edited. Of course, we are concerned only with the problem of Runic numbers, and not with that of the authenticity of the Runic stone of Kensington.

Three sources are cited by Doctor Holand—Fasti Danici, a work of a Danish writer, Ole Worms, published in 1643 (in Latin); the numerals of the Kensington stone; a parchment almanac from the XIV Century which H. R. Holand himself had detected in the Oslo University Museum.⁵⁶ The Oslo numbers correspond to the Wormsian numerals. Hence, we have two main types of numerals⁵⁷ (Figure 37):

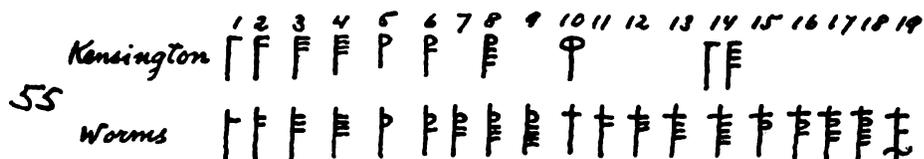


Figure 37

Both systems are very similar and they both are very close to the fir tree system of Kilfver. The Kensington numerals seem to confirm the fact that the left side was not used at all. Only the right side is used for the designation of individual numbers. Otherwise the Kensington sign for "ten" would be simply impossible. Its origin seems to be due to an addition of two signs for "five" (I owe this suggestion to Doctor Holand), one of which had been inverted (Figure 38):

As to the number "fourteen," which happens to be written in the Arabic manner, serious doubts may arise as to its authenticity.

The problem of the authenticity of the Kensington inscription⁵⁸ is very much a problem of the authenticity of the number "fourteen." The answer will be found later—in the chapter on "the decimal system."

The only abbreviation which we find in the Kensington numbers is a simplified sign for "five," which avoids the tracing of all

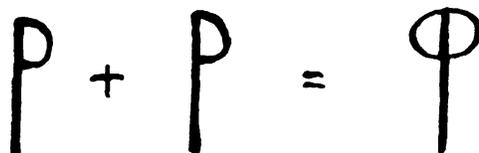


Figure 38

five twigs. The same abbreviation is used in all numbers going up to "ten." In all these numerals the first five twigs are replaced by a summary sign. Similar is the principle of abbreviation adopted in the Wormsian system. However, the Wormsian numerals are not "Arabized." Moreover, the Worms system is relatively "short"—it ends with the number "nineteen." One might call it a "vigesimal" system (from Lat. *viginta*—twenty). It is supposed to be an initial numerical system of the Goths. But this assumption is far from being correct. The Goths started, as we know, with an "octaval" system. The vigesimal nature of the Worms system is due to some particular reasons which will be mentioned in a later context.

Interesting is the sign for "ten" which obviously differs from the corresponding Kensington numeral (Figure 39):



Figure 39

The upper part has the form of a cross. One might ascribe it to Christian influence and, partly, to the influence of Roman numerals (Figure 40):

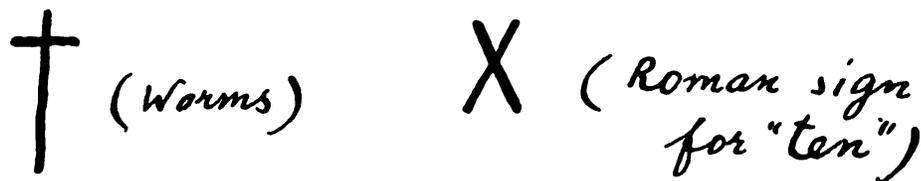


Figure 40

The "Fasti Danici" contain several other Christianized and Romanized signs for "ten" which make such a supposition quite understandable (Figure 41):

Hence, the form of the number "ten" might well be due to a combined influence of the Roman sign for "ten" and of Christian symbolism. Moreover, the symbol of the cross is, as we know, the basis of the sacred "tetrad" i.e., of the numbers "one,"



Figure 41

"two," "three," "four." The addition of these numbers leads us to the "most perfect number ten." The symbol of the cross seems therefore to be well applicable to the number "ten" as well.

We must count, however, with another eventuality, too. A variant of the octaval system might have ascribed to the first twig on the left side the meaning of "nine." The numbers of this system would have the following aspect (Figure 42):

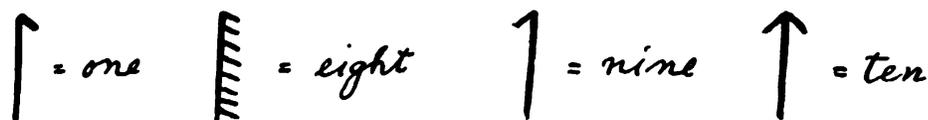


Figure 42

By straightening the twigs we arrive to the following sign for "ten" (Figure 43):



Figure 43

A further "christianization" of this sign would lead us to the Wormsian symbol for "ten" (Figure 44):

One should not reject this possibility. Such a limited decimalization of the octaval system was quite possible. We have to assume that the initial system was here an octaval "stick system" which supposes the use of eight twigs on the right side only. Then the idea of using the left side of the stem (or of the line which helped to trace the individual sticks) might have arisen. The ninth twig was traced on the left side. Its prolongation on the



Figure 44

right side permitted to create the sign for "ten" which is therefore characterized by a long line traced on the top of the stem of the symbol. Something of that kind might well have happened in one of the various coexisting numerical systems. An indirect confirmation can be found in the specific numerical terminology: the name for "nine" seems to imply the idea of "innovation" (cf. Greek "ennea," Lat. "novem," Germ. "neun"; the latter is, perhaps, not original). This terminology would brilliantly illustrate the peculiar position of the sign for "nine" in a decimalized octaval stick system. The "sanctity" of the number "nine," can be therefore ascribed to the fact that it was a particular form of "decimalizing," i.e., of "idealizing," the octaval system. "Nine" is a transition from "eight" to "ten." That determines its peculiar significance.⁵⁹ We will find an application of this idea in the

“Genesis.” The ages of Shem and of his descendants are formulated so, as to combine all three fundamental numerical concepts—eight, nine and ten. Nine persons are all in all mentioned. The addition of their decimalized ages gives a total of 3000. The octavalized numbers of the first column, which represents the age of each of Shem’s descendants in the year in which a first son was born to each of them, give a total of 300. Its relation to the “decimal” total of 3000 is, of course, also quite decimal. Moreover, the predominant number in the whole scheme is the number “three”—a symbol of “humanity.” The “patriarchs”—Adam and his descendants—are characterized by the “perfect” and “divine” number “four.” We must respect these exaltations of the ancient scientists, if we are interested in finding out the actual basis of the various manifestations of their peculiar “art.”

Particularly significant is the number “nineteen”—the end number of the Wormsian system (Figure 45):



Figure 45

The upper part is obviously “christianized” (or Romanized or, finally, “decimalized”). That does not exhaust the problems involved by the form of this numeral. The lower part seems to stress the final character of the number. Otherwise, the slightly curved bottom-line would not be traced on both sides of the symbol. It is probable that the number “twenty” would require two symbols, i.e., two “tens” (Figure 46):

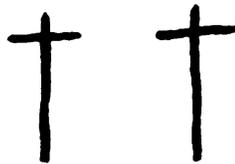


Figure 46

This “vigesimal” system certainly was far from being elastic. It probably had to borrow symbols from other coexisting Runic

systems—particularly, from the octaval tree system in its decimalized form (let us remember the number “one hundred”). The vigesimal system seems, however, to have enjoyed a great popularity among German and Slavic tribes. The fines were usually stipulated in terms of a “vigesimal” system (20, 40, 80 units).⁶⁰ In fact, the “vigesimal” system is not so clumsy, as it might appear from the outset. It practically is a decimalized system. The Roman system is very close to the Wormsian and might have directly influenced the latter. Moreover, it is very near to the decimal system implied in the fir tree system of Kylfver. Let us remember the particular thickness of the eighth twig on the right side of the tree. The eighth twig allowed to use the fir tree symbol as a decimal system—though as a decimal system of a higher type than the Wormsian. The clearest expression of an accomplished decimalization of the Runic numerals may be found, of course, in the utterly Arabized numbers of the Kensington inscription. The numbers “fourteen,” “twenty two,” and 1362 are all written in the Arabic manner (Figure 47):

Figure 47

Even the number “ten,” which, as we know, does not entirely coincide with the usual Runic sign for “ten,” might be due to a similar “detaching” of the numerical symbols from their ancient national roots. The Kensington numerals are strongly “alienized,” Arabized. The decimalization of the Arabian type was, of course, a significant achievement which concluded a tremendously long and stubborn drive toward a complete decimalization and “purification” of all preceding counting systems. Just for that reason I am personally inclined to consider the fact of an accomplished decimalization of the Runic numerals as a proof of the authenticity of the Kensington inscription as such. It is logical to expect an Arabization, i.e., a complete decimalization of the Runic numerals in the XIV Century, because the entire preceding development of the Runic numerical system was characterized by this particular

tendency.⁶¹ Moreover, the development of the Runic system of numerals is a direct corollary to a similar phenomenon in Greek and in pre-Greek counting. The "Genesis" and the Pythagorean "science of numbers" have both a quite similar psychological and scientific background. Decimalization meant improvement. The ancient mind was inclined, however, to absolutize this achievement and to interpret it in terms of a "divine gift from heaven to mankind." The philosophical and theological thought was following and "explaining" purely factual and mathematical phenomena. We will find striking examples of such a "wisdom" in the "Genesis."

According to H. R. Holand, the decimal system of the Arabian type was brought to the North in the XIV Century.⁶² Decimal numbers "were introduced into Western Europe at least as early as 982 when it is known that Pope Sylvester II introduced them. . . . They were presumably introduced into the Scandinavian countries in the beginning of the XIV Century. According to Thatcher and Schill, the decimal system was invented in the XII Century by an Arab mathematician, Muhammed Ibn Musa, who also invented the zero."⁶³ A manuscript entitled *Algorismus*—a treatise on numbers—preserved to us in *Hauksbok*, a Norse manuscript of about 1320, "explains the significance of the decimal system, and treats in detail of addition, subtraction, division, multiplication, and rules for finding the square and cube root of numbers."⁶⁴ This information, of course, has to be completed by our own observations. We have seen that a manual of arithmetics was used by Gothic scientists already in the III Century A.D.⁶⁵ and that the octaval tree system of the Gothic encyclopaedia of *Kylfver* is, moreover, a "potentially" decimalized or "decimalizable" octaval system.⁶⁶ The "invention" of the Arab mathematician would seem to be a logical conclusion of a long historical process⁶⁷ which was going on "from time immemorial," and to which many nations and many individual thinkers seem to have made their own contributions. It is difficult to fix the merits of a Pythagoras, or a Muhammed Ibn Musa. Each significant idea has a tremendously long pre-history which is far more important than any individual "illumination."

Let us turn to the question of "abbreviation." Of course, the

number "eight" of the octaval Kylfver system is in itself an "abbreviation" of a more primitive symbol with eight twigs on the right side. But that "abbreviation" was not intentional. It was a far-going simplification of counting as such, since high values could be now expressed in a condensed form. An abbreviation in the technical sense may be found in the manner of writing the number "five" (Figure 48):



Figure 48

This abbreviation seems to throw some light on the fir tree system, too. The fifth twig of the fir tree symbol is long and thick. We might suppose that this form implies the possibility to abbreviate the symbol for "five" in the same manner, in which Runic numerals actually are abbreviated. Hence, an abbreviated sign for "five" would have the following form (Figure 49):



Figure 49

It suffices to straighten the twig in order to discover that the sign for "five" has a prototype or—and that is more likely—a descendant. That is, of course, the number "nineteen" of the vigesimal Wormsian system (Figure 50):

It seems therefore that the number "nineteen" reflects the earliest manner of abbreviating the number "five." Later, for



Figure 50

purposes of clarity and of security, the central twig was curved upwards, like in the Oslo system, and finally rounded up, like in the Kensington system and in the Worms system and in the "Fasti Danici (Figure 51):



Figure 51

We may therefore assume that the fir tree symbol as such implicitly contains the idea of abbreviation (cf. the length and thickness of the fifth twig) and that in the III Century A.D.—and probably much earlier—the Goths and their predecessors, the Indo-European ancestors of the Greek and Gothic mathematicians, were using abbreviated signs. The material handicap of their art—the inadequacy of the material, etc.—thus could be successfully surmounted. If compared to the Wormsian system, the fir tree script would have the following aspect (Figure 52):



Figure 52

Let us look once more at the fir tree symbol as such (Figure 53):



Figure 53

It is, of course, an ideal system of writing, because each twig has a precisely defined position within the "whole." It suggests a minimum amount of signs. The relation between the twigs on both sides of the tree is in itself a very precise regulator. Additional indications are given in the particular proportions of some of the twigs on the right side. In fact, it was possible to express each number of the series 1 — 50 (that was, as we know, the normal series) by using a maximum number of three twigs only. I have no doubts that this outstanding advantage was highly appreciated, venerated, and—actually used, though the entire octaval system of the tree type still might be called "hypothetical." Being a secret script, it has the rare privilege of remaining unfindable in any written records. However, many indirect evidences will, I hope, prove its actual existence. The tree system forms an elaborate and, at the same time, an upmost simplified whole. It is "schematized" and, nevertheless, very near and "faithful" to its empirical basis. It is far from being "a mere human convention." It is "nature" as such conceived by the human mind in the form of what we are used to call—somewhat indiscriminatingly—a "symbol."

It seems possible now to face the problem of the "ambiguity" of the sign for the number "seven" and of various related signs. The abbreviation theory gives us some important hints. All these signs are, of course, abbreviations of a more complete initial sign. In order to solve the problem of their origin, it seems necessary to study some peculiarities of the Gothic alphabet—of the so-called "futhark."

CHAPTER VII THE GOTHIC FUTHARK

According to the abbreviation scheme which has been established in the preceding chapter, the abbreviated symbol for "six" would have the following form (Figure 54):



Figure 54

A further, though incorrect, but utterly understandable "abbreviation" of the stem itself leads to the following form (Figure 55):



Figure 55

That symbol seems to be nothing else than an inverted sign for the Runic letter "f" (Figure 56):



Figure 56

A direct connection between the Runic sign for "six" and the Runic letter "f" seems certain. Moreover, as we know, the Greek letter "digamma" had a very similar form (Figure 57):

The letter "digamma," pronounced like "v," belonged to an archaic Greek alphabet in which it occupied the sixth place. Since the letters of the Greek alphabet were used also as numerals, "digamma" had the numerical value of "six." It conserved that meaning even in the Semiticized Greek alphabet, although it ceased

to be used as a letter. The correspondent sound was simply left out (thus, the word "avavatos"—"invulnerable"—was later pronounced "aaatos"). The later designation of "digamma" was



Figure 57

"stigma"—"a hole." However, as a number, "digamma" or "stigma" continued to be used by the Greeks and its numerical value was "six," i.e., the double of "gamma"—"three." The relationship between "digamma" and the letter "gamma," which occupies the third place in the Semiticized Greek alphabet, seems to explain the very origin of the term "digamma." The term itself obviously does not reflect the sound "v." The term "digamma" is artificial.

It would be strange to admit that the Goths had borrowed the sign for their letter "f" from the Greeks. At the time, when such a borrowing could have taken place, the letter "digamma" was not used by the Greeks any more. Even the archaic sign itself was already replaced by a different symbol which represented a Greek "sigma" of a specific type (this "sigma" was used at the end of a word). That was logical, since the sign was now called "stigma"—"hole." The guess concerning a possible Greek origin of the Runic "f" must therefore be rejected. The Gothic "f" seems to be an original Runic symbol. Moreover, this symbol seems to prove that there has been a direct relationship between numerical signs and letters in Runic, and that the abbreviation of signs followed certain principles which had been already discussed in the previous chapter. The number "five" had only one central twig on the right side, and the number "six" consequently had two twigs (Figure 58):

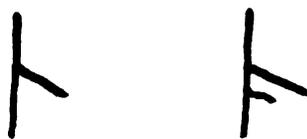


Figure 58

not forget that the Goths were during many centuries in a constant touch with Slavic and Finnish tribes. The first State of the Goths was formed on the Dnieper, i.e., in the region which may be called now Southern Russia. The inhabitants of this area were mostly Slavs and Finns. It is supposed that the Gothic alphabet had been composed by the Goths during their sojourn in this area, in the III and IV Century A.D. We will see that this guess is partly justified.

If the idea of a Gotho-Slavic language is defensible,⁶⁹ the "normal" Gothic alphabet would have a very conspicuous origin. The order of the letters was accommodated to a specific purpose. It had to correspond to the words which formed the prayer. Each letter, of course, conserved its initial features, but lost its initial—or at least its preceding—place in the newly rearranged alphabet. Partly, the new order was following the Greek pattern (g . . h . . ijpRst), but that was probably a coincidence, because the archaic, pre-Semitic, Greek alphabet could itself have corresponded to the Gothic alphabet. The rearrangement of the "futhark" did not, of course, change the position of all letters. A certain influence of the Greek alphabet (and possibly also of the Roman alphabet), of course, cannot be denied. Several new signs were introduced, the Greek (or Roman) origin of which is very probable. They either replaced old symbols or helped to express sounds which did not have before any specific symbols of their own.

The seven words—I would like to stress the fact that there are exactly "seven" words—which form the Gotho-Slavic prayer seem all to be more or less clear: futhark-gwhn-ije-pRs-tbe-mIng-od—"futhark sacred thou (that) through which (thou) (we) implore God (the "father"?). The "word" "ije" (izhe) is a specific, but quite correct, Slavic (Church-Slavic) construction. Of course, the meaning of that prayer is much more based on the sounds which correspond to the seven hypothetical words than on "correct grammar" or on a "correct spelling" of these words—if there could be at that time a "correct spelling." A similar "approximation" of sounds may be found in the Church-Slavic alphabet (az-buki-vedi, etc.), where the letters are also interpreted as a series of words forming a long sentence. The sacred character of knowledge as such had to be stressed by these words and,

✓ moreover, the alphabet itself had to be presented in a “memorable” form. We will see later that even the initial Gothic alphabet was conceived as a prayer or as a magic formula which contained the initial cell of Gothic wisdom—the word “lathu.”

One “word”—the very first word of the prayer—seems, however, to be “a mere convention.” The word “futhark” does not tell us anything. I do not reject the eventuality that it could and probably had been interpreted as “father’s language”—the “speech of our fathers.” This meaning is implied in the sounds composing that “word” (“rk” or “rek,” “rech” may be connected with the Slavic term for “speech”; the word “father” can be felt in the first part of the word “futhark”). There seems to exist, however, a quite different explanation which may appear to be more “authentic.” The rearrangement of the Gothic alphabet, of course, was not exclusively due to the desire to use it as a prayer. There were several purposes combined together. The ancient thought was “primitive,” but altogether complex and enormously sophisticated. The word “futhark” seems to be a significant key to ancient wisdom and to the Gothic “encyclopaedia” as such. We must try to find out the “concealed” meaning of the word “futhark.” One of the purposes of the rearrangement might well have been the desire to conceal a specific key word from the eyes and ears of the non-initiates.

A solution might be found in the position of the letter “f” within the Gothic alphabet. It should have occupied the sixth place. Instead, it occupies the first place in the alphabet—and in word “futhark” as well. Hence, we may suppose that a simple inversion of the word “futhark” would eventually give us a precious indication.⁷⁰ Since a similar “technique” is implied in the magic key word of the Kylfver inscription—“sueus”—it may well work in our case, too. The word “sueus” can be read in both directions. The “technical point” implied in such a possibility is self-evident. Let us apply this “method” of the ancient runologists to the word “futhark.” The letter “f” will thus occupy its real place—the same which “digamma” occupies in the Greek alphabet. The result of this operation is surprising.

In fact, we obtain a new “word”—the word “krathuf”—which itself seems to embrace two separate words—“kra” and “thuf.”

The meaning of these two words is somewhat obscured by their phonetic closeness to many etymologically unrelated words which all could have influenced their meaning. As I said in a previous context, the ancient intellectuals were far from being "learned linguists." Moreover, they were often risking bold phonetic confrontations in order to enlarge the initial logical content of a word, if they needed such an enlargement for their particular purposes (reinterpretation of a word, definition of its—supposed—meaning, etc.). External similarity was a significant additional indication, because each word was not only an element of speech and not only a symbol reflecting logical content, but moreover—and perhaps first of all—an "image," a picture, a compound of signs, points, lines. Hence, our further observations are practically limited to the most significant meaning of both words—"kra" and "thuf." Additional implications are both thinkable and probable.

The first word—"kra" or "skra"—is found in mediaeval Russian. It has a fairly specified, "isolated" meaning which might be best translated as "written statutes" or "constitution" of a guild of merchants,—particularly of a guild formed by foreign merchants.⁷¹ Such guilds existed in all great cities of mediaeval Russia. The merchants were settled in a separate part of the city and had their own internal organization. Their "selfgovernment" might have been identical to the internal order of the "hansahus" in London. The place where they are living, when they came to Russia, was called "Waranguian House" or "Gothic House" or, finally, "German House" ("house" translates here the Russian word "dvor"—yard, house). One should expect to find that the word "kra" (skra) is Gothic, not Slavic. But the Gothic vocabulary does not contain that word. Of course, the absence of a word "kra" in the Gothic vocabulary does not mean anything: our knowledge of Gothic is far from being complete. Most of the known words are taken from Wulfila's translation of the Bible. Hence, the absence of the word "kra" or "skra" in Sigmund-Feist's dictionary or elsewhere does not exclude the possibility that this word might have existed in the Gothic language—particularly in the spoken language. On the other hand, there might be found some traces of the word "kra" in Russian, and not only in the specific, legal sense which mediaeval sources

*Complete
"Stronger"*

attribute to that term. It actually seems to have possessed a much broader and a much more indefinite meaning. Its Slavic cognates seem to emphasize a "cutting" (cf. "krai"—border, edge, shore; cf. also "kroit"—to cut out and possibly a "chiselling," since the root of these words might well have originated as an imitation of sounds produced by such a cutting or chiselling.⁷² The peculiar phonetics implied by this root seem to be even better reflected in a correspondent German root. The voice of a "crow"—Grm. Krähe—is well reproduced in the German version of the sound-imitating root "kra." The "cutting voice" of a crow might well have served as a mediating element which led to an amalgamation of the concepts. The voice of soothsaying birds had a special name in Old Russian which, too, seems to be related to the sound-imitative origin of "kra." It was called "grai." We find here a compound of sounds, roots, words, concepts, late "isolations" of concepts, which seems to lead us to the idea of something which is "cut" or "cutting" and altogether is "signifying." Of course, the sharp voice of a bird was signifying and even "soothsaying." But something cut, chiselled or written with a sharp instrument could be "signifying" as well. A last amalgamation can be achieved and probably had been achieved by combining all initial elements into the concept of a "chiselling voice," of a "written speech," which was "signifying" and "soothsaying" by its very origin. Whatever the real etymology of "kra" might be, its phonetic connections seem to have played a very important rôle. In fact, we find very often the images of a bird, of something which is written, and the idea of a particular "significance" which has to be attributed to those images, closely connected with each other, and "completing" each other. The whole seems to form an initial "conception"—in the literally sense—of what one may call an "inaugurated order." The term "inaugurated" is here particularly appropriate, since the "augurs" were Roman priests specialized in the art of "soothsaying." They were using for their prognostications, sacred birds which gave them all necessary indications. The augurs interpreted these indications and their interpretations determined the decision of the people on various important occasions. We find the idea of such a newly "inaugurated order" in the Bible. Noah had all kinds of birds

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on his barge, but the raven and the dove both had special functions: after the deluge Noah let first a raven investigate the earth. The raven came back to the barge. Then a dove was twice entrusted with a similar task. It finally came back with the symbol of peace in its beak. The inauguration of a new peaceful order was successfully accomplished. Do we not find here a curious analogy with the specific implications of the concept "kra"? Of course, such an analogy cannot be simply denied. It seems to be determined by some intrinsic peculiarities of the ancient mind as such. The "linguistic" possibilities contained in the Gotho-German and in the Slavic root "kra" make this background of the ancient thought even much more understandable and justifiable.

The second word—"thuf" will be found somewhat "prepared" by the preceding considerations.⁷⁸ I am inclined to connect it with an antecedent of the German word "Taube"—"dove." It could be also confronted with the Slavic "dub" (oak), because the "sacred oaks" seem to have played an important rôle in the religious past of both, Germans and Slavs. "Thuf, gwhn"—"oak sacred" (cf. Germ. "weißen"—to consecrate) would make sense. Wooden benches made of oak are mentioned in an Old Russian poem in which the oblation of a goat is described ("skam'i dubovia"). We might, moreover, suppose that sacred texts were often written or chiselled on wooden plates, and oak-wood of course was particularly appropriated to such a use, because of its resistance. However, there are no direct evidences of that interpretation, despite its possibility and probability.⁷⁴ On the contrary, there seems to exist a direct confirmation of the interpretation previously advanced. The word "thuf" has actually been interpreted in the sense of a "dove." I would like to refer to the "Dove's Book"—the oldest Russian "encyclopaedia" which is a direct correspondent of the Gothic encyclopaedia of Kylfver, and, presumably, its direct descendant.

The Russian "Dove's Book"—"Kniga Golubinaia"—is a compendium consisting of religious poems and songs, of apocrypha, Christian legends, etc. The oldest layer reveals traces of pagan traditions and myths. It is, as several investigators have stated, a "Christian encyclopaedia" which includes cosmogonic theories, primitive physics, natural sciences, etc. The "Dove's Book" had

an educational purpose. It would like to instruct Christian people on ethics, true Christian behavior, etc.⁷⁵

Of course, the connection with the words "kra" and "thuf" is quite obvious. "Kniga"—"Book" corresponds to "kra" and "Golubinaia"—the "Dove's"—corresponds to "thuf." Moreover, the Russian word "Golubinaia" contains an additional hint which—curiously enough—finds a parallel in German. "Golubinaia" has often been interpreted as "Glubinnaia"—"deep," Germ. "tief." That might be a late "false etymology." But its existence must be noticed. On the other hand, the phonetic closeness between "thuf" and "tief" and the parallelism in meaning with the Russian interpretation is astounding, though it may be a mere accident. I would not like to overemphasize these possible linguistic connections, because the content of the "Dove's Book" as such gives us a far more convincing material.

Among the myths of the "Dove's Book" we find a very interesting story concerning a so-called "Latyr' Stone" which is said to be the "the father of all stones."⁷⁶ The "Kamen' Latyr' " ("Kamen' " is the Russian word for "stone") is sometimes called "Alatyr'."⁷⁷ That seems to be a case of "false etymology." The Christianization of the material of the "Dove's Book" seems to have led to an obvious confusion. The word "Latyr' " became connected with the word "altar" (Russian "altar' "). Thus, the version "Kamen' Alatyr' " is due to a typical "interpretation" of the ancient type which had been already discussed on many previous occasions. The main version seems to contain the authentic term "Latyr' ."

The "Stone Latyr' ," of course, is something which we should have expected to find in the "Dove's Book." Since the Gothic encyclopaedia is found chiselled on a stone—the stone of Kylfver—its Slavic equivalent could be also supposed to be somehow connected with a stone or even to be written on a stone. Moreover, the curious reference to the specific "meaning" of the stone which is proclaimed to be the "father of all stones" induces us to the assumption that the name of the stone as such might reveal a direct connection between the "Latyr' Stone" and the stone of Kylfver. We found the word "father" implicitly contained in the word "futhark." Since the Gothic encyclopaedia included the

Gothic alphabet, it is in no sense surprising to find a concept relevant to the Gothic alphabet in the Russian version of the Gothic stone. Finally, the term "Dove's Book" as such is, as we know, a direct translation of the inverted form of the word "futhark" which could be read as "krathuf."⁷⁸ The Russian myth-makers must have been well acquainted with the intrinsic meaning of the "words" composing the Gothic alphabet and with the Gothic encyclopaedia itself. Of course, they have themselves contributed to the elaboration of the "futhark." Several centuries of political and cultural contact may well explain these facts. A common Indoeuropean past determined all later developments of the initial cultural cells. We will find significant traces of a pre-historic Indoeuropean culture even in the "Genesis"—in its oldest pre-Semitic layer. The Slavs are Indoeuropeans. Their cultural roots necessarily coincide with those of the Goths who for many centuries were their neighbors and, partly, their teachers and masters.⁷⁹

The "Stone Latyr" has a very great importance for the understanding of the Russian version of ancient Indoeuropean wisdom. Its significance for us, however, is mainly determined by the fact that it allows us to find the initial order of letters in the Gothic alphabet. It contains a unique key to the Gothic variant of the sacred tree script. In order to bring that out, we must first try to place the Gothic Runes so as to make the individual signs quite compatible with the sacred fir tree symbol of *Kylfver*. In doing so, we are assuming that the octaval tree system determined the form of both, numerals and letters. We know that the Semiticized Greek letters were used as numerals (alpha—one, beta—two, gamma—three, etc.). In this particular case we face the opposite—and, of course, an "initial"—phenomenon: the signs for numbers are used as letters. Letters are nothing else than counted, registered, numeralized sounds which altogether formed the Gothic alphabet. Of course, only a few symbols can be ranged according to that principle. The other signs had been either Grecized or influenced by some coexisting counting systems. Nevertheless, the above-mentioned procedure has to be applied to the Runes, despite the fact that the Runes have an obvious hybrid origin.

Let us first look at the whole row of twenty-four Runic letters (Figure 60):

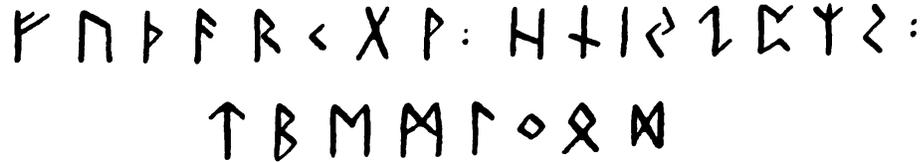


Figure 60

From these twenty-four letters only four seem to correspond to all requirements of the tree system—the letters l, a, r, and t (Figure 61):



Figure 61

From the outset, the result of this operation may appear discouraging. Only three letters are well placed. The fourth letter “t” might have been influenced by the Greek alphabet. But the letters l, a, f seem to be quite authentic. The problem which arises now is that of filling up the holes. In fact, three letters are missing in the first group of signs, from 1 to 6. The “Stone Latyr’” may help us to find a plausible solution. The first two letters—“l” and “a”—correspond perfectly well to the spelling of the encyclopaedia stone. We might suppose that the missing letters should correspond to the remaining sounds composing the word “Latyr’.” These sounds are the letters “th,” “u,” “r.” They are represented by the following Runic symbols (Figure 62):⁸⁰

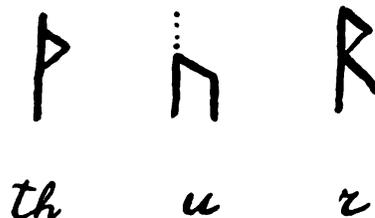


Figure 62

Since the "Stone Latyr'" is closely connected with the content of the Gothic encyclopaedia of Kylfver, our hypothesis seems to be utterly justified. The curious name "Latyr'" must have a rational foundation. We know that various elements of the myth seem to connect it with the Gothic alphabet as such. Hence, we may invert the hypothesis and interpret the Gothic alphabet in terms of the "Latyr'"-myth. However, the three interpolated signs, seemingly, do not correspond to the tree system as such.

In fact, they do correspond. At least, they reflect one of the general ideas of the tree script—that of abbreviation. The sign for "three" is abbreviated and reminds us of the Wormsian sign for "five." The letter "u," too, is abbreviated and the abbreviation is made in the form which is suggested in the sacred fir tree symbol of Kylfver, as such. The numerical value of the sign, of course, is different—"four" instead of "five." However, the fir tree system is, as we know decimalized. In an undecimalized octaval system the main abbreviation should necessarily characterize the number "four." As to the fifth letter "r," it seems to be a combination of the two preceding signs for "three" and "four."⁸¹ (Figure 63):

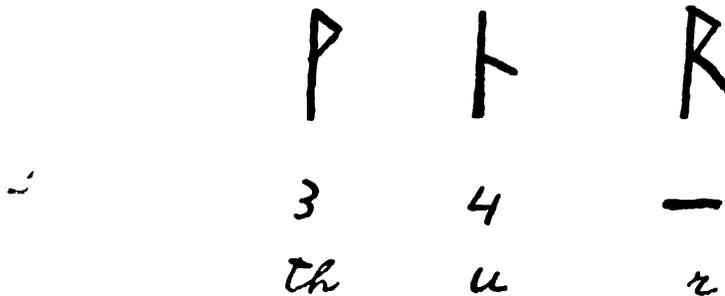


Figure 63

That is "logical," although the principle applied to the formation of the sign of "five" is practically detached from the tree system as such. The resulting row of signs would have the following aspect (Figure 64):

This order seems to be correct for several reasons. It explains the name "Latyr'" and corresponds to general content of the myth, as it is presented in the Russian "Dove's Book." Second, the order of the letters leads us to the first word of the sacred formula

“lathu, laukaR, gaukaR, alu” which, as we know, is an initial cell of most important “institutional conceptions” of the Goths and of various related nations (Norsemen, Anglo-Saxons, Slavs). That should not surprise anybody. We have seen that the letters of the “normal,” i.e., of the later “futhark,” formed a prayer.

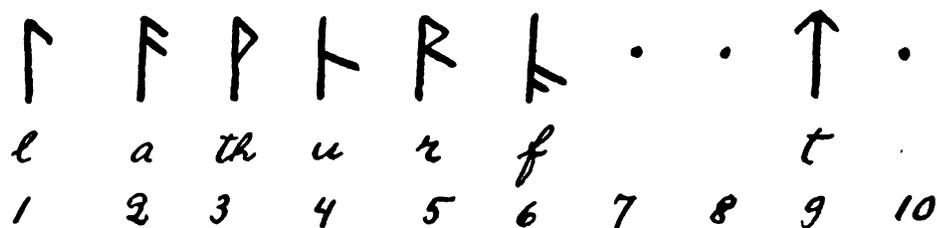


Figure 64

That seems to have been a very old tradition. The initial, authentic order of letters, which we are trying to reconstitute, seems also to represent a “prayer”—an incantation or a magic formula. It is possible to assume that the Goths were using an ancient Indo-European counting system for their own specific purposes. Their main objective is utterly clear: they used the numerical signs in order to fix the sounds composing their main-prayer and to reproduce them in a written form. The form of the letters was determined by the form of the numbers. The order of the letters, however, was dependent on the order of the sounds which composed the sacred formula. Hence, we find a letter “l” at the very beginning of the alphabet. That order, of course, is contrary to the usual manner to start an “alphabet” with the letter “a,” which we find in so many other alphabets (and in the word “alphabet” itself). That should justify, too, the fact that the normal “futhark” starts with the similarly very unusual letter “f.” Moreover, the peculiar order of the letters in the reconstructed Gothic alphabet has a deep logical foundation. The letters composing the first sacred word of the ancient incantation form a significant concept—that of “order” as such. The word “lathu” has that meaning. It can be translated also as “peace,” “agreement,” “concord,” “harmony.” The emphasis, however, seems to be put on the idea of “order” and of “regulation.” That explains all later developments of the concept “lathu” and of the three accompanying concepts as well. Their relevance to law and regulation is “initial,”

“cellular.” Particularly interesting is the influence of this formula on the institute of “hire” in Anglo-Saxon and Slavic law. As an oath formula, the ancient incantation helped to interpret the relations between a lord and a hireling or mercenary in terms of a legal “contract.” The entire initial thematic complexity of the sacred term “lathu” is revealed in this peculiar legal isolation and clarification of the concept (order, peace, regulation, concord—contract). The development is logical and utmost intelligible.

Nothing could be more justifiable than the idea of determining the order of sounds or letters by the word “order” as such. I do not exclude, however, the possibility of an inversed influence: the clarification of the concept “lathu” could itself be a consequence of the peculiar position which this term occupies in the Gothic alphabet. The initial meaning of this word presumably was less “centered.” It seems to have had the meaning of something “agreeable,” and this epithet probably was first applied to a “heavenly body”—to the sun. An etymological consideration may complete our observations.

In fact, the etymological question is far from being clear. K. A. Novotny tries to interpret the word “lathu” as an antecedent of the German word “Ladung”—“invitation.” Of course, “laden” has various other meanings, but Novotny is satisfied with his interpretation, because it fits into the general scheme of his explanation of the sacred formula “lathu, laukaR, gaukaR, alu.” Popular “metaphors” predominantly used by mediaeval German poets are his main source. That is an excellent way of finding out one of the possible lines of conceptual development. But this method is not sufficient and not quite “adequate” to the problem as such. Of course, Novotny always is anxious—as all contemporary historians of the “classical” school are—to find only one, the “only” correct meaning of an ancient or mediaeval term. In fact, such terms usually have a long series of meanings which partly would seem to be utterly incompatible from our modern point of view. The “logic” of our “non-Aristotelian” ancestors, however, was different from ours. False etymology, as well as bold phonetic and “paleographic” affiliations, occurred very often, and these phenomena had been, moreover, “rationalized” as a specific technique of interpreting ritual and legal terms and texts. Hence,

no term had "one" meaning, but always a bunch of meanings, which can be clarified only in terms of a "dynamic" study of a term beginning with its initial "cell" and covering all interpretations of a given term.

In the case of the term "lathu" our task is relatively simple. The concept exists in Slavic and gives an excellent illustration of the specifiable meanings which form the cell or bunch. The Russian word "lad" is a direct cognate of the Gothic term "lathu." It means "order," "agreement," "concord," "contract." Moreover, the term "lad" contains a significant isolated meaning—that of order in music. In that particular application the word "lad" may be translated as "tune," "harmony," "accord," also "stop" (of a guitar or of a lute).⁸² This musical element in the concept of "order" of the Goths and of the Slavs is in no sense surprising. It corresponds perfectly well to the Pythagorean approach of the same problem of "order." The musical scale became in the Pythagorean conception the most appropriated expression of order and of harmony as such. Of course, there is a complete congeniality between all these concepts of "order" which all are based on an identical initial "image." In Old-Russian folk-songs the term "lad" has a curious "personifying" expression. The word is applied to a mythical personality—"Did Lad" ("grand-father Lad"). "Grand-father Lad" is predominantly mentioned in the accompaniment of a song. ("Oi, dido lado," etc.) The respectable age of this personality is itself a symbol of "order." "Order" as such had to be old, established by the forefathers, universally venerated and well known. Otherwise, there simply was no "order." This important allegory was, however, combined with other congenial elements. The Old-Russian "menestrels" differed very much from their Western colleagues. A Russian pandorist or lutist had necessarily to be an old man, with a long beard which was, of course, a most significant illustration of his functions and of the supposed characteristics of the mythical personality of "Grand-father Lad." Moreover, these wandering folk-singers used utterly appropriate instruments which, too, had their "lad" (tune, harmony, stop). Everything had to correspond to the "image" of order, as it occurred to the people's mind.⁸⁸

It is quite reasonable to find a particularly illuminating picture of "order" in Slavic antiquity. The Slavs were great masters in "symbolic thinking." Late traces of this initial quality of the Slavic mind can be found in the peculiar technique of interpretation which the Slavic jurists had developed and maintained up to the XVI Century, in spite of their early acquaintance with Byzantine sources. In their early days they had made important contributions to the law of various German tribes. The obscurity of the gloses of the Salic Law is partly due to their collaboration, because their interpretations of the initial ritual and legal concepts was far too "meaningful" and upmost sophisticated. In our particular case the Slavic mind seems, however, to have played a positive rôle. The concept of "lathu" became well determinable, and its content quite transparent. Order, harmony, concord, regulation—all these conceptual developments seem to characterize equally well the Gotho-Slavic term "lathu"- "lad." " The presence of this concept in the Gothic alphabet, therefore, is justified. The alphabet itself meant "order." Hence, the alphabetic order of letters started with this very word. Significant might also be called the fact that the word "lathu" contains four sounds. That is not a mere coincidence. The numerical idea is, as we know, clearly expressed in the earliest conception of "order." The alphabet originated as a row of numbers representing the order of sounds which characterized an ancient incantation. This incantation, by which, as we know, the ancients praised the sun, had necessarily to be "quartal," since the symbol of the sun—first a circle, then a cross, then the swastika sign—required a quartal and octaval characteristic of the words composing the incantation (four words), of the leading concept (lathu; "th" is here, of course, a single sound), of the numerical system and, hence, of the alphabet as such. It seems to me, however, that the Goths, though applying an ancient system (even several systems) of their Indo-European ancestors, were not quite consistent in their efforts. They might have lost a part of their cultural luggage which could be much better preserved by other related nations—in particular, by the Greeks. In fact, the hypothetical Indoeuropean alphabet to which I was so often referring must have been—first of all and above all—a "counting system." The idea of applying

numbers to sounds was old, but the practical application of that idea, undoubtedly, was a difficult task for the confused mind of a "barbarian." The Gothic alphabet, therefore, is particularly short. Practically, they were interested only in registering those sounds which formed the four words of the sacred formula. Let us look at these words (Figure 65):



Figure 65

Only three additional signs had to be created, since the first word "lathu" already contained all fundamental letters which occur in the remaining three words of the Gothic "tetrad" (l, a, u). These additional letters—k, g and R—all have a very curious form (Figure 66):

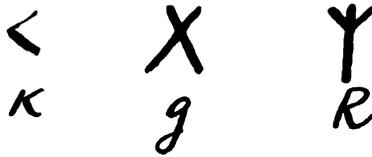


Figure 66

The first two letters seem to have an "auxiliary" character. The letter "k" reminds us of the correspondent Greek letter. It has, however, no "stem." It was particularly easy to place such a sign and, hence, to simplify the chiselling of a Runic inscription. The letter "g," too, is detached from the counting system as such. Of course, it could have been inspired by the symbol of the cross to which the Gothic "tetrad" seems to have been initially accommodated. Later, the sign of the sacred swastika became alone ruling and determined, as we know, the entire "Weltanschauung" of the Goths who became the most outstanding "octavalists" of the European antiquity. In any case, both letters—"k" and "g"—were pre-

sumably created ad hoc—for the specific purpose of registering the sounds of the sacred “tetrad.” The last sign, however, is too important in order to be a mere accidental “invention” of the Goths. The sign for “R” recalls the symbol which, if interpreted in terms of the octaval fir tree system, should have represented the number “seventy two” or “one hundred.” One might suppose that the Goths applied this symbol to a specific purpose to which the symbol as such was not destined. They were interested, however, in using a sign which, as we know, had some significant metaphysical implications (transition from the octaval to a decimal system) and decided to apply it to the letter “R” (“R” was probably pronounced as “rzh” or “r”). Thus, the letters of the magic formula included a particularly important symbol, though in an entirely new and inappropriate meaning. Of course, they already disposed of a sign which represented a very similar sound—the sign for the letter “r,” which belongs to the first series of Gothic letters. Why does the bracteates of Schonzen use the sign for “R” instead of the usual sign for “r”? Only because the very important sign for “seventy-two” (or “one hundred”) had to find a place in a sacred formula. The Goths knew that this symbol has a peculiar significance, but at that time they either did not know or they had forgotten its specific octaval Indoeuropean meaning. In any case, the first five letters of the Runic alphabet were sufficient in order to express the sacred character of the script. Two auxiliary signs completed the first series of literalized numbers. I should have added that the sign for “k” could be “deduced” from the sign for “r,” which itself is, as we know, a combination of two signs—of the sign for “th” and that for “u.” That would confirm the logical legitimacy of all these operations. Of course, this procedure is entirely detached from the initial counting system as such.

There exist some indications which induce us to the assumption that the creators of the Gothic version of numeralized letters did not know the tree system of the developed Kylfver type. The twigs of the letters “l” and “a” are sometimes placed on the left side of the stem. That would be impossible, if the Goths would have applied the fir tree system at the very moment when they started to “order” the sounds of their speech, i.e., of the quarti-

partite magic formula. They presumably used first a primitive octaval one-side system which, however, might well have been based on, or inspired by, an obscure recollection of some shivers of the ancient pan-Indoeuropean wisdom. Later they must have completed their knowledge. We have to take into account the fact that the octaval fir tree system was esoteric, i.e., known only to few initiates. The Runes reveal a close kinship with the esoteric tree system, but they are not identical to the latter. We can understand the origin of the Runes, if we apply the standards which characterize the sacred fir tree system. The idealogical background was quite similar, inspired by the same ideas, symbols and concepts. But the tree system is a product of a developed spirit, whereas the Runes represent a most primitive attempt to reconstruct an ancient cultural acquisition of the Indoeuropean mind. When, finally, the entire art of the ancient Indoeuropeans was sufficiently studied and learned, the connection between the Runes and "counting" as such had already been completely forgotten. Hence, the new Runic signs were simply borrowed from other alphabets. Two signs, however, seem to prove that the ancient tree system was, partly at least, known to the Gothic runologists—the sign for "seventy two" or "one hundred," falsely applied to a letter "R," and the sign for "f" which, as we know, has no direct connection with the sacred formula "lathu, laukaR, gaukaR, alu."⁸⁴ The latter sign is strictly "numerical" in form, quite consistent with the tree system, and, moreover, very ancient, since it occurs even in the archaic Greek alphabet in both functions—as a number and, of course, as a letter ("v"). How did this sign penetrate into the Runic alphabet which did not need it for its specific purposes? Should we suppose that the Runes were created by a revolutionist who attempted to deprive the initiates of their esoteric knowledge? May we assume that the Runes formed the alphabet of the non-initiates, whereas the "upper class" did actually know the sacred tree script and all its particular implications? Or did the Goths, actually reviving a "lost" knowledge? We are facing here some unanswerable questions. In any case, a last excurs into the mysteries of the sign for "f" should disclose to us the origin of the almost incomprehensible "ambiguity" of this sign which seems to have discouraged runologists of all times

and all countries. In fact, it had been so often confused with similar signs that a real solution of this particular problem should be welcome.

The first question which seems to be involved by the problem of the Runic sign for "f" has practically been answered in the preceding discussion. This sign should occupy the sixth place in the Runic alphabet. We know that the initial alphabet started with the letters l-a-th-u-r-f. .t. This order of the Runic letters is confirmed by the "numerical" aspect of the "alphabet," by its closeness to the term "lathu" which itself means "order," by its connection with the name "Latyr" and, finally, by its "quartal" aspect ("lathu" consists of four letters which occupy the first four places in the alphabet). The second version of the Gothic alphabet is revealed to us by a Slavic interpretation of the first six letters—"kra-thuf" (Dove's Book—Golubinaia Kniga). Here, too the letter "f" occupies its legitimate sixth place. An inversion of the two words "kra" and "thuf" produced the word "futhark" which changed the position of the letter "f." It became the first letter of the "normal" Gothic alphabet which is now conventionally called the "futhark." Moreover, it changed its proper form as a result of a new inversion. In fact, we had to assume that in the first "lathu"-version of the alphabet the letter "f" had an inverted form which alone could make it congenial to the preceding letters (Figure 67):



Figure 67

Its usual form, however, is different—much closer to the form of the Greek letter "digamma" and to the form of the Arabian number "seven" as well (Figure 68):



Figure 68

Is it possible to explain this inversion? We have to examine the various forms of the letter "f" in Runic. "Fasti Danici" seem to suggest a possible explanation. The sign for "f" had generally been used in the sense of "one" instead of "six" by all those who either did not know or did not wish to use Runic numerals. It is simply astounding how precariously the mediaeval runologists were acquainted with their own script. No other script had so many versions of each letter of the alphabet. The rigidity of the Greek and of the Latin alphabet, to which we are accustomed, was an unachieved aim of the Runic scribes. Since the initial rational basis of the Runic symbols had been forgotten, the mind of the non-initiates was condemned to a permanent oscillation between various more or less incompatible principles. Hence, it becomes understandable that some of the scribes came to the idea of using the alphabet—the "futhark"—for purposes of numeration and counting. That might strengthen the supposition the Runes of the "futhark" represent nothing else than a "vulgar" version of the esoteric tree script. The "Twelve Tables"—a first promulgation of the laws of Rome (V Century A.D.) owe their existence to a quite similar psychology. Of course, all such suggestions have a purely conjectural character. In any case, "Fasti Danici" reveal to us an attempt to bring Runic letters and numbers into a coherent system by way of using letters as numbers. The same principle was adopted by the Greeks, and the Greek pattern might have directly influenced some of the Runic scribes. The drive toward a unification of both alphabet and counting was, moreover, due to a vague, but utterly justified intuition. The "letters" were ab origine nothing else than "numbers." When this initial identity was broken by the introduction of new signs for different previously unregistered—uncounted—sounds, the homogeneity of the whole system became both, lost and forgotten. However, the initial unity later was re-established in some scripts by means of an opposite procedure: letters became numbers. Reading and speech finally overpowered the more ancient science of counting and of drawing.

Since the letters of the "futhark" at a certain moment became to be used as numerals, a dangerous confusion could arise and actually did arise. The sign for "f" could be confounded with

the sign for the Runic letter "a." First of all, both letters had an external similarity. They both consisted of a stem and of two twigs on the right side (Figure 69):



Figure 69

That, of course, might well explain, why the sign for "f" had been inverted in the "futhark." It is quite possible that the letters of the "futhark" were used as numbers by very many people—practically by all those who did not know the Runic numerals as such. Hence, it was quite indicated to change the direction of the twigs in one of the letters. We actually find many examples of such a confusion which, moreover, must have been stimulated by the fact that the letter "a" was the first letter of both, the Greek and the Roman alphabet. These alphabets were not only known to some of the Runic scribes, but seem to have served a reservoir for the creation of new Runic signs. The Runic sources contain some drastic examples of deformation and of confusion. The sign for "f" has in "Fasti Danici" the following contradictory forms⁸⁵ (Figure 70):

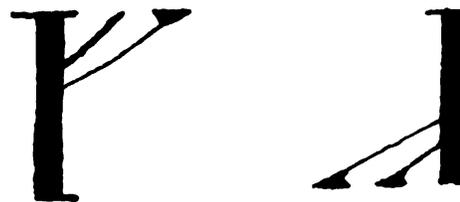


Figure 70

The latter form is a unique inversion of the usual forms, for "f." Other sources disclose more dangerous distortions⁸⁶ (Figure 71):

Two letters obviously overlapped each other in the mind of

the Runic scribes—the letter “f” and the letter “a.” Of course, both letters had a similar “rank.” “F” was the first letter of the “futhark” and “a” was the first letter of the Latin alphabet which was very well known to the mediaeval scribes. The form of both letters in “Thre Gotlin” and in “Liljegren” is a direct product of



Figure 71

such an interference between these two letters which was facilitated by the external similarity of both letters. Moreover, the form of the Latin letter “f” had, too, a certain influence on the form of the Runic letter “f” and “pushed” the form of the Runic “f” toward the form of the Runic “a.” A further distortion was produced by the same intricate constellation: in “Fasti Danici” we find the following two signs for the number “four”⁸⁷ (Figure 72):



Figure 72

It is obvious how that confusion could have originated. The first sign reproduces the Runic letter “a,” which occupies the fourth place in the “futhark.” Hence, it could be quite legitimately used as the number “four” by all those who were not accustomed to use special signs for numbers or simply did not know them. The second sign for “four” is a product of a terrific confusion. It is, of course, the normal sign for the Runic letter “f” which should be used as the number “one.” The sign had been, however, considered to be a Runic “a,” because “f” as the first letter of the Runic alphabet corresponds to the letter “a” which happens to be the first letter of the Latin alphabet. Moreover, the

Runic "f" and the Runic "a" both resemble each other. Then, a curious additional confusion took place. The sign for "f," interpreted as an "a," received the fourth place in the Runic alphabet in which the sound "a" actually occupies the fourth place. As the fourth sound of the Runic alphabet, the sign finally was interpreted as the number "four." This case alone might illustrate the specific difficulties which a modern investigator of Runes is facing. Of course, the mediaeval connoisseurs were in no sense in a better position. They often had to complete their very restricted knowledge by personal speculations of the above-described type.

An additional difficulty is due to the fact that the Runic sign for "f" seems to have been sometimes interpreted as the number "seven." That, of course, could be a direct consequence of an influence of the Arabic sign for "seven" which could be easily confused with the Runic symbol for "f." The problem, however, is much more complicated than it seems to be. An interesting information might be found in Dr. Holand's book on the Kensington stone:

"Ole Worms in one part of his work (*Fasti Danici*) discusses the ancient primstaver (also called runstaver), or household almanacs, which in the Middle Ages were in use in the Scandinavian countries. This 'calendarium perpetuum' most often consisted of a flat stick of wood about thirty inches in length and two inches in width. On its surface, lengthwise, were three lines of symbols. The middle line contained the . . . first seven letters of the Runic alphabet, repeated 52 times, with the addition of a (Runic sign for) 'f' at the end. In this way an ordinary year of 52 weeks and 365 days was represented. . . . Above this line was a line of figurative symbols representing the holy days of the church. . . . The bottom row consisted of a series of nineteen Runic numerals arranged in a certain complex order, and repeated, with numerous hiatuses, to the end of the calendar. These nineteen numerals represented the key numbers of the moon-cycle's nineteen years. By help of these numerals, one could determine on what day or date ad infinitum the new moon would appear."⁸⁸

This quotation contains several interesting points. Independently of their obvious practical purpose, the "primstaver" seem to imply the idea of a combination of several heterogeneous elements

into one system. The Runic alphabet is here connected with two different systems of measuring time. In fact, the "solar year" of 52 weeks and 365 days is brought into harmony with the moon-cycle's nineteen years and, moreover, both systems are expressed in terms of the Runic alphabet. We understand now, why a vigesimal system ending with the number "nineteen" became applied to Runic symbols. The vigesimal system as such might be called a "lunar" system. Its popularity certainly was due to the fact that it was particularly appropriate to the conditions of rural life and agriculture. As Dr. Holand remarks, "the early mediaeval Runic alphabet of sixteen characters,⁸⁹ with the addition of three late characters, was used . . . to mark the nineteen years of the moon-cycle."⁹⁰ We know that such changes in the number of letters of the Runic alphabet were quite possible, because only few letters were needed in the very beginning. The later "futhark" was not appropriate to be used as a table of numbers, but it had been used for that purpose, despite the fact that its numerical origin had been meanwhile completely forgotten. People needed a counting system. The Runic numerals were little known. Hence, the alphabet became once more a counting system—a very clumsy one, leading to many confusions and distortions. Of course, there was a much better system which only few "initiates" were able to apply—the fir tree system of Kylfver. But for the restricted purposes of the Northern farmers and fishermen the runestaver was entirely sufficient and represented even a maximum of scientific precision.

"The first seven letters of the Runic alphabet were repeated 52 times, with the addition of a (Runic sign for) 'f' at the end." This statement seems to suggest that the Runic "f" has here an ambiguous meaning. It represents, of course, the number "one," since the letter "f" is, as we know, the first letter of the "futhark." Simultaneously, however, it contains the "idea" of a number "seven." Seven letters represent seven days of a week. The unit of "seven"—the "week" as such—dominates the entire scale of the "runstaver." Moreover, the letter "f" happens to be the seventh letter, if we invert the order of the seven letters representing a week. The end sign, too, is an "f." This end sign seems to represent the key to the whole system of

the "runstaver," and, of course, that key is supposed to be the number "seven" and not the number "one." "Seven" is the key to the whole system and, hence, the sign which represents the key as such must have the meaning of "seven." That may appear surprising. We know that initially "f" meant "six." Then, being placed at the head of all letters of the "futhark," it received the meaning of "one." By mistake it sometimes was interpreted as the number "four." Now we ascribe to the same symbol a new meaning—that of the number "seven." How can we explain these fluctuations?

Of course, only the last meaning has now to be examined, since the other occurrences had been clarified in the preceding exposé. It is not impossible to admit that the entire time division—the lunar cycle, the division into weeks, etc.—had been borrowed from the (upmost mysterious) Orient. I do not exclude such an eventuality. In fact, a similar ambiguity might be found in the "Genesis"—in the myth on the creation of the world. The Eternal fulfilled his task in six days. That is a "number" of days which would seem to be typical of Babylonian (sexagesimal or sextal) counting. It has been advanced by several scholars that the creation myth actually is of Babylonian origin. However, the number "seven" suddenly intervenes in a specific function: on the seventh day the Eternal took a rest, to which, of course, He was fully entitled.

As a result of this prolongation of the time, the six days of creation were turned into a seven days long creation-week. The Babylonian division of time based on "six" (let us recall that the number "sixty"—six times "ten"—was the basic unit of the Babylonian counting system; we will see later that the "sextal" counting is pre-Babylonian), became "septimalized" and a curious ambiguity arose which probably has a purely "mathematical" origin. Two counting systems became combined together, and thus the Eternal got a whole day of rest. The "sixth" day received an unexpected additional value. Quite analogous seems to be the ambiguity which were observing in the "runstaver." Here, too, a sign for "six" (later interpreted as "one") became "prolongated" and reinterpreted as "seven." The "runstaver," of course, was more or less intentionally nothing else than the initial "creation

period" repeated "ad infinitum." The concept of a week, as a unit of time, had been officially inaugurated by the myth on the creation of the world. That seems to be directly confirmed by the connection between the "runstaver" system and the "holy days." The Biblical myth, in its Christianized version, is clearly discernable in the so-called "runstaver." Hence, the ambiguity of the sign for "f" seems to have a very ancient foundation. It has a curious double-meaning, exactly as the creation-week has in the Bible.

However, a more precise explanation might be added to the preceding observation. The Runic sign for "f" as such seems to contain a key to the solution of the problem of ambiguity. The sign itself is ambiguous. This ambiguity of the sign might well explain the origin of the Arabic symbol for "seven" which is so astonishingly near to the Runic sign for "f." Moreover, it should prove that in the "Genesis" itself the ambiguity of this ancient sign might have facilitated the combining of two counting systems—the sextal and the octaval. We will see later that the numbers of the "Genesis," in fact, are octaval and undoubtedly are based on the octaval tree system.

The ambiguity of the Runic sign for "f" can be explained very simply. The sign for "f" is an emanation of the octaval system (Figure 73):



Figure 73

It is obvious that the sign for "f" should mean "six," because its upper twig corresponds to the long fifth twig of the fir tree symbol, whereas its second twig reproduces the sixth twig of the tree symbol. The same sign can be, however, interpreted as corresponding to the last two twigs of the tree symbol, i.e., to the seventh and the half-cut eighth twig of the tree symbol. There is a conspicuous similarity between the sign for "f" and the above-mentioned two last twigs of the right of the tree. As a "part" of the tree the symbol for "f" could have eventually been interpreted

as "seven" and that "paleographic" possibility might well have been exploited by the ancient commentators. Why could the last two twigs be interpreted as the number "seven"?

In its normal meaning the symbol for "f" is nothing else than a crystallized addition. In fact, the sign represents an addition of "five" and "one." We find a quite similar idea in the Roman number "six" (Figure 74):

VI

six

Figure 74

The sign for "f" can be interpreted, however, in the opposite sense, too,—as a crystallized subtraction. The Roman sign for "nine" is an excellent illustration of such a crystallized subtraction (Figure 75):

IX

nine

Figure 75

The Roman system is already decimalized. Hence, the subtraction is presented in the form $10 - 1 = 9$. In the octaval system the end number of which is the number "eight," the correspondent subtraction would have the form $8 - 1 = 7$. That seems to be entirely clear. Of course, in the tree symbol the eighth twig appears already in a curiously shortened form. Hence, our ambiguous "f" sign has, too, a long twig combined with a short one. We will see that this shortened form of the eighth twig has its own deep significance. First of all, it meant, as we know, that the eighth twig as such had an "auxiliary" function. It usually was not needed. This initial "scientific" peculiarity was, however, illustrated later by a significant theological interpretation which leads us to the myth on the "Original Sin." We will dis-

cuss this subject later, in a different context. In fact, the tree symbol of Kylfver seems to contain a key to all legends of the "Genesis."

Despite its shortness, the eighth twig served to interpret the sign for "six" as a sign for "seven." A crystallized addition became turned into a crystallized subtraction. We know that the shortening as such meant that a more accomplished counting system had been imagined—the octaval system of the Kylfver type. It is, moreover, difficult to say which meaning of the abbreviated sign for the Runic "f" was the initial one,—"six" or "seven." The Greek "digamma"—an inverted Runic "f" of the same type as the "f" of the later normal Gothic "futhark"—leads us to the number "six." The Arabic sign for "seven" favors the second alternative. As to the particular form of the Arabic sign, an interesting analogy might be traced with the inversion found in "Fasti Danici" (Figure 76):



Figure 76

Quite analogous seems to be the "Arabic inversion," but in the opposite direction (Figure 77):



Figure 77

Is the latter inversion due to the well known Semitic peculiarity which resulted in an inverted reading and writing of words and, possibly, of all symbols? That is thinkable. In fact, the symbol for "seven" is fully inverted in the Arabic form. It is only partly inverted in the Greek "digamma" (perhaps also under Semitic influence) and in the Gothic "futhark" where, as we know, the

sign for "f" had to be made easily distinguishable from the sign for "a."

The problem of the key symbol of the runstaver seems now to be clarified. The number "seven," as we know, represented the "law of evolution." This law is clearly formulated in the creation myth. The runstaver express a quite similar idea, presumably under a direct influence of the Biblical myth. The Scandinavian "perpetual calendar" is a very interesting variant of the myth, but certainly not the only one. We will find a similar idea in Plato, but in an entirely new form which might be considered as Plato's personal contribution to mathematics—and even as a very important contribution. On the other hand, we know what significance was attributed to the number "seven" by all ancient thinkers by the authors of the "Genesis," by Pythagoras and his followers. The number "seven" meant a union of the Divine and of the "Human." The number "four" is the "perfect," the "divine" number par excellence. The number "three" is "human." Should our ancestors, Adam and Eve, follow the Eternal's advice, they would not have "eaten from the tree of knowledge," they would not have broken the eighth twig of the tree of knowledge to which they owed their knowledge and to which, we, too, owe ours. But they did it. Thus, the octaval tree system of Kylfver was born, numbers and letters created, and the ancient wisdom baptized. In order to understand all these connections and implications we must first pass through Plato—through his "science of numbers" and through his philosophy. Plato's mind is the best guide which one might suggest—both, reliable and sufficiently talkative.

CHAPTER VIII

THE IDEAL STATE AND ITS FACULTY

Plato's "ideal numbers" form an essential part of his philosophy. They determine its "scientific" foundation and its rational character. The approach as such is "Pythagorean" and follows the general line of the esoteric science of the ancient thinkers. Plato might be, however, called a last representative of ancient thought. His philosophy marks the end-point of a tradition which he himself declares to be "a gift from heaven to mankind." The main current of ancient wisdom had many peculiar expressions. We know some of them—the Pythagorean "science of numbers," the "Gothic encyclopaedia of Kylfver," the "Dove's Book," the "runstaver." Plato's "Republic" is one of them—a compendium of ancient esoteric knowledge presented in the form of an elaborate philosophical theory. It is hard to determine what part of Plato's speculations is "conscious," "reasoned," "intentional." A great majority of his ideas is due to intuition combined with scholastic training under the guidance of some Pythagoreans of the Italian school. The rest might be called Plato's individual contribution to science and to scientific reasoning. However, even these remaining personal elaborations of Plato's mind are thought through in terms of the ancient conception of things. Hence, Plato's philosophy is much more a recapitulation of cultural history than abstract speculation. The "images," symbols, shadows, "eidola," which surrounded his mind, were "rooted" in the cultural past and in the mode of reasoning which alone was accessible to the ancient mind, and determined the peculiar "logic" of the "pre-logical period." A first logicization and spiritualization of drawings, symbols, images helped to create a prototype of what we call "science." One of the those symbols—the "tree of knowledge"—was predestined to become the "cell" of human knowledge as such. It implied the idea of "order" and hence the possibility of an "ordered reasoning" and of an "understanding" of the world and of all things in general. "Numbers" became an initial, "cellular"

element of science. We should not be surprised to find a "science of numbers" at the very bottom of Plato's thought. Numbers are declared to be ideas par excellence. Aristotle and contemporary Platonists feel indignant about this phenomenal "archaism" in Plato's philosophy. They all have the excuse of having misunderstood the roots of Plato's thought. These roots, of course, are thoroughly concealed from the eyes of the "non-initiates," but they can be disclosed

Numbers are "ideas" par excellence and "ideas" as such form the upper plan of the world—the world of "true reality." Of course, no other kind of ideas can better express the "ordered" character of an "ideal city" than numbers. They form the first extract which human thought had been able to derive from the initial cell of all knowledge—from a symbol of a tree. Numbers represent the idea of knowledge as such. Hence, they dominate the world of ideas and determine its features—its very nature. This conception is Pythagorean, but had been prepared by the entire preceding history of human thought from the time of primitive tree- and sun-worship up to the significant moment when a Prometheus had proved able to "imagine"⁹¹ a logicized tree symbol which historically seems to have determined the very kern of knowledge. I mean the tree symbol of Kylfver which, as we will see it later, is identical to the "tree of knowledge" of the "Genesis."

There is no "tree" in the "Republic"—at least, no tree is mentioned expressis verbis. An interpolation is necessary. One has to plant a tree in the very center of Plato's "ideal city." However, everything seems to be prepared for such an operation. The ground is sufficiently porous. Plato's half-confessions have weakened the crust which concealed from us the content of the esoteric science of the ancients. We have to break it. The tree symbol of Kylfver gives us a key to Plato's concealed wisdom. Let us examine the very basis of Plato's "science of numbers." Plato's "ideal numbers"—the numbers which determine the main characteristics of his "ideal city"—should be relevant to the very nature of the central symbol. Hence, they should be "octaval." In fact, they are octaval.

Among the various arguments in favor of the assumed exist-

ence of an octaval tree system we have found one—perhaps the most important—which leads us directly to Plato’s “Republic.” In the so-called “nuptial number” Plato chooses a curious way of expressing the number “fourty eight” in the form of a subtraction $50 - 2$. The only plausible explanation of Plato’s extravagancy might be found in the characteristics of the octaval tree system as such. In fact, the form of the number “fifty” implies all three numerical elements of the equation $50 - 2 = 48$ (Figure 78):

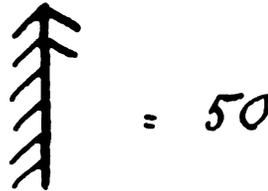


Figure 78

All three numbers are here crystallized and, of course, can be “mobilized” ad libitum (Figure 79):

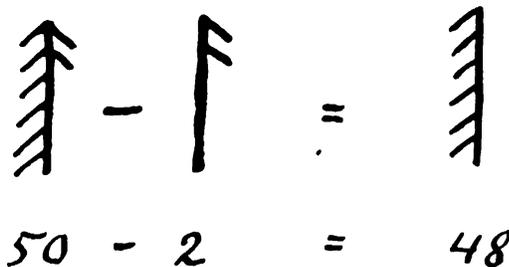


Figure 79

That might be a first evidence of Plato’s actual acquaintance with the octaval tree system. We have other indications, too.⁹² The octaval tree system puts its entire emphasis on the number “seven.” This number, in fact, had determined its entire significance. From the very moment, when the seventh twig on the right side of the tree became the last twig of the first series, the octaval tree system actually had come to life. This innovation created the octaval tree system of the developed, scientific type. Hence, the number “seven” might be expected to play an outstanding rôle in Plato’s “science of numbers.” We are therefore not surprised to find in the same “nuptial number” another equation

which is not less singular than the first one. The number "fourty eight," i.e., "fifty minus two," is moreover expressed in the form of "fourty nine minus one." "Fourty nine" is the square of "seven." Hence, the equation has the curious form of $7^2 - 1 = 49 - 1 = 48$. The octaval character of the first definition of the number "fourty eight" is confirmed by the similarly octaval character of the second definition. The second form is particularly interesting, because it stresses the significance of the number "seven." This number reappears in another "ideal number" of the "Republic"—in the number 5040 which determines the number of citizens in Plato's "ideal city."⁹⁸ Aristotle made an attempt to approach this number rationally. His concept of "rationality" was, however, very far from the esoteric tradition which Plato has espoused in his philosophical theory. The Aristotelian commentaries to Plato's works must be therefore taken "cum grano salis."

In terms of an octaval system the number 5040 receives its own peculiar justification. The number 5040, in fact, is nothing else than what is called in mathematics the "faculty" of the number "seven" ("faculty" translates here Grm. "Fakultät"; "Fakultät 7"—"factorial 7"). This term means that the number 5040 is a product of the consecutive multiplication of the first seven numbers.

$$1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 = 5040$$

In the light of the Pythagorean definitions, the number 5040 receives a quite conspicuous significance. The number "seven" represents a union between the "Divine" and the "Human" ($4 + 3 = 7$). Moreover, the number "seven" represents the "law of evolution" and "the complete realization in all things through seven degrees."⁹⁴ A "complete realization" of the State as a whole—Plato's "Republic" deals with the phenomenon called State—and, hence, of its entire body of citizens is expressed in terms of the number "seven." All human capacities⁹⁵ and all degrees of knowledge combined together⁹⁶ determine the number of citizens and the intrinsic characteristics of the body of citizens. It is a "vital" body—a crystallized evolution of a somewhat special type. The multiplication as such seems to express both vitality and efficiency. The number 5040 is the "faculty" of "seven." Plato himself does not disclose the real origin of the number 5040.

✓

7!

3 parts of soul
3 kinds of knowledge

↓
soul

On the contrary, he tries to dissimulate it by saying that this number can be divided by forty four different numbers. Of course, Plato was not entitled to reveal the esoteric octaval basis of his calculation. But the particular divisibility of the number 5040 was far from being a misleading indication aimed at keeping away the non-initiates from the real implications of the number 5040.

✓ Divisibility as such had its own importance. It expressed the idea of "specialization," of "professional grouping," of "diversity" as applied to the notion of a "body of citizens" forming a vital whole. Plato's approach is both, dynamic and functional.

These implications, however, do not exhaust the significance of the particular divisibility of the number 5040. Once more, one might find an invisible constellation of facts behind Plato's quasi-revelatory statement. The number 5040 can, of course, be divided by forty-four different numbers. How did, however, Plato come to such a precise indication? Plato's chief biographer, Ritter, seems to think that Plato used "empirical means." That remark is vague and much too condescending. In fact, Plato was very near to a first formulation of what is now called "combination theory." I do not think that Plato had simply tried to divide the number 5040 by as many different numbers as he could find. That, of course, would be an empiricism of the most hopeless kind. Plato undoubtedly was following a more scientific method. Since he knew that the number 5040 is the "faculty" of the number "seven," he might well have chosen a way which would reflect the connection between the number 5040 and the basic number "seven." Presumably, Plato had applied the following simple procedure:

Methodical

✓

*In psychology
of numbers
from 23*

| | | | | | | |
|--------------|--------------|--------------|-----------------------|--|--------------|--------------|
| 2 | 2 | 3 | 4 | 5 | 6 | 7 |
| | 1×2 | 2×3 | 2×4 | 2×5 | 2×6 | 2×7 |
| | | | 3×4 | 3×5 | 3×6 | 3×7 |
| | | | | 4×5 | 4×6 | 4×7 |
| | | | | | 5×6 | 5×7 |
| | | | | | | 6×7 |
| | | | $2 \times 3 \times 4$ | $2 \times 3 \times 5$, etc. ⁹⁷ | | |

Thus, Plato finds a series of numbers which all were relevant to the "faculty" of "seven," i.e., to the number 5040. Of course,

many numbers repeated themselves several times, but it was easy to find out the forty four divisors of the number 5040, without repeating a number twice or more. The method as such is "pre-scientific." However, the idea is quite congenial to the later scientific formulation of the theory of combinations which could be formulated only in the late Middle Ages.

The above-described procedure is intimately connected with the main unit of the Platonic "science of numbers"—with the number "seven." Hence, one might say that the number 5040 and its particular divisibility were both emanations of the octaval system. We know that the significance of the number "seven" is due to its position in the octaval system of the Kylfver type. The number "seven" thus becomes a key to Plato's mathematism and to his political implications and suggestions as well.

"Divisibility" seems to express, *prima facie*, a detailed division of functions in the whole of the "ideal city," and a far-going specification of human activity on a pluralistic basis. The various functions are distributed and simultaneously coordinated, held together in the initial whole. This division seems to interfere with a much broader division of the whole population into three (practically, four) "classes." However, both divisions can be easily reconciled. The division into groups is inspired by the idea of a possible group-cooperation which might well occur, and should occur, in each of the three or four "classes," of the population of the "ideal city." The forty-four numbers which divide the number 5040 may be compared to "associations" and "partnerships"—*koinonemata*—mentioned in the "Republic."⁹⁸ Plato's main principle of coherence between all citizens is that of cooperation: "The origin of the city, then . . . in my opinion, is to be found in the fact that we do not separately suffice for our own needs but each of us lacks many things . . ." "As a result of this, then, one man calling in another . . . we . . . gather many into one place of abode as associates and helpers, and to this dwelling together we give the name of the city or state . . ."⁹⁹ "More things are produced, and better and more easily when one man performs one task according to his nature, at the right moment, and at leisure from other occupations . . ."¹⁰⁰ This enlightened "pluralism" is completed by the stressing of the idea of order and unity:

✓ "And so long as your city is governed soberly in the order just laid down, it will be the greatest of cities. I do not mean greatest in repute, but in reality, even though it have only a thousand defenders . . ." One should add "and, all in all, only 5040 citizens." However, the latter number is not mentioned in the "Republic." It is recommended by Plato in the second version of his "ideal city"—in the dialogue called "Laws."

"For a city of that size," Plato continues, "that is really one you will not easily discover either among Greeks or barbarians . . ." ¹⁰¹ "The size" of the city as such seems to play a significant rôle. In fact, the creation of Plato's mind which is called the "ideal city" is primarily a product of Plato's "science of numbers."

It is interesting to notice that the idea of "association" and "cooperation" is vigorously stressed by Plato. It is opposed to helpless isolation. Moreover, the existence of the Platonic commonwealth does not merely rely on association and mutual help, but on a certain "order." We will see later that this significant idea combines two approaches—a mathematical and a "factual." The latter can be clarified only after a closer analysis of Plato's main metaphor of the "Ship of State." That will be done in a different context.

Plato does not mention the number 5040 in the "Republic," but he undoubtedly had this number in his mind. ¹⁰² It is mentioned in the "Laws" and, moreover, the number as such is quite congenial to the number of the "defenders" which is given in the "Republic" and "suggests" the number 5040. In fact, the following subtraction reveals a part of Plato's "science of numbers":

$$5040 - 1000 = 4040$$

That is, of course, a significant number, because it contains—twice—the "perfect" number "four." Moreover, the number 4040 is upmost congenial to the number 44 which represents the forty-four divisors of the number 5040. One might say that I am exaggerating the tacit implications of Plato's "science of numbers," but that would be unjust. The "appearance" of the numbers had a very great importance. It suffices to indicate Lemek's age—777 years which had been considered as a particularly happy

age, determined by the Eternal himself. The "Genesis" is full of such external manifestations of perfection. We are entitled to apply a similar standard to the numbers of the "Republic." The numbers 5040, 1000, 4040, 44, 7 were all marked by an external "perfectness" which was rooted in their "apparent" connection with the perfect numbers "four" and "ten" ($7 = 4 + 3$). Hence, the number 5040 certainly is present in the "Republic"—revealed by the number 1000, i.e., by the supposed number of the "defenders." Aristotle¹⁰⁸ takes the number of 1000¹⁰⁴ defenders as the actual number of warriors—alias "helpers" or "defensors"—in Plato's "ideal city." In this particular case his opinion seems to be correct. He misunderstood, however, the origin of the number 5040. Of course, the esoteric background of Plato's calculations had not been disclosed to him, because he obviously did never belong to the community of the Pythagorean initiates. Hence, his attempt to solve the mystery of the "nuptial number" was utterly unsuccessful. He must have misunderstood, too, the very basis of the number 5040. The utmost significant number "seven," thus, remained concealed behind its divulged emanation—the number 5040.

The number "seven" is here particularly justifiable—at least from the viewpoint of the ancient mathematicians. In fact, the State as such is lifted into a higher region representing a union between the Human and the Divine. The body of citizens forms a vital whole. The number 5040 implies the idea of "evolution" in two respects. First, the number "seven" represents as such the "law of evolution" in its earliest and most general expression. It is, of course, nothing else than an arithmetical progression starting with "one," in which d is equal to "one." The second expression of the idea of "evolution" has the more modern and more sophisticated form of a so-called "faculty" of the number "seven."¹⁰⁵ I am almost certain that this additional evolutionary conception is to a large extent Plato's own contribution to mathematics. Otherwise he would not have disclosed the fact that the number 5040 can be divided by forty-four different numbers. Plato, seemingly, could not entirely disguise his personal achievement. He found, however, a sufficiently vague definition in order to conceal whatever had to be concealed from his non-initiated

pupils and readers. Thus, a possible conflict between personal ambition and imposed secrecy could be solved in a smooth way.

The concept of "faculty" seems to have a most illuminating history which should help us to understand Plato. It is not easy to establish the origin of the term "faculty" as applied in contemporary mathematics. The Latin term "facultas" had been adopted by the mediaeval mathematicians as a translation of the Greek term "dynamis" (power, capacity) in the sense which Aristotle gave to that term. Plato's mathematical terminology, as we know, is particularly obscure—highly metaphorical and "conventional," though in a very specific sense. He seems to have followed the concealing tradition of the Pythagoreans. In any case, his use of the term "dynamis" is far from being clarifying. He seems to have applied a similar term to two different operations—to that of multiplication as such and to a very specific case of multiplication which is now called "faculty." That, of course, leads to a certain confusion. The concept of the "power" of a number, which implies the presence of one and the same number in the entire series of multipliers, excludes the possibility of using the same term "power" (dynamis) in the sense of a "faculty" of a number. Nevertheless, something of that kind seems well to have happened to Plato in his "nuptial number." "Treis apostaseis, tettares de horous labousai" means that the product of three numbers (in this case the product of the numbers 3, 4 and 5) has "to ascend four hills."¹⁰⁶ It is easy to express the "ascending" as such:

$$(3 \times 4 \times 5) \times (3 \times 4 \times 5)$$

This "ascending of four hills" (tettares de horous labousai) has here a very modest meaning of multiplication or "power." The term "ascension" would be much better applicable to the peculiar tripartite unit which is "almost" the "faculty" of the number "five." But Plato uses here the term "apostasis." Why are these three numbers called "apostasies"? Is it a definition of the "distance" which separates all three numbers from each other? Would Plato apply the same term to the "faculty" of the number "seven?" Or would he speak of "climbing up" a given number of hills? If so, then seven hills would have to be climbed up in order

to reach the hill on which the "ideal city" is situated, since $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 = 5040$. His terminology, of course, is far from being precise. On the contrary, he is intentionally obscuring relatively very simple operations in order to disguise the real basis of his calculations. We will find a solution of the "nuptial number"—a correct one, since James Adam actually has found the purely arithmetical solution of the problem—in the next chapter. It seems to me, however, that the term "apostasis" might be rightly applied to the members of the numerical line $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 = 5040$. These seven "apostasies" seem to characterize the intrinsic quality of the "ideal city" and, in particular, of its body of citizens. They form the "faculty" of the "ideal city," exactly as the number of citizens forms—in the mathematical sense—the "faculty" of the basic seven "apostasies." We will see later that Plato interpreted the rational foundation of the "ideal city" in terms of seven chief disciplines which determined the entire "knowledge" of the citizens. Of course, this knowledge had to be high enough. Seven steps were necessary in order to acquire a true scientific outlook which a philosopher—the "guardian" of the "ideal city"—is supposed to possess.

A curious additional implication might be mentioned. It is closely connected with the education scheme which Plato is advancing in the "Republic" and with the seven disciplines which form the luggage of a true philosopher.

The term "faculty" is in no sense restricted only to mathematics. It has a broader meaning, too. The academic world uses it in a well known meaning which seems to have originated in very early times and might well be relevant to the internal organization of the Pythagorean academy in Kroton and of the Platonic academy in Athens. The European definition of the term "faculty" is closer to its "classical" meaning: "Fakultät—eine der 4 (zuweilen auch 5, 6 oder 7) Abteilungen, in die sich eine Universität nach den Hauptwissenschaften gliedert, sowie die Gesamtheit der dazugehörigen Dozenten."¹⁰⁷ This is a European, a German definition. In the U.S.A. the term "faculty" is used in the second meaning only, i.e., applied to the entire teaching apparatus of a university. Of course, the term as such is quite conspicuously connected with

the two "leading" numbers of the ancient "science of numbers" which, as we know, formed the very basis of ancient wisdom. "Four" and "seven" are both significant elements of the Pythagorean philosophy, of the Platonic "science of numbers" and of the "divine tradition" which preceded the scientific elaborations of the Greek philosophers.

The "seven departments" of a university lead us directly to Plato's image of the "ideal city," and, probably, to his Athenian academy as well. All citizens—and particularly the philosophers, the "guardians"—are "onthologically" connected with science. They "express" science by their very nature and are themselves expressed in terms of the Platonic—of a numerical—conception of science which, as we will see it later, is prevailing in the Bible, too. In the "ideal city," everybody has to exercise his skill on the basis of his innate capacity and of achieved knowledge. Natural abilities are developed by means of a planned and rationalized education. "Sophia"—wisdom—determines and constitutes the very essence of Plato's "ideal city" and the "nature" of each citizen as well. Plato considers the "quality of love of knowledge" as the predominant feature of Greek civilization as such—in the entire area of "Greeceedom"—"in the region where we dwell."¹⁰⁸

"To philomaths"—the love of knowledge—is a natural gift which all Greeks as such enjoy. The "ideal city" is not only fully impregnated by the natural disposition toward science which distinguishes the Greeks from the "money loving Phoenicians" and from the high-minded, but uneducated Thracians and Scythians.¹⁰⁹ It itself is a creation of the scientific Greek mind.

Our contemporary academic life¹¹⁰ still reflects the Greek "Weltanschauung" and the Platonic educational scheme. The number "seven," of course, plays an outstanding rôle in the program: there seven degrees of knowledge which, if combined, represent the entire acquired wisdom of a "true" philosopher. "Seven" expresses the "law of evolution." Hence, knowledge as such necessarily embraces seven disciplines. The number "seven" is a "scientific" number par excellence. We know why it became to express the very idea of knowledge. The seventh twig on the right side of the tree symbol determined the birth of an accom-

plished system of counting and, hence, the being of the ancient science as such.

Plato's educational scheme begins with music and gymnastics. The third book of the "Republic" contains many refined judgments on music which, as Plato asserts, "does follow and conform to the disposition of the soul . . ." "Good speech, the good accord, and good grace, and good rhythm wait upon a good disposition, not that weakness of head which we euphemistically style goodness of heart, but the truly good and fair disposition of the character and the mind."¹¹¹ In Book II, XVII, Plato gives a comparative definition of both disciplines, gymnastics and music: "What, then, is our education? Or is it hard to find a better than that which long time has discovered?"¹¹² Which is, I suppose, gymnastics for the body and for the soul music." "It is."¹¹³

Plato objects against any "innovations in music and gymnastics counter to the established order."¹¹⁴ That, of course, is a significant statement. We know how deeply the "musical order" as such was connected with the "science of numbers" and with the entire Pythagorean philosophy which itself seems to be an emanation of early Indoeuropean culture. Let us remember the Gothic and the Slavic concept of "order" ("lathu"—"lad" "). The "established order" and "that which long time has discovered" form the very basis of Greek culture and of Greek tradition. In the light of the numerical approach to reality which determined the main features of the Pythagorean philosophy, Plato's suggestions become quite understandable. Music, the musical scale, the musical proportions discovered by Pythagoras and by his disciples, the concept of "harmony"—all that together explains both, Plato's support of music as a discipline and his conservatism, "traditionalism" in this particular part of his educational scheme. Plato wishes to conserve the sacred order in his "ideal city," too. In fact, the "musical order" as such is only one of the most important manifestations of the "octaval order" which he would like to impose on the city of his dreams.

The Platonic rulers are chosen by a process of progressive selection through ever higher educational tests.¹¹⁵ The "new"—of course, not entirely new—sciences of arithmetic and of geometry are added to the two disciplines which formed the first step

in Greek education—gymnastics and music. A series of even “newer” sciences complete Plato’s educational program. Astronomy, mechanics, acoustics become, too, important steps of the “scientific evolution” which Plato would like to see climbed up by each “true philosopher.” Together with the highest type of science—ethics and sociology—all disciplines form a consistent educational whole. Ethics and sociology mark the highest peak of knowledge. Thus, wisdom is achieved. A “final test”¹¹⁶ gives to the successful adept the opportunity to display his knowledge which is supposed to have been augmented by several years of practical experience in different minor offices of the administration. Paul Shorey is quite correct in characterizing the ultimate theoretical discipline—ethics combined with what one may call “sociology”—as “the power of close, exact, consecutive reasoning about complex moral phenomena.”¹¹⁷ Such a reasoning baptizes the “true philosopher” and makes him worthy of his leading rôle in the “ideal state.”

Plato’s educational scheme, which is fully applied only to the members of the class of “guardians,” thus includes seven steps: 1) primary education, i.e., gymnastics, music,¹¹⁸ “tales”—traditional patterns of behavior revealed in a form which makes them accessible to children; dancing, as a union of both, gymnastics and music; 2) arithmetic; 3) geometry; 4) astronomy; 5) mechanics; 6) acoustics; 7) ethics which also embraces sociology, practical administration, “reasoning” in its final form—“reasoning about complex moral phenomena.” That scale of sciences represents the “law of evolution” as applied to science and education. Seven hills have to be ascended before true knowledge is achieved. The educational scheme is utterly congenial to the Pythagorean “science of numbers.” The number “seven” dominates the entire field of human knowledge. One may consider Plato’s educational program as a relatively late and sophisticated product of the initial conception of knowledge, but it seems impossible to deny a probable connection between Plato’s scheme and the initial significance of the number “seven” from which all knowledge had started. When the octaval tree system of the Klyfver type came to birth, the number “seven” received an extraordinary significance. It became the end number of the first series

of numbers and a joint connecting the twigs of the right side with the twigs of the left side of the symbol. Thus, a perfect counting system could be created. The number "seven" became the crystallized expression of this significant discovery and a symbol of knowledge as such. Plato did not accidentally conceive his scheme. Either he knew the real origin of the particular significance of the number "seven" or his was intuitively following a tradition which he felt to be the right one. Of course, he must have known the main symbol of the tree and a great majority of its tacit implications. We have found several indications which all seem to confirm Plato's acquaintance with the tree symbol. The peculiar equation replacing the number "fourty eight" ($50 - 2$), the origin of the number 5040, the septimal character of Plato's educational scheme—all that might be interpreted as a proof that Plato actually was operating with the octaval tree system. His "ideal state" is a direct emanation of his "science of numbers." The city as such is a dynamic unity capable of growth and of decay. "The state," Plato says, "if it once starts well, proceeds as if it were in a cycle of growth. . . ." The "nuptial number," as we will see later, gives a precise definition of the almost organic vitality of the "ideal city." Plato's conception is in no sense static. An "élan vital" is stimulating the life of the ideal body.

I would not dare to call Plato's theory of the "ideal state" an "organismic" theory. On the contrary, as we will see it later, the metaphor of the Ship of State, excludes a purely organic conception of the state and of political life as such. Nevertheless, Plato's approach is far from being monistic—based only on one leading idea. It reveals a curious ambiguity which can be clarified only by means of confronting his views with those of the "Genesis." The second section of this volume should facilitate the understanding of the very basis of his conception of the "ideal state." Many threads seem to unite Plato's philosophy with the general cultural-historical background of ancient wisdom. Particularly amazing is Pluto's "vegetarianism" which can be appreciated only in the light of the Biblical legends, if compared to the "eating from the tree," to which our ancestors were accustomed in the first golden days of their life in the Eden. Two trees have determined the fate of humanity—the "tree of knowledge," from which Adam and

Eve did eat, and the "tree of life," from which the Eternal prevented them to eat, because they would thus become immortal.¹¹⁹ Both trees were placed in the center of the Paradise, governing the entire fauna of God's park. We know that the "tree of knowledge" is expressed in the main symbol of the ancient "science of numbers." A definite proof will be given at the right place. Should the image of the other tree—of the tree of life—have suggested the organic features of Plato's conception of the "ideal city"? Since the rational foundation of the "ideal city" is an emanation of the symbol representing the tree of knowledge, the organic conception might well have a similar source and be thus reducible to the "tree of life." We will have to face this problem in a later context. There actually seems to exist a certain ambiguity in Plato's approach to the "ideal city" which is probably due to his combining two "images"—that of the "Ship of State" and that of the "tree of life" which itself is a corollary of the "tree of knowledge." In fact, we will see that the initial version of the "Genesis" might well have contained only one tree which later had been split into two trees. Thus, reason and life became differentiated. They both, however, remain combined in the characteristics of the number "seven" which unites the concept of "growing" (from "one" to "seven") and of "knowledge" as such. Plato's conception of evolution in science—his educational scheme—reveals a quite similar ideological complexity. His somewhat surprising "vegetarianism" illustrates the same line of thought. In fact, it is a part of his educational program. People have to be educated, brought up to "vegetarianism." Of course, that would bring them nearer to "immortality," as the "Genesis" proclaims it in one of its most significant passages. In the "ideal city," too, all citizens are supposed to be vegetarians: "I reason that a sound nurture and education if kept creates good natures in the state, and sound natures in turn receiving an education of this sort develop into better men than their predecessors . . ."¹²⁰ Is that not, once more, a combination of the two trees—that of knowledge (education) and that of "life" (sound nurture)? Moreover, does this image not revive the initial vegetarianism of our ancestors? Do these ideas as a whole contain a key to the far pre-historical background of life and of knowledge as well? Tree

worship seems finally to have turned into a learned conception of true education and into the idea of sound nurture. Both elements, if cleverly combined, create "good citizens" who are superior to their "predecessors." That would seem to be an amazingly far and late echo of the earliest life of humanity. "Tradition" may partly explain these cultural-historical tones of the Platonic philosophy. We have to add his enormous intuition.

Simple food consisting of plants, vegetables, leads to a general improvement of the character of man. "Platon theilt dem jungen Staate nur einfache und zwar vegetarische Nahrungsmittel zu. . . ." ¹²¹ That, of course, is in no sense an intentional imitation of the life in Sparta, as one usually thinks. It is a suggestion inspired by a set of more or less intuitive illuminations which connect Plato's mind with the farthest past of humanity. Adam and Eve "ate from trees," and the entire golden period which preceded the deluge seems to be characterized by the absence of any carnivorousness. The Biblical ideal is that of "vegetarianism," and so is Plato's. Since the Greeks, as a true nation of sailors and fishermen, hated fish, Plato's "integral vegetarianism" had an additional historical justification. We will see later, that the historical conditions of Athenian life were far from being neglected by Plato. On the contrary, his entire attitude was patriotic and even national—in a broad cultural meaning of that word.

We find in both sources—in the "Genesis" and in Plato's "Republic"—certain associations of ideas and concepts which cannot be called accidental. They seem to be a product of human experience—of an "expérience vécue"—which started in pre-historical times. The legends of the Old Testament and Plato's intuition both go back to one and the same source—to the very roots of human civilization and to its first primitive rationalizations. Something is due to the esoteric science which Plato must have acquired as a member of the Pythagorean school. But far more important seem to be his own visions which allowed him to penetrate the past and to distinguish truth in the traditions of his time and of his school. He is too sharply condemning the lies of the ancient myth makers—Homer is one of them—in order to be accused of ignoring the cultural-historical implications of his

philosophy. He was a historian, though very much a historian malgré lui.

✓ Plato's "vegetarianism," of course, is a highly modernized version of the Biblical eating from a tree. Nevertheless, the analogy is striking. The life in the "ideal city" corresponds to the idea of "immortality" which the "Genesis" connects with the mysterious "tree of life." The tree of life might be called the oldest and the organic version of the "living" state. "The state," says Plato, "if it once starts well, proceeds as if it were in a cycle of growth." Plato speaks here of a "cycle of growth" and not of immortality. He does not exclude the eventuality of an unavoidable decay of the "ideal city." Nevertheless, he is quite close to the "Genesis"—astonishingly close. We will see later that Plato is almost reviving the earliest layer of the Biblical legends. This mystery can be disclosed only by way of a risky assumption which may become understandable only after a closer analysis of the "Republic"—particularly of his metaphor of the "Ship of State." Let us now turn our attention to the "nuptial number" which determines the growth and the decay of the "ideal city." The "nuptial number" has its correspondent in the "Genesis," too. It is the most important part of Plato's "science of numbers," and a key to ancient wisdom.

CHAPTER IX

THE NUPTIAL NUMBER

The “nuptial number” is the phocal point in Plato’s “science of numbers.” It determines the growth and the decay of the “ideal city.” In a more general sense, it seems to suggest that the life of each singular person depends on numbers and that the life of men and the life of human institutions are dominated by a “perfect number”—the “nuptial number.” This number discloses the meaning of numbers and of the “science of numbers” as such. Moreover, Plato’s “nuptial number” represents a particular application of this “science.” It is echoing a quite similar attempt made by the authors of the “Genesis.” There, too, a “nuptial number” can be found which dominates the birth and the death of the ten patriarchs—from Adam to Noah—and the birth of each son of each patriarch. A similar application is to be found in another part of the “Genesis,” in which the descendants of Shem are subjected to a quite analogous mathematical operation. Finally, a very unsophisticated use of the chief symbol, on which all calculations of the “Genesis” and of the “Republic” are based, is disclosed in the Gothic encyclopaedia of Kylfver. In fact, the “science of numbers” as such is nothing else than a particularly skilful “rationalization” of the basic tree symbol. Plato’s “nuptial number” reveals the presence of a “tree of knowledge” in the very center of all his calculations and philosophical meditations, and, moreover, it actually is a “tree of knowledge” of the form which the Gothic “initiate” had indiscreetly disclosed to us—laics.

Hence, the analysis of the “nuptial number” should appear promising. It may persuade us that Plato was actually operating with the octaval tree symbol of the Kylfver type and that a “tree of knowledge” actually is planted in the center of his “ideal city.” The analogy with the “Genesis” is self-evident.

The arithmetical solution of the problem of the “nuptial number” had been found by James Adam and confirmed by the obser-

vations of Kafka and Hilprecht. The “nuptial number” actually is a number—the number 12960000. As Kafka points out,¹²² 12960000 days are equal to 36000 years which represent a Babylonian “world year.” Hence, a connection between Plato and the Babylonian system of counting becomes quite conspicuous. However, the two cyphers of the number 36000 may be found in the octaval system, too. A German authority might be cited ad hoc: “Die Ziffern entscheiden und sind das Skelett der Zahl; die Nullen sind insofern belanglos. . . .”¹²³ That seems to be utterly true. The emphasis must be put on the number 36, and this number has some particular features of “perfectness,” exactly as all other numbers mentioned in the “nuptial number” and in the corresponding places of the “Genesis.” It is “perfect” in its external appearance. The form of a number had an extraordinary significance in the eyes of the early mathematicians. In fact, we must not forget that they were operating with “symbols,” “images,” “drawings,” “eidola”—as Plato calls them in his philosophy of ideas. Hence, the external characteristics determined the significance of a number or symbol. We know, what peculiar sophistications seem to have been connected with the “appearance” of the sign for “seven.” As a part of the whole, i.e., of the symbol used as a counting system, the sign for “seven” could have a certain similarity with the sign for “six.” The two signs could be confounded and had been confounded. I would add that in the “Genesis” this confusion was even not quite unintentional, since by such a paleographic trick two counting systems could be reconciled—an octaval and a “sextal” (or sexagesimal—the Babylonian system). The “nuptial number,” as we know, fulfils, too, the task of combining different counting systems. We will examine this question amplier in a later context.¹²⁴ The fact, however, of an undisputable external “perfectness” of the number “thirty six” undoubtedly was considered to be a significant feature of this number which, in fact, represents here the number 36000, i.e., the number of years in a Babylonian “cycle” or “world year.” Let us look at the symbol as such (Figure 80):

The first symbol—the normal one which is utterly consistent with the tree symbol of the Kylfver type—operates with four twigs on each side of the stem. The sign as such has all marks

of harmony and perfectness. Hence, the number 36 seems to imply the idea of harmony and regularity. One should assume that the same idea is expressed in the number of years forming a Babylonian "world year"—36000, since "the cyphers decide and are the skeleton of the number; the zeros are irrelevant." Thus, the "nuptial number" as such—the number 12960000—is itself



Figure 80

"externally" perfect, harmonious, ordered. It is, moreover, equal to 60^4 which is based on a chief unit of the Babylonian sexagesimal system. Plato's implications therefore seem to combine the chief numbers of several counting systems—of the Babylonian, of the octaval and of the decimal. It is a bridge between these systems. Where do we find traces of a decimal system? First of all, in the zeros of the numbers 36000 and 12960000. Then, also in the second alternative form of the number 36. In fact, the eight twigs on the right side were, as we know, used only in very few cases. One number, however, implies the use of the half broken eighth twig—the number "seventy two," alias "one hundred." The meaning of "one hundred" supposes the addition of the numerical values of all twigs on the right side of the tree (Figure 81):

and binary?

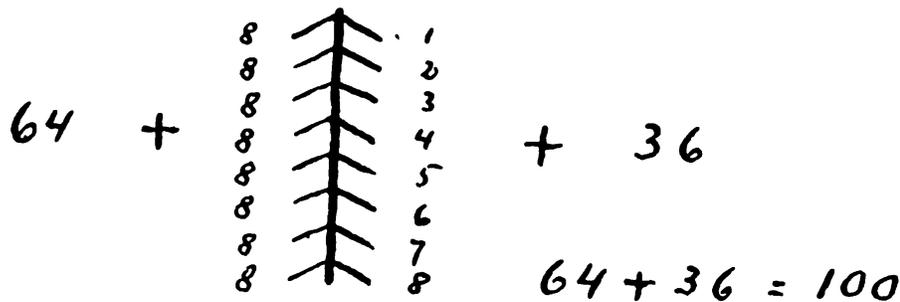


Figure 81

Hence, one might say that the number 36 contains the "idea" of three counting systems. Plato has found a way to express in his "nuptial number" the very idea of such a combination of three counting systems. Here seems to lie the main significance of the "nuptial number" and the main characteristic of the ancient art of counting. The "science of numbers" was to a large extent nothing else than the art of combining various counting systems one of which—the octaval system—was kept secret. An absolutely similar use of the various counting systems will be found in the "Genesis." There, too, the "science of numbers" manifested itself in a combination of the main counting systems. Traces of the Babylonian system are mainly visible in the creation myth, whereas the octaval system gives us a key to the understanding of all decimal numbers mentioned in various places of the "Genesis." This idea, as we know, is not entirely new. Kafka was the first to suppose a combination of two counting systems in Plato's "nuptial number," to each of which he tried to confer a particular significance. The sexagesimal system appeared to him as the "empirical" par excellence, whereas the decimal system was declared to be an ideal system—a "purified" system—which had to be used in "pure mathematics." Kafka did not know the octaval system. Otherwise he surely would have partly modified his judgment.

It is significant that the "nuptial number" 12960000 can be "reduced" to the number 36 which forms a bridge connecting all three systems. Plato must have been very proud of his own art. In fact, the "form" of this number, if expressed in symbols of the octaval tree system, connects it—the number 36—with the "perfect" number "four" (four twigs on each side of the tree), with the decimal system (through the sign for "one hundred" which is octaval and decimal at the same time), and with the Babylonian system (12960000 or 60^4). Moreover, in the number 60^4 the "perfect" number "four" appears, too, as the "power" of the number 60. Thus, the entire calculation becomes an utmost sophisticated application of three counting systems, and this art of combining all three systems formed the very essence of the ancient "science of numbers."

The fact of a number being "congenial" to three different counting systems made the number particularly significant and "mean-

ingful." Of course, such a number was "meaningful" in a literal sense—it combined three different systems of counting and of expressing numbers. The "significance" within each counting system was determined by the peculiarities of each counting system as such. Thus, the number 60 was the main unit in the sexagesimal system and hence this number and its cipher "six" had a particular importance. Other numbers relying on "six" and "sixty" were, too, "significant" in terms of the sexagesimal system. Moreover, the number "sixty" implied the idea of a decimal system. That, of course, was an important additional cause of its importance. Significant numbers of the decimal system were those in which the decimal idea was upmost distinguishable. Hence, the number "ten" (the "most perfect number" of the Pythagoreans), "one hundred," all numbers which could be divided by "ten," and, of course, the number "five," were particularly significant from the viewpoint of the decimal system. The number "ten," moreover, was relevant to the number "four" ($1 + 2 + 3 + 4 = 10$) and that fact, as we know, augmented its importance. The "perfect numbers" of the last—of the octaval series—had, too, their peculiar characteristics which determined their specific significance. We know one of those characteristics—the external perfectness of their form. In fact, this element is particularly important. We will find that idea confirmed in Plato and in the "Genesis" as well. It is completed by several additional characteristics—by the position of a number within the octaval tree system as such. Thus, the number "seven" is the end number of the first series of numbers and, moreover, a crystallized remains of an important discovery which practically had created the octaval tree system as such. The number "fifty" was the usual end number in the octaval system. That, too, was a cause of its importance. We will find a summary of these "marks of significance" in the final discussion of the octaval system.

The number 36 which, as we know, has a very harmonious form, if pictured in terms of the tree system, represents a bridge connecting all three systems—the sexagesimal system, the decimal system and the secret octaval system. It is "significant" in terms of all these three systems. Thus, by using particular numbers, it is possible to reduce the sexagesimal system to the octaval and

vice versa. Plato gives a clear demonstration of such a possibility, and, simultaneously, of his personal skill.

The number 12960000 represents the number of days in a Babylonian "world year" and corresponds to 360000 years "which form a Babylonian cycle and designate a "world year."¹²⁵ "We know from another place of the 'Republic,'" Kafka continues, "that Plato defines the duration of man's life by hundred years or $100 \times 360 = 36000$ days. It follows that a day in the life of the world corresponds to a year in man's life."¹²⁶ Thus, the number 36 becomes relevant to the number "one hundred," as we have supposed it, while analyzing the origin of the tree symbol for "one hundred" (the addition of the values of the eight twigs on the right side gives the number 36, whereas the twigs on the left side lead us to the number 64; an addition of both sides gives a total of "one hundred": $36 + 64 = 100$). Thus, a bridge is formed between the different counting systems and between the "life of the world" and the life of man. It is astounding, with what virtuosity Plato is manipulating with the three systems and with their particular implications. The "astrological" or "cosmological" Babylonian system is skilfully combined with the empirical "human" octaval system and the ideal decimal system. Plato always finds a way of bringing these heterogeneous numbers into harmony. Such was the very essence of the ancient "science of numbers." If we consider the entire set of numbers which form the so-called "nuptial number," our admiration should certainly increase, ad infinitum. It is, of course, an outstanding artistic performance.

Let us contemplate the "nuptial number" in its "solved" form, i.e., in the form suggested by Adam and Kafka :

$$Z = (X^2)^2 = X \times X \times X \times X = (3 \times 4 \times 5)^4 = y^2 \times 100^2 = [100 (7^2 - 1)] \times (100 \times 3^8) = [100 (\sqrt{50^2 - 2})] \times (100 \times 3^8) = 12960000.^{127}$$

Let us first consider the numbers as such, independently of the meaning which Plato ascribes to that endlessly sophisticated equation. We find the following numerical designations :

1, 2, 3, 4, 5, —, 7, 50, 100. Two basic numbers can be immediately added—the numbers 6 and 10, because X is here obviously

equal to 60, and 60 is, of course, equal to 6×10 . Moreover, we get some additional numbers, if we make all operations suggested by Plato: 27, 48, 49. As to the end number 12960000, we already know that it represents a Babylonian cycle or "world year." Similarly Babylonian is the number 60. The other numbers reflect a successful attempt to combine octaval and decimal numbers with the Babylonian system. In fact, the numbers 5, 10, 50, 100 and the end number itself are obviously decimal. They can be, however, combined with the octaval system, if we take into account the peculiarities of the tree symbol of Kylvfer. We know that this tree symbol is fairly decimalized. The number 5 is marked by a particularly long fifth twig on the right side of the symbol. The number 10, too, seems to be emphasized in the tree system by means of marking the second twig on the right side which, as we know, is particularly thick (the number 10 has one twig on the left side and two twigs on the right side). The same reasoning applies to the number 50 (six twigs on the left side and two on the right). Moreover, the number "fifty" was presumably the end number of the normal series of tree numbers. The relation between 50 and the octaval system is stressed by Plato himself in the curious equations $48 = 50 - 2$ and $7^2 - 1$. Of course the numbers 7 and 48 are both essentially octaval. We know the origin of the number "seven" and the historical cause of its peculiar significance. The remaining numbers—1, 2, 3, 4, 5, 6, 7—represent the "law of evolution" which Plato, moreover, has completed by the notion of the so-called "faculty"—5040.

As to the number 100, its relevance to the octaval tree system had been mentioned several times. It is hardly necessary to repeat again what has been said earlier on account of the equation $50 - 2 = 48$. It can be understood only in terms of the octaval tree symbol for "fifty." The number 48, moreover, is particularly "harmonious." All six twigs are placed on the left side. "Harmony," as applied to the external appearance of the numerical symbols of the octaval tree system, means either an equal distribution of twigs on both sides of the tree, or the presence of twigs only on one side of the symbol. Hence, the numbers 48 and 27 are both "harmonious," as well as the number 36 which had been discussed in a previous context (Figure 82):

The central idea, of course, is that of combining three counting systems and the most significant numbers of these three systems. This task seems to be fulfilled by Plato in a masterly way. The numbers 3, 4 and 5 seem to emphasize the main implication of the "nuptial number." In fact, they disclose the presence of all three systems in the "nuptial number." "Six" represents the Babylonian

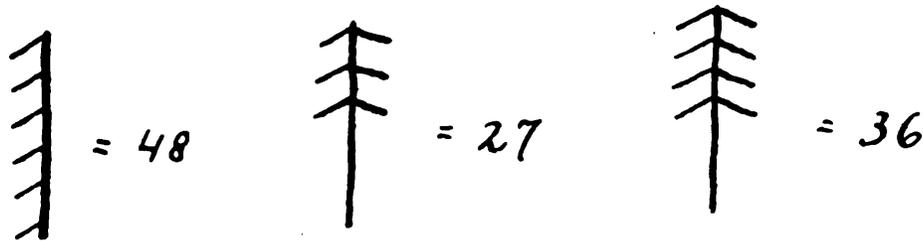


Figure 82

system, "eight" represents the octaval system and "ten" the decimal. The numbers 3, 4, 5, if multiplied by 2, lead us directly to the chief "representatives" of the three combined systems. The combination as such has various expressions. The number 48 is a combination of the octaval system with the sexagesimal: $6 \times 8 = 48$. The number 60 is a combination of the sexagesimal system and of the decimal: $6 \times 10 = 60$. The "nuptial number" as such combines the entire set of "interdependences" and "participations" which Plato could confer to the numbers which he is using. They all determine the "life" of his "ideal city," the life of each individual and the life of the world as a whole. In particular, the "nuptial number" seems to define the existence of certain relationships between the earthly life and the "ideal" life which Plato himself calls the world of "true reality." Hence, the peculiar name of Plato's number which, of course, is purely conventional, might be well justified. It "unites" the "Divine" with the "Human," and the presence of the entire range of numbers from "one" to "seven" stresses the nuptial character of the "nuptial number," because the number "seven" exemplified this union in the eyes of the Pythagoreans. We know that, in fact, the number "seven" as such is a crystallized expression of a magnificent inspiration which created the octaval tree system of the Kylfver type and determined all later developments in the "science of

numbers." The "nuptial number" became applied to those cases in which men were particularly anxious to hear the voice of God—to get a divine inspiration. Hence, it became applied to various calculations concerning "birth," "death," "marriage," "life," "growth," etc. In a more general way, the "nuptial number" might well have meant that "the life of each singular person depends . . . on numbers . . ." ¹²⁸ "The life of men and the life of human institutions are dominated by a perfect number which discloses the meaning of numbers and their influence on life and on all that is created by man." That definition marks the end effect of the ancient "science of numbers." I trust myself of having successfully tackled the problem of the very origin of that "science."

It is interesting to notice that the six days long creation period of the "Genesis" which we have seen reflected in the "runstaver" is present in Plato's "nuptial number," too. The main element—and the first number in the entire series of numbers mentioned in the "nuptial number"—seems to be the number "six," i.e., the Babylonian chief unit 60. The entire equation starts with that number, as the "Genesis" starts with the six days of creation (cf. also Noah's age at the time of the deluge—600). The other elements of the Platonic equation which are all octaval and decimal correspond to the parts of the "Genesis" which contain numerical designations. We have, of course, to start with the legend on the "tree of knowledge" which seems to be the prototype of the general meaning of the "nuptial number." The application of the "science of numbers" is given in the part where the ages of the patriarchs are calculated. Of course, Plato's application is different. But it reflects an entirely similar idea. Moreover, both "applications" operate with the octaval and decimal systems. The Babylonian system characterizes only the starting point in both sources. All that has a far-going importance which will be fully clarified in the last "conclusive" part of the present volume. It is simply astounding how the various "echoes" of a complex initial theme found themselves repeated in all main sources of ancient wisdom—in the "Genesis," in the "Republic," in the inscription of Kylfver, in the "runstaver." Let us remember the Runic "f" which dominates the "runstaver." Is it not an

equivalent of the six days of creation and of the initial Babylonian unit in Plato's "nuptial number"? Of course, it is. All these sources of ancient wisdom are intimately related to each other and must be studied altogether. They complete each other and seem to determine the main current of ancient thought. It is curious to state that each of them has amply preserved the idea of combining heterogeneous counting systems—even the Gothic stone of Kylfver and the relatively late "runstaver." They are all reflexes of a quite similar mental attitude. They form a dynamic whole of ancient wisdom.

There is one element in Plato's "nuptial number" which deserves a particular attention. The numbers 3, 4, 5 are combined in a systematic whole. In fact, they permit to define the main implication of the "nuptial number"—that of a combination allowing to group into one concept three heterogeneous numerical systems. The "nuptial number" as such is primarily a successful combination of the three counting systems and that is the first condition of its own "meaningfulness." We have, however, to add some other implications which seem to characterize the three "apostases" of the "nuptial number"—the numbers 3, 4 and 5. These three numbers determine, according to Plato, "similarity and dissimilarity, growth and decay."¹²⁹ The concepts of "growth" and of "decay," of course, are given in the "nuptial number" as such. Even the "ideal city" is perishable and not eternal, being produced by man and by his mind. The notion of "similarity" and "dissimilarity," however, seems to be somewhat obscure. We will see later that this pair of opposites has been later completed by a long series of opposites forming an entire "table of opposites."

According to Kafka, the passage in which the numbers 3, 4 and 5 are contained "indicates the circumstances on which the origin of similarity and of dissimilarity, of growth and of decay depends, and since these circumstances are themselves determined by numbers, also the numbers on which these circumstances are dependent. Why the numbers 3, 4 and 5 are those which can produce similarity and growth, as well as their opposites, is not indicated in this passage and may be due to Pythagorean speculation."¹³⁰ Kafka stops there where his analysis has touched the most important point. "The Pythagorean speculation" as such does not

explain anything. The real content of this "speculation" should have been elucidated. Then the Platonic implications might have become explainable, too.

The fir tree symbol of Kylvfer seems to give an answer to that sophisticated problem. Let us once more look at the upper part of the tree symbol (Figure 83):



Figure 83

It is in no sense difficult to find out "the origin of similarity and of dissimilarity, of growth and of decay," if one takes into account the characteristics of the tree symbol. The three twigs on the left side and the four twigs on the right side seem to form a consistent system. First of all, they occupy a similar space. In fact, three twigs on the left side occupy the same space, as the four twigs on the right side. We find here "similarity" and "dissimilarity" well expressed within a curious system which, of course, is far from being an accidental result of "bad drawing." On the contrary, as we have seen it earlier, one of the implicit ideas of this particular arrangement was the desire to reproduce the "musical harmonies"—the musical relationships which the Pythagoreans had first succeeded to formulate with the help of the so-called "monochord." There was a second idea, too, which will be discussed later. It suffices to indicate for our present purposes that the resulting figure—three twigs on the left side occupying the same space as four twigs on the right side—implies the concepts of "similarity" and "dissimilarity." Our observation might be completed by the examination of the entire tree symbol of Kylvfer (Figure 84):

The upper part may be called "dissimilar," since three twigs are opposed to four. The lower part, on the contrary, is "similar," because three twigs on the left side face the same number of twigs on the right side. The whole stem is divided in two equal parts by the fifth twig. Should we count the fifth twig to the lower

part, we would discover here, too, a similar ambiguity, as in the upper part of the tree which Plato defines as “similarity” and “dissimilarity” inherent to the numbers 3, 4, 5. Of course, such an “inherence” is justifiable only in terms of the tree symbol—of its



Figure 84

intentional arrangement. We will see that other observations were added to this initial characteristic of the tree symbol which altogether defined the content of the “table of opposites” mentioned by Aristotle. The tree symbol was an almost inexhaustable source of significant inspirations. One of those inspirations, usually attributed to Pythagoras, is worth being studied in detail.

CHAPTER X

THE NUPTIAL NUMBER

(Continued)

A fundamental difficulty arises as a direct result of some outstanding peculiarities of ancient reasoning. The tree symbol was a counting system. Each twig of the tree had its own definite value. The twigs on the right side represented the first series of numbers, from "one" to "seven," whereas each of the twigs on the left side had the meaning of "eight." The system could be used for the designation of numbers from "one" up to "seventy two," although the usual limit might well have been the number "fifty." In facing the problem of the numbers 3, 4, and 5 we must detach our mind from the customary meaning of the twigs. The tree symbol was far from being a numerical table only. It was a chief symbol of ancient science as such—a symbol which altogether determined the actual content of ancient wisdom. Different branches of science seem to have arisen out of an "active contemplation" of that "image." The tree symbol might well be called a "synopsis" of ancient science: everything had to be reflected in it and almost everything actually had been derived from it. The tree symbol was primarily an "image," a "picture." It could and had been used as a counting system which simultaneously could serve as an "order of letters"—as an alphabet. It could be, however, used for other purposes, too. We know one of such specific applications—the musical application. The musical scale and the musical "harmonies" could be reconciled with the main features of the symbol. Hence, the upper part of the symbol could be adopted to the designation of the "fourth" which was one of the perfect consonances measured by the Pythagoreans with the help of a so-called "monochord." Since the characteristics of the fourth led them to the ratio 4:3, the upper part of the tree symbol could be perfectly well appropriated to that specific task. The lower part could be used for quite similar purposes: The fifth implies the ratio 3:2. This relationship is clearly reflected

by the three twigs on the left side and by two twigs on the right side. The whole represents the musical scale as such. Even a "monochord" might be supposed, if one admits that the clumsy eighth twig could be interpreted as the weight by which the musical ratios were calculated. However, I do not think that this musical interpretation actually had induced the ancient scientists to arrange the twigs of the tree symbol in the peculiar manner which gives a unique aspect to the tree of Kylfver. The discoveries of the Pythagoreans in the field of music seem to have been added to the already established characteristics of the tree symbol. Of course, they got their ideas probably by contemplating again and again the main source of ancient science. The fact that the sacred symbol could be utilized for musical measurements of a new type (ratios) must have strongly encouraged them and strengthened their confidence. The arrangement of the twigs seems, however, to be due to a far more significant motive. We know that the numbers 3, 4 and 5 reflect the three main counting systems and their combination. Behind this significant generalization, which was destined to become the phocal point in the ancient "science of numbers," we might find a more initial concept. This concept, too, is numerical. But its nature is different from the conception of the tree symbol to which we are used. We have to introduce the notion of "space" into our usual conception of the tree symbol. Of course, an "image" is relevant to space. Moreover, we are obliged to recur to the concept of space, while discussing the "origin of similarity and of dissimilarity" to which Plato is referring in his characteristic of the "nuptial number." The three twigs on the left side occupy the same space as four twigs on the right side. The numbers reveal "dissimilarity," whereas "similarity" might be found in the fact that the twigs occupy a similar space. A quite analogous consideration might lead us to a far more precise definition of "similarity" and "dissimilarity." Since the tree symbol is supposed to be a "synopsis" of the entire ancient science, we might not be surprised to find there a well known Pythagorean theorem.

Let us consider the upper part of the tree symbol of Kylfver (Figure 85) :

The three twigs on the left side and the four twigs on the right side seem to form a close system. The fifth twig is traced so, as to suggest a certain relationship with this system, but a relationship of a different character. The fifth twig seems not to

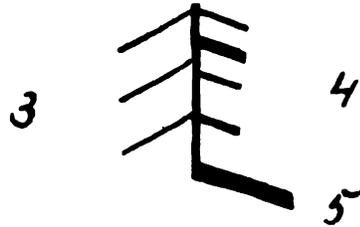


Figure 85

be involved into the notion of “similarity” or “dissimilarity.” Its position is utterly independent, “unique.” All in all, one might say that the three twigs on the left side, the four twigs on the right side and the “selfsufficient” fifth twig form altogether a “system” which corresponds precisely to the entire upper part of the tree symbol. The numbers 3, 4 and 5 seem to reflect the numerical characteristics of that symbol. How would we apply the notion of “similarity” and “dissimilarity” to this “system”?

The solution seems not to be very difficult. It is strongly favored by the Pythagorean nature of the entire symbol which already has been stressed previously. The “dissimilarity” is clearly demonstrated by the difference in the number of twigs. The “similarity,” however, is reflected in the fact that these “numbers” designate similar elements of a system. They seem, in fact, to represent the two cathetes of a rectangular triangle in which the fifth twig—“five”—plays the rôle of the hypotenuse (Figure 86) :

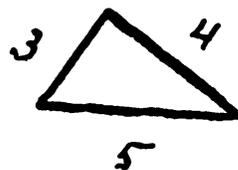


Figure 86

Thus, the “similarity” is illustrated by the fact that both sides of the upper part of the tree represent both cathetes. The “dis-

similarity" is determined by the difference in their numerical value. The hypotenuse completes the picture. The correspondent values are 3, 4 and 5. A rectangular triangle seems to solve the mystery of Plato's definition.

The resulting triangle is often called "the Egyptian triangle." The Egyptian origin of this triangle is quite probable. It seems, however, that the Egyptian mathematicians were able only to rationalize this specific case, whereas Pythagoras succeeded in finding a general formula which assumes that the sum of the squares of both cathetes of a—of each—rectangular triangle is equal to the square of the hypotenuse. In our case, the theorem would have the following aspect :

$$3^2 + 4^2 = 5^2$$

Pythagoras might well have generalized this equation. Moreover, he might well have developed the method of proving the theorem, although the relationship between numbers and concepts of space (square) probably was known to the Egyptian mathematicians. This relationship was an important acquisition of the ancient mind. The idea that the square of a number is "congenial" to a square in the planimetric sense is a significant abstraction. In any case, the upper part of the tree symbol seems well to imply the famous Pythagorean theorem which is universally known under the somewhat indiscreet name of "the trowsers of Pythagoras." It might appear surprising to find the trowsers of Pythagoras hanging on the tree of Kylfver, but that seems, nevertheless, to be the right place for them. One of the most important achievements of the ancient "science of numbers" had necessarily to be included into the "synopsis," though in a very particular form. There is a place in the "Republic" which seems to indicate that Plato was much more concerned with the external appearance of the tree symbol than with abstract planimetric concepts. Speaking of Plato's "nuptial number," Hultsch makes the following surprising remark: "Plato considers one and the same value first as a square and then as a rectangle, i.e., according to our contemporary terminology as a product first of equal factors and then of unequal factors . . ." ¹⁸¹ Such a confusion may appear almost incredible. It becomes comprehensible, if we assume

that Plato was operating not with entirely abstract concepts of space, but with concrete characteristics of the tree symbol as such which in the case of the “nuptial number” had to be the chief source of all his inspirations. The planimetric peculiarities of the tree symbol implied certain irregularities which might well have led Plato to the above-mentioned astonishing confusion, without invalidating, however, the final result of Plato’s “nuptial” calculations.

We are facing the following figure (Figure 87) :



Figure 87

If all twigs are straightened, the figure receives the following aspect (Figure 88) :

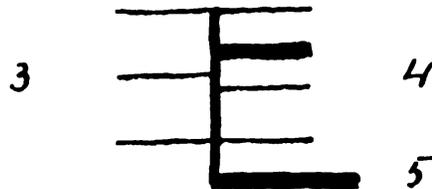


Figure 88

One might say that the addition the two rectangles characterized by the number of twigs (3 and 4) is here—but, of course, only here—to the square of “five,” i.e., of the fifth twig.¹⁸² This phenomenal “theorem” is applicable to the external form of the tree symbol only. Nevertheless, such a consideration might well have occurred to Plato’s mind. Since Plato himself stresses the fact that under certain circumstances the relationship between numbers does not depend on the introduction of other numbers—factors—he might well have meant that even the tree symbol as a whole is consistent with his curious “theorem” (Figure 89) :

The number which should complete the picture is, of course,

the number "ten." As we know, the tree symbol of Kylfver is a fairly decimalized system. The decimalization is clearly expressed in the peculiar length of the fifth twig and in the implicit characteristics of the thick and short eight twig. The number "ten" is conspicuously "suggested" by all chief characteristics of the

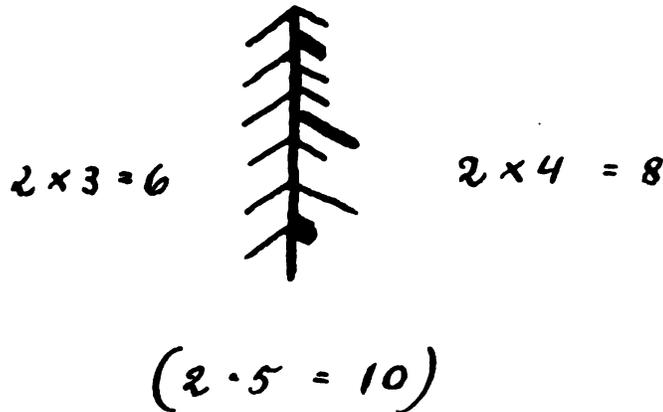


Figure 89

tree symbol. However, this number is not traced—it remains in the air as an "ideal" toward which the entire system is evolving. That seems to correspond perfectly well to the idealized significance of the decimal system in Plato's "science of numbers" and to the rôle of the number "ten" in the Pythagorean speculations. "Ten" was the "most perfect number" among all "arithmoi teleioi" of the Pythagoreans. Hence, Plato seems to have decided—and he was utterly correct in that assumption—that the introduction of the factor 2 does not change the chief theorem. In fact, $3^2 + 4^2 + 5^2 = 50$ and $2 \times 3^2 + 2 \times 4^2 + 2 \times 5^2 = 100$. Thus Plato actually suggests the use of the entire symbol as an equivalent of the number "one hundred"—on the assumption of its "spacial characteristics." Actually, the Runic sign for "one hundred" seems to reflect that idea (Figure 90):



Figure 90

Obviously, squares and rectangles are here helplessly confused and, moreover, the rectangles and squares are here used in order to confirm—in a wrong way—a theorem concerning some particularities of rectangular triangles. However, in the “light” of the tree symbol everything seems here to be justified—particularly the result. The final symbol had actually been used as a Runic sign for “one hundred.” We know that a different consideration might have inspired this particular form of the sign. The addition of the numerical values of all twigs on both sides leads us to the number 100, too (left side 64; right side 36; together 100). Plato’s speculation coincides with the more logical one. That, of course, might have stressed in his opinion the meaningfulness of the tree symbol as such. His “nuptial number” is primarily an apology of the ancient “science of numbers”—a complete exhibition of all its qualities. The tree symbol as such is, of course, the most significant part of that science. It had to include all possible expressions of ancient wisdom. Plato continued the efforts of his predecessors. His purpose was to accommodate the chief symbol to all achievements of the scientific thought. The tree symbol had to remain a universal key to ancient wisdom. It seems to have given birth to the “science” of the ancients. The legend on the tree of knowledge clearly implies that idea. Now science was unwilling to leave its old shape. The resulting conflicts had to be “appeased” at any price—even at the expenses of “logic” as such. The “tree of knowledge” seems to have sometimes thrown its own shadow on the ancient mind.

The relationship between the three numbers 3, 4 and 5 has allowed Plato to find a bridge between the three systems of counting and, thus, to give a particularly sophisticated interpretation of similar efforts made by his predecessors—in particular, by the authors of the “Genesis.” Of course, we do not know how far the “nuptial number” might be called an elaboration of Plato’s own mind. He must have closely followed some patterns composing the very essence of the esoteric doctrine of the Pythagoreans. One of the most important implications had been already mentioned in a previous context. The three counting systems had each its own particular meaning. The octaval system represented the “empirical” world, since it was itself based on an “empirical

thing”—on a tree or, at least, on an “image,” “eidolon,” of a tree. The Babylonian counting system had a cosmological significance. We therefore find it in the creation myth of the Bible (which is “sextal” and, hence, “sexagesimal”: $60 = 6 \times 10$) and at the very beginning of the Platonic equation called “the nuptial number” (cf. the number 60). The significance of the decimal system is, too, clarified. It is an “ideal system” representing “true reality.” In fact, it had been historically an ideal of many generations of ancient mathematicians. The history of the Runic numerals gives us a magnificent picture of this long struggle for “decimalization.” An interesting additional implication of the “nuptial number” must be stressed in order to understand its entire significance. This implication is quite comprehensible in the light of Plato’s general approach.

We have seen that the tree symbol as such is a “table of numbers” and, of course, a potential “alphabet”—a general expression of “order.” The “squaring” of this table leads us to planimetric (geometrical) concepts clearly revealed in the presence of the well known Pythagorean theorem concerning “rectangular triangles.” Moreover, the squaring of the number of twigs on both sides of the tree symbol also leads us to an important implication—that of a potential decimalization of the symbol (6 twigs on the left side, if “squared,” give us the number 36; the twigs on the right side give the number 64; that leads us to “one hundred”). A similar result can be achieved through an addition of all numerical values of the twigs ($64 + 36 = 100$). In both cases the respective numerical values are inverted, and that might well have been an additional justification of the notion of “similarity” and of “dissimilarity.” The emphasis must be, however, put on “squaring” as such. It meant an application of numbers to space. That was an important achievement of the ancient scientific thought. It probably was prior to the Pythagorean “science of numbers.” We find this idea in the “Egyptian triangle” and its full realization in Pythagoras’ theorem. But what was the meaning of the second squaring which seems to dominate Plato’s “nuptial number”?

The answer seems easy. It meant that a number was “living in time.” The power 4 expressed the projection of a number into

a "fourth" form of existence. The first squaring meant "space." The squaring of a squared number meant "time." The fourth power determined the "astrological" character of the "nuptial number." Numbers could "live" in time, too. The life of the universe—the notion of the "world year" confirms that—was expressible in terms of a "double squaring" of a number which, of course, had necessarily to be a particularly significant number. The number 60—the chief unit of the Babylonian sexagesimal system—fulfilled that purpose. "The meaning of that entire passage can be interpreted as follows," says Kafka: "The life of each human being depends, in a general way, on numbers . . . each moment is determined by the respective numerical constellation of the world as a whole . . . that is a general presupposition of any astrology."¹⁸³

The first squaring gave to a number a "spacial" existence. The second squaring made it a "force" relevant to time and determining everything itself was relevant to time. The "fourth power" of a number defined its particular efficiency in time. The fourth power of the number "sixty"—the number 12960000—determined the "life" of the world as such. It was a "world year"—a cycle in the life of the world as a whole. Nothing could be exempt from the influence of that number. We have seen that Plato has intentionally connected the "empirical" octaval numbers with the astrological number "sixty" ($3 \times 4 \times 5 = 60$). He has subjected the empirical world to astrology. The idea is old. The creation myth of the "Genesis" is "astrological," because the heavenly bodies had been created in this first week of "life" as such. Hence, the cosmogonic conception had somehow to prevail in all matters of creation, of life, etc. The "creation" of human beings—the conception of a child—was submitted to the influence of the "nuptial number" in no sense less than the creation of the "ideal city." Plato is continuing the old line of thought which became first clearly expressed in the Bible and then seems to have formed a chief element of all ancient encyclopaedias. We have already discussed this question in an earlier context.

The significance of the decimal system is well stressed in Kafka's definition of the "nuptial number." "It is not impossible," says Kafka, "that he (Plato) had here in mind to impose

to the 'Divine,' to that which is related to the soul, the number 10 as a ruling number (ruler) . . ." ¹⁸⁴ Hence, the decimal system appears to Kafka as being destined to be used in "pure mathematics," whereas the sexagesimal system should be applied only in the empirical science of numbers. The first suggestion is well motivated and might have occurred to Plato's mind, too. The second assumption, however, seems to be erroneous. The sexagesimal system is essentially "cosmological" and "astrological." The real "empirical" system was the octaval system which Plato was anxious to conceal from the eyes of the non-initiates. Historically this system seems to have preceded the two others. It is, in fact, closer to the most ancient symbols of the Indoeuropeans. The analysis of the octaval Gothic script and of the Runic numerals has permitted us to find the very roots of the octaval conception of "order" which seems to have prevailed in the early days of the Indoeuropean culture.

Plato's philosophy of ideas gives an additional confirmation of the particular antiquity of the octaval tree system. The tree symbol which forms the octaval system is close to "nature" as such. It is a "tree"—a "tree of knowledge"—which might well be called an "eidolon," an "image" or "shadow" of a tree, according to the specific terminology of Plato's philosophy of ideas. Knowledge starts with the contemplation of such "shadows" and "images." Hence, if one is inclined to accept the thesis of the presence of a cultural-historical element in Plato's philosophy, the octaval tree system actually has been the earliest form of knowledge as such—a first abstraction of the human mind which still was preserving the real empirical source of its inspirations. The "tree of knowledge" continued to dominate the mind of the ancient thinkers, despite the obvious impossibility to reconcile all acquisitions of the ancient science with an initial tree symbol. We have seen to what grotesque confusion such a conservatism eventually could lead. Even the clear-minded Plato was subdued by the traditional methods of the initiates of the Pythagorean school.

The tree symbol is placed in the very center of Plato's scientific meditations. "Knowledge" and "life" are both conceived in terms of the sacred tree symbol. "Life" is determined by numbers and numbers are nothing else than a rationalization of the image of a

tree made by "some Prometheus" who seems to correspond perfectly well to Plato's conception of a "true philosopher." A "true philosopher" starts by contemplating a "shadow" of a thing and finishes by getting the right "idea" of its very essence. The number 12960000 "rules the universe." Man's life—even in the "ideal city"—is intimately connected with the ruling number. As Kafka and Hilprecht demonstrate, "a day in man's life corresponds to a year in the life of the universe." The "nuptial number" determines "growth and decay,"¹⁸⁵ birth and death. In particular, it "determines the aspect of the moment in which a child is conceived by its mother." Man's life is utterly dependent on the numerical constellation of the universe.

The decimalization of the ancient octaval system led the ancient thinkers to the idea of a higher and purer reality. We have followed the growing tendency toward decimalization within the history of the Runic numbers. It is almost incredible that this relatively simple phenomenon should have been the source of upmost significant and far-reaching philosophical speculations. "Imagination" as such—in a very literal sense—has led Plato to one of the most important contributions to philosophy and history which have ever been made. His intuition was right, and he might well have felt that himself. Otherwise he would not have so eagerly accused the "lying myth-makers" of the Greek antiquity—Homer and others—of having distorted the real past of the Greek nation. Plato was able to find out the way by which insignificant empirical phenomena gradually became spiritualized and rationalized, and finally developed into an elaborate system of "detached"—rational, symbolic—human thought. Thus, he helped to define the very foundation of our contemporary reasoning. His philosophy of ideas has many brilliant interpreters among philosophers of the modern school. But the cultural-historical background of Plato's theory had been completely neglected. There are some reasons which may justify this omission. Plato himself was, to a large extent, "antihistorical"—opposed to history as such. He thought to exercise himself in "free thinking," in an unlimited speculation in which the mind is submitting itself to nothing, except "true knowledge." He could not be completely unaware of the fact that his theory was very close to

cultural history. Plato's "antihistorism" might be partly rooted in the obligation and in the desire to maintain secrecy, and to conceal the real sources of his knowledge from the non-initiates. He did never refer *expressis verbis* to any "esoteric" science and did never reveal the names of the adherents of the Pythagorean school. As soon as we begin to understand the actual sources of Plato's reasoning, a set of entirely new problems arises which must be answered. Did Plato know the traditions which form the content of the so-called "Genesis"? Was he consciously following patterns of thought which might have been considered to be obligatory for each member of the Pythagorean community? How far was Plato "creating" his theory and to what extent was his "science" a mere product of erudition? The tree symbol which forms the focal point of his "science of numbers" might, perhaps, disclose to us the real background of the Platonic philosophy. The tree symbol leads us directly to the "Genesis"—to the "Holy Script"—which might contain a last key to the problem of "ancient wisdom." Plato's philosophy is a significant episode in the history of ancient thought, but, of course, not the only episode which throws light on the very beginning of science as such.

CHAPTER XI

THE TREE OF KNOWLEDGE

The task of planting a "tree of knowledge" in the very center of Plato's "ideal city" is in no sense an easily justifiable operation. On the contrary, the interpolation of a symbol, to which Plato does not refer explicitly, might be considered as a very unusual and risky enterprise. In fact, all indications collected in the preceding exposé have the character of "indirect evidences." Plato does not mention a "tree" neither in the "nuptial number" nor elsewhere. It seems to be implied in his "science of numbers" and even in his philosophy of ideas. It is not accidental that Plato came to a complete identification of "numbers" and "ideas." In his conception, based on the tree symbol, numbers actually were "ideas"—even the most typical of all ideas. The history of the tree symbol as such forms the backbone of the Platonic philosophy of ideas, because it seems to prove that an early contemplation of a "shadow," "image" or "symbol" could and actually has led the human mind to a significant "idea"—even to a set of ideas—forming the very foundation of ancient science and of Plato's philosophy as well. Thus, Plato's philosophy together with his "science of numbers" seems both to rely on the octaval tree system.

Various other considerations concerning the choice of numbers, their form, their meaning, their curious formulation, their place in the conception of the "ideal city" seem to confirm both, Plato's acquaintance with a tree symbol of the Kylvfer type and his actual use of that symbol. The analogies with the development of the related Runic script are additional evidences of the actual existence of an esoteric script and of Plato's reliance on that script. He seems to have belonged to the Italian branch of the Pythagorean school and his "initiation" might well have taken place during his first sojourn in Sicily. There is nothing unnatural in such a supposition. Far more complicated is the problem of the relationship between the tree symbol of the Pythagoreans and the "tree of knowledge" of the "Genesis."

I would like to recall the “organic” metaphors which occur in the “nuptial number.”¹⁸⁶ Plato speaks of “growth” and of “decay.” We know that the concepts of “similarity” and of “dissimilarity” are, too, somehow connected with an “organic” conception of the inherent ambiguity of the initialed whole. These notions are derived from a rationalization of the “twigs” of the initial symbol—of their number and, partly, of their form. We have seen, too, that Plato’s suggestions concerning “sound nurture” seem to represent a far echo of the Biblical “eating from trees.” The “eternal life,” of which our ancestors were deprived after their expulsion from the Eden, has an indirect correspondent in Plato’s “ideal city” which, however, is not “eternal” in the proper sense. It, too, is subjected to its astrological fate which makes no exceptions and dominates all that had been created by man and by man’s mind. The State of Plato’s dreams is purified from all evils, but it cannot be protected from decay. The fact that a tree symbol covers the main elements of Plato’s “science of numbers” and those of his philosophy of ideas as well—that fact is, of course, a chief argument in favor of a probable relationship between the “Republic” and the “Genesis,” between the “tree of knowledge” of the Bible and the tree symbol of the Pythagoreans.

On the other hand, the real cultural-historical background of Plato’s philosophy, which he himself might well have felt and appreciated, seems to coincide with the most significant implication of the “Genesis.” Both sources, whether related or not, rely on a similar interpretation of the very origin of science and culture. The idea of “regularity” which is inherent to the very nature of a tree—particularly of some trees, as the fir tree and others—might well have given the first impulse to the human mind.¹⁸⁷ Thus the idea of “order” originated and, simultaneously the idea of the naturalness of “order” as such. Together with the idea of “growth,” which received here the expression of a “growing number” of twigs, the idea of “order” became a first scientific rationalization of a “thing,” of a natural phenomenon and, hence, of nature as such. Many ancient conceptions of “number” seem to go back to “trees” and “plants.” The attitude of the “Genesis” to this particular cultural-historical problem is

almost a prototype of the far more elaborate cultural philosophy of the Greek thinkers. I do not mean by that that Plato actually knew the text of the legends composing the "Genesis." His conception of the various problems, as we will see it later, seems to be close to an initial layer of the Old Testament. This layer had been taken over by Semitic thinkers and completed according to their own cultural standards. Nevertheless, the initial sheet is still distinguishable and can be reconstructed in the light of the Platonic meditations. Plato seems to be much more reliable than the "Genesis" as far as the "history of ideas" as such is concerned. We will face this problem in discussing Plato's metaphor of the "Ship of State" which has its correspondent in the legend on Noah's ark.

Let us now turn our attention to the "tree of knowledge" of the "Genesis." If our previous assumptions are justifiable, the "tree of knowledge" would, of course, appear in a new light. It could be called a crystallized product of cultural history. It marks, moreover, a most significant discovery. We know, to what circumstances the meaning of the number "seven" might be attributed. The history of the "tree of knowledge" coincides with the history of counting, of science, of logic and of moral judgment. Tree worship combined with an "active contemplation" of an early "image" of a tree was followed by an ingenious rationalization of a picture, i.e., of a tree symbol. The result was magnificent. Science as such came to life and became the predominant factor in the later cultural history.

We have planted a tree in Plato's garden. Let us see how the same operation had been fulfilled in the "Genesis."

The "tree of knowledge" is one of the chief images of the "Genesis."¹³⁸ "In the land of Eden, to the far east,¹³⁹ God the Eternal then planted a park, where he put the man whom he had moulded. And from the ground God the Eternal made all sorts of trees to grow that were delightful to see¹⁴⁰ and good to eat,¹⁴¹ with the tree of life and the tree that yields knowledge of good and evil¹⁴² in the center of the park."¹⁴³

Already this short quotation from the "Genesis" seems to reveal an intimate thematic connection between both sources, the "Genesis" and Plato's "Republic." In fact, we find here a refer-

ence to the "form" of the trees which were "delightful to see." We know what peculiar importance the "form" of various numbers has. A harmonious distribution of twigs distinguishes all Platonic numbers which aim at being called "perfect." The "eating from trees" finds an equivalent in Plato's "vegetarianism." The Eden is echoed by the concept of a purified "ideal state." The antithesis of "good" and "evil" has many analogies in the Platonic philosophy. We know some of them. "Similarity" and "dissimilarity," "growth" and "decay" and the entire set of "opposites," which will be discussed later, reflect the initial pair of opposites suggested in the Bible. Moreover, it must be stressed that the contrast between the "good" or "just" and the "bad" or "unjust" forms the main theme of Plato's "Republic." The "ideal city" as such is an expression of the "good," whereas Athens of the IV Century may be considered as representing the "evil." Plato's entire method of reasoning is based on "antithetical opposition." The idea of "distinction"—a cellular form of knowledge—is clearly expressed in the tree symbol as such. One of the most initial distinctions is that of two sides—of the right side and of the left side. The tree symbol exemplifies this primary pair of opposites. In the normal symbol of the Kylvver type we find six twigs on the left side and seven on the right side. That, of course, implies the idea of "even" and "odd." In the tree symbol of the initial type, which, as we will see later, seems to represent the initial form of the "tree of knowledge," eight twigs are placed on the left side and seven on the right. That does not change the antithetical implications of the tree symbol. The "growing" of the trees in the Eden seems to be quite connectable with the concept of "growth" in Plato's "nuptial number." The idea of "decay" has its correspondent in the "Genesis," too. It enters later and is clearly expressed in the theme of Adam's and Eve's expulsion and of their later death. I would like to add that contrary to the indications of the "Genesis" Adam died when he was only ninety-six years old. The "official" age of 930 years is nothing else than a key number which must be "transliterated." This operation will be described later.

We all know how Adam and Eve came to commit their original sin.¹⁴⁴ A fatal whisper of a serpent seduced them. They broke

the prescription of God, the Eternal, and were both expelled from the paradise. One of the immediate consequences of the sinful eating from the forbidden tree was the realization of the sexual nature of men. This initial theme seems to have a direct correspondent in Plato's so-called "nuptial number." We know that the "nuptial number" was supposed to have a particular significance in matrimonial matters. The moment of "conception" was dependent on the respective numerical "constellation" (Lat. *Stellastar*) of the universe. The "nuptial number" contains a general formula of all such constellations.

The Original Sin seems to be reflected in the tree symbol as such. In fact, the eighth twig on the right side can be interpreted as a peculiar "crystallization" of the events described in the "Genesis." We have to proceed, however, with the greatest care. Otherwise our assumptions would be easily and readily rejected.

The Runic number "one hundred" has the following form (Figure 91):



Figure 91

The sign for "one hundred," as we know, implies the idea that the eighth twig on the right side had to be used in this particular case, where it could be omitted in all other designations of numbers. Hence, the end form of all signs of the tree symbol suggests the idea of an initial form in which both sides of the tree had an equal number of twigs—eight twigs on each side. It is also not excluded that the left side had six twigs and the right had eight twigs. But the latter form was not the initial, though it seems to correspond much better to the tree symbol of *Kylfver*. We will see later that among the numbers of the "Genesis" we often find the numbers "seventy two," "sixty four" and "fifty six," which all pre-suppose the presence of seven or eight twigs on the left side of the tree symbol. Hence, the initial form of the octaval tree system seems to imply the possible use of eight twigs on both

sides of the tree.¹⁴⁵ The “tree of knowledge,” at the moment when it was planted by God, the Eternal, might well have had the following aspect (Figure 92):



Figure 92

If we compare this figure to the tree symbol of Kylvfer, completed by two twigs on the left side, we receive the following “image” (Figure 93):



Figure 93

The difference is obvious—and, I might say, “self-speaking.” The eighth twig is “broken”—shortened by the sinful eating from the tree. This “breaking” of a branch gave to our ancestors the forbidden knowledge. The symmetry between both sides of the tree was lost, and the perfectness of the form had faded away forever. However, “knowledge” as such was achieved by our ancestors, and this “knowledge” was primarily a “scientific” knowledge. In fact the symbols of the “Genesis” seem primarily to reflect the use of the “tree symbol” as such. Not only the idea of “opposites” is implied in the result of the breaking of the eighth twig on the right side; not only the realization of the sexual nature of men which in itself is, too, an expression of “dissimilarity” and of “opposition” (of two sexes). Something much more relevant to “science” seems to be explicitly contained

in the Biblical myth. The use of the tree symbol gave birth to both, numbers and script, counting and writing. The notation of numbers and, hence, of letters ¹⁴⁶ was, of course, a primary acquisition of the ancient mind and surely the most important discovery among all human discoveries. Moreover, as Plato's use of the tree symbol shows, geometrical concepts could be, too, partly derived from, partly combined with, the initial tree symbol. That was real knowledge—knowledge in the broadest sense of this word. It was a first condition of all science. The "Genesis" seems to give a first representation of the tree symbol. We will see later, that the "Genesis" gives a first application of the sacred tree script, too. The name of the tree itself is upmost expressive. It stresses the cultural-historical significance of the tree symbol and its all-embracing "scientific" character.¹⁴⁷ In Plato's exposition, the tree symbol represents a synoptical survey of the entire content of his "science of numbers," and this science, as we know, determines everything—all elements of the universe. Hence, the "tree of knowledge" is a universal key to "order" and to the understanding of "order." A similar significance must be ascribed to the tree symbol of Kylfver, too, despite the fact that the number of twigs on the left side had to be changed in accordance with practical needs. But the Runic number "one hundred" seems to confirm the presence of a direct connection between Runic tree numerals and the "tree of knowledge"¹⁴⁸ in its initial form (eight twigs on each side of the stem).

There is, however, one indication in the "Genesis," which seems to contradict the later interpretations of the "tree of knowledge." The "Genesis," in fact, mentions two trees—a "tree of life" and a "tree which yields knowledge." Plato seems to operate only with one tree symbol which embraces both, "life" and "knowledge." I doubt, however, whether originally the "Genesis" had in mind two different trees. The two trees seem to represent two names of a single tree. The text of the "Genesis" contains a curious contradiction. Was it actually possible to plant two trees in the center of the park? That must have been a very difficult task. The character of the correspondent phrase seems to show that the hand of a glossator had been active in amalgamating two versions of the legend. A single tree had two names, as in Plato the

octaval tree symbol both notions—that of life and that of knowledge (cf. the conjunction “and” in the phrase “and the tree which yields knowledge”; however, an analysis of the text should not be very promising, because it probably had been worked over many times). The “doubling” of the initial tree might have been partly inspired by the mentioning of “four rivers” in the next following sentences. That, too, is a guess (cf. Section II, Chapters 11 and 12). I would not be, however, surprised, if the four rivers would be found to symbolize the four “arms” of the symbol of the cross. We know how intimately that symbol was connected with the notion of a “tree” in Gothic “science” and religion.

Let us consider the text of the “Genesis”: “You are free to eat from any tree in the park, he (the Eternal) said, but you must not eat from the tree that yields knowledge of good and evil, for on the day you eat from that tree you shall die.”¹⁴⁹ A “tree of life” is here not mentioned at all. Could Adam and Eve eat from it? One might suppose that they were fully entitled to do so, since only the “tree of knowledge” was declared to be intangible. Nevertheless, a later passage should seem to destroy that assumption: “Man has become like one of us, he knows good and evil. He might reach his hand now to the tree of life also, and by eating of it live for ever.”¹⁵⁰ The words “now” and “also” indicate that Adam and Eve had not yet eaten from the “tree of life.” The “tree of life” seems also to be a “forbidden” tree. Both trees, thus, were forbidden, although the earlier passage forbade only the eating from the “tree which yields knowledge.” Moreover, in the well known dialogue between Eve and the serpent only one tree is mentioned as being both, forbidden and placed in the center of the park: “We can eat fruit from the trees in the park, God has said, You must not eat from it, you must not touch it, lest you die.”¹⁵¹ We know, to what consequences this “touching” led our ancestors. They broke the eighth twig of the tree.

It seems that the main version referred only to one tree. The “tree of life” was altogether the “tree which yields knowledge.” By committing their crime, Adam and Eve learned to know “life” as such. Life contains both—good and evil. The eating or breaking produced an upmost meaningful asymmetry which received many interpretations and became an important source of philo-

sophical speculation. "Distinction" as such was the leading idea clearly reflected in the "table of opposites" of the early Greek philosophers and in Plato's "Republic" as well. "Genesis" itself makes use of the "power of discrimination." We find there the notion of several pairs of opposites: good and evil, eternity and mortality, male and female. Implied are the notions of "symmetry" and "asymmetry," "similarity" and "dissimilarity," "right" and "left," "even" and "odd." All these categories are found in Plato's "Republic," too. We have partly discussed them in previous contexts.

"Knowledge" and "life" are both combined by Plato in the formula of his "nuptial number" which, too, is based on the tree symbol. It seems, however, that Plato was already using a tree symbol of the *Kylfver* type, i.e., a symbol with six twigs on the left side, instead of the initial eight. Otherwise the presence of the number "fifty" which was an "end number" in the tree system of *Kylfver* would be less comprehensible (cf. the equation $48 = 50 - 2$). But that makes no difference. A tree of knowledge dominates Plato's wisdom, as it dominates the most significant legends of the "Genesis," too (the real origin of the number 48 will be explained later).

Certainly, no other symbol could express the same set of ideas with an equal precision. The tree is a source of knowledge *Dei gratia*. Its growth produces a significant change in its appearance. Each change is reflected in time and in space by a regular increase in the number of twigs. Everything seems here to be naturally "numeralized." A tree is, of course, the most perfect numerical system which nature could give us. This system is "natural." This fact seems to have deeply impressed the ancient mind. They were themselves active in widening the first achievement of the mind. Their "imagination" was encouraged by the historical truth which was inherent to the "image," from which they tried to derive all knowledge and to which they were ready to subject all life. Plato himself is an outstanding representative of that ancient tradition.

The chief moral problem of the "Republic" is that of "justice." It implies a distinction between the two opposites—good and evil. Of course, the concept of "justice" is a sophistication of a more

initial theme. Asymmetry, inequality, dissimilarity and their opposites lead us to the notion of good and evil, of justice and injustice. Once more, the tree symbol forms the very foundation of Plato's ethics. Primitive natural facts, thus, may become scientific and moral concepts of the highest significance. A tree, then the "image" of the tree, finally a rationalization of that "image" mark the steps of the "active contemplation" which created "knowledge." In Plato's "Republic" the good, the true and the beautiful are inseparable. The "just" is an emanation of all these concepts. The "Genesis" echoes that conception and stresses the genetic unity of all these qualifications. The tree is "delightful to see," "nourishing" and "yielding knowledge."

Particularly important seems to be Plato's care for "truth." His dialogues all tend to establish "truth" in various fields of human knowledge. A "true philosopher" is entrusted with this higher task which man is supposed to fulfil. Plato's concept of "wisdom"—"sophia"—is an equivalent of "true knowledge" in its broadest and deepest form. We know how such a knowledge could be achieved according to Plato's views. Plato was reviving the historical route, which the human mind had chosen.

We will see later, how the "Genesis" attempted to make use of the sacred tree script. The numbers of the "Genesis" are far from being "irrational." On the contrary, they are key numbers which conceal from the eyes of the non-initiates the real numbers—the numbers of the tree script. When I first became interested in the problem of Plato's "ideal numbers" and succeeded in determining their connection with the Kylfver tree—at least, I dreamed of having succeeded in my attempt—the nature of the Biblical numbers seemed still to remain an insolvable problem. They seemed, in fact, to be utterly detached from their real rational root. Lemek's age—777 years—seems to be merely symbolical. "Seven" is a good, a "lucky" number. It could well be applied to the age of one of the patriarchs who, moreover, was the father of a particularly lucky son, Noah. Noah himself "had found favors with the Eternal," and might be called the happiest figure in the whole Bible. However, the Biblical numbers are not irrational. We will see that they lead us directly to Plato's "ideal numbers" which, thus, become a significant part of the divine tra-

dition. "The gift from heaven to mankind" seems to have included Plato's "science of numbers" and that of the "Genesis" as well.

If our assumptions are justifiable, the "Genesis" receives an utterly new meaning and a new historical interpretation. We have to face a problem of the "pre-Semitic roots" of the Biblical legends. Too many indications seem to lead our mind toward the thesis of an Indoeuropean origin of the main legends of the Bible. Their scientific implications are far more typical of the Indoeuropean mind—particularly of the Greek mind. "Love of knowledge" distinguished the Greek mind from the psyche of the "money loving Phoenicians" and from the "high spirit" of the Scyths and Thracians. Of course, the Bible as such is a crossing of many legends and of many versions of these legends. Let us briefly discuss these questions in the next following chapter.

CHAPTER XII

THE WORD "SA"

The origin of the earliest layer of the legends, which form the "divine tradition," is not quite certain. One of the key-concepts which might disclose to us the origin of the legend on the "tree of knowledge" is the Sanskrit word "sa." This concept seems to be a unique creation of the human mind. It has the following almost incompatible meanings: snake, wind, bird, knowledge, fence, musical sign. All these meanings are pressed together within a single word¹⁵² which, thus, receives much more the character of a common "symbol" than that of a "word" in the proper sense. The significance of this word or symbol seems to correspond to its unique meaningfulness.

In fact, the concept "sa" seems to include the most important elements of the Biblical legend on the "tree of knowledge." The "snake" and "knowledge" as such are reproduced in substance. The "bird"—let us remember the soothsaying birds which were mentioned in connection with the Gothic bracteates and the Russian "Dove's Book"—is probably "doubling" the serpent. Similarly, the whispering "wind" might be confronted with the fatal whisper of the serpent which seduced Adam and Eve. The "fence," of course, corresponds to the "tree of knowledge." Moreover, it stresses the esoteric character of knowledge. The "Genesis" speaks of a forbidden tree which had to remain untouched and "uneaten." The "fence" seems to express these ideas in a perfect manner. The Eden is supposed to be surrounded by a fence. The only gate leading to the park is guarded by an angel armed with a sword. Adam and Eve were prevented from returning to the place where they had committed their great original sin—the sin of disobedience. The Sanskrit word "sa" seems well to imply all these details of the Biblical legend. The "Genesis" appears to be nothing else than an elaborate interpretation of the incredibly rich content of the initial concept "sa."

Does that mean that the source of the Biblical legend should be

sought "in the far east," to which the "Genesis" actually is referring *expressis verbis*? It is in no sense excluded that the legends of the "Genesis" actually contain an Indic element. The early presence of Indo-German and even of Indic tribes in the vast Eastern Mediterranean area is an established fact. Since the concept "sa" seems to lead us to the "far East" (as does the swastika sign, too), one might assume that the material of the "Genesis" received a first touch from the Indic mind. However, I am more inclined to interpret the "Genesis" as a crossing of several sources, two of which—the most ancient ones—seem both to be "Indoeuropean." The "Far Eastern" tradition had been doubled by a tradition coming from the European North. Both traditions are Indoeuropean and have a common origin. They are overlapping each other in the "Genesis." This "crossing" is well reflected in the fact that a "fence" is combined with a "tree of knowledge." The "fence" exemplifies the "Far-Eastern" version, whereas the "tree of knowledge" seems to lead us to the Northern fir tree, of the Gothic stone of *Kylfver*. It seems to me that the "planting" of a tree in the center of the Eden reflects a historical event—the crossing of two versions of the origin of human knowledge. The Indic version stresses the esoteric character of that knowledge which, however, is also confirmed in the "tree version" of legend. The "tree of knowledge" was a "forbidden tree." It becomes quite understandable, why Plato—an initiate of the Pythagorean school—concealed his knowledge from his pupils and colleagues. Aristotle was one of the victims of Plato's esoterism. The tradition of secrecy was "initial"—starting with knowledge as such. Plato was obliged to conceal the octaval tree system from the non-initiates. It is astounding, however, that the tree system could remain undisclosed for so many years. A Gothic initiate finally committed the unavoidable act of indiscretion which helped us to unveil the truth.

The Northern tradition seems to have prevailed in Greece. Perhaps, this Northern tradition was—at least partly—an achievement of the Greek mind. Plato remained faithful to the basic beliefs of his people. Delphi, the center of Greek worship, not only had preserved the most fundamental traditions of the past, but seems even to have developed them. The Apollonian myth is,

to a large extent, an elaboration of some initial vague national remembrances. The Apollonian myth seems to strengthen the hypothesis of a Northern origin of the Greeks and of their worship as such. The Solar God allegedly had come from the North. That is perfectly understandable. Sun worship belongs to the North. The inhabitants of the Northern regions are naturally inclined to espouse a monotheistic attitude, since the solar deity was dominating all other "gods." The sun is the main source—the only source—of all that could be called "good," "benevolent," "enlightening." For them sunshine was the sharpest expression of divine benevolence.

Plato does not disguise his sympathy for the Northern regions and for their inhabitants as well: "It would be absurd to suppose," Plato says, "that the element of high spirit was not derived in states from the private citizens who are reputed to have this quality as the populations of the Thracian and Scythian lands and generally of northern regions."¹⁵³ Plato's approval seems to have a slight Hyperborean adumbration. The Solar God, Apollo, appears here in a somewhat unexpected dress of "barbarian virtue." Far more direct and revealing is Plato's acclamation of the sun which seems to place this "divinity" in the very center of Plato's gnoseology: "Which one can you name of the divinities in heaven as the author and cause of this, whose light makes our vision see best and visible things to be seen? Why, the one you too and other people mean . . . for your question evidently refers to the sun . . ." ¹⁵⁴

Another passage stresses even more Plato's "solar attitude": "Is it not also true that the sun is not vision, yet as being the cause thereof is behold by vision itself? That is so . . ." ¹⁵⁵

The sun is the "cause" of sight as such, an "offspring of the good,"¹⁵⁶ the "cause of knowledge and of truth," the "highest divinity" and "the author of this"—of everything: "But when . . . (the eyes) are directed upon objects illuminated by the sun, they see clearly, and vision appears to reside in these eyes . . ." "This reality, then, gives their truth to the objects of knowledge and the power of knowing to the known, you must conceive it as being the cause of knowledge, and of truth in so far as known."¹⁵⁷

How is it possible that the sun is called here the "cause of

knowledge," whereas a quite similar significance had been ascribed to the tree symbol? The answer is not difficult, although one has to admit that as soon as Plato faces the task of "enlightening" his pupils or readers, his language—intentionally or not—becomes upmost "esoteric."

The above-mentioned passage seems to indicate that for a "true philosopher," who understands the relationship between the shadows, images, reflections, pictures of things and their "ideas," the access to "true knowledge" is open. He actually sees "truth" as such. His eyes possess the power of penetrating into the very essence of things. Like the Solar God, Apollo, a "true philosopher," is able to approach the "eidos" of a thing and to reveal it to his own view and to that of congenial fellow thinkers. How is this process of "penetration" actually going on? Plato seems to suggest a very comprehensible explanation. The tree symbol is a shadow thrown by a tree on which the sun had fixed its rays. Thus, the sun creates the first condition of knowledge as such. Even a true philosopher must start by "contemplating" a shadow, image, reflex of a thing. The "shadow" leads a true philosopher to the "idea" of the thing—of the tree. He understands the "real" thing, as it had been "caused" by the "author of all this," i.e., by the sun. Aristotle certainly misunderstood Plato, when he decided to replace the notion of "ideas" by that of the "form." The form alone does not reveal the essence of things. The "imagination" of a "true philosopher" should not stop here. The history of the tree symbol discloses to us the way of finding the "eidos" of a thing. The entire ancient script could be extracted out of a "shadow" of a tree—with the help of an "illumination" coming "from above"—from the sun or from God, the Eternal. In Plato's eyes the sun, i.e., Apollo, is the real "cause of knowledge." The authors of the "Genesis" ascribe all inspiration to God, the Eternal. In both cases, however, "enlightenment" helps to rationalize a shadow, symbol, "eidolon" of a "tree." The enlightened eyes of a "true philosopher" almost coincide with the beams of the heavenly body. The philosopher understands the "thing"—its "cause" and "essence." Thus, Plato gives an additional—utterly historical¹⁵⁸—confirmation of the real connection between sun-worship and tree-worship, between the symbols which

were relevant to sun-worship and symbols which originated in the most primitive conditions of tree-worship. This relationship had already been studied in a previous content (Figure 94):

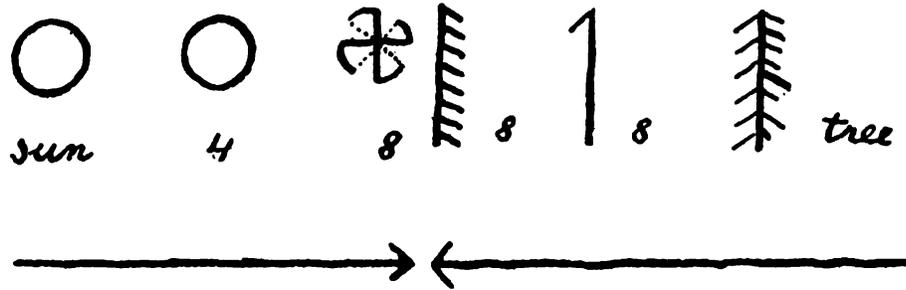


Figure 94

Plato's philosophy helps us to understand the historical rôle of certain "associations" which had a tremendous influence on the development of the human mind. These associations may appear quite accidental to our own developed brains. They were in no sense accidental or casual from the viewpoint of the ancient thinkers. On the contrary, they seemed to be given in nature as such. To a large extent, this naïve symbolism, which replaced an even more naïve, primitive "realism," can and must be justified in terms of nature itself. The idea of "order" actually seems to be inherent to nature, and the primitive mind was particularly successful in finding out the most appropriated manifestations of "order" in nature. The regularity of the form of a tree and the regularity of the form of the sun both implied the idea of "order" and "regulation." Their curious crossing—the mutual overlapping of the correspondent symbols—determined the beginning of an "ordered" and "ordering" scientific reasoning. Plato probably is the most sharp-sighted interpreter of cultural history who has ever existed. His intuition, combined with a serious erudition, proved able to master all difficulties. He invariably found the deepest solution of each problem which occurred to his mind. The problems, which he was investigating, form the very basis of culture. It is curious to state that even when he himself was quite sure of being utterly independent in any of his speculations, his mind virtually was reviving the past of humanity. Plato was

“true” in his visions, because his “imagination” was actually relying on the cultural-historical experience of men. He completed his philosophy by the main elements of an esoteric doctrine which he was obliged to support as a “true Pythagorean” and as a member of the community of initiates. He did it, however, being fully convinced that this doctrine actually contains “truth.” “The ancients,” says Plato, . . . “were superior to us and dwelt nearer to the gods.”

Apollo, the Solar God, was, moreover, the god of the “perfect form.” No other “divinity” could be more congenial to the Pythagorean conception of science—particularly of the “science of numbers.” We know that the Platonic numbers were all “harmonious” and “delightful to see.” That, too, seems to connect his “scientific” convictions with the worship of the sun. The “form” and particularly the perfect form of the main symbols was an important factor in Plato’s philosophy. The esoteric doctrine which we found behind Plato’s teaching must be approached in quite similar terms. The ancient mind had its own prerequisites which always must be taken into account. Otherwise, the walls surrounding the ancient wisdom and the ancient mind would prove to be impenetrable.

A few minor problems may complete the preceding discussion. The phenomenon of “decimalization” had already been discussed in various connections. A last consideration will be necessary when the “decimal” numbers of the “Genesis” will be “reduced” to their real octaval basis. However, the transformation of an octaval system into a decimal seems to have had a very peculiar corollary in the doctrine of the transformation of metals. It seems to me that this idea might well have originated in close connection with “decimalization” as such. The “purification” of metals strongly reminds us of the purifying decimalization of the “empirical” octaval system. Plato reveals in his dialogues a perfect acquaintance with the chief problems of alchemy.¹⁵⁹ Speaking of the three (or four) classes in which the entire population of the “ideal city” had to be divided, Plato compares them to metals—gold, silver, iron, brass. Of course, alchemy might well have been a part of the esoteric doctrine of the initiates. “Transformation” as such seems to characterize a main feature of this

doctrine. We will see that the transformation of numbers is a chief theme of the "Genesis," too. Hence, one should not reject the idea of a close connection between decimalization and transformation of metals. It is not excluded that the Gothic stone of Kylvfer which contains a decimalizable octaval counting system is a prototype of the so-called "philosopher's stone" which, as we know, was one of the magnificent dreams of the pre-scientific mind. Such a stone, as the Gothic stone of Kylvfer might well have moved the imagination of the mediaeval scientists who were virtually continuing the work of their Greek and "Oriental" predecessors. Both types of transformation—decimalization and transformation of metals—were perfectly compatible and even completing and stimulating each other. The "Latyr' Stone" appears here in a new light, as the "philosopher's stone" of the alchemists. Perhaps, the fading of the ancient tradition might explain the alleged "loss" of the "philosopher's stone." Plato seems still to have held it in both hands. I wonder, however, whether he himself did really believe in transformation of metals. The metaphor concerning the classes of the population of his "ideal city" seems to prove the opposite. He thought that a man has to remain faithful to his natural abilities, to his character and to his particular skill. A "true philosopher" must be born as such. Education completes what nature already had disposed of.¹⁶⁰ The same maxim seems to be applicable to the other classes. Hence, iron and brass are not going over into silver and gold. Plato's "alchemy," seemingly, did not surpass the limits of his "science of numbers." However, his "knowledge" included the other doubtful science of the ancient and mediaeval thinkers—astrology. It was an important part of the esoteric doctrine. It could not be rejected.

It is interesting to state that the significance of Plato's "science of numbers" has been thoroughly underestimated by his interpreters. "The relation of ideas to numbers," says Paul Shorey, "was doubtless much debated by the scholastics of the Academy. Aristotle's reports of the intolerable logomachy do not make it clear how much of this nonsense be attributed to Plato."¹⁶¹ Very much, indeed, is the answer. A revelatory cultural-historical assertion—and Plato's "science of numbers" is, of course, such an assertion—

cannot be called a "nonsense." Aristotle would perhaps fully agree with Shorey, because he had no "feeling" for the undisclosed prerequisites of Plato's science and of Plato's method. However, it seems impossible to reject an important part of Plato's theory on the ground that it appears to be a "nonsense." It must first be investigated and if possible, disapproved. Similarly, it is impossible to blame Plato's theory for "its reliance on diagrams (images) and hypotheses" which may appear to destroy its scientific foundation.¹⁶² On the contrary, Plato's doctrine is upmost congenial on the history of human thought and particularly precise in all major details. One might accept Shorey's definition that Plato's mathematical approach "is midway between the pure nous (spirit) and the doxa of sense."¹⁶³ We must, however, complete this statement by referring to the fact that this "dianoia" represents the real history of the human mind. Plato's teaching is not "fantastic," but "historical" in the strictest sense of this word. Hence, it is entirely scientific.

Contrary to Paul Shorey's opinion, Plato was operating not with two kinds of numbers only, but with a series of "numbers" and "counting systems." Besides the "abstract, ideal numbers of the philosopher" and "the numbers of the vulgar, i.e., concrete numbered things,"¹⁶⁴ we find a third class of numbers—that which embraces the earthly life and is represented by the secret octaval system. It seems to imply the possibility of its own decimalization. The empirical world, thus, is subjected to the higher plan of true reality which is expressed in the decimal system. Then, there is a fourth class of numbers which is derived from the Babylonian system. These numbers have a "cosmological" and "astrological" significance. All these "numbers" and "numerical systems" are combined in Plato's "science of numbers" and participate in each other. They all center in the sacred tree symbol—the "tree of knowledge" of the Bible—which is a universal source of knowledge and a complete "synopsis" of ancient wisdom as such. "The contemplation of the eidolon, image or symbol, leads us to reality. The reality is always the Platonic Idea . . ."¹⁶⁵ The "eidolon" of a tree is the phocal point in Plato's philosophy. This image reveals truth, if it is contemplated by a "true philosopher." He alone has the particular ability of disclosing the real meaning—

the essence—of an “eidolon,” of a “popular definition” or of an “analogy.” His ability is partly innate, partly due to acquired knowledge. The “philosopher’s ascent” is “rough and steep,” says Plato,¹⁶⁶—“but finally he would be able to look upon the sun itself and see its true nature, not by reflections in nature or phantasms of it . . .”¹⁶⁷

The highest aim of a philosopher is that of discerning “the good.” This theme is utterly congenial to the moral implications of the “Genesis.” “The duty of us, the founders, then . . . (is) to compel the best natures to attain the knowledge which we pronounced the greatest,¹⁶⁸ and to win to the vision of the good, the scale that ascends . . .”¹⁶⁹

It seems significant—and altogether curious—that even here, in this emphatic assertion, Plato is referring in a discreet way to the central symbol of his doctrine. The “scale” is one of the many applications of the tree symbol. The scale leading to the heaven is, of course, nothing else than the tree symbol leading to true knowledge (cf. the “scale” in the Biblical legend on Jakob).

“And again,” says Plato, “do you think it all strange . . . if a man returning from divine contemplations to the petty miseries of men cuts a sorry figure and appears most ridiculous . . .”

We approach here a particularly delicate matter. These bitter words seem to contain a clear explanation of Plato’s reticence. “La peur du ridicule”—the fear of appearing ridiculous—seems to unveil the psychological background of Plato’s strict esoterism. The danger—perhaps, the certainty—of not being understood by some of his best pupils might well explain Plato’s silence. Of course, Aristotle would scarcely have accepted the ancient tradition without submitting it to a destructive criticism. His own mind was far from the symbolic method of reasoning adopted by the initiates of the Pythagorean school. To those, however, who have a feeling for “things which we call real” a manipulation with images, symbols, idols, shadows, reflections, echoes, puppets, shapes, analogies, popular definitions, is allowed and may reveal truth. Few people are capable to acquire “true knowledge.” These few people—“the philosophers who arise among us” or “the best natures”¹⁷⁰—shall “take charge of the other citizens and be their guardians.”¹⁷¹ “Once habituated . . . they will discern them

(the 'obscure things in the habitation of others') infinitely better than the dwellers there, and they will know what each of the idols (images) is and whereof it is a semblance . . ."173

I hope that the central "image" of the Platonic science had been sufficiently clarified. Between those who know what is beautiful and good, and true, and just, a complete mutual understanding is natural. No "ridiculous appearing," no "laughter" whatsoever would destroy their mutual confidence. "A sensible man," says Plato, "would not laugh at the difficulties of a man who returns from divine contemplation and is not yet accustomed to the envying darkness and is obscured by it."178

FOOTNOTES
(SECTION I)

1. Cf. Paul Shorey, *Plato, The Republic*, volume II, Introduction, p. XLIV.
2. *Ibidem*.
3. Cf. K. Vering, *Platon's Staat*, p. 167.
4. "That there must exist laws of inheritance which can be expressed in numbers."
5. Cf. James Adams, *The Nuptial Number of Plato: its Solution and Significance*, London 1891; cf. also Hultsch's review in "*Berliner Philologische Wochenschrift*, October 1892, pp. 1255-1258.
6. A brief bibliography concerning the "nuptial number"—also called "Plato's Geometrical Number"—is indicated in Shorey's edition of the "*Republic*," volume II, Introduction, p. XLIV.
7. "Plato has been able to give to his words such an obscure meaning that the mystery cannot be solved, even if one takes into consideration the entire strictly scientific terminology of the Greek mathematicians"; cf. Hultsch, *Berliner Philologische Wochenschrift*, October 1892, p. 1256.
8. "It is indeed a constant effort to introduce as directly as possible the mathematical measure into morals"; cf. J. Souilhé, *La notion Platonicienne d'intermédiaire dans la philosophie des dialogues*, Paris 1919, p. 61.
9. *Ibidem*, pp. 61-62.
10. "Did we not say, in fact, that the Ideas necessarily penetrate each other, interfere with each other, participate in each other? It suffices to wish that these interferences, penetrations, reciprocal dependencies be adapted to a rigorous precision, to a scientific determination . . . in order to apply to them the notion of a function, of a number of each idea"; cf. Gaston Milhaud, *Les philosophes géomètres de la Grèce, Platon et ses prédécesseurs*, Paris 1934, p. 352.
11. Cf. E. Shuré, *Hermes and Plato*, pp. 85-86.
12. Cf. E. Shuré, *Pythagoras and the Delphic Mysteries*, p. 84.
13. *Ibidem*.
14. *Ibidem*, p. 34.
15. *Ibidem*, p. 38.
16. It is "Plato of the last period who has adopted to his doctrine the Pythagorean mathematism"; cf. Léon Robin, *Etudes sur la signification et la place de la physique dans la philosophie de Platon*, Paris 1919, p. 74.
17. Cf. G. Kafka, *Zu J. Adam's Erklärung der Platonischen Zahl*, *Philologus*, Band LXXIII, p. 119.
18. "The number 12960000 rules the entire universe, because 12960000 . . . are equal to 36000 years, which form a Babylonian cycle and represent a world-year. . . We know from another place in the *Republic* (X. 615 B) that according to Plato the duration of the human life is equal to 100 years or $100 \times 360 = 36000$ days. Hence, a day in the life of man corresponds to a year in the life of the universe"; cf. Hilprecht, *The Babylonian Expedition of*

the University of Pennsylvania Gen. a. Vol. XX. 1, Philadelphia 1906; cited by Kafka, o.c., p. 119.

19. "The Pythagoreans considered as perfect numbers, in the first line, the number 10, then the number 4."

20. "The number 10000 as 10^4 should have appeared, even to a much greater extent, to be a perfect number. If one considers that the number 10000 was, according to Plato a number which was particularly important for the soul (Phaedr. 248 Cf. Rep. X 615 Aff), then one would be entitled to assume that he (Plato) intended here to impose the number 10^4 as a 'ruling number' to all that is created by God, i.e., immortal, relevant to the soul; all that is 'human,' mortal or material would be subjected to the 'ruling number' 60^4 ; hence, Plato could have intended to formulate a metaphysical distinction in value between the decimal system and the sexagesimal system . . ."; cf. G. Kafka, o.c., pp. 119-120.

21. "In its practical consequence, this distinction could lead to the postulate that the sexagesimal system must be used in 'empirical' or applied mathematics, whereas pure mathematics should rely on the decimal system"; G. Kafka, *ibidem*.

22. The meaning of the word "sueus" (cf. Latin "suus"—his own) is clarified in a separate study of mine called "Magic and Jurisprudence," which has not as yet been published.

23. Cf. K. A. Novotny, *Mythos oder Zauberei im germanischen Altertum*, Nationalsozialistische Monatshefte, March 1939.

24. A sign similar to a fir tree.

25. Cf. K. A. Novotny, o.c. The formula "lathu, laukaR, gaukaR, alu" is, too, discussed in "Magic and Jurisprudence."

26. Cf. E. Shuré, *Pythagoras*, p. 37.

27. *Ibidem*.

28. *Ibidem*.

29. The key word "sueus" was transformed by an Old-Russian jurist into a legal norm consisting of five words. The technique of the ancient Russian jurists is described in my "Etiudy po istorii russkogo iuridicheskogo byta" (Studies in Russian Legal History), Brussels 1939.

30. Cf. his article on "Mythos oder Zauberei im germanischen Altertum." K. A. Novotny defends the utterly unscientific assumption that the ancient Germans did not believe in witchcraft or magics.

31. The designation "fir script," of course, is conventional. I use it—as well as the other term "deer script"—in order to stress the "genetic" implications contained in both terms.

32. Cf. Novotny's above quoted article on "Myth or Witchcraft" (*Mythos oder Faubereo*).

33. *Ibidem*.

34. The swastika sign figures on the bracteate of Schonen together with the magic formula "lathu, laukaR, gaukaR, alu." The bracteate is reproduced in Novotny's above-mentioned article.

35. The sun is "the highest divinity," according to Plato. Cf. chap. XII.

36. In such a case, the number of twigs on the right side of the tree would rise from eight to nine.

37. But not as a necessary element of the actual counting system which normally did not need more than seven twigs on the right side.

38. The number 50 seems to be the last and the highest numerical symbol of this type.

39. Cf. K. A. Novotny, *o.c.*

40. Cf. Sigmund Feist, *Vergleichendes Wörterbuch der Gotischen Sprache*, Dritte Auflage, Leiden 1939.

41. Here again I have to refer to my unpublished study on "Magic and Jurisprudence."

42. Cf. the so-called "Russkaia Pravda"—the oldest Russian law-code—which is ascribed to the Waranguian-Russian ruler Iaroslav the Wise and to his sons (XI century).

43. The magic word "sueus" is one of the most important terms of the European mediaeval legal vocabulary. It occurs in Gothic, Slavic, Anglo-Saxon norms. One finds in oath formulae, though usually in a distorted or "reinterpreted" form.

44. The ancient "runologists" could read a word in both directions. Each time the resulting word had its own significance. A similar idea is expressed in the St. Gallen script, in which the designations of the first and of the third "family" are intentionally inverted. The magic word "sueus" can also be read in both directions—with a quite similar result.

45. Cf. also the legend on the "philosopher's stone." Cf. chap. XII.

46. The Greek scale can be supposed to consist of two "tetrachords" or of a single "heptachord."

47. According to the usual explanation, the designation "gamma" (scale) originated from the Greek letter "gamma," because this letter was used by Guido d'Arezzo (X century) in order to designate the sound G (Ital. "sol"). The Guidonian system of sounds started with this sound G. But already Oddo de Cluny (IV century) used the designation "gamma" in a quite similar sense. It is important to notice that the early mediaeval scale started with the sound A (Ital. "la") and ended with G (Ital. "sol"), whereas nowadays the scale starts with C (Ital. "do") and goes up to H (Ital. "si"). That reflects the fluctuations in musical terminology which make a study of musical signs particularly intricate. Cf. Brockhaus and Efron, *Novyi Enziclopedicheskii Slovar'*, volume 12, "gamma," "Guidon."

48. Cf. E. Shuré, *The Great Initiates*, p. 246. The quotation contains an excerpt from a work of the French linguist Fabre d'Olivet—"Vers dorés de Pythagore." Fabre d'Olivet belonged to the linguistic "school" of the XVIII century. That means that he had a great intuition without having, however, a real scientific background. Linguistics as science is a product of the nineteenth century.

49. Cf. E. Shuré, *Pythagoras*, p. 97.

50. *Ibidem*, pp. 97-98.

51. *Ibidem*, p. 97.

52. It is hard to explain the origin of the words "lathu," "laukaR," "gaukaR" and "(h)alu." "Laukar"—fire (cf. Lat. lux), "gaukaR"—earth (cf. Greek ge; also Gothic gawi), "(h)alu"—air (?), "lathu"—water (? cf. Slav. ladia—boat) seems to be a far too risky confrontation, although it would permit to establish a vague relationship between the Gothic incantation and the Greek doctrine of

the four "elements"—fire, air, earth, water. It seems to me (I have attempted to clarify this problem in the study "Magic and Jurisprudence") that these four magic words were initially related to the fauna which characterized the environment of the Gothic (perhaps of the Indoeuropean) hunters in the earliest stage of their civilization. The linguistic cells composing the magic formula were applied to various representatives of that fauna. Thus, "gaukaR" became connected with the "raven" (cf. Germ. Gauch, which usually is translated as "cuckoo," but seems to have been a general designation of all soothsaying birds; cf. also the related Russ. gava—crow); "laukaR" can be either connected with Greek lykos—wolf, or with "deer" (through a most curious metaphor: the image of deer was the usual symbol for a woman, and the word "Lauch," too, was a metaphor designating the work of women—cf. the expression "Lauch und Linnen" interpreted by Novotny in his article on "Mythos oder Zauberei"; hence, we receive the conceptual line "LaukaR"—"Lauch"—woman—deer; "(h)alu" might be, too, connected with the wolf ("heli"—tale of a wolf or of a fox; cf. Novotny, o.c.) or with "deer" (cf. Slav. olen'—deer); "lathu" might have designated the hunter himself. All these words had been, however, often reinterpreted by means of false etymology and artificial phonetic affiliation. This operation was not always quite unconscious. It was a peculiar technique of interpretation which allowed to keep some ancient sacred terms almost intact by accommodating their meaning to the changing conditions of life. It seems certain that the four magic words of the Gothic incantation were at a certain moment transformed into a prayer addressed to the sun—to the highest divinity of the Indoeuropeans. But it seems almost impossible to determine which meaning of a sacred word was the initial one and which can be attributed to a spontaneous or intentional reinterpretation. In any case, there have been two main routes of interpreting or developing an ancient cellular word—an "animalistic" and a "spiritualistic." Each term had therefore two versions, or even more than two. I am trying to clarify this problem in the study on "Magic and Jurisprudence."

53. These "qualities" are discussed in "Magic and Jurisprudence"; cf. also Novotny, o.c.

54. Cf. E. Shuré, Pythagoras, p. 98.

55. Cf. the work of Dr. Hjalmar R. Holand, "The Kensington Stone," 1932. Cf. also his excellent new book "Westward from Vinland."

56. Cf. H. R. Holand, o.c., pp. 126-129.

57. Ibidem, p. 129.

58. Ibidem, p. 127.

59. The number "nine" had a very great importance in the ancient "science of numbers." It played the rôle of a "medium" between the empirical octaval system and the ideal decimal system and between the respective numbers—eight and ten.

60. It suffices to indicate the fines mentioned in the "Russian Law" of Iaroslav the Wise. Cf. "Pravda Ros'ka," edition of the Ukrainian Academy, Kiev 1935.

61. Let us remember the thickness of the eighth twig, the peculiar characteristics of the fifth twig (thickness and length) and the "final" character of the second twig. Certainly, the abbreviated form of the number "five" and the very fact of such an abbreviation seem to confirm a tendency toward decimali-

zation. Otherwise the number "four" would have been abbreviated, and not the number "five."

62. Cf. H. R. Holand, o.c., p. 254.

63. Ibidem, p. 255.

64. Ibidem.

65. Cf. K. A. Novotny, o.c.

66. The tree symbol represents all arithmetical operations in a crystalized form.

67. The Roman numerical system was, of course, a decimalized system. But it belongs to a more primitive type than the Arabic system.

68. Cf. the Arabic sign for "seven." Its explanation will be given later.

69. A "spoken" Gotho-Slavic language is far from being a fanciful guess. A mixture of languages is natural, if two national groups become closely connected with each other for two or more centuries. It is interesting to notice, however, that the Slavic words seem to belong to the Western-Slavic group.

70. Let us remember the inversion of "families" in the secret "deer" script of St. Gallen.

71. The sources often speak of a "niemetskii dvor" (niemets—German or, in a more general sense, a man who does not speak the language of the country; "niemoi"—dumb).

72. "Kra" or "skra" might be related to Russian "iskra"—spark. "Iz"—Lat. ex. out. However, the "i" in "iskra" might be prosthetic. Both explanations seem possible.

73. The Gothic sound "th" is represented by a single letter. Its pronunciation seems to have fluctuated between a d', th and a Slav. ch. The Slav. ch is usually transliterated in the Salic Law by the sound th (cf. the glos "theolosina"—Slav. "cheliadina").

74. The significance of false etymology is described partly in my "Etiudy," Brussels 1939.

75. Cf. "Novyi Enciclopedicheskii Slovar'" of Brockhaus and Efron, "Dukhovnye stikhi."

76. Ibidem, "Latyr' kamen'." According to the opinion of Professor A. Veselovskii, the stone "Latyr'" is nothing else than the "altar of the Church of Sion." We are facing here a crossing of several legends. A. Veselovskii presumably has found the origin of one of these legends, but not of the original one. The connection between "Latyr'" and the word "altar'" (altar) is probably due to false etymology. I would like to mention here the Russian word "lodyr'"—sluggard, which might be, too, related to the name "Latyr'" (lazy, immovable like a stone).

77. Ibidem, "Latyr' kamen'."

78. This peculiar treatment of sacred words had been already described in connection with the magic word "sueus." It seems, however, that the interpretation "dove" (cf. Gothic dubo, Germ. dubon; the word is supposed to be an imitation of the dove's voice; cf. Goetze, Etymologisches Wörterbuch der deutschen Sprache, "taube") originated as a phonetic adaptation of "thuf." "Thuf" seems also connectable with Germ. taub—deaf (cf. Goth. doubs, Indogerm. dhubh, Germ. stumpf—blunt, dull; cf. Russ. tupoi—blunt, stupid, Greek typhlos—blind). The Russian word "duren'" or "durak" might well contain the root du(v) (cf. also Dan. durik, from duvrik). That would even-

tually confirm the idea that "thuf" could seem to be quite understandable to Slavs. If we combine the various meanings of these words, which partly are etymologically related to each other, we would find that they all express something "secret," "inaccessible" or even "inexprimable"—something which does not say or show anything to anybody who does not possess the key to the "secret" as such, i.e., in our case—a key to the secret script "kra thuf."

79. Cf. Germ. kra (Kräh—crow); cf. also Germ. krakehlen—to speak very loudly, with a full voice. Hence, "kra" might well contain two elements—a Germ. "kra" which stresses the meaning of "voice," "speech," "language," and a Slav. "kra" which can be connected with "cutting" or "chiseling." Both roots are presumably "sound-imitative." Let us not forget that we are speaking of an area where Goths (Germans) and Slavs were living and "speaking" together.

80. The form of the letter "u" is borrowed from the Kylfver inscription.

81. We have to assume that the usual line of development goes from the "simple" to the "complicated."

82. Let us remember that the Italian denomination of the notes of the musical scale originally started with the sound "la." Curious may appear the following confrontation:

| | | | | | | | |
|----------------|----|----|-----|----|----|----|-----|
| Italian scale: | la | si | do | re | mi | fa | sol |
| Runic: | la | .. | thu | r. | .. | f. | ... |

The Italian scale seems to be utterly "un-Italian" and very close to the initial Gothic alphabet. Is that a mere coincidence?

83. One must recognize that a confrontation between the "Italian" designations of notes and the Gothic alphabet might lead to a very amazing discovery. In fact, la—do—re—fa form a "septaccord," and that leads us to the octaval system as such. The resulting melodical line is very decent and has a "pastoral" character. It is, moreover, not very far from the Chinese scale. Should the ancient Gothic (Indoeuropean) scale actually have consisted of such a "septaccord"?

84. The word "alu" is sometimes found in an inverted form—"ula"; cf. the inscription on the bracteate of Skrydstrup, reproduced in Novotny, o.c.

85. Cf. H. R. Holand, o.c., p. 128.

86. Ibidem, p. 123.

87. Ibidem, p. 128.

88. Ibidem, p. 126.

89. Let us recall the octaval basis of the Runic alphabet. The "early mediaeval" Runic alphabet had conserved its octaval character: sixteen letters form two "families"— $16 = 2 \times 8$. Whether this alphabet had been actually formed in the Middle Ages, is doubtful. It could exist before. In fact, it seems to imply the existence of an undeveloped octaval counting in which the twigs on both sides had a quite similar meaning. Each twig meant "one." We should not reject the idea of an early existence of such a system. I would say more—such a system must have existed.

90. Cf. H. R. Holand, o.c., pp. 126-127.

91. The terms to "imagine," "imagination," have a precious implicit meaning.

92. It may be useful to recapitulate these arguments: the octaval character of the "futhark" (24 letters); the form of the signs of the most ancient line

of letters; the form of the number "one hundred"; the meaning of the number "seven"; the connection between the octaval system and some ancient symbols (cross, swastika); the peculiar form of the number "fourty eight" in Plato's "Republic."

93. This number is indicated in the "Laws," but it is implied in the "Republic," too.

94. Cf. E. Shuré, Pythagoras, p. 98.

95. The seven numbers correspond to the seven disciplines provided in Plato's educational program. This question will be clarified later.

96. This combination is achieved by means of a multiplication. That certainly is a curious idea.

97. Thus Plato could easily get out the 44 numbers which "divide" the number 5040. He must have completed, however, the initial line of seven numbers by the numbers "eight," "nine" and "ten." These numbers, of course, are quite congenial to his "science of numbers." Moreover, $7 \times 8 \times 9 \times 10 = 5040$.

98. Cf. P. Shorey, Plato, Republic, Book I, p. 333.

99. Ibidem, Book II, XI, p. 149.

100. Ibidem, p. 153.

101. Ibidem, p. 327.

102. Ibidem.

103. Cf. Aristotle, Politics, 1261 b 38.

104. The origin of the number 1000 seems to be due not only to Plato's mathematics. It was the usual unit—the highest unit—of the armed forces of almost all Indoeuropean nations.

105. Faculty—a product, the factors of which are formed by the numbers of the natural line of numbers beginning with "one"; cf. Brockhaus, Lexicon, "Fakultät."

106. Cf. Kafka, o.c.

107. "Faculty—one of the four (sometimes 5, 6 or 7) departments in which a university is divided in accordance with the main disciplines; and also the totality of the instructors"; cf. Brockhaus, Lexicon, "Fakultät."

108. Cf. Shorey, Plato, Republic, Book II, p. 381.

109. Ibidem, pp. 436-437.

110. The terms "Academy," "acedemic," etc., are Platonic, too.

111. Shorey, ibidem, p. 255.

112. That is an illuminating recognition of the value of tradition in culture.

113. Shorey, ibidem, p. 175.

114. Ibidem, p. 331.

115. Ibidem, Introduction, p. XXXIX.

116. Ibidem, p. XL.

117. Ibidem.

118. It would be interesting to study musical symbols from the viewpoint of the octaval system—the designation of notes and of pauses. They all seem to be reducible to an octaval basis.

119. The exact quotation will be given in connection with the "tree which yields knowledge."

120. Shorey, o.c., p. 331.

121. Cf. Ast's edition of the "Republic," Platons Staat, Leipzig 1881,

Anmerkungen, p. 372 B, 374: "Plato attributes to the young state only simple vegetarian nurture."

122. Cf. Kafka, o.c., p. 119.

123. Cf. G. Albert, *Miscellen*, L. Der Sinn der Platonischen Zahl, *Philologus*, volume LXVI, p. 155.

124. The three systems are, of course, the "octaval," the "decimal" and the "sexagesimal." The octaval system was secret. We will see, however, the decimal system, too, contains some peculiar mysteries.

125. Cf. Kafka, o.c., p. 119.

126. *Ibidem*.

127. I give this number in the form suggested by Kafka. It does not contradict J. Adam's theory.

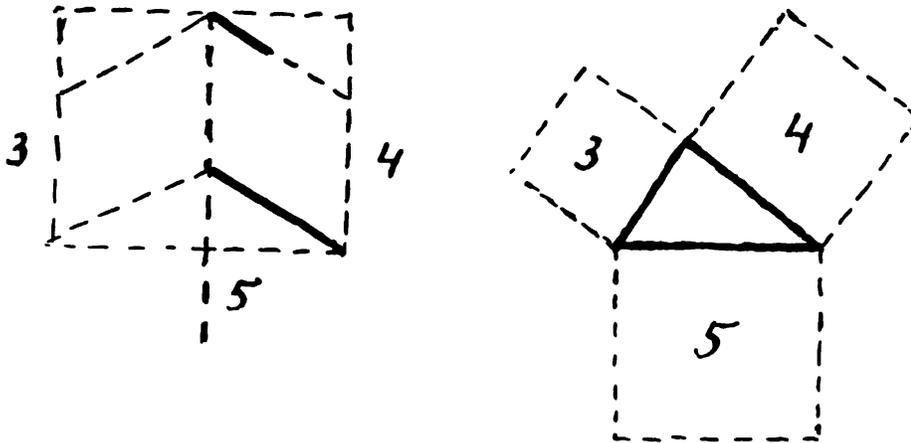
128. Cf. Kafka, o.c., pp. 118-119.

129. *Ibidem*, p. 120.

130. *Ibidem*, p. 118.

131. Cf. Hultsch's review of J. Adam's study on the "Nuptial Number of Plato," (London 1891) in *Berliner Philologische Wochenschrift*, October 1892, p. 1256.

132. The same idea could be expressed in the following form (figure 95):



$$3^2 + 4^2 = 5^2$$

Figure 95

133. Cf. Kafka, o.c., pp. 118-119.

134. In Uigurian law, the number 10000 signifies "full," "eternal" ownership. The Uigurs might well have been under a direct influence of Greece, because an important trade route connected their region (Central Asia) with Greece. Many Uigurian institutions seem to reveal a kinship with Greek—particularly with Byzantine—law.

135. Cf. Kafka, o.c., p. 119.

136. The term "nuptial number" is influenced by some "nuptial" implications which the ancient mathematicians attributed to astrological numbers.

137. It suffices to indicate the willow tree—*salix*,—the palm tree and the Russian willow—*tal*." The latter term is found among all Indoeuropean nations (cf. Lat. *talio*, Anglo-Saxon *tale*, etc.). The origin of the root "*tal*" is obscure.

138. Cf. Genesis, II, 8-10.

139. The meaning of the words "far east" will be discussed later.

140. The expression "delightful to see" reminds us of the perfect form of Plato's numbers and of his entire philosophical theory (cf. his "images," "eidola," etc.).

141. The "vegetarianist" conception reappears here in a generalized form.

142. Good and evil and other "opposites" will be discussed in connection with the so-called "table of opposites" of the Greek thinkers.

143. Cf. J. Moffat's edition of the Old Testament, London 1934, Genesis, II, 8-10.

144. The origin of the symbol of the serpent will be discussed later.

145. If the twigs on both sides would have a similar meaning, then the right side would include the numbers 1 to 8 and the left side those from 9 to 16.

146. The Runic letters were nothing else than numbers indicating the order of sounds in the Gothic alphabet.

147. In particular, the "nuptial number" contains all arithmetical operations, all counting systems and all possible relationships between numbers. It is a real encyclopaedia of mathematics including astrology. We know that the Gothic stone of *Kylfver*, the Old-Russian "Dove's Book" and the "runstaver" had all an entirely similar purpose. The "Genesis" has a similar objective, too. Cf. section II and conclusion.

148. Cf. the "tree which yields knowledge."

149. Of course, Adam and Eve did not die after having committed their crime of disobedience to God's will, but they became "mortal"—subject to death.

150. Genesis, III, 22-23.

151. *Ibidem*, 1-5.

152. I am consciously omitting the problem of "gender" which might have a certain connection with the differentiation of the logical and factual content of the word "*sa*." The gender seems to be in some cases a relatively late phenomenon which helped to determine a growing specification of the meanings of a word.

153. Cf. Shorey, o.c., p. 381.

154. *Ibidem*, p. 101.

155. *Ibidem*, pp. 102-103.

156. *Ibidem*, p. 103.

157. *Ibidem*, pp. 104-105.

158. Plato's "historism" will become quite evident after a discussion of his metaphors and allegories in section II. The relationship between his metaphor of "the Ship of State" and the Biblical legend on Noah's ark is upmost illuminating. It reveals the birth of a significant idea—that of the State and of political life as such.

159. The classes in which the population of the "ideal city" is divided are compared to metals—gold, silver, iron, brass. Should Plato display here an inclination toward alchemy? We will see that he presumably did not accept the chief thesis of the alchemists concerning the so-called "transformation of metals."

160. One might call Plato a "sociologist," because he was primarily interested in the "significant" and the "general." These notions often coincide with the notion of the "typical," and from here we pass over to "sociology." The true historian is mainly concerned with the "individual," the "unrepeated" and "unrepeatable." However, cultural history embraces every manifestation of the human mind, if it might be called relevant to culture and cultural development.

161. Cf. Shorey, *The Unity of Plato's Thought*, Chicago Decennial Publications, 1904, First series, Volume I, p. 82.

162. *Ibidem*, p. 81.

163. *Ibidem*, p. 81.

164. *Ibidem*, p. 83.

165. Cf. Shorey, *Plato, Republic*, Book II, p. 412, footnote b, and p. 413.

166. *Republic*, 516 A.

167. *Ibidem*, 516 A-C.

168. *Ibidem*, 517 B-C.

169. *Ibidem*, 519 C-D.

170. *Ibidem*, 519 C.

171. *Ibidem*, 520 A.

172. *Ibidem*, 520 C.

173. A few additional remarks should be introduced into the preceding discussion, despite their vagueness and risky character, which, of course, will augment the "attackability" of the present study. The Sanskrit word "sa" and its curious variety of meanings seem to provoke a linguistic analysis which alone could eventually explain the origin of the word itself and its later peculiar fate. Of course, we are here restricted to a very narrow approach to this fascinating problem.

The word "sa" has several meanings—snake, fence, knowledge, bird, musical abbreviation. This complexity is almost unique. Very few ancient terms have so many incompatible meanings, although we find among the legal terms of *Lex Salica* some words which had been so many times reinterpreted that the various specifications of the respective term appear, too, absolutely unrelated to each other. In the case of "sa" we face a particularly complicated problem. The content of the word might be due to an "interpretation" of the ancient type, i.e., carried through by means of "false etymology," "phonetic" or "paleographic" affiliation. It might be explained, however, differently. The word could have been applied to a complex initial situation which implied the notion of "danger" and, consequently, of a "knowledge" of danger. A "fence" or a "tree" seem to be both combinable with the idea of the presence of a "snake," i.e., of a dangerous reptile. The "Genesis" mentions, in fact, a serpent, a tree, a fence surrounding the Eden, and "reptiles" in general (reptiles are explicitly mentioned in the legend on Noah's ark). Let us assume that the term "sa" could originate as a characteristic of a "situation" which was, in a certain sense, "typical" and could be retained by the mind of a primitive man. A similar complexity of the "situation," to which a word or a combination of words had been applied, might be found in the variety of meanings ascribed to the mabic formula "lathu, laukaR, gaukaR, alu." Here, too, the meaning of each word and of the incantation as a whole have suffered endless variations. The origin of the word "sa" seems thus to be explainable in terms of a typical initial situation.

The further biography of the word "sa," however, is full of intricate problems.

We cannot rely on any etymological analysis, because the ancients were in no sense learned linguists, and their approach of a word was entirely different from ours. They were primarily interested in "phonetics" and in "paleography." Hence, we must include these "accidentalia" in our analysis.

Something dangerous, forbidden and altogether "yielding knowledge" seems well to be implied in the entire set of meanings of the word "sa." Moreover, we find the notion of a "fence" which leads us to the notion of a "tree" and of "wood" in general. The Sanskrit word for "wood" is the word "dhan," which seems to involve two very significant connections. The first connection seems to be revealed in the name of God's "antagonist"—Satan. The second connection leads us to the German word "Tanne"—fir tree. Both connections would seem to be upmost illuminating. The name "Satan" implies both versions of the origin of knowledge—the Indic version and the Northern version. That is an outstanding phenomenon which can be understood only in terms of the peculiarities of ancient reasoning. The connection between "knowledge" and the "fir tree" is, moreover, complicated by an additional fact. The fir tree is an evergreen tree of the pine family. In several Indoeuropean languages the name of a pine tree includes the word "sa": cf., Latin *sappinus*, French *sapin*, Russian *sosna*. Is that a mere coincidence? One might be inclined to think so. But even a purely phonetic or false-etymological connection might have had a great influence on the ancient mind and, hence, on the meaning of these words. One of the most ancient concepts of "knowledge" could reemerge under the influence of such phonetic connectibilities. Satan is symbolized in the "Genesis" by the serpent. The concept of "knowledge" appears here in its Indic dress—that of danger and of fear. The Northern version is free from these specific implications. The two versions seem to be as distant as may appear to be their respective personifications—Satan and Prometheus. It is obvious, however, that the notion of a "forbidden knowledge" is implied in both figures. We are facing here an important cultural-historical problem, which should be studied anew and from an entirely unexpected angle. It is astounding how deep the influence of some initial concepts could be, and how revealing the ancient symbols are, if one takes into consideration their initial complexity.

Another question arises in connection with the often quoted magic formula "lathu, laukaR, gaukaR, halu." A slightly "anagrammatic" presentation of this formula would lead us to the following form:

(h)al(u)—la(thu)—l(a)u(kaR)—ga(ukaR)

These "simplified" words (the simplification might represent an abbreviated notation of the four words) can be grouped together into one "artificial" word:
hal-la-lu-ga

That arrangement, which, from the outset, might appear to be arbitrary, leads us to a well-known exclamation:

hallelujah

It is considered to mean "praise Jahwe." The abbreviation "jah" for "Jahwe" is in no sense self-evident. Should the word "hallelujah" be an adaptation of a non-Hebrew word to the Hebrew vocabulary? Is the "formula" as such of a pre-Semitic origin? If so, it might be related to the earliest linguistic layer of the Gothic formula which itself in its full form might represent a similar adaptation of an initial combination of "words" or sounds to the Gothic vocabu-

lary. These questions, of course, are unanswerable. It is, however, not excluded that the bottom sheet of both formulas, the Hebrew and the Gothic, is nothing else than an imitation of certain sounds which later become (gradually?) "rationalized." What sounds might have influenced the formation of the initial sheet of sounds?

It seems to me that the "dove"—the symbol of the Spirit—might well have been the actual source of all these later tremendous sophistications. We find a dove in the legend of Noah's ark in a very important function—as God's (and Noah's) envoy to the new "appeased" world. The dove became thus a symbol of a new peaceful order. We saw a dove in the Gothic encyclopaedia of *Kylfver* (thuf) and in the Russian variant of it which even is called the "Dove's Book." Why should not the voice of a dove become, too, an expression of the new order and form, the initial sheet of a prayer which is addressed to God? A series of sounds as "u—lu—glu," etc., could well represent the initial form of the Gothic formula and of the Hebrew exclamation as well. It is, however, not impossible that this "imitative" version of the formulas is not the initial one. It could simply overlap an initial combination of words or sounds. Such "interpretations" would be typical of the ancient mind. It might also have strengthened the significance of the initial incantation and induced the ancient to preserve it by means of adapting it to the new meaning or use.

We must not forget that not only "symbols"—pictures, "images"—were wandering from one nation to the other. The accompanying words or sounds could also wander together with the symbols. They partly were themselves "pictures"—paleographic crystals of the sounds which composed such words. These phenomena have not been studied at all. They might explain the actual biography of many words—in particular, the biography of "sacred" words which were subjected to endless reinterpretations and readjustments. The study of the biography of such words is primarily the task of historians, and not of linguists. An etymologist would face here problems which are utterly inadequate to his science and to the methods on which his science has necessarily to rely. I have made a first attempt to study the "biography" of some important legal terms in my "Etiudy," Brussels 1939. The "biography" of a word includes all "interpretations" which had been made or can be supposed to have been made. This method seems to be well appropriated to the study of "legal" terms and, hence, to the study of religious terms as well. Law and religion almost coincide in the earliest period of cultural history. Similarly, the ancient "Magi" were both, priests and "jurists."

The relationship between the words "sa" and "sanskrit" is a separate problem of highest significance. I hope to come back to this problem in a different context.

SECTION II
THE SHIP OF STATE

CHAPTER I

THE LEADING METAPHOR

The "eternal" Plato has been the subject of many brilliant interpretations. There is little or nothing to add to these stubborn attempts to adopt Plato's philosophy to all times and to all races. The task of finding a true Plato behind all generalizations and accommodations, which had been started in the first part of this volume, must now be completed by a study of one of Plato's most important "visions." The "Ship of State" is Plato's leading metaphor which seems to determine the main features of the structure of his "ideal city." I would not go so far as to say that each great philosopher and political thinker has a leading metaphor of his own and that this metaphor actually determines all structural details of the picture which he is painting. Undoubtedly, Plato had before him such an "image" when he was defining the "scientific foundation" of his philosophy and was attempting to apply his notion to an ideal state-body. The symbol or image of a tree gave a "rational" background to his projections. We know that the "adumbration" of his chief "eidolon" copied and revived—consciously or "intuitively"—human history, i.e., the real cultural-historical becoming of humanity—in particular, that of the Indoeuropean humanity.

Structural metaphors occupy an important place in political meditation. Plato is far from being unique in his technique of political reasoning. It would be impossible to understand a mediaeval principedom without applying to it the standard of a household. It was a household. Everybody knew that. Similarly, it seems quite impossible to separate the communist doctrine of Lenin from the life of a Western-European factory and from all "revolutionary" implications which this mode of life involves. The terminology and the institutional ideas in Lenin's chief work, "State and Revolution," are both "borrowed," not "invented." They are relevant to the peculiar ambiance of the capitalist system in the age of advanced industrialization, of labor conflicts, and of

proletarian class feeling. Hence, Lenin's program of emancipation is conceived in terms of a well organized and successful strike movement.

The structural implications of the Nazi-doctrine are in no sense different. Here, too, a primitive metaphor had been derived from the past of the German race. The image of a "leader" and of his "followers" determines the structural aspect of the entire "society." Each structural detail—the "whole," of course, is itself simple enough—is defined by means of applying the initial all-embracing metaphor to a specific problem. There is no place for any "imagination" outside the predetermined "leading" image, which dominates both life and thought.

Such metaphors are almost identical to what one sometimes calls an "ideal type." An "ideal type" can be chosen arbitrarily, by means of detaching one's thought from any historical reality; or, it can be "rooted" in the past and in the present of a group, of a nation, of a "hemisphere." The image can be utterly fantastic, or, on the contrary, it can be related to reality and be explainable in terms of a "realistic" organizational pattern. The more rooted this pattern appears, the more convincing is its promulgation, and the more efficient is the propaganda for its universal approval.

Plato's "ideal city" certainly is an "ideal type" relying on a basic metaphor which seems to make Plato's "vision" much more "rooted" than Platonists usually would like to admit. The image of a tree leads us to another image—to that of a ship. The first image determined the "reasonableness" of Plato's conception of the "ideal state." The second image defines its structural characteristics. The Ship of State is a leading metaphor in Plato's "Republic." Here again, vision or "intuition" seem to have revealed to Plato the very essence of a Greek polis. The eyes of the "true philosopher" were able to surmount such obstacles as time, environment, political partisanship. Plato penetrated deep into the very soul of the past. Although Plato himself was convinced that he was painting a possible and desirable future which he tried to represent as attractive as possible to all enlightened minds, he virtually was reviving the past—the historical origin of the Idea of the State. Thus, he solves a genetic—a historical—problem by creating a phantasm. The detached image hap-

pens to be rooted in cultural history. Plato's mind functions as a medium connecting both—the detached product of his own philosophical speculation and the birth, the development and the very essence of the Idea of political life and organization.

The image of the Ship of State is, of course, neither Plato's first creation, nor is it a mere image or metaphor. The analogy between State and Ship had been used before Plato. The comparison must have been widely known and used as a popular dictum, the content of which was self-evident. However, in Plato's interpretation the image receives a particular meaning. Let us not forget that Plato himself, i.e., a "true philosopher," is contemplating it. Plato's Ship of State is not "a vulgar concrete thing." It is an "idea" expressed in terms of an easily understandable metaphor which aims at establishing a structural similarity and an ideological commensurability between both, State and Ship.

It has been often assumed that Plato himself has proved unable to create an "accomplished" philosophy of ideas. For those who made the attempt to develop his suggestions a new problem arose immediately—that of connecting the "world of ideas" with the "world of things." Plato was supposed to have left a dangerous hiatus which allegedly invalidated his entire theory. Whether Plato's critics succeeded in their enterprise or not, remains doubtful. All metaphysical constructions are more or less a matter of "belief." Their misfortune, however,—if there was any—was definitely attributed to holes in Plato's doctrine. That certainly is an unjustifiable criticism. In Plato's mind there was no incommensurability and no rupture between the empirical world and "true reality." Plato's solution was conceived in terms of cultural history. His "philosophy" was nothing else than a condensed and crystallized human experience. The human mind as such was interpreted as a history of its actual historical formation. The images, symbols, shadows, schemes—all these kinds of "eidola" were playing the rôle of a "medium" connecting the empirical world of "things" with that of purified—intellectualized or spiritualized—"ideas."

However, Plato's own use of the word "idea" seems to reveal a certain amount of mental fluctuation. His philosophy is midway

between "divine tradition" and "logic." It cannot be taught as such. It can be used as a key to cultural history and admired or condemned as a logic of his time. Plato was far from considering his theory merely as "history." In fact, he even was not quite aware of his own "historicity." But every time when he was firing out what he thought to be a "speculation," his mind was hitting some significant event in the cultural past of humanity.

Paul Shorey complains that the term "idea" is sometimes used by Plato "in the loose Herodotean—Thucydidean—Isocratean sense."¹ Undoubtedly, the term "idea" has in Plato's mind contours which might be called vague. Quite similar is the extreme broadness of the concept "eidolon" which embraces shadows, images, idols, symbols, reflections, pictures, analogies, popular dicta, etc.,—everything that can be rationalized by the enlightened mind of a true philosopher. In order to extract the "idea" from a thing, the philosopher has to apply his power of "vision" and "its vehicle which we call the eye." It is "the most sunlike of all instruments of sense."² The true philosopher is enlightened by the "sun" which "is vision, but being the cause thereof is beheld by vision itself." He has the power to see the truth and to know what the very "idea" of a thing is.³ The essential element of knowledge and of understanding is "vision," and the eye is the most appropriated instrument or "vehicle" of vision. Hence, we can realize that the birth of an idea is identifiable to a first conception of the "form" of a thing. The form or shape leads the mind toward the disclosure of the very idea of a thing and toward a rational determination of its "reality." It is in no sense accidental that Aristotle replaced the Platonic "ideas" by the notion of the "form." In both conceptions—in the Platonic "idea" (and particularly in the procedure by which an "idea" is disclosed) and in the Aristotelian doctrine of the "form" the element of "vision" is the first and the most significant. Vision—in the circumstances described by Plato—constitutes a first step toward knowledge as such.⁴

However, vision must be completed by "light." Only the "enlightened" philosopher is capable of painting a true picture of what he is visualizing. "Though vision may be in the eyes and its possessor may try to use it, and though color be present, yet with-

out the presence of a third thing, specifically and naturally adopted to this purpose, you are aware that vision will see nothing and the colors will remain invisible." "What is the thing of which you speak," he said. "The thing," I said, "that you call light . . . the bond . . . that yokes together visibility and the faculty of sight is more precious by no slight form (idea) than that which unites the other pairs, if light is not without honour." "It surely is far from being so," he said. In the next following passage we learn that the "author and cause of this, whose light makes our vision see best" is the "divinity called Sun."⁵

That significant passage gives us a clear notion of what Plato himself calls an "idea."⁶ The philosopher "sees" (with his "eye," i.e., with the "vehicle" and "instrument" of vision) a "shadow" or "image" or a "reflexion in water." He attempts to reveal its true significance by using all instrumentalities of true vision. "Color" helps him to transform a shadow into a picture full of vivid contrasts. Then, a "third thing" intervenes which alone can make his picture "true," adequate to "reality"—light. The philosopher participates in the world of pure reality and is getting his inspiration (light, enlightenment) from above. Thus, he becomes a real painter of truth, and the picture which he is painting becomes a real representation of the very essence of what is painted. The colors become "visible" and "sunlike." It is a complex procedure which transforms a "shadow" of a thing into a vivid representation of its true reality. A painter's view clearly dominates the entire allegory.

It is not difficult to understand the value of the enlightening metaphor which Plato is using in the "Republic." The "Ship of State" is a projection of a philosopher's inspiration on the screen of structural images which he himself had built, while contemplating the shadow-life of the empirical state. It is the same kind of relationship which connects both leading ideas of the Platonic philosophy—the "tree of knowledge" and the "ideal state"—with its earthly prototypes—an empirical fir tree and Plato's native state, Athens. That analogy is stressed by Plato himself: He defines "light" as a "bond" that "yokes together visibility and the faculty of sight." Then follows a somewhat obscure analogy which is in no sense clarified in Shorey's translation. The "bond"

is "more precious by no slight form than that which unites the other pairs, if light is not without honour." The "other bond" which unites the "other pairs" is, of course, the tree symbol which determined the series of opposites forming a whole "table of opposites" (cf. "Conclusion"). These opposites are relevant to each other, complete each other, and form a long set of "pairs" of antithetical concepts.

It seems that Plato stresses the supremacy of "light," i.e., of the sun—of the "highest divinity." It is called "more precious" and "not without honour." It dominates the tree symbol. The sun is the "cause" and the "author of all this." The divine tradition or "gift" must be, of course, inferior to its very source. A "gift from heaven to mankind" occupies a lower rank—enjoys less "honours"—than "heaven" as such. Both "bonds," however, are necessary in order to realize the "idea" of a thing. In the case of the state Plato seems to refer to a particular species of "ideas" and of correspondent "eidola." A metaphor takes the place of a symbol, but the result of the speculation and the line of his thought both remain unchanged. The metaphor of the "Ship of State" might have appeared to Plato as "specifically and naturally adopted to this (particular) purpose." Thus, "vision will see what its possessor tries to see," and the "colors" at once will become "visible" and soothsaying.

It is clear that the comparison is here an "eidolon" transformed by the philosopher's mind into an "idea" of the state as such. The technical medium between the concepts of "eidolon" and "idea" is defined by the notion of an "enlightened vision" which characterizes the mind of a true philosopher. Both concepts are opposed to non-adumbrated, formless, empirical things. The realization of things starts with their first "adumbration" followed by a full, sunlike "enlightenment." The philosopher's mind is adequate to the world of ideas. They belong to the same category. There is no rupture whatsoever. Reason and things are commensurable. They are reconciled in the notion of "true reality."

We have seen that the symbol of a tree was "rooted" in history and in the empirical world as such. Similarly, the metaphor of the "Ship of State" is, too, deeply rooted in the entire ambiance of

Greek culture and of Greek history. Plato placed the régime of the "ideal state" under the control of his "science of numbers." That determined the rational characteristics of the city of his dreams. Through the "tree of knowledge" Plato's "ideal city" remained connected with the empirical world. Plato's rationalization scheme prevented him from detaching the "ideal city" from life as such. The tree symbol and its numerical implications form a "bond" connecting Plato's phantasm with earthly existence. The metaphor of the "Ship of State" gives to the "ideal city" a definite structure. In no sense is that structure arbitrary and phantastic. It is "rooted," though in a very singular way, in the realities of political life and of political structure. Plato did not proceed as a contemporary thinker of the reformist or of the revolutionary school would do. He did not dissolve an existing structure into its components in order to reassemble them in accordance with some abstract patterns. The proud and limitless rationalism of our time is utterly foreign to Plato's thought. Plato's "ideal city" is not a creation *ex machina*, nor is it a blind or artificial revival of an outdated past.

We find in the reactionary doctrine of the German national-socialism a conception of the state which is deprived of any creative thought and inadequate to the phenomenon of the state as such. The notion of the state had to be altered, as Carl Schmitt, a leading Nazi-thinker, confesses it in his latest works. All notions—that of politics and that of law, of constitution, etc.—had to be revised and drawn out. The empty shapes of the old, customary concepts were filled up with the structural components of two incompatible metaphors—that of a "troop" (leader and followers) and that of a "machine"—of an "engine"—handled by the "leader" and by his favorites. Similarly, the brutally empirical conception of Lenin—fractional and dictatorial in its very essence—deprived the state of its most fundamental features. Here, too, a double-metaphor seems to have determined the structural characteristics of the proletarian "state"—the concept of a "factory" and that of a "bio-organism" of the entomological type. Lenin was an "insecticist." He speculates with the idea of "instincts" replacing the power of autonomous self-determination. A similar conception seems to penetrate the two chief metaphors

of the Nazi-régime. The Nazi-State may be compared to an iron mask which is both blinding and torturing.

One has to reject such schemes in order to be able to understand Plato's political theory. Plato is neither a decadent, nor a phantast. The picture which he is painting revives and exteriorizes the fundamental characteristics of the very phenomenon of State. The birth of the idea of political life, i.e., as of something opposite to any strictly "natural" form of social grouping, is reflected in Plato's philosophy better and fuller than anywhere else. The deep implications of the "Genesis" become discernable only in the light of Plato's "metaphorical" language. Plato's structural conceptions, too, are "rooted," as are his "numbers" and all the "eidola" to which he, the "true philosopher," is referring in his theory. Everything becomes explainable, if contemplated from below, while being illuminated from above. Plato's mind as such connects his ideological projections with the empirical and historical roots of his own reasoning. His thought and his language are both conditioned in time and are relevant to life as such. They are, moreover, deeply rooted in the national cultural past of Greece. We must study the lines which the painter's mind is constantly tracing, independently of the fact whether these lines are traced intentionally or not. Plato's intellectual constructs are completed and justified by a set of subjacent data relevant to Greek and Indoeuropean antiquity. These peculiar prerequisites of his reasoning give a glowing color to the philosophical panorama which surrounds a reader of Plato's "Republic." The color helps us to embrace both worlds, both ontic plans of the "ideal city," and to conceive them both as a whole, as a system, as an "idea" of a "true state." A basic assumption seems to be implied in Plato's image of the "ideal state"—that of "commensurability." Human experience and human reasoning are presented in the compound form of a "political theory" in which an illuminating phantasm serves to clarify and to describe the first initiation of humanity to political life and "order." A metaphor opens the gate which leads to Plato's city. Let us follow the call of our guide.

CHAPTER II

PLATO'S NATIONALISM

The "leading metaphor" of the "Ship of State" is, altogether, Plato's privileged "formgiving thought" ("Formgedanke"). It determines both the appearance and the structure of the ideal body of the state. The ship and its two "ontic" complements—the crew and the pilot—seem all to unify and to structuralize Plato's principal implications—as far as the political aspect of his theory alone is concerned. Plato's "ethics" conceived in terms of a "good," "just," "rational" behavior, in which each individuum submits his personality to the needs of the whole, complicate the picture very substantially. Plato's sociology is intimately connected with ethics. The resultant "image" is therefore particularly intricate.

The "merit" of having clearly separated political science from ethics is ascribed to Aristotle. That might be true, although Plato's concept of virtue is quite "scientific" and "Aristotelian": "virtue is knowledge." The fact that knowledge as such includes the knowledge of both good and evil seems in no sense to undermine Plato's rational and scientific approach of all political phenomena. The problem of "understanding" overshadows the problem of distinction between the good and the evil. The "whole" precedes the various implications and elaborations. Distinction is not so much knowledge as application and interpretation of knowledge. It is the result of a structural analysis of the form-giving whole. We have observed a quite similar attitude in the case of the "form-giving" tree symbol which determined the various "pairs of opposites." The metaphor of the "Ship of State" implies a very realistic problem of an adequate "organization." Hence, the structural aspect dominates here, too. "Good organization" is a structural problem. Everything seems to be structuralized in the "Republic"—even the notion of the good.

That should not surprise us. The "Genesis" has an equally "structural" conception of good and evil. The connection

between moral qualifications and a tree symbol reveals a structural approach to "distinction" as such. This method of combining both structural and moral ideas is odd, ancient, primitive. It is, however, quite understandable. The mind was operating with an initial indifferenced "whole." Hence, the breaking of a twig, which disturbed the harmonious symmetry of the tree symbol, could become interpreted in terms of a moral disqualification of this very fact. The ancients did not succeed in detaching their moral notions from the image on which their speculations were relying. The structural characteristics of this image remained "leading." The ancient mind practically was interpreting the form, the proportions and the "content" of an image or symbol. Each detail, moreover, could be conceived only in its relation to the "whole." A similar viewpoint was applied even to man. The fact of being lame, one-eyed, squinting or hump-backed implied a moral inferiority or even a complete moral disqualification. Even now we are inclined to follow such inexcusable atavistic prejudices.

Plato, too, was unable to liberate himself from a structural viewpoint. On the contrary, he seems to have adopted the structuralist approach as a kind of "methodology" which, of course, was utterly congenial to the "divine tradition" of the Pythagoreans and of their predecessors. A tree symbol formed the foundation of Plato's "science of numbers" and, hence, of his philosophy of ideas, too. Numbers, as we know, were "ideas" par excellence. The image of a ship completed the structuralist methodology of Plato. This image determined the chief characteristics of life within a state-organization. The structure of the "Ship of State" swallowed all human "individua" and even some particular types of social grouping which, for any reason, did not seem to be quite compatible with the structure of the "leading metaphor." Hence, we find in Plato's "ideal city" occupational groups, but no individuals, no self-existing personalities, and no "parties."

Even Aristotle, who is said to have collected about one hundred and fifty "constitutions" of various Greek and non-Greek states of his time, had not the power to detach his mind from the structural implications of a Greek polis. Both thinkers were destined

to become monographers of the small Greek city-state. According to Plato, the population of his "ideal city" had to include only 5040 citizens. The idea of a larger world became accessible to the Greek mind after the foundation of the Macedonian empire. Aristotle's mind was incapable of rationalizing the newly expanded political world, although he himself had been for years Alexander the Great's educator and the success of a disciple should have induced his teacher to a broader approach of political reality. However, that did not happen. The eyes of both great philosophers remained fixed upon the historical Greek polis. Plato, of course, should be excused for being so "shortsighted." His intuition was directed toward the cultural past of Greece and of the Indoeuropean humanity. The metaphor of the "Ship of State" greatly contributed to a particular limitation of his political views. His approach was structural, and his "formgiving thought" was utterly determined by the structural characteristics of the "Ship of State." He was following a main route of ancient thinking. Noah's ark seems to be a direct predecessor of Plato's ship. Genetic problems dominated the mind of the "true philosopher." His structural approach, moreover, was a "bond" which prevented him from detaching his mind from the "eidolon" of a ship. The metaphor was more than an illustration of his thought. It was the very "idea" of the thing—of the "eidolon" which he was contemplating. It was the only way leading to "true knowledge." Structure meant for Plato almost everything, although he himself was probably not entirely aware of this integral submission of his mind to the external aspect of the eidolon which he was contemplating and idealizing. It was a tradition which had become a chief element of his reasoning.

Since Plato remained faithful to the structural approach of the phenomena which he was studying and discussing, he was compelled to interpret moral questions in terms of structure and of "order." Quite analogous is the philosophy of the authors of the "Genesis." Noah's ark exemplifies both structure and moral order. A further development of the same conception led Plato to an identification of this ambiguous essence of the state to its repercussion in the mind of the "true philosopher." Hence, he identified both concepts with that of "knowledge." The philoso-

pher's mind, of course, had to be commensurable with the object of "true knowledge." There is—must be—a mutual participation between "true reality" and "true knowledge." The external world and the human mind are congenial. The "true philosopher" is a medium connecting both. He "knows" what true reality is and his own mind is a part of that reality.

Hence, Plato comes to the assumption that the "ideal state" is both—a product of knowledge and knowledge as such. That means that the state is primarily a structure, an "order," because knowledge is nothing else than "order," and "order" as such is determined by the structure of the initial "eidolon." A quite reasonable additional implication gives a peculiar nationalistic aspect to Plato's theory. The starting point is determined by the dominating concept of knowledge. Plato advises a "high spirit" to the barbarians of the North and cupidity (love of money) to the Phoenicians. What is left to the Greeks in this discriminating scheme? Of course, the "quality of love of knowledge"—to philomathes—had to be Greek and actually was Greek. Hence, an "ideal city" expressing order and structure with all its moral implications was, above all, a Greek city. Plato's assumption is both logical and historically justifiable. It is, of course,—we will see it later—strengthened by the "leading" metaphor of the "Ship of State." "It would be absurd to suppose," Plato says, "that the element of high spirit was not derived in states from the private citizens who are reputed to have this quality as the populations of the Thracian and Scythian lands and generally of the northern regions; or the quality of love of knowledge, which would chiefly be attributed to the region where we dwell; or the love of money which we might say is not least likely to be found in Phoenicians and the populations of Egypt."

The "quality of love of knowledge" is considered to be the chief feeling within the "ideal city," too. In fact, the entire structure of the ideal state reveals its scientific substance. Plato proclaims his own adherence to the Greek "love" or ideal: "The lover of wisdom . . . far surpasses the lover of gain, as well as the lover of honour . . ." "By what are things to be judged, if they are to be judged rightly? Is it not by experience, intelligence and discussion . . .?" "It is impossible for any one except

the lover of wisdom to have savoured the delight that contemplation of true being and reality brings . . . so far as experience goes, he is the best judge of the true . . . And again, he is the only one whose experience will have been accompanied by intelligence . . . It was by means of words and discussion that we said the judgment must be reached . . . and they are the instrument mainly of the philosopher . . .”

Hence, the ideal state is the realization of a philosopher's rule over the non-initiates. It is a “sophocracy” in which “virtue” is declared to be identical to knowledge. Both qualities constitute the chief distinction of a “true philosopher.” They define his chief possession—the only one which is allowed to him—the possession of “true knowledge,” of wisdom—*sophia*.

In terms of Plato's leading metaphor all these qualities—experience, intelligence, knowledge, virtue—would have to be attributed to the experienced pilot who alone is entitled to make authoritative judgments and to take wise decisions. It is easy to detect in Plato's conception of a philosopher-ruler a modern problem—that of “expertise.” Plato stresses the technological aspect of his “ideal city.” In no sense, however, can Plato's ideal state be called an artefact. The structure of his chief image is derived from reality. Reality works through the image or metaphor and dictates the content of Plato's proclamation. The rule of experience, of intelligence and of wisdom is something prior to the rationalization of the state as such and of all “qualities.” The structure was a predetermining factor which gave a definite direction to all further elaborations of the initial theme contained in the image itself. We had to face a quite similar problem in the case of the tree symbol. The image as a whole holds the contemplating mind bound to its structure. The interpretation of the metaphor of the “Ship of State” is not loose or impressionistic. It is “rooted” in the metaphor and immanent to its structural essence. The importance of “contemplation” in this particular case is utterly justifiable in terms of the Platonic philosophy of ideas. Experience, intelligence, knowledge are nothing else than specifications of “enlightenment” which is ascribed to each true philosopher. They become, however, extremely sugges-

tive, if one takes into consideration some outstanding peculiarities of Greek life and of Greek history.

The Greeks were a nation of sailors, navigators, shipbuilders. By imposing to his listeners and readers the metaphor of the "Ship of State" Plato actually was stressing the particular psychal disposition of his co-citizens and the historical foundation of their psychal and intellectual superiority. The Athenians were proud of their navy and of all their nautic achievements. Athens' glory and might were both due to her superiority on the sea. Plato was, of course, quite aware of the particular adequacy of his leading metaphor. Let us not forget that popular analogies and definitions formed a species of the Platonic "eidola." If contemplated by a true philosopher, such a popular metaphor could become a significant idea revealing true reality—the reality of the state as well as any other. Thus, Plato conceived his "ideal city" not as a universal pattern, but as a rational expression of Greeceedom as such.

The "quality of love of knowledge" is Greek and the metaphor of the "Ship of State," too, is basically Greek. Both elements determine the national aspect of Plato's political doctrine. "I affirm," says Plato, "that the Hellenic race is friendly to itself and akin, and foreign and alien to the barbarian." "Rightly," he said. "We shall then say that Greeks fight and wage war with barbarians, and barbarians with Greeks, and are enemies by nature . . ."⁸ Plato's doctrine is not only "national," but even "nationalistic." What determines the unity of all Greeceedom? Is it friendship, kinship, inimicity toward the barbarians, even if the barbarians are distinguished by a "high spirit"? It would be false to abase Plato's nationalism. Plato's quasi-racial theory has a distinct cultural content. Let us not forget the positive side of his nationalism—the "quality of love of knowledge" and his entire intellectualistic conception of both life and knowledge. Plato's nationalism is in no sense exclusive and paramount. In that it seems to be much closer to the Biblical "cultural nationalism" than to the bio-absolutism of the contemporary racists. Moreover, the content of the leading metaphor as such gives an important additional meaning to his national-cultural approach of the state. The "ideal city" is a pattern only for those who

correspond to, and who are able to accept, the structural implications of the metaphor of the "Ship of State." It is a tacite assumption which is inherent to the metaphor as such and, hence, to the very "idea" of the city-state. In the light of the "racial" theory of the "Genesis" Plato's approach will become both understandable and justifiable. The Bible distinguishes "sea-board" nations from the two other groups—from the Semitic nomads (cf. the "tents of Shem") and the Hamitic hunters exemplified by Nimrod.

It would be unjust to assume, together with Paul Shorey, that "Plato shared the natural feelings of Isocrates, Demosthenes and all patriotic Greeks"⁹ and that this "patriotism" determined Plato's anti-alien attitude and his inclination toward maintaining "slavery" even in the "ideal city." Plato's nationalism is a product of a very profound conception of the state as such and, particularly, of Greek political life—of its origin and essence. Confusing is also the vague assertion of the learned Englishman Hobhouse: "Plato's conclusions show how narrow was the conception of humanitarian duties in the fourth century."¹⁰ Hobhouse obviously confounds Plato's political views with the positivistic conservatism of Aristotle. We do not know, however, what Aristotle would have suggested in his own unaccomplished work on the "ideal city." His envisaged *lex ferenda* might have deeply differed from his usual pragmatic views inspired by comparative studies, in which he was much more classifying the existing socio-political data than postulating any "constructive" views. It is, moreover, dangerous to compare Plato to any other of his contemporaries and to characterize his political doctrine in terms of a century. Not the views as such, but the sources of the views of all his contemporaries should be taken into consideration. Otherwise we would be induced to apply a superficial general "-ism" to a series of highly differing doctrines which might well have originated from utterly unrelated sources. "Patriotism" alone does not explain anything.

Plato does not explicitly define his position. It is not clear whether "nature" should have established an unsurmountable barrier between Greeks and barbarians which "ontologically" excludes all barbarians from the enjoyments of an ideal political

existence. The discrimination which Plato is advancing is based on a cultural ground and might be called much more a question of "degree" than that of "essence." "Greeks . . . are still by nature friends of Greeks." A conclusion which necessarily follows opens the "ideal city" immediately to all Greeks: "Well then . . . is not the city that you are founding to be a Greek city"? "It must be," he said . . . "And won't they be philhellenes, lovers of Greeks, and will they not regard all Greece as theirs and not renounce their part in the holy places common to all Greeks"? "Most certainly."¹¹ Of course, we do not find here the broad universalism of the Christian doctrine. But are the walls of the "ideal city" really paramount? No, they are not. "The quality of love of knowledge," "intelligence," etc., are primary conditions of admission. The nature of the ideal is conceived in terms of knowledge. If and when this ideal is achieved, it may become accessible to all "lovers of knowledge." The term "nature" has here no absolute meaning. It is a psychological notion which is relevant to culture and to a certain stage of culture. Even a "barbarian by nature" might become a "lover of knowledge" and thus change his very "nature." Such a conception would be much closer to the "Genesis" which—we will see it later—is a direct predecessor of Plato's political doctrine.

Whether Plato was actually interested in broadening the significance of his "ideal city" and in transforming it into an ideal "type" and a universal pattern, remains doubtful. First, the "ideal city" had to be—rather to remain—a polis. Second, it was conceived primarily, if not exclusively, as a scheme destined to improve the political conditions of Greek—in particular, of Athenian—life. It would be dangerous to overemphasize the exclusiveness and the racial or "natural" character of his ideal. It would be wrong, on the other hand, to ascribe to Plato a universalism of the later Stoic and Christian type. He happens to occupy a central position between the two extremes. This position is not intentional, but profoundly rooted in the entire set of ideas and representations which form the far background of his philosophy. The "principle of division" used in Plato's racial theory seems to stress the cultural aspect of the problem. Thus, Plato avoids Aristotle's calm acceptance of "antihumanitarian" facts without

committing himself to a universalism of the Stoic and Christian type. Undoubtedly, Plato's conception is close to the theory of the "Genesis." Some chief characteristics of the national psyche are combined with some fundamental features of the respective environment. Plato explicitly refers to "regions"—"northern regions," "the region where we dwell," etc. "Race" and "region" are in no sense identical. Similar is the approach of the "Genesis." In any case, the "ideal city" is open only to "lovers of knowledge," because it is itself nothing else than knowledge. The concept of knowledge dominates all possible implications. A specification of this concept leads us to Plato's leading metaphor. Expertise—intelligence combined with experience and wisdom—is supposed to mark the main advantage of the projected sophocratic régime. The experienced pilot is the only possible leader of the ideal community. Of course, Plato's "true pilot" has a distinguished predecessor—Noah. Since both sources—the "Genesis" and Plato's "Republic"—operate with a quite similar "image," this coincidence is amply justified.

More intricate seems to be the question of slavery. Plato is highly indignant by the practice of enslaving Greeks—Greek farmers, artisans, etc.—for debts. But he does not move his sword for the sake of enslaved "barbarians." One might easily attribute this "obscurantism" to the basic conditions of ancient civilization. The city of Athens was full of slaves of different national origin. Two-fifths of the entire population of Athens were full slaves—*douloi*—and an additional quantum of half-free foreigners—*metoikoi* ("metics")—has also to be taken into consideration. All these people were not citizens and did not participate in political life as such. In the fourth century, i.e., in Plato's century, the proportion became even more disastrous. Three-fifths of the population were unfree. One should therefore assume that slavery was a "given fact"—almost an *a priori* of ancient culture which could not be opposed even by Plato.

It would be unwise to reject any "factualism" in matters of political speculation. The mind of a political thinker is intimately connected with the fundamental characteristics of the culture of his time, i.e., with "facts" relevant to culture. However, such was not the way of Plato's own reasoning. He had his own

method of finding out the very "ideas" of things which in his eyes constituted "true reality." Hence, we should be able to find "slavery" implicitly contained in the structure of his leading metaphor of the "Ship of State." Otherwise, it would be impossible to justify Plato's acceptance of the "fact" of slavery. The structure of the image is supposed to determine all major details of his theory. We saw a similar "structuralism" in Plato's use of the tree symbol. We will find the same approach in the "Genesis"—in one of the main sources of ancient wisdom. Ancient reasoning was dominated by the structure of a "whole" and by all chief implications of the correspondent "image," "shadow," "eidolon." Let us remember the word "sa" which held the mind bound to an initial typical combination of factual elements and finally induced the ancient thinkers to justify these connections in terms of a sophisticated interpretation. "Myth-making" helped to rationalize an initial complex situation which included various logically unrelated facts. The "whole" was preserved in the form of a myth or of a series of myths. In the case of the "Ship of State" we face an analogous situation. Hence, slavery, in order to be acceptable and justifiable, must be contained in the "whole" of the leading metaphor. We will see later that it has a place there, though in no sense as an "apriori" of ancient culture.

Perhaps, one should not narrow too much Plato's "patriotism" and "antihumanitarianism." Of course, his views were to a certain extent "time-conditioned," regional and even racial. They were all, however, relevant to culture. Greek supremacy was a question of "degree," and not of "substance." "Love of knowledge" is rated higher than Phoenician cupidity and the love of honours which distinguished the barbarians of the North. One should not forget that the Phoenician cupidity was, too, far from being a mere and pure "evil." The "money loving" Phoenicians had a tremendous amount of vitality, of initiative. But the "spirit of enterprise" is declared to be inferior to the "love of knowledge." The supposed supremacy of the Greek culture and of the Greek approach to life found in Plato a most vigorous defender.

The "ideal city" was primarily destined to include Athenians and their "friends," i.e., the Greeks. The emphasis is, however,

put on the notion of "knowledge" and of "love of knowledge." It is quite understandable that the cultural approach to political life could have induced Plato to an attempt to apply his conceptions to a living political body. The tyranny of Syracuse was destined to become Plato's laboratory. The result of the "experience" was negative. Plato had even difficulties to reach again his mother-country. He is said to have been sold as a slave by his Syracusean antagonists. Finally, he returned to his beloved Athenian academy and to the usual scholastic "logomachy" which, as we know, has found sharp critics in Aristotle and Paul Shorey. The former was, however, a pupil and then a colleague of Plato. The latter spent his life in writing of books on Plato. They both misunderstood Plato very profoundly. A metaphor was in Plato's conception something much more than a mere illustration of his thought and something entirely different from what Aristotle and Shorey call "intolerable logomachy." It was "vision"—"true vision" of an enlightened mind. An image—eidolon—could be interpreted in such a way as to disclose the very idea of a thing—its essence and real significance. Plato's attitude is intimately connected with the farthest past of humanity. We have seen it while discussing Plato's "science of numbers." The tree symbol determined the rational basis of Plato's "ideal city." The metaphor of the "Ship of State" leads us to the understanding of its structure. Both images form an essential part of the "divine tradition" which "some Prometheus" had handed down "from heaven to mankind."

CHAPTER III

NAVIGATION AND POLITICS

Plato's metaphors have been the subject of several cleverly written monographs. There are two doctoral dissertations which are both written by American scholars. Only one of them could be made available. G. O. Berg, Ph.D., Johns Hopkins University, 1904, composed a book called "Metaphor and Comparison in the dialogues of Plato."¹² Berg refers in his work to the dissertation of Dr. E. G. Sibley, called "A Study of Metaphor and Comparison in Plato," Johns Hopkins University diss. 1882, and to the well known work of H. Blümner, "Über Gleichniss und Metaphor in der attischen Komödie," Leipsic, 1891. Let us consult the latest monograph—Berg's "Metaphor and Comparison in the dialogues of Plato." It might give us a first idea of what had been done in this particular field of Platonic studies.

"The metaphors drawn from the nautic sphere are . . . very abundant in Plato's dialogues . . ." "Comparisons on the state to a ship with its crew are both numerous and elaborate . . ."¹³ "So Rep. 488, A ff. to illustrate the treatment to which philosophers are subjected in the state . . . Similarly Pol. 272 E the universe is conceived as a ship, whose helm in alternate cycles is held and abandoned by its divine ruler . . ." "Kybernan in the general sense, to direct, is common, e.g., Rep. 590."¹⁴

G. O. Berg does not go into any further details. His statements have a formal character. The nautic vocabulary of Plato seems, however, to have a far greater importance than one may think from the outset. The Greeks were sailors par excellence. Only a few decades before Plato, discouraging events compelled the better part of the Athenian citizens to speculate with the idea of a spontaneous mass-emigration to Sicily. The foundation of a new colony was in no sense a new task for a true Greek. The mind of a Greek, and particularly that of an Athenian, was upmost congenial to seamanship. "Parmi les recherches archéologiques qui ont pour but de reconstituer la physionomie du peuple grec," says A. Cartoult, "aucune ne touche plus directement

à son caractère et à sa vie que celles qui ont pour objet la marine. En effet, les Hellènes sont avant tout un peuple de marins c'est à ce point de vue qu'il faut se placer pour bien comprendre leur destinée et leur histoire . . ."16

"The islands of Greece . . . surrounded by the waters, seem to float on the surface with their constitutions and their customs."¹⁶ This comparison is due to Cicero.¹⁷ It is upmost illuminating. Specific geographic conditions seem to favor an essentially "nautic" approach to life and to its institutional forms. One begins to feel how near was Plato's leading metaphor to the historical conditions of Greek life, and to Greek mentality as well.

"In accordance with the geographic configuration of the country," says Cartoult, "the primary facts of Greek history and legend, religion and mythology, picture the Hellenes as sailors and navigators . . ." "It is the sea that gave them their first elements of civilization . . ."¹⁸ "Apollo himself, the Greek god par excellence, did he not come from outside? He was said in Greece to have come from abroad . . . his routes are sea-routes by which he has passed accompanied by dolphins."¹⁹

During the Persian invasion the Athenians decided to abandon their entire territory to the armed forces of the enemy. The real might of Athens was her undefeatable fleet. Pericles followed the "classical" policy of his country, when he decided to keep the whole population behind the fortified walls of the capital and to assure by all possible means the Athenian domination over the sea even at the price of a complete devastation of Attica.²⁰ Themistocles and Pericles had surrounded Athens with walls which had virtually separated the city as such from the continent. It seemed far more important to protect the communication-line connecting the city with the sea than to defend the land. Athens and its sea-port, the Piraeus, had thus become an artificial island. Plutarch gives a smart definition of Themistocles' policy: "Ten polin exepse tou Peiraios kai ten gen tes thalattes"—Themistocles has made both the city of Piraeus and the land utterly dependent on the sea.

In the "Birds" of Aristophanes two travellers are asked from what country they are coming. They answer: "hoten hai triereis hai kalai"—from the country of the beautiful vessels (triremes).

The sea determined the main features of the Athenian life and the chief objectives of Athenian policy as well. Foreign policy, defense, institutional life—everything had necessarily to be congenial to the sea. Plutarch testifies that as a result of Themistocles' policy "the power passed to sailors, signal-men and pilots."²¹ These sailors knew well "that they were, in fact, the main force and the real support of the state."²² The Athenian democracy was nothing else than a most significant emanation of the nautic style of Athenian life. Aristotle was quite aware of that fact. He explains that democracy can have different roots: "Here farmers, there sailors . . . as the fishermen of Tarent and Byzantium: in Athens . . . the crew of the triremes."

"In Athens," says Aristotle not without a slight sarcasm, "the poor and the people (the mass) has more influence than the noblemen and the rich, and that is just, because it is the people who are rowing on the vessels and assure the might of the republic; in fact, the pilots, the signal-men, the lieutenants,²³ the look-out-men, the carpenters have founded the greatness of the city, much more than the hoplites, the noblemen and the honest men . . ."²⁴

Aristotle's testimony seems to explain many things. It is not surprising that Aristotle himself favored the idea of a farmer-state. The disadvantages of an extreme democracy were too well known to him. Athens' collapse might have contributed to Aristotle's anti-nautic attitude. In any case, the nautic aspect of the Athenian constitution was quite evident. "Athens was in the fifth and fourth century B.C. a maritime city par excellence."²⁵ The comedies of Aristophanes "were made for an auditory of sailors . . . it is for that reason that nautic expressions are so abundant in them."²⁶ A political consequence of primary importance is due to this peculiar style of Athenian life: "In such circumstances it seemed equitable that all citizens participate in the elections (of officials) and that they all be entitled to take an active part in political debates."²⁷

Such an egalitarianism of the nautic type had a profound influence on both institutional life and political structure. The crew, once put ashore, maintained the style to which it was accustomed. It is possible, however, that the sense of "hierarchy,"

which must have existed as long as the crew was navigating, became “naturally” lost when the sailor put his feet ashore. The authority of a captain or pilot ceased to be recognized, because his specific knowledge and experience was less needed and less visible. Moreover, the life on the sea seems to strengthen egalitarian feelings. The most ancient maritime code, the so-called Rhodian Law, reveals a profound egalitarianist tendency. Of course, on a vessel each member of the crew has a certain function. His activity is combined with that of all other members of the crew. He feels to be an inseparable and necessary part of a whole. The life of the crew contains implicitly the idea of cooperation and that of a basic functional equality. There is a predetermined coherence between all members of the crew. A certain order is imposed to men by the specific conditions of nautic life as such. That order may receive an extreme form, if some of the basic conditions of seamanship are neglected. Plato accuses the Athenian mob of neglecting viciously and foolishly the most fundamental features of true seamanship. We find that idea expressed in Plato’s leading metaphor of the “Ship of State”—more specifically, in the allegory of the “ship of fools”²⁸ The “ship of fools,” of course, is Athens—a guideless, undisciplined, headless democratic Athens in which neither knowledge nor experience have anything to say. They have no place in Athenian political life.

“Hear my comparison . . . conceive this sort of thing happening either on many ships or on one . . .” In the following sentences Plato attempts to picture—like “a painter who is portraying goat-stops and similar creatures”—a ship on which “the sailors are wrangling with one another for control of the helm, each claiming that it is his right to steer though he has never learned the art and cannot point out his teacher or any time when he studied it. And what is more, they affirm that it cannot be taught at all.” Plato blames the fools, as well as the imposters—“pretenders” and demagogues who are “most cunning to lend a hand in persuading or constraining the shipmaster (i.e., the Athenian people²⁹) to let them rule, while the man who lacks this craft (i.e., the philosopher) they censure as useless.”

Plato finds a striking argument utterly derived from his leading

metaphor of the "Ship of State": "They (the fools) have no suspicion that the true pilot (kybernetes) must give his attention to the time of the year, the seasons, the sky, the winds, the stars, and all that pertains to his art if he is to be a true ruler of a ship." "Science of navigation" should be the only "science" of how to control the helm of the ship.

A true pilot is to be "a scholar and gentleman." He "is to seek that, i.e., truth, always and altogether . . ." "It is not the natural cause of things that the pilot should beg the sailors to be ruled by him or that wise men should go to the doors of the rich." Innate ability and honestly acquired knowledge and experience determine the choice of a pilot. "The natural cause of things requires an entirely different procedure than that which the fools are adopting. The Ship of State should commit itself to a true pilot, i.e., to the philosopher."

But in the present conditions, thinks Plato, "the people of Athens are like a shipowner who has little knowledge of navigation; they are more powerful than anyone else in the Ship of State, if they care to exercise their authority: they have the right to appoint the ruler of the State, as the shipowner has the right to appoint the captain for his vessel; but they do not understand very well what is told them, have little foresight, and know little of the principles of government . . ." "On the other hand, the philosopher, the true seaman, does not believe there is any true art in the devices to attain power whether the other party desires it or not; and that in any case the man who is to be qualified to command the Ship of State needs all his time for higher duties and has none to devote to the mere attainment of power . . ." "On these grounds the philosopher is indeed useless to the State, but only because the State does not commit itself to him."⁸⁰

Certainly, T. D. Seymour's interpretation of the passage on the "ship of fools" is quite adequate. Plato criticizes the Athenian democracy sharply, and opposes the rule of an enlightened philosopher to that of unqualified "pretenders." The fools do not realize the "natural cause of things" which postulates a non-opposed and unhindered rule of a "true pilot." What is here the real problem? Of course, that of a predetermined rational order to which the empirical would have to be adapted. The privilege

of "authority" should belong to the experienced and learned navigator—to the "true pilot" who must naturally be ruler of the ship. The idea of hierarchy is based on the natural order implied in the very existence of the ship and of its crew. If such an order is not maintained, then the ship is said to be a "ship of fools." Nobody would dare to oppose that statement. The "Ship of State" has to be organized in strict accordance with the real foundation of nautic life and organization. People do not understand that the political order in a state is subjected—or should be subjected—to a quite similar "natural" or "aprioric" regulation. The qualified pilot must command the vessel and the crew as well. Hence, the "Ship of State," if it is not organized in accordance with its nautic pattern, is nothing else than a "ship of fools." Behind the dialectical ornamentation we find a main assumption—that of a full and necessary correspondence between the concept of order in a state and that of the order which naturally exists on a ship. The comparison is structuralizing the empirical state in terms of its nautic pattern. The "true pilot" is the natural hero of the whole passage.

The metaphor is, of course, far from being an accidental inspiration of a poetic mind. It is deeply rooted in Athenian history. Hence, it is particularly intelligible and suggestive. One might call it a challenge addressed to a people of sailors who were used to spend the best years of their manhood as rowers, sailors, signal-men, etc. Moreover, the comparison touches the entire mode of life in Athens—the prevailing "mores," the taste of the auditory, the philosophy of life reflected in language and literature, the main themes of all political debates. The Athenian readers of the "Republic" must have well felt the weight of Plato's argumentation and the efficiency of his comparisons and criticisms. They might have understood much better than any contemporary commentator of Plato's theories the "naturalness" of his assumptions. Nautic life was an apriori of Athenian reasoning in political matters—a logical prerequisite which was prior to any political discussion and to political thought as such. Only "fools" could dare to diverge from the "natural cause of things."

The "naturalness" of the image of a ship representing the state makes Plato's "comparison" something more than that. It seems

to disclose a logical postulate of Greek, and particularly of Athenian, thought. It is an "eidolon" which predetermines the way itself, by which it could be interpreted. One might call it a structural prototype which as such is prior to any political discussion—self-evident and self-speaking and alone "reasonable" in relevance to politics. We are facing here a problem which is quite analogous to that of the "tree of knowledge." In both cases we are dealing with an apriori of cultural history—with something prior to thought as such. The connection between the structural apriori and its later explanation or interpretation historically had to pass through a stage of "contemplation." Plato's tremendous intuition seems to have disclosed to him the way which human reasoning actually had chosen: contemplation (of an "eidolon"), intelligence, experience, knowledge, wisdom. These concepts reproduce the chain of events which determined the history of the human mind. The first stage is prior to "logic." All data of that period are "natural" in the sense that they enter into man's conscience as real apriori. Such facts are "given" and remain "given" as long as the correspondent "logic"—one may call it in this case "the first logic"—continues to be used as a foundation of reasoning as such. It might be even impossible to separate one's mind entirely from this genetic stage of human reasoning as long as man remains a "zoon historicon" relying on some primary genetic facts and the following historical experience. In any case, Plato was defending the "old"—the "first"—logic characterizing the very beginning of Greek—"Japhetite," Indoeuropean—culture. He was following a "divine tradition" handed down "from heaven to mankind." He did it in the case of the tree symbol. Plato was, in fact, fighting against the new logic of the "positivist" Aristotle to whom he did not dare to reveal the actual source of his "science of numbers." Thus, the entire philosophy of ideas remained more or less concealed from Plato's non-initiated pupil and colleague. Again, in the metaphor of the "Ship of State" Plato is operating with a pre-logical notion. It is true that this notion becomes particularly lucid—even self-evident—in the conditions of Athenian life and of the nautic ambience of that life. Plato's comparison, however, seems to have much deeper roots. We will see later

that Plato was virtually reviving a most significant theme of the "Genesis." I do not think that in this particular case Plato's reliance on the Biblical material was quite conscious. His metaphor—in particular, the significant implications of the metaphor—are due to intuition. Plato had the right feeling in suggesting a kind of order which was both, genetically and historically, justified. This order had been foolishly destroyed by vicious politicians—power-loving "pretenders," demagogues and intriguers.

The delicacy of Plato's task is revealed in the fact that the "naturalness" of the order on a ship cannot be based on any "biological" prerequisites. A crew is not a family, and a pilot is not a paterfamilias. The order as such is not relevant to any biological forms of human coexistence. An act of reason is necessarily implied which introduces an element of artificiality into this particular form of a "natural order." We will discuss this problem later, in connection with the Biblical legend on Noah's ark. The "naturalness" is, however, so obvious that only "fools" are incapable of recognizing the necessity of "hierarchy" and of "cooperation" which are both "genetic facts" and primary components of man's nautic experience as such. Plato finds a logical issue in a fundamental metaphor which eo ipso defines all structural details and predetermines all political interpretations and accentuations. The "Genesis" has adopted in the legend on Noah's ark a very similar approach.⁸¹ Both sources defend a rational order which is conceived of as being "natural"—either imposed by God, the Eternal, or "given" in history. This order, born in the specific conditions of "seafare," is vigorously defended against human foolishness and vice. Both sources are solving genetic problems, and they both seem to solve them in accordance with the actual becoming of human civilization.

Let us turn back to Greece of Plato's time. Speaking of the "true pilot" Plato, of course, was very realistically referring to men who actually were piloting Athenian vessels and whose reputation was high enough in order to make Plato's metaphor quite reasonable from all angles. The Athenian pilots—steermen—were widely known for their experience, intelligence and adequate preparation. Plato did not refer to angels. The entire emphasis

is put on "knowledge" which completes the natural abilities of a good pilot. As to the crew, T. D. Seymour seems to think that the metaphor may be applied only to professional politicians. That has, however, to be understood in terms of the specific Athenian conditions. Every Athenian citizen was involved in political activity and, hence, was a member of the crew of the "Ship of State." Plato's "ship of fools" might well have contained about 25000 individual fools, because usually one sixth of the entire free population of Athens was performing various political duties. As to the image of the "shipowner" whose will should be not only sovereign, but also reasonable, I am inclined to consider this passage of Plato's "Republic" as a first clear definition of the people's "sovereignty." The population as a whole is compared to a shipmaster—*naukleros*. One might feel surprised in finding this significant principle combined with a discriminating metaphor. However, Plato was not a "democrat" in the proper sense of this word. He was a "selectionist." The state as a whole is supposed to submit itself freely and deliberately to the rule of a "true pilot," i.e., of a philosopher or "guardian" (*phylax*). Qualified rulers form a separate class in Plato's "ideal city." Later, Plato seems to have dreamed of a single ruler who thus would double the functions of the "divine ruler"—at least, in the limits of the "ideal city." The "divine ruler" himself is, too, compared to a pilot. We will discuss this metaphor in connection with the "Genesis."

CHAPTER IV

THE TRUE PILOT

In defining the art which a true pilot is supposed to possess Plato approaches very closely his own educational scheme. The greater part of what a pilot had to know in order to be called a "true pilot" fits perfectly well into Plato's program. The five mathematical disciplines—arithmetics, geometry, astronomy, mechanics, acoustics—form the basis of Plato's scientific preparation which he would like to impose on each "true philosopher." These sciences are very congenial to the art of navigation. Of course, the last stage—that which includes ethics and sociology—is essentially "political." A good pilot, however, should reach the very top of Plato's scale of education. He is supposed to command both—the ship as such and the "Ship of State."

It is evident that as far as Plato's metaphor is embracing the whole of life in the "ideal city," the pilot must be considered as an immanent element of the entire system. In fact, he is a constituent element of the system, because his knowledge and experience, and his authority, hold this system together. A ship without a "true pilot" and with a crew of fools cannot exist. Its existence is contrary to reason. It is a caricature of a state. Plato's attitude is clear enough in that particular point. Nevertheless, his viewpoint had been recently completely misinterpreted by a contemporary German scholar whose influence on modern political thought should not be underestimated. I am referring to Carl Schmitt,—the man who first introduced the term "totalitarian state" into political theory. His close connection with the modern school of the so-called "existentialists" makes his theories particularly significant and typical of our time. In the center of his theory Schmitt places—of course—the concept of "leadership"—"Führertum." It is interesting to see how Schmitt defines his chief "image" by opposing it to Plato's conception of a "true pilot."

"A famous passage in Plato's dialogue 'Politikos' (Statesman) deals with different comparisons which identify the statesman with a physician, with a shepherd or with a pilot; and the image of a pilot is emphasized . . ." ⁸² "It (the image of a pilot or steerman) has been adopted by all German and Anglo-Saxon languages,

which had suffered the influence of Latin, and it has produced the term *gubernator* . . .” “The history of this ‘*gubernator*’ is a good example of how a picturesque comparison can evolve into a technical legal concept . . .” “On the contrary,” says Schmitt, “the concept ‘*Führer*’ (leader) originates from the concrete substantial thinking of the nationalist-socialist movement. It is remarkable that here no image can be considered to be quite adequate . . . Our concept (‘*Führertum*’—leadership) does not need any mediating image or representative comparison. It does not emanate from any decadent allegories or representations, or from a Cartesian ‘*idée generale*.’ It is a concept expressing an immediate and a real presence.”⁸⁸

Carl Schmitt profoundly misunderstood Plato. The “Ship of State” is far from being merely a picturesque comparison. It is a metaphor reflecting cultural history in one of its most important expressions. One might call this metaphor a crystal of human civilization, because it implicitly contains a “genetic situation” which gave birth to an important cultural idea—perhaps to the most important idea which humanity had ever embraced. I mean the idea of the State. We will see that no other primitive sociological formation could have suggested a quite similar idea—neither a family, nor a kin, nor a household. “Conquest” alone was also not sufficient in order to suggest the structural characteristics of a real state. Only the nautic experience of mankind could lead the human mind to a new concept of “order” and to the rationalization of an utterly new type of coexistence in which the “citizens” form a quasi-natural whole. In that, Plato’s metaphor of a “pilot” is far superior to Schmitt’s concept of a “leader” (*Führer*) and to the images of a “shepherd” or of a “physician” as well. In announcing his preference for the comparison of a statesman to a pilot, Plato, once more, discloses to us an astounding intuition. Plato, presumably, did not know the “Genesis”—at least not the “Genesis” which we find in the Old Testament. But even if he would have known it, the later Hebrew interpretation would rather have obscured his own conception than furthered it. In the “Genesis” the family and the household conception are combined together and dominate the entire “image.” Noah embarks his family, including men and animals.

Contrary to Aristotle's opinion, we have no reason to accept an abstract scheme in order to explain the origin of the state, which Aristotle himself seems to favor: household—union between several households—village—union between several villages—State. Such a line of development seems to be prejudicial, because a household or a family or a kin do not involve structural problems relevant to the State as such. The "idea" of the State had to come from outside—had to be applied to the above-mentioned formations. They seem to be much more "biological" than "social." Any "political" implications do not emerge out of these bio-social forms of coexistence. Of course, the idea of the State could be eventually infiltrated into them from outside and thus produce something analogous to a real State. But that would have to be proved in each individual case. A Roman familia, in which the father's power—*manus*—was unlimited, could not produce *suo sponte* any institutional complications which might be called relevant to law and to politics. The later change of the extraordinary simple structure of the Roman family is mainly due to interventions from outside. A household might be judged more favorably. However, the Middle Ages seem to prove that the parcellation of a State into a series of large "households," which themselves included several sheets of dependent households, practically led to a complete dissolution of the State as such. Similarly the enlarged family of the Slavic "zadruga"-type, which implicitly contained the household conception as well, did not lead to the formation of a State. A substantial element was lacking in all these bio-socio-economic formations. The state—the idea of the state—seems to have originated from an entirely different "genetic situation." Of course, it is difficult to analyze the farthest past of the human civilization, but it would seem that the combined testimony, which we find in Plato's rather intuitive assertions and in the legends of the "Genesis" as well, should induce the assumption that a ship with its crew and its pilot might well have constituted a primary—a genetic—situation particularly favorable for a spontaneous birth of the very idea of State. That should explain the abundance of nautic metaphors in the political vocabulary of so many nations. Latin influence alone does not explain anything. The metaphors had to be con-

genial to the mind of the people who were adopting and using them.⁸⁴

On the contrary, the images of a shepherd, of a physician and of a "leader" (Führer) seem all to be "external" or—as Schmitt would say—"transcendent" to the State as such. Carl Schmitt himself gives an enlightening analysis of the use of the concept of a "shepherd": "The Roman-Catholic church has chosen the images of a shepherd and of the herd in order to characterize the rule of the church over the community of its adherents. These two concepts were then worked over into dogmatic-theological concepts. The most outstanding particularly of that comparison is the fact that the shepherd as such remains absolutely transcendent to the herd." That seems to be both correct and clearly defined. As to the "physician" to whom Plato is referring in the "Politikos" and in the "Republic" as well, he, too, is in no sense "immanent" to his patient. Moreover, the intervention of a physician presupposes an emergency situation—illness. The State cannot be supposed to be constantly "ill." The functions of a pilot are utterly different. He is supposed to direct the ship without any interruption. The "Ship of State" is running permanently. Its journey has no time-limit, nor has it a clearly defined "direction." There is a great deal of "free determination" on the part of a ruler or "pilot." Plato alone knew that the pilots of his "ideal city" would manage the political affairs of the ideal community during a whole "world year," i.e., during 12960000 days.⁸⁵

The concept of "Führertum" (leadership), which seems to have been introduced into political theory by Max Weber and which was later adopted by Carl Schmitt and all national-socialist thinkers, is, of course, very close to the image of a "pilot." It is, however, far less "constructive" and hence much less "political." A "Führer"—leader, dux—is first of all an experienced leader of a troop of hunters or fishermen. Thus, the concept as such might be very old and well applicable to a very early and primitive "genetic situation." However, this concept is less formative than the image of a pilot, because it does not involve a similarly rich set of institutional, psychological and ideological implications. The emphasis is put on command and on obedience.⁸⁶ Experience is

combined—even mixed up—with physical superiority. The idea of hierarchy has here a brutally simple solution, whereas the implications of Plato's image seems to determine a particular kind of "active cooperation" between men on the basis of what one may call "functional equality." Such an equality does not exclude "authority." On the contrary, it implies a certain principle of coordination which is quite compatible with the idea of a "leading mind." The physical superiority of the pilot or steerman is simply irrelevant. Experience, intelligence, knowledge can alone justify the nomination of a pilot. I do not mean here any modern content of the concept or of the metaphor, but their first, original, genetic content, which was utterly relevant to the respective genetic situation as such. The authority of the pilot is a constituent part of the genetic situation itself. Its foundation might be called "scientific." Navigation was an "art" which necessitated a far greater amount of "knowledge" than any other form of leadership. The "shepherd" may be called, from that point of view, a direct anti-thesis of the pilot. This profession requires a minimum amount of "knowledge." As to the image of a "troop-leader," it seems to be midway between the two others.

The work of the crew on a ship implies both, a cooperative organization and—curiously enough—a territorial limitation of the crew's activity. Both elements might have had a great influence on human thought. Let us remember Cicero's illuminating remark on the "floating islands" of the Greek archipelago. The life on these islands might well have assumed the form of a "ship-like" existence. They were favored by nature itself. We should not be astonished to find that some of these islands disclose traces of a very early civilization. The idea of a political organization could have occurred to the mind of the inhabitants of those islands much easier and much earlier than elsewhere on the continent. One of the islands—Rhodes—produced the first maritime legal code, which later had been adopted by all nations of the Mediterranean area—even by the Romans. Even nowadays references are sometimes made to this "Rhodian Law." The inclination toward political organization and legal regulation could develop only in a congenial environment. Hunting certainly could not lead the mind to the idea of a constitutional organization of the com-

munity. Political life needed a more complex initial situation. A ship, i.e., an artificial island, or an island, i.e., a natural "ship," could form a genetic situation which was particularly favorable to the development of institutions different from what we call a family, a kin, a tribe, or even a "household." The latter concept may have had various precious institutional points, but its biological roots (a family or an "enlarged" family, including outsiders) seem to have formed an unsurmountable handicap which prevented a household, or a union of households, from evolving into a strictly political organization—into a "State." A ship or a ship-like island can be called a far more adequate source of political reasoning. The idea of a coordinated whole was clearly implied in that initial situation. We should not be surprised that Plato and the "Genesis" are both referring to a "ship" or to a "barge." Cicero, as we know, had a very similar intuition.

Carl Schmitt has the merit of having felt the presence of a very significant problem, though his solution seems to be wrong—contrary to facts. Of course, all national-socialist thinkers neglect the Biblical material. That certainly is unwise. "The ancients," says Plato, "were superior to us and dwelt nearer to the gods." That applies to the national-socialist gods, too.

Schmitt mentions a fourth image—that of a riding warrior. He attributes this metaphor to the French historian Hippolyte Taine: "This picture," says Carl Schmitt, "corresponds magnificently to the personality of the emperor (Napoleon I) who succeeded in subjecting the state of the French nation, because the image as such gives a deeper explanation of the internal pressure (coercion) which exemplified his rule." Schmitt makes the attempt to enumerate with an astounding lucidity the various institutional implications of that image. He speaks of "new" legitimations—plebiscites, papal coronation, marriage to a princess of the Hapsburg family—and of "new institutionalizations (new nobility) within (the empire) and from within." Schmitt becomes here "ultra-Platonic." It is very doubtful whether in the XIX Century such interpretations could be derived from a leading image—even from the image of an emperor. The chief comparison as such is not new. It occurs in a political pamphlet of a Russian publicist of the XVI Century, Ivan Peresvetov.⁸⁷

Its main implication seems to be that of conquest and of attack. Attila or Zhengis-khan might well have inspired such an image. It would be hard to find plebiscites or an honorable dynastic liaison implied in such an image. The picture suggests destruction much more than any "legitimations" or "instutualizations." Of course, Schmitt's sarcastic character is well known to his readers, and to the leaders of the "Third Reich," as well. His recent disgrace has a very natural explanation.

Plato's imagination was restricted to the immediate content of his metaphor of the "Ship of State." Let us briefly analyze the actual position of a pilot and the functions of a Greek crew. Some of the institutional suggestions of the "Republic" might well go back to historical reality, i.e., to the life of the crew on board.

The Athenian triremes were usually commanded by military officers—trierarchs. Although the trierarch was considered as the official commander of the vessel, his real authority was very much dependent on the fact whether he was an experienced sailor or not. "Let us not forget," says A. Cartoult, "that the trierarch was not necessarily a professionally trained sailor." His nomination usually was due to purely political considerations—"esti de kat' eklogen ton politikon andron." Hence, it was absolutely necessary for a trierarch to have on board "a second officer who would be perfectly acquainted with the art of manoeuvring a ship and capable of guiding a novice."³⁸ A trierarch was in most cases much more an "homme de confiance" of some of the leading politicians than the real commander of a trireme. Similar was the position of a naukleros on a merchant ship. A naukleros was either the owner of the vessel or a representative of the owner. Later the term became an equivalent of the English word "skipper."

The task of finding a trained pilot was a delicate one. "Aussi le kybernetes occupait-il sur la trière une situation considérable," says A. Cartoult. "Au point de vue technique, c'est lui qui commandait en réalité le navire."³⁹ The pilot or steerman "directs the ship, gives orders to the sailors." We know the passage in the "Republic" in which Plato describes the knowledge which might be expected from a "true pilot." In the dialogue "Gorgias" Plato defines this art (kybernetike) as an "important science

which preserves the souls, the bodies and the goods from supreme danger."⁴⁰ "It was in fact a science which had a special name and which was considered to be very important," says A. Cartoult.⁴¹ "From the practical viewpoint the salvation, as well as the destruction of the vessel depended entirely on him, the kybernetes."

The passage found in "Gorgias" gives an additional justification to the comparison between a pilot and a philosopher or "guardian." In fact, a pilot was a guardian—a guardian of souls, bodies and goods. Quite similar is the function of the guardian class in Plato's "Republic." It is not excluded that Plato had chosen the term "guardian"—phylax—in order to stress the particularities of the functions of a pilot. The interpretation of the initial metaphor of the "Ship of State" seems to have determined many details—terminological and other—which otherwise would not be quite intelligible.

Aristophanes tells us in his "Knights"⁴² that a kybernetes starts his career first as a simple rower; he then "puts the hand on the helm," "observes the winds." Finally, he "governs the vessel, and depends only on himself and on nobody else." The pilot maintained order and discipline on the ship. This discipline necessarily had to be severe, because the crew did not always consist of "honest" men. Such was, at least, Aristotle's opinion. The pilot "exercised his authority through subordinated officers . . . he gave orders to them, and they transmitted these orders to the crew."⁴³

It is obvious that the pilots were the actual custodians of Athens' supremacy on the sea and the real promoters of Athens' glory. Is it possible to qualify Plato's leading metaphor as a spontaneous creation of a romantic mind? Of course not. The comparison is highly realistic, despite the fact that its roots are ancient and it may appear "romantic" in form. "Political romanticism," says Carl Schmitt, "is an accompanying effect which is given by a romanticist to a political event as far as this event accidentally provokes a romantic productivity. An impression suggested in a political-historical reality may give an impulse to subjective creating."⁴⁴ In Plato's case the term "romanticism" seems to be unapplicable. His entire conception of the Athenian state is upmost congenial to historical reality. The "image" is almost identical with the "thing"—at least, with the historical expression of the

“thing.” As to the “idea” of the thing, Plato seems to have succeeded in disclosing its origin and its very essence. He holds the root of the “thing.” I would not call that “political romanticism.”

The comparison is, moreover, a well-defined program. It is doubtful whether Plato himself was influenced by any considerations concerning the practicability of his scheme. He undoubtedly was aware of the fact that his language and his structural suggestions were very close to the feelings and interests of his fellow-citizens, despite the sharpness of his criticism. However, he was far from the idea of “gilding the pill” which the foolish, sick-minded Athenians were supposed to swallow. Plato’s program was a natural emanation of a Greek mind embellished by deep personal intuition.

One of the minor consequences of the metaphor of the “Ship of State” is Plato’s much disputed “communism.” It seems that in this particular case Plato’s mind went pretty far astray. Aristotle’s objections are self-evident. A positivist could not feel any encouragement from Plato’s utopian denial of property. However, Plato did not go so far as to impose a communistic régime on the entire population of his “ideal city.” Only the “guardians” were deprived of property. They had a compensation in their knowledge and in their leading position. Plato’s communism is easily explainable in terms of his metaphor.

Attempts have been made to connect some of Plato’s institutional ideas with the political structure of Sparta which from time immemorial was Athens’ chief rival. Sparta was reputed to be a state of warriors and ascetics. Plato’s “Republic” seemingly reproduces some features of Spartan life. Simple food would seem to be a Spartan label. It suffices to recall the famous “black soup” which is said to have been the chief dish of the Spartan youth. The organization of the military class might, too, have some common features. Plato was, however, very reticent in matters which were not entirely familiar to him. The Spartan ambiance of Plato’s suggestions is in any case doubtful enough. We know that his vegetarianism has utterly different roots. It is closer to the “Genesis” than to Sparta. As to Plato’s communism, its Spartan provenance is more than doubtful. It

seems to be inspired by quite different considerations. A key might be found in the image of the "true pilot."

A. Cartoult tells us that an Athenian "kybernetes" may be rightly called "un véritable loup de mer." The life of a pilot was far from being smooth. The pilot was completely absorbed by his duties and cut off from the coast for the greater part of his life. Happy family life might have been a frequent theme of his dreams, but in no sense a real element of his "empirical" existence. Since a pilot's authority was chiefly due to "experience," intelligence and knowledge, he practically did not need to be supported by politicians and "pretenders." Ex officio, a pilot was the guardian of souls, bodies and goods. His life was devoted to the fulfilment of a patriotic duty and did not contain the usual compensations which a man is supposed to have. The entire régime of his life was very peculiar.

Plato conceives the style of life of his guardians in very similar terms: "In the first place," says Plato, "none must possess any private property, save the indispensable . . ." ⁴⁵ "Secondly, none must have any habitation which is not open for all to enter at will. Their food, in such quantities as are needful for athletes of war sober and brave, they must receive as an agreed stipend from the other citizens as the wages of their guardianship, so measured that there shall be neither superfluity at the end of the year nor any lack. And resorting to a common mess like soldiers on campaign they will live together . . . So living they would save themselves and save their city." ⁴⁶

"But whenever they shall acquire for themselves land of their own and houses and coin, they will be householders and farmers instead of guardians . . . and they will pass their days . . . laying the course of near shipwreck for themselves and the state." ⁴⁷

The condemnation of land, house and coin and the emphasis put on the metaphor of a near shipwreck seem to stress the nautic background of Plato's institutional suggestions. Paul Shorey is quite right in saying that "the image (in Rep., 417 B) is that of a ship nearing the fatal reef." ⁴⁸ One might add that the guardians are here "imaged" as pilots or steermen on whose vigilance the safety of the ship and that of the crew is utterly dependent.

These ideas are "communistic," but certainly in a very peculiar sense. They approach the realities of ancient "seafare" and therefore cannot be called "revolutionary." Plato's scheme rationalizes some characteristic features of the nautic style of life and confers on them a normative value. He completes this picture by the description of a curious marriage system in which again the homeless "kybernetes" seems to play a decisive rôle.

"It follows from our former admissions," says Plato, "that the best men must cohabit with the best women in as many cases as possible and the worst with the worst in the fewest, and that the offspring of the one must be reared and that of the other not . . . And the way in which all this is brought to pass must be unknown to any but the rulers, if, again the lord of guardians is to be free as possible from disunion . . ." "And on the young men, surely, who excel in war and other pursuits we must bestow honours and prizes, and, in particular, the opportunity of more frequent intercourse with the women . . ." "And the children thus born will be taken over by the officials appointed for this . . ." "The purity of the guardians breed shall be pursued . . . The mothers themselves shall not rule too long, and the trouble of wakeful nights and similar burdens they will devolve upon the nurses . . ." Maternity becomes thus "a soft job for the women of the guardians."

Plato's eugenics form an elaborate and consistent system. How could he, however, come to the surprising idea of intercourse without marriage and of education outside of any family life? Even the communist experience in Russia proved unable to break these traditional forms of human existence. Is this conception of "free love"—though of a "love" subjected to the intervention of the state and to different reasonable regulations—due to the exaltations of a romantic or artistic temperament; or is it, on the contrary, a product of a cold rationalization of observable social phenomena? Is Plato's scheme derived from reality and from history, or is it utterly detached and arbitrary?

Here again one might find traces of a peculiar nautic ideology which is inherent to the Greek mind. Plato's matrimonial scheme and his eugenics seem both to sublimize reality, existing condi-

tions, which, however, were certainly far enough from the projected idyl. The sailors and particularly the pilot's life became thus institutionalized and justified in terms of a risky "idealism." Although starting from reality Plato has to use wings in order to reach such unexpected conclusions. Perhaps, the accidental fact that he himself was not married might have influenced and "romanticized" his thought. No romance, no woman, is connected with Plato's biography. He had friends among his youthful admirers. It would be wrong, however, to ascribe to Plato a particular "gynecophobia" which in any case could not be historically proved.

It is astounding that Plato mentions "intercourses with women" together with other forms of "remuneration." This idea of a reward given in the form of a legitimized "free intercourse" with a "best" woman is brutally "practical." Plato's suggestion looks like an attempt to allure people and to induce his fellow citizens to an integral acceptance of his political program. It certainly is the weakest point in the entire scheme. The more surprising is a recent attempt made by the Nazi government which is virtually reviving Plato's "free love" conception. The government of the "Third Reich" promised, in 1940, to give full material aid to mothers who beget children from soldiers during the time of war, independently of the fact whether the parents were married or not. This decree seems to be directly inspired by Plato's considerations in the "Republic," 459 A-E. Are there any precedents in German history as such? The decree was not accompanied by any historical comments. It seems, therefore, that the "spiritual leadership" can be in this particular case attributed to Plato. The initial idea of ascetic rulers who are completely detached from the seducing vices of society is somehow abased by the introduction of such a sexual intercourse of high frequency. Nevertheless, the weak side of Plato's eugenics should not annihilate the value of his entire approach to the duties of the leading class of guardians. "The security of disinterested capacity in the rulers is the pons asinorum of political theory," says Paul Shorey.⁴⁹ "Plato constructs his whole state for that end." One should add that he is doing it by means of his leading metaphor of the "Ship of State."

CHAPTER V

THE CREW

Plato divides the entire population of his "ideal city" into several classes: "While all of you in the city are brothers . . . yet God in fashioning those of you who are fitted to hold rule (the guardians) mingled gold in their generation, for which reason they are the most precious—but in the helpers (warriors) silver, and iron and brass in the farmers and other craftsmen."⁵⁰

It seems that the "crew" is here divided into three classes—guardians, helpers and craftsmen. That leads us, as we shall see later, to the classification scheme of the "Genesis." Since the last class is divided into two subclasses—that of "farmers" and that of "other craftsmen" (both subclasses are symbolized by two different metals—iron and brass)—we might augment the number of classes from three to four.

The number "four" was, as we know, an important element of the Pythagorean "science of numbers." That seems to give a higher justification to Plato's class theory, although the division as such might have been very close to the actual grouping of the population of an ancient Greek city. Paul Shorey says that these classes were "not casts, but species."⁵¹ He might be true. It seems to me, however, that Plato's scheme has a solid foundation—the leading metaphor of the "Ship of State."

The "helpers"—epikouroi—are also called soldiers and defenders—propolemountes.⁵² How did Plato come to the term "helpers"—epikouroi? We know that the name of "guardians" is intimately connected with the functions of a pilot who "guards" the souls, the bodies and the goods of the crew and of all people who might be found on board. The term "helpers" seems, too, directly connected with the repartition of certain functions on a ship. In fact, the "helper" seems to correspond to the so-called "proreus." "Le grade immédiatement inférieur à celui du kybernetes était le grade du proreus . . . Ce qui faisait du proreus pour le kybernetes un auxiliaire indispensable, c'est qu'il devait lui donner tous les renseignements nécessaires à la manoeuvre."⁵³

“The proreus,” says Plutarch, “has to survey for the kybernetes all that is going on in the front part of the vessel; he transmits his observations to the pilot and must execute the latter’s orders . . .” “Sitting or standing on the prow the proreus is looking out for the squall, tries to discover reefs and sand banks, gives to the sailors the order to throw the sounding-load, if he finds that the water is not deep enough, communicates with the pilot by means of cries or signals and gives to the latter all information which he might need in order to direct the ship in full accordance with the actual situation.”⁵⁴ The proreus was in fact a most important “helper” and “defender.” It seems probable that the proreus who had the entire front part of the vessel under his personal command⁵⁵ was entrusted to lead the attack in the case of boarding, whereas the pilot had necessarily to remain on the ship. At least, such a technique seems to have been adopted by the Byzantine fleet,⁵⁶ and it may be an old Greek military tradition. In any case, the class of “helpers” or “defenders” is perfectly justifiable in terms of the metaphor of the “Ship of State,” and the terminology as such seems to reveal a direct connection with the usual functions of a proreus.

The other two classes—that of “farmers” and of “other craftsmen”—seem to correspond to the remaining two categories of a Greek crew. The farmers as the most numerous class of the population of a Greek city-state may correspond to the category of “nautai”—sailors, whereas the “other craftsmen” are almost identical to the so-called “naupogoi”—carpenters. This analogy is much closer to life than one may suppose. We find an interesting parallel in the law code of the Waranguian-Russian ruler Iaroslav the Wise. There, the term farmer—smerd—is used in the sense of a sailor or rower, whereas the carpenter—naupegos—is designated by the term “okhot’” (shepherd, then hireling, craftsman). Probably in Kiev, Russia, farmers were used as rowers. In any case, this similarity in the use of terms in Greek and Slavic sources might explain and justify an analogy between farmers and sailors also in Plato’s times. I should have added that the law of Iaroslav was influenced by Greek—Byzantine—sources. The terminology of this code is closely following Byzantine lines. On the other hand, the Byzantine terms were

themselves based on history and tradition. The Rhodian Law which played the rôle of a universal legal and terminological pattern contains, too, four main categories.⁵⁷ We find there Plato's classes in their nautic expression—kybernetes, proreus, nautes, naupegos. Plato's classes, thus, represent the main figures of the maritime law of Rhodos. Iaroslav's code, on the other hand, helps to understand the analogy between sailors and farmers, carpenters and "other craftsmen." It is astounding how closely all these traditional representations are connected with each other. A similar social background, a similar technique and a similar "scientific outlook" seems to explain these surprising inter-dependences.

The nautic vocabulary is far more important than one usually is inclined to think. It suffices to indicate that in Waranguian Russia, and in England as well, the different categories of the ship's crew became "classes" of the population. Thus, in Novgorod the term "kochetniki" originally designated "rowers." Later the same term was applied to a class of the population of the Novgorod state. Similarly the Anglo-Saxon "cosceti" (alias "cotseti")⁵⁸ were a category of the rural population which originally might have consisted of "rowers" of Slavic origin. The term "filtorti" which we find in the Salic law seems, too, to have designated originally a category of a ship's crew. In the Salic law this term had already received the meaning of a "class" of half-free men, as were the "cotseti" in England. One might see in these curious facts a direct connection between the "nautic life" of a nation and its legal and political terminology. The classification of the population seems to have reflected, at least partly, the division of the crew on ancient ships.

Unquestionably, Plato's thought had a deep historical background. He did not neglect the actual structural characteristics of Athens. His "ideal state" has all features of a true and quite intelligible Greek city-state. But his "historism" was more penetrating than that of any other "reformer." Otherwise, he would not have insisted on nautic metaphors and comparisons. His attitude toward Athens of his time was very critical. Would he so intensively use the image of a ship, if he had intended to demolish the structural foundation of Athens—of this city of

pilots, sailors, rowers? Aristotle found a different solution in condemning the extreme Athenian democracy and in propagating a farmer state. Of course, Plato puts the entire emphasis on "knowledge," on experience and responsibility. The stubborn reliance on the main image of the "Ship of State" has partly infected some of Plato's institutional suggestions. Nevertheless, Plato's intuition was both deep and adequate. Only the peculiarities of his thought, which induced him to over-emphasize the structural details of the leading image and which may be called ancient, traditional, can be made responsible for an occasional aberration of his mind. In fact, he had succeeded in revealing the real cultural past of humanity—the very birth of the idea of the State. Once more we are facing here a subconscious Plato whose intuitive revelations are more precious than the reasoned and intellectualized details of the picture which he is both painting and using. Whether Plato's perspicacity is utterly due to intuition, is doubtful. A certain amount of acquired knowledge—of Delphic or Pythagorean origin—has necessarily to be supposed. He seems to have been acquainted with the oldest layer of the Biblical legends. Hence, his cultural-historical views might be partly attributed to Pythagorean schooling. His philosophy of ideas, however, seems to be to a very large extent his own contribution to cultural history. The very essence of his philosophy is composed of the two leading images of the "Republic"—of the symbol of a tree and of the image of a ship. His philosophy reproduces the actual history of the human mind, of two significant ideas which determined the direction of the main current of human civilization. One might say that Plato came to these revelations by "contemplating" his own mind and by giving a free way to his own visions. These visions were, however, partly rooted in the Greek and Indoeuropean nature of Plato himself,—in the innate peculiarities of his own "Weltanschauung."

We have to stress these facts. They have no place in the usual approach of the Platonic philosophy. Any connection with the material of the "Genesis"—particularly with an alleged pre-Semitic layer of the Biblical legends—would seem to be improbable, though not utterly impossible. We will see, however, that Plato's assertions are not only close enough to the various impli-

cations of the "Genesis," but that the "Genesis" as such becomes understandable only in terms of the Platonic speculation.

Hence, one should approach the problem of the alleged Semitic roots of the Greek culture from an entirely new angle. The origin and the pre-historical past of the Greeks remains still a mystery. We do not find any reliable indication in the sources—an indication which could be called a "direct evidence." The worship of the Solar God, Apollo, and the presumable content of the Delphic traditions suggest a Northern origin which, moreover, seems to be confirmed by some basic similarities between the Greek and the Old-Gothic "sciences." Of course, these assumptions still remain highly conjectural.

According to the prevailing conception the Greeks owe their "knowledge" to the Phoenicians. That should surprise us after Plato's condemnation of the Phoenician cupidity which is directly opposed to "the quality of love of knowledge" of the Greeks. Nevertheless, Plato's testimony does not appeal to the mind of the learned world. "Les Phéniciens," says A. Cartoult, "apportaient aux Hellènes les connaissances usuelles élémentaires: alphabet, numération, poids, mesures, etc."⁵⁹

We have already seen in the first section of this volume that the Greeks seem to have possessed a pre-Semitic script which was at the same time a numerical system. This ancient alphabet seems to be connected with the "tree of knowledge" of the "Genesis." It is, moreover, related to the most ancient form of the Runic script.⁶⁰ We know that in this tree system numbers became used for the designation of sounds. Hence, a number was simultaneously a letter. The "order" was as such primarily a "counting system." The numbers were leading—not the letters. If we look at the later Greek alphabet which actually had been borrowed from the Semites we find an opposite phenomenon. The letters are leading. The alphabet is used as numbers. Obviously, the Graeco-Semitic alphabet is a relatively late product of a mixed Graeco-Phoenician culture. Hence, the Phoenician contribution to Greek science was not so important as one generally believes. Phoenician influence meant a complete break of the ancient tradition, which had turned into a "secret science" known only to few initiates—eventually to the priests of Delphi who preserved the

most ancient Indoeuropean roots of Greek wisdom and of Greek worship. It was probably necessary for the Greeks—for the “newcomers”—to adapt themselves to the specific conditions which were prevailing in the Eastern Mediterranean area. They were compelled to accommodate, at least partly, their chief symbols to those used in that region. The Phoenicians were dominating on both shores of the Mediterranean sea. Trade relations, exchange, dictated a unification and a generalization of all measures, and of various corresponding symbols. The Greeks—particularly, the Greek merchants—became accustomed to the Phoenician standards and gradually forgot their own.

One might become sceptical, too, on the account of the other great Phoenician contribution—that of having influenced Greek religion. Here again we must speculate with the eventuality of “an accommodation” of traditional Greek worship to the conditions which were prevailing in the regions of their new settlement. “Greek religion itself,” says Cartoult, “suffered foreign influence, and the Hellenes borrowed from the Phoenicians their traveller-gods or transformed their own deities according to the Phoenician pattern. Thus, Aphrodite is the Phoenician Astarte . . .”⁶¹ “Thus, too, the great deity of the Ionians is the god of the sea, Poseidon . . . The deities of his cortège (suite), Proteus—he who knows the sea-routes, Atlas, the father of the star of the navigators, reveal to us a nation of sailors . . . Apollo himself, the Greek god par excellence, did he not come from abroad?”⁶²

It would be unjust to neglect the entire Northern ambiance of the Apollonian myth and to ascribe his “sailing” to Phoenician influence. The Black Sea, which was usually called “Hospitable Sea,” would seem to fit into the details of the Apollonian myth much better than in any other. Even the dolphins are present and complete the picture. It seems impossible to detach Apollo from the Hyperboreans, from sun-worship and from the North in general. Cartoult’s conclusions imply, however, an important additional assumption. It would seem that the Greeks “had learned navigation from the Phoenicians.” Such a suggestion appears somewhat exaggerated or, at least, too general and hasty. It is true that the Greek eupatrides did not associate themselves de plein coeur with the development of the naval power of their

mother country. They would prefer to remain—or to become—landlords of the later feudal type. In Athens, says A. Cartoult, “it is the democracy which had created and maintained the naval might of the state.”⁶³ However, the very aristocratic Plato who was a direct descendant of the great Athenian lawgiver, Solon, did share the nautic attitude of his democratic fellow-citizens, and he was probably far from being alone in assuming and in promoting the commonly approved naval ideology of the country.

Even the old Greece of Homer and of the other “myth-makers,” whose lies are sharply criticized by Plato is not so agricultural and pastoral as one would have expected to see it. We find in Plato’s works, too, metaphors relevant to cattle-breeding and agriculture, but these implications cannot overshadow the main line of his thought. Similar is the situation in Homer’s works. The legendary leader of the Greek military expedition to Troia, Agamemnon, is supposed to have possessed an important fleet.⁶⁴ That seems to explain his nomination as supreme commander of the entire army of the Greek invaders. It is generally admitted that the Achaeans had come from the North. Hence, it may appear significant that already in the early days of Troia they were considered to be skilled sailors. Agamemnon’s kingdom embraced a part of the islands of the Archipelago. The Achaean experience in navigation is quite understandable. Moreover, the Achaeans certainly did not choose the region in which they intended to dwell henceforth, quite accidentally. It had to correspond to their national habits and to their particular “knowledge.” They presumably possessed a certain naval experience before settling down on the islands of the Archipelago. A. Cartoult who himself is strongly favoring the thesis of a Phoenician influence on Greek navigation admits that “they (the Hellenes) knew from very early times the ‘humide routes’—*ta hygra keleutha*—and they blessed them as being the only means by which their widely dispersed tribes could communicate with each other.”⁶⁵ It seems dangerous to assume that the Greek skill in navigation was entirely a learned product due to Phoenician cultural influence. The term itself—*ta hygra keleutha*—is applicable not only to the open sea, but to rivers as well. The rivers were the most ancient and the most natural communication routes ever utilized

by men. The particular importance of these "water-routes" for the expansion of the Northern nations—of the Goths, later of the "Warangians" and Normans—is well known. The Warangians crossed the entire Eastern-European continent by using the main water arteries of that region—the Dnieper and the Wolga. The Dnieper played a most significant rôle in ancient and mediaeval history. The river-route connecting the Baltic Sea with the Black Sea was known as the "great route from the Warangians to the Greeks." The German tribes came down, one after the other, and attempted to establish their domination over the entire area. Some of these invader-nations evolved into real sailor-nations whose nautic achievements and whose political successes later surpassed even the glory of their Mediterranean predecessors and rivals. Piracy and trade were the main objectives of this perpetual movement toward the rich regions of the European South. The Goths called the Russian plain "Oium"—low, humide place (from Goth. ahwi; cf. the later Germ. Aue; cf. also Lat. aqua—water). The term as such seems to stress the particularities of the territory from the viewpoint of a new-comer nation which is primarily interested in using it for purposes of further expansion and for the establishment of trade communication lines. These lines, of course, were used for pirating and robbery more often than for any peaceful transactions. The river pirates of the Dnieper and of the Wolga rivers were called "ushkui"—from Goth. usgauja ("lackland"), and their boats had a similar designation. The Southern part of the Russian plain was colonized by Greek settlers and tradesmen. That seems to have happened in the earliest days of Greek history. In vain would we try to find any Phoenician influence or Phoenician colonies on the Northern shore of the Black Sea. The entire region was under a constant pressure coming from two directions—from the North and from the East. From time to time, hordes of unknown nomads penetrated the region from the East. They were often thrown back to Central Asia from where they usually had emerged. These invasions did not remain without any cultural consequences. The nomads brought back not only slaves and military booty, but "knowledge" as well. The Runic alphabet penetrated into the farthest parts of the central Asiatic regions.

We find Runic symbols in the Mongolian alphabet. The ancient tree system was widely expanded. Nobody would expect to find its traces in some forgotten corners of Asia.

It seems to me that the Eastern part of Europe—the Baltic Sea, the rivers of the Russian plain and the Black Sea—was the real experimental field of the first European sailor-nations. If the Greeks came from the North—and some peculiarities of the Apollonian myth seem to favor such a supposition—we would have all reason to assume that they had reached the Mediterranean area as experienced navigators who had not very much to learn from their Southern neighbors and rivals. It is almost inconceivable that a nation without any nautic experience should have acquired the art of navigation with such an astonishing rapidity as did the Greeks. Their nautic spirit, exactly as that of their later successors—of the Warangians or Normans, must be rooted in the depth of the Greek prehistory which, of course, cannot be reconstructed in any details.

We cannot reject, on the other hand, the eventuality that the non-Semitic nations which inhabited Asia Minor, the Mesopotamian area and the shore of the Mediterranean Sea had succeeded in developing the art of navigation in a very early stage of their own culture. Hence, the early nautic experience of various Indoeuropean nations could have reached the Greeks without the mediation of the Phoenicians or any other Semitic nations. We will touch this intricate question later—in connection with the legend on Noah's ark which seems to disclose to us the earliest days of Indoeuropean culture. In any case, the alleged apprenticeship of the Greeks and the rôle of the Phoenicians seem both to be foggy points in ancient history.

Plato's leading metaphor of the "Ship of State" leads us directly to these early days of civilization. His intuition may be called a main source of our historical knowledge. His erudition and Pythagorean influence complete his personality, but they do not alone determine the very essence of his thought. Plato himself was quite aware of the tremendous importance of "innate wisdom"—intuition. His entire sociological scheme is based on the assumption of a natural selection, of unequal ability and of a privileged mind. He was quite conscious of his own forces and

of the unacquirable power of innate intuition which he seems to have called somewhat summarily "vision." The particularities of Plato's personality and of his views are a far more precious and reliable key to Greek prehistory than any evidences of the usual scholastic type.

We have to discuss one more question before going over to the analysis of the Biblical legend on Noah's ark which shall conclude our study on Plato's philosophy and on the cultural roots of his philosophy. We touched the problem of slavery in an entirely different context, while defending Plato's from the attacks of contemporary "humanitarianists." The same question can be, however, studied in the light of Plato's metaphor of the "Ship of State."

In a formal sense, the problem of slavery is solved by excluding them from citizenship and any "human" activity in the "ideal state." Slaves are "things"—"servi res sunt," says a Roman proverb. The Greek attitude was very close to the Roman. Slaves are animals which happen to have a specifically human instrumentum vocale. They can speak. In all other respects they are similar to domestic animals. Since the "ideal state" is not said to be utterly deprived of domestic animals, despite Plato's vegetarianist attitude, slaves might have their place in the "ideal city," too. Such a supposition is confirmed by the fact that the leading metaphor seems also to provide for their existence. We know that the metaphor determines all structural details of the ideal state. Hence, the slaves must be found in the leading image. Actually, this image gives a clear solution of the problem.

We find two categories of men on a Greek trireme which both can be brought into connection with the unfree population of Athens. "Par le mot hyperesia," says A. Cartault, "on entendait tous les hommes nécessaires à la manoeuvre du bâtiment."⁶⁶ The term itself designates that the men who formed the hyperesia were not regular members of the crew. The word hyperesia means "the rest," "the others." Demosthenes declares that the term hyperesia embraces all sailors and all rowers of a vessel. However, in a second passage the same Demosthenes opposes rowers to sailors and seems to apply the term hyperesia only to rowers. Probably, the word hyperesia did not have a quite definite mean-

ing. It could be used in a broader or in a narrower sense. The terminology was possibly determined by the size of a ship. As far as Athenian triremes are concerned, the word *hyperesia* seems to have had a well defined technical meaning. It was not applied either to sailors, or to rowers. The term embraced all men who were used for the execution of certain manoeuvres—loading, landing, etc. At least one of these “manoeuvres” has to be stressed explicitly—the dragging of the ship which seems to have played a very important rôle in early navigation. Several European nations have used specific terms which imply this particular manoeuvre. The Salic Law mentions a category of half-free men called “filtorti” (French *tordre*—to drag; the idiom “*tordre du fil*” designates a long, dull and hard work). It is obvious that the ships and boats had often to be dragged across sand-banks and even over land—from one river to the other. This specific procedure had a colossal significance in the early days of human civilization.⁶⁷ It seems to have determined the origin and the character of many important legal institutions. Hence, the *hyperesia* seems to have fulfilled a very important task. As to the men who composed this category, their legal status was not very clear and seems to have varied from country to country. The existence of the Greek term “*hyperesia doulike*” in the Byzantine vocabulary stresses the fact that the members of a “*hyperesia*” were either slaves or half-free men—partly foreigners (cf. the Anglo-Saxon “*cotseti*” who presumably belonged to a Slavic stock) and partly criminals or bankrupts. One has to take into account institutional dynamics, too. On Roman ships even the rowers were slaves, whereas the Athenian rowers were usually free citizens. The career of a pilot, as we know, started with rowing. One might assume that the rowers of an Athenian trireme were free citizens. The *hyperesia* might have consisted, on the contrary, chiefly of temporary or of “full time” slaves. However, even the very reliable Demosthenes uses the term *hyperesia* in an ambiguous sense.

The other term which might be, too, connected with slaves is the word “*perineos*.” According to A. Cartoult the word has probably designated “slaves and superior officers,” i.e., all those who did not belong to the crew as such. That definition is doubt-

ful. It seems that the word *perineos* did not have any technical meaning at all. It could be therefore used in a very general sense of "outsiders," and sometimes coincide with the meaning of the word *hyperesia*.

One might be induced to think that Plato actually had planned to preserve slavery in the "ideal city." At least, the existence of a *hyperesia* on the Greek ships seems to suggest such a conclusion, if we assume that the structural details of the leading metaphor determined Plato's institutional suggestions and, in particular, his classification scheme. I am, however, far from being convinced that Plato did really wish to maintain slavery on his ideal "Ship of State." The problem of classifying the population of the "ideal city" into classes is not entirely clarified in the "Republic." Plato started with the idea of three classes—guardians, helpers and craftsmen. He later transformed these three classes into four by using an analogy (cf. the four metals which symbolizes the four groups—gold, silver, iron, brass). This inconsistency is due to a crossing of different traditions and considerations. In any case, one might suppose that in the first scheme the slaves and metics are simply left out. They seem to form the "hyperesia" of the "ideal city." One may count them with the domestic animals which the citizens of the ideal state should possess. In the second scheme based on the distinction of four metals all artisans ("other craftsmen") seem to form a separate sub-class or a fourth category, which might well have included metics and slaves. We must take into account the well known fact that the half-free population of a Greek city actually consisted mostly of artisans and craftsmen. That is true not only for Plato's time but even for the Middle Ages.

It was important for Plato to preserve a division of the population into three groups, because such a classification corresponded to the real social stratification of the free Athenian population. On the other hand, this division reflected the structural implications of the metaphor of the "Ship of State" (cf. the pilots, signal-men and sailors). Finally, it followed a very ancient tradition which we will find later in the other main source of ancient wisdom—in the "Genesis." This old tradition seems also reflected in Plato's conception of three types of "souls."⁶⁸

However, the octaval basis of the entire Platonic "rationalism," which had been already discussed in the first part of this volume, compelled him to introduce the notion of the four metals into his original classification. That might be called a flagrant inconsistency. Of course, the attempt to reconcile two different classifications could not lead to anything better. However, we have already observed a quite similar case of "reconciliation" of two utterly different schemes. Let us remember the "creation-myth" of the "Genesis" in which a period of six days had been amalgamated with that of seven days by means of reinterpreting the symbol which designated the number "six." This symbol could be easily confounded with the sign for "seven," and this paleographic possibility seems to have been exploited—intentionally—for the above-mentioned purpose. In Plato's case a similar refuge might be supposed. In fact, the scheme 3 — 4 — 5, which dominates the "nuptial number," could eventually justify Plato's amalgamation of both schemes—of that based on "three" and of that based on "four." Three groups symbolized by four metals might imply the idea of a perfect division expressed by the number "five." "Five," of course, is an element of the perfect decimal system. Hence, Plato's scheme, just because of its hybrid nature, suggests a "perfect division" of the entire population. Thus, the perfectness of the division as such is stressed and, moreover, various traditions are successfully combined together.

CHAPTER VI

THE SHIP

Plato's metaphor of the "Ship of State" was a last accord in an ancient tune. The new school had no feeling for the old sacred images and symbols. The philosophers of the Aristotelian type were relying solely on their intellect and on their erudition which was much more an agglomeration of facts than real knowledge. The critical period started with Aristotle. The time of ingenious revelations ended with Plato.

The entire structure of the "ideal city" was determined by Plato's leading metaphor. Its proportions were deduced from the "tree of knowledge." Its structural features, however, were utterly rooted in the various details of the image of the "Ship of State." Plato undoubtedly considered such a structuralizing of the "thing" as the right way to true knowledge. The metaphor was an "image," a symbol, an "eidolon," the rationalization of which gave to the true philosopher a direct access to "reality," i.e., to the very essence of the phenomenon that the philosopher's mind was contemplating. In no sense would I feel entitled to insist on the unequalized significance of the Platonic methodology, if behind this primitive structuralism we would not be able to discern the very birth of the "idea" of the State. Plato shows how this idea actually had emerged as a product of a first rationalization of an important part of the human past. Man's "nautic experience" forms the very essence of the Platonic theory of the State.

Plato's "romanticism," as Carl Schmitt would call it, has the rare privilege of being entirely adequate to cultural history. It is not a mere "illumination," but primarily—and above all—a revelation. Perhaps, Plato was induced to his visions by the specific features of Athenian life and history, but he certainly goes beyond the universally known realities of the Athenian political order. He uses his metaphor in a philosophical or cultural-his-

torical sense, without neglecting, however, the practical aspect of the problem. His image is directed against the false connoisseurs of political life—against demagogues, “pretenders” and fools. The combat is fought out under the auspices of an ancient tradition which reveals the origin and the very idea of the state. The order, which is inherent to the activities of a ship’s crew, is declared to be determining political life as such. Nothing was more congenial to the Athenian “Weltanschauung” than the image chosen by Plato. The pilot—kybernetes—was the most tangible and comprehensible element of the comparison. The metaphor of the “Ship of State” was almost “selfspeaking,” and all those who were unable to trace automatically the necessary conclusions were supposed to be “fools,” anti-rational beings or wilful impostors. A revolt against a true pilot and a misunderstanding of his art were simply absurd. Who of the Athenian citizens would actually dare to oppose such a statement? The emphasis, of course, is not put on the self-explanatory mores of the Athenian sailors. They simply could not be objected. Plato’s main idea is that of a “genetic connection” and of an absolute “commensurability” between the order on a ship and the order in a State—between Ship and State. The nautic vocabulary, which was utterly congenial to the historical conditions of Athenian (and Greek) life, implied a more significant statement. An ordered existence, thinks Plato, has to assume the forms of the life of the crew on a ship. That is the real key to an adequate understanding of the very idea of order among men who happened to have formed a State and who have now troubles in keeping it going in a reasonable and ordered fashion.

The State of Athens was itself very much like a ship. We know how intimately all habits of the Athenian citizens were connected with the sea and with navigation as such. The walls which separated the city from the continent transformed it into an artificial island of the same “floating” type which Cicero has ascribed to all Greek island-states. Athens was almost a ship. The image was given in nature, and was far from being a romantic “effect” or adornment.

The pilot is the central figure of the whole image. Plato him-

self had several occasions to cross the sea—of course, not as a true pilot, but as a passenger. He made several trips to Egypt, Sicily and to Asia Minor. Each journey of a Greek meant the use of “water-routes”—“*ta hygra keleutha*,” which were the main communication means of ancient Greece. His admiration for the functions of a pilot might be partly attributed to these personal impressions. There is nothing as convincing as such an “*expérience vécue*.” The “precise pilot,” says Plato, “is a ruler of sailors, not a sailor.”⁶⁹ He adds the following definition: “For it is not in respect of his sailing that he is called a pilot, but in respect of his art and his ruling of the sailors.”⁷⁰ Certainly, Plato must have had in mind a big ship—an Athenian trireme—which reflects much better the implied significance of his metaphor of the “Ship of State.” The situation was quite different in the early days of navigation. “At the beginning the *kybernetes* was simply a sailor who was staying or sitting at the helm which directed the ship; later, on big ships, the *kybernetes* was replaced at the helm by sailors to whom he gave orders, while he himself was concerned with the general manoeuvres.”⁷¹ We will see later how the structural aspect of the earliest days of navigation actually had impressed the human mind. It is obvious that the “higher position” of the pilot who was staying or sitting at the helm could have easily led the mind to a figural interpretation of his position. The picture as such seems to contain many additional implications, too. The man at the helm had to possess an adequate knowledge of his art, a serious experience and some intelligence. The prototype of the later art of navigation—*kybernetike*—was, of course, modest enough. But even in that stage it presupposed certain capacities—mental, psychal and even physical. The piloting sailor was regarded as the “natural” chief of the crew and as the actual “ruler” of the ship and of the crew as well.

That image represents nothing else than a cellular form of the complex phenomenon which we are used to call a “State.” This term is borrowed from the Romans who happened to be the greatest pedestrians of the European antiquity. Later they learned navigation, too, when the competition with Carthago became dangerous for the very existence of the Roman “state.” The “state”

had to be "moved." Actually, the Romans proved able to acquire this new art with the help of foreign slaves acquainted with the art of navigation. We find, therefore, slaves as pilots and captains on Roman ships, whereas the Greeks had, from time immemorial, their own experienced navigators. Nevertheless, the Romans succeeded in subjecting to their rule the entire Mediterranean area. Military skill combined with the newly acquired art led to the foundation of the Roman empire.

The Greek term for the state was "polis"—city. It is doubtful whether this term can be brought into connection with the root of the word "ploion"—merchant-ship (cf. Slav. *plavat'*—to swim). It suffices to indicate that the Greek terminology did not imply any sense of immobility, as does the Roman term "status" (cf. *stare*—to stay). On the contrary, the phonetic closeness between "polis" and "ploion" might have given some additional suggestions to the ancient mind. We know how curiously the ancient "etymologists" were operating and what tremendous significance they were attributing to phonetic and paleographic similarity.

Plato reflects a dynamic approach to the life of a state. We know the organic implications of the tree symbol—the idea of growth and evolution. The metaphor of the "Ship of State" gives a new interpretation of a quite similar dynamic conception of the state. The man who surveys this constant development is called a pilot, a guardian. The primitive art of a sailor placed at the helm of a boat or barge is lifted up, sublimized. It becomes glorified in the metaphor of a divine ruler who is piloting the whole universe. That, of course, is a tremendous ascendance which seems to stress the great importance which the ancient mind attributed to navigation as such. Which were the qualities required from a pilot in the earliest days of the nautic experience of humanity? They were partly physical—a "sharp eye" is a necessary physical attribute of a sailor—and mental, but, of course, in a very primitive sense. Important must have been the acquaintance with currents, winds, stars, etc. In this early stage of civilization even such a knowledge must have appeared to be superhuman. Hence, the authority of these ancient connoisseurs of navigation was recognized and even divinized by the rest of the people. The

idea of hierarchy based on knowledge thus became inaugurated in strict opposition to the "natural supremacy" of a paterfamilias which was primarily based on biological facts. This hierarchical element occupies in Plato's scheme a very important place, although it is somewhat softened and humanized by the very foundation of the "authority" which he imposes on the ideal state. Knowledge, experience, intelligence—all these mental and psychal qualities give a particularly agreeable and attractive color to Plato's hierarchical structure. Simple facts of human pre-history become thus spiritualized and promoted to the rank of fundamental principles which determine political organization as such.

The idea of hierarchy is seconded by that of a particular form of cooperation between all members of "crew." It is not a natural biological bond which unites them with each other and connects the whole of the crew with the ruler—archon—of the sailors, i.e., with the pilot. There is a certain amount of artificiality in their union which is determined by the absence of any biological or natural bonds between the individual units forming the whole. It seems that such an artificiality is recognizable even nowadays in the far more complex order of a modern State. Citizenship does not necessarily imply a feeling of solidarity which would be superior to various other "natural" feelings. A citizen might feel to be primarily a father, a brother, a husband, a member of the church, etc. The church usually assumes an organismic approach to its organization. The individual members form a "body," e.g., the Body of Christ. Hence, the church is operating with a quasi-biological conception of unity. Similar was the situation in the Old-Roman conception of the "family" which was an attribute of the "magic personality" of the head of the family. The "familia" formed his magic, i.e., quasi-biological body. The union between the members—individual elements—of a crew, on the contrary, belongs to a non-biological type. Plato speaks of "friendship" which should unify all Greeks and, in the first line, the Athenians as such. He adds a quasi-biological justification by stressing the idea that all Greeks are "akin." However, the entire emphasis is put on "cooperation." The naturalness of this non-biological

union between men is given in the fact that the structural characteristics of the life of a crew on board were prior to their later rationalization, i.e., they were prior to the "idea" as such. The necessity and the "naturalness" of such ("natural" means here "prior to reason") an order were, of course, later recognized and variously motivated. Plato's leading metaphor is one of such "a posteriori recognitions" of a factual, genetic apriori. The "Genesis" shall give us a second upmost significant illustration of the same phenomenon.

It is interesting to notice that the "Greeks of the North"—the Waranguians or Normans—had a very similar conception of the intimate bond which united all members of a Waranguian naval expedition. The term "Vaeringjar" itself—at least in one of its possible etymological interpretations—reveals to us the presence of a union between men of a non-biological type. "Vaeringjar" is connected with "varar"—formal promise, vow, and seems to designate participants in a trade expedition. Of course, trade and piracy were almost synonyms.⁷² The term "hansa," too, discloses the presence of a complete, though of a non-biological, union between all members of a group of Gothic merchants or pirates.⁷³ The Hanseatic League became later a formidable political grouping of city-states, as was the Achaean League and the later Italian "city-empires"—Venice, Genoa. Carthago seems to have belonged to a similar type. A quite analogous structural basis determines in all these cases utterly analogous political developments. It is in no sense surprising to find that navigating nations were particularly successful in creating political communities—States. They all had a particular "esprit de corps" which held together all members of the community, although the unity was not biologic in its origin and very essence. The rationalization of such a cooperative union led the human mind to the idea of a political union, i.e., of a State. The latter term could be adopted, because it implies the idea of a clarified, stabilized order, though it is not quite congenial to the very origin of the idea of the State. It is "territorial," "pedestrian," as were the people who first created that concept. The real genetic situation was that of a ship with its crew and its pilot.

A last expression of this early genetic situation is, of course, the British Empire. Its possible decline might be attributed to the fact that navigation in the air is nowadays overshadowing the importance of navigation in the proper sense. A new factual situation and, perhaps, a new spirit may arise which as yet cannot be defined and classified. One of the thinkable consequences of this technical innovation might be the disappearance of the "State" as such. It might be replaced by a new type of cooperation and order. Why should one come to such an extreme assertion? For a very simple reason—the idea of isolating a certain territory—a polis, a mediaeval city, a contemporary small state of the "Balcan"-type—seems to become utterly outdated. Only continents can still be kept isolated from each other, as long as air-navigation cannot master such wide areas as the Atlantic Ocean, the Arcticum and Antarcticum, and some of the great deserts (Gobi, Sahara) and mountain regions (the Himalaya).

In Plato's time the human mind was still much closer to pre-history than to newly arising forms of human civilization. Even Aristotle proved incapable of rationalizing the political consequences of the creation of the Macedonian empire. Plato, of course, was thinking in terms of genetic events which had determined the very origin of the Greek and Indoeuropean culture. Thus, he maintained the "divine tradition" which gave the most adequate description of these genetic facts. The essence of the state and of political life as such is determined by cooperation between man. Each man needs the cooperation of other men. It is not an abstract "appetitus socialis" which explains the origin of the state and its essence, but a reasonable purpose implied in the underlying factual genetic situation.

The nautic experience gave to man the "idea" of a political organization, i.e., of a new cooperative order of a non-biological type. This discovery had soon to be recognized as a tremendous revelation which, of course, necessarily became ascribed to God. Apollo is one of the multiple incorporations of the "divine pilot." Plato himself conceives the universe as "a ship, whose helm in alternate cycles is held and abandoned by its divine ruler."⁷⁴ The image of a ship receives thus a widely generalized application.

It expresses the idea of "order" as applied to something movable and changeable. The movement of the human thought becomes itself reflected by a similar metaphor: "A discussion is compared to the procedure of a shipwright building a ship."⁷⁵ "An elaborate metaphor from sailing is found Prot. 338, A in describing the long speeches of Protagoras."⁷⁶ The generalized conception of the metaphor of the "Ship of State" is found, too, in the other great source of cultural history—in the "Genesis." Both sources, Plato and the "Genesis," become quite understandable only if compared to each other. We have found a tree in the very center of Plato's "ideal city." We will now find an "ideal city" in the "Genesis." The main content of the "esoteric science" of the ancients will thus become fully clarified.

CHAPTER VII

NOAH'S ARK

“When the Eternal saw that the wickedness of man on earth was great, and that man’s mind was never bent on anything but evil, the Eternal was sorry that he had ever made man on the earth; it was a grief to him. So the Eternal said, I will blot him off the earth, this man that I have formed—man and beast and reptile and bird; I am sorry that I ever made them. However Noah had formed favours with the Eternal . . .” “God said to Noah, ‘I have resolved to put an end to every human being, for they have filled the earth with insolence and outrage; I will destroy them and the earth together. Build a barge of cypress wood . . .’ ”⁷⁷

Noah received detailed instructions from the Eternal how to build the barge. The proportions of the barge, as we will see it later, make it in fact a nicely looking and well dimensioned ship. The alleged Hebrew authors of the “Genesis” must have been either good sailors or they must have borrowed their knowledge from a “seaboard nation.”

“But I will make a compact with you,” the Eternal said to Noah. “You shall enter the barge, you and your sons and your wives and your sons’ wives along with you. And you shall take into the barge two living creatures of every kind, to keep them alive with you . . .” “Then Noah did all that the Eternal ordered him. Pairs of animals clean and unclean, of birds and of reptiles, male and female accompanied Noah into the barge, as God had ordered Noah. Then the Eternal shut him in . . . Whatever was on the dry land, died . . . Only Noah and his company inside the barge were left.”

The story ends with a racial theory: “The sons of Noah who came out of the barge were Shem, Ham, and Japheth . . . The descendants of Japheth were the Cimmerians, Magog, the Medes, the Ionians, Tubal, Meshek, and Tiras . . . The descendants of

the Ionians were Elishah, Tartessus, Cyprus, and Rhodos, from where the seaboard nations spread.”⁷⁸

I have omitted many details and intentionally neglected the usual division of the text into two versions. Both versions are themselves late and sophisticated elaborations of an initial theme. We are primarily interested in finding out the latter. The earliest layer seems to be contained in both versions.

The legend on Noah’s ark is a chief theme of the “Genesis.” Its significance is in no sense inferior to that of the tree of knowledge and of Adam and Eve’s expulsion from the paradise. The following attempt to disclose the origin and the meaning of the legend is different from all previous interpretations. It is not excluded that the proposed methodology will not be accepted without resistance. Nevertheless, only a comparative study of both chief sources of the ancient knowledge—of the “Republic” as well as of the “Genesis”—may disclose to us the real background of the science on which both works are relying.

First, we find in the legend on Noah’s ark a conspicuous general analogy with the Platonic approach. In both sources an interesting psychological theme is involved, though it is neither stressed, nor explicitly mentioned. We have to interpolate the concept of danger. Solidarity helps to overcome that danger. In Plato’s image of a ship and of a true pilot this theme of danger is more or less discernible. The danger of a shipwreck gives to the situation a definite psychological color. In the legend on Noah’s ark the concept of danger is, of course, contained in the theme of the deluge as such. It seems, however, that this idea is rooted in the preceding legend on the tree of knowledge—in the cellular concept “sa.” We know that the word “sa” covered a complex initial situation. Certainly, the connection between a tree (or a fence), a serpent and “knowledge” might implicitly contain the idea of a dangerous situation for man. A snake is a dangerous reptile. Knowledge would thus mean a realization of the danger which a man in such circumstances is facing. This form of knowledge is primitive. It is almost an instinct. The Old Testament does not even speak of danger in that particular sense. The idea becomes intelligible only in the theme of Adam and Eve’s expulsion from the Eden and also in the fact that they

both had become mortal, i.e., subject to death. But the initial cell of the entire legend—the Sanskrit word “sa”—implies the concept of danger quite conspicuously. The realization of danger is a primary form of knowledge. This idea is postulated in both sources—in the metaphor of the “Ship of State” and in a chief theme of the “Genesis” as well.

We know, on the other hand, that the material of the “Genesis” seems to contain two versions of the origin of science—an Indic “fence-version” and a Northern “tree-version.” They seem to overlap each other. Hence, we find a “tree of knowledge” in the Eden and the park itself is surrounded by a fence. An angel protects the entrance to the Eden. That stresses the secret character of the ancient science. However, such a mutual overlapping of the two versions seems to possess a peculiar logical justification which must have been felt by the ancient thinkers.

In fact, the tree symbol as such seems to suggest a possible logical connection between both versions. The “tree” can be easily transformed into a “fence” (Figure 96):

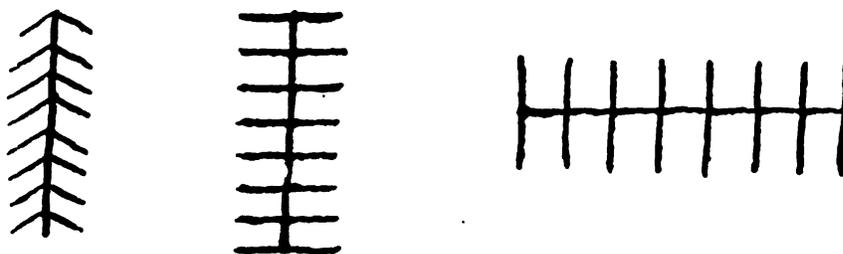


Figure 96

Both versions are compatible and can be even unified in terms of the tree symbol. Their origin might be different. The “fence-version” might well have originated from a “stick-system” and not directly from the “contemplation” and rationalization of a tree. But they could be “thought” as being genetically related to each other. The same idea of a genetic and logical connection could have another significant aspect, too. It could be thought that the relationship between a “tree” and a “fence” is given in the fact that a fence is made of wood. Hence, we receive a line

which connects directly both concepts—that of a tree and that of a fence. The idea which helped to realize that connection is specifically “constructive.” This kind of knowledge has a new content. It signifies the ability of using trees for making a fence. Construction as such is here implied. The legend on Noah’s ark expresses the same idea in a far more obvious and elaborate way. Noah is entrusted with the construction of a barge. He uses cypress-wood for that purpose. The Eternal gives him detailed instructions. The shipbuilding theme of the legend is nothing else than a late and highly developed idea of “construction” implied in the preceding myth on the tree of knowledge. The distance between the building of a fence and the building of a ship is, of course, enormous. But the cellular theme is still recognizable. I would include into the same line of thought the use of leaves by our ancestors, the purpose of which is well known. Here, too, a tree was used. All primitive knowledge goes back to trees.

The theme of danger and the idea of construction are connected with each other. They are both, of course, constituent elements of the ancient conception of knowledge. A fence gives protection from wild animals. A barge had been selected in order to protect Noah and his fellow-travellers from the deluge. Ancient wisdom was following very closely human experience. Of course, the word “sa” implies the notion of experience. Knowledge is, *prima facie*, human experience. The building of a fence signifies a constructive effort to prevent danger. Shipbuilding has in the “Genesis” a quite similar psychological background. The barge protects Noah from the coming storm. This idea is, too, close to early human experience. The most ancient and primitive reaction against inundation was the idea of seeking refuge on a tree. If that was not sufficient, a hill could be used, which thus would have all characteristics of an island surrounded by water. Then, however, *homo faber*—the carpenter—developed in man. An artificial island—a barge, a ship,—took the place of the earliest natural kinds of refuge. Trees were used for the construction of these first nautic “vehicles.” Thus, the various themes of the “Genesis” become connected and, alto-

gether, 'explainable in terms of what one may call a "history of ideas."

Important is also the psychological background of this genetic situation. It is a well known fact that in the case of acute danger—fire, inundation—all beings behave in a very unusual way. An instinct of solidarity suddenly develops even in wild animals and in men. The very primitive realization of danger paralyzes for a while the instinct of destruction. Dangerous reptiles and animals, which usually are their victims, remain side by side as long as the danger lasts.

Quite analogous is the situation on a barge or ship. The possibility of a sudden danger must always be taken into account. Evidently, the psychological characteristics of this situation are somewhat different and more sophisticated. The initial biological experience has turned into "consciousness" and "foresight." The instinct has become—or should have become—a rule of reasonable behavior suggesting a sense of solidarity, of active cooperation, of a basic identity of interests and purposes. The ancient knowledge appears in a new dress. "Experience," "intelligence," "knowledge" must dominate the entire situation on board. Such, at least, are Plato's assumptions in the "Republic" and their reasonableness is beyond doubt. Only a "ship of fools" might neglect the fundamental rules of behavior and the "natural"—pre-rational—order on a ship. It would be better, perhaps, to speak here of a "quasi-natural" order, since this order is still a creation of the human mind which was able to rationalize a given pre-rational situation or experience. The artificiality of the situation is clearly illustrated by the following facts. First, the ship is, in fact, not an island and not a tree as such. Second, the danger is only possible, but it does not exist for the time being. Third, the initial temporary "biological peace" between men and animals is changed into a kind of active cooperation between all people on board. Fourth, knowledge as such embraces the whole situation as an abstract maxim of behavior which determines each detail of the life of the crew, the structure of the human community, the leading rôle of the experienced pilot, etc.

On the other hand, the danger itself is not coming suddenly,

against man's will and from outside, as in the case of inundation or fire. The artificiality of the situation is stressed by the fact that man is here intentionally, for his own purposes, risking a possible danger. He is artificially creating the possibility of the coming of such a danger. Hence, man is compelled to force upon himself and his fellow-sailors (co-citizens) certain rules, norms, patterns of behavior which might be utterly justifiable in times of an actual and acute danger. In peace-times, however, the understanding and the acceptance of these rules requires an act of reason. Fools do not realize them. That certainly augments the artificial character of the bonds which hold together the human community which forms a state. Many attacks are directed against the State because of a complete misunderstanding of its real origin and of the very essence of political life. The "artificiality" of the situation becomes thus unduly over-emphasized.

The legend on Noah's ark implies both ends of the line of thought. It refers in some details to an initial biological situation and postulates, at the same time, the last political rationalization of the instinctive tendency toward cooperation for the purpose of preventing a possible—a coming—common danger. Plato seems to have reached the endpoint of the development of that idea, but he still is entirely conscious of its real origin. He is quite aware of the fact that this "order" was given to the human mind in a period which preceded the rationalization of the genetic situation as such. Hence, he recurs to a metaphor which may be called a crystal of the previous cultural-historical developments and which contains in a condensed form the chief implications of the very idea of a "structural order." The metaphor of the "Ship of State" tells Plato everything, because he feels the past and, moreover, he is conscious of the complete congeniality of his image to the basic historical conditions of Greek, particularly of Athenian, life. His argumentation seems convincing even to us who are separated from him by twenty-four centuries of mental struggle. Truth is independent of time. Plato's image is in no sense a mere illustration of his political views. It is a revelation—in the proper sense of this word. Its significance is even

stressed by the fact that the "Genesis" implies almost the entire set of Plato's thematic developments. His cultural-historical views thus receive a striking confirmation. Of course, we have to take into consideration Plato's erudition, too. But facts cannot be denied—Plato was the only "initiate" who was able to create a philosophy which was upmost adequate to the actual history of the human mind.

The Biblical legend is, of course, much closer to the genetic situation than Plato's "Republic." The danger is not only possible. It is there, announced by God and actually happening. One might say that Plato considered the situation in Athens to be already so bad as to be comparable to an imminent shipwreck. However, the emphasis seems to be chiefly put on the foolishness of the Athenian mob and on the dishonesty of the leaders—imposters and pretenders. The Old Testament develops a quite analogous anti-thesis. It opposes a new order, which the Eternal dictates to Noah, to the wickedness of man on earth. The Biblical conception is strongly moralized. That is a direct consequence of a moralistic presentation of the legend on the "tree of knowledge." The distinction between good and evil is the starting point of the whole "Genesis." Hence, the new order is also opposed not to stupidity, but to man's wickedness. Plato stresses man's foolishness, whereas the "Genesis" maintains the direction given by the original sin. There is, however, no direct contradiction between the "Republic" and the "Genesis." One might say that Plato was a fervent of knowledge and a propagator of knowledge, while the "Genesis" insists on the esoteric nature of knowledge. By getting knowledge our ancestors committed a terrific crime. The "Genesis" seemingly puts the entire emphasis on obedience to God's will. That is true and might be attributed to an Eastern—Indic—origin of the legends. Fear and obedience are from Buckle's time recognized to be chief attributes of the Eastern mind. Nevertheless, the difference is far from being as relevant as it seems to be from the outset. Plato, too, defends a certain kind of knowledge from any divulgation. Just the tree script with all its implications remains concealed from the non-initiates. Plato, thus, is himself maintaining the old tradition of secrecy. His "tree of knowledge" is also intangible. Of course, he himself

possesses this knowledge which "some Prometheus" brought from heaven to mankind. But any further divulgation is stopped. We know how successfully this "esoteric science" remained concealed from all laics and even from Plato's closest collaborators.

Plato's metaphor of the "Ship of State" is in no sense deprived of any moral implications. But from Plato's viewpoint the "true" and the "good" are synonyms. Everything which is "true" is altogether "good." The concept of knowledge seems to lead. However, the Biblical conception is very close to Plato's. The tree of knowledge yields, first of all, knowledge of what is good and what is bad. Here, too, knowledge and morals are completely amalgamated. We should be therefore not surprised to find that the moral implications of the legend on Noah's ark have a quite similar ambiguity. The new order is better than the preceding wickedness of man on earth. Moreover, this new good and true order is conceived in terms of ancient technology. To the first moral aspect of the legend another aspect is added. Shipbuilding and navigation complete and determine the content of the legend. Plato's conception of a "true pilot," of the art of navigation and of "order" as such find a clear parallel in the "Genesis," too. It is a technical and, moreover, a mathematical knowledge which is suggested in both sources.

We have to proceed in a systematic way in order to clarify the scientific implications of the "Genesis." The emphasis is put on the building of a barge. The art of shipbuilding is conceived as a divine inspiration which assumes in the Biblical text the form of certain instructions given to Noah by the Eternal Himself. This illustration is very close to Plato's fundamental idea of a philosopher getting true knowledge from "the cause and the author of all this"—"from the highest of all divinities,"⁷⁹ i.e., from the sun. These advices start with a detailed instruction on the building of the barge. The proportions of the ship, its form, the kind of wood to be used—all that is foreseen by the Eternal.⁸⁰

"Build a barge of cypress wood, build cabins inside the barge, and cover it with pitch, inside and outside. This is how you are to build it: the barge is to be four hundred and fifty feet long, seventy five feet broad, and fourty five feet high; you must put

windows in the barge, eighteen inches from the roof, and make a door in the side of the barge; also put three decks in it . . .”⁸¹

Let us first consider the numbers which seem to express “scientific” precision and rationality. The entire construction receives thus a mathematical aspect which strongly reminds us of Plato’s approach to his “ideal city.” There, too, numbers served to express the rational and scientific nature of the city of Plato’s dreams.

In discussing Plato’s “ideal numbers” we had necessarily to attribute a high significance to their external form which involved the notion of harmony and completeness. The tree system alone can explain and justify these characteristics of Plato’s “ideal numbers.” No other counting system implies the notion of “external completeness”—of symmetry, etc. It was, as we know, a strong argument in favor of the very existence of the octaval tree system.

It is in no sense surprising that the numbers mentioned in the legend on Noah’s ark are, too, “perfect” in their external appearance. In fact, the “Genesis” (Gen. VI, 14-18) mentions the following numbers: 450, 75, 45, 18, 3. The number “three,” of course, belongs to the first series of numbers which all had as such a particular significance. The three “decks” of the barge, as we will see it later, correspond fairly well to the three classes of the population of the “ideal city.” The numbers 18 and 45 are, however, utterly justifiable only in terms of the tree system and of the Platonic, Pythagorean and pre-Pythagorean conception of “perfectness” (Figure 97):

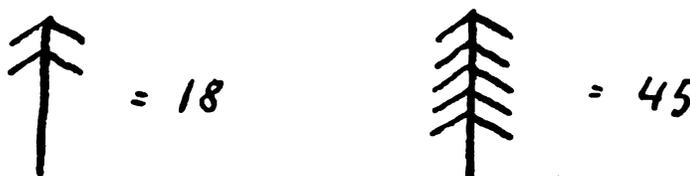


Figure 97

The numbers 18 and 45 look “perfect.” The twigs are harmoniously distributed on both sides of the tree. Moreover, all

three numbers—3, 18 and 45—represent a very curious analogy with the three chief numbers of Plato's "nuptial number." These numbers 3, 4 and 5, which have a great significance for the understanding of the arrangement of twigs on the tree symbol, can be detected in the three above-mentioned numbers of the "Genesis." The analogy is not complete and, of course, very "conventional." But it is thinkable. We will have to discuss this problem, as well as the problem of the remaining two numbers 450 and 75, after having studied the "science of numbers" of the "Genesis" in a much clearer context. We must now turn our attention to the "nuptial number" of the "Genesis," i.e., to the part in which the ages of the patriarchs are calculated in accordance with the principles of the esoteric science of the ancients.

CHAPTER VIII

THE PATRIARCHS

The earliest layer of the "Genesis" had been worked over many times. It seems that the book called "Numbers" originally was closely connected with the legend on the tree of knowledge. The counting of Jewish tribes was, of course, an application of the tree system to a specific purpose, exactly as in the case of Noah's ark. However, in the redaction which we are facing now the "science of numbers" has already a quite different application. Genesis V gives us a series of numbers which all represent the ages of Noah's ascendants. The age limits reached by Adam and by the other patriarchs are incredible. Methuselah, the grandfather of Noah, is said to have lived 969 years. It has been questioned whether the Hebrew thinkers did not use a different principle of counting. Many suppositions had been made which did not further, however, the solution of the problem. Could they have used a larger initial unit, as did the Babylonians who were operating with a unit of "sixty"? But the ages of the patriarchs cannot be all divided by one and the same number. The real key is to be found elsewhere—in the relationship between the decimal system and the secret octaval system which we have discussed in connection with Plato's "science of numbers" and with the so-called Runes. The decimal system is an "ideal system," whereas the octaval system signifies earthly things—the empirical world.

"Here is the list of Adam's descendants. When God formed man, he made him to resemble God; male and female, he formed them both and blessed them, calling them human on the day when they were formed. After living a hundred and thirty years Adam became the father of a son resembling himself, in his own likeness, whom he called Seth; Adam lived eight hundred years after the birth of Seth, and was the father of sons and daughters. Thus Adam lived for nine hundred and thirty years in all . . ."

In fact, $130 + 800 = 930$. The calculation is entirely correct.

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Plato, Pythagoras and the authors of the "Genesis" could not be denied any more. Let us reconsider the "fir tree symbol of Kylfver" (Figure 98):



Figure 98

The tree system implies two positions. The first is characterized by twigs on the right side. The second uses the left side. If we assume that the numbers of the "Genesis" can be transformed into numbers of the octaval tree system, then we would have to consider the third number of each numerical "triad"—e.g., 930, etc.—as belonging to the first position (the numbers 1-8), whereas the two other numbers would both belong to the second position representing the numbers from "eight" onwards. The following scheme conceived in terms of the tree system should clarify the procedure which we must apply in order to transpose the "key numbers" of the Bible into numbers of the octaval tree system. In fact, we have to multiply the first two numbers of each "triad" by "eight." The external correspondence of the tree numbers to the Biblical "key numbers" is simply surprising (Figure 99):

This table of numbers seems to suggest a possible confusion. The numbers of the octaval system belonging to the second position seem to have been taken for numbers of the first position. One might say that the numbers of the "Genesis" are tree numbers which had been "decimalized" in a very peculiar—in a wrong—way. The decimalized numbers neglect the question whether the twigs are marked on the right or on the left side of the tree. I ask myself, however, whether one is really entitled to speak here of a confusion. The entire table of numbers seems to be an elabo-

| | | | | | |
|---------------|-----------------------|---|------------------------|---|-------------------------------|
| 1. Adam | 130 111. 8+24 | + | 800 111. 64 | = | 930 111. 72+24 = 96 |
| 2. Seth | 105 111. 8+5 | + | 807. 111. 64+7 | = | 912 111. 72+8+2 = 82 |
| 3. Enoch | 90 111. 72 | + | 815 111. 64+8+5 | = | 905 111. 72+72+5 = 149 |
| 4. Kenan | 70 111. 56 | + | 840 111. 64+32 | = | 910 111. 72+8+72 = 152 |
| 5. Mahalel | 65 111. 48+5 | + | 830 111. 64+24 | = | 895 111. 64+72+5 = 141 |
| 6. Jared | 162 111. 8+48+2 | + | 800 111. 64 | = | 962 111. 72+48+2 = 122 |
| 7. Hanok | 65 111. 48+5 | + | 300 111. 24 | = | 365 111. 24+48+5 = 77 |
| 8. Methuselah | 187 111. 8+64+7 | + | 782 111. 56+64+2 | = | 969 111. 72+48+72 = 192 |
| 9. Lemek | 182 111. 8+64+2 | + | 595 111. 40+72+5 | = | 777 111. 56+56+7 = 119 |
| 10. Noah | 500 111. 40 | + | 350 111. 24+40 | = | 850 111. 64+40 = 104 |

Figure 99

rate fabricate of the ancient scientists who were deliberately mixing up their "science" with religion. We will have to pronounce ourselves on this subject later—after having completed all observations.⁸⁴

The reconstructed tree symbols are placed so, as to correspond very strictly to the "decimal" numbers. The latter do not reflect the positional of the tree numbers at all. They play the rôle of "key numbers." Let us consider the result of the calculations which is somewhat surprising. The ten patriarchs have reached the following ages:

| | |
|---------------------|-----|
| 1. Adam | 96 |
| 2. Seth | 82 |
| 3. Enoch | 149 |
| 4. Kenan | 152 |
| 5. Mahalel | 141 |
| 6. Jared | 122 |
| 7. Hanok | 77 |
| 8. Methuselah | 192 |
| 9. Lemek | 119 |
| 10. Noah | 104 |

The addition of these numbers leads us once more to the sacred "tetrad," which we had already found in the total of the first column of the "decimal" numbers of the "Genesis." In fact, the total of the octaval tree numbers is utterly "Pythagorean."

Total 1234

The "tetrad" appears here in a new form. Moreover, the "tetrad" is contained in the age of the first "man"—Adam:

$$\begin{aligned} \text{Adam} & \dots\dots\dots 1 \times 2 \times 3 \times 4 = 24 \\ & \dots\dots\dots 24 \times 4 = 96 \end{aligned}$$

We know, of course, that the number "four" is a significant "perfect" number of the Pythagoreans. It is quite understandable that it should figure in the age of the first man created by God.

The ages of both Lemek and Noah correspond strictly to the Eternal's will that "they" (men) shall not live more than a hun-

dred and twenty years. The last two patriarchs reached, in fact, the modest age of 119 and 104 years:

| | |
|-------------|-----|
| Lemek | 119 |
| Noah | 104 |

The numbers figuring in the table of ages contain many additional implications which probably appeared to be very significant to the ancient thinkers. Some of them are worthy of being mentioned. The octaval basis of the numbers is stressed by the following phenomena:

| | |
|------------------|---------------------|
| Adam | $96 = 12 \times 8$ |
| Kenan | $152 = 19 \times 8$ |
| Methuselah | $192 = 24 \times 8$ |
| Noah | $104 = 13 \times 8$ |

The remaining ages can be also connected with the key number "eight" by combining it with another key number—the number "seven" which, too, is, as we know, relevant to the octaval tree system.

| | |
|---------------|----------------------------------|
| Seth | $82 = 12 \times 8 - 2 \times 7$ |
| Enoch | $149 = 23 \times 8 - 5 \times 7$ |
| Mahalel | $141 = 22 \times 8 - 5 \times 7$ |
| Jared | $122 = 17 \times 8 - 2 \times 7$ |
| Lemek | $119 = 21 \times 8 - 7 \times 7$ |
| Hanok | $77 = 14 \times 8 - 5 \times 7$ |

The method of decimalizing the octaval tree numbers and vice versa—the octavalization of the decimal key numbers faces some very curious difficulties. The ancients were, of course, quite aware of these phenomena and decided to recur to theological explanations. God's will had to explain formal arithmetical phenomena. Thus, the age of Seth can be obtained only, if one deducts "two" from the octavalized key numbers of the first two columns:

$$\text{Seth} \quad 8 + 5 \quad 64 + 7 \quad - 2 = \quad 72 + 8 + 2 \quad = 82$$

We find a very similar difficulty with the number 9 and its octavalized equivalent 72. We have to add this number to the numbers indicated in the third column.

| | | | | |
|-------|----|--------------|---------------|---------|
| Enoch | 90 | 815 | 905 | |
| | 72 | $64 + 8 + 5$ | $72 + 5 + 72$ | $= 149$ |
| Kenan | 70 | 840 | 910 | |
| | 56 | $64 + 32$ | $72 + 8 + 72$ | $= 152$ |

It seems to me, therefore, that the "table of ages" contained initially only two columns. Of course, they were utterly sufficient in order to calculate the total age of each patriarch. The ancient mathematicians would have enormous difficulties in trying to master the formal arithmetical phenomena which disturb the numbers of the third column. In fact, the octavalization of the equation $104 + 105 = 209$ leads to a quite normal result:

$$\begin{array}{ccc} 104 & 105 & 209 \\ 8 + 4 & 8 + 5 & 16 + 9 = 25 \end{array}$$

However, if we replace this equation by a very similar one, a curious purely arithmetical phenomenon arises:

$$\begin{array}{ccc} 105 & 106 & 211 \\ 8 + 5 & 8 + 6 & 16 + 8 + 1 \quad +2 \end{array}$$

That illustrates the particular difficulties with which the ancient mathematicians had to deal. Hence, it might be assumed that only the first two columns of the "table of ages" are initial and quite authentic. The first column designates, as we know, the age of each patriarch in the year when a son was born to each of them. The second column contains numbers each of which embraces the number of years from the year of the birth of the son of each patriarch up to the year of the death of each of the patriarchs. The totals forming the third column were probably added by a later glossator of the "Genesis" who made the final arrangement of the "table of ages": Similarly, the totals are utterly omitted in Genesis XI, 10-26, where the ages of Shem and

of his descendants are mentioned. We will briefly discuss this question in a later context.

There is one case, however, when the ancient scientists, nolens volens, had to pronounce themselves on the account of the above-mentioned curious arithmetical phenomenon. It occurs in the second column which must have been initial and authentic. Here, an explanation was absolutely necessary:

$$\begin{array}{r} \text{Lemek} \quad 182 \qquad \qquad 595 \qquad \qquad \qquad 777 \\ \qquad \qquad 8 + 64 + 2 \quad 40 + (72) + 5 \quad 56 + 56 + 7 = 119 \end{array}$$

In fact, we must subtract here the number 72 (9×8). The ancient mind found a sophisticated theological solution. As I said it previously, Lemek's death marked a significant change in man's age limit. The limit from now on should not exceed 120 years: "So the Eternal said . . . They shall not live more than a hundred and twenty years." The Eternal took the decision after Methuselah's death. This oldest man of all times lived, as we know, altogether 192 years—twice as long as did Adam. Why did the Eternal limit the age of men to 120 years? It seems to me that this decision is due to the arithmetical phenomenon which occurs in the numbers determining the age of Methuselah's son, Lemek. We had to subtract there exactly 72 years:

$$192 - 72 = 120$$

The age of Lemek who, as we know, lived 119 years—in strict accordance with the Eternal's will—seems thus to have produced a very important theological explanation. A parallel to that theological illustration might be found in the other of the two versions of the "Genesis." "After living a hundred and eighty-two years (74 years) Lemek became the father of a son, whom he called Noah, saying, 'Now we shall (know a) relief from our labour and from our toil on the ground that the Eternal cursed.' " Is it a reference to the coming deluge? I do not think so, because Lemek died before the deluge, when the Eternal himself had not as yet taken the decision to blot off all beings from the earth. Hence, Lemek's words can be only brought into connection with the arithmetical phenomenon of a necessary subtraction of 72

from the octavalized number of the second column. The second theological variant is in no sense less ingenious than the first one. It is important to stress that "scientific" phenomena are here leading. They determine the theological gloses. One might assume, therefore, that the authors of the "Genesis" of the last redaction arranged the entire material in such a way as to form a thoroughly schematized whole. The entire scheme starts with the creation-myth which contains, as we know, an amalgamation of two counting systems—of the Babylonian (or Sumerian) system, represented in the six days of active work, and of the octaval system, which is expressed in the number "seven." In fact, the creation-week had been thus prolonged from six to seven days, by means of a reinterpretation of the sign for "six." In terms of the tree symbol such a reinterpretation could be made without any major difficulties. The ages of the patriarchs are an application of the tree system—a very peculiar one, but at the same time a very logical, too. The "nuptial" character of the table of ages is reflected in the fact that the numbers actually are designating the births of the patriarchs, their death, etc. Life and knowledge are here combined together quite obviously. Of course, the ages of the patriarchs are "idealized." We find ten patriarchs (cf. also the "Ten" Babylonian kings) and the key numbers to their respective ages are decimal. It is the same idea which Kafka found in the silent implications of Plato's "nuptial number." The unity of the ancient thought is really astounding. The Bible, the Pythagorean "science of numbers" and Plato's "Republic" form a uniform whole. The sources complete each other. It is obvious that we are facing here a tradition—an ancient science which "some Prometheus" had brought from heaven and handed down to mankind. The ancients "dwelt nearer to God," says Plato. The ten patriarchs with their decimalized ages were, of course, quite near to an "ideal" existence. However, the real octaval structure of the numbers forming their ages reveals mortality. That is stressed by the presence of the number "eight" in the age of each patriarch, by the significant rôle of the number "seven," which, as we know, is essentially octaval, and by the fact that after the death of the eighth patriarch, Methuselah, the Eternal decided to shorten the age of men on earth. All these implications are as significant as

they are, altogether, obvious to any unprejudiced investigator of ancient wisdom.⁸⁵

A minor inconsistency may be noticed. It can hardly be ascribed to an "accident." The age of Noah is calculated in a very peculiar way. If we consider the table of decimal code numbers, we have to mark the number 600 in the first column, instead of the number 500 which represents the age of Noah in the year, when a son (three sons) was born to him. The first column, as we know, includes numbers representing the age of each patriarch in the year when a first son was born to each of them. Hence, one should expect to find in Noah's case the number 500. The number 600 designates Noah's age in the year of the deluge. However, the Bible notifies us that "after the deluge Noah lived three hundred and fifty years. Thus Noah lived for nine hundred and fifty years in all; and then he died" (Genesis IX, 28-29). The first number is here supposed to be the number 600, since $600 + 350 = 950$. Consequently, a later glossator speaks of the deluge, and not of the birth of Shem (and of his two brothers), though the next following passage (Genesis X, 1 ff.) contains the names of Noah's sons and enumerates the descendants of Japheth. It is clear that the number 600 must have meant in the original text the age of Noah in the year when his sons were born, and not the age of Noah at the time of the deluge.

The "octavalization" of the decimal code numbers presupposes, however, the number 500, i.e., the "right" age of Noah. Thus, Noah lived altogether 850 years, i.e., 100 years less than Genesis IX, 28-29, tells us. We find a quite analogous inconsistency in the case of Shem's age. It was in no sense easy to "arrange" all numbers and to appropriate them to the various calculations which the ancient thinkers considered to be inherent to their "science."

A more complicated case is that of the "oldest man," Methuselah. In fact, the age of 969 years, which the patriarch has reached, fits very well into the table of decimal code numbers, but it cannot be "octavalized" at all. The end number 9 is impossible, absurd. It seems here to be a number of the "first position." Hence, its presence is absolutely illogical. The number 9, as well as the number 8, are both *eo ipso* numbers of the "second position." It

is quite understandable that the "table of ages" does not contain any number which would end with the number 8 or 9, although the table consists of altogether thirty different numbers. It would be impossible to "octavalize" them, if they would contain the end numbers 8 or 9. Methuselah's age must be due either to an error or to the desire to make the ancient "science of numbers" absolutely inaccessible to non-initiates. What was Methuselah's "real" age?

The answer is not as difficult as it seems to be. Let us examine the numbers which are mentioned in connection with the oldest man of all times.

| | | | |
|------------|-----|-----|-----|
| Methuselah | 187 | 782 | 969 |
|------------|-----|-----|-----|

The octavalization of these numbers leads us to the following result:

| | | |
|---------------|----------------|----------------|
| $8 + 64 + 7?$ | $56 + 64 + 2?$ | $72 + 48 + 9?$ |
| $72 + 7?$ | $120 + 2?$ | $120 + 9?$ |

If we assume that the number 7 in the first column and the number 2 in the second column are derived from the absurd end number 9 of the third column, we would come to the following result

| | | |
|----|-----|--------------------|
| 72 | 120 | $120 (+ 72) = 192$ |
|----|-----|--------------------|

That seems to be the only correct arrangement. The shadow-number 72 reappears once more in the third column. That is not surprising. In fact, the end number 9 has been treated by us, as if it were a "zero." In two other cases we had to add 72 to the numbers of the third column whose decimal code numbers ended with a zero. Methuselah's case is quite similar. The end number 9 might be due to an unsuccessful attempt to "redecimalize" octavalized decimal code numbers, since it seemed necessary to dispose of the number 72 (8×9). Thus, Methuselah's age became fixed at 969 years, instead of 960. The end number 9 might be due, however, to the desire to disguise the "scientific" background of all these calculations. Moreover, the number 969 was needed for the table of decimal code numbers.

We can now understand much better the hint contained in the Eternal's decision: "(human creatures) . . . shall not live more than a hundred and twenty years" (Genesis VI, 3). Lemek and Noah both died before reaching the limit (119 and 104). The theological glos does not concern only Lemek and Noah, but Methuselah as well. The number 120 is found in the third column, in connection with the age of Methuselah ($120 + 9?$). The glos means that the end number 9 has to be neglected and treated as a "zero." Then, we come to the correct result. Methuselah lived altogether $120 + 72 = 192$ years. The Biblical scientists were probably quite aware of the actual implications contained in the various gloses of the "Genesis."

CHAPTER IX

THE DELUGE

Noah was forty-eight years old when the deluge started: 600×8 makes, according to our octavalization formula, 48. This number is a significant number of the Platonic "science of numbers." Plato mentions it twice, and the equations which he uses are precious indications of the actual existence of the tree script. Here, we encounter the same number 48 in a function which is very analogous to Plato's use of it. The number 48 expresses the transition to a new order on the earth, exactly as in Plato's "Republic" the same number occurs in connection with the numerical characteristics of the new "ideal city." Plato's equations are $50 - 2$ and $7^2 - 1$. The result leads us in both cases to the number "fourty eight," which seems to stress the idea of "renovation." In fact, the tree symbol expresses this idea quite conspicuously (Figure 100):



Figure 100

Since a new counting system had been created, in which each twig on the left side received the meaning of "eight," the discovery as such could not be expressed more adequately than by the number "fourty eight" which contains the normal maximum of left side twigs, i.e., six twigs. We know that the usual limit of the octaval tree system was the number "fifty," although it could—and had been—used up to "seventy-two." The connection between Plato's nuptial number and the "science of numbers"

contained in the "Genesis" becomes quite visible. Only the application of this science differs in some details. The table of ages regulates the birth and the death of each of the ten patriarchs. Similarly, Plato's "nuptial number" determines, according to Plato, the particular constellation which governs the birth and the death of each man, the moment when a child is conceived by its parents, and the growth and the decay of the "ideal city" as well. The decimalization plays, of course, a very significant rôle. We found it already while discussing Plato's scientific conceptions. The "Genesis" clearly adopts a quite analogous attitude toward the chief counting systems of the ancient world. We find ten patriarchs whose ages are expressed in decimal code numbers. The addition of their ages, i.e., the period of time filled out with their lives is decimal, too. The total is 1234. That is a special arrangement of the sacred tetrad, and the tetrad leads us to the "most perfect" number "ten":

$$1 + 2 + 3 + 4 = 10$$

Since the number "four" is a numeralization of the symbol of the cross, we should not be surprised to find that the number "ten" had actually been drawn as a cross in Runic—partly under Roman influence, partly because of a half-forgotten tradition, which still kept the mind of the mediaeval thinkers bound to the initial symbols.

The phenomenon of "decimalization" is revealed in the numbers of the legend on Noah's ark, too. We have already discussed the strictly octaval numbers 3, 18 and 45. They are all "perfect numbers," because 3 is a number of the sacred tetrad and the other two numbers are perfect in their external appearance. The remaining numbers—75 and 450—are obviously "decimal." The number 75 is nothing else than 450 divided by "six." It becomes thus relevant to the number 45, because 450 is, of course, 45 multiplied by 10. The number 45, thus, is "leading," as far as the construction of the barge is concerned. The other two measures are derived from the "perfect number" 45. In fact, it is perfect, because it is symmetrical. Each side of the tree has five twigs (Figure 101) :

The fact that 75 is equal to 450 divided by 6 seems to imply the presence of the Babylonian—sexagesimal or sextal—counting system which, as we know, is to be found in the creation-myth of the “Genesis” and in Plato’s “nuptial number” as well. The ancient “science of numbers” was constantly operating with the three chief counting systems—the octaval, the decimal and the



Figure 101

sexagesimal (or sextal). Since we found the number 3 (number of “decks”), 4 (the number 18 has two twigs on each side—altogether 4 twigs), and 5 (the number 45 is characterized by 5 twigs on each side), it would be logical to find the number 6 also somewhere among the numbers of the legend on Noah. It is contained in the number 75, because $75 = 450 : 6$. Plato indicates a different formula which is, however, based on the same numbers: $3 \times 4 \times 5 = 60$. It was necessary to include all these numbers into each calculation which aimed at being significant. The question how each combination actually arose cannot be answered in a general way. The “art” of each ancient thinker seems to have played a decisive rôle, although one should not eliminate the possibility of the existence of several “schools,” each of which might have had its own peculiar traditions.

The proportions of Noah’s barge are calculated in such a way as to make the entire construction as perfect as possible. The numbers, therefore, are decimal and, moreover, the “barge” has all characteristics of a real ship, capable of surmounting all dangers which the forthcoming deluge could bring. The conception of the ship reveals nautic experience, intelligence and knowledge, i.e., the three chief qualities of a “true pilot.” Of course, Noah has proved to be a perfect navigator, though his knowledge was entirely due to the Eternal’s instructions and to his own obedience to God’s will. His “barge” is an excellent product of

the ancient art of shipbuilding. The ship has the following very suggestive form (Figure 102):

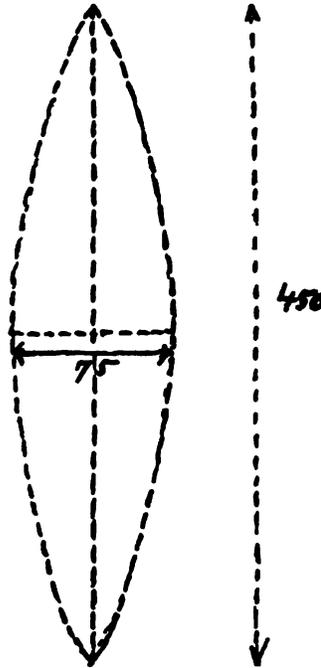


Figure 102

The figure is self-speaking. Only a "seaboard-nation" could have worked out such a perfect model of a ship. We will see later that the Hebrew mind was far from such a conception of shipbuilding and navigation. It suffices to refer to Ezekiel's "Ship of Tyre." There is, however, one element in the ship's dimensions which seems to involve a very peculiar and, altogether, a very significant implication. It is almost a corollary of Plato's image of the "ship of fools" and, at the same time, a direct antecedent of another interesting "vision" which from time immemorial seems to have influenced the imagination of sailors.

We know that the ship was 450 feet long. An "octavalization" of this decimal number (it is, in fact, the "octaval" number 45, multiplied by 10) leads us to a very curious result:

$$4/5/0 \times 8 = 32 + 40 = 72$$

The resulting number is nothing else than the end number of the octaval counting system which, as we know, implies the pos-

sibility of a transition toward the number "one hundred." In fact, the addition of all numerical values of the twigs on both sides of the tree—each side has eight twigs—gives a total of "one hundred." The number 72 expresses the idea of a change of the old world and the creation of a new "decimalized," perfectly ordered, world. It implies, however, an additional inspiration which becomes understandable only in terms of the "table of ages." In discussing the age of Noah's father, Lemek, we observed a very peculiar phenomenon. The number 72 had to be deducted from one of the numbers which results from an "octavalization" of the three numbers indicated in the "Genesis." This number 72 has a "shadowy" existence. It appears and disappears in accordance with God's will—"on the ground which the Eternal coursed." Genesis V, 29, gives, of course, a theological commentary to a purely formal arithmetical phenomenon. Since the same number 72 seems to express the numerical characteristics of Noah's ship, it might be assumed that the ancient thinkers could have intended to stress the idea that the ship corresponds to God's will, just because its numerical designation expresses the ship's dependence on God's will. The "providential" character of the ship was certainly stressed by such a coincidence. Moreover, the idea of a peculiar "shadowiness" of the ship could easily be implied, too. The idea of a phantom, of a vision, of a mirage was almost given in the very definition of the rationality of Noah's construction. It is quite obvious what developments such a conception could have. Of course, it is hardly possible to trace a direct conceptual relationship between the legend of the "Genesis" and the later well-known tale which enjoys the greatest popularity among sailors of all countries. But a quite analogous connection between the "philosopher's stone" and its ancient prototype (cf. the Gothic stone of Kylfver, the Slavic "Stone Latyr'," etc.) suggests the idea of a direct connection between one of the interpretations of the Biblical legend on Noah's ark and its later—mediaeval—reflexion. One has always to observe the initial thematic complexity of the cellular concept or image, from which numerous interpretations could and usually had been derived by the ancient and the mediaeval thinkers. This method was a part of reasoning as such—its most outstanding peculiarity. Let us

remember the word "sa" and, of course, the tree symbol of Kylfver.

The new "ordered" world was supposed to be decimal. Hence, as the Bible says, "till the tenth month the waters steadily subsided, and on the first day of the tenth month the tops of the mountains were seen" (Genesis VIII, 5). The number "ten" inaugurates the new peaceful order on the earth. "On the first day of the first month of the six hundred and first year the water had dried off the earth." The "ones," of course, are a clear evidence of a new beginning of life. As to the "six hundred and first" year, only one supposition seems to be plausible. It was Noah's age. The deluge started when Noah was 600 years old, i.e., 48. If we transpose the number 601, we get the number 49 which, as we know, occurs in Plato's "nuptial number," too—in the form $49 - 1$. Plato's odd numbers become quite understandable in the light of an analogy with the Old Testament. Moreover, Noah's age in the "six hundred and first" year was 49, i.e., 7^2 .

That gives us an idea of the peculiarities of the ancient "science of numbers." Arithmetics were the scientific basis of all speculations of the ancient mind. Numbers gave to the "rationality," i.e., "truth" and conformity to God's will. In fact, Plato's "nuptial number," the tree symbol of Kylfver and the "Genesis" are not only applications of the ancient "science of numbers," but, altogether, manuals in primary arithmetics. The encyclopaedic character of all these manifestations of ancient knowledge is particularly visible in Plato's "nuptial number" which includes all arithmetical operations. The "table of ages" still remains, however, a unique product of the mathematical mind. No other source contains a similar amount of numerical "interdependencies." The numbers of the legend on Noah might be called direct predecessors of Plato's "nuptial number." They bind together the "Genesis" and Plato's leading metaphor of the "Ship of State" and the entire conception of the "ideal city" as well. Plato is reviving the "Genesis," in a somewhat remodeled form, but he uses the old traditional tools. Ancient wisdom has two main expressions—the "Genesis" and Plato's "Republic" which are both intimately connected with each other by a similar approach

to culture, to its history, and by a quite similar "logic." An almost identical use of form-giving symbols, pictures, "shadows" and numbers characterizes equally both sources and illustrates their intimate connection. "Ancient knowledge" forms their common background.

"For fourty days and fourty nights rain fell upon the earth" Genesis VII, 12). The number "fourty" is very interesting. It is, of course, a perfect number, because it has five twigs on one side only. Moreover, it is a combination of two "perfect numbers"—of the number "four" and of the "most perfect" number "ten." The two counting systems—the octaval and the decimal—are here combined even in a double way, since $40 + 40 = 80$, and 80 is a product of the multiplication of the two chief units of the two counting systems: $8 \times 10 = 80$. The "octavilization" of the number 80 leads to another important number, 64, which is "perfect" (all eight twigs are placed on the left side), and, moreover, corresponds to the number of years which Noah lived after the deluge. Is that a coincidence? Probably, it was a coincidence which must have been welcomed by the ancient mathematicians who spent their time in composing the "science of number" of the Old Testament (cf. also Appendix; 40 represented Ea, the God of Knowledge and of water—navigation?).

The "Genesis" speaks of "three decks" on Noah's barge which are supposed to shelter "bird, beast and reptile," two of every kind—"male and female." A second version of the text of the "Genesis" speaks of "clean" and "unclean" animals and of birds, too. This division into three categories corresponds to a quite similar division of the entire population of Plato's "ideal city" into three classes. Even the concept of "cleanness" has its equivalent in the "Republic." Pure metals—gold and silver—are opposed to iron and brass. All passengers of Noah's ark lived together, but in separate decks. The idea of order, classification and hierarchy is here expressed in a very clear way. Of course, the concept of hierarchy has several equally significant aspects. The first leads us to God's will. The Eternal has conferred on Noah the necessary authority and the equally necessary knowledge. The second aspect is a logical consequence of the first. The pilot, Noah, is ruler of the ship and of its crew, too. He and his family live in

cabins. They represent the golden guardian class of Plato's "Ship of State." A third expression of hierarchy might be found in the principle of classification. However, the idea of solidarity is made visible, too: "But I will make a compact of my own with you," the Eternal said (Genesis VI, 18). That is much more a command than a "compact," but the acceptance of God's order by Noah emphasizes the bilateral character of the arrangement: "He (Noah) did all that God had ordered him." The solidarity of the ship's crew assumes in the "Genesis" a quasi-contractual form.

We will not follow all details of the disaster which preceded the foundation of a new order. Finally, Noah sent out a dove—he did it even twice—and "in the evening the dove came back to him, and there, in her beak, was the fresh leaf of an olive." Thus, a peaceful order had been established, and both the dove and the fresh leaf of an olive seem to symbolize this new régime of peace and of confidence. That seems to be the earliest appearance of a dove in the ancient cultural-historical sources. The dove, as we know, reappears later in the chief sources of ancient wisdom—in the Runic script, in the Old-Russian "Dove's Book"—as a messenger of peace and order. The "inauguration" of a new peaceful order needs, of course, the presence of a bird. The "Genesis" mentions a raven, too. But the raven was the symbol of the preceding quarrels, of warfare, and hostility. The new order had to be characterized by a "peaceful" bird. We know to what extent the dove had influenced even the words composing the chief prayer of the Goths and, possibly, of other nations as well.

Two conceptions could originate from Noah's nautic experience—a general conception of a newly ordered universe and the conception of the State which would correspond very closely to Plato's leading metaphor of the "Ship of State." In fact, both aspects may be found in Plato's works. The first is reflected in the image of the divine ruler who keeps the helm of the universe conceived as a ship. This universalist interpretation is hardly the original one, although the "Genesis" is virtually defending the thesis of "recreation" by stressing the Eternal's dissatisfaction with his first attempt. It seems to me that this universalist approach is due to a relatively late reinterpretation of an earlier layer which probably contained the Platonic political interpreta-

tion of the image. Plato is, of course, the actual creator of the idea of the State, because the genetic events receive their full expression and their historical explanation only in terms of the leading metaphor of Plato's "Republic." Politics as reasoned behavior and as the art of political "pilotage" has been first formulated by Plato in the image of the "Ship of State." He succeeded in reestablishing the primary meaning of the legend on Noah's ark. Of course, the scientific foundation of Plato's "ideal city" is unique. Mathematics combined with an allegory replace the gnoseological approach to the phenomenon of State. But curiously enough, this archaism is closer to actual cultural-historical happenings than any modern theory of State. We saw it in the case of Carl Schmitt who certainly cannot be accused of being shortsighted. Plato's "Republic" makes an attempt to rationalize the State, political life, the art of "ruling" a political community in terms of a "genetic situation" which had been conceived by Plato as an eidolon leading to the very idea of the State. Of course, he was following a tradition which was particularly justifiable from the viewpoint of a Greek, of an Athenian. But let us not belittle Plato's enormous intuition—the intuition of all great thinkers which alone discloses truth to the enlightened mind of the true philosopher. Plato's conception of a "true philosopher" is close to the Biblical assumption. One has to "find favours with the Eternal" in order to be admitted to true knowledge and guardianship. Plato is a selectionist, an aristocrat, and altogether a believer. In that he shares the general attitude of the authors of the "Genesis."

The legend on Noah's ark has a very interesting appendix. A somewhat contradictory racial theory completes the philosophical content of the "Genesis." It seems to culminate in a statement which is not quite compatible with the alleged Semitic provenance of the "Genesis." It is the well known claim "May God enlarge Japheth. May he be welcome in the tents of Shem, and have Canaan as his slave." These words are ascribed to Noah.⁸⁶ A common military expedition against Hamitic tribes is presented in the form of a family dispute between Noah and his "youngest" son, Ham. "A course on Canaan. May he be slave and throll to his brothers."

Since Ham's name is mentioned in the "Genesis" twice between the names of his two brothers, the term "youngest" son is understandable. Moreover, all three brothers seem to have been born in the same year, and the question of "primogeniture" is in no sense easy to solve.⁸⁷ It is not excluded that the racial theory and, particularly, the statement concerning the three sons of Noah, who exemplify the three races, represent an elaborate glos to a previous context—even a series of gloses which partly contradict each other. The term "youngest son" applied to Ham may indicate that Ham was interpolated after the other two brothers. The chief problem is that of determining who of the two remaining brothers—Shem or Japheth—belong to the initial content of the legend. It is quite possible that Shem had been introduced at the very moment when the initial material of the "Genesis" became accommodated to the Semitic mind and to Semitic traditions.

In fact, the uncertainty in the question of Shem's age which had been noticed in a previous context induces to the assumption that Shem actually has to be considered as a Semitic contribution to an earlier version of the "Genesis." It is significant that the Bible mentions Japheth and his descendants before the other two brothers and their descendants, although in several other places Japheth's name appears after the names of his two brothers. There is a striking uncertainty in all that concerns the three sons of Noah. Genesis X, 21, calls Shem "the ancestor of all the Hebrews, the older brother of Japheth." But that seems to be a late "politesse" of the Hebrew glossators of the "Genesis." Far more important is the fact that Japheth and his descendants are mentioned immediately after Noah's death. Japheth thus becomes a "direct," and the most congenial, successor of Noah. "After the deluge Noah lived three hundred and fifty years. Thus Noah lived for nine hundred and fifty years in all; and then he died. Here are the descendants of Shem, Ham, and Japheth, the sons of Noah (they had sons born after the deluge). The descendants of Japheth were the Cimmerians, Magog, the Medes, the Ionians, Tubal, Meshek, and Tiras, the descendants of the Cimmerians were Ashkenaz, Riphath, and Togarmah; the descendants of the Ionians were Elishah, Tartessus, Cyprus, and Rhodes, from whom the seaboard nations spread . . ."⁸⁸ A direct line seems to connect Noah,

the navigator, with the Ionians and Rhodians "from whom the seabord nations spread." Thus, we finally arrive to Athens, because "among all Hellenes, the Ionians were the greatest lovers of travel, of adventure, and of navigation; it is in Athens that the Ionian character has received its most complete development."⁸⁹

The "seabord nations" are openly favored by the authors of the "Genesis." Japheth and his descendants are put ahead of the other two brothers and their descendants. God is asked to "enlarge Japheth." Moreover, the entire context and legend on Noah's nautic experience seem to prove that the most significant sheet of ideas is intimately connected with navigation, with "seabord life," and the cultural achievements to which the sea led a privileged part of humanity embraced in the term of the "descendants" of Japheth." It is impossible to admit that the "tents of Shem" or the even more primitive cultural standard of the Hamites who are exemplified in the figure of a "despotic" hunter, Nimrod, could have created the theme of the deluge and all its cultural and even political implications. The Hebrews were, of course, profoundly interested in finding out a pattern of life which they could eventually use after having become a settled nation and having replaced their tents by stable buildings—farmer houses, etc. In "Genesis" IX, 20, Noah, the navigator and pilot, is suddenly called "Noah the farmer." That seems to be an almost incredible transformation which has, probably, a very simple explanation. The cattle breeding Hebrews wished to change their cultural standards and become settled. Their drive toward Canaan might well be due to this desire of a culturally grown-up nation to appropriate a territory which was particularly suitable for agriculture—farming (cf. the term "Noah the farmer"). A new order had to be created. The experience of culturally more advanced nations was then adopted by the Hebrew (and related Semitic tribes), for their own purposes. The logic of the time prescribed the use of picturesque comparisons, images, allegories, legends. Hence, the "Japhethite" legend on Noah the navigator became Semiticized and accepted as a pattern of "rationality" in matters of structure and of behavior. In any case, Noah's qualification of a "farmer" contains a striking contradiction which we will examine in the following chapter.

CHAPTER X

NOAH AND JAPHETH

Noah, the navigator, could not, of course, be a Hebrew,—at least, not from the etymological point of view. The term Noah might be connected with the Sanskrit word *nauh* and with related roots and terms found in the vocabulary of different Indoeuropean nations.⁹⁰ Greek *naus* designates a ship. Latin *navis* has a similar meaning, as well as the Armenian *naw*, and the Isl. *nor* (cf. also the term “norman”). The Roman sea-god, *Neptunus*, belongs to the same family of terms. It is in no sense surprising that the “Normans” appear to be late descendants of the “divine pilot,” Noah. They were, of course, Japhethites, and their ideological and “professional” connection with their far ancestor is simply beyond doubt.

It is important to state that the phonetic closeness between certain words might well have contributed to the creation of the legend on Noah’s ark and to some of its most important implications. In fact, skr *nauh* is phonetically very close to skr *navah*—new. Whether this closeness is merely phonetical, cannot be decided here authoritatively. In any case, this similarity of the sounds composing the words seems to have facilitated the interpretation of the legend on Noah in the sense of a creation of a “new order.” The concept of “novelty” was thus stressed without prejudicing the initial “nautic” content of the legend or image. Curiously enough, an additional complication of a quite similar kind helped to develop the legend. The Sanskrit word *nava*—nine introduced a numerical aspect which, too, seems to be clearly reflected in the Bible. Skr *nava* explains Greek *ennea*, Lat. *novem*, Germ. *neun*, etc. The “Genesis” the conception of a “new order” is quite conspicuously connected with the number “nine”: “When Abram was ninety-nine, the Eternal appeared to Abram and said, . . . you shall be the father of many a nation; no longer shall you be Abram, but Abraham (Manyfather) . . .”⁹¹ The idea of a

“renovation” is here expressed, first, in the use of a symbolic number, 99, in the content of the entire passage which I brought here in an abbreviated form, and, finally, in the curious reinterpretation of the very name of Abram who, thus, was transformed into a “Manyfather”—Abraham. The idea of a “new order” which is mainly expressed in the legend of Noah became now applied to the national hero of the ancient Hebrew. Such an echoing had already been noticed many times before in other contexts. It constitutes a significant element in the ancient art of interpretation and development of initial themes.

It is also interesting to observe that the deluge took place after the death of the ninth patriarch, Lemek. The number “nine” as such suggests renovation. Moreover, we know that in order to receive a correct number for the designation of Lemek’s age it was necessary to subtract 72 from the octavalized number of the second column :

$$\begin{array}{rcl} 182 & 595 & 777 \\ 8 + 64 + 2 & 40 + (72) + 5 & 56 + 56 + 7 = 119 \end{array}$$

This “shadowy” number 72 corresponds, of course, to the number “nine” of the decimal system of the “Genesis.” Here, too, the number “nine” means renovation. First, the age of man is changed in general, i.e., restricted to 120 years only. Second, the idea of renovation is clearly expressed in the chief number of the legend on Noah’s ark—72. Noah, the navigator, is altogether Noah, the renovator. Of course, the number “nine” might well be a direct etymological cognate of “new”—in Sanskrit, at least. These linguistic and ideological connections are difficult to analyze. One can never be quite sure of having found the “correct” etymological connection, because the ancient scientists were passionate linguists without having a modern strictly scientific approach to language. In those times phonetic and even paleographic similarity played a rôle which contemporary linguists would not like to admit without being forced to do so in each individual case. In the history of “concepts”—proper names were “concepts,” too,—false etymology and more or less intentional phonetic affiliation were both upmost important weapons of the human mind. They both

determine the very foundation of ancient logic—particularly in the field of interpretation of texts and oral formulas, and even of names. They both became, at a certain moment,—and in very early times—a “technique of reasoning.” Many ancient myths and mediaeval legends are due to such an attempt to combine words by means of a myth which had to be created ad hoc. But in many important cases the mind of the ancient thinkers was virtually reconstituting some initial “genetic concepts” covering a more or less complex situation. We have seen it in the case of skr sa. A similar phenomenon might be seen in the concepts or words constituting the legend on Noah’s ark. The artificiality of the construction probably was felt by the ancient thinkers. But they had the right idea that in the farthest past there might have existed a direct “situational” connection between these words. A great linguist of the early nineteenth century, Fabre d’Olivet, has made a deep attempt to approach the problem of the origin of various Biblical terms. He started with the idea of comparing to each other phonetically close words which belong to unrelated linguistic stocks. Biblical terms were, of course, among such words. Fabre’s “methodology” was naturally rejected by the linguists of the scientific school. In fact, he was pursuing a not quite scientific aim. Instead of trying to find out a common archaic language of all nations he should have limited himself to the task of studying the religious vocabulary of various nations. The religious words have, in fact, a chance of being found in the vocabularies of nations who are “linguistically” in no sense related to each other. They might, however, have used in common some cultural and religious terms. Thus, non-Semitic terms might be eventually found in such sources as the Bible, if they happen to be “technical”—religious or cultural. The names of Gods, the designations of various sacred symbols, can reveal to us the roots of a legend and the logical development of its chief terms and themes. Cultural influence coming from outside might well be detected by surprise, if one follows the linguistic implications of the legends and myths. It suffices to refer to the word “sa.” There is little certainty in all such observations. However, as soon as historical events might be cited as confirming the presence of such or another

cultural and religious influence, the task becomes easier and the observations more convincing.

There are many indications that Indic and Indo-German sources form the earliest layer of the material of the "Genesis." It would be, in fact, impossible to explain the very content and the main themes of the "Genesis," if one would start from the cultural standards of the Semitic tribes. The Hebrew thinkers misunderstood or consciously misinterpreted the cultural implications of the legend on Noah's ark. They confused—not quite unintentionally—the life of a crew on a ship with a household. The crew itself became thus a family. Noah, the navigator, was transformed into a farmer. The only trace of his real profession might be found in the fact that his sons once discovered him naked and drunken.

The real meaning of the legend is far better reflected in Plato's leading metaphor of the Ship of State than in the correspondent text of the "Genesis." We have seen what significant interpretations of the initial image Plato had been able to extract from it. It is, however, necessary to stress that he was far from being the first inventor of that image or allegory. He was using a commonly known and approved pattern of thought. Moreover, Plato has a literary predecessor—none else than Ezekiel. "There is . . . a doom prophecy upon Tyre, which is expanded, unlike the other prophecies, into a parable of the ship of Tyre . . ." "Ezekiel's prophetic method was that of the artist, student and popular orator."⁹² The similarity between Ezekiel's approach and that of Plato needs hardly to be stressed. One has the impression that the quotation is taken from a preface to Plato's "Republic."

The position of Tyre was "somewhat analogous to that of the Venetian republic toward the Holy Roman Empire. Tyre commercially represented Babylon . . . The ship 'Tyre' is a symbol of Chaldea; his cargo is a symbol of the institution of the priesthood and principedom of Judah which Babylon had profaned; and his doom is the doom of Babylon herself."⁹⁸

Ezekiel's visions began in July 593 B. C. (Ezekiel I, 1-3). He was, of course, not the real author of the parable of the ship of Tyre. It is a Hebrew reinterpretation of the legend on Noah's

ark, but this interpretation is closer to the essence of the legend and, moreover, it contains a very curious Hebrew "pointe." Ezekiel was in no sense a sailor. Hence, his ship "was surely one of the strangest vessels that ever ploughed the seas."⁹⁴ "The allegory is a strange medley, if read as a real ship's manifest."⁹⁵

Two centuries separated Plato from his Hebrew co-thinker. Nevertheless, it would be difficult to believe that Ezekiel could have had any direct influence on Plato, i.e., on the choice of metaphors. Ezekiel's vision does not contain any particularly important political implication, except the fact that Tyre's terrific resistance against Babylon was welcomed by him, because he was himself a Babylonian prisoner. The application of a nautic metaphor to Tyre seems, however, to prove that Ezekiel had a certain intuition similar to that of Plato. The territory of Chaldea was, of course, a political creation of a "seaboard nation." "Behold, the land of the Chaldeans—this is the people that was not, when Ashur founded it for shipmen."⁹⁶ Ezekiel's allegory seems to prove that the metaphor of the Ship of State was currently applied to the political formations of "Japhetite" nations—of the "seaboard nations," as the "Genesis" calls them.

The seaboard nations and island nations seem to have started and developed the legend on the deluge. For them the image of a ship was a guiding conception of the entire institutional life and of their theological theories as well. Noah, the pilot, belongs to the most important figures of the Indoeuropean legends. The "Genesis" pictures him as God's substitute—as a substitute, however, who is blindly performing the commands which are given to him "from above," i.e., from the divine pilot of the entire universe. Whether the division of the ruling force into two personalities—the Eternal and a man, Noah—is original, one does not know. The splitting of a single initial concept or term might easily be supposed. If we admit that, then the word Noah—pilot, navigator—would simply become one of the possible qualifications or metaphorical descriptions of the divine ruler—of God. Noah might be compared to the Roman god of the sea—Neptunus. The crossing of a monotheistic approach with polytheistic conceptions makes the problem as such very intricate. Even the text of the

“Genesis” itself contains traces of a crossing of these two religious approaches. We have seen it, while discussing the theme of Adam and Eve’s expulsion from the paradise. In any case, Noah can be supposed to be a specification of the various rationalized functions of a divine ruler. This specified function is presented in a personified form, i.e., in the form of a man who “had found favours with the Eternal.” Noah becomes thus a human incorporation of the Eternal which is qualified metaphorically as a “pilot” of a ship or barge. The initial unity of the personality is reflected in the concept of a “compact” which binds Noah to God and to His will. A symbolic expression of this quasi-contractual relationship might be seen in the image of a rainbow which signifies a union—an accord—between the heaven and the earth. “When the rainbow appears in the clouds, I will look at it to remind me of the lasting compact between God and every living creature whatsoever upon earth. This, God said to Noah, is the symbol of the compact that I ratify between myself and every creature upon earth.”⁹⁷

It is now easier to understand why Noah is presented as a “father” who ascends the barge together with the members of his family. That concept, strengthened by the interpretative household conception of the whole legend, which distinguishes the Hebrew approach from the Platonic viewpoint, it undoubtedly related to the idea of a “God-father,” as we find it expressed in the Roman term “Juppiter” and in skr dyauh pita—god-chief of the family (of gods?). The term “dyauh” is so close to the Hebrew name for God—Yhwh, usually written Yahowah, with the vowel-points of Adonai (Lord), that an Indic origin of the Hebrew name is almost certain.⁹⁸ A similar connection between the terms Adonai and Adam should be considered, too. Here again one might well suppose a splitting of an initial concept and the personification of both elements of the “dyad,” i.e., of the Lord and of His substitute. The doubling of a personified representation of God is a very important phenomenon. A late echo of such a conception are the mediaeval norms concerning substitution. The lord could be replaced by his vassal or hireling in a trial, etc. It took a long time until the relation between the lord and his substitute received a contractual character. The idea of a “com-

pact" did not occur so easily to the mind of the ancient and mediaeval logicians.

In the case of Noah, the navigator, one might assume that a specific qualification of the initial deity helped to conceive the very personality of the hero of the Biblical legend. It seems that a "dyauh nauh"—a God of the sea (or God in his quality of a pilot or ruler)—had been transformed into two separate personifications—into God, the Eternal, and into Noah, the man who found favours with God and was chosen to substitute God on the earth during the deluge and the following organization of life.

A second application of a quite similar technique or splitting an initial term or concept might be eventually seen in a third principal personality of the legend on Noah's ark—in Japheth, the most congenial son of Noah, the navigator. Should the same specification "dyauh nauh" have induced the ancient mind to a renewed splitting of the same concept? May we assume that "dyauh nauh" originated the personified representations of God and Noah, whereas an inversion of this concept—nauh dyauh—produced the personalities of Noah and of his quite congenial son, Japheth, who thus could become the ancestor of all seabord nations? That seems entirely possible. We find a complete analogy in a much more recent legend. The term "Arthur Cador" (Arthur, the warrior) became interpreted and "rationalized" by a mediaeval myth-maker as representing two individuals—Arthur and his "father" Cador.⁹⁹ The phonetic similarity between the terms Jahwe and Japheth seems to favor a similar supposition. Since Japheth, the alleged ancestor of all seabord nations, is the most direct successor of his "father" Noah, the navigator, the peculiar relationship between the three chief personifications of the legend seems to be justifiable or, at least, thinkable. The two other sons of Noah had been added later. We saw that such a supposition is confirmed by the fact of certain inconsistencies as to Shem's age, and, secondly, by the application of the term "youngest son" to Ham. A racial theory thus was finally created which might be called a very precious contribution to cultural history and to science as well. Particularly interesting is the fact that the most significant characteristics of a "race" were sought not in any biological data, but

primarily in the cultural premises of each of the three "races." Thus, seabord nations were opposed to those living in tents (cattle breeding nations), and both races became opposed to the hunting Hamites. Later, the "Genesis" included additional qualifications—"lands, languages, and national families."¹⁰⁰ But this passage is probably a late interpolation, because in the next following chapter of the "Genesis" we find a description of the situation which preceded the building of the "tower of Babylon" and it is stated there that "the whole earth had one language and one vocabulary."¹⁰¹

CHAPTER XI

THE INDIC AND INDO-GERMAN BACKGROUND OF THE GENESIS

All problems discussed in the preceding chapter are reflected in Plato's philosophy and, in particular, in the leading metaphor of the "Republic." The entire structure of the "ideal city" is defined in terms of the image of the Ship of State—the whole of the State and each detail of the whole. The individual is utterly subjected to the tyrannical metaphor: "A just man . . . will not differ at all from a just city . . . The same forms and qualities are to be found in each one of us that are in the state."

The application of Plato's metaphor to the State is expressed in a few illuminating words: "To begin with . . . consider the nature of its (the city's) constitutive and defining principle. Suppose men should appoint the pilots of ships in their way, by property qualification, and not allow a poor man to navigate, even if he were a better pilot." "A sorry voyage they would make of it," he said. "And is not the same true of any other form of rule?" "I think so." "Except of a city," said I, "or does it hold for a city, too?" "Most of all," he said, "by as much as that is the greatest and most difficult rule of all."

The major points of the Platonic method of reasoning had been already sufficiently discussed. It is obvious that Plato's approach is much closer to the earlier layer of the "Genesis" than to its Semitic adaptation. A very archaic Plato seems to arise out of the cinders of the prehistorical culture of the Indoeuropeans. Recent investigations seem to prove that as far as Asia Minor is concerned the presence of an Indo-German and even of an Indic element in the upper sheet of the kingdom of the Hettites (Hotti) is certain.¹⁰² A quite similar opinion had been expressed on behalf of the ethnical configuration of the state of the Hurrites. In the XVI-XI Centuries B. C., a sharp racial and cultural conflict is supposed to have happened in the Eastern Mediterranean area. The "Genesis" refers to a "migration from the east"¹⁰³ without giving,

however, any precision whatsoever. One might assume that this conflict had compelled the Indic and Indo-German element to seek refuge elsewhere. A curious, not quite reliable, confirmation is found in the well-known legend on the descendance of various Indoeuropean nations (Romans, Franks, Britons, even Slavs) from the "last king of Troy," Aeneas, and from his son, Ascanius. It is almost incredible that all these nations identify themselves with the descendants of the defeated party. This psychological mystery might be considered as a powerful argument in favor of the historicity of their alleged origin. In fact, a migration of Indo-German tribes from Asia Minor is not only possible, but even quite probable. A defeat of these Indoeuropean elements and their forced exodus would explain how the sacred and secret tree system could have been adopted by the Goths and the Slavs, whereas it had been completely forgotten in the South East and only the few initiates still knew its meaning and could use it in their esoteric writings. That would explain, too, how the Runes could be brought into such far lying regions as those inhabited by the Mongols. Mediaeval Tartarian inscriptions contain Runic signs or, at least, signs based on a very analogous primitive tree system. More historical accuracy could be achieved, if the cultural face of the Tochars—an Indo-German tribe temporarily settled in Central Asia—could be sufficiently clarified. At present we are not in the position to emit anything more than conjectural statements which certainly cannot persuade friends of "direct evidences." I would like, however, to quote a modern historian who, at least, seems to possess the right feeling and who finds an eloquent way of expressing his views: "I cannot escape the conviction that when scholars return to those primary sources, early . . . history will be found by them to have survived in legendary or story form, and that it can be recovered by diligent research and investigation."¹⁰⁴ That is an encouraging opinion. It seems that the existence of a tree script, which might well have originated somewhere in the North, but later was brought down to the Southern regions where it had been worked over and "rationalized" and then turned back, opens new possibilities in the field of early history. It may become possible now to reconstruct—at least partially—the prehistorical past

of the Indoeuropeans and to define the main steps of their cultural-historical becoming. Even such "impossible" confrontations as that connecting some institutions of the Salic Law with the laws of Hammurabi become reasonable.

Let us briefly recapitulate the Indic elements of the "Genesis." The tree script, as we know, is intimately connected with the "fence script" which, too, was secret. The latter script is Indic. In fact, it explains the origin of Sanskrit. In the Bible a fence is supposed to surround the Eden. That is a direct consequence of an extensive interpretation of the initial concept "sa." Very interesting is the fact that no bird is mentioned in the first part of the "Genesis," until we get to the legend concerning the deluge. There we find "reptiles" (cf. the serpent in the legend on the tree of knowledge) and "birds." How did birds come into the later development of the initial theme of the "Genesis"? The answer is easy. A bird is implied in the initial concept "sa" which, as we know, has a series of meanings (snake, bird, wind, knowledge). Similarly, the notion of a storm is clearly given in the dominating concept (sa—wind) and the deluge as such becomes thus directly—and "logically"—connected with the initial theme of the "Genesis." Everything is in fact submitted to the notion of "knowledge" and of experience. It is easy to find out how the mind was working and how a complex initial "genetic" situation became developed by means of applying a certain technique of interpretation and "myth-making." What makes this line of reasoning particularly important is the fact that the mind of the ancient thinkers was virtually reviving and describing the real way of cultural-historical becoming.

The word "nauh," too, might be called a leading theme of the "Genesis," together with the word "dyauh." Both words are Indic. The "far East," to which the "Genesis" itself is referring, seems to mark the Indic origin of these most significant terms and themes of the "Genesis." I ask myself whether the ending of the term "Japheth" might become explainable in terms of a quasi-patrimonial suffix, which sounds pretty close to the Greek ending "-id(es)." This question may be submitted to the judgment of ex cathedra linguists.

The Indo-German element is conspicuously expressed in the sacred—and secret—tree script as such. The fir tree symbol of *Kylfver* is presumably Indo-German, though its origin is rooted in the farthest common past of all Indoeuropean nations. Tree worship and lore or knowledge thus represent different phases in the history of the Indoeuropean culture.

If we try to reconstruct the early stages of this astounding evolution of the mind, we necessarily have to take into consideration the so-called “ideo-grams” of the non-Semitic Sumerians. In fact, these ideograms are precious reflexions of various movements of the human mind. It is more than probable that the Pythagoreans knew some of these ideograms and that the Sumerian technique of expressing words and concepts by means of condensed drawings had strongly influenced their philosophy, as well as that of Plato.

Among these symbols we find a sign which corresponds to our suggestions as to the very origin of the “octaval system” (Figure 102a):

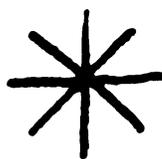


Figure 102a

We spoke earlier of a division of a circle into eight parts which seems to explain the origin of the sacred swastika sign. Here, in the case of the archaic Sumerian ideogram, the circle is omitted, but the octaval nature of the symbol is quite obvious. The sign represents several related concepts—that of a “star” or of a heavenly body in general. In a more technical sense the same sign designates a “deity”—a heavenly being, a goddess. Thus, we find this symbol in a prayer addressed to the goddess *Nidaba* (or *Nisaba*)—an Accadian deity considered to be the goddess of agriculture, of “grain,” and moreover of science, magic, mathematics, and of writing (Figure 102b):

This inscription is found on a sexangular argile-prism of Accadian origin (the Accadians were a Semitic nation which defeated

the non-Semitic Sumerians). Hence, the first ideogram is already "Accadized" and the sign has the so-called "cunei form."

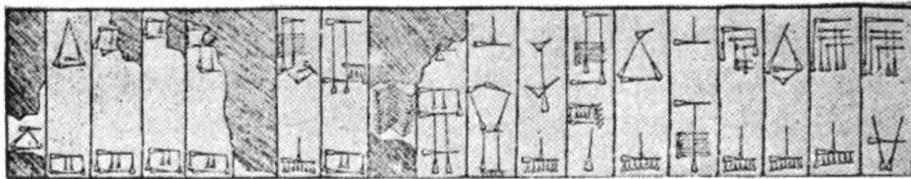
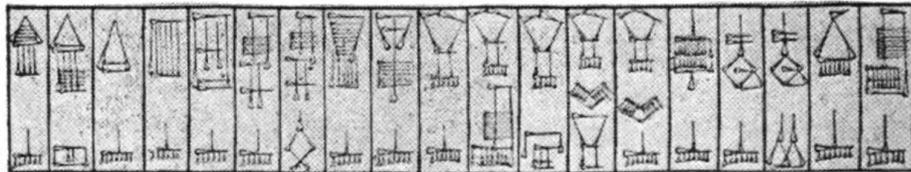
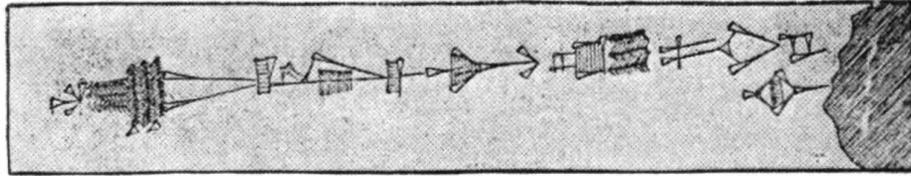


Figure 102b

In fact, four cunei-lines replace the initial Sumerian eight ends of the symbol (Figure 102c):

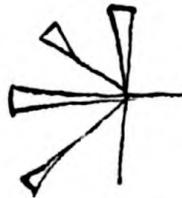


Figure 102c

Very interesting is also the ideogram which represents the goddess (dingir) Nidaba as such (Figure 102d):

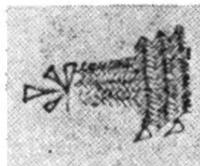


Figure 102d

This symbol is very close to our tree symbol. However, the number of twigs is different, if one has to believe the autographic reproduction of the Accadian inscription made by Shileico (cf. his article in "Zeitschrift für Assyriologie, vol. XXIX, and another article in Brockhaus and Efron's Russian Encyclopaedia, under "klinopis'"). It seems to me that the Accadian version of the tree symbol represents an attempt to justify the nature of the deity (Nisaba—goddess of grain) by changing an initial tree symbol into that representing ears of wheat. There are altogether six ears—three vertical (this part of the inscription must be read from the top downward, whereas the other five parts are written so as to be read from left to right) and three horizontal. It is interesting to notice that the prism containing the inscription is sexangular, too. The number "six" seems to have played here an outstanding rôle. Similarly, the number "three" is here important (cf. the number of ears). Moreover, the sexangular prism, in fact, has only three different sides, because the inscription on the surfaces 2—5 is identical (cf. the central part of Figure 102b). The numbers "three" and "six" are here clearly emphasized.

May we suppose that the ideogram representing the goddess Nidaba had originally the form of a tree? That is quite possible. Since Nidaba symbolized "knowledge," "mathematics," and the art of "writing," we may expect to find a "tree of knowledge" in the very ideogram representing the correspondent deity. That would confirm our main assumption as to the origin of the idea of "order," of counting, etc.

The assyriologist Shileico says that the Accadian inscription which we are discussing reflects "very ancient traditions." The cylinder or prism had been made presumably in the year 2650 B. C., during the reign of the emperor Naram—Sin or of the emperor Margani—Sharri. The part of the inscription which contains the consecration to the goddess Nidaba is particularly important. The very fact that this part must be read vertically seems to stress the great antiquity of the text of the consecration or prayer as such. We must try to find some light in the pre-Accadian ideograms of the Sumerians. The connection between the "grain" symbol and the original, hypothetical tree symbol may

become explainable in terms of a specific ideological evolution which is reflected in various qualifications of the goddess Nidaba (cf. Talmquist, *Akkadische Gotterepitheta*, p. 429; Helsingfors, 1938).

A precious indication can be found in a second ideogram of the same inscription—in that representing the syllable “sar” in the word “dubsar” (scribe). This symbol, too, has a “grain”-form which may be due to the fact that the “dubsar” was probably entrusted with the collection of taxes, with the counting of the fisc’s revenues, etc. A “scribe” was in those days altogether a “treasurer” and—*prima facie*—a “learned man.” This last wide meaning of the word “dubsar” might justify the preservation of the title “dubsar” even in such cases when the “scribe” had already been promoted to a higher rank, e.g., that of a “patesi.” Thus, the inscription which we are discussing seems not to be contradictory, despite the fact that a “dubsar” is called altogether a “patesi”: “(To) the goddess Nisaba—Lugal—Ushumgal, scribe, patesi (of) Lugash.”

Let us look at the ideogram representing the syllable “sar” (or “sar”; the Semitic pronunciation of the sound “s” made it close to our sound “sh”) (Figure 102e):



Figure 102e

It corresponds to the first part of the symbol representing the goddess Nisaba. Three “ears” or “trees” are grouped together. The number of twigs is not identifiable, because Shileico did not attribute to this question any particular importance. I have the impression that the author of the Accadian inscription himself did not care for determining the number of twigs. However, each “tree” seems to possess approximately 8—10 twigs on each side of the “stem.” Curiously enough, the “stem” as such is lacking. The crossing of each pair of twigs replaces the “stem.” The drawing is utterly close to our tree symbol. Similarly, the

circle is missing in the ideogram representing the concept of a "star" (also "goddess" and "heavenly body"), although the idea of the symbol is quite identical to the swastika sign.

Obviously, the three "ears" or "trees" express the idea of "writing" and of "counting," and hence of knowledge, science, magics, mathematics, etc. Otherwise we would not find the same ideogram in the word "scribe" (dubsar) and in the sign for "Nidaba," the Accadian goddess of writing, counting, etc. Perhaps, these three "trees" or "ears" correspond to the syllable "sa" in "(Ni)sa(ba)" and in "(dub)sa(r)." That would lead us directly to the concept "sa" which is, as we know, of Indic origin (Sanskrit), and hence to the "tree of knowledge," to the "fence," to the "serpent" and to the entire ideology of the Genesis (cf. also the term Ni-saba and the Lat. root sap; sapientia—wisdom; cf. also the tribal name of the "learned" Sabines—the alleged first rivals of the Romans).

The origin of the sign for "sar" seems to reveal to us the most ancient background of ancient knowledge. In fact, we find a very archaic representation of "sar" which has the following aspect (Figure 102f):

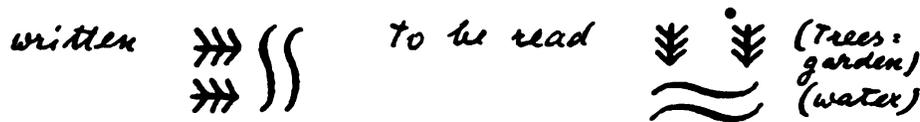


Figure 102f

This oldest form of "sar" is altogether a key to ancient knowledge and a first image of the paradise. According to Deimel (cf. his "Sumerisches Lexicon," p. 370; cf. also Fossey's "Manuel d'assyriologie," p. 376-377. I am indebted for these bibliographical indications to Prof. F. S. Stephens of Yale University), this ideogram can be interpreted as a "garden with trees and water"—"Baumgarten." In fact, the two curved lines on the right side of the symbol represent "water" (Sumerian syllable "a") or "wet ground," also "irrigation," etc. Should the two trees on the left side express the sound "s(a)"? That seems admissible. Thus, we would come to the word "sa(a)" which is a presumable prototype of the syllable "sar" ("shar"). The connection between

the Sanskrit word “sa” and the Sumerian ideogram is quite evident. It is probably not genetic, but “cultural” (crossing).

I wonder, however, whether the meaning “garden” might be called the first and original interpretation of the above figured ideogram. The initial meaning might well have been that of an “island” (curiously enough the Finnish word “saari” means “island”). Our cultural historical assumptions would appear much more reliable, if the meaning “island” could be inserted into the logical content of the archaic Sumerian ideogram “sar” or “sa.” From the concepts of an “island” we would gradually arrive to the various cultural-historical developments and interpretations which are implicitly contained in the “Genesis” and in Plato’s philosophy as well. Even Noah’s ark seems to be reflected in the Sumerian ideogram: the trees are figured together with the symbol representing “water.” The ark is, of course, nothing else than a construction made of trees (of wood) and destined to float, i.e., to remain combined with water as such—exactly as the two trees of the Sumerian ideogram are graphically and logically combined with the sign for water. Similarly, the Eden is primarily a “garden.” Two trees are placed in the center of the park, and four rivers are irrigating the territory which surrounds the paradise and the divine garden itself. The two trees—the tree of life and the tree of knowledge—are reproduced quite faithfully. Their number seems primarily to reflect the idea of a “garden.” A single tree would scarcely express this idea obviously enough.

The number of twigs is particularly suggestive. Each tree has six twigs—three on each side. We understand now the significance of the numbers “three,” “six” and “twelve” in the “Genesis.” Particularly, Adam’s age becomes now easily explainable in terms of the Sumerian knowledge. Adam reached the age of 96 years, i.e., $8 \times 12 = 96$. The origin of the number 12 is obvious. But from where did the ancient scientists get the number 8? The answer is not difficult. The number 8 is implicitly contained in the ideogram representing a “star” which we found in the inscription described by Shileico. Thus, the symbols representing the Accadian goddess Nisaba seem to illustrate an early stage of ancient knowledge. It is clear that the octaval characteristics of the ideogram representing a “heavenly body” (a

“star,” a “goddess”) could lead the mind to an octavalization of the “tree” (of the two “trees”) which we find in the “Genesis” and in the Pythagorean speculations. Such was the way by which the human mind achieved actual “knowledge.” It is thinkable that the lines representing “water” could easily be interpreted as meaning a “snake” or “snakes,” reptiles (cf. the “reptiles” mentioned in the “Genesis” in connection with Noah’s nautic experience, i.e., with “water”). The notion of the “wind” might be due to a similar interpretation of the archaic ideogram (waves—water moved by the wind).

It is hard to say whether the ideogram actually preceded the creation of the various legends composing the “Genesis.” The opposite conception is well defensible, too. The ideographic vocabulary undoubtedly helped to “rationalize” and to develop the material of the legends. We are facing here the very beginning of cultural life as such. The significance of Plato’s philosophy of ideas seems to be stressed by the existence of these Sumerian “eidola.” It gives us a key to a tremendously important first chapter of the Indoeuropean-cultural history.

It is particularly interesting to follow the development of the tree doctrine in the religion of the various Semitic nations. An important contribution to this problem is the recent study of Maurice H. Farbridge, “Studies in Biblical and Semitic Symbolism,” London, 1923. M. H. Farbridge has consecrated the second chapter of his book to “trees, plants and flowers.” “Tree worship and tree symbolism were particularly common amongst the ancient Semitic peoples . . .” “The pines (!) and cedars of Lebanon, the evergreen oaks of the Palestinian hills, the tamarisks of the Syrian jungles, the acacias of the Arabian wadies, besides such cultivated trees as the palm, the olive, and the vine were all venerated by the ancient Semites . . .” “However, tree symbolism of a definite nature seems to have been particularly strongly rooted in those areas where the Semitic races came into contact with the Aryans. Attis, whose worship was exceedingly popular in Phrygia, was symbolized by a pine tree with his image attached.”

A Sumerian hymn describes a mythical tree as the abode of the gods. On Assyrian monuments one finds often a cone-shaped object held by winged genii who point at a sacred tree. The

genius holds some kind of basket in the other hand. Different explanations have been advanced by Bonavia, Taylor, D'Alviella, Farbridge, but they all seem to miss the real meaning of the allegory. The tree, of course, is the "tree of knowledge." The whole scene symbolizes "counting" as such—the counting of fruits (lemons, dates?).

Very interesting is the term "Ashera," so often referred to in the Bible. Farbridge identifies it to a "wooden post, which was planted near the altars of various gods" (cf. Deut. XVI, 21: "an ashera, any tree" or, according to Farbridge, "an ashera of any kind of wood"). Our reflections concerning "sar" (or "shar") seem to explain this mysterious term, "Ashera." "Ashera" is, first of all, a tree which symbolizes counting, i.e., knowledge, wisdom. At least, one of the "a's" in the word "Ashera" might have been influenced by the two curved lines representing "water" in the ideogram of "sar," because these lines designated later the syllable "a." The "tree of knowledge," as we know, implies not only the notion of the "tree" as such, but moreover the idea of various constructions for which a tree could be used (a fence, a barge, etc.; even the covering of the genital parts of men may be considered as a particular "construction" for which the leaves of a tree were used). Hence, Farbridge's explanation is utterly correct, as well as that advanced by his predecessors (tree). We have to take into account the ideological development of the initial theme of a "tree" which dominates the legends of the "Genesis."

It is important to notice that according to Frazer, Osiris, Tammuz, Adonis, Attis, and Dionysus were all tree gods. That seems to lead us directly to the "Delphic mysteries"—to the supposed source of Pythagoras' and Plato's enlightenment. The national religion of the Greeks contained elements of an early, pre-historical, tree worship which, of course, might well have been strengthened and, altogether, modified by a "mathematical" approach to the symbols of this ancient form of religion.

Farbridge does not connect "counting" and primitive mathematics with tree worship. "The one universal system of counting by primitive man throughout all parts of the world seems to have been the finger method." I do not deny the influence of "organic images" on the idea of counting. But such a method of counting

was upmost limited. No "counting" could actually originate from the "finger method" alone. Far more important is the tree conception of counting which enabled man to create an elaborate and, finally, a most perfect counting system, e.g., that which we are now using (cf. the following chapter).

"It is highly probable, and, in fact, almost certain," says Farbridge, "that amongst the Ancient Hebrew there was a system of numerical notation, although, unfortunately, no examples have come down to us . . ."

Should the tree system have formed the earliest counting system of the Ancient Hebrew which they might have borrowed from their Aryan predecessors and, possibly, developed into the sacred tree script of the "Genesis"? That is quite possible. In any case, amongst the Rabbis a different system was frequently in use—the same which had been adopted by the Greeks after the Semitization of their alphabet. The letters of the Hebrew alphabet began to be used as numerals. That, of course, could not be the original counting system of the Hebrew. One might assume that they were using the tree system—at least, those of their "scientists" who had the rare privilege of being true "initiates." Interesting additional considerations on the meaning of various numbers are found in Mr. Farbridge's book, chapter IV (Symbolism of Numbers). The author does not, however, explain the origin of the various meanings of the most important numbers (3, 4, 5, 7, 10).

We will see later that the Sumerian ideogram "sar" suggests the existence of a sextal system. In fact, if we combine together the two trees of "sar," we receive a tree with six branches on each side. This "image" would have the meaning of 48 (each twig on the right side would mean "one" and each twig on the left side—"seven"; 42 and 6 make together 48). Should this image have first created the "dominating" number 48 which we find in the "Genesis" (cf. Adam's and Methuselah's ages, and Noah's age in the year of the deluge; cf. also Plato's "nuptial number")? That seems almost certain. The Sumerian image of the Eden, thus, seems to have occupied an important place in the symbolism of numbers of the ancients.

CHAPTER XII

THE DECIMAL SYSTEM

The numbers which we found in the "Genesis" deserve an additional analysis. There are some indications which might induce the assumption that the authors of the "numerical tables" were acquainted with a decimal system of the Arabic type, although they were using symbols derived from the secret octaval tree script. Of course, one should not be surprised to find that. The octaval tree system of the Kylfver type contained implicitly the possibility of using it as a decimal system. The eighth twig—the half-broken twig of our two ancestors, Adam and Eve,—can be interpreted as containing two twigs—an eighth and a ninth. Thus, the twigs on the left side would automatically receive a new value—that of the number 10. We have broadly discussed this question in connection with the history of the Runic numerals.

What evidences can be extracted out of the "science of numbers" of the "Genesis"? We have seen that the octaval numbers correspond perfectly well to the theological comments of the redactors of the "Genesis." The age of Lemek is a convincing example of the theological technique of the ancient thinkers. Similarly, the age of Methuselah reflects ancient conceptions. A very old man—or the "oldest" man—had, of course to be twice as old as the first man, Adam. The doubling of a number was a most simple form of expressing a "high" age or a high penalty, etc. All ancient and mediaeval calculations are based on that psychology. The "Genesis" makes no exception.

The octaval tree system gave us a key to the real numbers of the "Genesis" which are concealed from the eyes of the laymen by decimal code numbers. The values of these decimal code numbers are, however, characterized by some important peculiarities which suggest a careful investigation.

It is, first of all, interesting that most of the Biblical numbers are "tri-positional," if expressed in Arabic numbers, e.g., 930, 777, 600, 450, etc. Moreover, the chief number of the first table

of ages—the number 1234—is even “quarti-positional.” In fact, I said that the number 1234 represents nothing else than a special arrangement of the sacred “tetrad.” But this assumption is quite convincing, if the number 1234 is expressed in Arabic numerals. Then, of course, the first number 1 is really the number “one” which has here the meaning of 1000, because it occupies the fourth place—from right to left—in the series of four numbers. Its meaning of “one thousand” is due to its “position” in the composite of four numbers. A similar consideration has to be applied to the numbers 2 and 3. They have the meaning of 200 and of 30, because such a value is implied in their respective positions. All that is self-speaking, if we assume that the mathematicians of the “Genesis” were actually using a system which was almost identical with the Arabic system. Only in that case one might be quite sure that the number 1234 had been conceived and interpreted as the sacred tetrad. Otherwise the first number 1000 could scarcely be connected with the first unit of 1. Of course, the actual relationship between a sign for 1000 and the sign for 1 was known. But we would certainly simplify all problems involved by the fact of a decimal counting in the Bible, if we were able to demonstrate that these decimal code numbers really belonged to an Arabic type. Then everything would at once become quite clear. In fact, the octaval tree system suggests a very reasonable solution.

The answer can be given in terms of the fir tree symbol of Kylfver.

Let us consider once more the fir tree symbol of Kylfver (Figure 103):



Figure 103

If we assume that the half-broken eighth twig on the right side had actually been interpreted, at a certain moment, as containing two twigs, we would come to a very simple explanation of the origin of a decimal system of the Arabic type. In the decimalized octaval tree script the number "one" and the number "ten" would have a very similar form (Figure 104):



Figure 104

The difference is determined by the opposite direction of the twigs. Far more important, however, is the fact that in the case of the number "one" the twig is placed on the right side of the tree, whereas the number "ten" is characterized by a twig on the left side of the stem. This idea has been a starting point of other complementary ideas. Since the addition of the numbers "ten" and "one" gives the number "eleven," the mind of the ancient mathematicians did not have any difficulties in discovering that two separate tree symbols correspond to one symbol, if the twigs are correctly placed. The stem of the tree could be "split" without changing the very principle of designating numbers (Figure 105):

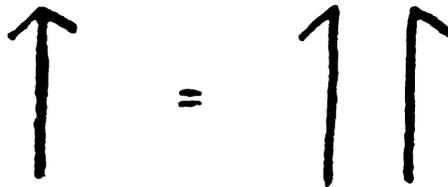


Figure 105

Thus, the number "eleven" is nothing else than the addition of the signs for "ten" and "one." The next step is quite conspicuous. The position of the sign began to determine the numerical value of the sign. The "direction" of the twigs did not play from

now on any rôle. The position alone defined the meaning of each tree sign. Since then, it was easy to conceive the same sign as meaning "one hundred," "one thousand," etc. The position of the sign determined in each case its actual value. Thus, the tree script could lead the mind of the ancient mathematicians to a decimal system of the Arabic type. It seems that it actually had helped the mathematicians of the "Genesis" to work out such a perfect decimal system. The number 1234 seems to confirm that supposition. The use of "tri-" and "quarti-positional" numbers is a further precious evidence. The authors of the two "tables of ages" of the "Genesis" were thus using not only the secret octaval tree system, but its decimalized variant as well. There are some evidences that Plato, too, must have been acquainted with the decimalized tree system. Let us remember the number 5040 representing the number of citizens in the "ideal city." If we deduct from that total number the one thousand defenders, the remaining number would be 4040. The "perfect" number 4 is here contained twice. But, of course, it becomes quite "tangible" to the mind only, if it is expressed in terms of the decimalized tree system. Then everything is upmost clear. The authors of the numbers of the "Genesis" seemingly operated with two secret systems—with the octaval tree system and with its decimalized version. And so did Plato. Aristotle was once more wrong in saying that the decimal system is universally known and used. The developed decimal system of the Arabic type was known only to few initiates. It was a part of the "divine tradition" handed down by the ancients.

Two minor questions arise in connection with the use of the decimalized form of the tree script. The question of the "zero" had to be solved by the ancient mathematicians, even if the sign for "zero" might well be a later (Arabic?) invention. How could they designate the absence of a number which in fact determined the positional meaning of another number? They had to use some sign for that specific purpose. It might well have been the naked stem of the tree symbol. Eventually, a point could replace the vertical line forming the stem. Should the two segments forming the "zero" simply mean that the stem has no twigs at all? It might be supposed that the stem itself was later left out, so that only the two semi-circles remained in use. Of course, various sup-

positions are possible. The "naked stem theory" would seem to be the most logical.

The second question is less important. If we assume that finally the numbers of the first series became also drawn with twigs placed on the left side of the stem, then the numbers from "ten" onwards must have been traced, in all cases, with the help of two signs. The number "ten," in fact, would need two signs—one for "one" and the other for "zero." That is quite obvious. Moreover, it was necessary to introduce a special sign for the addition of numbers. Otherwise, a dangerous confusion was always possible. The other operations needed certain designations, too. The sign of addition is the most important, because it explains the sign for multiplication and that for subtraction as well. It seems to me that this sign expresses the idea of the presence of decimal numbers for which the sign as such actually was necessary. The sign has the form of the cross. We know that this sign corresponds to the first four numbers 1, 2, 3, and 4. The addition of the four numbers of the "tetrad" leads to the number 10. The number 10 has in mediaeval Runic very often the form of a cross. Even the form of the Roman sign for "ten"—X—reminds us of the cross. It would be quite reasonable to assume that the sign for addition had primarily the purpose to stress that the numbers which had to be added were decimal numbers. Moreover, the sign retained the idea of the historical connection between the sign of the cross and the number 10. In fact, this connection is given in the Pythagorean doctrine of the "perfect" number 4 and of the "most perfect" number 10, for $1 + 2 + 3 + 4 = 10$.

We know that the "table of ages" of the patriarchs ends with a specific arrangement of the sacred tetrad—with the number 1234. Since the tetrad is intimately connected with the cross, one might say that the total indicated in the table of ages implies the symbol of the cross. That would be utterly congenial to the very text of the "Genesis." The "table of ages" of the patriarchs would thus be adorned by a very significant symbol containing many implications—that of the tetrad, that of the decimal system, and that of death—but of death which occurred on God's own order. In fact, the table of ages is, as we know, a kind of "order." The

idea of "order" dominates the entire content of the "Genesis" and that of Plato's "Republic" as well. One should not be surprised to find that the sacred tetrad has here, in the table of ages of the "Genesis," exactly the same meaning which it has in the Gothic "science"—that of "peace," "lathu." Is it really possible that the word "lathu" as such is implied in the "Genesis"? Should this Gothic—possibly, Indo-German—word be found "in corpore" in the Bible? I would not deny such an eventuality. If the "tree of knowledge" is Indo-German and if a Runic symbol gave us a key to the legends of the "Genesis," a word of the same origin might well be found accompanying the key symbol. As I told it earlier, symbols alone were not transmitted from nation to nation. Key-words, explanatory terms of a sacred—and secret—character had often a quite similar fate. We know that the letters composing the word "lathu" (l-a-th-u) formed the first four letters of the most ancient variant of the Gothic alphabet. This word might well have been a common ancestor-concept of several—perhaps, of all—Indoeuropean nations. We found it in Slavic (lad"). The same root appears in Greek (cf. lathros—hireling, a man who has concluded an agreement or accord). It exists in Latin (cf. latro, also latrocinium). We found it in music (la—do), and the Slavic word "lad" " has a particularly strong musical ambiance. All in all, the supposition that an Indo-German key word dominates the conceptual philosophy of the "Genesis" should seem to be far from being "absurd." On the contrary, the word "lathu" would be the only concept which actually covers the entire thematic complexity of the "Genesis," as well as the later developments of the initial themes, which we find in the Pythagorean philosophy, in Plato, and in the mediaeval—Gothic and Slavic—encyclopaedias. Of course, all these problems suggest a further assiduous research work. It suffices, in the present context, to indicate the general direction, which more detailed investigations will necessarily have to follow (cf. Appendix).

It is not excluded that the mother of mankind, Eve (Eva), received her name from an Indo-German word "eva"—"truth," later "law." The word "eva" or "effa" is found in the Salic Law. A well known glos speaks of a sanction called "seolando effa" which, according to Iakob Grimm, must be translated as

“seabord law.” That, of course, makes the term quite congenial to the “seabord” approach of the “Genesis.” “Eva”—“truth” makes the use of this word in the “Genesis” particularly suggestive in connection with the legend on the tree of knowledge and Eve’s active participation in the acquisition of “knowledge.” The concepts of “sa,” “lathu” and “eva” seem to determine and altogether to explain the entire initial content of the “Genesis.” The possible relationship between “Jahwe” and “dyauh” is doubled by another possible connection with “ahwi”—lowland (cf. Germ. Aue: also Lat. aqua—water). Is the Biblical name for God a crossing of an Indic and an Indo-German approach to religion which eventually might have led to a fusion of certain terms? That is possible. The initial theme of a differentiation—of a separation—of land and water is upmost significant. It dominates the creation myth. It is curious that in German the initial concept “ahwi” led the mind to the word “Aue” (in German)—meadow (“Talgegend am Wasser”), whereas in Latin the same term evolved into the designation of “water” (aqua). That, too, is a “differentiation” of an initial concept which originally designated a “materially” indifferenced thing (ahwi—lowland, i.e., land and water together). We are facing here some fascinating problems of the development of some initial words—concepts. They can be answered only in terms of an elaborate theory on the origin and the earliest development of speech.

A very particular question might be elucidated “en passant.” It concerns the “sextal” counting system and, in particular, the number “thirteen”

In fact, speaking of the “sextal” system I have stressed its connection with the Babylonian sexagesimal system and with the Sumerian ideogram “sar.” The arithmetical connection is obvious, since $6 \times 10 = 60$. However, if we find that Plato uses in his “nuptial number” the sexagesimal system there, where the “Genesis” operates with the notion of “six,” that does not mean necessarily that both systems, the “sextal” and the sexagesimal, were connected ab origine. The “sextal” system can be, too, reduced to the tree system. There are some indications which seem to favor the supposition that one of the earliest versions of the tree script operated with six twigs on each side of the tree.

The particular significance attributed to the number 48 becomes quite explainable in terms of a sextal tree symbol (Figure 106) :

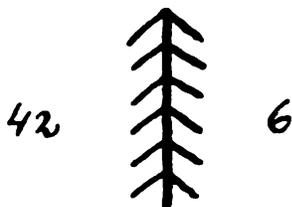


Figure 106

In fact, we would come automatically to the number 48, because each twig on the left side would have the meaning of 7. Hence, six twigs of the left side make altogether 42. The addition of the right side to the left leads to 48 ($42 + 6 = 48$). The great significance of this number lies in the fact that the twigs of the left side became considered as units of a higher value—7—instead of meaning “one.” It is the same kind of discovery which I have discussed in connection with the creation of the octaval system and of the decimalized octaval system as well. Here, too, the number 7 is as such a lucky discovery. Of course, this system seems to have preceded the legend on the tree of knowledge, the episode of the plucking of an apple, etc. The significance of the number 7 might thus be prior to the formation of the octaval system.

Are there any direct confirmations of this sextal version of the tree system? Of course there are. First of all, the creation as such lasted six days. Then, the number 48 plays an important rôle not only in the legend on the deluge (Noah’s age) and in Plato’s “nuptial number,” but in the very first number of the “Genesis” as well. Adam reached, as we know, the age of 96 years, i.e., $2 \times 48 = 96$. The doubling has here a similar meaning as in the case of Methuselah’s age. It means that Adam reached a very high age. He lived twice as long as did a normal man. Our ancestors were relatively short-lived people. The ages of the descendants of Shem confirm that supposition. I may add that Shem himself died at the age of 48. Thus, the second table of ages of the “Genesis” starts with this “crucial” number of all legends composing the “Genesis” (cf. also “Appendix”).

The sextal tree symbol seems also to explain the rôle of the

number 12 in various places of the "Genesis." Of course, the sextal tree symbol had altogether 12 twigs—6 on each side. The number 12 appears in the number 48 ($4 \times 12 = 48$). It reappears in the age limit prescribed by the Eternal—120 years. Thus the age limit started with $8 \times 12 = 96$ (Adams's age) and was later decimalized— $10 \times 12 = 120$. It might be found in Noah's age— $13 \times 12 = 104$ years. We know that the Biblical numbers, as well as Plato's "ideal numbers," combine the leading counting systems which were used in an earlier period of human culture. Hence, the number 12 is usually combined with numbers of the other two systems—through addition, multiplication, etc.

One of the most curious reflections of the sextal tree symbol is the fateful number 13. It is generally considered to be an "unlucky" number, but for some people the number 13 means exactly the opposite. Both meanings are historically justified. The number 13 is sometimes called the "devil's dozen." This curious designation is undoubtedly connected with the tree symbol of the "Genesis." In fact, the tree symbol of the Kylfver type (13 twigs) gives a direct explanation of this name, if we connect the tree symbol with the Biblical "tree of knowledge." The seventh (or thirteenth) twig, as we know, inaugurated a new counting system which was interpreted as "forbidden knowledge." The serpent, i.e., the devil, Satan, seduced our ancestors. Thus, the seventh twig on the right side of the tree was, first, the crystalized remembrance of a significant discovery and, second, a symbol of the original sin committed by Adam and Eve under the influence of God's antagonist, Satan (Figure 107):



Figure 107

From the viewpoint of the sextal tree system the number 13 was, of course, an "enlarged" normal dozen. A thirteenth twig is actually added to the normal number of twigs of the complete

sextal tree symbol. That explains the term "devil's dozen." Thus, even here one has to deal with a combination of two counting systems—of the octaval system, as we find it in the inscription of Kylfver, and of a sextal tree system. The "devil's dozen" is one of the most curious creations of the ancient mind.

After having written down the present volume I found a very interesting article of Messrs. Sydney Fairbanks and F. R. Magoun in "Speculum," July, 1940. The study is consecrated to various problems of writing and printing in Gothic. One of the symbols mentioned by the authors is particularly important. It has the form of the number "nine" of my hypothetical octaval tree script. The symbol seems to designate the number 900—"niun hunda." It is, of course, a precious direct evidence of the existence of the octaval tree script. The fact that an enlarged symbol for "nine" is used in the meaning of 900 reveals a high degree of "decimalization." Nevertheless, the main significance of this symbol is due to its form as such. It helps to establish the fact of a real existence of the octaval tree script. The symbol is recorded in the Gothic ABC (Vienna, National bibliothek Ms., 795, fol. 20). All observations made in the preceding exposé, thus, receive a precious additional confirmation (Figure 107a):

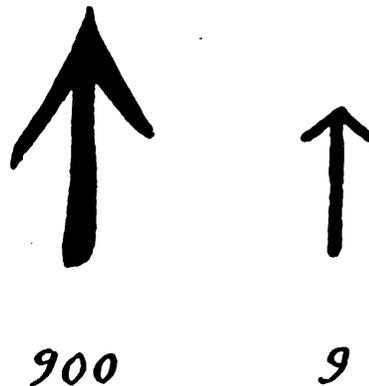


Figure 107a

FOOTNOTES

(SECTION II)

1. Cf. P. Shorey, *Plato, Republic, II*, p. 99.
2. *Ibidem*, p. 101.
3. *Ibidem*, pp. 101-105.
4. The sun "founds" reality as such, being "the cause and the author of all this"; cf. the following passage: "Is it not also true that the sun is vision, yet as being the cause thereof is beheld by vision itself?" "That is so," he said (*ibidem*, pp. 101-102).
5. Shorey, *Republic, II*, pp. 100-101.
6. Shorey translates here the Platonic term "idea" by the word "form," but adds the following reflexion: "Form overtranslates "idea" here, which is little more than a synonym for "genos"; *ibidem*, p. 99.
7. *Republic, IX*, 582, B-E.
8. *Ibidem, V*, 470 C.
9. Cf. Shorey, *Republic, I*, pp. 496-497 b.
10. Cf. Hobhouse, *Mind in Evolution*, p. 384.
11. *Republic*, 470 E.
12. Edited by Mayer and Miller, Berlin, 1904.
13. Cf. G. O. Berg, o.c., p. 45.
14. *Ibidem*, pp. 45-46. Many other metaphors complete Plato's "nautic" vocabulary: "Herma, prop, support of a ship when hauled ashore, is used metaphorically of justice, *Legg. 737, A . . .* Ankyra, anchor, is applied to a council of the best men in the city, *Legg. 961 C*" . . . "To begin with the ship and things connected with it," says Berg, "a discussion is compared to the procedure of a shipwright building a ship, *Legg. 803, A ff*" (*ibidem*).
15. A. Cartoult, *La Trière Athénienne*, Paris, 1881, Introduction, p. I: "Among the archeological works which have the purpose of reconstructing the life of the Greek people, no one touches more directly their character and their life than those (works) which deal with the marine ('seafare'). In fact, the Hellenes are primarily a nation of sailors; it is necessary to assume that attitude in order to understand their fate and their history."
16. Cicero, *De Republica, II*, 4.
17. Cf. A. Cartoult, o.c., p. V.
18. *Ibidem*, p. IX.
19. *Ibidem*, p. X.
20. *Ibidem*, p. XVIII.
21. Keleustes—fegleman or signal-man who gives the time to the rowers. Cf. Liddel and Scott, *Greek-English Lexicon*, Eighth Edition, Oxford, At the Clarendon Press.
22. A. Cartoult, o.c., p. XXI.
23. Pentekontarches—commander of fifty men, lieutenant.

24. Politics, VI, 4, 1 and 1, 2; cf. A. Cartoult, o.c., p. XXI.
25. A. Cartoult, o.c., p. XXV.
26. Ibidem.
27. Ibidem.
28. Republic, VI, 488 B ff; cf. T. D. Seymour, On Plato's Ship of Fools, The Classical Review, November 1902.
29. Cf. Seymour, o.c., p. 386: "The people of Athens are like a shipowner," etc.
30. Ibidem.
31. We will see it later in the analysis of the legend on Noah's ark.
32. Cf. Carl Schmitt, Der Deutsche Staat der Gegenwart, Heft I, Staat, Bewegung, Volk, Hamburg, 1934, pp. 41-42.
33. Ibidem.
34. Maxime Leroy, a leading French scholar of the sociological school, calls the first part of his recent political treatise "Introduction à l'art de gouverner." The French vocabulary is particularly congenial to the logical content of the leading term.
35. It is interesting to notice that the "divine pilot" of the "Politikos" holds the helm of the "ship," i.e., of the universe, in "alternate cycles." The "cyclical" aspect seems to be due to Babylonian influence. Cf. also the Babylonian "world-cycle" or "world-year." Plato uses in the "Politikos" a Babylonian (Semitic) interpretation of "piloting." We will see later that this interpretation is probably not the original one. A nationalist conception became turned into a universalist approach to the concept of order. That seems to be relevant to the Babylonian imperialism and to the stateless universalism of the Hebrew.
36. The curious terminology—"real presence," etc.—is borrowed from the so-called "existentialists"—Jaspers and others.
37. An empire without an emperor is compared by Peresvetov to a horse without a rider. I would like to stress that the word "Führer" contains, too, a clearly pronounced military nuance. "Führer"—Lat. dux. "Dux belli" was a title given to the commander of an army. Cf. also king Arthur's title "dux bellorum" which differs from the Roman terminology, but seems to imply a similar meaning.
38. Cf. A. Cartoult, o.c., p. 226.
39. Ibidem. "The pilot occupied on the trireme a considerable position . . . In the technical sense it was the pilot who virtually was the commander of the vessel."
40. Gorgias, 511 D.
41. A. Cartoult, o.c., p. 228.
42. Aristophanes, Knights, 541.
43. A. Cartoult, o.c., p. 229.
44. Cf. Carl Schmitt, Politische Romantik, München, 1925, p. 225.
45. Republic, 416 D.
46. Ibidem, 416 E, 417 A.
47. Ibidem, 417 B.
48. P. Shorey, Republic, I, p. 313.
49. Ibidem, p. 305.
50. Republic, 415 A.
51. P. Shorey, Republic, I, p. 305.

52. Republic, 415 A.

53. Cf. A. Cartoult, o.c., p. 320. "The grade which was immediately inferior to that of a kybernetes was the grade of a so-called proreus . . . That what made of the proreus an indispensable auxiliary of the kybernetes was the fact that the proreus gave to the pilot all information necessary for the execution of the manoeuvres."

54. Ibidem, 230-232.

55. "Le proreus est le maitre à l'avant." Cf. A. Cartoult, o.c., p. 229.

56. Cf. my "Etiudy," Brussels, 1939, chapter III (Okhot' Russkoi Pravdy). The Old-Russian term for proreus was "pod"ezdnyi."

57. Ibidem.

58. The Anglo-Saxon term cotseti or cosceti might well be of Slavic origin. The Anglo-Saxons could have used their Slavic allies or prisoners as rowers. Since the Slavs were agriculturists par excellence, the later transformation of the rowers—cosceti (Russ. kochetniki)—into farmers or half dependent tillers was quite natural. It followed the natural inclination of the Slavic cotseti themselves. The supposed etymological connection with "cottage" is doubtful. Of course, the word cotseti was later connected with the word cottage, but this relationship might well be due to false etymology. The Irish word "cot" (small boat), on the other hand, became also connected with both words cottage and cotseti. The Slavic (Novgorod-Russian) word "kochetnik" (fisherman, later peasant, farmer) is probably related to "kochet"—cock (cf. Czech. kohout). That curious linguistic relationship is probably due to the fact that the rowlocks had a certain similarity with the profile of a cock. In any case, the word "kochet" has in Russian two meanings—that of a rowlock and that of a cock.

59. A. Cartoult, o.c., p. IX. "The Phoenicians gave to the Greeks the usual elementary knowledge: alphabet, counting, weight, measures, etc."

60. Cf. Section I.

61. A. Cartoult, o.c., p. IX.

62. Ibidem, pp. IX-X.

63. Ibidem, p. X.

64. Ibidem, p. XX.

65. Ibidem, p. III.

66. Ibidem, p. 239. "Under the name of hyperesia one meant all men necessary for the execution of manoeuvres."

67. The Salic gloss "via lacina" and the norms concerning "via," "via lacina," etc., are institutionally and terminologically connected with the dragging of boats across the land, from one river to the other. This procedure of dragging and the road itself were called in Slavic "vlak." This term was later reinterpreted many times by the Frankian jurists and by Latin scribes according to the prevailing rules of interpretation which can be summarily characterized as "false etymology." The institutional significance of this dragging of boats and ships was enormous. A series of complicated legal regulations arose out of this particular "genetic situation." I am discussing this subject in a separate study in *Lex Salica*.

68. The division of the entire population of the "ideal city" into three categories is very "congenial" to a Greek "trireme" as such. The word

"trireme" itself implies a division into three classes. We will find a very similar phenomenon in the legend on Noah's ark (three decks, three classes of beings).

69. Republic, 341 D and 342 D-E.

70. Ibidem.

71. A. Cartoult, o.c., p. 226.

72. Cf. my "Etiudy," p. 95, fn 22.

73. The term "hansa" is an abbreviation of the Gothic magic formula "hands jah fôts"—hands and feet; cf. the Gem. idiom "Hand und Fuss fassen" and other expressions which all seem to have emerged from the same cell.

74. Pol., 273, D, Legg. 709, B, 905, E, 906, D, E; cf. G. O. Berg, o.c., p. 45.

75. Legg. 803, A ff; cf. G. O. Berg, o.c., p. 45.

76. Ibidem, p. 46.

77. Cf. James Moffat's translation of the Old Testament, p. 6.

78. Ibidem, p. 9; Genesis X, 10, 1-5.

79. The text of the "Genesis" has several obscure polytheistic implications. "Then said God, the Eternal, Man has become like one of us, he knows good and evil," etc. "One of us" means "one of the Gods" (?); cf. Genesis III, 22. Cf. also Genesis VI, 6, where "angels" and "giants" are mentioned.

80. One might observe, however, that even this sinful knowledge has made man almost a God: "Man has become like one of us" . . . Only the fact of being mortal distinguishes him from God: "He might reach his hand now to the tree of life also, and by eating of it live 'forever.' So God the Eternal expelled him from the park of Eden" . . . Cf. Genesis, III, 20.

81. Genesis, VI, 14-18.

82. Ibidem, V, 31-32.

83. Ibidem, VI, 3.

84. I would like to stress, however, that the decimal code-numbers are not entirely inconsistent with the text. Thus, Noah was born when his father, Lemek, was allegedly 182 years old. At the beginning of the deluge Noah himself was 600 years old. Hence, Lemek, who succeeded in reaching the age of 777 years, died five years before the deluge— $182 + 595 = 777$. The decimal code-numbers do not contradict in this case the chief facts of the legend.

Inconsistencies might be mentioned, too. We know that the first column of the "table of ages" indicates the age of each patriarch in the year when a son was born to each of them. However, in Noah's case, the first number represents the year of the deluge. Noah was 600 years old when the deluge started. This number 600 after being "octavalized," had been included into the "table of ages." That was wrong, because the table should have adopted the number 500, which represents Noah's age in the year when Shem (and the two brothers of Shem) was born to him. From where did the "Genesis" derive the number 500? It seems to represent the addition of the ages of Noah himself (Noah's age is here based on the erroneous calculation $600 + 350 = 950$, i.e., 112) and of three of his ascendants—Hanok, Methuselah and Lemek:

$$77 + 192 + 119 + 112 = 500$$

Methuselah, Noah's grandfather, died when his grandson Noah had become 500 years old (in decimal code-numbers). That might have strengthened the desire to include the number 500 in the text. The result was that Shem

and his two brothers were born to Noah in the same year when Methuselah died. Is that not a strange coincidence?

In fact, Shem's and his brothers' births seem to be a later development of the original text. We will discuss this problem in connection with the racial theory of the "Genesis."

85. It might seem important to describe the peculiarities of the "science of numbers" in some other places of the "Genesis." They are echoing the "table of ages" which embraces the ten patriarchs from Adam to Noah. Let us consider the ages of the descendants of Shem. There are no similar numerical indications for the descendants of Ham and Japheth.

| | | | |
|---------------|-----|-----|------|
| 1. Shem | 100 | 500 | 600 |
| 2. Arpachshad | 35 | 403 | 438 |
| 3. Shelah | 30 | 403 | 433 |
| 4. Eber | 34 | 430 | 464 |
| 5. Peleg | 30 | 209 | 239 |
| 6. Reu | 32 | 207 | 239 |
| 7. Serug | 30 | 200 | 230 |
| 8. Nahor | 29 | 119 | 148 |
| 9. Terah | 70 | ? | ? |
| <hr/> | | | |
| 10. Abram | 86? | ? | 175? |
| Nahor | | | |
| Haran | | | |

These numbers are indicated in Genesis XI, 10-26, XVI, 16 and XXV, 7. The totals are interpolated by me. The text does not contain totals. If we exclude Abram and his brothers who, altogether, seem to recall the theme of the three sons of Noah, we have nine men left. The addition of the numbers of the three columns leads us to the following numbers:

390 2471 2791

Two numbers are missing and, moreover, the age of Shem at the time of Arpachshad's birth could not be "hundred," because in such a case Arpachshad's birth must have occurred on the barge. Shem was born when Noah was 500 years old, and the deluge started when Noah was 600 years old (the numbers are here decimal code-numbers). Hence, Shem's age is due to an error. If we assume that the number 100 replaces here the number 10, we would have to change the total of the first column from 390 to 300. That seems reasonable. A second operation is, however, necessary in order to reestablish the entire "table of ages" of Shem and of his descendants. We must interpolate the missing number 209 into the second column—a number which is already mentioned in it once. We receive then a total of 3000 years in the third column. That probably is the exact calculation which the ancient mathematicians intended to combine with the text of the correspondent place in the "Genesis." The entire "table of ages" is here nothing else than an attempt to reiterate the efforts of the composers of the first "table of ages." We find here 9 men and the numbers 300 and 3000, which altogether form a systematized numerical table.

Shem was 8 years old when the deluge started, and that might have inspired the number 100, since the "octavalization" of 100 would lead to 8. His son was born two years later, when Shem was only 10 years old. This age, of course, was extremely low even for the golden days of superhuman Hebrew manpower. Hence, Shem's age was changed in the table into 100. The proportion $3000 - 300 - 3 \times 3$ or 3^3 expresses perfectly well the decimal, i.e., the "ideal" meaning of the "table of ages." Shem's age, moreover, contains the idea of a transition from the octaval system to the decimal and the relationship between both systems. The leading number of the table is the number "three"—an echo of the third counting system (the sextal or sexagesimal).

The octavalization of the "totals" leads us to the most significant elements of the ancient science of numbers:

48
64
59
84
49
49
40
48
81

$$522 = 2 \times 9 \times 29$$

Moreover, $5 + 2 + 2 = 9$

86. Cf. Genesis, IX, 18-28. It is the well-known episode of Noah's drunkenness.

87. Cf. Genesis, V, 32: "After living five hundred years Noah became the father of Shem, Ham, and Japheth"; cf. also Genesis IX, 18: "The sons of Noah who came out of the barge were Shem, Ham, and Japheth."

88. Genesis, IX, 28-29, X, 1-6.

89. Cf. A. Cartoult, o.c., p. XVI.

90. Cf. A. Ernoult and A. Meillet, *Dictionnaire étymologique de la langue latine*, "navis."

91. Genesis, XVII, 1-5.

92. Cf. Wilfred H. Schaff, *The Ship "Tyre,"* London-New York, 1920, pp. 47, 49.

93. *Ibidem*, pp. 58-59.

94. *Ibidem*, p. 59.

95. *Ibidem*, p. 60.

96. Cf. Isaiah XXIII, 13 IR; cf. W. H. Schaff, o.c., p. 58.

97. Genesis, IX, 16-18.

98. Cf. also Greek Dzeus, etc.; cf. Ernoult and Meillet, o.c., "Iuppiter." Important is the fact that the Finnish word for God—Iumala—seems also to be related to the same root. There are some evidences in the Salic Law that the Franks had used the Finnish term for God. The Goths might well have used it, too. We know that the Goths used the Finnish word "äiti" for "mother." The component "mala" leads us to the Latinized Frankian "mallare"—to pray.

99. Cf. Kemp Malone's paper on "The historicity of Arthur" in "The Journal of English and Germanic Philology, Vol. XXIII, NH, October, 1924, p. 489.
100. Genesis, X, 5.
101. Ibidem, XI, 1.
102. Cf. Bilabel and Grohman, *Geschichte Vorderasiens und Aegyptens*, I, pp. 134-164.
103. Genesis, XI, 1 ff.
104. Cf. Griscom's edition of "Historia Regum Britanniae" of Geoffrey of Monmouth, London, 1929.
105. Cf. Francis Macdonald Cornford's recent work, *Plato and Parmenides*, London, 1939, p. 7.
106. P. Shorey, *Plato, Republic*, II, p. 412.
107. The Kylfver symbol is, of course, an elaborate interpretation of a more simple symbol. In accordance with the "Genesis" we must admit that for certain numbers it was necessary to use the left side of the tree amplifier than the Kylfver symbol as such provides for. Eight twigs had sometimes to be marked on the left side, instead of the usual maximum of six twigs.
108. F. M. Cornford, o.c., p. 6.
109. Ibidem.
110. Ibidem, p. 7.
111. Ibidem, p. 6.
112. Some of the mediaeval Runic scripts use similar "crooked" symbols. That might reflect a much older tradition.
113. F. M. Cornford, o.c., p. 4.
114. Aristotle, *Metaphysics*, 1072 b, 30; cf. Cornford, o.c., p. 5.
115. Aristotle, *ibidem*.
116. Cornford, o.c., p. 60.
117. Ibidem.
118. Examples are given in F. M. Cornford's work, o.c., p. 183.
119. I have made an attempt to explain such a metamorphosis in a separate study, "Magic and Jurisprudence." The man who intended to use the magic formula traced a circle all around himself and then pronounced the ritual magic words. In fact, he was reproducing a picture which represented a God (Odin) and his sacred animals and which was illustrated by four words composing the incantation. By placing himself in the center of a circle the incantator believed to have become Odin in persona. He might have put the sacred animals (a dog, a falcon) also inside the magic circle. Thus, his resemblance to Odin was "total" and it sufficed to recover the superhuman capacities of the God in order to become utterly "like one of us"—like God. The circle corresponded to the round form of the talisman which contained the above-mentioned picture. The round form as such seems to have corresponded to the image of the sun. The sun, of course, gave the initial impulse to the spiritualization of pictures.
120. I do not touch here some other more detailed features of the tree system. It is impossible to exhaust all implications contained in the symbols of this system. However, it seems necessary to stress the probable connection between the tree system and the so-called "Dyad" (the "Indefinite Two"). What does this term mean—in terms of symbols and not in terms of the later verbal sophistications which partly were due to the desire to conceal the real meaning and partly to pure ignorance? It seems that the "Indefinite Dyad" of the

Pythagorean mathematicians is nothing else than the "shadowy" number 72 which, if expressed in symbols of the tree system, actually has two twigs—one on each side of the stem (Figure 108):



Figure 108

We saw in the case of Lemek's age that this "Dyad," in fact, seems to be somewhat "indefinite." The number 72 had to be subtracted from one of the numbers representing Lemek's age (Figure 109):

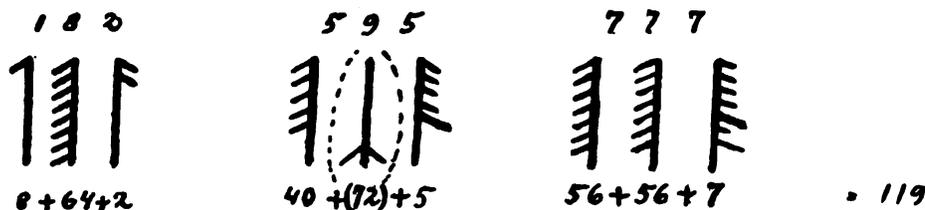


Figure 109

A similar phenomenon occurs in the age of Seth, where 2 had to be added to the total (third column). Of course, the number 2 has also two twigs. Both numbers—2 and 72—are highly "indefinite," if one has in mind the peculiar method of octavalizing decimal code-numbers which the ancient mathematicians were using in the "Genesis" and, probably, elsewhere, too. The "Definite One" is the tree symbol as such, i.e., the tree counting system as a whole which permits to count from "one" to "seventy two." We know (cf. "Conclusion") that the "Indefinite Dyad" is, in fact, an abbreviation of the symbol representing the counting system as a whole. It seemed, therefore, particularly important to distinguish the "Definite Monad" from the "Indefinite Dyad." A confusion could be made very easily. From here, later sophistications led the mind to an antithesis between the numbers "one" and "two." That development was, of course, facilitated by the fact that the number 2 as such had the same "indefiniteness" as the number 72. Let us remember the theological interpretation of the disappearance of the number 72 in the "Genesis." Lemek's age was limited "on the ground which the Eternal had traced." It will be easy now to understand the following passage from Theophrastus (cf. F. M. Cornford, o.c., p. 5):

"Plato and the Pythagoreans make the distance between the real and the things of nature a great one, but hold that all things wish to imitate the real" . . . A thing of the empirical world is, so-to-say, remolded according to its rationalized scheme or symbol which leads the true philosopher to the "idea"

of the thing. Reality becomes thus subjected to its eidolon and from there to its "idea."

"Yet since they make a sort of opposition between the One and the indefinite dyad, on which essentially depends what is indefinite and disorder, so to speak, all shapelessness (let us remember Noah's ark and the rôle of 72 in the 'table of ages,' as well as that of the number 2 in the second 'table of ages'), it is absolutely impossible that for them the nature of the whole should exist without the indefinite dyad; they say, it has an equal share in things with, or even predominantly over, the other principle; whereby they make even the first principles contrary to one another."

Theophrastus makes a very pessimistic conclusion: "Hence those who ascribe causation to God hold that even God cannot guide everything to what is best." The "Genesis" is far less pessimistic in attributing to God, first, a firm decision to limit the age of man to 120 years (Lemek therefore lived only 119 years, whereas his father Methuselah lived $120 + 72$, i.e., 192 years) and, second, in stressing Lemek's readiness to follow God's advice "on the ground which the Eternal traced." Theophrastus concludes that "God cannot guide everything to what is best." The "Genesis," on the contrary, thinks that God is supreme and has power even over arithmetical phenomena. Theophrastus' reflexions sound almost like a glossary to the Biblical "table of ages." Of course, he was polemizing against the Pythagorean mathematicians who were virtually applying and developing the "science of numbers" of the "Genesis."

The "one"—the unity, the monad—became later confounded with the number "one," and so was the "dyad" which began to represent—with much more reason—the number "two." In certain cases, the "indefinite dyad" actually corresponded to the number "two":

| | | | | |
|------|---------|----------|--------------|-------|
| Seth | 105 | 807 | 912 | |
| | $8 + 5$ | $64 + 7$ | $72 + 8 + 2$ | $+ 2$ |

At a certain moment the very basis of all Pythagorean and pre-Pythagorean calculations became forgotten. The secrecy was kept so diligently by the initiates that the central figure of the entire system finally was lost. Even in Plato's time its use had probably to be concealed. Plato does not even mention a tree. By interpolating the sacred tree symbol into ancient science we get access to all mysteries of the ancient mathematicians.

I would like to add that the number 72 virtually connects the Pythagorean "science of numbers" with the Babylonian system:

$$3 \times 4 \times 6(0) = 72$$

Plato uses in his "nuptial number" a somewhat different pattern:

$$3 \times 4 \times 5 = 60$$

The relationship between the different counting systems was an inexhaustable source of important metaphysical speculations. The octaval system was empirical, the Babylonian system was cosmological and astrological, and the decimal system was "divine." Since the sign for 72 could and had been reinterpreted (in Runic) in the sense of "one hundred," the notion of the "indefinite dyad"

was enriched by a new "indefiniteness." In fact, the predominant significance of the "indefinite dyad" might well have been ascribed to the fact that the correspondent tree symbol had acquired a new decimal parallel meaning of "one hundred." The decimal system as such was divine, and hence the most important symbol of this system—the sign for 100—was naturally superior to the octaval "monad." We know that the new meaning of the sign for 72 was presumably achieved by means of adding all numerical values of the twigs on both sides of the tree (Figure 110):

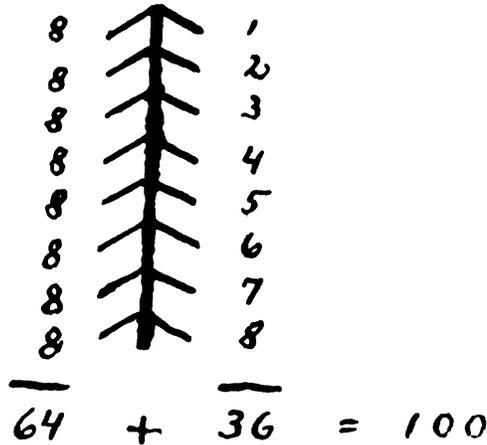


Figure 110

Hence, the idea of harmony, of perfectness, of goodness, etc., was reached and, altogether, expressed by means of a symmetrical symbol. The form of the symbol determined all logical developments. In that the ancient mind displayed a rare historical intuition. Ancient science actually had started with the contemplation of a tree which was nothing else than a natural counting table open or "given" to man's mind.

CONCLUSION

The way to truth leads through knowledge, and knowledge is acquired by an adequate education which forms the mind of a true philosopher. The seven steps of knowledge, which each philosopher must ascend, confer upon him the power of understanding things as they really are, i.e., "reality" as such. Plato did not disclose to his pupils the chief symbols with which he was constantly operating. His "science" remained esoteric. The key to the very essence of his philosophy and of all his images and metaphors was carefully concealed from the "non-initiates." The tree symbol had to be interpolated by us into Plato's philosophy without his own sanction. Plato does not even mention a tree. Aristotle who spent about twenty years with Plato in the Platonic Academy did not get access to the esoteric roots of Plato's wisdom. The "gift" from heaven to mankind sent down through the agency of some "Prometheus," to which Plato himself is referring in *Philebus* 16 c, remained unrevealed to his auditory. "The Prometheus of this revelation," says F. M. Cornford, "can hardly be other than the divine man, Pythagoras."¹⁰⁵ That might be so, but in no sense was Pythagoras the first "initiate." The "science" as such is older—in fact, it seems to go back to the very beginning of the Indoeuropean culture.

It seems to me that F. M. Cornford has some fundamental difficulties in interpreting the esoteric science of the early Greek mathematicians, for which, of course, he cannot be made responsible. He does not take into account the significance of the symbols on which the entire science virtually was relying. Cornford, thus, neglects the peculiarities of ancient reasoning, though he is obliged to use the very specific conceptional vocabulary of the ancient mathematicians. The main problem—that of finding the leading images or symbols—did not arise in F. M. Cornford's mind. Hence, no clarification whatsoever could be achieved, despite Cornford's ingenious efforts to explain various implications of the Platonic formulas as they are expressed in "Plato and Parmenides." The essence remained concealed.

Particularly important is the notion of the "unit." Aristotle's statements as to the nature of the "unit" receive sense only in the light of Plato's and Pythagoras' symbolism: "And the unit (to

hen) consists of both these (of “the limited Odd” and of the “unlimited Even”), for it is both even and odd; and from the unit (proceeds) number.”

In this case, as in many others, Aristotle simply repeats Plato’s assumptions without understanding them. In fact, the nature of this mysterious “unit” is utterly determined by the tree symbol which we found in the Gothic inscription of Kylfver. The idea of a “unit” including two opposites could have originated only as a result of the contemplation of the “eidolon” of the Kylfver inscription. As Shorey points out in his comments to Plato’s “Republic,” “the contemplation of the eidolon, image or symbol, leads us to reality. The reality is always the Platonic Idea.”¹⁰⁶ The contemplation of the tree symbol explains the later interpretations which were destined to extract the very “idea” from the “eidolon.” Let us consider once more the tree symbol of Kylfver (Figure 111):¹⁰⁷

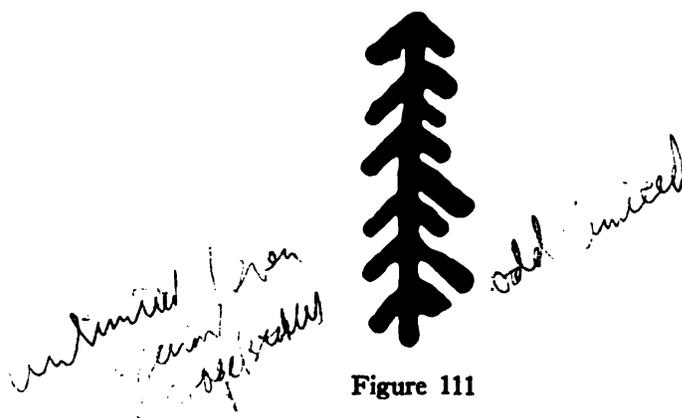


Figure 111

Aristotle’s definition seems to be a perfect—though quite unconscious—illustration of the image: “And the unit consists of both these, for it is both even and odd; and from the unit proceeds number.” The left side of the symbol is “even.” It has six (or eight) twigs. The right side is “odd” (seven twigs). “Odd and even are only the exemplification of (these) universal principles in the sphere of number.”¹⁰⁸ What are these “universal principles”? “The fundamental pair of opposites are Limit and Unlimited . . . ”¹⁰⁹

This notion, too, is perfectly explainable in terms of the tree symbol. The right side contains the idea of a “limit.” The

range of numbers goes from one to seven. In the more primitive "stick" or "fence" system it went up to eight, until Eve succeeded in "plucking the apple." Thus, a more advanced counting system could be created in which the left side was used for the designation of higher numbers. "Limitless" counting was from now on possible. The final decimalization of the octaval tree symbol practically established the very idea of "unlimitedness." The left side of the tree exemplifies this idea in a very clear way. The new principle was considered to be a "divine gift." It was, of course, an inspiration of tremendous significance. Certainly, this Promethean gift cannot be entirely attributed to Pythagoras alone. Plato himself stresses its ancient origin: "And the ancients, who were superior to us and dwelt nearer to the Gods, have handed down a tradition that all things that are said to exist consist of a One and a Many and contain in themselves the concrete principles of Limit and Unlimitedness."¹¹⁰ Does this passage not imply Plato's acquaintance with the tree of knowledge and with its graphic image? The ancient tradition, of course, is that which we found in the "Genesis." The concept of a "one" and that of a "many" seems also to be both sublimized aspects of the tree symbol. "One" represents the symbol as a whole. "Many" expresses the use of the symbol as a numerical table or system which embraces a series of individual numerical signs. They are all derived from the "whole" and are contained in it.

The opposite concepts of "Limit" and "Unlimitedness," of "Even" and "Odd" can be completed by other "pairs of opposites" mentioned by Aristotle.¹¹¹

| | |
|--------------|----------|
| 1. Unlimited | Limit |
| 2. Even | Odd |
| 3. Plurality | Unity |
| 4. Left | Right |
| 5. Female | Male |
| 6. Moving | Resting |
| 7. Crooked | Straight |
| 8. Darkness | Light |
| 9. Bad | Good |
| 10. Oblong | Square |

J. W. R. R.

This list of opposite concepts is, too, a far echo of the tree symbol—its rationalization and “logicization.” The number of “opposites” as such is self-speaking. The table contains ten pairs of opposites. This decimal aspect of the ancient logic reminds us of the “table of ages” of the “Genesis” in which “birth” and “death” are the chief opposites. The “table of opposites” is, of course, nothing else than a sophistication of the “tree of knowledge” and of its graphic image. The left side of the tree is, in fact, “unlimited” (it helped to surmount the “limitedness” of the right side and of the initial tree symbol), “even” (each twig represents the “even” number “eight” and all twigs have the same value), “plural” (the number “eight” can be repeated several times, whereas each twig on the right side has a definite unrepeated value), “left” (of course), “moving” (the twigs can be “moved” without changing their unique value—that of “eight”), “dark” (secret, i.e., known only to the “initiates”), “bad” (the qualification of “bad” is fully understandable, if we consider the interpretation given by the “Genesis”; the concept of an “original sin” had been interpreted as the acquisition of a “forbidden knowledge”; the left side, of course, expresses this knowledge quite adequately).

Three concepts remain outside of the general scheme—the quality of being “female,” “crooked” and of forming an “oblong.” The sex-assumption is utterly congenial to the “Genesis.” Eve initiates the “original sin.” Her action was, of course, “bad.” She had, therefore, herself to be placed on the left side of the tree. Thus, the left side became “female.” “Crooked” and “straight” form a pair of opposites which might be added as an abstract antithesis. However, there are some evidences that the twigs on the left side were sometimes drafted differently from



Figure 112

the twigs of the right side. Perhaps, the mediaeval scribes were interested in avoiding any possible confusion. A direct influence of the “table of opposites” should not, however, be rejected. It

is even not excluded that, vice versa, the habit of marking the twigs on the left side in a crooked form might have influenced the "table of opposites" itself (Figure 112):¹¹²

The opposition between an "oblong" and a "square" might be a development of the two concepts "odd" and "even." A precious indication is found in F. M. Cornford's book (o.c., p. 10). Some of the ancient Greek mathematicians used the following scheme (Figure 113):



Figure 113

This peculiar form of expressing numbers is very congenial to the tree symbol. The tree has seven twigs on its right side. Hence, the right side reflects a "square." The left side has, on the contrary, six or eight twigs and therefore represents an "oblong."

The "table of opposites" thus becomes completely intelligible. It is a rationalization and an abstractization of some inherent characteristics of the initial "unit," i.e., of the tree symbol or of the "tree of knowledge" of the "Genesis." This "unit" must be distinguished from the first unit of number. Confusions were made too often—in a vain attempt to "generalize" certain primary scientific principles. Cornford seems not to be quite aware of the significant implications contained in the quotations which he himself is using in his book. "The first unit is not a number, but the beginning of number," i.e., the tree symbol as a whole. "The two opposites, Limit and Unlimited . . . are combined in its nature . . ." "So Limit and Unlimited combine to produce the first unit; and from the unit proceeds number."¹¹³

We have to start with a "whole"—exactly as in the case of the image of the "Ship of State." Here, the initial image of a tree

became rationalized in terms of a numerical system and developed into a universal conception of "order" which included the notion of "value" not only in the arithmetic sense, but in the moral sense as well. We have seen in the "Genesis" a very clear expression of such an attitude of the ancient mind. The "tree of knowledge" inspired—or had been connected with—a first antithesis between the "good" and the "evil." The "table of opposites" is a further deduction from the same initial symbolic "unit." It seems that this "unit" was called sometimes "the Monad" and in other cases "the One" (to hen). Cornford states with much reason that "some obscurity in our sources is due to the confusion of (these) two senses of "the One" ("to hen" and "he monas"). In fact, this concept of a "unit," which altogether is a "unity" ("he monas"), must be distinguished from the number "one." Its characteristics became at a certain moment applied to the number "one," but that was partly an error, partly a philosophical sophistication. The "Monad," i.e., the tree symbol, is "the first principle of all things." We approach here the Pythagorean and Platonic "pan-mathematism" which is understandable only in terms of the actual historical origin of "science." Plato's philosophy of ideas becomes thus a history of the octaval tree system. One might now easier admit the identity between ideas and numbers, despite the fact that Aristotle did not find any excuse for such an identification. However, Aristotle was a mere layman who was deprived of the highest "eighth" degree of knowledge. The official educational scheme embraced, as we know, seven disciplines. The eighth remained secret—accessible only to members of the Pythagorean community. This eighth discipline corresponds fairly well to the eighth half-broken twig of the tree symbol which exemplified the esoteric knowledge in both of its two aspects. The ancient octaval tree script and its later decimalized form were both implicitly contained in the clumsy eighth twig of the tree.

We must represent to us the "Monad" as a perfect, complete order. The image of the tree necessarily reflected the completeness and harmony of order as such. The initial symbol is supposed to be symmetrical. Symmetry determined the "perfectness" of the Platonic numbers and of the numbers of the "Genesis" as well. Such was the tree of knowledge before Eve had committed the

original sin. The "eating" from the tree disturbed this initial order which might well be called a "pre-rational" or "pre-scientific" harmony. Hence, the "opposites" were produced by Eve's crime. It is significant, however, that the initial "innocent" harmony was denied by the Pythagoreans. Aristotle states that "the Pythagoreans suppose that supreme beauty and goodness are not present in the beginning; for, although the beginnings of plants and animals are cause, beauty and perfection are rather in their outcome."¹¹⁴ That seems to mean that nature as such (cf. the most interesting reference to "plants" which, of course, reminds us immediately of the "tree of knowledge") implies, and even dictates, the necessity of a first abstraction in the form of an image, symbol, eidolon. This eidolon, then, becomes rationalized as an "ordered whole"; and from that "ordered whole" one might come back to nature—to the empirical world which now can be understood in terms of such a first abstraction and rationalization. It is possible to call this procedure the establishment of a principle. Plato calls this principle—or the application of the principle to an empirical thing—the "idea" of a thing. In the Pythagorean and in the Platonic conception these "ideas" of things are primarily "numbers," because they express most adequately the very idea of "order" and explain, on the other hand, the real birth of the idea of "order" (contemplation of a tree, counting, etc.).

"Bred in the study of mathematics, which they were the first to advance, they thought that the principles of mathematics are the first principles of things. Of these principles numbers are by nature the first; and in numbers, rather than in fire or earth or water, they (the Pythagoreans) found many resemblances to things that exist and come into being . . ."

One should add that this appeal to nature and to knowledge was, of course, much older than the Pythagorean school. It seems to root in the earliest days of human culture—in tree worship. Plants were "causes of supreme beauty and goodness."¹¹⁵ The tree of knowledge is clearly implied in this astonishingly adequate definition of the mathematical conception of order, harmony and beauty. The contemplation of trees led the human mind to a first significant abstractization which, in fact, was due to a primitive

attempt to express a tree graphically—to picture it. The contemplation of this image and its schematization and ordering led the mind to the idea of a numerical order and, finally, to that of counting. It was a most important acquisition of mankind—perhaps, even the most important of all ideas. Such seems to be, at least, the assumption of the “Genesis.” The mathematical absolutism of the Pythagoreans is a far echo of the same theme. The Gothic encyclopaedia of Kylfver is, perhaps, the latest product of the ancient Indoeuropean conception of “order,” of “science” and even of religion. Plato, of course, might be called the most accomplished representative of this ancient school. In his works the history of the mathematical achievements of the Indoeuropean thinkers has become an all-embracing philosophic system. If even Plato’s enlightened mind was anxious to maintain the enthusiasm of the early tree-contemplators and “mathematicians,” the source of their enthusiasm must have still appeared in Plato’s time (IV Century B. C.) as a divine inspiration—as a “gift from heaven.” Plato himself confesses that. Of course, his intuition helped him to understand truth and to distinguish “true myths” from the lies of the ancient professional myth-makers.

It seems that the obscure symbolic language of the Pythagoreans, which Aristotle uses without realizing its actual meaning, has become quite intelligible in terms of the tree system. At the same time, the methods of reasoning of the ancient thinkers reveal to us an outstanding quality of their mind. A symbol, image or eidolon was something much more meaningful for them than for our contemporary experienced and realistic mind. We know how to separate empirical things from abstract concepts of things. Our power of identification is infinitely greater and preciser than that of the ancients. Our empiricism is more empirical, our abstractions are more detached from empirical things. The ancient thinkers confused both—the thing and its image. The schematized image became reality. One might say that the eidolon “participated” in the thing as such. Hence, the “idea,” i.e., the rationalized eidolon, remained intimately connected with the thing and represented its very essence. Plato clearly expresses this view in his philosophy of ideas. A thing was caught by the mind

as an entity. Its essential features were determined by the scheme—by the image, shadow, diagram, eidolon—which could be applied to it and reproduced its chief characteristics. All specifications of its content were utterly dependent on the contemplated and rationalized “whole” of the thing. The “individual,” the “detailed,” could be conceived and interpreted only as an inseparable element of the “whole,” i.e., of the leading image or picture sublimized as the very “idea” of the thing. Hence, structural features played an extraordinary important rôle. We saw it in discussing Plato’s metaphor of the “Ship of State.” Everything became attached to the metaphor, and the rationalization of political life meant nothing else than an interpretation of all structural details of the image as such. Even more conspicuous is the procedure applied to the tree symbol. Here, too, a series of significant qualifications were derived from an original entity—from the image of a tree. The initial whole (unity, monad) determined all details—an endless series of scientific and moral assumptions—and, as we know, the very foundation of ancient science.

It might be interesting to follow these peculiarities of the ancient reasoning in a specific field of mathematics. The Greek notion of fractions has some outstanding characteristics which seem to be almost incomprehensible—at least, from the outset. The Greek mathematicians had no generic concept of fraction. “Every number is divisible (only) into the units whose sum it is, but no further . . .”¹¹⁶ “The arithmetical unit, 1, is essentially indivisible; in Greek arithmetic a fraction, such as $\frac{1}{2}$ or $\frac{2}{3}$, does not stand for a part or part of a unit, but for one unit in a group of two, or two units in a group of three.”¹¹⁷

In terms of the tree script this statement becomes quite clear (Figure 114):

$$\begin{array}{c}
 \text{two} \\
 \text{F} = \text{F} + \text{F} \\
 \text{one} \quad \text{one} \\
 \text{(half} \quad \text{(half} \\
 \text{of two)} \quad \text{of two)}
 \end{array}
 \qquad
 \begin{array}{c}
 \text{three} \\
 \text{F} = \text{F} + \text{F} \\
 \text{two} \quad \text{one} \\
 \text{(two} \quad \text{(one third} \\
 \text{thirds} \quad \text{of three)} \\
 \text{of three)}
 \end{array}$$

Figure 114

The later version of the Pythagorean notion of “perfect numbers” is due to a similar approach. A perfect number has parts equal to the whole. Thus the parts of 6 are:

| | |
|-----------|---|
| the half | 3 |
| the third | 2 |
| the sixth | 1 |
| Total: | |
| | 6 |

Other numbers are called “excessive” or “defective.”¹¹⁸ We know, of course, that the “perfectness” of certain numbers is very much relevant to the form of the symbols representing “perfect numbers.” Hence, the number 18 is “perfect,” because it has two twigs on each side of the tree. If all twigs are placed on one side, the number is, too, “perfect,” e.g., the number 48, etc. The notion of “excessiveness” and of “deficiency” becomes quite understandable only in terms of the secret tree script. Later, of course, the very foundation of the ancient “science of numbers” became forgotten and the initial concepts were reinterpreted in a new way.

A very similar “indivisibility” in the sense of an absence of “fractions” can be found in Plato’s “Republic.” The individual citizen is not distinguished from the whole. He is an element of a closed system—of the Monad of the State: “A just man,” says Plato, . . . “will not differ at all from a just city . . .” “The same forms and qualities are to be found in each of us that are in the State.” Each number is an inseparable and homogeneous part of the tree system which forms the initial unity or monad. Similarly, a citizen is in no sense different from, or opposite to, the State as a whole. He would become “inexistent” and even “irrational,” if separated from the initial unity. Each citizen completes the others, as the Pythagorean “halves” and “thirds” are conceivable only in terms of the whole number. This phenomenon of operating with a “whole,” a system, a monad is particularly important for the understanding of the ancient mind. The roots of this peculiar logic are prehistorical. Let us remember the Sanskrit word “sa” (fence, bird, serpent, knowledge, musical sign). The “whole” of the “genetic situation” determined later develop-

ments of the initial "concept." It inspired the idea of finding out the relations between the various elements of the initial whole. Hence, legends and myths were created. History became replaced—but not entirely washed away—by imagination. Of course, the initial situation might contain elements which are not, from our contemporary viewpoint, necessarily connected with each other. The ancient mind, however, was faithful to the initial impression. A typical whole, a unity, composed of some heterogeneous elements dominated the mind, despite the fact that these elements were combined with each other quite accidentally. Only, such a combination had to be either particularly striking or "typical," i.e., capable of being observed repeatedly. The first step on the way of fixing such an initial "conception" was the reproduction of the situation by means of a primitive scheme, an image. Thus, a situation or conception became definitively "typified" and memorized. Then the mind began to rationalize and to structuralize the "photostate." The final stage was reached in the Platonic philosophy of ideas. But even here, in the detached speculations of the "true philosopher," the picture as such remained dominating and virtually determined all details and specifications of the content of the "whole." In certain cases man almost identified his representations with actual life and his own "I" with an imaged thing. The man who pronounced a magic incantation felt himself transformed into the deity which he was imploring.¹¹⁶ This kind of "participation" is very close to Lévy-Brühl's observations concerning the so-called "totemism." The primitive mind was different from ours. Of course, one should be careful in applying sociological categories relevant to the primitive mind to the ancient Indoeuropean scientists. Nevertheless, even Plato's enlightened mind conceived an image, a metaphor, an eidolon in such a peculiar way that his reasoning seems to be closer to the "prelogical" mind of a primitive totemist than to our own modern approach. For him a rationalized eidolon was much more than a mere analogy or illustration. It was "reality" as such—rationalized life, true reality—which had to be distinguished from the world of shadows, reflections, echoes. In fact, Plato chose a way of expressing his gnoseological views which revived the real march-route of cultural-historical becoming. He was reasoning

complete
Buddhist
imagination
of
Buddhism

in terms of cultural history. The image of a tree, that of a ship, the concept of the even-odd unity—all these basic “ideas” of his science seem to be rooted in history. Quite similar is the approach of the authors of the “Genesis.” Plato himself seems to be half aware of the historicity of his philosophy. He finds an excuse in saying that the ancients were superior to us and dwelt nearer to God. Plato was, of course, partly nearer to historical truth than any other ancient source. His own conception of the origin of the State—his leading image of the Ship of State—was nearer to historical truth than the re-creation variant of the “Genesis.”

It is difficult to determine how far Plato did actually follow the divine tradition handed down by the ancients. It seems that he maintained the most important elements of that tradition and completed them by an intuitive vision of the past which no other thinker or historian has ever possessed before and after Plato. In fact, he was the greatest interpreter of the genetic phase in cultural history. Plato has revived and explained the archaic stage in the development of the human mind.

The “new” Plato, whom I intended to describe in the present volume, looks old and even archaic. But it seems to me that we are now much closer to the real Plato and that, moreover, we now possess a key to the ancient mind which eventually will disclose to us many other misinterpreted or concealed features of ancient wisdom.¹²⁰

APPENDIX

THE BIBLICAL NAMES

The name of "Eva" (truth) suggests a solution of a series of most important terminological problems which seem to disclose an Indo-German background of the "Genesis." The fir tree symbol of *Kylfver*, of course, is a first significant proof of the presence of Indoeuropean "blood" in the Biblical material. We found, moreover, the concept of "order" in the numerical table of the "Genesis" and, particularly, in the number 1234 which represents the total of the ages of the ten patriarchs. The chief symbols, too, are Indo-German—the octaval image of the sun (cf. the swastika sign), as well as the sacred "tree of knowledge" (cf. the tree symbol of *Kylfver*). Let us briefly discuss the terminological problems of the "Genesis."

The main heroes of the "Genesis" can be easily connected with Germanic terms which, altogether, form a most important conceptual vocabulary including such concepts as "order," "truth," "spirit" (or "breath"), "earth," "succession," etc. We must analyze the words "Adam," "Eva," "Jahwe," "Noah," "Seth," "Shem," "Japheth," "Lemek," "Lot," "Abraham," "Sarai," "Abel," "Cain," etc. Endless cultural crossings make our task particularly delicate. Let us start with the concept of "order" (Goth. "lathu").

We did not indicate the presence of the term "lathu" in the "Genesis," despite the fact that the "concept" of "order" and of "ordering" determines one of the chief themes of the "Genesis." However, this term can be detected, though in a very specific context. It is given in the name of Abram's nephew, Lot. The fate of "Lot" is very instructive. It expresses the idea of "order" with the greatest vigor.

In fact, Lot's name is mentioned in connection with the division of land between him and Abram. "Abram was very rich in cattle, silver and gold; he traveled on from Negeb to Bethel, to the site of the altar he had erected there at the first, and there he wor-

shipped the Eternal. Lot, who accompanied Abram (Gen. XII, 5, says that 'he—Abram—took Sarai his wife and Lot his nephew, with all the property . . . ' Gen. XIII mentions Lot in a quite similar context: 'Abram left Egypt, along with his wife and all that he had, accompanied by Lot . . .'), also had flocks and herds and tents. Now the country could not support them both together; their possessions (in cattle?) were so large that they could not live side by side. A dispute arose between the herdsmen of Abram and the herdsmen of Lot . . . So Abram said to Lot, 'Let us have no dispute, you and I, my herdsmen and your herdsmen; we are kinsmen. The whole land lies before you, does it not? Pray, separate; if you go to the left, I will go to the right, or, if you go to the right, I will go to the left.' Then Lot, looking round, noticed that the whole of the Jordan basin was well watered in every direction . . . ; it was like the Eternal's own park, like the land of Egypt on the way to Zoan. So Lot chose all the Jordan basin; Lot went east. They parted company . . ." (Gen. XIII, 1-12).

This passage is extremely interesting. The idea of "order" has here several important aspects. The "separation of goods" proposed by Abram and accepted by Lot corresponds to the supposed earliest meaning of Grm. "Los" which, of course, may well be etymologically connected with "lathu" or with its umlaut-form "lothu." Besides this specific meaning, the term "Lot" is here directly opposed to the notion of a "dispute." The term implies, moreover, a discrimination between "right" and "left" and "right" and "wrong." Important is also the fact that "Lot" chose the "well watered," i.e., the "ordered" part of the country. The idea of "separation" is strengthened by that of "parting" which suggests the Grm. adverb "los." Furthermore, Abram's wanderings are, too, connected with "Lot" who is said to have accompanied Abram even to Egypt. Here "Lot" is almost identical to "Los" in the sense of "fate" (lot, part). The term "property"—also "possessions"—seems to fit perfectly well into the same line of thought. The cellular term "lathu" (cf. also Slav. "lad" "—agreement, etc.) seems to justify the main elements of the legend concerning Abram's "nephew."

In Gen. XIX Lot appears as the protector of order in the wicked

city of Sodom. He tries to protect the two men (angels) who came to Sodom in order to investigate and, if necessary, to punish the inhabitants of Sodom. The concept of "order" implied hospitality. Hence, Lot persuaded the two strangers to pass the night in his house. "They had not lain down to rest before all the townsmen, the inhabitants of Sodom, beset the house, young and old from every quarter, shouting to Lot: Where are the men who came to visit you to-night? Bring them out to us that we may rape them" (Gen. XIX, 4-6). The rest of the story is analogous to the legend on the deluge. Instead of a barge, Lot is induced by the Eternal to use the top of a hill. That seems to be a very ancient version of the legend on the deluge. We had to speculate with this primitive conception of a refuge, while discussing the origin of the legend of Noah, the navigator.

The town of Sodom was then swept away. "The Eternal rained sulphur and fire from heaven on Sodom and Gomorrah, sweeping away these towns and all the Jordan basin, with all the inhabitants of the towns and whatever grew on the ground . . ." That is a curious poetical reinterpretation of theme of the "deluge." Important is the fact that the punishment was administered by the Eternal as soon as Lot—"order"—had left the wicked area. "Lot" exemplifies here the concept of "order" as such. The two episodes concerning Lot's daughters (Gen. XIX, 8 and XX, 30-38) do not contradict this statement. The first episode expresses the idea of "destiny," and the second, moreover, that of drunkenness as being a chief source of "disorder." The central meaning of the cellular term "Lot" seems to be now sufficiently clarified. I wonder, however, whether this term does not include a certain amount of "false etymologies" invested by the ancient commentators and "myth-makers." This means of interpreting an ancient term was commonly used by the early mediaeval glossators. The mediaeval experts, of course, did not create their peculiar "art." They continued to apply certain methods which characterize the "linguistic" technique of the ancient thinkers.

It seems certain that the "cell" Lot implies also the notion of a "boat" (cf. Slav. "lodia") which leads us to Noah's "barge." Moreover, the idea of "construction" in a broader sense, which we find reflected in the legend on the deluge and in many other

places, might be equally due to the presence of the cell "Lot." Particularly interesting is the fact that Abram was constantly constructing "altars" during his travels, in which, as we know, he was accompanied by his "nephew," Lot. The presence of "lathu" might be also seen in the "invitation to a feast" which Lot addressed to the two "strangers" (Gen. XIX, 2-4), and even in Lot's readiness to deliver his two daughters to the mob which threatened to rape the two foreigners. In fact, the term "lathu" which we found in the Gothic magic formula "lathu, laukaR, gaukaR, alu" is probably a direct predecessor of the concept "Ladung" (cf. Grm. "laden"—to invite, to challenge; cf. Novotny, o.c.: "Ladung—lathu—bezieht sich auf den Fürsten"). A different application of the same cell can be assumed in the case of the "compact" between the Eternal and Lot—a compact which was almost identical to that between God and Noah. The compact-idea is essential to the initial content of the cell "lathu—Lot" (cf. Slav. "lad"—peace, agreement). The same idea seems to be present in the concept of Lot—God's "servant" (Gen. XIX, 18-19). The idea of "substitution" (Noah is almost a full substitute of the Eternal on earth and, of course, a direct substitute of Adam—a "new" Adam)—is, too, intimately related to the cellular concept "lathu." Substitution, hire, etc.—all these forms of "doubling," replacing or resisting a chief personage—a lord—are altogether embraced by the term "lathu" (agreement). Therefore we find a transformed Gothic "lathu" in an Anglo-Saxon oath-formula by which a hireling pledged his allegiance to his lord. The same concept appears in Slavic norms regulating the mutual relations between a mercenary and his master (in a trial by combat and in other similar cases).

The most striking proof of the presence of the cell "lathu" in the "Genesis" is, of course, the number 1234 which represents the sum of the ages of the ten patriarchs from Adam to Noah. The transliteration of this number leads us directly to the word "lathu," i.e., to the first four letters of the octaval Gothic alphabet. Here, in the "table of ages," the word "lathu" means "peace" and, altogether "order"—even, more specifically, a mathematical order. At the same time, "lathu" (the numbers 1, 2, 3 and 4) implies the notion of the sacred symbol of the cross, as well as the num-

ber of patriarchs (ten) who form the "stock" of the Biblical cemetery (a cross corresponds to 4; $1 + 2 + 3 + 4 = 10$). I do not exclude the possibility that the cell "lathu" could well have been connected with concepts arising from words which belong to etymologically unrelated roots. Thus, "lathu" might have been connected with a root which forms Grm. Leute (people; cf. the notion of the "mob" in Gen. XIX, etc.). Similarly, the concept of "leadership," of guiding, seems to be clearly implied in various places of the "Genesis." Do all these concepts actually go back to the "cell" Lot or "lathu"? That might well be so. Certainly, mediaeval jurists would exploit the presence of a convenient cellular term in the supposed manner. Their predecessors can well have applied the same technique.

Let us now turn to the other terms which, too, may be suspected to be Indo-German before being appropriated by the Hebrew thinkers and dragged into the shape of various phonetically close Semitic words. A minor hero of the Biblical legends—Isaak—receives an intelligible interpretation by means of being confronted with the term "esago" (also "asago, isago, esagari")—"truth-sayer," judge, prophet. The supposed components of "esago" are "eva"—truth, and "sag" (cf. Grm. sagen—to say). In fact, "Isaak" appears there where a judicial function is clearly implied by the entire context. His very birth is "octaval," i.e., essentially Indoeuropean. The number 8 is implied in Abram's age—100 years (the octavalization of 100 leads us to 8). Isaac was circumcized when he was eight days old. The birth of Isaac was predicted "beside the Mamre-oaks" (Gen. XVIII, 1 ff). These Mamre-oaks remind us of the name which the Franks applied to the place where their trials usually were held (cf. the term "mallare" in Lex Salica; cf. also the so-called "Malmberg"-gloses, i.e., formulas delivered by the Frankian judges). The "oaks" as such are strikingly Germanic (and also Celtic and Slavic), because it is universally known that the ancient Germans and Celts held their meetings "beside the (Mamre) oaks." It is interesting that the prophecy concerning Isaac's birth was made under a "Mamre-oak" and that this prophecy assumed the meaning of a "verdict" (the term "verdict" is a logical equivalent of a judgement pronounced by a "truth-sayer"—an "esago"). An "esago" was not

only a "judge" in our sense, but, of course, primarily a man who knows and who can tell or predict the truth. Knowledge of truth presupposes a high age. Hence, Abram and Sarah are both supposed to be very old, when Isaac was born to them. The prophecy seemed to them incredible. Sarah laughed at the prophecy, because "the custom of women had ceased with Sarah" (Gen. XVIII, 11-12). Nevertheless, the Eternal's will became fulfilled. The three men who made the prophecy (Gen. XVIII, 2 ff.; the number 3 may well represent the actual number of judges who delivered the verdicts for the ancient Germans; moreover, the number 3 was, of course, a sacred number), did not fail in their "verdict." Sarah "bore a son for Abram's old age" (Gen. XXI, 1-2). The old age of both parents of Isaac seems to emphasize the fact that the wisdom of an "esago" is due to experience. For a similar reason, Isaac had to reach a very high age. In fact, he is said to have become almost blind ("his eyes were so dim that he could not see"; cf. Gen. XXVII, 1). Wisdom and old age were almost equivalents from the viewpoint of the primitive mind.

More specifically the judicial theme of the legend on Isaac is reflected in several other episodes. Thus, sooth-saying, prophecy, old age wisdom, become connected with the notion of "sacrifice." In fact, we find a human sacrifice in Genesis XX which had been provoked, and, altogether, prevented, by the Eternal Himself. ". . . Abram built the altar, arranged the wood, and, binding his son Isaac, laid him upon the wood on the altar. Then Abram put out his hand and lifted the knife to cut the throat of his son. But the angel of God called to him from heaven," etc. The term "Isaac"—"isago" must have suggested the creation of the entire meaningful episode, in which, however, the active part had been ascribed to Isaac's father, Abram (the explanation of the term "Abram" will be given later). It is important to notice that the performance of sacrifices was a natural function of an "esago" who was altogether a priest, a prophet, and a judge—a "wise man" in all possible exemplifications. Very significant is, moreover, the custom of swearing an oath which is repeatedly mentioned in connection with Isaac (Gen. XXIV, 1 ff., XXI, 24-25, XXIV, 37, 42, XXVI, 33). All these "swearings" are grouped around Isaac, although the actors were either Abram or Isaac's

sons. Everybody knows what an important rôle oaths played in ancient law and procedure. Particularly interesting is the fact of a "cession" of rights by one of Isaac's sons in favor of the other. Here we are facing a judicial transaction which, of course, was an important part of the ancient legal procedure. The peculiar relationship between the two terms "Isaac" and "Rebecca" (Isaac's "wife") will be explained later. As to a possible connection between "esago" and the concept of "order"—lathu (I do not distinguish the Ablaut-form "lathu" from the—earlier?—form "lothu"-Lot), one may suppose its existence in the permanent building of new "altars" which seem to symbolize a successful conquest of new territories. In fact, the term and the concept "altar" is, as we know, related to "lathu": cf. the Slavic term "latyr" (Stone Latyr). Justice and order belong together.

Let us now turn our attention to Adam and Eve and to their sons, Cain, Abel and Seth. The term "Adam" was at a certain moment combined with a series of phonetically close words belonging to different genetically unrelated linguistic stocks. It is impossible to determine the chronology of the various linguistic sheets which covered, one after the other, an initial word or "cell." "Adam" has among other meanings that of "man" and of the pronoun "I." However, the Biblical text allows us to establish an Indo-German version of the term "Adam." "At the time when God the Eternal made earth and heaven, there was as yet no shrub on earth, and no plant had sprung up; for God the Eternal had not sent rain on earth, and there was no one to till the soil—though a mist used to rise from the earth and water all the surface of the ground. Then God the Eternal moulded man from the dust of the ground, breathing into his nostrils the breath of life; this was how man became a living being . . ." In this well known story two elements seem to be particularly meaningful: the indication as to the material of which Adam was made and the procedure of breathing life into Adam's nostrils represent both two main themes of the legend on the creation of man. Are there any Indo-German terms which would correspond to these two themes?

The answer is easy. The "breathing" of the "breath of life" has a direct correspondent in Grm. Atem—breath, spirit. In differ-

ent Germanic languages this word has the following forms: *atem*, *atum*, *adem*, *asem*, *Idg.* —*etmo-n*—, *Ind.* *atman*, *Gr.* *atmos*—*mist*, *vapor*. The Biblical text contains the notion of “mist,” too. We have, therefore, a complete correspondence between the term “Adam” and the various meanings of its Indo-German, German and Greek cognates. Should we suppose here too the existence of an original “cell,” from which the later words all were derived? In any case, the text of Genesis II, 4-8 gets a conspicuous justification only in terms of a supposed Germanic background of the entire saga. Curiously enough, the question of the “material substance” of the first man can be also solved in a quite similar way. I recall the name of Noah’s—the “new first man’s”—father, *Lemek*. *Lemek* was a “tiller.” Gen. V, 29 ascribes to *Lemek* the following phrase: “Now we shall know a relief from our labour and from our toil on the ground that the Eternal cursed.” That remark is a distant echo of Gen. II, 4-8 concerning the creation of the “tiller” Adam. Since Noah is in fact a new version of the first man, Adam, the term “*Lemek*” seems well to correspond to the “substance” from which man was made. The term as such is very close to *Grm.* *Leim*—“*Klebstoff aus einer Erdmasse*” (argil, clay), which corresponds perfectly well to the “dust of the ground” mentioned in the “Genesis” (II, 7). The material used for the moulding of man had necessarily to be cohesive. Argil was a well appropriated material which sculptors are still using even in our advanced epoch.

A far more complicated problem arises in connection with the Biblical “Eva.” We must discuss this question now in detail.

“The man called the name of his wife Eve (life), because she was the mother of all living persons” (Gen. III, 20). This glos seems to represent a Semitic (Hebrew) version of the term “Eva.” We find a term “eva” (*effa*) in the Salic Law, e.g., in the glos “*seolando effa*,” which has the meaning of a particular legal and criminal sanction. “Eva” is here usually translated as “law,” *Grm.* *Recht*. The concept of “truth” seems to reflect much better the nuances of this ancient term (cf. also the term “*esago*”—“eva” and “*sag-*”—“truth-sayer”). There is no doubt that the meaning of “truth” is particularly appropriated to the entire text of the “Genesis” (cf., Eve’s rôle in the legend concerning the

"tree which yields knowledge," etc.). It is interesting to notice that "Ea" was the name of a water-deity worshipped in Babylonia. In fact, Ea held supreme rank among these deities. The name of the god is composed of two ideograms, meaning "house" and "water." The construction of houses and ships and, altogether, the irrigation of the fields—both important manifestations of the ancient genius—became ascribed to Ea—"the king of the ocean," the god of knowledge, of wisdom, of destiny, of art, and hence of life (cf. M. H. Farbridge, o.c., pp. 30-31, 36, 57, 74, 93, 101, 105, 142, 161-163, 197, 205 ff.). The Assyrians also adopted the deity Ea for their own cultus. The presence of "Ea" in the Biblical text is revealed in the frequent use of the number 40 which was the numerical expression and equivalent of the god Ea. The Babylonian deity Ea undoubtedly was confused—amalgamated—with the Germanic concept "eva" (truth) and with the Hebrew concept "(h)ewwa" (life). Of course, the notions of "truth," "knowledge," "art," "destiny," "life" were intimately related to each other in the mind of the ancient theologians and thinkers. Ea was a supreme expression of the unity of all these concepts.

The symbols representing Ea had different forms. Ea was often connected with the image of a serpent. We find a similar relationship in the Biblical legend on the "original sin." A frequent symbol was that of a fish. A water-deity was, of course, particularly congenial to such a graphic interpretation. We know, moreover, that the name "Ea" contained ideographically the images of a "house" and of "water." All these "logicizations" of Ea complicate the picture very considerably. Interesting is the fact that Ea was represented with two horns. The origin of the "horns" is far from being clear. Should they correspond to the two twigs of the octaval tree symbol representing the number 72, alias 100? We know that this number was particularly "fateful"—almost a symbol of divine will, of providence. Hence, this number—and the correspondent sign—are found in the Biblical "table of ages" (cf. God's fateful decision concerning the age of man, Gen. V, 29 and VI, 3) and in the legend on the deluge (the chief measure mentioned in connection with Noah's barge—450—represents, after being "octavalized," the number 72). The "horns" may well represent the twigs of the number 72 (100).

They would thus become identical to the "Indefinite Dyad" of the Greek mathematicians (cf. "Conclusion"). I am inclined to interpret the "horns" as the symbol of "fate," destiny—a substantial attribute of "divinity" as such.

Of course, if that is so, one might feel induced to the assumption that the Semitic deities—particularly Ea, the chief water-deity of the Babylonians—are derived and adopted from the Indo-europeans. In fact, the god of "knowledge," of "art," of "irrigation," of the "ocean" might well have been borrowed from the "Japhetites," i.e., from the "seaboard nations" whose culture was on a higher level than that of the Semitic nomads. That would explain the octaval horns of Ea and emphasize the Indic and Indo-German foundation of the Eastern-Mediterranean culture. The question of cultural priority would thus be clarified. A chronological order of cultural influences may become establishable.

The Germanic origin of the term "Eva" can be confirmed by an important additional consideration. ". . . God the Eternal made a deep sleep fall upon the man; while he slept, he took one of his ribs, closing up the flesh in its place; the rib he had taken from the man the Eternal shaped into a woman, and brought her to the man . . ." (Gen. II, 21-23).

A very delicate operation is now needed. We have to interpolate a term which would be particularly congenial to the creation of Eve, as it is described in the Bible. This "cell" seems to be "revu"—a term which we find in the Salic Law, and which has played an important rôle in Germanic and Slavic law. Several norms of Jaroslav's "Truth" and of the "Statute of Polica" are based on this term and on its later interpretations. The cell "revu" is reflected in a series of Biblical names: Reu, a descendant of Shem, then Reumah; a concubine of Abram's brother, Nahor, and Rebekah; a granddaughter of Milkah who was the wife of Abram's brother, Nahor. Rebekah became the wife of Isaac,—the "judge" (esago). The "cell" is represented numerously enough. What is its real meaning?

In the Salic Law the glos "revu" seems to designate the skeleton of a man, his bones, his ribs. Quite similar are the Slavic versions of this glos. That—direct—meaning makes the term extremely clear. It corresponds perfectly well to the implications

contained in the Biblical legend on the "birth" of Eve. Let us glance once more on the procedure chosen by the Eternal. He took one of Adam's ribs and shaped it into a woman. The first part of the procedure is quite conspicuously reflected in the tree symbol of Kylfver. One side of the symbol has one twig more than the other side. We know that the tree symbol representing the "tree which yields knowledge" presumably had eight twigs on its left side and seven twigs on its right side. Thus, one may suppose that the tree symbol could well have been associated with the skeleton of man. The twigs could easily be interpreted as man's ribs.

There is no doubt that such an interpretation actually had been made by the ancient scientists. It would be, otherwise, impossible to explain the curious assumption that the Eternal had taken only one rib from the sleeping Adam instead of taking a pair of ribs. The tree symbol, on the contrary, suggests such a version, because of the unequal number of twigs (ribs) which characterizes this "image." The chief scheme of the ancient scientists became thus applied to the creation-myth, and more specifically to the creation of man's "helper," Eve. Probably, a parallel-version of the same myth, which assumes a bi-sexual nature of the first man, is also due to a counting of man's ribs and, hence, to the image of a tree.

In fact, man usually has twelve pairs of ribs. The first seven pairs are called "real ribs." This number, of course, is particularly congenial to the tree symbol. It might be true that women have sometimes more ribs than men do. This argument had been often advanced as an explanation of the Biblical assertions. However, the emphasis must be put in this case on the tree symbol—on its origin and on the various implications which it contains. We know how the two tree symbols of the Sumerian ideogram for "sar" were combined together. The resulting scheme was interpreted as meaning 48. The six twigs on the left side of the tree meant 42 and the six twigs on the right side meant 6. The sum leads us to the most significant number 48 which occupies a place of honor in the "Genesis" and in Plato's "nuptial number" as well. It has, of course, a "nuptial" character. Two trees were combined

together into one single symbol of a tree having six twigs on each side.

The same number can be achieved, however, by means of an entirely different procedure, and that coincidence must have appeared particularly welcome to the ancient mind. Man usually has twelve pairs of ribs, i.e., altogether 24 ribs. Two men—man and woman together—have 48 ribs. Hence, the number 48 exemplifies a union between man and woman not only in terms of the Sumerian ideogram, but also in terms of certain anatomical characteristics of man. Moreover, the anatomical approach maintains the “nuptial” character of the resulting image. The ancient mind must have been extremely proud of all these findings.

In any case, the tree symbol could be well combined with that representing man’s own structure—his skeleton, “*revu*.” Hence, the legend concerning the creation of Eve could be inserted without prejudicing the initial content of the creation myth, which chiefly relied on the idea of a tree (or of a pair of trees). The idea of comparing man to a tree is almost universal. Correspondent metaphors are found everywhere. Regularity, beauty of structure, stature as such—all these characteristics facilitate a comparison between man and tree.

The term “*revu*” has, however, a very important additional implication. The skeleton, the ribs, the bones hold together man’s body. This idea of “binding together” has several expressions in the Bible and in *Lex Salica* as well. The human skeleton—Germ. *Gerippe*—is one of them. The peculiar union between the first male and the first female—by way of shaping a woman out of Adam’s rib—is another significant expression of the same idea. But we find a series of more sophisticated expressions of this idea, too,—in the “*Genesis*” and elsewhere.

In *Lex Salica* the glos “*revu*” seems to have been confused or at least connected with several etymologically unrelated roots.

We are facing here a tremendously complicated problem. “*Revu*” had been merged with the term and concept “*rebus*” (*reipus*; cf. Goth. *raip*—string, bond) and with its Slavic and Mediaeval-Latin equivalents—*very*, *vertibolum* (same meaning). The fact of “holding” or “binding together” must have provoked this confusion. All these terms contain a quite similar idea. The

existence of a cellular term, on which the interpretation of the mediaeval jurists were based, must be supposed. Even the material which served to bind together various things (animals killed by a lucky hunter, etc.) was embraced by this cellular term, because the normal binding-means consisted of the branches of various kinds of trees. The branches of a willow (Lat. *salix*, Slav. *verba* or *tal*; cf. the long series of terms in the vocabulary of different Indo-German nations which are based on the root "tal") were a very appropriate material. Hence, the willow tree, as well as the palm tree, were both commonly used symbols of agreement, union, and peace. These interrelationships may explain and justify the fact that the Salic Law confounds such terms as "revu" (cf. Grm. *Gerippe*—skeleton, *Rippe*—rib), "rebus" (cf. Goth. *raip*—rope, string, bond, Grm. *Reif*), "reffare" (also "riffare"—to pluck, to rape), "verv'" (Slav. *verv'* designates rope, a string, a bond, a union), *vertibolum* (a Latin translation of Grm. *Reif* and Slav. *verv'*), and even Lat. *verbum* (binding word). Sometimes, a parallel root "si" is used in a quite analogous meaning (cf. Grm. *Seil*—rope, string). Are these "confusions" due to a false interpretation of the various terms? May we assume a common origin of these terms which we are now incapable to reconstruct? Is it a technical means of interpreting certain terms which had to be preserved, despite the fact that their meaning had to be changed and accommodated to the newly arising legal situations? All three suppositions seem to be acceptable and combinable. The technical element seems, however, to have played the main rôle—as far as the Salic Law and the later Slavic codes are concerned. The situation which we find in the Bible is quite analogous.

We found the cell "rebu" in several names—*Reu*, *Reumaah*, *Rebeka*, etc. It is typical of mediaeval and ancient texts that the phonetic shape of an important initial cellular term is preserved, though the term has changed its original place and appears in an entirely new meaning (false etymology). A synonym usually replaces the cellular term there where it used to stay before. Thus, a cellular term was divided in two as if it were a nut. Since we have found the "shape" or "revu," let us now try to find its real logical content—its "kernel" or substance.

The "Genesis" already contains a series of interpretations of the

initial content of the cell "revu." We found the notion of a "skeleton," of "Adam's "rib," of Adam's "union" with Eve, of the nuptial "bond" which connected two "trees," two "skeletons," two human beings. The presence of the idea of a "bond" is furthermore stressed by the name of Adam and Eve's son, Seth. The name "Seth" is very close to Ind. "setu"—bond, union. The same root appears later in "Shern" (Sem, Sim). It is, of course, a parallel-root to "revu" which might be reduced to the root "si." The "plucking" of an apple by Eve may, too, be connected with "revu"-reffare (reffare—to pluck; even the notion of a "ripe" fruit seems to be involved), inasmuch as this procedure of plucking is—in another version of the same operation—identified to the taking away of one of Adam's "ribs." The terms "reffare" (I choose the Latinized Salic equivalent of "plucking") and "revu" (rib) occupy one and the same place in both versions.

The cell "revu" reappears in other contexts, too. Particularly interesting is the story concerning Rebekah's betrothal. The name "Rebekah" itself contains the cell "revu" (here in the sense of Sal. "reb-us"—bond). The theme of marriage is a distant echo of the initial theme of the union between Adam and Eve. In fact, we find several traces of a very interesting interpretation of "revu" in Genesis XXIV, 47-67. Abram's servant who had been charged to find a wife for his son, Isaac (esago), "put the ring on her (Rebekah's) nose and the bracelets on her hands . . ." "then he took out jewels of silver, jewels of gold, and garments, which he gave to Rebekah; he also presented costly gifts to her brother and her mother . . ."

All these manipulations correspond to the technical meaning of the term "rebus" (Goth. raip) in Lex Salica. The idea of a "bond," of a "union" had to be expressed symbolically by means of putting a ring, bracelets, etc. The German antiquity has upheld this ceremony up to a relatively late date—partly, up to our time. The Salic term "rebus" implied donation to relatives, too (cf. the "gifts" mentioned in Genesis). Is that a mere analogy in customs between nations which had no cultural connection whatsoever? I do not think so. The term "Reb-ekah" dictates a more careful attitude toward the hypothesis of an Indo-German background of the Biblical legends. It is hardly possible to speak here of any

vague parallelisms. The interrelationships are too precise in order to be purely analogical. A genetic connection seems probable—even certain.

The relatives—members of an ancient “family”—formed themselves a “union,” a “rebus,” “verv’.” An ancient term often covered a series of elements which from our modern viewpoint are in no sense related to each other. But the symbolic logic had its own ways of embracing concepts and situations. One and the same term was applied to a “whole” and to its individual elements. It was concrete and abstract at the same time. It was a key word which had to embrace a compound of facts, things, persons and symbols.

The presence of “revu” might be also found in Genesis IV, 13-16. Cain said to the Eternal, “My punishment is more than I can bear. You are expelling me from the country, banishing me from your sight; I must go stumbling and straying over the earth, and anyone who catches me will kill me.” In Lex Salica such a man was called “wargus.” “So the Eternal said to him (Cain), ‘Well then, whoever kills Cain, seven times over shall the murder be avenged’; and the Eternal set a mark on Cain, to prevent anyone from catching and killing him. Then Cain left the presence of the Eternal to stay in Nod (Wanderland), east of Eden.”

The text does not reveal to us what mark the Eternal had set on Cain. One might suppose that here, too, the cellular term “revu”-“rebus” contains the lacking explanation. In fact, a murderer, in order to save his life, was obliged to put bracelets made of willow-branches on his neck, both shoulders, both hands and both legs. Thus, he became inattackable and had time to pay out his “wer” (criminal fine for murder). Let us remember the bracelets mentioned in connection with Isaac’s bride, Rebekah. The cellular term corresponds in both cases to quite analogous symbols. The central idea is that of “obligation” (Lat. obligare—to bind). The number of bracelets of a murderer seems to justify the phrase: “Well then, whoever kills Cain, seven times over shall the murder be avenged.” In fact, he had to wear altogether seven bracelets. This number “seven” is given in the number of “ribs” or “branches” of which we spoke in connection with the creation

of Eve. One clearly sees here the way by which the ancient mind came to its astounding assumptions.

The term "Cain" presumably is a crossing of several unrelated words. It seems to me that the initial term contained the idea of a "germ" (cf. Grm. "Keim"). I see an indirect confirmation of this guess in the fact that Cain's brother, Abel, was killed by his older brother. The idea of an unsuccessful creation of man is echoed in the theme of the deluge. Presumably, Cain was originally the only son of Adam and Eve (cf. the birth of Seth). This personage was later split in two, instead of being declared to have died when Adam and Eve were still alive (cf. Gen. XI, 28: "Haran died during the life-time of his father"; that seems to be an echo of an initial early death of the first son of Adam and Eve). The episode of murder served to inaugurate an important rule on the ceremony by which a murderer—a wargus—could be protected from being killed by the relatives of the victim. The term "revu"—"rebus" contained the entire necessary material. "Nod"—the country in which Cain spent the rest of his life—may be confronted with the root of Grm. "Not"—need, necessity. That, of course, would be a very realistic definition of the life-conditions of a "marked" criminal.

Cain's "duplicate"—Abel—may be connected with Goth. afar—after, Ind. apara—the next. Gen. IV, 2, tells us *expressis verbis*: "Next she (Eve) bore his brother, Abel."

Since Cain is called a "farmer" (Gen. IV, 2), a crossing with a root which is related to Gr. ge—earth (cf. Goth. gauja—inhabitant, ga-wi—earth, Lat. Gaius) seems probable.

We have already discussed the name of Noah and that of his "son," Japheth. The problem of the term for God—Jahwe—is complicated by the fact that the Germanic term "ahwi" (cf. Grm. Aue—"Talgend am Wasser") might well have crossed an earlier Indic term. The worship of "Jahwe" can be better explained in connection with the peculiar fate of Abram who seems to have done miracles while expanding the new faith. In any case, "Jahwe" seems to have represented a water-deity comparable to the Scandinavian God, Aegir. The term Aegir is, too, etymologically related to "ahwi" (cf. also Lat. aqua). The Babylonian water-deity Ea, belongs to the same terminological family. The

creation-myth starts with the assumption that "the spirit of God was hovering over the waters" (Gen. I, 2-3). The creation of animals started with "sea-monsters" (Gen. I, 20-21). In God's "spirit" we easily recognize the later "Adam" (spirit, breath), whereas the concept of "water" presupposes a long conceptual line—water, irrigation, knowledge, truth, art, etc. Let us now turn our attention to "Abram" and to his wife, "Sarah."

The term "Abram" had been later changed into "Abraham"—Manyfather. Its original spelling—Abram—seems to contain a precious linguistic hint. The term "Abram" might be connected with the root "arb" (cf. Goth. arbja, Germ. Erbe—heir, successor, follower). The order of sounds is, of course, changed (methatesis), but we find a term "arba" in Genesis XXIII, 2: "Sarah died at Kirjath-arba (that is Hebron) . . ." Sarah was Abram's wife. The term "arba" appears therefore in connection with Abram.

In fact, the Bible speaks constantly of "succession," "heritage," "division of goods," etc., in all parts of the tale concerning "Abram." Thus, Abram receives from the Eternal the Land of Canaan—the country promised by God, God's "heritage." Genesis XII explains how the Eternal induced Abram to leave his kindred, his father's house, for the land of Canaan (Gen. XII, 1-4). Abram passed on through the land as far as the oracular oak at the shrine of Shechem. The Canaanites still occupied the country, but the Eternal appeared to Abram and said: "I give this land to your descendants" (Gen. XII, 6-7). In Genesis XIII occurs the division of land between Abram and his nephew Lot (order). Genesis XIV, 13-24, tells us about Abram "recovering all the possessions," lost by Lot after the battle of the nine kings. Genesis XV, again, repeats God's decision to give land to Abram's descendants (XV, 18-21). The same theme reappears in Genesis XVII, where "descendants" are mentioned in various contexts, and in XX, 17. In Genesis XXVI, 5, Abram is praised by the Eternal for having obeyed God's word and done duty to Him, following God's orders, rules and regulations.

Interesting is the connection between "Abram" and "Mamre." We know that the latter term is Germanic (cf. the Latinized word "mallare" in *Lex Salica*; the "Malmberg-gloses" are legal formulas—sanctions). The word "Mamre" appears many times

In Genesis XIII it is said that "Abram moved his tent and went to live beside Mamre's oaks at Hebron, where he built an altar to the Eternal." In Genesis XIV, 13 "Mamre" becomes suddenly a man's name ("Mamre the Amorite"). In Genesis XIV, 24, the same "Mamre" is called Abram's comrade—together with Aner and Eshcol. In Genesis XVIII, 1-2, we find "Mamre-oaks" which in a previous context had been fantastically interpreted as oaks belonging to Mamre, the Amorite. In Genesis XXIII "Mamre" is the name of a town, Hebron.

It is extremely interesting to follow the different manifestations of the peculiar art of interpreting cellular terms which the ancient thinkers had developed in such an early epoch. The mediaeval "jurists" were using quite similar "logical" weapons. In all preceding quotations and references "Abram" appears as Jahwe's heir, follower, substitute, true servant, who carefully maintained all laws, rules, regulations, imposed by the Eternal. The association of the terms "Abram," "arba," "Mamre," "Lot" (order), "Isaac" (esago—judge) and various thematic developments of the theme of "succession," etc., seem altogether to favor the idea of a non-Semitic origin of this hero of the "Genesis." Let us also remind the "oaks" under whose branches the German and Celtic "truth-sayers" usually made their prophecies and decisions. Farbridge thinks that "Abram's" chief activity consisted in the introduction of a new religion (the worship of Jahwe). It seems to be that "Abram" was primarily a successful military hero—a conqueror and defender ("defensor pacis"), but altogether an efficient propagator of a new (monotheistic?) worship. He was a real "Kulturträger" (cf. the permanent establishment of "altars," etc.). We will come back to this question in connection with the name of "Sarah."

The term "Abram" contains a fascinating linguistic problem. Is it possible to connect with "Abram" the Latin word "arbor" (arbos) which has no definite etymology? In fact, the notion of a "tree" (arbor) constitutes a chief theme of the "Genesis." Not only trees as such, but also various forms of utilizing trees, wood, are described in the Bible (cf. the "fence" surrounding the Eden, the "leaves" of a tree covering the sexual parts of man's body, Noah's "barge" and other constructions—a house, a wooden altar,

etc.). The "planting" of trees—an important part of any irrigation-policy—seems also to belong to the thematic implications of the "Genesis." It seems quite reasonable to connect the term "Abram" (Goth-*arbja*—heir, successor) with Lat. "*arbos*." The latter term seems to have embraced not only "trees" as such, but various "parts" of trees as well. Gaius, a well known Roman lawyer of the II Century A. D., tells us that the ritual legal term "*arbos*" had to be used even then, when the suit is dealt with "branches" (*vites*). Should we assume that the term "Abram" embraced "trees" as well as various constructions made of wood? The connection between "Abram" and Lat. "*arbos*" would in this case become quite understandable. The "successor," heir, would inherit the "wooden possessions" of his ancestor—the planted trees, his boat, his ark and his arrows (one of Abram's sons became an "archer"), his "house" (mentioned in connection with "Abram"), his "altar" ("Abram" was constantly planting altars using, probably, oaks for these constructions, the construction of altars made of stone is ascribed to Jacob), his carriage, etc. This custom—and the correspondent terminology—might well be rooted in the farthest past of the Indoeuropean humanity, when man was living on trees and placing his "house" on the branches of a tree (of an oak?).

If it is possible to connect the term "Abram" with Lat. "*arbos*"—tree, then the name of Abram's father, Terah, could be eventually connected with Lat. "*terra*"—earth, ground. What was that language which we find in the Biblical names? It was, presumably, a "Proto-Indoeuropean" language which seems to differ from the artificially reconstructed "Indo-European," but nevertheless approaches the latter very closely. We thus get access to important ritual—religious and legal—terms of a series of Indo-German nations. *Lex Salica* and the pre-classified Roman legal terms—*jus vetus*—seem both to complete the vocabulary of the "Genesis." It is hard to attack these problems from a purely linguistic viewpoint. We are facing here the same difficulties as in the Salic Law, where a so-called etymological analysis of a term does not produce any result. The terms are too distorted in order to permit a clear linguistic insight. One has, in fact, to study "cultural crossings" which were complicated by a conscious

use of "false etymology" on the part of the commentators. Jacob Grimm knew that when he wrote his famous preface to *Lex Salica* (Merkel's edition). To what epoch does this "Proto-Indoeuropean" actually belong? Presumably, to the third millennium B. C. Hammurabi's code may already contain Indo-German legal material (cf. the responsibility of the inhabitants of a village, situated near a high-way, in the case of murder; this norm is found in *Lex Salica*, in the Statute of Polica, in Jaroslav's *Pravda*), which future investigators will have to extract in order to reconstruct the institutional dynamics of that period. In fact, the water-ordeal which is mentioned in Hammurabi's code also seems to suggest Indo-German influence. "Truth" can be determined with the help of "water" only, if one assumes that the concept of "truth," "justice," is in any form connected with "water." Of course, the concept of the Babylonian water-deity, Ea, suggests such a possibility. But is this water-deity itself not borrowed by the Semites from their cultural antecedents? That seems to be so.

Some other terms—Milkah (cf. Grm. Milch—milk) Eshcol (Grm. Esel—ass)—sound very Germanic, though the latter term occurs in many other languages, too. Let us now devote some attention to "Abram's" wife, Sarai or Sarah.

The term "Sarah" is a tremendously complicated crossing. The fact that Sarah was the wife of an Indo-German (or Celtic) hero, "Abram," suggests that she, too, may well have belonged to the same race. However, it is almost certain that her name embraces the Indic term "sa" (wisdom, fence, serpent), the ideogram "sar" (garden) and, moreover, some phonetically close Semitic roots. Let us apply the same procedure as in the case of Lot, Abram, etc.

Sarah appears in a somewhat surprising association. Thus, Genesis XVII, 10-17 tells us of a compact between Jahwe and Abram, the heir, and the visible mark of this compact had to be the custom of circumcising "every male," "from generation to generation, . . ." "when he is eight days old" (octaval counting). Then God said to Abraham: "As for your wife Sarai, you are not to call her Sarai, but Sarah (princess). I will bless her, and give you a son from her," etc. In Genesis XXI, Sarah again is mentioned in connection with the circumcision of Sarah's son, Isaac (esago). Finally, Sarah died at Kirjath-arba. I am

inclined to connect the term "Kirjath" with the root "kra" which we have already discussed in a previous context ("krathuf"). All in all, the term "Sarah" seems to imply the idea of "cutting," "circumcizing," "chiselling." This supposition may find an indirect confirmation in the fact that the term "Sarah" can be considered as a part of the term "ashera"—altar. This "altar," as we saw it earlier, was presumably made of wood (oak?). The construction presupposes the "cutting" of a tree, the "chiselling" of a sacred inscription, etc. Is there any Indo-German root "sar"? Of course, an ancestor-term of Grm. Schere (cisors; originally "a part," "a cut," "a piece") would well correspond to this nuance of the "cell" Sarah. Whether "Sarah" could be eventually connected with Grm. Schar (troop) is not so certain, but also possible, since "Shere" and "Schar" are cognates. Then we would easily understand Abram's preregrinations, the temporary lending of "Sarah" (of the Troop) to the Egyptian Pharaoh, etc. Moreover, the fact that "Sarah" was barren up to a very late age might well have meant that Abram's followers had their hands "empty" and were anxious to start a military expedition in order to fill up their hands and pockets: ". . . Let my comrades," Abram said (Gen. XIV, 24), "let Aner, Eshcol, and Mamre, have their share (!) of the spoil . . ." "Nothing for me—except what the troops have eaten." Of course, there seem to exist serious difficulties, as far as we try to assume an "etymological relationship between "Sarah" and the ancestor-terms for "Schar" or "Schere" (scar—; the sound "c" is absent in "Sarah"). But a phonetic closeness encouraging such an interpretation, which would have been mainly based on "false etymology," is quite admissible.

A possible connection between the term "Sarah" and "circumcision" is indirectly confirmed by the analogy with the legend concerning the creation of Eve. The circumcized "flesh of the foreskin" reminds us of the cellular concept "revu"—"rebus" which we found reflected in the episode on the cutting out of one of Adam's "ribs." "Circumcision" as such might well correspond to one of the possible meanings of "reb-us" (ring-form; cf. also the idea of a "compact" between Jahwe and Adam symbolized by the act of circumcision). The term itself—the phonetic shape of "reb-us"—has, of course, to be sought elsewhere. I think that

this "shape" is contained in the name of "Rebekah" who became the wife of Abram's son, Isaac (Isaac himself is almost a direct "consequence" of the "compact" concerning the rite of circumcision). It is interesting to notice that Rebekah was chosen by one of Abram's servants and not by Isaac himself. That illustrates the initial terminological association between Abram "reb-us," the compact idea, circumcision, "Sarah," etc.

A last question is that concerning the "Hittites" in whose region "Abram" allegedly was dwelling. In Genesis XIV, 13, Abram is called "Abram the Hebrew." In Genesis XV, 19-21, Abram and his descendants receive a vast region from the Eternal—"from the river of Egypt to the great Euphrates river—Kenites, Kenizzites, Kadmonites, Hittites, Prizzites, Titans, Amorites," etc. In Genesis XXIII, 1 ff., is described Abram's transaction with "Ephron the Hittite" and other Hittites concerning a "cave" in which Sarah had to be buried. She died, as we know, in "Kirjath-arba." Abram says of himself that he is a "foreigner, residing among you" (the Hittites). Probably, these passages induced the Hebrew to consider Abram as their direct ancestor. This assumption seems, however, to be based on an error. We know that the term "Abram" is presumably non-Semitic. Even the opposition between Abram and the Hittites seems doubtful, though Abram might well have been a "new-comer" belonging to a different non-Semitic tribe. The Hittites mentioned in the Bible were undoubtedly of Indo-German origin. The term "Mamre," which occurs in this context several times, seems to favor this supposition. However, a far more convincing evidence may be found in Genesis XIV, i.e., in the place where Abram is *expressis verbis* declared to be a "Hebrew."

Genesis XIV tells us the story of a war between altogether nine kings: "Out marched the king of Sodom, the king of Gomorrah, the king of Admah, the king of Zeboiim, and the king of Bela . . . facing Kedorlaomer (cf. Celt. "cador"—warrior) king of Elam, Tidal king of the Gutti (Goths?), Amraphel king of Shinar, and Arioch king of Ellasar—four kings against five . . . The four kings captured all the possessions and all the provisions of Sodom and Gomorrah and went away . . ." These events are probably rooted in history. They explain the theological version of the

destruction of the wicked cities, Sodom and Gomorrah, which we have discussed in an earlier context. Now follows a phantastic interpretation of these events in which the chief part is ascribed to Abram. The four kings "also carried off Lot, the son of Abram's kinsman, who lived in Sodom, and his possessions" (XIV, 12). Of course, they had to do so, because "Lot" was supposed to live in Sodom (Gen. XIII, 13). He could not be forgotten. Moreover, the "carrying off" of "Lot" symbolized the devastation of Sodom and Gomorrah.

What did Abram, the "Hebrew"? He allegedly attacked the four victorious kings, defeated them and "recovered all possessions, and also recovered Lot his kinsman ('nephew') with his possessions" (XIV, 14-17). The number of Abram's "followers"—318—is symbolic: an octavalization of this number leads us to the number 40, the numerical symbol for "Ea"—truth justice. Soon afterwards Sodom and Gomorrah were destroyed by a sulphur- and fire-rain sent by the Eternal. The entire context becomes understandable, if one assumes that Abram is here doubling the "four kings" who destroyed the two wicked towns. He himself destroyed them following God's will. We will see later that Abram's activity was almost "automatic." Thus, the punishment of Sodom and Gomorrah has three different versions: an invasion of the four kings ("four" is a sacred number; cf. the sign of the cross and the Gothic "tetrad"—particularly the word "lathu"—Lot), Abram's personal intervention, a sulphur- and fire-rain sent by Jahwe. We are more or less compelled to identify Abram with the four kings. It is impossible to assume that Abram was fighting against them. Hence, Abram is to be sought in the ranks of "Laomer," the warrior ("cador"), Tidal, the "Gut" (Goth?). He is practically doubling them. The parallelism between the various versions is moreover illustrated by the fact that the population of Sodom and Gomorrah "fled to the hills" in Genesis XIV, as later did "Lot" in Genesis XIX.

Abram is clearly associated with Indoeuropean chieftains. I am therefore inclined to interpret all these passages as a striking confirmation of an Indo-German—presumably, of a Gothic, Celtic or Hittite—origin of Abram. We find here a Celto-Gotho-Hittite alliance which later has been reinterpreted in terms of Abram's

“Hebraism” and of Jahwe’s personal intervention (cf. the sulphur- and fire-rain). The background of Genesis XIV seems to be utterly historical (cf. the later confrontation of “Abram” and “abracadabra”).

How would we explain the well known statement (Gen. II, 23) : “This, this at last, is bone of my bones, and flesh of my own flesh : this shall be called Wo-man, for from man was she taken”? The “bone” and the “flesh” illustrate perfectly well our assumptions concerning Adam’s “rib” and Abram’s “circumcision.” Phonetically, the solution may be found in the relationship between the names of “Jahowa” (Jahwe; the form “Jahowa” is ascribed to the influence of the other—Biblical name for God—Adonai; the ending “ai” might have influenced the initial version of Sarah’s name—Sarai), and Eva (Hebrew “ewwa” or “hewwa”), of Adam and Ada(h) (that seems to be an artificial construction based on Gen. II, 23), of “ashera” (altar; the building of “altars” was a chief activity of Abram), of Abram (cf. the form “arba-(m)” in the compound word “Kirjath-arba”—the place of Sarah’s death) and “Reb(v)” —(cf. the name “Reb-ekah”; —ekah—Grm. Eiche—oak?).

It is in no sense surprising that the Hebrews took over a series of ancient Indo-German names. We are nowadays doing exactly the same in using Greek, Roman and Biblical names, instead of “native” names. Who ever had the singular pleasure of meeting an “Attelstan”? On the other hand, each of us had certainly the occasion to face several dozens of Georges (Gr. georgos—farmer), a couple of Abra(ha)ms, and, occasionally, a modest, though Roman-sounding Caesar.

Doubtless, the Indo-German terms which we have discussed in the previous context did not remain intact. They were mixed up—more or less consciously—with phonetically close Semitic roots. Hence, every Biblical name is a “cultural compound”—a product of confusion, false etymology, imagination. That observation seems to be applicable to all above discussed terms. Particularly complicated is the case of “Sarai” or “Sarah.” Arabic “shari” or “shar” (Turk. Sheriat or Sheri) leads us to the concept of “Islamic Law”—a connection which is in no sense surprising, if one takes into consideration the ritual elements of the

Biblical legend on "Sarah" (circumcision; water-ordeal; a direct connection with the ideogram "sar"—garden; "rules and regulations" observed by Abram who therefore was called Jahwe's true servant, etc.). Moreover, the term "Sheriat el Kebire" was applied by the Arabs to the river Jordan which is explicitly mentioned in the "Genesis" in connection with Abram, Sarah and Lot. "Sheriat" means here a "water-trough"—a reservoir of water (Sheriat el Kebire—the great water-trough). In order to understand the innumerable implications which the Biblical authors (and commentators) succeeded in investing into the initial content of the saga, the Semitic element must, of course, be studied very carefully. To us, however, the utterly neglected Indoeuropean element appears to be far more important. It is more ancient, and it is practically preceded only by the Indic element (cf. the cell "sa," the term "nauh," etc.). The more ancient form "Sarai" might well have contained the geographic name "Ai" ("sar" plus "Ai") mentioned in Genesis XII, 8; Abram "built an altar on the spot to the Eternal who had appeared to him; then he moved on to the hill east of Bethel on the west and Ai on the east," etc.

It is interesting to notice that the peculiar "linguistic" technique of the Biblical authors has distant echoes in some of the products of the later mediaeval mind. One should not be surprised to find that the term "rebus" could have been influenced by the peculiar "meaningfulness" of the correspondent term in the "Genesis" and in the Old-German ritual vocabulary (cf. the Salic Law) as well. It is striking that the term "rebus" appears on armours, shields, book-titles, etc. The predominant conception attributes the origin of the term "rebus" to the inventiveness of the mediaeval youth which found pleasure in composing humoristic riddles concerning curious or spectacular events under the general designation "de rebus quae geruntur" (on things which are going on). These riddles—"daily history"—were a part of the enjoyments on carnivals—particularly in Picardie, around the year 1600. A "rebus" is usually composed of pictures, signs, with or without the introduction of letters, syllables, numbers. The whole forms a curious "mixtum compositum" which presupposes a lot of perspicacity on the part of the person who would like to solve a "rebus." Symbols—the chief weapons of the ancient and mediae-

val mind—are presented here in terms of a coherent whole (a sentence, a brief report on certain events, etc.). That seems to justify the term “rebus” (cf. Goth. raip, Grm. Reif—string, rope) which the medieval scholastic youth has connected—wrongly or intentionally—with the Latin word “res” (thing). The carnival theme connects “rebus” with the Biblical tradition, whereas the appearance of the same term on armours and shields seems to exemplify its direct connection with the ritual and legal vocabulary of the Germans (Franks, etc.).

Very suggestive seems to be the famous magic formula called “abracadabra” which allegedly originated from the term “abraxas.” The term “abracadabra” is old. It is found in a source of the III Century A. D., but this fact does not disclose to us either the origin or the meaning of the curious name.

Abracadabra seems to be, first of all, a magic formula which was supposed to protect man against illness. Hence, we find this term on talismans, amulettes, etc. Moreover, abracadabra contains a mathematical idea. It is, in fact, a vivid expression of “permutation” as such (ab, ac, ad). This idea has an additional nuance in what one may call “the witchcraft of letters”—Buchstabenzauber. The possibility of manipulating letters and, thus of producing curious effects was a phenomenon which seems to have played an important rôle in antiquity. These manipulations were an “art”—a “science”—which was utterly detached from any reality, but was nevertheless considered to have a certain influence on possible future events (illness, etc.). Of course, this belief was based on a vague feeling that all these detached symbols had been originally connected with the empirical world (cf. the history of the “lucky” number 7, of the “unlucky” number 13, etc.). It seems to me that a similar standard can be applied to the term “abracadabra.” Moreover, I am inclined to assume its Biblical origin, though this term might well be even much older than that.

We must first divide this term into three natural components—abra-cad-abra. The first and the third components are identical. Hence, we are, in fact, facing only two components—“abra” and “cad.” The idea which seems to embrace both parts—“abra” and “cad”—is that of “protection” (magic formula). This idea must

give us a key to the very origin of the two components. The task is in this case far from being difficult.

"Abra," of course, leads us directly to the correspondent Biblical term (Kirjath-arba; cf. Gen. XXIII, 2) which, according to our methodological premises, should belong to the cell "arba" (metathetical variant "abra"). This cell includes the term "arba," the name "Abram," the notion of a "tree" (cf. Lat. arbos) and of its parts (vites—branches), as well as certain constructions made of wood (a house, wooden weapons?). May we find here—in these Biblical implications—the idea of "protection"? It seems that this theme is expressed in the "Genesis" in a very conspicuous way. The Biblical hero, "Abram" (the ending—m might be analogical: cf. the name of "Adam" and the later form of the term "Abram"—Abraham, Manyfather), is God's heir, "successor" (cf. Goth. arbja—inherent, successor) and altogether the "father of many a nation" (Gen. XVII, 5), the guardian of true worship and of God's "rules and regulations" (Gen. XXVI, 5). Abram is "shielded" by God (Gen. XV, 1). He himself is shielding the regions which God gave to him and to his descendants. The entire legend is chiefly concerned with questions relevant to "succession" and "guardianship." Abram complains to God that "a slave born in (his) house will be heir to (him)." The Eternal promises that "a son of his" (Abram's) own body shall be heir to (him) (Gen. XV, 3-4). Then, Abram—the custodian in God's name of vast territories—exercises, in a very diligent way, his duties of an "heir," "father," "guardian," and "protector." He defeats the "four kings" who had ravaged the territory of Sodom, Gomorrah, etc. (Gen. XIV), frees his "nephew" Lot and, later, tries to obtain pardon from God, the Eternal Himself, from the two wicked cities. He acts as a real "protector" defending his subjects and their possessions against invasion and even against God's anger, and divine punishment (sulphur- and fire-rain).

Of course, this idea of "protection" has far deeper roots. A tree is a natural protection—probably the first which man knew (cf. the previous discussion of Skr. "sa"—fence, protections, etc.). It is quite understandable that a hero whose name is connected with the notion of a "tree," of wooden weapons (wooden swords, bows and arrows, etc.), became gradually developed into

the very idea of "protection," until the name itself was almost completely detached from its ideological basis and finally was transformed into an oddly sounding magic word—"abracadabra."

This supposition could be successfully defended, if it were possible to prove that the other component—"cad"—is also connected with Genesis XIV and with the same idea of "protection." I think that that can be done. In fact, we found a Celtic term "cador" in the name of one of the four kings who destroyed Sodom and Gomorrah. Cadorlaomer—Laomer, the "warrior,"—seems to belong to the Celtic stock (cf. also the tribe called "Cad-monites"). Another personage of the Bible—Aner, Abram's "ally" and "a kinsman of Mamre, the Amorite" (Gen. XIV, 13 and 24), is presumably also a Celt, though the word "aner" can be also Greek (aner—man). The name "Aner" is very close to "Anir"—to the name of the son of "king Arthur," "Arthur Cador"—Arthur, the warrior. The story of Anir, says Kemp Malone, "seems to be reminiscent of human sacrifice, and the place of Anir's tomb was perhaps originally a cult center, where such sacrifices took place. When it is said that Arthur killed and buried his own son, we may suppose that the god required the sacrifice of a human victim who had first been consecrated to him (and so was in some sort his embodiment or 'son')."

The story of "Anir" reminds us strongly of the unaccomplished human sacrifice described in Genesis XX. The victim—Isaac (esago, the judge)—was Abram's "son." This parallelism is simply striking, inasmuch as even some names or epithets—"Anir," "Cador"—seem to coincide in both sources—in the Bible and in the Arthurian legend. Moreover, the idea of "protection" is particularly strong in all versions of the Arthurian legend. Arthur appears as "defender of the border . . ." "as defender of the realm, as guardian of the border . . ." "as the keeper of the ford . . ." "he opposes the invader without hesitation . . ." "The Arthur of this episode, then, is to be explained as a god degraded (under the influence of Christianity) to an automatic, but still independent position as a supernatural defender of the border" (K. Malone, *The Historicity of Arthur*, *Journal of English and Germanic Philology*, October, 1924, p. 482). One might apply a similar standard to Abram (Gen. XIV) who allegedly protected

the region of Sodom against the four kings and defeated them with the help of his followers and allies. Abram is the protector of order—"defensor pacis."

Analogy, of course, is no "proof." But it seems plausible to assume that the Biblical material contains a certain amount of Indoeuropean mythology. The "degradation" of Arthur under the influence of Christianity is a distant echo of a similar degradation of Abram under the influence of a new Jahwe-worship. A former deity, thus, became in both cases a superhuman hero, whose actions were almost automatic and whose chief duty was that of protection, defense. It seems in no sense impossible to establish a direct connection between the Biblical "Abram" (arba, arbor) and the mediaeval "Arthur"—"Arthur Cador" (the warrior). We are facing here a "tree-deity"—a sacred tree which determined and "protected" the border or "boundary." The latter concept may be taken with all its possible direct and metaphorical implications (binding, obligation, rule, etc.). The emphasis is put on "protection." That, of course, is the earliest conception of a tree—protection from the most primitive forms of danger (wild animals, rain, etc.—cf. the "sulphur-rain" in Genesis). As to an eventual etymological relationship between "Abra-m" and "Arthur," I would not deny that such a construction—a priori—is quite thinkable. The Indoeuropean sound "b" is a well known etymological rebel which does not allow its inclusion into any narrow scheme. We face here the same problem as in Lat. *vibrare* and in many other words. The sound "b" might have evolved out of a "th"-sound (cf. the problem of the so-called unaspirated consonants in Indoeuropean; *vibrare* < *virth*—?), and the metathetical transformation of the word (arba—Abra-m) might well have facilitated the appearance of a revolting b-sound in the new term. Of course, in Lat., *arbos* (arbor) we have no metathesis.

It is interesting to notice that the mediaeval glossators of Nennius' "Historia Brittonum" (the earliest source) connect the name "Arthur" with "arth"—bear, and with "arth"—hammer. "The provenience of 'arth' . . . remains uncertain," says K. Malone (o.c., p. 464). In fact, both terms seem to represent a very early form of the same b-ized root which we found in "Arbra-m" (arba) and "arbos" (arbor). A "hammer" is semantically very

close to a "tree" (wooden instrument). "Arth"—bear might be, too, connected with the notion of a "tree." The bear is, in fact, one of the few wild animals which is able to climb a tree. That made him particularly dangerous and efficient in times when "trees" were the chief refuge—and a chief domicile—of primitive man. We find very often metaphors comparing a robust and efficient "warrior" to a "bear." "Arth"—bear seems to be quite connectable—from the semantic viewpoint—with the concept of a "tree." The mediaeval "etymologists" might well have had a vague intuition of the genetic problems involved by the later developments of the initial cell "arth." A connection with Lat. "ars" (Gen. artis; ars—art), though suggestive, seems nevertheless to be doubtful. Of course, numerous crossings make the etymological study of ancient "technical" terms particularly difficult.

Let us now turn back to "abracadabra." It seems likely that this almost humoristic term is a distortion of a prayer addressed to the tree-deity "Arba"—"Abra"—"Abra-m." "Arba" (I choose this form, because it is particularly close to Goth. arbja—heir, successor, protector; this meaning of "Abram" is well illustrated in Genesis) followed by the epithet—"cador"—the warrior leads us directly to "abra-cador-abra" and, thus, to the magic inscription "abracadabra." The word "cador" (cf. Lat. cavere) has many parallel forms—Cathov, Cado, Cato (cf. K. Malone, o.c., p. 483). Should they have facilitated the formation of the magic formula "abracadabra"? That may well be so.

Thus, we are facing tremendous difficulties in trying to revive the background of the Biblical names. However, the direction of the necessary research work seems to be clearly defined. We are induced to admit that Geoffrey of Monmouth was well entitled to connect the Arthurian legend with a racial conflict between Aryans and Semites. The same theme is given in Genesis XIV (Celts, Guths, possibly Hittites, were fighting against Semitic "kings"), though the "deity of protection"—Abram—is pictured as a Semitic warrior (Abram the Hebrew). This appropriation is quite understandable in terms of Malone's viewpoint (the "protecting deity" is acting "automatically"). Geoffrey refers to an "old book" which he has used for his work on Arthur. In the

light of the above-described parallelisms between "Abram" and "Arthur," Geoffrey's assertion becomes, at least, quite reasonable. He might well have known a source, in which the origin of the Arthurian saga was described in an unusual way—in a way, however, which was closer to historical truth than what one finds in any other known and approved source. Was it Geoffrey's own intuition? One can hardly admit that.

Our observations concerning "Abram" find a very curious confirmation in the well known "Prophetia Merlini" (cf. Geoffrey of Monmouth's *Historia Regum Britanniae*, Book VII; a "Commentary" on the *Prophetia Merlini* may be found in *Speculum*, October, 1940, published by Jacob Hammer). Since Dr. Hammer intends to write an explanatory treatise concerning this "Commentary," I am kept from going into any greater detail. Moreover, I am discussing this matter in a separate study on the origin and the development of the Arthurian legend, which I have started a year ago and which is still far from being completed. Nevertheless, we might well get acquainted with some of the problems relevant to the so-called "Prophecy."

"Arthur" appears at the very beginning of the "prophecy": "aper etenim Cornubiae, Arturus scilicet, ferus homo," etc. The "Cornish boar," Arthur, is called a "wild man" (ferus—wild). He reappears—in a quite different dress—in a later context: "Superveniet aper commercii, ferus homo . . ." Here, the chief qualifications have remained unchanged (aper—ferus homo), but the word "Cornubia" has been replaced by the word "commercium" (trade). The so-called "aper commercii" seems to represent "Arthur" after one of his predicted "revivals" or "resurrections" (this prediction is mentioned at the very first mentioning of Arthur's name in the "Prophetia Merlini"). Though we do not find Arthur's name in connection with "aper commercii," his "spiritual" presence is revealed by many details—by a series of most interesting linguistic and conceptual implications.

Let us first consider the Latin text: "Superveniet aper commercii, ferus homo ('ferus' is here used in a very curious sense—'bringing,' from Lat. *fero*—to bring; such a meaning is found in compound words as 'frugifer,' etc.; the idea of 'interpreting' the word 'ferus'—wild as 'fer-us'—bringing is quite typical

of the technique of the ancient and mediaeval commentators), *afferens commercia panis et obsonii et obsequii* ('afferens' confirms our previous remark; the word, however, has an additional ritual implication which will be discussed later), *qui dispersas greges per famem et mortalitatem ad amissa pascua, ad terram uberem factam, revocabit. Pectus eius propter prudentiam cibus erit egentibus sapientia et lingua eius propter eloquentiam sedabit ab inquietudine sitientes sapientiam. Ex ore ipsius in iudiciis proferendis procedent flumina, sapientia simul et doctrina, quae arentes hominum fauces, non habentes peritiam, rigabunt, mentes instruat. Exin super turrim Londoniarum quam Lud frater Cassibellani construxit, procreabitur arbor (arbor est regnum), quae tribus solummodo ramis contenta (ramus est particula regni) superficiem totius insulae, non enim amplius habebit quamquam versum, latitudine foliorum (folia sunt munitiones castrorum), obumbrabit, occupabit regnum. Huic adversarius Boreas, velut a Scithia populus Borealis, superveniet atque iniquo flatu suo, violento impetu incursionis, tertium illi ramum, id est tertiam partem regni, eripiet; duo vero residui, id est duae partes quae remanebunt, locum extirpati rami occupabunt, ne possit prevalere . . . In diebus illis ardebunt quercus per nemora, robustae arbores, id est homines igni deputabuntur . . ."* (cf. Hammer, o.c., p. 414, 420-21).

The translation of this passage does not present any particular difficulties. "There will suddenly arrive a 'boar of trade,' a bringing (wild) man who will bring the trade of bread and of cereals and of service (slaves?) and who will call back the herds, which were dispersed by hunger and decay, to the abandoned pastures, to the soil rendered fruit-bringing. His chest, because of its wisdom, will serve as nurture to those who desire knowledge and his speech, because of its eloquence, will appease (and free) from anxiety those who thirst for knowledge. From his mouth, in the judicial decisions which he will pronounce, will proceed rivers, knowledge and doctrine altogether, which will provide with water the thirsty throats of men, which have no experience, and will instruct the minds. Then, over the tower of London which Lud, the brother of Cassibellanus has constructed, will grow up a tree (the tree means kingdom), which will have only three branches

(a branch is a part of the kingdom) and will (nevertheless) cover with its shadow the surface of the entire island—it will, however, not have more than what it covers (versum from 'verro')—by the breadth of the leaves, and will occupy the kingdom. His adversary, Boreas, e.g., (?) from Scythia the Borean people, will then suddenly come and will tear off, by his unequal blow, by the violent impetus of the invasion, the third branch, i.e., the third part of the kingdom; the remaining two, however, i.e., the two parts which will remain, will occupy the place of the branch which had been plucked away, in order to prevent it from prevailing over the other two branches . . . In those days will burn the oaks in the groves, strong trees, i.e., men will be circumcized (?) by fire."

"Prophetia Merlini" is a document of much importance. Let us briefly analyze its terminology as well as its content.

The oldest sheet is "Biblical," but altogether non- and pre-Semitic. The cell "arb" (arp-arth-ard) seems to dominate the entire context. In fact, we find here the name "Arturus" (revealed by the qualifications "aper" and "homo ferus") together with the term "arbor" (tree), with the notion of an "oak" (quercus, etc.), with the idea of "protection" (poetically expressed in the allegory of leaves covering the entire territory of the island-kingdom), with the idea of "defense" (against a Nordic invader), and, finally, with terms which seem all to be amazingly close to the main cell (aper—boar, ardebunt—will burn, arentes—thirsty). Furthermore, "arb" in the sense of "arbja" (heir, successor) seems to be reflected in the verb "superveniet" and in the idea of Arthur's "resurrection" as well. We find here, seemingly, all meanings of the cell "arb-abr" which are contained in the Biblical story on "Abram"—the heir and protector. New is the connection with "aper"—boar. But this connection, too, is far from surprising.

The cell "abr" is, as we know, a complicated crossing of several etymologically unrelated roots. It is a knot of concepts, formed with the help of bold phonetic and quasi-logical affiliations. Hence, it is quite understandable that the cell "abr" could be connected with a root "apr," which we find in Lat. aper—boar. There are many derivations from this root, e.g., the name "Apra," etc.

Kemp Malone was the first to recognize the existence of a striking analogy between the Arthurian saga (Arthur is said to have sacrificed his son) and the Biblical legend on Abram and Isaac. He thought, however, that the "Genesis" had influenced the later mediaeval "myth-makers." The opposite view, however, has to be assumed. The Biblical material contains certain themes of the farthest Indoeuropean past, in which the god (later, the hero) "Abra" seems to have played an outstanding rôle. Malone connects Arthur's surname—*aper-boar*—with the theme of sacrifice. That may well be so. But the real root of this theme—and hence of the linguistic confusion "*abra-apra-arba*"—is to be sought in the "Genesis" itself. In fact, a "wild boar" (*aper*; cf. the adjective "*ferus*"—wild, connected with *aper*—"aper . . . homo ferus") seems to have been considered as an important deity by the Romans and by the Celts as well. The totemistic implications of this worship are expressed in the theme of "sacrifice." They even are reflected in the idea of a "human" sacrifice (cf. the expression "*aper . . . homo ferus*"; cf. the theme of Abram and Arthur both sacrificing their sons, as Malone rightly points out in his article on "The Historicity of Arthur"). But what right have we to assume that this peculiar constellation of the legend is present in the Bible?

The answer is not difficult. The "Prophecy of Merlin" is utterly relying on the material of "Genesis." It is a curious synoptical survey of the events described in "Genesis."

In fact, the "*aper commercii*" is a boar *sui generis*. First of all, it is a "man"—*homo*, and even a "bringing" man (*homo ferus*). He brings various kinds of nurture—material and spiritual goods. The term "*afferens*" seems to imply the notion of "*aqua arferia*"—sacred water. I am inclined to include the term "*afferens*" into the dominating cell "*arb.*" The connection with water seems to be confirmed by the mentioning of "*flumina*"—rivers. In a later context three "sources" (*fontes*) are mentioned, too. The term "*aqua arferia*" is ancient, and its etymology is uncertain. Usually the term is brought in connection with "*ad-ferre*"—to bring, as it is also done here, in Merlin's "Prophecy." This "water" was used for sacrifices. Does it designate "blood"—the blood of the victim? That may well be so (cf. *Gr. arteria*—one of the muscu-

lar tubular vessels which convey blood away from the heart). That meaning seems to be stressed by the term "pectus" (chest) in the next following passage.

Thus we come to the chief cell "arb—apr—art—arth," which dominates the conceptual implications of this part of the "Prophecy" (cf. also the term "artes," and even "Arabi," which both are here connected with the original cell). Of course, I do not suggest that all these elaborations are found in "Genesis." Only few of them ("Abram," arba, arbor, probably also "aper" and "artes") are Biblical. Many others (e.g., "ursus"—bear suggests a Celtic "arth"—bear) are due to the skill of mediaeval commentators, who were applying the ancient technique to the material on which they were working. Their "sapientia et doctrina" had very ancient roots. Moreover, in this case, they were following the actual way of cultural history. A connection of these legends with the cultus of the Scythian deity Areus is also possible (the Prophecy mentions "Scythians"). Arthur's "knights" strongly remind me of the four dead knights who together with their dead horses, were placed around the hill on which sacrifices in honor of Areus were brought by the followers of his cultus. How much of this material had been added in later days and how much has to be attributed to the pre-Semitic layer of "Genesis"—this question cannot be decided in this context.

"Aper commercii" is a "bringing man" (homo ferus; cf. also the term "afferens" and the later term "signifer"; the "Prophecy" is full of such interpretations). What does he bring? Material goods and enlightenment. But the emphasis is put on order, appeasement (cf. "dispersas greges . . . revocabit"; also "terram uberem factam" and "sedabit"). The linguistic shale of this concept appears in the well known Biblical form—"Lot" (here "Lud"). Particularly important, however, is the passage which starts with the word "pectus."

It is said that his "chest" will be the "nurture" of those who desire "knowledge." That reminds us of Adam's "ribs," which, as we know, were a primary source of "knowledge." Moreover, the Latin word "pectus" has some additional important nuances. "Pectus" designates the thorax as such and, altogether, the heart (cf. what was said in connection with "aqua arteria") and, hence,

the very "seat of the spirit," the seat of the "mind." We are approaching here the same elements which we found while discussing some implications of the name of Adam, the story concerning the creation of Eve (Eva—truth), etc. The direct meaning (Adam—breath, spirit) is reflected by the word "flatus" (blowing), which occurs in a later passage ("iniquo flatu suo"). Obviously, an ancient theme of "sacrifice" is here connected with a detached, a spiritual, approach of the same subject. The chief theme, however, is that of "knowledge"—*prudentia, sapientia, doctrina*. Similar—very similar—is the situation pictured in "Genesis" (breath, ribs, sacrifice, knowledge, etc.). The so-called "iudicia proferenda" remind us strongly of the implications contained in the term "Isaac" (*esago*—judge, prophet, "truth-sayer"). In order to make the connection between "Genesis" and Merlin's "Prophecy" even more convincing, the commentary on Merlin's "Prophecy" speaks of "*sapientia simul et doctrina*" and connects them with the notion of "rivers" (cf. "arteries"—*aqua arferia*, etc.)—*flumina*. These rivers, of course, lead us directly to the "tree of knowledge" of Genesis. As we know, the Bible mentions "rivers," too, in connection with the "tree" (two trees—cf. the expression "*sapientia simul—altogether—et doctrina*") which is said to have been planted in the very center of the Eden.

The "arbor" of Merlin's prophecy seems also to be planted in the center of the "regnum" (cf. *arbor est regnum*)—in London, i.e., in the commercial center (cf. *aper commercii*) of the kingdom. Curiously enough, it is placed on the top of a "tower." This assumption, however, seems to be deeply motivated. London had a "tower"—first a Roman (or Anglo-Saxon) tower, which later was rebuilt by William the Conqueror (in 1078?). Moreover, a "tower" is mentioned in "Genesis," too. Merlin says that the "tower" of London was constructed by "Lud." That, of course, is a quite adequate use of the concept "Lot" (order, construction, etc.), as we found it in the Bible and in the Gothic term "lathu" as well. Thus, the "tower of Babylon" seems at once to be transplanted to London, and, moreover, it is now orned by a "tree"—the tree of knowledge.

The name "Lud" is, presumably, a crossing. A historical Welsh "Llud" might well have crossed the Biblical "Lot" and the

idea of "order" and "construction" as such. As to "Cassibelanus"—the brother of "Lud"—I am inclined to identify him with the Biblical "king Tidal"—"cad(or) Tidal," who allegedly was the chieftain of the "Guths" in the famous battle of the nine kings which ended with Abram's personal intervention (he freed his "nephew" Lot, etc.). As soon as "cad" (cf. the Arabian form "cadhi" and the Persian "casi"; a "cadhi" corresponds to a western "presbyter"; the title "cadhi" was adopted by Mohammed for the organization of his church; a non-Semitic origin of this term is probable—even certain) or "cad-Ti" was interpreted as "cassi-" (cf. Lat. *cassis*—"helmet," also "war"), the remaining syllable became, too, militarized (—bellanus from "bellum"—war).

Particularly interesting is the description of the "tree"—arbor. It has "three branches" and covers with its leaves the entire island. The idea of "protection" is here expressed with the greatest vigor. In the following passages, however,—and that is far more important—we find a direct confirmation of our chief assumption concerning the "tree of knowledge." We find it interpreted in the sense of a counting system. Merlin must have known the ancient esoteric conception of the "tree of knowledge."

In fact, the story concerning the "three branches" of the tree seems to contain and to express the same principle which we found out while describing the creation of the octaval counting system. It is said that "Boreas" (the Greeks applied this name to the "north-wind"; here, however, "Boreas" seems to have originated from the word "boar," which belongs to the conceptual cell "Arthur-aper-boar"; it may be, too, an emanation of the second part of the word "arbor": "ar-bor," and then "-bor" "-Boreas"; a similar connection may be seen in "Arturus": first ar-turus, then "turus"—"turris"—tower; these additional linguistic interpretations seem to have played a very considerable rôle in the development of various details of the legend) tore out one of the three branches, but the remaining two occupied the place of the twig which had been plucked (*exstirpatus ramus*). The terminology as such reminds us strongly of the Biblical story (the "plucking" is here moreover paralleled by a "blowing" of the wind, etc.). It revives the chief thematic implications of the "original sin" (the

plucking of the apple, etc.). Moreover, the "blowing" is called "unequal." That curious qualification can be explained only in terms of an analogy with quite similar results ascribed to Eve's plucking an apple (creation of a new counting system).

The principle of counting is clear. Let us imagine that the tree had three twigs on the same side. One of them is plucked away and placed on the other side (Boreas is called an "adversary" of "arbor"). The remaining two, if added together, are equal to the third branch ($1 + 2 = 3$). Thus, the third twig (number 3) does not prevail over the other two (*ne possit praevalere*).

We find here the same idea as in the octaval tree system. I think, however, that the idea of using both sides of a tree symbol for purposes of counting is—historically, at least,—inherent in the octaval system as such. The idea was later applied to other systems, e.g., to the Sumerian "sextal" system, etc. The example given in Merlin's "Prophecy," is nothing else than a general definition of a "two-sides-counting." In fact, we find in the same "Prophecy" the octaval system as such—in a curious "table of opposites," which reminds us of a quite analogous, though decimal, Pythagorean table.

The introduction to the "table of opposites" starts with a significant hint. The "trees"—oaks, quercus—are called "men" (*arbores, id est homines*). That clarifies the matter of the "tree" which is said to have grown on the top of the "tower." It is a "man"—cador Arthur or cad(or) Abra(m). These "oaks" are said to be "circumcized" (*deputabuntur*). That is a technical term. The connection with "Abram" and with the new rite, which is ascribed to him in "Genesis," is quite obvious. Then comes a description of three "sources" (*fontes*). One of them is "curing," the other two bring decay and death. "Good" and "evil" are here opposed to each other in the usual way, though the author had difficulties in trying to combine the antithesis between "good" and "evil" (life and decay) with the number of sources (three). We know that Plato was facing a quite similar difficulty, when he had to define the number of "classes" in his ideal city (three classes, but four metals). Merlin's prophecy solves the problem in terms of a gradation. One of the two per-

noxious sources brings immediate death, whereas the other determines decay as such (mortality is here opposed to longevity).

Now comes the "table of opposites," which, as I said, is "octaval." (1) Earth will be changed into its opposite (in contrario vertentur)—into stones; (2) weight into solidity; (3) stones into spring-water; (4) ripeness into flexibility; (5) wood into ashes; (6) prosperity into instability; (7) ashes into water; (8) laughter into dissolution. These "concepts" reflect the idea of "opposition" altogether with that of "transformation." However, the emphasis must be put on the presence of an "octaval" system, which is here—as it is in the Bible and in the Pythagorean philosophy—closely connected with "arbor," i.e., with the "tree of knowledge."

One should be surprised not to find here "Eve," to whom we owe our wisdom. In fact, Eve is mentioned here *expressis verbis*. "For the plucking out (extirpanda) of these evils a young woman (puella—girl) will come from a town of king Canut (will come—will be excluded—eliminabitur), as if she were disinherited or expelled (proscriptio),—from a town which is excessively old (quae aevo excedit) . . ." "Aevo" seems to reflect the phonetic shape of Eve's name (eva—truth). But this Latin word might well be a direct cognate of Germ. *eva* (cf. Ernout and Meillet, *Dictionnaire etymologique de la langue latine*) or a. h. "ewa." In any case, Eve's presence is clearly revealed in the next following passages: ". . . Quae, ut omnes artes, calliditatem et ingenium, inierit, adhibuerit, solo anhelitu sua, fontes nosivos siccabit, id est periculosa tempora removebit." Eve is here supposed to teach all arts and crafts, to dry the noxious sources, and to remove the times of danger. The chief theme of "knowledge" is here illustrated in the same way as in "Genesis." We know that "Genesis" gives us a picture of a gradual development of "arts," "crafts," "letters." The contemplation of a "tree" led to a rationalization of this "image" and to a multilateral exploitation of the original knowledge (use of wood for construction, etc.). "Anhelitus"—breath—reminds us of "Adam," Eve's husband, of the unequal "blowing" (flatus), etc.

Then—curiously enough—Eve's activity suddenly becomes pernicious. That is a conscious imitation of the Biblical implications.

Knowledge is an "evil." It seems that Merlin's prophecy, though relying on most ancient pagan legends, is not entirely free from influences coming from the Bible in its relatively late Semitic interpretation. The "puella" begins to spread illnesses, etc., until the young woman—puella—finally dies, being killed by a "cervus decem ramorum" (cervus—deer). The "ten horns"—they are called here "branches"—seem to express a decimal counting system of the usual tree type (cf. also, our remarks concerning the "deer script" of St. Gallen). All these implications are predominantly mathematical. It is the same line of thought which we found in "Genesis," in the doctrine of Pythagoras and Plato, and in the Gothic inscription of Kylfver. The decimal aspect of Merlin's prophecy is furthermore illustrated by the addition of two pairs of opposites to the previous eight—right and left, father and mother (cf. the quite similar pairs in the Aristotelian table).

The last part of the "Prophecy" is devoted to an obscure interpretation of the various astronomic "constellations" (Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpius, Sagittarius, Capricornus, Aquarius, Pisces). These passages seem to deal with the theme of the "deluge." The emphasis is put on the number "nine," on the creation of a "new order," and on "navigation." "In icto radii . . . exsurgent aequora . . . et pulvis veterum renovabitur . . . configent in novissima tuba . . . eritque coelum novum et terra nova." A new sky, a new earth, and "resurrection" dominate this prophetic picture. The theme of the deluge is here mixed together with that of the appearance of Christ and, presumably, with the idea of Christ's resurrection. We find here all meanings of the cell "nauh" which dominates the legend of Noah's ark (new, nine, navigation). In fact, the chief rôle is attributed in Merlin's prophecy to the so-called "Sagittarius"—to the "ninth" sign of the twelve signs of the zodiac. Moreover, the "eleventh" sign—Aquarius—is also called "nonum signum" (ninth sign). How can we explain this curious confusion? It seems to me, that "Aquarius" corresponds here to the personality of "Noah," the navigator, the "waterman." The number "nine" had to be mentioned in that connection. The esoteric language of Merlin is much better reflected in his "mistakes" than elsewhere.

The so-called "mistakes" reveal to us the real implications of the esoteric knowledge.

Illuminating is also the connection between the two months of "September" and "November." "Virgo quod nil pariat Septembri datur, dorsum Sagittarii, Sagittarius Novembri, eo quod annus tunc degenetet; sol in ill mense usque ad metas noni signi perveniet et flores virgineos quos Libra solet procreare obfusca-bit, quasi in hieme marcescent flores." The meaning of this obscure allegory seems to be the following: if we add seven branches (September—from Lat. Septem—seven) on both sides of the stem (dorsum Sagittarii), we would get a tree with eight branches on each side (number 72). This sign, in abbreviation, has the aspect of the well known Runic number 100, which we have already discussed on several occasions. Thus, the tree loses its "flores" (the "green," flowers, branches), and the naked tree looks like "in hieme"—in the winter. This picture is quite congenial to the entire "science of numbers" of the ancients. In "Genesis," the deluge is characterized by the number "nine" (Noah, renovation, nine) and by the number 72, which later, in the part dealing with Abram, is transformed into the number 100. Here, in Merlin's prophecy, the new earth and new life also are subjected to the number 100, i.e., to a perfect, divine number; (cf. also the mediaeval conception of the reign of Christ—1000 years; the numbers 10, 100, 1000 and 10000—cf. Plato's "Republic"—seem to have dominated the ancient and mediaeval conception of what was considered to be "divine" par excellence).

"Sagittarius," i.e., the "ninth sign," is in itself a brilliant confirmation of the existence of the "octaval system." The number "nine" has, in fact, all characteristics of an "arrow" (cf. also the Gothic sign for 900). I am glad that the sign for "nine" had actually been interpreted—or compared to—an "arrow." I was quite aware that such an interpretation must exist. The external similarity between both signs should have induced the ancient mind to compare the number "nine" to an "arrow." In fact, Merlin's prophecy brings this interpretation. The legend on Noah's "ark" seems to contain a similar idea. Let us remember the rôle of the number "nine" and its possible connection with the image of a "bow"—of a "rainbow," which symbolized the union between

the heaven and the earth—between the number 10 and the number 8. This union, of course, can be best symbolized by the number 9 and altogether by an “arrow.” These symbols are really illuminating, almost self-speaking.

Merlin’s “Prophecy” proves that the ancient tradition was not entirely lost in the “barbaric” countries, in spite of the fact that the new Aristotelian approach had broken the old esoteric line of thought, which connects the legends of “Genesis” with the Pythagorean school. The wise men of the Goths and of the Celts were able to preserve the ancient wisdom of their forefathers. It seems to me that the “sapientia et doctrina,” to which the “Prophecy” is referring, is a direct product of the ancient tradition (oldest sheet of “Genesis”), which reveals, however, a certain acquaintance with the later Semitic interpretation of this Aryan tradition. Geoffrey, as well as the unknown author of the “Commentary” to Merlin’s “Prophecy” were both acquainted with the esoteric doctrine. The bishop, Alexander of Lincoln, to whom Geoffrey had dedicated the chapter VII of his book (I call your attention to the number VII), seems also to have belonged to the “initiates.” The legendary Merlin, of course, was an outstanding representative of the ancient school. His mother is said to have been of Roman origin. His father was a “demon,” a “genius.” Undoubtedly, Celtic myths, together with Roman myths, were a primary source of Merlin’s inspirations. They helped to understand and to maintain the “ancient wisdom” in its original form.

Merlin’s “Prophecy”—and particularly the “Commentary” to this prophecy—is an important confirmation of my hypothesis concerning the sacred tree script. It proves that the interpretation of “Genesis,” which I am advancing in the present volume, had actually existed, and that the “doctrine” still was known in the XII Century A. D. The roots of this “knowledge”—sapientia simul et doctrina—are ancient—prior to the Semitic version of the Bible. Unprejudiced scholars should accept my theory and, altogether, the new research technique, which alone can disclose to us the very mind of the ancient thinkers. This research technique seems particularly applicable to Indoeuropean history—to the life and fate of “homo faber.”

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