



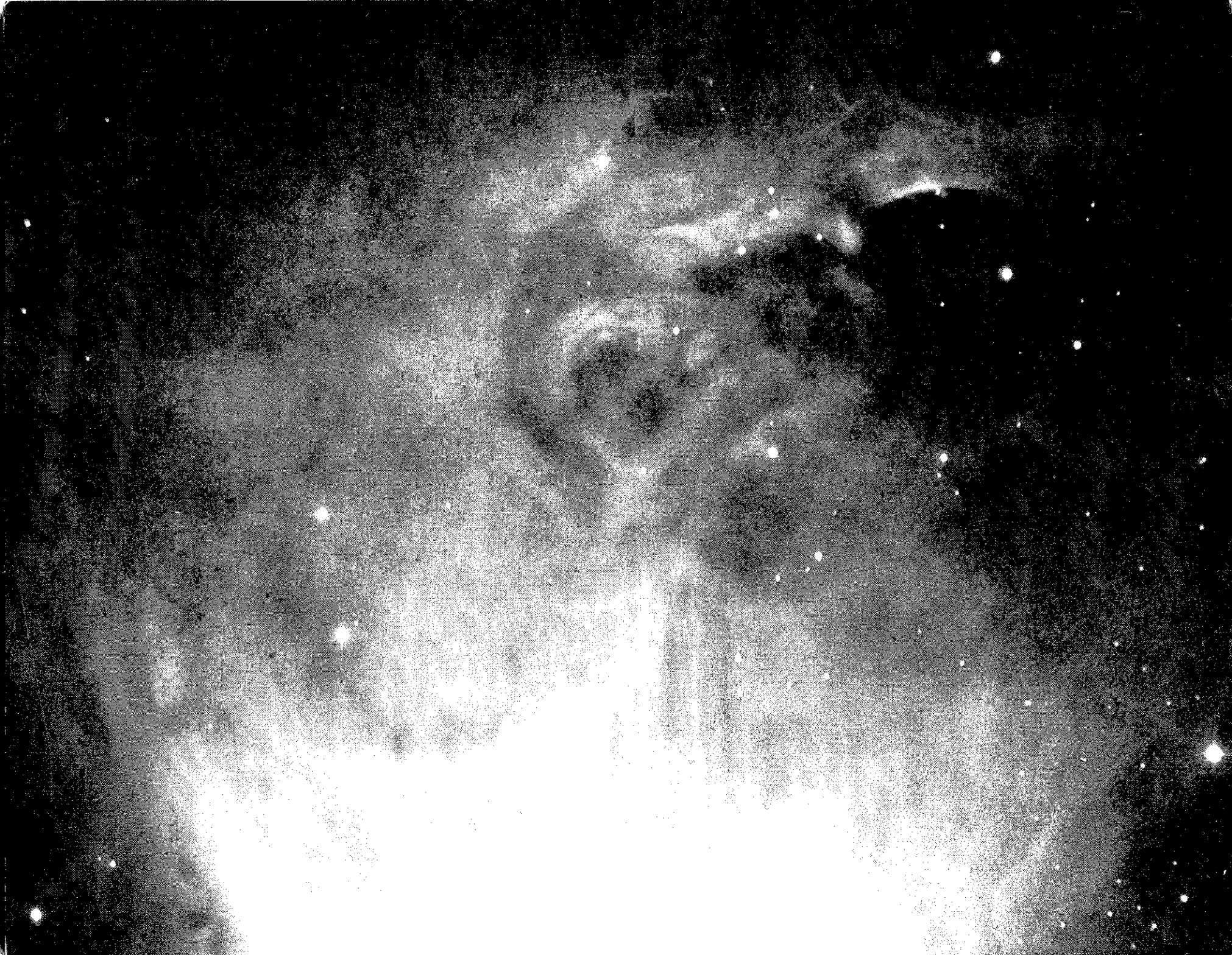
the
Campaigner

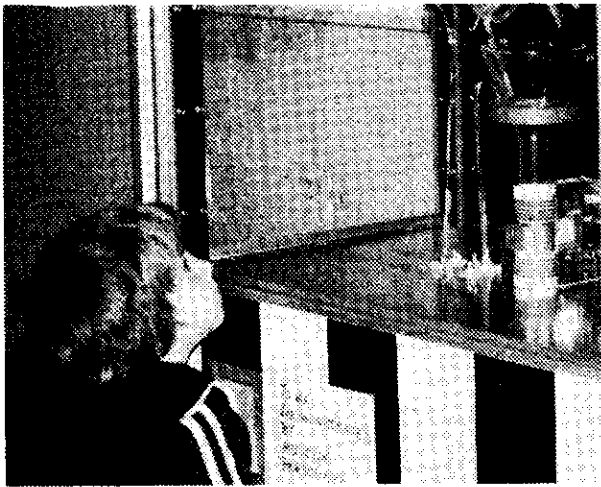
FEBRUARY 1980

\$2.00 / Canada \$2.25

Plato's
TIMÆUS
The Basis of Modern Science

The Only Authentic
English Translation





Plato's TIMAEUS

*The only authentic
English translation*

4

Introduction:
Plato and the
New Political Science

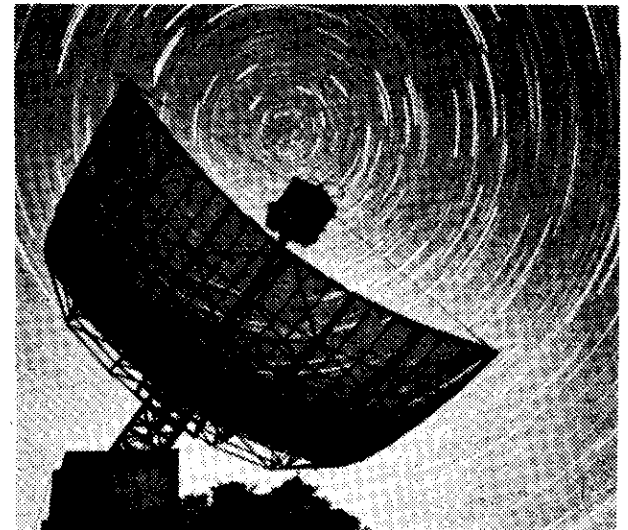
Lyndon H. LaRouche, Jr.

33

Translator's Preface

35

TIMAEUS



EDITORIAL NEWS

- 2 The Society of Jesus: Evil Heirs of Aristotle
- 75 Hundreds March to Close Studio 54 Drug Den
- 75 Is America Ready to 'Recreate a Musical System'?
- 76 The 'Fourth Man': Art and Political Intelligence
- 77 Blunt Affair is Key to Global Epistemological Warfare
- 78 Furtwängler Attacked as 'Führer Figure'

Editor-in-Chief:
Carol White

Editorial Board:
Kenneth Kronberg,
Charles Tate, Paul Arnest

Managing Editor:
Tessa DeCarlo

Art Director:
Christopher Sloan

ON THE COVER

Theta Orionis, which looks like a single star to the naked eye, is discovered to be a breeding ground of stars when viewed through a telescope. The glowing center of the photograph on our cover is the site where new stars are forming out of a cloud of hydrogen, helium, and other elements. In this self-generating process, the shock wave produced by the formation of stars—visible as the sharply defined darker portion of the cloud running diagonally across the right of this photograph—creates the conditions for the birth of still more stars.

THE CAMPAIGNER is published 10 times a year by Campaigner Publications, Inc., 304 W. 58 Street, New York, N.Y. 10019. Telephone (212) 247-8820. Subscriptions by mail are \$19.00 for 10 issues in the U.S. and Canada. Air mail subscriptions to other countries are \$38.00 for 10 issues. Second class postage paid at New York, New York.
Copyright © CAMPAIGNER PUBLICATIONS, INC. ISSN 0045-4109

The Society of Jesus: Evil Heirs of Aristotle

In "The Secrets Known Only to the Inner Elites" (*The Campaigner*, May-June 1978), Lyndon H. LaRouche reported on the work he and his associates had done establishing the continuous existence over thousands of years of two conspiracies which are in combat for the future of mankind.

On the one side is the unbroken thread of Platonism, exemplified by LaRouche's International Caucus of Labor Committees and by the sorely missed Pope Paul VI. On the other is the oligarchic conspiracy that threatens a return to the Dark Ages and nurtures the evil of Mao, Pol Pot, and the Ayatollah Khomeini. It is difficult for most people to admit the depths of evil to which these dark forces are prepared to descend rather than risk the loss of their hereditary claims to power. Yet today, less than two years after the writing of "The Secrets Known

Only to the Inner Elites," the horrors of Cambodia stand revealed, and the new horrors of Iran are unfolding.

When we speak of two conspiracies, we do not mean that Satan and God exist as junior and senior partners who jointly run the world. The human race has survived up until now despite the failure of the humanist conspiracy to finally stamp out these enemies of the human race—but we do not have such latitude today.

At issue is not just the death of billions in Africa, Asia, Latin America, and the Middle East, portended by the Dark Age tight-credit policies of the International Monetary Fund and its agents, such as Federal Reserve Chairman Volcker, policies which doom the inhabitants of these areas by cutting off vital imports. Nor is the issue just the oligarchic IMF policy that pushes these areas to divert food production capabilities into the production of cash crops for export, such as marijuana, cocaine, and heroin, which are then imported into Western Europe and the United States. Perhaps we could survive this new opium war, which threatens to destroy our own children, without finally defeating the oligarchic masters of the international illegal narcotics cartel "Dope, Incorporated."

But we are threatened today with the absolute annihilation of civilization through a nuclear third world war, brought on by the insane adventurism of these same Dark Age forces, if the situation they have provoked in the Middle East and Asia should go out of control. Good and evil cannot continue to coexist if the world as we know it is to survive. This time we humanists must win.

How is it possible that over two thousand years have elapsed

since Plato's death and the death of Jesus, and still the human race is in jeopardy? How is it that this nation, founded as a humanist republic, is in the state we find it today? Why did the great humanist leaders of the past not recruit a constituency sufficiently powerful to wipe out this evil conspiracy once and for all? Clearly because Satan finds shelter in the passivity and pettiness of the average person who places his own concerns, his family, his job, first. The Christian religion knows this as the problem of the sheep who must be guided by a pastor. Plato describes it with the "Phoenician myth" of mankind divided among the golden-souled few, the silver-souled, and the mass of people who, alas, have only bronze souls. The oligarchic conspiracy depends on the passivity and gullibility of the mass of men and women who do not yet rest their identity on the rule of reason, who at best—as silver souls—try to govern their behavior by what they believe to be "true opinion," and who therefore are easily manipulated.

The so-called energy crisis is an example of how this manipulation works. The oligarchic conspiracy maintains power through its ability to deploy a larger class of feudal retainers, whose job is to contain and, where possible, destroy the proscience, proindustrial humanist conspiracy. These are the enemy of the republic. To them science is necessarily anathema; progress is anathema. It is these retainers whose job it is to whip up the most backward, the materially and culturally deprived, into a frenzied antisience mob. Ted Kennedy, who openly supports the Ayatollah Khomeini, is just such a lackey of his aristocratic British in-laws; Jane Fonda is another.

But these are merely the puppets. Behind them are the puppet masters, the evil geniuses of unfolding horror. And although not every puppet master is a Jesuit, the Society of Jesus has, over the past 500 years, been the key institution deployed by the oligarchy to carry out its attack on progress.

The Jesuits' Science Of Subversion

A series of feature articles by Criton Zoakos that appeared in the biweekly newspaper *New Solidarity* in November exposed the current role of the Society of Jesus in Latin America, the Middle East, and Asia. In the articles, titled "Societas Jesu: The Intelligence Outfit the Pope Must Clean Out," Zoakos identifies the Jesuits as a political-intelligence organization which is only nominally religious. Along with British and Israeli intelligence, it is one of the main controllers of present-day terrorism; Khomeini's Islamic fundamentalism and the Muslim Brotherhood are only offshoots of the Jesuit Order's "Liberation Theology."

The insidious Jesuit attack on science exemplifies their method in its entirety. Destabilization operations in the Middle East are a cover for the fraud of a global energy shortage. Similar terrorist operations in the West create a climate in which the suppression of nuclear energy development becomes acceptable. Solar energy and "appropriate" technologies for the underdeveloped nations, such as windmills, are promoted. Cult operations such as Sun Day are introduced.

The Jesuits, who are nominally proscience, cover this with the fraud of "relative science." In other words, each culture is to have its own appropriate science.

It is not appropriate for the developing nations to learn about nuclear energy; they need only understand windmillism. It is inappropriate for their leaders to eradicate superstition; this is the proposed appropriate "scientific outlook" for the Third World. Through this sleight of hand it becomes "racialist oppression" to bring Western culture, with its included standard of living, to the "colonies." Liberation Theology is born.

The Society of Jesus, since its inception, has been an instrument used by the oligarchy to deceive and control the sheep. The Jesuits have just been openly admitted to China, but they have been "playing the China card" since the sixteenth century, when they opened missions there as well as in Latin America. Except for the forces grouped around Sun Yat-sen, China has been an evil, backward peasant despotism for centuries. China is and has been the model for the oligarchs who wish to replace industrial capitalism and urban civilization with a new Dark Age. Maoism, merely the modern name for this age-old Chinese system, was introduced into Europe before the French Revolution by the Society, which was the almost unique source of information about China, where their missions were well entrenched.

Physiocratic theory, the idea that all value comes from the land rather than from man's productive industry and improvements on the land, is merely one offshoot of this. Quesnay, physician to Madame Pompadour and the leading physiocratic economist, in fact authored a book titled *Despotism in China*. Voltaire, the ideologue of Jacobinism, although an atheist, was Jesuit educated. Not only did he politically defend the Society,

but he was the leading French Sinophile of the eighteenth century. What else were the hideous excesses of the Jacobin mobs in the French Revolution but Maoism?

The Society, an agency of the Genoese and Roman "black nobility," was formed by Ignatius Loyola in the early sixteenth century as a direct counterdeployment within the Church to the humanist Catholic networks of Nicholas of Cusa and Erasmus. However, they soon extended their sway to the nominally Protestant opposition. Thus William Cecil's nephew, the infamous pederast Francis Bacon, merely translated his *Advancement of Learning* from the work of a Jesuit, Father Anthony Possevino—although in typical style he failed to acknowledge his "borrowing." British empiricism is merely another ugly offshoot of the Society.

The evil ability of the Jesuits, chameleon-like, to penetrate every pore of society was noted by our own President John Adams in a letter to Thomas Jefferson. Wrote Adams:

"I do not like the reappearance of the Jesuits. Shall we not have regular swarms of them here, in as many disguises as only a king of the gypsies can assume, dressed as printers, writers, publishers and school masters? If ever there was a body of men who merited eternal damnation on earth and in hell, it is this Society of Loyola. Nevertheless, we are compelled by our system of religious toleration to offer them an asylum."

Aristotelian Brainwashing

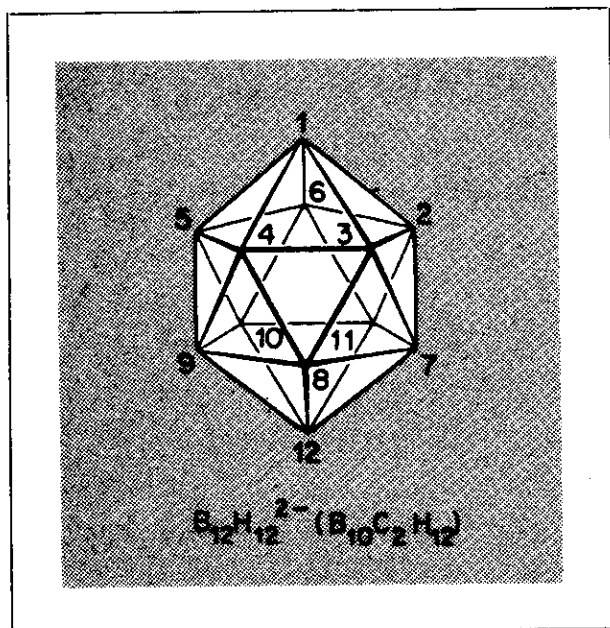
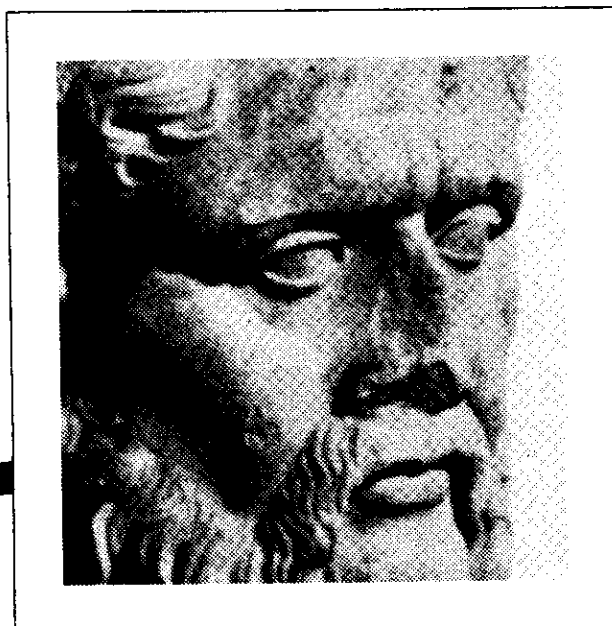
Today a full 20 to 25 percent of all Jesuits in the world operate in the United States. Among the major U.S. educational institutions run by the order are Fordham Uni-

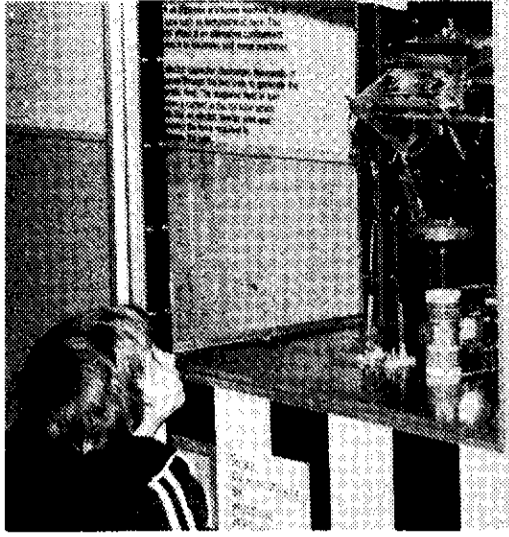
Continued on page 79

Introduction:

Plato and the New Political Science

by Lyndon H. LaRouche, Jr.





Embedded within Plato's *Timaeus* are conceptions of physical hypothesis as advanced as those of modern Riemannian relativistic physics. Yet, as other features of the *Timaeus* point out most forcefully, civilization has progressed a long way in details of knowledge and technology, and in features of culture correlate with advancements of technological practice. If this contradictory set of facts is viewed properly, the evidence of that comparison provides the clue to a new, rigorous comprehension of the lawful ordering of human history.

It is from that standpoint of emphasis that we now introduce a new, corrected English translation of the *Timaeus*.

Although the *Timaeus* is not as popularized a writing of Plato's as the *Apology* or the *Republic*, it has exerted a more direct influence on the fundamentals of European thought than perhaps any other of those writings. This point is easily demonstrated in terms of key writings of Christian patristics, a point which is more or less axiomatic among relevant specialist historians. For special reasons, an approximately equal degree of influence on the development of scientific method is less recognized today. For reason of such profound influences, this work serves as a most appropriate benchmark for the historiographical studies we have indicated above.

The student's difficulty with the *Timaeus* is that it must appear to him as extraordinarily "sophisticated"—to use a commonplace term of American bureaucratise. At least, it must appear so to the student who has begun to discover what richness lies embedded in the writing. This difficulty would persist even were the student using an acceptable quality of translation from Plato's Greek.

The general character of these difficulties is twofold.

As Criton Zoakos has emphasized, Plato's correspondence includes a statement of policy concerning those writings he composed for publication. Never, Plato insists, has he or will he write his own views in his own name in works composed for publication. There are obvious reasons for this decision, and they do account for a secondary aspect of the difficulties Plato's writings represent to the student today.

Contrary to the myth of Plato the merely contemplative speculator, Plato was the leader of the most active and far-flung political-intelligence operations organization of the city-builders' faction of the fourth century B.C. His efforts to organize a coup d'etat in Syracuse are at least well known to have been conducted, if the details are obscured. It was Plato's Academy that prepared Alexander the Great's coup d'etat, and policies and intelligence developed through the work of the Academy's networks that guided Alexander's victorious campaigns, and that substantially shaped the policies Alexander was initiating at the time of his assassination.

Plato had excellent reason to put very little of his activity into writing, and nothing explicitly autobiographical into his published work.

We can identify aspects of Plato's published work that must be attributed to his political caution. In chief, this possibility depends on accounting first for the other features which the student will tend initially to find obscure. What remains after accounting for this second factor proves to fit the category of political caution.

The student's principal difficulty with the works Plato composed for publication is that these works were constructed according to principles which Renaissance and some later writers identify as the "poetic principle." The Platonic ideas which are the principal content, the subject, of Plato's compositions are of the same order which the nineteenth-century mathematician Georg Cantor identifies with his notion of "transfinite." What that signifies we shall make clearer below; for the moment, we focus on the mere fact of such a source of student's difficulty. For this reason, the student is looking at the matter of difficulty in the right fashion when he uses the term "sophisticated." Plato is never truly obscure in *presenting ideas*. The chief formal problem in studying Plato is that of "getting the hang of" his employment of the poetic principle.

Once the poetic principle is grasped, not only does one begin to discover Plato to be an extraordinarily lucid writer. One is able to account directly for the reasons certain features of Plato's work are a match for the most advanced conceptions of physical scientific knowledge today—whereas other features

of Plato's text represent an archaic state of detailed scientific knowledge of twenty-three centuries past.

Platonic ideas, properly so termed, take as their subject the characteristic features of the mental processes by which hypotheses concerning empirical scientific knowledge are formed. It is therefore such Platonic ideas which rightly appear very modern to informed readers today. Yet Plato is presenting these insights into the lawful processes of hypothesis in terms of the empirical scientific knowledge of his own period. What is relatively timeless in Plato's work is his conception of the principles of scientific hypothesis; what is archaic in his work for today's reader is the collection of empirical scientific knowledge he achieved (with aid of application of his method of hypothesis to then existing empirical knowledge).

Instantly this is recognized, the student's admiration for Plato's method must increase. Had Plato confined himself to a prosaic argument for his particular theories respecting empirical scientific knowledge of his own time, he could not have become more than a great scientific thinker of his own time. By deemphasizing the particular scientific knowledge of his time, by making that knowledge merely a means for demonstrating the method of hypothesis, Plato defined ideas of a relatively timeless quality, ideas which survive many successive revolutionary advances in empirical scientific knowledge in particular.

The use of the poetic principle as the basis of organization of his published compositions is readily seen as indispensable to achieving that timeless merit. It is only by methods of composition which force the reader's attention away from primary emphasis on prosaic facts of the ephemeral here and now that the reader's attention is directed to the relative transfinite, subsuming successive transformations of knowledge in the ephemeral here and now.

We, today, must pursue the same method if we are to arrive, at last, at abstraction of sets of principles which account for the ordered course of the history of civilization in the past, and into the future. Here is the practical importance of historiography to every citizen, whether a public official or an individual man or woman lacking any conspicuous status in public affairs. What we do—or fail to do—in the present, in our here and now, determines how we and others shall live in our own personal future and in the future of our posterity. Our actions do not *entirely* determine such consequences; others, present and future, will also shape the course of history.

What the future will be can be adduced implicitly from the characteristic features of those assumptions which are variously explicitly and unwittingly

embedded in the prevailing weight of individual decisions. If we are not to play roulette with the fate of present and future generations, if we are to give assured meaning to our individual living and having lived, we must know that we have discovered and are self-governed by efficient knowledge of the sets of principles which do in fact govern the historical process. It is so to determine the present and future that we devote ourselves to rigorous study of the past. We cannot adduce efficient principles from the idiosyncrasies of the social order as defined by the here and now. We cannot attribute wisdom to mere prevailing opinions of the present, whether scholarly or vulgar. We must know those principles which transcend all "heres and nows," an achievement which can be effected by no other method than the poetic principles employed by Plato.

The chief further difficulty the student confronts in taking up Plato is the weight of that ignorance and libel which attempts to explain away Platonic ideas as some sort of mysticism. Such falsehoods are, admittedly, made to appear plausible to the student often enough. The fact that Plato appears difficult, that his argument does not admit of prosaic simple paraphrases, is used to dupe the student into attributing much of Plato's conception to something "other-worldly." The English editions, commentaries, and glosses that are in accredited use in our universities aggravate this problem. Although most translators do not go to such extremes of blatant fraud as the notorious Cornford, each of the Oxford, Cambridge, and Warburg Institute editions deliberately mistranslates Plato's writings to the effect of attempting to save the appearances of fraudulent representations of Plato as a "mystic."

The belief that Plato is a mystic belongs formally to the same category of social phenomena as the inability of some primitive cultures to count beyond "one, two, heap." At the point the mental capabilities of the ignorant collapse in exhaustion, the term "heap" appears in the counting process, or "mystic" in the study of Plato. The mind stops functioning, and consoles its threatened self-esteem by the sort of "reaction formation" which substitutes "his mysticism" for the lazy mind's own "ignorance."

Granted, Platonic ideas are extremely advanced, profound conceptions by today's educational standards. Therefore, some effort, time, and assistance are required to aid the student in mastering the subject—just as a student requires assistance to progress from seventh-grade algebra to competent grasp of the essential conceptions of plasma physics. It is not the student's labors in the educational process which represent ignorance, but halting the process of devel-

opment, and explaining away what has not been mastered as "mysticism."

The importance of the *Timaeus* prescribes that an acceptable English edition must, at last, be produced. That would suffice to account for an International Caucus of Labor Committees effort to prompt some qualified person or group to produce such an edition. It does not fully explain why an ICLC team undertook that task.

If the task were defined merely as one of a competent rendering of words and phrases, we probably would not have undertaken it. It happens that Uwe Parpart reported an exciting discovery from his studies of the characteristic flaws of the English editions.

Many scholars have listed criticism of the Jowett translation, for example. If lists of particular errors had been the extent of the problem, then the problems of extant editions could have been defined as the cumulative effect of such errors in detail. Parpart reported something more fundamental. Plato's Greek relies on certain key grammatical features of the language. Two of these are essential. One is the way pronouns are used to embody the transfinite conception associated with an entire passage, or even a section, as a particle-term within a statement of a conception on a yet higher order of abstraction. The second is the conjoined use of the available moods to express a conception self-consciously. *This latter is a way of thinking about the process of formation of a hypothesis.* Unless these two features are efficiently replicated in the translation, the flow of the argument in Plato is disrupted—and replaced by a kind of psychological *Schwärmerei*.

This being identified as a crucial problem for the translator, another, second problem was identified. The translator himself must be sufficiently a master of Plato's dialectical method to recognize the expression of such methods both in Greek and in English-language forms of expression.

This problem demonstrated that mere competence in Greek plus competence in translation of terms of specialized usage would not be adequate equipment. An additional set of special qualifications is clearly essential to the required result. So, where other specialists might perform the detailed, terminological features of some aspects of the translation better than our own Greek-language specialists, respecting the most essential requirement of the translation our own translators were qualitatively better suited. Our purpose is not to produce the final improvement in English editions of *Timaeus*, but only the first of such competent translations.

Those preliminary points made, we shall now

turn, for the remainder of this introduction, to focus on two sets of points. First, we shall summarize the principles of the Platonic dialogue *as a method*, rather than a procedure for contrasting opinions. Second, we shall expose the fraudulent implications of the generally accepted characterization of Plato as an "idealist." If one attributed a very special, rigorous meaning to the term "idealism," Plato could be so described; that is not the connotation of the term in any general usage over the past century.

In undertaking the second topical area, we shall employ the essential principles of the Platonic dialogue, although without employing the dialogue form in a literal sense. We shall address our remarks on the subject of Plato's alleged idealism to a hypothetical Soviet audience, permitting the reader to look over our shoulder, so to speak, imagining the internal mental processes of the Soviet audience as the address is made.

The Platonic Dialogue

If the reader were adequately informed of the work of Giordano Bruno, and otherwise informed of crucial features of English Tudor history, it would be an easy matter to demonstrate conclusively to the reader that the greatness of Shakespeare's plays is derived from the mastery of the principles of the Platonic dialogue among the circle of Tudor Neoplatonists associated with the Dudleys, and centered around Walsingham and John Dee in the pre-1590 to 1593 phase of development of the Tudor Secret Intelligence Service. A play of Bruno's from that period serves as a kind of Rosetta stone for tracing the direct role of the Platonic dialogue in determining the principles on which Shakespeare's plays are constructed.

Among the profitable byproducts of such knowledge, the reader would be able to prove from the internal evidence of the Shakespeare plays that the virulently anti-Platonic and pederastic sodomist Francis Bacon could not have had any hand in creating such plays. More important, the reader would begin to comprehend the richness of those plays, the scintillating, multifaceted historical ironies which proliferate throughout—ironies which a certain knighted, contemporary British actor clearly ignored, and could not have comprehended.

Hamlet, for example, is predominantly Queen Elizabeth I. He is, ironically, many actual and hypothetical personages as well as the just-deceased queen of the time of the play's initial appearance. To the sensitive members of the audience of that time, Hamlet not only identified the follies of the deceased Queen's reign, but combined the Queen Elizabeth metaphor in the personality of Hamlet with other

images. Shakespeare thus created a conception of a transfinite, for which the deceased queen's case was but one predicate. In this way, he made the principle of her follies comprehensible as a principle, rather than leaving her follies as the perceived idiosyncrasies of a single monarch.

Friedrich Schiller aids us to the same effect. As one of the greatest historians of his time or afterward, Schiller's plays were essentially Platonic dialogues in which the author abstracted a principle of history from the massive researches associated with the studies on which the drama was based. Although Schiller is a far greater and broader figure than Shakespeare, on this cited point the traditional likening of Shakespeare and Schiller to one another as playwrights is a well-grounded and useful comparison.

The classic Renaissance work to be compared with both Shakespeare and Schiller on this point is the *Commedia* of Dante Alighieri. Nearly everything in this *Commedia* is Plato as viewed through Neoplatonic eyes. If one is not a credulous glutton for the usual sort of scholarly edifying nonsense written about the work, one also knows that this was no "mere work of art," but a political document which played a leading part in shaping the political history of the fourteenth and fifteenth centuries. The ideas communicated through the *Commedia* armed the political intelligence of the Augustinian networks associated with Petrarch and others, and changed the history of Europe.

We briefly summarize the organization of the *Commedia*, pointing out to the reader what he or she must bear in mind as most crucial for understanding the deeper implications of that work.

The *Commedia* (later called "The Divine Comedy," after Dante's death) is organized into three sections of thirty-three *successive* cantos each. The term "successive" is crucial. In each section, the ordering of the successive cantos reflects an ordering-principle. This ordering-principle is properly termed a transfinite in the most rigorous sense of Cantor's intent. Each section is ordered by a different transfinite ordering-principle, each differing essentially from the other two. The succession of sections represents a third ordering-principle, that which is relatively transfinite in respect to the subsumed three as predicates of this higher-order transfinite. However, the ordering-principle (conception) embodied in the thirty-third canto of the final section, the "Empyrean," is in agreement with the higher-order transfinite ordering the three sections as a whole. That agreement defines the proper conclusion of the successive development of the entire composition.

The configuration is strictly Platonic in all essen-

tial features of organization—although the details are, of course, not precisely in agreement with Plato.

In the first section, the "Inferno," the ordering of cantos leads us into the pit. This is, of course, an unsatisfactory conclusion of progress to all but the most degraded, masochistic Dionysians. The reaching of the pit demonstrates that the characteristic ordering-principle of the "Inferno" is not acceptable for mankind. The principle to be superseded is that of *heteronomic, irrationalist forms of egoistical sensuality*.

One case, that of Count Ugolino, is worth citing here. Ugolino, thrown into prison by persecutors, survives for a while by eating his children, for which he is condemned to pass eternity perpetually gnawing on a skull. Egoistical, heteronomic sensuality superseded all reason or even rational morality in Ugolino. So, like one of the "bronze souls" of the "Phoenician myths" in Plato's *Republic*, Ugolino lives in the hell of perpetually being what he is.

Today, such moral degenerates, like other denizens of the "Inferno," are known euphemistically as "political pragmatists." The wretched fate their impulses produce in the world—whether in international relations, national policy, or personal affairs—is the only consequence of the successful realization of their irrational, greedy impulses for heteronomically motivated advantage.

This principle must be rejected, negated, as a whole. That discovery is embodied in the first canto of the next section, "Purgatory." With this higher ordering principle, that of greed, of sensual appetites informed by logical forms of knowledge, one proceeds to a second dead end, "Earthly Paradise." This is neither hell nor is it the end humanity requires. Purgatory's ordering principle is superseded through a turn to the first canto of the final section, "Paradise." The achievement of the "Empyrean" through that ordering-principle brings us to the desired condition of human existence, the agreement of thought and practice with the higher ordering-principle which is demonstrated by the overall course of progress from infantile sensuality to reason. The fact that the conception coincides with that higher ordering-principle demonstrates sufficient reason, that we have reached the proper condition of human willful governance of human conduct.

The *Commedia* thus presents itself to the knowledgeable reader as a perfect Platonic dialogue.

The same principles are brilliantly realized in another of the greatest works of literary composition, the *Don Quixote* of Miguel Cervantes. The subject of the book is the effort to develop Sancho Panza, a bestial peasant predominantly occupied with stuffing his fat paunch (*Panza*), to the point that Sancho is

qualified to govern a province, or, the same thing, an island. Or, how to bring the Spanish people out of rural imbecility in moral outlook, so that those people might become qualified to govern themselves. This book is organized on three levels: Don Quixote the character, the Moor who is the fictionally attributed author, and Cervantes himself.

Beethoven's sole opera, *Fidelio*, is organized conceptually according to the same Platonic-dialogue principles. More important, the entire development of the well-tempered system of counterpoint in music, identified by John Bull, Sweelinck, Bach, Mozart, and Beethoven (notably), has its origins in Plato's musical faction, and was mediated into Europe through al-Farabi.

Thus, today, in many branches of art we are confronted with worthless productions called "art," whose attributed value depends upon ignorant, misplaced plausible explanations for the actual artistic productions of some earlier period.

For example, the so-called modernists in music could not survive in reputation as artists for long if informed taste were knowledgeable of the determining considerations in the development of well-tempered counterpoint. The twelve-tone doctrine, for example, would not be tolerated in any musical circles which actually comprehended the way music had developed through Bach into Beethoven.

For example, in literary productions and dramas, acceptable forms today are rationalized by crude, pragmatic abstractions. These abstracted rules, or conventions, are assumed to delimit "what will work" from things which will probably be excluded from consideration out of hand. It is assumed that a provocative, appealing effect, adapted to such conventions, is the essence of the matter.

The result is that vulgar forms of popular entertainment are tolerable on condition one accepts the fact of the banality of the mental level of the authors, directors, actors, and so forth. Let the same authors, directors, and actors attempt to escape from the banal entertainments at which they succeed, let them essay to produce a "truly serious work of art," and the banality of their souls simply bores us most painfully. There is admittedly the problem that audiences are conditioned to the effect of disinterest in the real creative features of great artistic work. If a great work of art were produced, it would admittedly have difficulty in securing an economically adequate audience. The problem today, in respect to the attempts at serious works of art, is not located originally in the audiences, but in the professed artists. They are incapable of creating a serious work of art, but merely confuse one or another form of conceptually banal

psychic peek-a-boo, *National Enquirer*-like "pornographic" psychoanalytical "revelations," with an *artistic effect*. They have no true sense of variation, of irony.

In the organization of the section to follow this, you will be engaged in simultaneously watching the argument of the writer and the inferred mental processes of the hypothetical Soviet audience. We have not elaborated that process in the way a formal Platonic dialogue prescribes, but all the elements are present by implication. Keeping that section of this introduction in view for purposes of reference, we now outline the essential principles of the Platonic dialogue.

How will your mental processes organize themselves for this circumstance? You will, of course, attempt to simulate your projected estimate of the Soviet mental processes within an aspect of your own mental processes. You will also attempt to simulate your best estimate of the writer's processes in still another facet of your own mental processes. All the while, you will be watching both with still another facet of your mental processes. That is not yet the end of the matter. You will compare by setting up in one part of your mind another facet of the mental processes, to represent your own reactions to both the Soviet reactions and to the writer's argument.

In this manner, you induce yourself to become *self-conscious* of your own mental processes. One part of your mental processes studies the manner and method in which your mental processes ordinarily function. A situation has been created in which crucial features of your ordinary conscious behavior are brought to your conscious attention. Instead of treating your ideas, impulses, and so forth as eruptions which simply happen to you, instead of permitting your consciousness to merely react to stimulations, you have introduced another element of consciousness: self-consciousness. Now, you peer into the processes by which you formulate opinions, by which certain stimuli evoke impulses into your consciousness, and so forth.

The function of such self-conscious activity is not merely to observe, but to correct the manner in which you form judgments. The watching part of your consciousness is not merely observing passively, it is acting. The object of the dialogue is to induce *you* to develop one yet-higher level, which activity is what I am doing now: to look at these four facets of your mental processes through yet another facet of your mental processes. That accomplished, you are examining the way in which your first-level self-consciousness intervenes into the processes of your simple consciousness.

The initial object is to study and to correct the way in which your first-level self-consciousness corrects perceived errors of assumption and method in your simple-conscious processes of judgment.

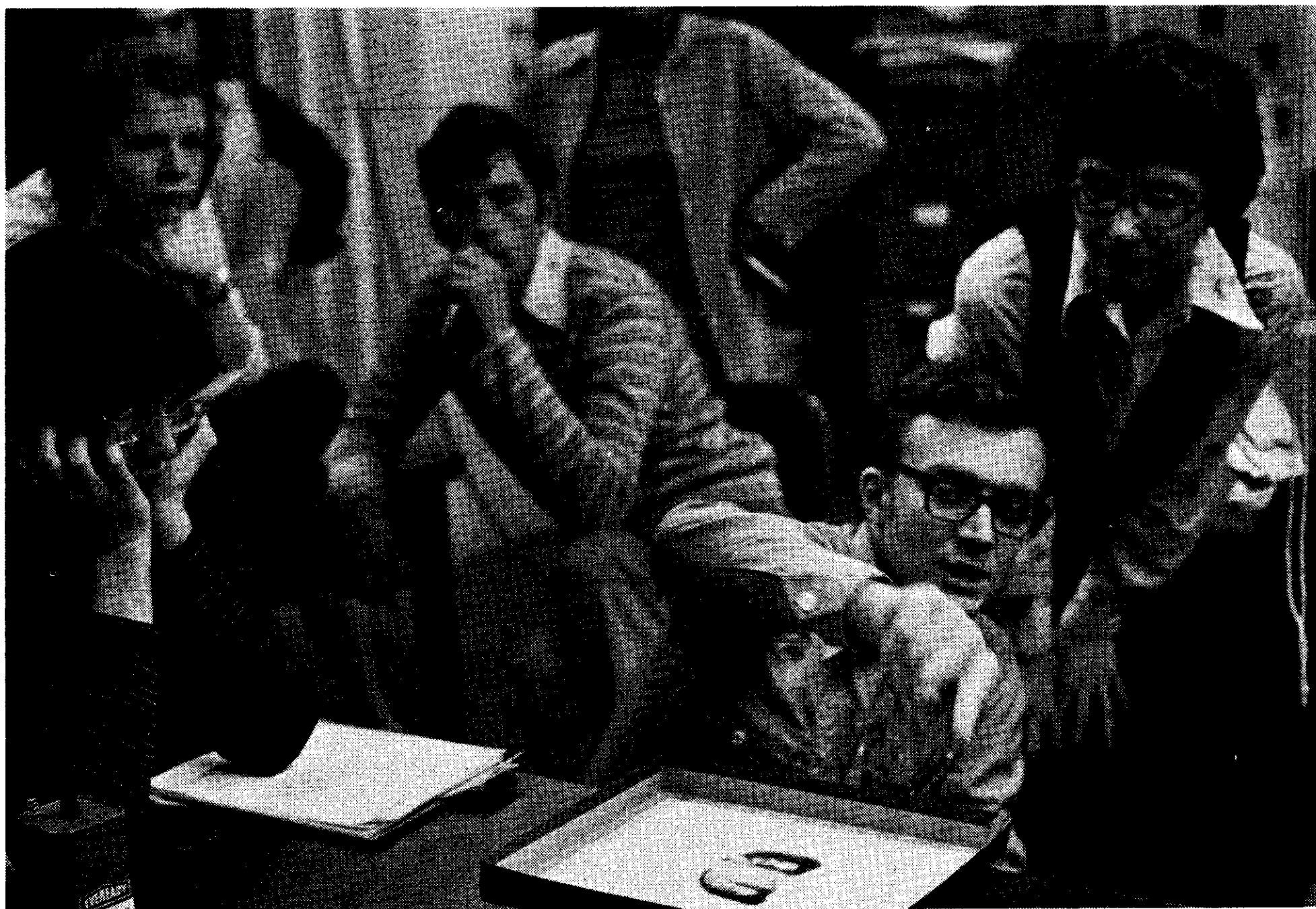
Is this, then, some approximation of Freudian psychoanalysis? Freudian psychoanalysis depends upon aspects of just those capabilities of the mind we have indicated here. But this is by no means so crude an instrument, so intrinsically flawed an instrument as Freudian psychoanalysis.

How do we determine what is and is not error in judgment? How do we determine which assumptions and methods of conscious judgment are in error? This is not a formal question, a psychological question as such. It is a question of empirical knowledge of social practice.

To turn the potentialities we have outlined into a process which is applied to fruitful results, we must select a topic of inquiry which is specially suited to our purposes. The typical such topic is a matter of scientific hypothesis, selecting a problem in formulation of hypothesis which admits of empirical verification. We require not just one problem of this sort, but a range of such problems, covering relevant cases of proven and disproven, provable and disprovable hypotheses from past and present practice.

Ignorant opinion concerning scientific education assumes that students progress by mastering proven theories, procedures, and so forth—something analogous to stuffing programs into a digital computer system. This is not the case. Students learn scientific method through successes and failures in problem solving. They "guess" answers to problems from the launching point of knowledge already given to them; those guesses which lead to successful solutions then serve as the basis for the mind's informing itself of what kinds of assumptions and methods lead to successful hypotheses in the associated class of cases. By also learning why assumptions and methods producing successful hypotheses in one case do not work in other classes of cases, where other assumptions and methods do succeed, the student develops the ability to guess answers to problems effectively over the entire field mastered in this way.

A good school or a good teacher never builds a course around memorizing "facts." Such methods of instruction literally destroy the mental capabilities of the student in that field, possibly creating a more or less permanent blockage, such that the student may thereafter never become able to perform competent judgments in that field in later life. A "multiple-choice" examination is sometimes permissible pedagogy, under the right conditions and design of testing. Good education always focuses on development of



In a course on the history of "crucial experiments" and scientific hypothesis, an instructor shows how a magnet beneath a tray of iron filings attracts them along its poles.

the student's ability to develop and test hypothetical solutions to a previously unknown problem. Good education focuses on developing the student's power to create and test soundly developed hypotheses for problems of a sort never before encountered in the student's experience.

This does not mean that the student should not learn facts. It means that the assimilation of facts must be a subordinate feature of the process of education. It is the additional facts which make a successful hypothesis possible, the additional facts which test a hypothesis decisively, which the well-directed student prizes—and gobbles up as *coherently assimilated facts*—in consequence of their importance to his hypothesis-forming and -testing powers.

A good teacher asks the student, "What led you to make that error?" rather than simply asserting, "Your answer is wrong." That does not mean that teachers should not expedite matters in classrooms, and so forth, by such simple declarative statements of error by a student. The class—and life—must proceed.

The student who has learned to inquire, "What misassumptions caused me to err in making that hypothesis?" will automatically respond to the knowledge of an error he or she has made by conducting self-examination independently. The good teacher cultivates that practice among the students.

"Why is that wrong?" The question, properly assessed, ought to mean: what misassumptions produced the wrong hypothesis?

This is the function of the Platonic dialogue. Whether as a dramatic presentation, or as an implicit drama of the sort we have outlined above, the purpose of Plato's (or my own) communicating to you in these terms of reference is to facilitate our mutual discussion of our respective methods of forming hypothesis. We are using the Platonic dialogue and derived forms as a medium through which my second-order self-consciousness can establish a basis for mediated, efficient communication with your second-order self-consciousness. By laying out the social relationships in such a manner that they correspond to

the simulated mental processes we each have simultaneously constructed within our respective mental processes, we can now refer to the hypothesis-generating functions of thought as the subject of our communication.

The question is not the psychoanalyst's problem of sorting out the noise associated with carried-over grudges from childhood. The purpose is to bring the processes of guessing within the mind into agreement with the lawful ordering of the universe. The purpose is to refine one's hypothesis-generating processes, with aid of error-correction, to the effect that the way in which one guesses at the consequences of an action will closely parallel, with increasing precision and range of implications conceptualized, the actual causal relations realized by such action within the universe outside the mind.

If you desperately insist on making such an analogy, you are using a sophisticated error-correcting procedure for making your mental processes a useful "analog computer" in respect to the lawful ordering of the universe apart from those mental processes as such.

There are two general levels on which the method of the Platonic dialogue operates. The first is that of ordinary hypothesis; the second is termed the level of the *higher hypothesis*.

Ordinary hypothesis—let us confine our attention for the moment to physical-scientific hypothesis—is simulated in good secondary-school pedagogy (for example) whenever the teacher presents the students with a problem to solve on a slightly higher level of educational development than the students have so far achieved. We wish to illustrate the point by assuming that the solution required cannot be effected through deductive methods on the basis of preceding education. Some small degree of genuine creative scientific hypothesizing is demanded.

That illustration helps us to reach agreement on the notion of a range of quality of the knowledge a society has achieved at any point in the here and now of general progress of civilization. This coincides with the kind of knowledge to which *misguided* persons refer when they wrongly propose that existing scientific knowledge is based on laws which correspond efficiently to the actual lawful ordering of our universe.

That sort of fallacious assumption has been made apparently by misguided, educated persons during every age. In due course, new advances in scientific knowledge, a new age, shows that such persons were indeed misguided. So, mere schoolchildren of each age ridicule the archaic ignorance and foolish pre-

sumptions of many learned figures of the ages preceding their own.

What, then, does our existing scientific knowledge represent? It is better than that of the nineteenth century—in respect to the technology of practice to which it corresponds. It is more appropriate, more adequate, more powerful than knowledge of earlier ages. Yet those earlier forms of scientific knowledge had a similar authority for their own age, and justly so. We say that our present knowledge is *less inadequate* than any which has preceded it. We know, and we have conclusive empirical proof of this fact, that our own scientific knowledge is devastatingly inadequate by the standard of any effort to pose the requirements of a finished, adequate such knowledge.

Ordinarily, by hypothesis we mean those methods of scientific guessing which can be relied upon to produce a usually fruitful result in empirical practice. As we compare the methods of forming simple hypothesis over successive ages, in respect to the particular body of scientific knowledge of each age, we discover that the principles of simple hypothesis undergo a necessary change as scientific knowledge progresses.

This historical view of the problem of hypothesis provides us the empirical basis for studying the higher functions of our own mental processes. The fact that the secular course of progress in scientific knowledge for practice corresponds to an increasing *negentropy* in social productive practice demonstrates that the progress in hypothesis-making methods represents an ordered progress in the power of hypothesis-making methods.

This fact, abstracted as a fact from that historical evidence, now becomes the primary subject of our further inquiry. We are now confronted with the task of defining and proving a hypothesis which accounts for advances in general hypothesis-making powers. This hypothesis concerning an orderable advancement in hypothesis-making powers of entire societies is what Plato terms *the higher hypothesis*.

It is that *higher hypothesis* which is the subject of the *Timaeus*.

Plato's treatments of astronomical data, of matters such as the circulation of the blood, the distribution of food through the blood, the carrying away of waste matter by the blood—almost two millennia before Harvey!—has the underlined purpose not of presenting a science of metabolism, but of abstracting the method of hypothesis in terms of then existing scientific knowledge.

The various treatments of what is now archaic scientific knowledge, taken all together, have the

purpose of giving empirical reference over a range of different subject matters, for the discussion of hypothesis in general, and hence of the higher hypothesis.

This is the essential feature of the poetic principle.

In true poetry, the subject of the poem is never explicitly located in the lines. As the stretto in the form of Platonic dialogue known as the fugue, a key line may have the same function as the last canto of Dante's *Commedia*. It may identify agreement with the subject of the composition in such a way that the reader is aided to recognize that the true subject is the subject. So, the stretto in the fugue assures us that we and the composer are of the same mind concerning the true subject of the fugue, its process of development taken as a whole. The last canto of the *Commedia*, the same. Such coded elements of parts of a composition so noted, the true subject of a poetic composition is the subject which is never mentioned in a literal way in any line. The subject is that which corresponds not only to the configuration of the lines (as a transfinite corresponds to subsumed, lower-order numbers), but to the process of development that configuration of successive lines represents.

The reader of *Timaeus* must fight against missing the forest for the trees. *That* configuration of *those* trees is necessary to give us *that* forest, but it is the forest which is the subject, just as the individual man is no mere intellectual construct of his biological parts.

The principal subject of *Timaeus*, the higher hypothesis, is that *self-developing* (self-improving) form of the higher hypothesis which corresponds to the *increasing* power of man to willfully command the lawful ordering of the universe. What, the dialogue implicitly inquires, are the assumptions of guessing which efficiently correspond to such self-developing increasing power? The principal subject of *Timaeus* is not the fulsome explication of the development of such assumptions. The principal subject is the implications of the result of such a successful inquiry, of such a successful perfection of man's power to form the higher hypothesis.

It is on that point that Plato's *realism* (often termed "idealism") hangs.

The Platonic Dialectic

Excepting the anti-Plato bowdlerizing of *Timaeus*, etc. in the Peripatetic writings conventionally attributed to Aristotle's authorship, the name *dialectical method* refers to the formulation of that method through the dialogues of Plato. Whence, then, one asks, do Soviet proponents of *diamat*—"dialectical materialism"—purport to represent themselves as proponents of a dialectical method?

It is possible to reduce conventional retorts to that challenge to variations on the following basic formulation.

The respondent, perhaps a manifestly indignant respondent, will insist, "Soviet *diamat* and *histomat* are chiefly derived from a corrected body of secondary sources, which, in turn, were chiefly informed on this matter by the writings of Friedrich Engels, who, in turn, shared the views of Karl Marx on this matter. It is to be admitted," they will continue, "that Marx, in turn, acknowledged his own considerable debt to G.W.F. Hegel. Hegel's *Phenomenology of Mind* and *Science of Logic* are among the works most useful for reference on this connection. However, Marx 'turned Hegel on his head and made him a materialist.' The defect of Hegel was that he was an 'idealist' in much the same sense as Plato. We concede that Plato made a contribution to the development of dialectical method, but he was an idealist, and quite possibly an antidemocratic reactionary as well."

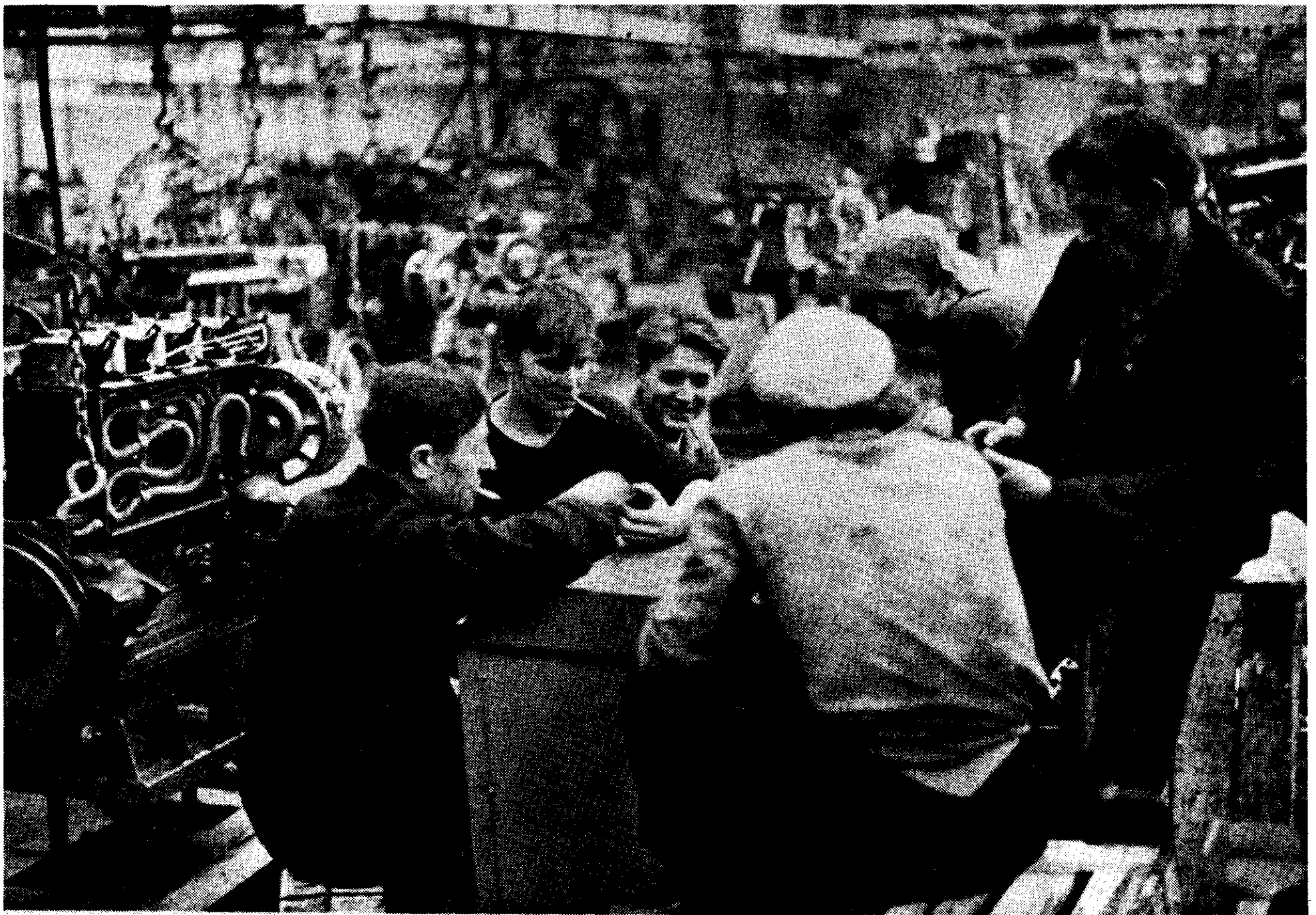
Our representation is essentially a fair one. The response to our characterization fully corroborates the characterization to which the response was given. It is unthinkable to use the term "dialectical method" and to also insist that Plato was an "idealist" contemplative philosopher, who essentially reflected the world-outlook of a slave-owning form of society. Such blunders suffice to demonstrate that the respondents lack competent knowledge of either Plato or the dialectical method.

This we shall show to be the case.

What is the importance of addressing a Soviet audience on this matter? Assuming the characterization of *diamat* to be an accurate one, why bring it up—why not overlook it as a point of avoidable disagreements?

First, the best leading currents of Soviet outlook have no agreement *in practice* with *diamat*, however much ritual lip service they may offer in support of it on standard sorts of ceremonial occasions. Although these currents are not, to date at least, professed, conscious Neoplatonists or Platonists, their world-outlook converges in effect on that of Neoplatonism. Would it not be better for the world if one of the most powerful nations of the world had a conscious command of a theory which agrees with its proper "organic impulses," rather than one which does not?

Second, the agreements reached between Chancellor Helmut Schmidt and President Leonid Brezhnev at their May 1978 meeting are directly articulations of the "Grand Design" policies earlier associated with Gottfried Wilhelm Leibniz and Henry IV of France, among others. These policies are Neoplatonic



"In practice, the primary movement of history for the Leninist currents of Soviet life is not socialism, but a principle of progress." Work-break at a tractor factory in Vladimir, U.S.S.R.

policies, which depend for their determination and conscious, efficient implementation on conscious mastery of corresponding aspects of Neoplatonic principles.

Third, the possibility of the May 1978 agreements flows to a considerable degree out of not only the Vatican's so-called *Ostpolitik*, but also Paul VI's 1967 *Populorum Progressio*, both of these flowing from Vatican II. The ecumenical principle consciously governing the Vatican's approach to these matters is far more explicitly Neoplatonic than the conscious motivations of the May 1978 agreements.

It comes full circle. It was the Soviet "organic impulses" convergent upon Neoplatonic principles which made the latter two processes possible, on the side of Chancellor Schmidt and the Vatican. As Brezhnev, Schmidt, President Giscard d'Estaing, and leading forces of the Vatican concur, the policies of coherent East-West and North-South economic and political cooperation are the only hope for avoiding

an otherwise virtually certain general thermonuclear war.

For such reasons, it is of great practical urgency to all of us, including the Soviet leadership, that better knowledge of the dialectical method be rapidly developed.

Before proceeding to the kernel of the matter, we must pause to interpolate a bench mark of reference. Notably, where does Karl Marx himself actually stand in respect to the quality of dialectical method reflected in such works as the *Timaeus*?

In this matter, we shall state the essential points of our previously documented knowledge of the contradictory features of Marx's method.

Marx's secondary-school essay of 1835, written as an assignment for the Trier *Gymnasium* director, John Hugo Wyttenbach, affords us a point of insight into Marx's character. Wyttenbach, elected to head the *Gymnasium* during the 1790s, was a Neoplatonist by inclination, elected to that post as the teacher best

qualified to represent the world-outlook of both Benjamin Franklin and Immanuel Kant. Some later writings of Wyttenbach, some years following Marx's graduation, emphasize continued development of his Neoplatonic outlook.

This same Neoplatonic influence is reflected in Marx's work on Democritus—although with other elements included—and is expressed in the most concentrated way in both his 1845 *Theses on Feuerbach* and another writing of the same year, the "Feuerbach" section of *The German Ideology*. The latter are writings which some official Soviet circles—partially as a reflection of a British intelligence "Right Opposition" operation involving Karl Korsch, Eduard Bernstein, and Sidney Hook—were induced to characterize as Marx's "idealist" youthful writings.

It is most inconvenient for the Soviet and other proponents of the "young" versus "mature" Marx that the concluding section of *Capital* Volume III emphasizes the same methodological outlook as the 1845 items. This is most notable in the development of the notions of necessity and freedom in that section of *Capital*.

It is correct to say that Marx's essential character to the end of his life was predominantly that of a Neoplatonic. The problem was that Marx was otherwise variously ignorant and disinformed in crucial respects on such topics as the French Revolution, the history of medieval and modern Europe, and the factional history of the development of European science.

This ignorance and disinformation centered around Marx's misguided obsession that nineteenth-century Great Britain represented the model-of-reference for the development of capitalism, and that the British and French empiricists (the "materialists") represented a development in ideas which correlated with the development of capitalism as a more advanced form of society.

Of the two collaborators, Friedrich Engels was targeted earlier for influencing and containment by British intelligence. Marx himself was later massively disinformed through such operatives as David Urquhart. Among the hideous personal operations deployed against Marx, representative is the case of Edward Aveling, general scoundrel and womanizer, who left the embrace of his cultist mistress, Annie Besant, to seduce Marx's most talented child, Eleanor, dragging her through degradation to a premature death.

If one understands the hideous circumstances in which Marx lived and worked—the fact that the entire "radical" movement of continental Europe and England was controlled top down by British intelli-

gence networks throughout Marx's life—this controlled environment, plus operations such as the Urquhart British-intelligence operation, account for the circumstances under which Marx's ignorance and error were cultivated on various important issues.

One ought to have compassion and admiration for what Marx represented and did in fact accomplish under these circumstances, and thus inter his errors with his bones.

It is not Marx who is responsible for the hideous concoctions known as diamat and histomat. There is the case of Karl Korsch, the British agent and associate of British intelligence's evil Bertrand Russell. There is N. Bukharin, Vienna-trained subagent of Royal Dutch Shell's Alexander Helphand (Parvus). There is "ultra-leftist" G. Riazanov, another subagent of Parvus's from Vienna, who later turned up in the British-intelligence-controlled "Right Opposition." There is British intelligence operative J.B.S. Haldane, associated with the order of the same cult of "The Golden Dawn" which produced Hitler, and various other British elements. It was British agents in Moscow who revived Edward Aveling's hoax, the effort to have *Capital* dedicated to Charles Darwin. It was British agents such as these who made histomat and diamat the Mandarin-like babbling and gibberish they represent in quasiofficial edifications on those subjects.

Then, happily, there is Lenin. "Spiritually," V.I. Lenin was the heir of Marx in the best sense. Lenin's inclination by pedigree was toward the Neoplatonic Russian currents identified in art by the novelist Chernyshevsky, the author of the Cervantes-emulating novel *What Is To Be Done?*, the novel whose title Lenin coopted with well-aimed irony for one of his own major, self-defining booklets.

The "organic" Neoplatonic tendency in the Soviet leadership and nation is, our Soviet discussion-partners will be somewhat consoled to hear, historically determined, with V. I. Lenin key to the realization of that determination into today. Lenin's political dedication from the earliest role of political leadership combined two elements. One element of policy was identical with that of Czar Alexander II, Chernyshevsky, and Count Sergei Witte: the industrial development of Russia, to lift Russia out of the bestiality of rural life. The other, distinguishing element was his commitment to the development of the Russian working class as an *independent political force*. As an independent political force, that working class must either bring a policy of capitalist industrial transformation into being, or, should the capitalists fail to accept such a dedication, that independent political force must undertake the transformation without

capitalism. This was not only Lenin's outlook prior to World War I; it was the conceptual basis which subsumed his strategic "Rapallo" policy of the early 1920s.

It is a nominalist's fraud by the Mensheviks and their clagues to insist that they were dedicated to a capitalist transformation of Russia in 1917. They were for a *British-capitalist* transformation of Russia, which meant, in effect, very little industrialization at all. They were committed to defending City of London-centered financier interests in the form of feudal rural estates in Russia, and to facilitating the Milner-Parvus version of what later became known as Haushofer's geopolitical strategy for dismembering the "Eurasian heartland" in British interest.

In brief, Lenin was no Trotskyist.

The heritage of Lenin's influences and Lenin's institutions in Soviet life today does involve a dedication to socialist transformation of society globally, although not in the form of Red Army occupations or anything of that sort. In practice, the primary movement of history for the Leninist currents of Soviet life is not socialism, but a principle of progress otherwise consistent with the Neoplatonic view of the necessity for generalized scientific, technological, and cultural progress. Whatever means serve that purpose are but *ephemerals* of this moment of history, the necessary mediation of a process of progress in terms of means actually at hand. The means are not a miraculous, instantaneous transformation of the world to a state of socialist homogeneity; the means are whatever practice actually serves the process of progress.

Our Soviet discussion partners must accept this formulation. Certain features of it will sit unpleasantly in their minds at first hearing, but they cannot seriously argue against it. The end is not some utopian goal. The end is the continuation and, preferably, the acceleration of progress. The means and the end are one and the same. The Soviets define the Soviet Union as a state characterized by a socialist constitution. In that, they are right. But *Leninist socialism* is not a state, but a means, a method, a course of action, which under certain circumstances produces (*determines*) a socialist state. The ultimate Soviet objection to a capitalist Russia is essentially an objection to the means (and social forces) by which such a capitalist Russia would be established. It is not static conditions that are essential; static conditions are merely historical ephemerals. It is a specific quality of movement that is primary; it is direction, it is quality of movement in the required direction. With this proposition our Soviet discussion partners could find no defensible difference.

What continues to pain them in the discussion so

far is essentially that this writer is saying this. What pains them is the fact that this writer, to whom they have accorded no corresponding titles of authority on these matters, should be passing judgment on the judgment of Marx, Engels, Lenin, and so forth. Behind every form of objection, provided we trace it to its source, we will find the *ad hominem* argument I have just identified.

That noted, we focus on the crux of the matter: the basis for arguing that the proof for the higher hypothesis is also a proof that the ontological quality of the universe is also dialectical. This is, of course, the point toward which Karl Marx and all serious elements among his professed successors have been working in their efforts along these lines. Vis-à-vis our Soviet discussion partners, our point is to show them why the official diamat intrinsically leads to absurdities on this point, whereas the Platonic approach not only avoids such absurdities, but produces empirically corroborated results of exactly the sort Soviet specialists have sought in this respect.

In the forthcoming book edition of the new translation of the *Timaeus*, an introductory article by Dr. Steven Bardwell elaborates the matters of physical theory per se from the vantage point of contemporary plasma physics. Here we will concentrate on the crucial points this writer has adopted as his specific responsibility.

Economics and Epistemology

The writer's very special qualifications in writing this introduction flow from his successful breakthrough in solving the hitherto unsolved but crucial problem of theoretical and applied economics. It happens, as the point is outlined within the writer's *Theory of the European Monetary Fund*, that this solution was developed as a correction to a crucial, systematic failure in Marx's *Capital*, the notorious issue of the concluding chapter of Engels's edition of *Capital* Volume II. Although Marx's conception of economic processes paralleled the work of Alexander Hamilton, Friedrich List, and Henry C. Carey, among others, in locating the source of all wealth in *increases* of the productive powers of labor through technological progress, Marx, like all others attempting to solve this problem, was unable to construct a deterministic model of an economy based on the principle of a constant transformation through technological progress. With aid of Georg Cantor and Riemann, the writer first discovered the solution to this problem during 1952.

Although use has been made by others of subsumed features of Bernard Riemann's discoveries in relativistic physics, the essential breakthrough, represented in Riemann's famous 1854 habilitation paper

on fundamental physical hypothesis, has not been generally comprehended. Exemplary of that lack of comprehension is the case of Albert Einstein and his collaborator Hermann Weyl, who mistakenly regarded the Einstein general relativity program as "Riemannian." In fact, the Einstein program deals only with one alternative, degenerate case of the kind of universe specified by Riemann's notion of fundamental physical hypothesis.

Through aid of Cantor's development of his own notion of the transfinite, it was made clear to the writer that the $n+1$ generative principle of the Riemannian conception corresponded to the generation of successive transfinite orderings, and not anything like an increase in the number of degrees of freedom in the ordinary sense of aprioristic varieties of non-euclidean physical geometries. The recognition of this implication of Riemann's work encouraged the writer to adopt a similar approach to solution of the problem of deterministic economic models.

This has two direct implications for fuller appreciation of the Platonic conception of both the higher hypothesis and the dialectical ontology which flows from the higher hypothesis. First, Riemann's notion of fundamental physical hypothesis is a partial reaffirmation of the Platonic conception for physics. Conversely, the difficulties which have attended generally failed efforts to comprehend Riemann are the result of educational and related indoctrination of physicists in an anti-Platonic epistemological world-outlook. Second, it is, as we shall summarize the proof for this, only in a proper approach to economics studies that man is able to prove the relative truth or falsehood of scientific conceptions in general.

The first point is more easily set forth if we consider the second point beforehand.

The fallacy of all economic doctrines existing prior to the present writer's post-1952 elaboration of his own discovery is that the effort to define deterministic models for policymaking takes either monetary data or other particulars as if they were self-evident data. Models, either simultaneous linear equations or equivalent procedures, are constructed on the basis of these assumptions. A basic model is constructed on the assumption of no significant technological transformation of the system described. Then, at best, an effort is made to account for the effects of introducing technological transformations to such models. The fallacy of this procedure ought to be obvious.

As Alexander Hamilton proved, in principle, in his 1791 *Report on the Subject of Manufactures* to the U.S. Congress, the sole possible source of continuing wealth of a society is *increases of the productive powers of labor*. It is that *increase*, and that increase alone, which

is the source of wealth; therefore, *that increase must be the primary datum of any economic model*. In other words, only a phase-space datum of an economy can yield a nonparadoxical accounting of the economy.

Conversely, the effort to debate matters concerning technological progress in terms of accounting-oriented models is absurd, and can yield only absurd answers.

The development of the Neoplatonic outlook, as focused in the analysis given by Plotinus, occurred in direct connection with the *Timaeus*. The consubstantiality of the divine and man in Christ was defined as the unity of the necessary being with mortal (ephemeral) man brought to maturity of perfection. The consubstantiality of the Trinity was the unity of the *necessary being*, the *higher hypothesis*, and the *perfected particular man*.

The further, crucial point was that of the church as the embodiment of the living Christ. The body of the church, a continuity superseding the ephemeral existence of the individual communicants, was defined as a process of perfection toward agreement with the higher hypothesis (atonement). The "New Jerusalem" in the Revelations of St. John the Divine bear most directly on this matter.

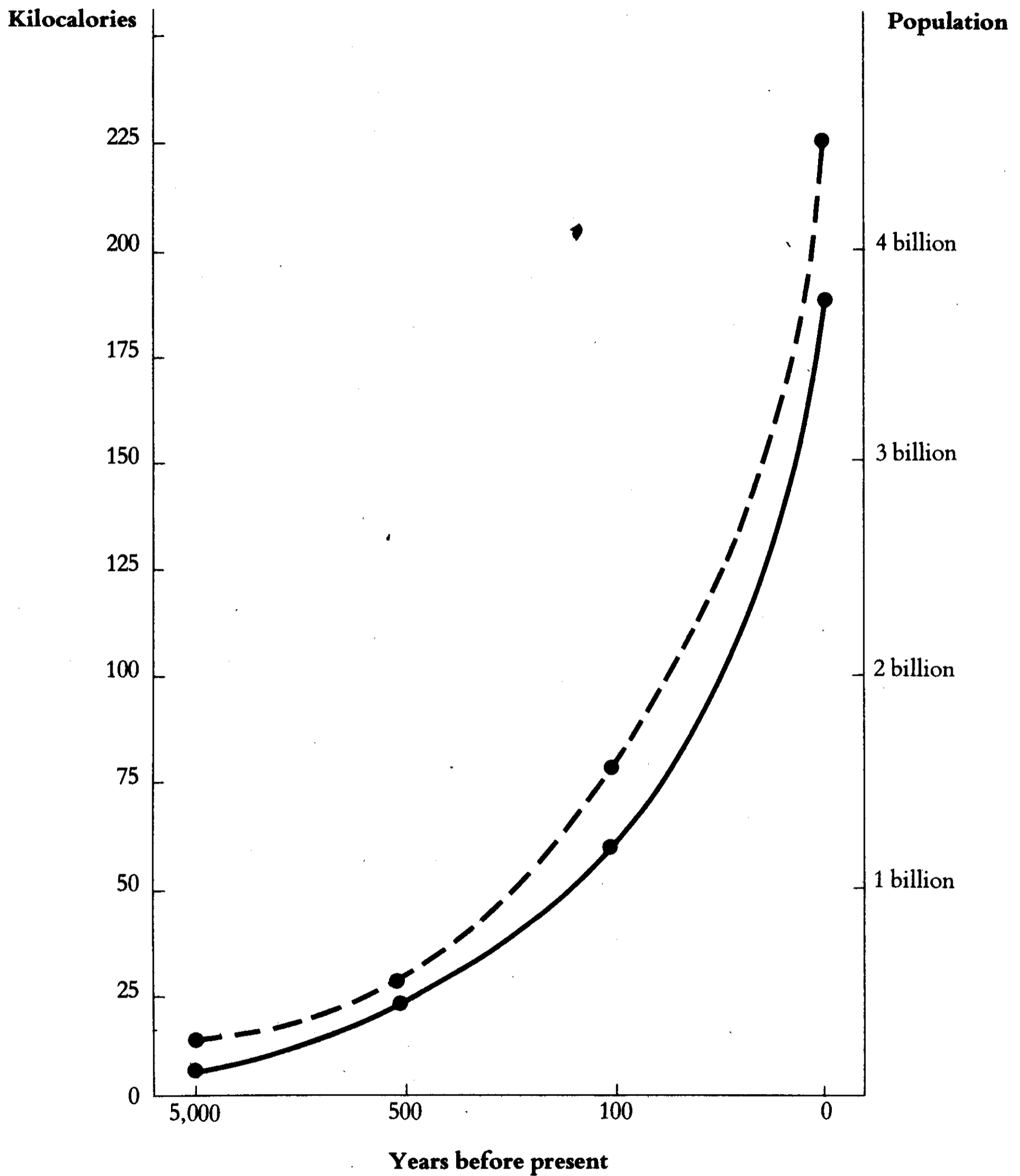
This is readily proven to be the case.

As man develops beyond a beast-like form of hunting and gathering, he does so through technological innovations. With each stratum of social practice so defined, there is an associated definition of what are ostensibly man-altered primary resources for the society in that technological stratum. In this way, every society encounters a marginal-resources social-cost factor, which bounding condition is of no governing significance except with respect to that and more primitive levels of technology.

Examining this process in terms of the thermodynamic characteristics of various levels of technological progress since the old Stone Age cultures, we are able to show that the succession of cultures has the following thermodynamical characteristics. At first gridding of the data, we observe a rise in the per capita throughput of useful energy for production, and hence also consumption. With a finer gridding, we adduce an exponential tendency (secularly) for rise in this rate of increase of per capita energy densities.

There is a further, crucial consideration.

Examining the process more closely, we note that the total energy throughput of production has two aspects. One aspect is the energy per capita consumed ostensibly in merely maintaining the society and its associated mode of production—as if in a fixed technological mode on the same scale of production. The



The process of scientific invention through the course of human history has produced an exponential increase in per capita energy consumption (dashed line), showing that secular increases in human population-potential produced by scientific and cultural progress more than offset the increases in population (solid line). In the modern period, the introduction of fossil fuels and, most recently, nuclear energy has rapidly increased the energy density available for further progress.

other aspect is the "free energy" component per capita. This is the margin of energy which increases the "reducing potential" of the society (and production), enabling overcoming of marginal-resource limitations, and is the margin of throughput on which expansion and qualitative development of the society and its mode of production depends.

As society advances (secularly), this ratio of "free energy" to total energy must increase. However, the per capita throughput merely to maintain individuals and the mode of production also increases as we progress from lower to higher technologies. The combined increase of this base-line throughput with higher ratios of "free energy" to total energy throughput we term *negentropy*. We restrict the usage of negentropy in our further discussions to that definition.

Although it is the negentropy which we treat as the parameter correlative with technological progress, it is not merely the application of increased energy flows to society which produce the advancement. Rather, the increased negentropy, in terms of energy flows, is in the form of a requirement, not a sufficient cause for progress. *Whence comes the possibility for increased energy throughputs?*

The source is innovations contributed by individuals and assimilated for social practice by other individuals as well as the individual innovator. The generalization of the innovations which provide the rising negentropy is what we term generalized scientific and technological progress. In respect to this, scientific knowledge is the generalized expression for advancement in the creative-mental potentialities of individuals both to generate and assimilate those discoveries.

Thus, *the fact that a certain "world-line" of development of scientific progress correlates with negentropy of social existence and practice is the only source of conclusive proof of scientific knowledge.*

Wealth, in turn, is defined primarily as *negentropy*, as the mediation of a rise from one condition of negentropy to a higher condition. Wealth is that total spectrum of all production and consumption through which the development of the minds of persons mediates a continuing advancement in the potential and realized negentropy of society.

Each product, and every other isolable particular feature within an economy, is but a transient value, an ephemeral. It is not accounting constructs of these particularities which determine value, but the change in negentropic values which determines the value of particulars such as individual products, prices, units of labor time, and so forth.

The "world-line" which scientific knowledge describes in the outlined process is the empirical correlative of the self-development of hypothesis associated with Plato's notion of the higher hypothesis. It is this view of the history of scientific knowledge which enables us to attribute empirical authority to scientific knowledge in any field. It is, as we noted, a proper application of economics which provides us with the sole basis of empirical proof that scientific knowledge is not some delusion, some chimera.

If we then apply this overview of science to the most fundamental sort of empirical knowledge we presently command concerning the development of our own planet, the following, decisive results are obtained.

The history of our planet begins, according to present knowledge, as a matter of *inorganic physics*. Out of this emerges *organic physics*, the (negentropically) self-developing biosphere. Out of organic physics emerges man, *reason*. Reason cannot be accounted for as merely an extension of organic physics as such physics is defined for knowledge. However, reason, knowing itself through knowledge of the higher hypothesis, has comprehension of that ostensibly immanent, creative principle which is already embedded as a self-developing principle within the inorganic domain, which, through its self-development, elaborates the organic domain and then the domain of reason. The parallel to the organization of Dante's *Commedia* is exact and is not merely coincidental.

We have just now stated the essential notion of Riemann's habilitation paper.

The empiricist critic objects; he insists that reason is a nonmaterial, and therefore mystical, existence in our account. Just the reverse is the case. The fact that we exist as a species whose existence is ordered by the negentropy that is in turn ordered according to the higher hypothesis proves that the materiality of the universe is not as pathetic, *as paradoxically mystical* as vulgar forms of inorganic-physics doctrines assume it to be. Otherwise, the critic—should he deny this argument—is placed in the interesting predicament of asserting that he himself cannot possibly exist. One presumes that the utterance vanishes with the utterer; hence the critic's argument, if true, never existed and need not be considered further.

This, incidentally, is the basis for the Riemannian notion of multiply connected manifolds.

We live in a universe whose essential nature, whose lawful ordering, is such that we, with our negentropic existence, are an integral part of that universe. The fundamental lawful ordering of the

universe therefore corresponds to those aspects of human behavior which correspond directly to the principles reflected in comprehension of the higher hypothesis.

There is one further, crucial point to be made on this immediate basis.

Since every stratum of extant scientific knowledge is but an ephemeral in the process of self-development of knowledge, no particular such body of knowledge can be considered to be in more than adequate, pragmatic correspondence with the actual lawful ordering of the universe. However, the higher hypothesis is. Since the higher hypothesis is that aspect of human knowledge which correlates with an increasing negentropy of social practice, and thus represents directed increasingly willful power over the lawful ordering of the universe, it is the higher hypothesis which, uniquely, corresponds to natural law.

Hence, the ontology of the universe must necessarily be defined in agreement with the higher hypothesis. The fundamental "stuff" of the universe can not be other than that *for human practice*. This "stuff" is termed the *necessary being*—the necessary "stuff"—to distinguish it from ephemeral and otherwise inadequately defined notions of materiality.

That is the principled solution to the so-called unified field problem.

That is the notion of the interconnection of *higher hypothesis* and *necessary being* which is the principal subject of Plato's *Timaeus*.

In this overview, the particular, the relative ephemeral is determined, and real. Particular existence mediates the self-development of the whole process. The particular comes into being by action of the whole process, and in turn mediates the whole processes's self-development through the action associated with the existence of the created particularity.

To account for the development of such conceptions in Plato, the potentialities for such discoveries are adequately identified by studying the development of Ionian and Eleatic thought from Thales of Miletus through Parmenides, Heraclitus, Democritus, and so forth. The combining of three qualities of existence through the addition of reason (*Logos*) to the hylozoic overview of nature apart from man is the key point of reference.

Hence, the significance of triads in Platonic and Neoplatonic thought. They are not arbitrary or mystical. It happens that there are three distinguishable qualities of knowledge—inorganic physics, organic physics, reason—and that these have a definite correlation with the succession of maturity of knowledge in the developed individual: egoistical-infantile-sensual ("bronze souls"), sensual infantilism educated to

logical rationality (Kantian "understanding," or "silver souls"), and the actually mature human being of reason ("higher hypothesis," Kantian "pure reason," "golden souls"). There is nothing at all mystical about any of it.

The mystification occurs only as persons on one of the two inferior levels of maturation attempt to either account for the universe generally, or attempt to interpret the conceptions of matured minds from the standpoint of their own inferior development of mental processes.

Riemann's own published writings, as corroborated (to date) by a preliminary investigation of his unpublished literary remains, show that his own mental development, his own approach to the issues of the fundamental hypotheses of physics, emulated the Platonic-Neoplatonic outlook, and that the approach taken by Riemann reflected the extent to which he had been informed through the Neoplatonic influences perpetuated into his own time and education.

Neoplatonic Christianity

The Soviet attitude toward Plato and Neoplatonism is conditioned by a simplistic form of atheism, and also by the powerful association of Neoplatonism with the first centuries of Christianity's defining itself more rigorously against the problems represented by various pseudo-Christian cults. Consequently, predominant Soviet views on Christianity (in particular) are essentially incompetent, incompetent views of Christianity which spill over into the attacks on Neoplatonism, and are reflected in Soviet susceptibility to British-style frauds concerning Plato's "idealism."

The best way for the Soviet reader (for example) to understand the Christianity of the apostles, of the Council of Nicea, of Origen, of St. Augustine is to look at the conflicts between the apostles and patristics on the one side, and various pseudo-Christian cultist "heresies" on the other. What is the issue between Philo of Alexandria and the Sadducees? What is the issue between Simon Magus, the first prominent pseudo-Christian cultist, and both Philo and St. Peter in Rome? What is the issue between the apostles and patristics, on the one side, and the gnostics and other forms of monophysites on the other? What was the issue of Manicheism, the latter the belief of Winston Churchill's "Henry Kissinger," Arnold Toynbee? What was the issue of Arianism, of Donatism?

Reduced to essentials, these struggles against pseudo-Christian cults centered around the *consubstantiality* of the divine and man in Jesus Christ and the *consubstantiality* of the Trinity. The latter was defined in opposition to the effort to introduce a thinly

disguised trinity of the Ptolemaic cult of Isis (Isis, Osiris, and Horus) as a pseudo-Christian trinity, giving Isis the name of the Virgin Mary, and shamelessly renaming the existing icons of Isis to this effect.

The development of the Neoplatonic outlook, as focused in the analysis given by Plotinus, occurred in direct connection with the *Timaeus*. The consubstantiality of the divine and man in Christ was defined as the unity of the necessary being with mortal (ephemeral) man brought to maturity of perfection. The consubstantiality of the Trinity was the unity of the *necessary being*, the *higher hypothesis*, and the *perfected particular man*.

The further, crucial point was that of the church as the embodiment of the living Christ. The body of the church, a continuity superseding the ephemeral existence of the individual communicants, was defined as a process of perfection toward agreement with the higher hypothesis (atonement). The "New Jerusalem" in the Revelations of St. John the Divine bear most directly on this matter.

There are, of course, deviations from so coherent a view among the leading patristics and others. Nonetheless, in each combat against the cultists Christianity was obliged to search more deeply, once again, to define the crucial form of the issues; leading figures, working with material inherited from their predecessors, worked consistently in the same direction—the direction which echoes the *Timaeus*, a directedness which defines the patristic church as essentially Neoplatonic.

The crux of Neoplatonic Christianity from the vantage point afforded by the *Timaeus* is this. The *divine* corresponds to an agreement among *necessary being*, the *higher hypothesis perfected*, and *man matured to perfected agreement in method of judgment and motives of practice with the prescriptions of the perfected higher hypothesis*. The ontological definition of the universal, necessary being as a self-subsisting creative principle consubstantial with the universe is *deified* as God.

With this kernel of knowledge, one can cut through all the confusion with which the history of Christian doctrines otherwise confronts us.

This occurs most clearly in surviving literature of Islam in the *Metaphysics* of ibn-Sina, in the definition of the "Necessary Existent." The most rigorous statement of the same notion during the Renaissance is given by Cusa's exposition on the "Non-Other."

These principles of the *divine* in Christianity are extended as a doctrine of practice according to the three levels of maturation of the human mind and sense (and motivations) of personal identity. The *soul* is empirically identified by those phenomena of the creative-mental potentialities of man which fundamentally distinguish species-man, through realized

self-development, from all the beasts. This is the active potentiality within the individual, which, developed to comprehension of the higher hypothesis, corresponds to reason. It is the development of man, of individuals, through the three degrees of maturation of such souls, which is the analytical basis of reference for defining the *tasks* of Christianity. It is the issue of ordering society under conditions that most such souls are on the two lower orders of maturation which completes the basic outline of the problem.

This overview of Christianity from the standpoint defined by the subject of the *Timaeus* is the first step toward removing the delusion that Christianity represents a collection of myths, irrationalities, and so forth, or is a trick by which ruling classes keep the sheep more readily in willing subjugation. Exactly the contrary to the latter is true, as will be clear as we turn more directly to examine the class content of the pseudo-Christian cults.

The second set of facts to be considered, to remove the fraudulent characterization of Christianity as myth-ridden, is that the documented history of Christianity is authoritative and verifiable. In addition to the New Testament itself, the most relevant principle sources are the writings of Philo of Alexandria, the documents surrounding the Council of Nicea, the writings of Origen, the history given by Eusebius, the writings of Plotinus, and the *Confessions* and *City of God* of St. Augustine. Through most of the first century after Christ, the church was held together by St. John, "who knew Christ," and after that, into the larger part of the second century, by John's successors, "who had known John, who had known Christ."

Although, admittedly, we have only the witness of the apostles and some others to the resurrection of Christ, every other essential fact concerning early Christianity is verified—without revelation—to the point that this aspect of that period, from apostolic, patristic, and related sources, is, in respect of depth, one of the best-known aspects of the entire history of the period.

What is mythical is the account of history which attempts to explain the barbarian invasions of the western portion of the Roman Empire without taking into account the controlling role of the Arian cults, controlled from Byzantium. Similarly, it is absurd to attempt to explain "Mongol hordes" later in terms of "population pressures" and so forth. The total Mongol male population of that period, man and boy, did not exceed one million! If one notes that the Mongol invasion was coordinated with forces centered among the "black nobility" of Rome, the silly myths told to credulous children concerning the "Mongol hordes" are dispelled, and the more hideous truth of the matter

comes to light. What is mythical is the customary fairy tales concerning the reasons for the Albigensian crusades, or the mythical version of the fall of Constantinople.

The emergence of Christianity intersects and intervenes in an age-old, continuing struggle between the two principal factions of civilization. There are, on the one side, the "city-builders," the current typified by city-builder Thales of Miletus, by Plato. On the opposite side, there is the faction known in Plato and Alexander the Great's time as the "Persian model" faction, or, generically from then to the present day, the oligarchical faction.

During the span of history which represents a literary continuity, as history, for us today, we begin near the beginning of the first millennium B.C. During this period, the center of evil, of the oligarchical faction, was the Babylonian priesthood—together with some very nasty, similar social formations in Egypt. During the period of the Attic Greek civilization, the Babylonian priesthood, "the magicians," were represented throughout the Mediterranean littoral through the Delphic cult of Apollo (the immediate adversary of Plato's Academy at Athens), which was the master of that oligarchist and Delphi agent, Aristotle the poisoner.

The last great political consequence of the direct organizing work of the Academy at Athens was the coup d'état which brought the antioligarchist Alexander the Great to power in Macedonia. The fragility of Alexander's conquest, that the antioligarchist forces depended upon a relatively small circle of power gathered chiefly around one individual, made the assassination of Alexander a catastrophic defeat for humanity for an entire period.

Contrary to all the frauds, the Roman republic was dominated by the cult of Apollo throughout its literary-historical period. Meanwhile, the cult of Apollo, apart from dominating the Mediterranean more freely after the death of Alexander, created a new form of the cult of Isis in Ptolemaic Egypt, and also synthesized the Stoic cult. The Roman republic became increasingly degraded, and was transformed into the Roman empire and its prefascist forms of existing by cannibalizing conquered cultures.

It was during this period that Philo of Alexandria contributed to reawaken humanity, through his campaign against the Sadducees and their Pharisee allies among the Jews. It was during the course of the fight launched by Philo that Christianity emerged among the Jews, and, there is no doubt, around the existent personality of Jesus Christ. It is also clear that there was no essential modification of Christianity from the apostles and St. Paul's writings to the patristic tradition of Christianity of today. Although the elabora-

tion of the doctrine was extended after the death of St. John, notably from the standpoint of the *Timaeus* as an agreeable methodological point of reference, there was no change in the essential doctrine. Rather, as we have noted, the elaboration was extended to the purpose of sharpening the distinctions of thought and practice between Christianity and the pseudo-Christian cults.

The issue between the Christians and the pseudo-Christian cults is made most clear by examining the issues in nonreligious terms. This presents us with the additional advantage of showing what is really to be understood whenever one hears the argument that "Platonic idealism leads toward religious outlooks."

Man's nature, the potential for creative-mental development which distinguishes him from the beasts, demands a form of society in which that nature is made the practical basis for the personal identity of the individual person. This occurs only under those conditions in which the development of the productive powers of labor is emphasized. Man condemned to live in the same mode of production and existence as his father, grandfather, and his father before him, is a man whose lack of experience of development degrades him to circumstances analogous to those of mere cattle. Deprived of the basis for making an essential distinction in practice between himself and some talking beast, man prizes himself for his mere cattle-like biological existence, his egoistical-sensual appetites and impulses. Man becomes degraded into a beast-likeness in his morality and self-image.

The rise of humanity has been urban-centered. It has been centers of trade and culture through which technological advances were radiated into the countryside. Hence, the fight for humanity, for progress, is properly associated with the city-builders, with those forces which lift mankind out of the "idiocy of rural life," out of the moral imbecility of social relations which degrade men to a kind of talking cattle.

Since Babylon, the enemies of humanity have been clearly defined. The oligarchical faction, as a social class, has been based on feudalist forms of land-owning aristocracy, allied with mercantilist rentier-financier aristocratic families. The coordinating instrument for this ruling oligarchical class was the sort of priesthood typified by the Babylonian magicians, the priests of Apollo, the priests of Isis, and so forth, into the Isis cultists of the Scottish Rite of Freemasonry, of Oxford and Cambridge, and the British-centered oligarchical cultists of the Order of Malta. It is British intelligence today, as the center of this combined cult and political-intelligence network, which replicates the traditions of belief and practice of the ancient oligarchical and Roman imperial priesthoods.

This is the key to the fight between Christianity and the Roman Empire. It was a struggle, on behalf of the ruling strata of Rome, to maintain the oligarchical world order which the Empire had instituted. At first, the Roman imperial reaction was hideous repression. The Sadducee-allied faction of Jews in Rome proposed to the Emperor Nero that he slaughter the Christians, providing a scapegoat for his own incendiarism. Repression was complemented by other, subversive methods: the pseudo-Christian cults. One begins, properly, with the case of the alliance of St. Peter and Philo against the pseudo-Christian Roman cult of the magician Simon Magus, and continues in the history of the business through the principal cult manufactures such as gnosticism, Arianism, Manicheanism, Donatism, and the various disguised Isis cults, such as the cult of Our Lady of Fatima today.

In manufacturing these cults, the priesthood of the cult of Isis and the Stoics understood exactly the way in which to parody a humanist body of scientific knowledge or religious belief, imitating certain appearances of what was parodied, but totally reversing the direction of outlook for practice. This knowledge, the principles of cult syncretization, was developed as the priesthood's accumulated knowledge of centuries of practice.

The essential methods for cult manufacture in this way are sometimes identified, currently, as the "Delphi Principle." These are the methods which the authors of the writings attributed to Aristotle employed in their efforts to simultaneously coopt and destroy Platonic knowledge. Just as the apostles and patristics used methods paralleling Plato's to defend Christianity against the pseudo-Christian cults, so the methods of Plato's adversary, Aristotle, were used as the fundamental body of method and procedure for designing pseudo-Christian cults.

The significance of Aristotle in this respect is summarily the following. He was a member of an established oligarchist family, and an agent of the cult of Apollo at Delphi from not later than his apprenticeship as an intelligence operative (i.e., Macedonian-Persian spy) for the cult at Isocrates' Athenian school of rhetoric. Although the Babylonian priesthood, in particular, had perfected methods of cult syncretization as a psychological science over centuries, the concentration of scientific knowledge embodied in Plato's Academy at Athens represented, for Delphi and Babylon, the most deadly potential danger the oligarchical faction had faced. Plato's consolidation and advancement of Greek science represented a new quality of foe. Just as the entire civilized world depended on Greek methods of warfare—for nations whose military policy was not totally suicidal—so the Babylonians depended upon Greek agents of Delphi,

most notably the Peripatetics led by Aristotle, to apply ancient cult methods to the task of attempting to neutralize the more powerful quality of knowledge represented by Plato's Academy.

Aristotle, after his own initial training under Isocrates, was assigned to penetrate the Academy, and remained there for an extended period as a Delphi penetration agent and Persian spy. By developing the ancient cult-syncretizing methods of the oligarchical priesthood into a weapon adapted to cultist practices against Platonism, the oligarchists brought their cult-syncretizing methods to the relatively highest degree of development. In principle, from that period down into Oxford University and the Ashmolean Museum or Tavistock Institute of today, the British monarchy and its predecessors have effected no principled advances in cultist methods of psychological warfare over the methods associated with the Peripatetic subgroup of the cult of Apollo.

It should be interpolated here, out of courtesy to our Soviet discussion partners, that in this matter of Neoplatonism the advantage, relative to Moscow, is not entirely on the side of today's Catholic Church. There are three most commonly recurring sticking points in the tradition of the Catholic Church's postpatristic history which Catholic leaders of the apostolic tradition have attempted to circumvent, but have not so far mustered the courage and insight to extirpate directly. Aristotle and Aristotelian methods are the common denominator of this problem.

These three sticking points—which correlate with every other expression of the same difficulty—are the seizure of control of the papacy by the Pierleoni converted-Jewish bankers of Rome during the eleventh century, Bernard of Clairvaux's doctrine of cultist irrationalism (against Abelard of Paris) during the twelfth century, and the case of St. Thomas Aquinas of the thirteenth century (against Roger Bacon et al.). The case of Thomas Aquinas is central.

The Catholic leaders of the apostolic tradition circumvent the difficulties associated with Aquinas's commentaries on Aristotle essentially by defining Aquinas as an Augustinian who commented upon Aristotle—rather than the radical-pagan view of Aristotle, adopted by the Anglican Jesuits of today, which defines Aquinas as an Aristotelian. By defining Aquinas as an Augustinian—which has an emphatic historical basis in Aquinas's repudiation of his earlier work toward the close of his life—the apostolic traditionalists concerned to save Aquinas's position argue essentially as follows.

They argue that Neoplatonism is essential to comprehension of all essential matters, but that the Aristotelian method is useful for lower-order concerns.

The analogy in Soviet practice is the case in which the Anglo-Dutch agent of influence N. Bukharin were to be “rehabilitated”—as the British demand today. The effort to falsify Soviet history in such a way as to allow “some merit” to the enemies, N. Bukharin and G. Riazanov, would provide a most useful cover for the deployment of all sorts of British-Zionist penetration agents into relatively high levels of the Soviet party and state.

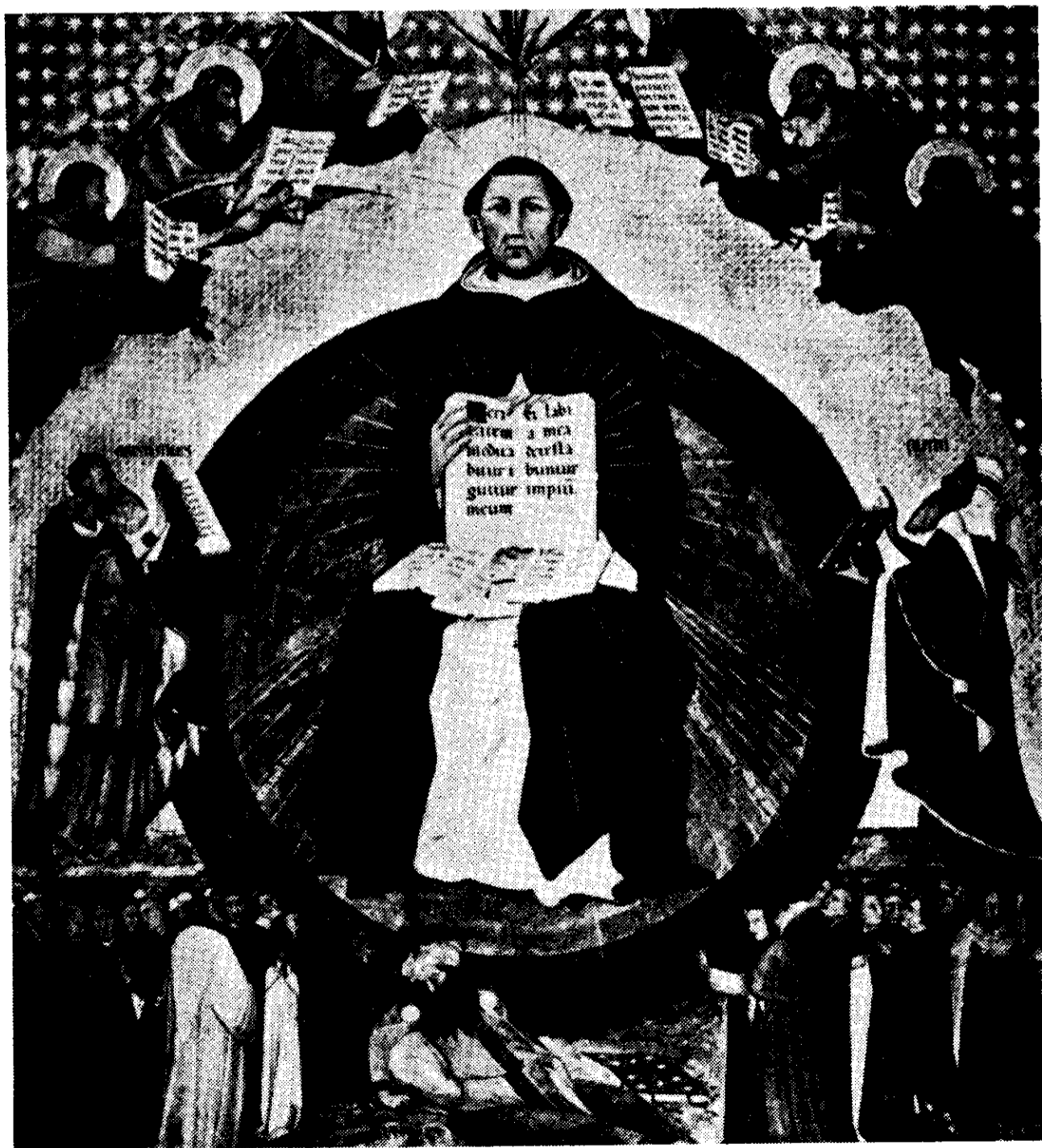
It may be the case that V. I. Lenin tolerated the wretched Bukharin, just as he tolerated the wretched Karl Radek. If one knows the facts—what an agglomeration of variously outright agents and muddleheads even the Bolshevik leadership of 1917 represented—one better appreciates the magnitude of Lenin’s role during that and the following years, and also the virtual impossibility of cleansing the Bolshevik leadership of all figures who had dirty pedigrees as agents of various police and other intelligence services in their past. Were Lenin alive, so that he and I might discuss the matter today, he would entirely agree with my view on this point.

The same Aristotelian method is manifest as the

controlling, “Delphi” principle in the deliberate falsification of translations of Plato by Oxford and Cambridge specialists down to the present date. The case of Benjamin Jowett is illustrative of translators who have apparently used every opportunity to mistranslate specific terms of (for example) the *Ti-maeus* in such a way as to mystify clear argument through superimposition of Anglican-religious terminology.

In each of the pseudo-Christian cults, the Delphi principle is key. The first, large-scale pseudo-Christian cult problem centered around gnosticism. Gnosticism, overall, attempted to adapt Christianity to the form of the authorized Roman Empire pantheon, describing Christianity as analogous to the inner beliefs of the cult of Isis, as a “mystery religion.” More crucial in this package were the alternative versions of *monophysitism*, the one arguing that Christ was merely of a mortal nature or, the opposing monophysite doctrine, that Christ had no mortal nature.

Granted, the man in the street might not comprehend the implications of his assimilating either variant of the monophysite views. The arguments might



The case of Thomas Aquinas: This late-medieval portrait of Aquinas shows him drawing inspiration from both Aristotle (the figure at center right in the painting) and Plato (on the opposite side).

appear—and did appear—plausible to many persons, and because of that plausibility drew such persons into cults and into the hideous practices which flowed, as potentialities, from such indoctrination. From the vantage point of the *Timaeus*, the practical implications of the various monophysite dogmas quickly become clear. The consubstantiality of the divine and mortal for the doctrine of the *imitation of Christ* is seen as crucial.

The cosmographical essence of religious cultism is as follows. First, the universe is separated into two domains, the domain of mortality, and a higher, independent domain of some *deus ex machina*. The higher domain has power over the world, a power which is either irrationalist (such as the standard Greek pantheon) or is governed by some fixed principle. Both variations argue that reason is unknowable to man, or that reason simply does not exist (irrationalism), and insist, in the same way, that the lawful principles governing the ordering of the universe either do not exist (irrationalism), or are inaccessible to human knowledge.

The cultist cosmography is either merely irrationalist (for example, Bernard of Clairvaux), or argues that a *deus ex machina* created the world at a certain point, with built-in, fixed laws of the Aristotelian sort. Either case both denies the accessibility of reason for man, and, by that implication, *denies that man is accountable to knowledge of the ordering of the universe as accessed through reason*. Once these arguments are adopted as religious beliefs, the victim of such superstitions is open to belief in some arbitrary, mystical principle.

The consistent view of apostolic and patristic Christianity is most clearly emphasized in the way in which Christianity characterized itself in clarifying its own world-outlook against the views associated with cult syncretization based on the ontological assumptions we have just summarized.

The standpoint of Christianity was, at each point, the ontological standpoint of consubstantiality. God is, they argued, one and the same with the self-elaborating positive, self-subsisting principle and substance which is manifest in the self-elaboration of the universe according to the lawful ordering expressing the self-subsisting positive. The universe as a whole, taken as a self-subsisting positive creative principle of self-elaboration, is God.

Christianity was not “rationalist” in the sense associated with the French Enlightenment and the cosmogony of Lagrange, Lalande, and Laplace. Christianity was “rationalist” strictly in the sense of *reason* as given by Plato, reason as defined in respect to the higher hypothesis.

French Enlightenment rationalism would insist—if it accepted the proof of the higher hypothesis we have outlined in respect to Riemannian hypothesis—that perhaps the mastery of this quality of knowledge by man is possible—at least, ultimately. However, the French Enlightenment spokesman would view this acquisition of knowledge as an augmented power of *the quality of man associated with French Enlightenment moral outlooks*. Thus, a person working in the tradition of the French Enlightenment would miss the crucial point of Christianity. In the transformation of man through knowledge, from the man of Dante’s “Purgatory” toward the higher quality of man, of the “Empyrean,” there is not merely an increase in the knowledge at man’s disposal, *there is also a transformation in the moral character of man*.

Enlightenment man is motivated by his egoistical-sensual appetites and impulses. He is, admittedly, qualitatively separated from the ignorant, brutish sansculotte who irrationally follows those infantile impulses. He takes account of the logical consequences of his actions and inactions, according to a certain degree of universalized formal-scientific knowledge of social practice and physical lawfulness. He is of the same quality of Immanuel Kant in his *Critique of Practical Reason*, in the “Dialectic of Practical Reason.” He has negated those impulses which are prohibited to him because of his own or society’s judgment of the intolerable consequences of actions governed by such impulses. Yet his essential motivation has not changed. His motivation is a rationalist modification superimposed upon his infantile-egoistical sensuality, his greediness, his bestial manner of lusting, and so forth.

His inner nature must be transformed. His sense of personal identity must be relocated from the infantile, here-and-now reference point defined by a sensually motivated simple consciousness, must be relocated in the quality of consciousness associated with knowledge of the higher hypothesis. In psychological terms, his sense of personal, acting identity in the universe must be relocated in those higher aspects of what is termed his “preconscious” thinking processes, the aspects we have identified with conscious knowledge of the higher hypothesis, with the level of knowledge required to comprehend the principal subject of the *Timaeus*.

This does not produce a monastic withdrawal from the world. It is a view entirely hostile to mysticism and mystification. The transformed person is very much in the world of practice. The transformation involves the different manner in which he defines his individual identity, the way his sense of identity determines his judgment and motivations for social

practice. He now views himself as a particular intelligence, partaking of the divine quality of that universal reason reflected through perfecting knowledge of the higher hypothesis. He acts as an individual for a universal purpose according to that divine knowledge.

In Riemannian physics terminology, the purpose is that of individually mediating the negentropic development of the human species' condition, of willful command over the lawful ordering of the universe.

The quality of the characteristic acts of the transformed individual is exemplified by the case of a fundamental scientific discovery. This discovery advances the quality of knowledge possessed by the human species, and, if assimilated for practice, advances the human condition generally in such a manner as to contribute to the possibility of new qualitative advances in knowledge and practice. So, science, realized in that way through generalized social practice, is science at the level of the higher hypothesis, is a self-developing positive knowledge, which mediates its development as knowledge through transformations which negentropically advance human practice.

Karl Marx summarily poses the crucial problems of modern knowledge, pointing in precisely this direction, in his *Theses on Feuerbach*, and in the "Feuerbach" section of *The German Ideology*. The "dirty-judaical" quality of the object of contemplation must be superseded by that view which recognizes the ephemeral quality of the particularity, and which locates actual human knowledge in a self-advancing body of revolutionary social practice.

The inadequacy of the isolable fundamental scientific discovery is that such discoveries may be effected (and usually are) by persons whose sense of identity and outlook is not otherwise more advanced than that condition outlined by Kant in the "Dialectic of Practical Reason." There is a disagreement between their *immortal* actions in scientific discovery (laying a higher foundation in the universality of human knowledge for laying yet higher foundations yet to be added), and their personal world-outlook as individuals. There is a qualitative disagreement between that aspect of them which produces fundamental discoveries (immortal acts) and those aspects of their personal lives and conduct which are governed by vestigially infantile, egoistical motivations.

The transformation occurs, for example, if the scientist ceases to view his identity as that of an ordinary sort of greedy person who also makes discoveries, if he, instead, accepts the reality that he is an individuation of the divine intelligence, whose acts

are universal acts, are the conscious mediation of the negentropy of human existence.

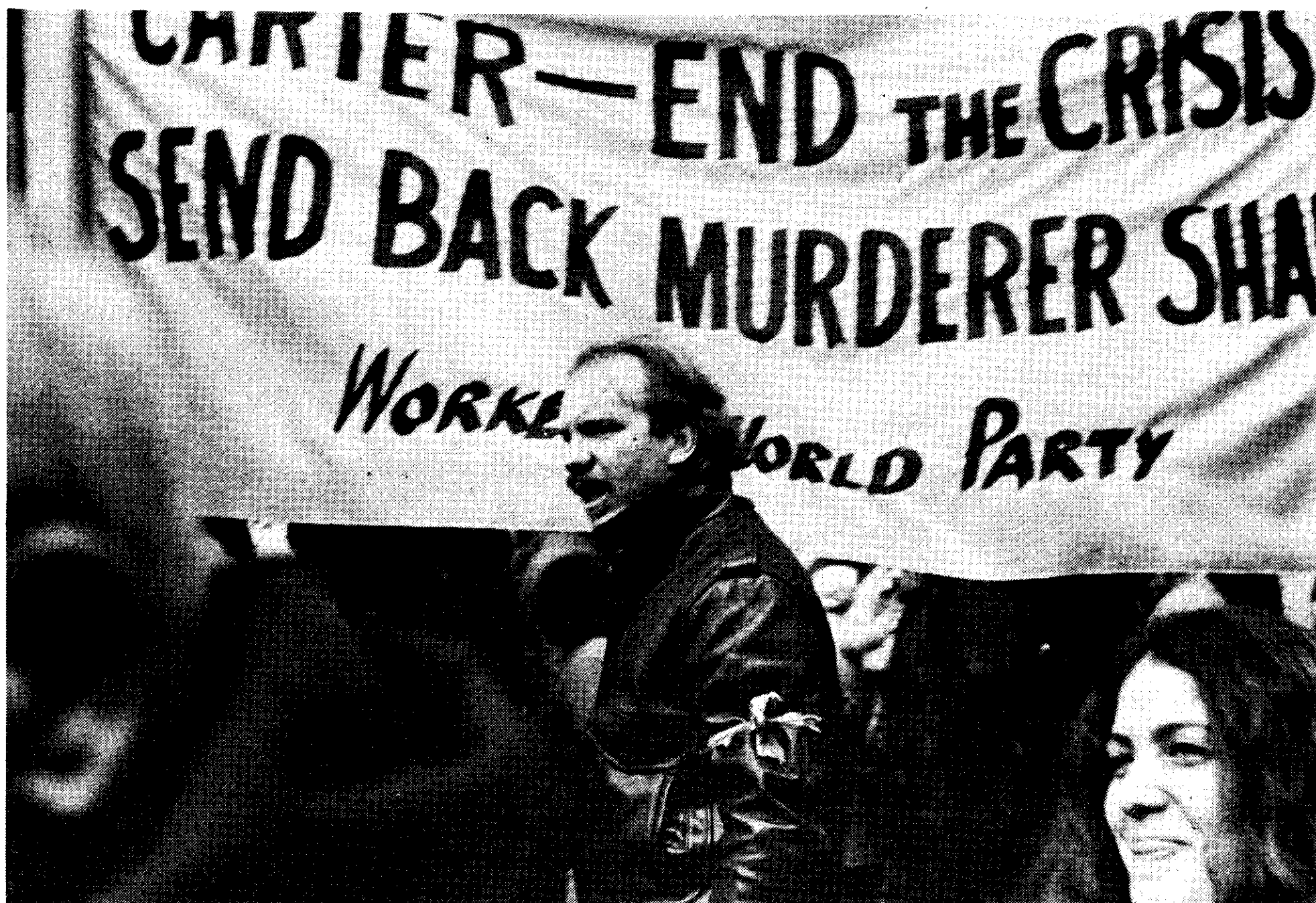
The society whose morality must be transformed desires scientific knowledge merely as power in behalf of its egoistical desires. The transformed personality pursues the same power over the lawful ordering of the universe because this realization of the divine is the necessary activity of the human species and its individual member. The transformed person does not cease to eat, to make love, to utilize material prerequisites of work, leisure, and living, to feed his children, to work to gain the means for these things. The transformed man does these things under the governance of a relocation of his sense of personal identity in that aspect of his consciousness which is occupied with perfecting knowledge for practice of the higher hypothesis.

A second principle issue of Christian combat against pseudo-Christian cultism pins down the point being argued here. This point is the significance of the consubstantiality of the Trinity. The Christian view defines God, the Holy Spirit, and Christ according to the principles of the *Timaeus*: the universal necessary being, the universal lawfulness expressed by the perfected higher hypothesis, and perfected man. This is the coherent oneness of the universal, self-subsisting ontological reality as a oneness, the lawful ordering this embodies in itself, and the individual intelligence, embodied with the knowledge of the higher hypothesis, the ephemeral particular existence, whose immortality lies in its efficient mediation of the self-development of the universe according to the lawful principles of the perfected higher hypothesis. Christianity essentially prescribes the necessity of ordering human affairs according to the acceptance of the necessity for perfection (atonement) in this universal ordering.

Once the deification of the Necessary Being is grasped, there are no mysteries in Christianity as such. The problem is that persons on the two lower levels of existence are incapable of comprehending these matters, and they are therefore mystified, not because the reality is mystical, but because of the mystification flowing from their relative bestialization.

The cult emerges whenever mystification is substituted for the scientific Neoplatonism we have outlined here. The oligarchist priesthood exploits the mystification of the persons on lower orders of development as their potential credulousness for what is actually mysticism.

In the case of the Christian Trinity, the cult-maker substitutes Osiris, Isis, and Horus, by redefining the Trinity as God, the Virgin Mary, and Mary and God's son. This substitution, which the evangeli-



Dionysiac cultism on the march: demonstrators in New York City scream their support of the Ayatollah Khomeini's regime. The same "radicals" had marched on Wall Street a few weeks earlier to protest nuclear energy development.

cally trained Ludwig Feuerbach introduced into the middle chapters of his *Essence of Christianity*, is combined with the cosmography of the monophysite doctrine and that latter's implicit derivatives. The result is either weird monophysite forms of mysticism as such, or a dualistic cosmogony, modeled on the Greek and Roman pantheons. In the dualistic universe, capricious deities and mystical principles intervene, *deus ex machina*, to reorder the events in the world.

A particular, hideous form of such cultist mystification is given by the case of Manicheanism. Here, starting from an Aristotelian misconception of reality, the mystic exploits the problem Leibniz noted in the cosmogony of Isaac Newton. In Newton's universe, someone must, *deus ex machina*, periodically wind up the run-down contrivance again, and yet once again. The Manichean solves this problem by introducing the necessity of evil—to keep the world moving. This was the doctrine of Arnold Toynbee, and is the doctrine the Rothschilds' London *Economist*

employs to argue in effect for the coming time of Satan's turn at a period of rule.

The purposes of motivating the cult-syncretizers are quite earthly. The cult-makers are agencies of the oligarchical social classes.

The oligarchical faction, the "Persian model" faction for which Aristotle worked against Plato, and later against Alexander the Great, is based on the goal of subjugating the world to what might be described approximately as a feudal order. Its notion of political economy is essentially physiocratic, in the sense of the British and French Physiocrats, apologists for the parasitical landed aristocracy during the seventeenth and eighteenth century. In this aspect, the parasitical land-owning-oriented aristocracy is the emphasized social element of oligarchism. The complementary element is the financial aristocracy, mercantilist rentier finance, which is associated with a tax-farming orientation. It augments its appropriation of social wealth at the expense of the relatively stagnant mode of production on which the financier

parasite feeds. The rentier aristocrat of finance is "physiocratic" in his doctrine—whenever he troubles himself to make himself conscious in that way of his swinish practices.

The priesthood—or the modern controlling centers of the British-dominated, British-centered intelligence networks—is the executive agency for the oligarchical classes and class interest.

As a minority within society, the oligarchical class—the three identified components—is obliged to find ways in which to accomplish two things. It must propagate ideologies which prompt masses of people to submit themselves to bestialized forms of "zero-growth" existence. It must develop mass battering rams for deployment against the city-builders' factions.

The two objectives are served by the same cult-making means. Therefore, we may concentrate on the second feature, the deployment of battering rams against city-builder forces. We discover the evil reality of what Christianity was combating in opposing gnosticism, Arianism, Manicheanism, Donatism, and so forth.

The essential requirement of an oligarchist's cult is a social force which is opposed to technological change, opposed to scientific and technological progress as a *generalized social policy*. These susceptibilities are found most readily in three strata of the population of society: primitive and rural populations, slum elements, and adolescent youth. The first are incited to "defend our traditional ways." The second are easily recruited to various forms of immorality. The last is susceptible to the psychological conditioning modeled on the Orphic-Dionysian cults. In all three cases, the psychological principles of cult manufacture and indoctrination are based on the relative bestialization of the world-outlook of the recruits. In the case of adolescent youth, the indoctrination over the ages has combined forms of music and dancing like modern rock styles, eroticism moving through sodomy into human and or animal sacrifices as sexual rituals, and the introduction of psychedelic substances. The youth are brainwashed into becoming participants in terrorist-death cultism by playing upon the infantile aspect of the conflict between the infantile impulses and demands of adult maturity; this conflict is expressed in a special form of susceptibility to cultism among adolescents.

The various pseudo-Christian cults, or the kinds of syncretic cults fostered since the early nineteenth century around Oxford University (and more recently, Tavistock) as a center, can be psychologically interpreted as reaction formations prepared in advance for introduction to a population conditioned

into a state of psychosis. In terms of Dante's *Commedia* as a point of reference, the cults are based on exploiting the susceptibility of the cultist to be drawn into the pit of the Inferno, through the equivalent of group masturbational rites—and not excluding such rites as such. The biological individuality, and the infantile-egoistical evaluation of one's own sensual appetites and impulses, is excited through rituals of alternating gratification and denial. The soul, as Christianity defines it, is destroyed. (The victim of this degradation is now qualified to become an Anglican priest.)

Contemporary "environmentalist" organizations are exemplary of such paganist cultism. This applies not only to the characteristic features of the environmentalist organizations, and to the Dionysiac "rock culture" which has been crucial to developing Dionysian cults (environmentalists, terrorists, and so on). The environmentalist and terrorist cults of today have been created through British intelligence and the Zionist subordinate arm of British intelligence. The center is the British faction of the Order of Malta, including that inner circle of Isis cultists known as the "Order of the Golden Dawn," the order which created Adolf Hitler.

Hitler and Mussolini's fascist movements are both strictly cults, created by exactly these forces and based on the basic sociology and psychological principles used in creating Dionysiac cults over the centuries. The hand behind both Hitler and Mussolini was the old British-monarchy-centered "black" aristocracy of Europe and the Middle East. The British Order of Malta, the British Isis-cultist form of international Freemasonry, the Anglican faction among Jesuits (for example, Major-General Professor Karl Haushofer), and the Zionist subcult of British Freemasonry, created Adolf Hitler and brought him to power. True, having created the Nazi "Frankenstein's monster," the British, who had intended that Hitler's forces would plunge only eastward, to conquer the "Eurasian heartland," found the monster they had created largely out of their control. Nonetheless, it was they who created the monster and set it afoot.

The political content of pseudo-Christian and other cultism has been that of an instrument deployed by the oligarchical faction to the continuing purpose of bringing the world under a hideous sort of feudalist utopia, of an end to scientific and technological progress, and a perpetuation of world rule by a feudalist oligarchical elite, the goals stated by Otto von Hapsburg and his allies today.

The Judaism of Philo of Alexandria, and the Islam of the Prophet Muhammad, have the same categorical significance as Christianity, in their opposition to the various pseudo-Judaic and pseudo-Islamic cults. This

is implicitly indicated in our outline of summary features of the case for Christianity. This similarity is a featured element of Cardinal Nicholas of Cusa's development of his proposal of an ecumenical policy for relations among Christianity, Judaism, and Islam. Cusa's analysis is also the basis for the extended ecumenical policies represented in the Vatican's "Ostpolitik."

Historiographical Lessons

The vulgarized version of Karl Marx's doctrine of history as a succession of "class struggles" is premised on the variously stated or implicitly required assumption that members of social classes secrete specific qualities of ideas as an epiphenomenon of the objective conditions and social relations characteristic of that class. In the twentieth-century U.S. socialist movement, this vulgar doctrine was expressed by Daniel DeLeon's argument that a socialist outlook springs from "the horny hand of labor."

We would not wish to imply that Soviet thought is to be equated generally with such vulgarity. Rather, by focusing on the extreme, vulgar version of the "class-struggle theory of history" we use this worst-case version as a point of reference for marking out the range of views of historiography which lie between the vulgar view cited and the view which we are obliged to entertain in light of the Plato case.

The first level of general correction of the "vulgar-Marxist" version of historiography was developed by Karl Marx in early sources including *The Communist Manifesto*. It is not the condition of labor, individually, which determines "socialist potentialities" of outlook. It is only as the atomized working class is developed as an independent political force, and develops a consciousness of its fundamental interests as a whole, independent political force, that it becomes what Marx defines as a "political class-for-itself."

So far, Marx's argument stands up against the empirical realities of subsequent history and repeated concrete experience with the labor movement generally. The remaining question to be resolved is that posed by Marx in his *Theses on Feuerbach*: Who will educate the educator? Granted, the creation of an organization based, in sociological emphasis, on working people does correlate with the potentialities of outlook associated with the "political class-for-itself." How are these mere *potentialities* to be realized as *actualities*?

The fact is that working people in particular may, or may not, assimilate and reflect ideas, outlooks, which correspond to the actual self-interest of working people as a whole.

Their actual interests are high rates of capital formation, both in respect of expanding the scale of the most advanced productive technologies and in the rate of advancement of technology. Their interest is also for improvement in education, in material conditions of life, and other matters of "consumption," but meeting those interests depends upon the realization of high rates of capital formation.

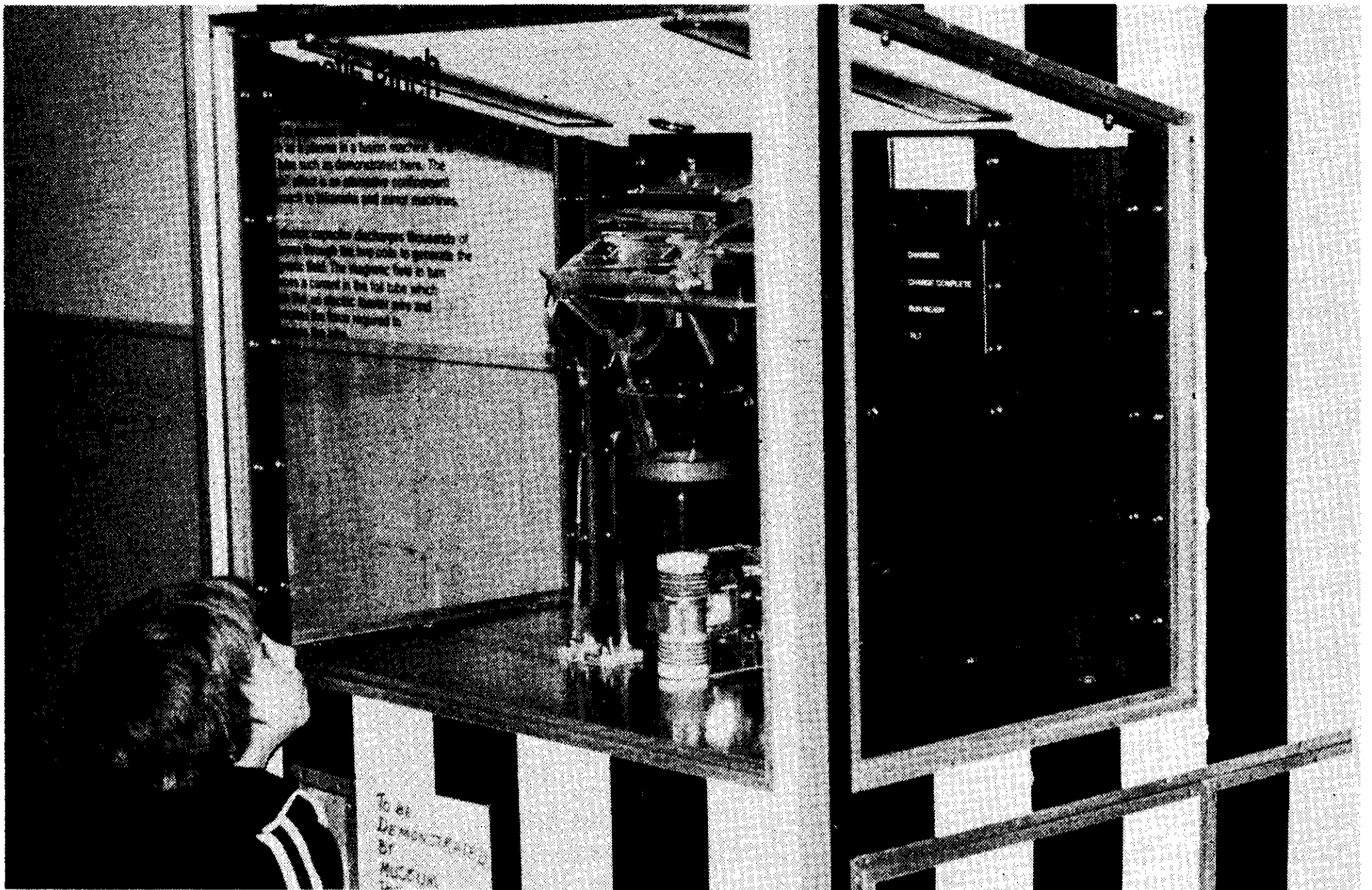
In practice, trade unions and other bodies frequently appropriate and are governed by policies directly opposite to the most fundamental interests of working people as a social class taken in its entirety. Although those unifying tendencies which correlate with the potential emergence of independent political "class-for-itself" social formations do tend to correlate with receptivity toward ideas and outlooks in agreement with the interests of working people as a social class, there is in no way any automatic, "spontaneous" connection between valid conceptions and policies and the condition of being a worker or a member of an organization of working people.

How is the educator to be educated? V.I. Lenin accurately grasped the essentials of the point in his *What Is To Be Done?* It is a question of the existence of a political elite, of appropriate qualifications, dedication, and so forth, to catalyze appropriate trends in class political activities, organization, and ideas. The role of the modern industrial working class as a potential political class-for-itself is a potentiality, which cannot be realized without an "outside" agency, an elite, dedicated to and qualified for realizing such potentialities.

The same point is demonstrated by the history of the industrial capitalists as a class. In fact, no class in history has generated a self-interested policy as a "spontaneous" epiphenomenon of its mere existence. Rather, the actual "objective" self-interests of such a class represent merely a potential consciousness of self-interests. Under proper circumstances, practice will *tend to* corroborate widely circulated ideas which do converge on the actually underlying self-interests of that class.

In summary, then, beginning with our negation of the vulgar "class-struggle history" doctrine, and proceeding in the same way through both the cited and other available illustrative cases, we note that the notion of the significance of social classes in history is not *entirely* wrong; it is wrong only in the sense that it is an inadequate conception, which is wrong only when it is made the axiomatic basis for historiography.

Going directly to the point we introduced at the outset: Plato's writings show us that there has been virtually no progress—and much retrogression—in



A child examines a model demonstrating magnetic confinement, a principle used in fusion power devices, at the Franklin Institute in Philadelphia. His future depends on the solution of the scientific and political problem of bringing this newest form of technology into practical implementation worldwide.

respect to the most fundamental features of Platonic science; but there has been much development from the archaic level of particularized aspects of Attic Greek knowledge and practice. To restate the point: with some distinguishable exceptions, there has been no significant advancement in general knowledge of the higher hypothesis; there have been successive, qualitative advancements in knowledge on the lower orders of hypothesis.

This is the general, empirical fact of the past twenty-three centuries of human history. Any history which does not begin with that empirical fact, which does not adequately comprehend that crucial fact and its implications, is axiomatically an incompetent historiography.

First, we must settle accounts with the lack of significant progress in respect to the notion of the higher hypothesis. Is the lack of advancement on this matter a reflection of some necessary principle? Is that principle connected to the presumption that Plato and the Neoplatonists might have approximated a per-

fect notion of the higher hypothesis, such that very little further progress were available? Or is the lack of development of the higher hypothesis's notion over the ages a result of some defect in the progress of mankind during that period?

It might appear that the Platonic-Neoplatonic notion of the higher hypothesis is approximately perfected in one respect: in both its definition, and the implications of the existence and function of such an empirical actuality. Yet, if we examine the cognitive content of thought associated with the higher hypothesis, with self-consciousness of the higher hypothesis, the answer is entirely different.

The writer's own fundamental breakthrough in theoretical economics proves the second observation. That breakthrough enables us to explore, with increasing refinement, the connection between the ordering principles of higher hypothesis and differing rates of potential development of the negentropy of society's willful power over the lawful ordering of nature. From that vantage point, the possible and

required unlimited advancement in knowledge pertaining to the content of the higher hypothesis is analogous to the case for what we ordinarily regard as scientific thought.

We understand this more richly if we compare the case of the writer's breakthrough in theoretical economics with the correlated notions of Riemann and Cantor. The writer's breakthrough in economics is of the same order of conceptual nature as the Riemann and Cantor discoveries, and therefore all three were feasible discoveries under the conditions of general social development which produced Riemann's breakthrough. It was not inadequate technological development which prevented earlier discovery of what this writer discovered for economics, or which has prevented several generations of scientists to date from reaching an adequate comprehension of Riemannian physics.

Extending this backward in the history of scientific knowledge, through Leibniz, Descartes, Kepler, Gilbert, Cusa, Roger Bacon, ibn-Sina, Archimedes, to Plato, we are able to account adequately for the fact that the development of knowledge of the higher hypothesis which could have occurred at varying degrees of technological progress was blocked by social process considerations external to the connection among advancements in the higher and lower orders of hypothesis and their respective and mutual connections to existing conditions of technological progress.

Examining this same issue more closely, we ought to be able to distinguish the kinds of advancement in the content of the higher hypothesis, as knowledge, which should have occurred under suitable conditions at each point of further advancement in the technology of social practice. This latter inquiry shows us that the implicit (potential) knowledge of the higher hypothesis has been *unconsciously* advanced through the advancement of ordinary scientific knowledge, through advancement in the quality of technology.

However, it is not a matter of indifference to progress whether the advancement is present as an unconscious potentiality or is made conscious. The *making conscious* of the higher hypothesis with respect to an existing body of ordinary scientific knowledge has the effect of accelerating the power of guessing, and thus of accelerating the power of mankind at any level of technological progress, variously to create and to assimilate new advancements.

Most readers are familiar, to one degree or another, with the fatalistic notion of progress associated with G.W.F. Hegel. In this misguided historiography it was necessary, to save the appearances of the doctrine, to argue that the succession of the principal

phases of history in the main line of civilization represented successive advancements over their predecessors. In this way, Hegel and others have asserted "slave society" to be a necessary phase in the development of civilization. Similarly, a positive value has been attributed to Rome.

It is such perversions which must be extirpated from every attempt to order history according to a causal principle of progress. The fatalistic notion of the single, self-elaborating idea in Hegel and the kindred "materialist," "class-struggle" version are more or less equally defective on principle in this connection. The case of Rome illuminates the nature of the proof.

Except for its militia system, and possibly also the baked-brick construction business and its derivatives, there is not a single advancement in knowledge for practice which can be attributed to ancient Roman republican or imperial origins. The argument that the Romans developed the principles of law is the most hideous of frauds, with no competent evidentiary basis—except for those disoriented persons who admire so immoral a body of law as the Roman.

The fact is that the history of civilization has been one of alternating advancements and retrogressions. The cause for this pattern is the shift in power of two, contending elites, that of the city-builders and that of the oligarchists. The overall character of society tends to be determined by which of those elites is relatively hegemonic, but progress has persisted often despite the hegemony of the oligarchists.

The oligarchist apologists, especially those in the Manichean tradition, refer to this evidence to argue that the world is governed by unending contention between the forces of good and evil. The Manichean view is best understood by comparing it to the contention between the alternating preference for order (Apollonian phase) and bestialized chaos (Dionysian phase) in the internal development of the oligarchical order itself.

There is not a "force of evil" inherent in the world. There is rather man's failure to rise out of infantile bestialization. Mankind creates its own evil by clinging to its mother's skirts, by refusing to grow beyond the infantile state of bestial preoccupation with infantile-egoistical sensuality.

It is an interesting and fruitful philological-historical fact that the Christian "Satan" is no one but the Middle Eastern form of the Phrygian "Dionysus." The "Satan" of Christianity is alternately the Orphic-Dionysiac cults of Greek-Hellenic culture and the Osiris-Horus cults of Ptolemaic Egypt. The Christian "Satan," or "Whore of Babylon," is the high priestess of Isis who is currently the ranking official of the

British Ashmolean Freemasonry and British Most Venerable Military and Hospitaller Order of the Knights of St. John of Jerusalem, who is also the person of veneration for the Isis-Urania Hermetic Order of the Golden Dawn. The personality who has the misfortune to enjoy such titles is the British monarch.

The Christian "Satan" is a man-created agent of the cause of the bestiality represented by adult persons who refuse to loose their childish grip on their mother's skirts.

The Roman Empire was the embodiment of such evil, and was so correctly understood by the apostolic and patristic Christian leaders. *The City of God* of St. Augustine is a useful introduction to such lines of inquiry.

The oligarchical rule has had several interconnected problems over the ages. Although the oligarchical ideal is zero growth, a halt to all scientific and technological progress, the oligarchs have been forced to make concessions to technological progress, most emphatically in the domain of military technology, and in the need to develop the logistical strength, the general infrastructure, to support that military rule.

Because mankind is human, humanity asserts itself through the pores of opportunity. The greed of the oligarchs promotes trade and production. The need of arms against dangerous foes creates opportunities for technological innovations. The social forces developed by such activities—with recurring emphasis on colonies and "marcher lords"—have turned against their oligarchical masters. Usually, this insurgency against established oligarchs has been categorically unconscious of the principles of the higher hypothesis, except—in European history since Rome—as Neoplatonic Christianity and Neoplatonic Islam have maintained and disseminated such knowledge.

Thus, a certain degree of successive development asserts itself despite even the hegemony of oligarchical rule and policies.

In this process, technological development is associated with an advancement in the quality of human knowledge and existence, and with social forces which identify themselves with the benefits of a policy of continued technological progress.

Thus, that process which can be comprehended only from the standpoint of the higher hypothesis asserts itself through the unconscious action of the creative-mental species-potentialities of human beings. Just as infantilism (evil) finds its institutional forms, so the process of progress finds its institutional forms.

The problem of mankind is not that evil is an inevitably permanent institution and force in the world. The problem is that society is not yet ordered according to the conscious principle of the higher hypothesis.

This principle must have a conscious agency, the Platonic-Neoplatonic elites. It is to the extent that such elites exist as an efficient agency, and that such elites contribute a higher rate of progress to the forces otherwise engaged in fostering progress, that we may, at last, eradicate the power of "Satan" from the ordering of the affairs of nations.

It is the defeat of the institutionalized forces of the city-builders by the institutionalized forces of the oligarchical faction which have produced the reverses in the course of civilization. It is the inadequate influence and development of the humanist (Neoplatonic) elites over the forces for progress which account for the principal weaknesses of the forces of humanity against the infantilism, the bestiality, of the oligarchical adversary and his degraded rabbles.

The enemies of humanity win battles chiefly by winning a psychological warfare battle for the minds of the backward sectors of the population and in gaining control—through pornography, "disco" cultism, drug cultism, and so forth—over the minds of adolescent youth of the cities. The ordinary person, otherwise committed to progress, has not yet, himself or herself, broken from the controlling impulse which Dante Alighieri associates with "Purgatory" and the utopian goals of "Earthly Paradise." Since he or she has not resolved the corruption within himself or herself, his or her own attachment to the vestiges of infantile bestiality, he or she tolerates the enemy's manipulation of the infantilism of his or her own children.

The Neoplatonic elites alone recognize and consistently combat the kinds of corruption represented by "disco," drug-cultures, environmentalism, "existentialism," and so forth today. Hence, without the Neoplatonic elite's increased influence, humanity may well lose in a manner analogous to the rise of Ptolemaic Egypt and the evil that was Rome. This time, the price would be far more hideous.

The progress of scientific knowledge today demands that we solve the ostensibly insoluble problems of physics and so forth by mastering the implications of Riemann's notion of fundamental physical hypothesis. Yet, if we fail to do that, we lose more than the scientific progress this makes feasible. Unless we bring our political and moral life under the rule of the same principles, the same conscious mastery of the notion of the higher hypothesis, our species might not survive this century.

Translator's Preface

This new translation of Plato's *Timaeus* into English does not claim to be the ideal or perfect translation of that history-making ancient text. We are confident that, in the future, much better translations will be produced and made available to the English-speaking public. This translation, however, is the best English-language translation of Plato's scientific treatise to date. In point of fact, the International Caucus of Labor Committees decided to launch its own translation project of Plato's text because of the frauds, inaccuracies, and outright fabrications which dominate all existing translations. A more detailed treatment of the problem with English-language translations of Plato's works will be offered in the forthcoming book edition of this translation.

What can be summarily stated in this brief preface is that the three dominant English-language translations of the *Timaeus*, those of Jowett, Cornford, and Taylor, are complete, premeditated frauds commissioned by British intelligence, which has dominated the Oxbridge deployments since the time of Clarendon, to state the case conservatively.

Each of these three rival translations conflicts with the other two, and each was undertaken to establish a different kind of slander at Plato's expense.

Jowett, who takes extreme liberties with the Greek text, attempts to conjure a nebulous, poetastish effect, in order to support the claim that Plato was some sort of myth-maker and poetical dreamer, essentially not concerned with fundamental issues of scientific method—especially in this particular dialogue.

Cornford, though he makes a more passable attempt at obfuscating the epistemological integrity of the dialogue, commits a fraud in his translating effort mainly because he systematically distorts those portions of the text in which Plato makes a special effort to convey the sense to the reader that he treats ideas as ontological existences that are endowed with a reality qualitatively superior to the apparent reality usually imputed to things of sense-perception, or "ephemerals." This systematic flaw of Cornford's is most dramatically evident in the 52a4-52d section, where his translation turns out to be an arbitrary fabrication conveying a meaning directly opposite to that in the original Greek text.

Taylor's translation and commentary, perhaps the most celebrated in recent decades, is probably the most desperate fraud of all. Taylor translates and comments from the specific task-oriented standpoint of disproving the thesis that the *Timaeus* is Plato's thesis on

natural science coherent with Riemannian mathematics and superior to Einstein's formulation of the theory of relativity. Taylor attempts to conceal the most devastating thesis of relativistic phase-space that Plato fully develops in the *Timaeus*.

Exemplary of the frauds prevailing in all other existing translations of the *Timaeus*, frauds which made the present translation a necessary undertaking, are the cases of such Attic Greek terms as *pantodapes* (the Riemannian "manifold") and the celebrated *hypodochē* ("host"), the first being usually mistranslated as "strange variety" and the latter atrociously rendered as the nonsensical "receptacle," which the fraudulent Jowett incorporated into the official Oxford Greek Dictionary.

The greatest fraud, however, is the systematic failure of all previous translators to render the even, thoughtful, stimulating narrative style which is unique in Plato's usage of the Attic dialect. The present translation is only a small step toward a remedy of this problem.

For an even better translation, two important ingredients will be required. First, the medium of the English language as used at the present time will have to be enriched after it breaks out of its present prevailing nominalist usage. A great deal of the inherent

richness and versatility of English has been buried under the heaps of banality of present-day usage. The fate of the English language is not to wither away under the banality of conveying empiricist-utilitarian conceptions. Once we free the English-speaking world from the ideological grip of British empiricism, we shall have created an English-speaking population cheerfully engaged in the socialized practice of thinking socially and of reflecting socially upon their thought processes. Once such dialectical processes are established as social practice, the language itself yields to the power of thought, and the inherent richness of the language comes to the fore as a prized possession of all society. Better translators and better readers are yet to come.

The translation which follows is the fruit of a collaborative effort of a team of Labor Committee specialists who, although all shared varying degrees of mastery of Attic Greek, were principally engaged in a seminar whose purpose was to bring forward the epistemological wealth of Plato's dialogue. This team was coordinated by Criton Zoakos and included Chrissa Kalimtgis, Uwe Parpart, Mary Jane Coates, Paul Arnest, Charles Tate, Kenneth and Molly Kronberg, and Steven Bardwell.

Criton Zoakos

T

SOCRATES
HERMOCRATES
TIMAEUS
CRITIAS

Editor's Note

"Plato and the New Political Science" by Lyndon H. LaRouche, Jr., and the new English translation of Plato's *Timaeus* that appear in this issue of *The Campaigner* are excerpted in full from a soon-to-be-released book published by Campaigner Publications' University Editions. The book will also include a second introductory essay by Dr. Steven Bardwell elaborating the advanced scientific questions raised in Plato's work, and extensive commentaries on the dialogue and translation itself.

TIMAEUS

SOCRATES: One, two, three—but, my dear Timaeus, what has become of the fourth of yesterday's guests and today's hosts?

TIMAEUS: He got sick, Socrates, otherwise he would not have willingly missed today's gathering.

SOCRATES: Isn't it therefore your job to do the part on behalf of those present and of him who is absent?

TIMAEUS: Certainly, and we shall omit nothing within the limits of our ability. It would not be fair of the rest of us not to eagerly return you the proper hospitality, as we have been entertained by you yesterday.

SOCRATES: Do you remember, then, all about those subjects of which I bid you speak?

TIMAEUS: Some we remember. Whatever we don't, your presence will remind us; better yet, if it isn't too much trouble for you, do go over those subjects briefly from the beginning so we can grasp them better.

SOCRATES: So be it. The main subject of my speech

yesterday was the republic, the method and the kind of men which it seemed to me would build it best.

TIMAEUS: Yes, Socrates, and what you said was very much to our thinking.

SOCRATES: Did we not begin by separating the farmers and the craftsmen in general from the class of the defenders of the state?

TIMAEUS: Yes.

SOCRATES: And after we had assigned to each one a single suitable pursuit, one craft to each, we said of those whose main duty was to make war that they were to be the sole guardians of the city in case anyone either from the outside or from within should mean to harm her. They should calmly render judgment to those governed by them, who are their friends by nature, but they should be ruthless to whomever happened to be their enemies in battle.

TIMAEUS: Everything is quite so.

SOCRATES: We said, I think, that the nature of the guardian's soul should be both exceptionally passion-

ate and philosophical, in order to be able to be appropriately calm and ruthless toward friends and enemies respectively.

TIMAEUS: Yes.

SOCRATES: And what of their education? Were they not to have been educated in gymnastics and music and all subjects suitable to them?

TIMAEUS: Everything is quite so.

SOCRATES: For those thus educated, it was said that they were to consider neither gold, nor silver, nor any other property for themselves, but they should, as servicemen, receive from those whom they guard and rescue a salary sufficient for prudent men, which they are to spend in common, and that they should live with each other rendering service exclusively to virtue, freed from all other preoccupations.

TIMAEUS: These things were said.

SOCRATES: We also mentioned the subject of women. Their natures must be molded similarly to those of men, and common pursuits must be given to all of them during war and during their lives generally.

TIMAEUS: We were saying these things.

SOCRATES: And what about the bearing of children? Or is this easy to recall, due to the unusual nature of what we discussed? Did we not lay down that marriage and the bearing of children be common to all, arranging that no one would ever know his own offspring, but all were to regard all others as kinsmen, those at the appropriate age as sisters and brothers, those of older and former generations as parents and parents' ancestors, and those of younger generations as descendants and their children?

TIMAEUS: Yes, and these things as you say them are well remembered.

SOCRATES: Do we not remember having said that, in order to ensure to the extent possible their becoming from the outset best in nature, the men and women in authority should secretly arrange the marriages by the use of certain secret lots, so that the bad and the good, respectively, be brought together with their likes from each side, and that no hostility should arise from this, as they will believe chance to be the cause of the union?

TIMAEUS: We remember.

SOCRATES: And did we not say that the children of the good were to be cultivated, and those of the bad secretly dispersed in other parts of the city, and that as the rulers continually watch them growing, they must promote the worthy and in turn demote the unworthy to the position formerly occupied by those who have been promoted?

TIMAEUS: Precisely.

SOCRATES: Then, have we now said enough, my dear Timaeus, to recapitulate the main points of yesterday's discussion, or do we wish to add anything which has been omitted?

TIMAEUS: Not at all. That is what was said, Socrates.

SOCRATES: Listen, then, and I will tell you how I am disposed toward the republic we have just described. My attitude resembles that of someone who, as he gazes at some beautiful creatures, either painted by an artist or truly alive but motionless, experiences the desire to see them moving and engaging in struggles for which their bodies appear to be suitably equipped. This is how I am disposed toward the city we have described. I would be happy to listen to some account that goes through the achievements which the city accomplishes when in competition with other cities, and when she goes to war in a manner worthy of her, and when, while at war, she pays proper tribute to her education and training, both in combat and in negotiations with each of the other cities.

I well know, Critias and Hermocrates, that I will not be able to praise these things sufficiently myself—the city and the men. This is not surprising to me. But I have adopted the same opinion about the poets that existed in the past and those of the present. Not that I mean to disgrace the poetic race, but it is obvious to all that the imitative race imitates most easily and best that in which it is trained. That which is outside one's training is difficult to imitate well in deeds and even harder in words. Regarding the class of Sophists, I have considered them to be consummately skilled in the use of profuse and beautiful talk on other subjects, but I am afraid that, being wanderers from city to city and possessing no home of their own to manage, they would fail to grasp what philosophers and statesmen would do and say in wartime when they fight and when they negotiate.

Thus there remains the kind of men of your disposition, which partakes of both philosophy and

“And a very old priest said to him, ‘Oh, Solon, Solon, you Greeks are always children, and there is not one Greek who is an old man.’”

statesmanship by character and upbringing. Timaeus here, for instance, who comes from Locris, an Italian city with excellent laws, and who is inferior to no one there in wealth and birth, has held the highest offices and honors the city can offer and, in my view, has reached the highest eminence in philosophy. Critias, we here all know, is by no means a layman on these subjects. As for the character and upbringing of Hermocrates, there are many trustworthy witnesses who attest that both are in every respect sufficient. Having exactly this in mind yesterday, when you asked me to go through the subject of the republic, I readily obliged, because I knew that there is nobody better than you, if you consent, for supplying an adequate sequel to my subject—only you among our contemporaries could envisage the city engaged in a war appropriate to her, and attribute all those things that are befitting to her. Having discussed what was demanded of me, I in turn demanded of you the task I am now reminding you of.

You agreed to consult among yourselves and return my hospitality today. So here I am, dressed up for the occasion, and most eager to receive.

HERMOCRATES: Indeed, Socrates, just as Timaeus said, we neither lack in eagerness, nor will we make up any excuse which will prevent us from acting on our commitments. As a matter of fact, yesterday, immediately after we arrived at Critias’s guest chamber where we are staying, and even earlier, on our

way there, we reviewed these matters. Critias then submitted to us a story which he had heard a long time ago. Repeat the story now, Critias, for Socrates to judge along with us whether it answers his request or not.

CRITIAS: I’ll do so if our third companion, Timaeus, agrees.

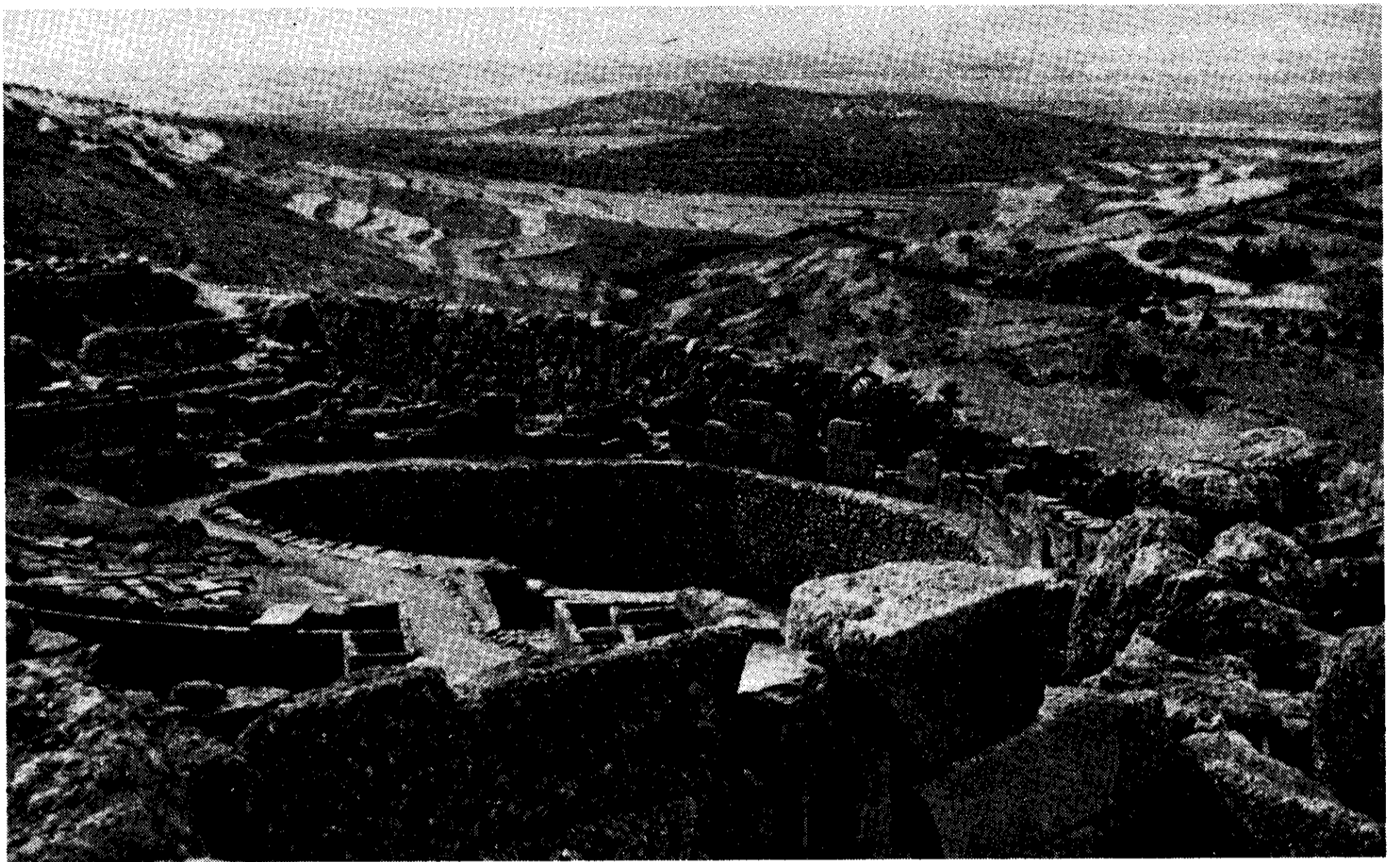
TIMAEUS: I agree.

CRITIAS: Listen then, Socrates, to a story which though strange, is completely true, as Solon, the wisest of the Seven Sages, once said. He was a relative and a close friend of my great-grandfather Dropides, as he says himself in many passages of his poems. He told Critias, my grandfather, as the old man used to recollect to us, that the achievements of the city in the old days, now forgotten because of the passage of time and the destruction of human life, were great and marvelous; and of all those achievements one was the greatest, that which is appropriate to recall now in order to simultaneously repay our debt to you and to praise the goddess on her festival day with just and truthful hymns.

SOCRATES: You speak well. But what is this achievement that Critias recounted to you as he heard it from Solon, which is authentic but yet unrecorded?

CRITIAS: I will tell you an old story that I heard from a man no longer young. As Critias said, he was at the time ninety years old and I was about ten. It was Children’s Day during the Apaturia festival. For the children there were the customary ceremonies; our fathers offered prizes for reciting. A great many poems were recited, but since the poems of Solon were at that time new, they were being sung by many of the boys. One of the clansmen, either because he thought so, or in order to please Critias, said that he considered Solon to be not only the wisest of men but also the most outspoken of poets. And the old man, I remember vividly, was very pleased, and said with a smile, “Oh, yes, Arynandros, if he had not treated poetry as a spare-time occupation, had he studied it as others do, and if he had finished the story he brought from Egypt and had not been forced to neglect it because of the revolts and other evils he found here on his return, it is my opinion that no other poet, not even Hesiod or Homer, would have been more prolific than he.”

“And what was the story about, Critias?” asked Arynandros. “It was about the greatest and most renowned of all of this city’s achievements, but due to



“ . . . The achievements of the city in the old days, now forgotten because of the passage of time and the destruction of human life, were great and marvelous . . . ”

The Lion Gate of the citadel of Mycenae, which dominated the Aegean approximately a thousand years before Plato's lifetime.

the lapse of time and the destruction of those who participated in it, it has not lasted till our days,” he said.

“Tell us from the beginning,” said the other, “what and how and from whom did Solon hear the story which he told you to be true?”

“There is in Egypt,” he said, “at the head of the delta where the current of the Nile divides, a district called Saitic, whose chief city, Sais, is where King Amasis came from. The main goddess of this city is called Neith in Egyptian and, according to them, Athena in Greek. They are pro-Athenian and claim that somehow they are related to them. Solon said that when he visited he was highly honored by them and, moreover, when he questioned the most experienced of the priests about antiquity, he found that neither he nor any other Greek knew anything worth knowing about the subject. And wishing to lead them to talk about antiquity, he undertook an account of the earliest events known here, namely of Phonoreus, the so-called first man, and of Niobe. And again, he

recounted how Deucalion and Pyrrha and their descendants survived after the deluge, and attempted to calculate how long ago the events of which he was speaking has occurred by enumerating the generations. And a very old priest said to him, “Oh, Solon, Solon, you Greeks are always children, and there is not one Greek who is an old man.”

When he heard this Solon said, “What do you mean by that?” “You all have young souls,” said the priest, “because you possess in them not one old belief rooted in ancient tradition, nor any learning made hoary by age. And the reason is this: there have been and will be many and various destructions of mankind, the greatest ones caused by fire and water, the lesser by countless other causes. Even the story you tell about how Phaethon, the child of the Sun, harnessed his father's chariot but was unable to drive it along his father's path and burned up everything on earth and himself got killed by a thunderbolt is but a mythical version of the truth. The truth is that deviations in the movement of heavenly bodies

around the earth have resulted, at long intervals, in great destruction by fire. During such time, people who live on mountains and in high and arid places perish more completely than those living by rivers or by the sea. We, however, are saved from this distress by the Nile, our preserver, when he is set free. When again the gods purge the earth with floods of water, the shepherds and herdsmen in the mountains are saved, but those who live in your cities are carried by the rivers into the sea. But in our country neither then nor at any other time does the water come pouring down on earth from above; on the contrary, it rises up from below. This is the reason why the traditions that are preserved in this part of the world are said to be the most ancient. It is true that in all places where excessive cold or heat are not prohibitive, human beings are always to be found in greater or lesser numbers. We have preserved in our temples written records from antiquity of whatever good or great or in some way exceptional we heard occur in your country, in ours, or anywhere else.

“With you, however, and the others, letters and the other requirements of civilization have to be developed from the beginning again and again, when with the usual passage of time, the floods of heaven come down like a pestilence upon you, to spare only the ignorant and uncultured. So each time you have to begin anew, like infants, knowing nothing of what happened in your part of the world and in ours during ancient times.

“Those genealogies of your people, for example, that you just went through, are little better than nursery tales. You recall only one deluge on earth, even though there were many. Moreover, you are ignorant of the fact that the best and finest breed of men once lived in your land and that you and your whole city derive from a small remnant of their seed. This you have forgotten because for many generations the survivors died leaving no written record. Because there once existed, Solon, before the great flood, a city that is now Athens which was the most gallant in war and the most exceptionally well governed in law. Her achievements and her constitution have the reputation of being the finest under heaven of any we have any information of by way of tradition.”

Solon was astonished hearing all this and eagerly pleaded with the priest to describe in detail everything about these ancient citizens. The priest replied:

“I will be pleased to go over this, Solon, for your sake and your city’s, but especially for the sake of the goddess who chose and raised and instructed your country and ours, yours first a thousand years earlier, having received the seed from Gea and Hephaestus, and ours later. As for the establishment of the present

civilized order in our part of the world, it is written in our sacred texts to have been 8,000 years ago. Regarding the citizens living 9,000 years ago, I will now briefly describe for you their laws and their finest achievements. We will go into all of these in detail. From here on we can consult the written records at our leisure. Consider these laws in comparison with ours and you will find many models of your ancient laws being implemented here.

“First you will find that the priestly class is kept apart from the others; secondly, the class of producers, because they each produce by themselves, do not mix with others: shepherds, hunters, and farmers. And you will see that the warrior class is separated from all other classes as well and is forbidden by law to care for anything else but military matters. Moreover, their armament is shield and spear, which we were the first people in Asia to arm with, as the goddess instructed us, just as you were the first to do in your part of the world. Moreover, regarding wisdom, you see the amount of care the law devotes right from the beginning to matters of the order of the universe, deriving from these divine matters what is relevant to human affairs, everything down to the art of divination and medicine, and mastering all other branches of knowledge that follow from them. The goddess first endowed you with all this civilized order and organization when she established your city, and selected the place in which you were born because she foresaw that the climate in that land would produce the wisest men. Being herself a lover of both war and philosophy, the goddess selected a location for her first settlement which was most likely to bear men like herself. So there you lived, making use of laws such as these and even more excellent ones, and you surpassed all men in virtue, as is to be expected of offsprings and disciples of gods.

“Of all the many and marvelous achievements of your city recorded here, there is one that exceeds all in magnitude and virtue. For our scriptures report how your city once stopped a great power which was arrogantly advancing against all of Europe and Asia, proceeding outward from the Atlantic Ocean. For the ocean was during that time navigable. The ocean had an island in front of the straits which you call, as you say, the Pillars of Heracles, and this island was larger than Libya and Asia combined, and from that island travelers in those days could reach the other islands, and from those islands the whole opposite continent which surrounds that true ocean.

“For the sea within the straits that we were talking about turns out to be only a lake with a narrow entrance. But the other one is a true ocean, and the land which surrounds it completely could

truly and correctly be called a continent. In that Atlantic island then, there had developed a great and extraordinary dynasty of kings which ruled not only the entire island but also many other islands and parts of the continent. Within the straits, it also controlled Libya all the way up to Egypt, and Europe as far as Tyrrhenia.

"This entire dynasty, assembled in a single force, attempted to enslave in one stroke your land and ours and the whole region within the straits. It was then, Solon, that the strength, virtue, and power of your city became manifest to all men. Because her audacity and military skills were great, both when she led the alliance of the Hellenes and when she was left alone, by necessity, as the rest had deserted her, after facing ultimate perils she overpowered the invaders and triumphed. She rescued those who were in danger of being enslaved while the others, those of us who lived within the Pillars of Heracles, she generously liberated. At a later time, earthquakes and floods of great violence occurred and in a single dreadful day and a night, all your fighting men were sunk into the earth and the island of Atlantis was swallowed by the sea in a similar manner. For this reason, the ocean there up to this day is impassable and unexplored, being blocked by very shallow shoals which the island caused as it sank."

So, Socrates, you have now heard, in summary, the story of what the old Critias reported that he heard from Solon. When you were speaking yesterday about the republic and the men that you were describing, I was amazed to recall the story I have just told you, realizing that by some miraculous chance, you were in agreement with almost everything that Solon said.

But I did not want to speak at once, because after so long a time I wasn't sure of my memory. I realized then that I ought to first go over the whole story to myself before reporting it. Accordingly, I was quick to agree to the task you demanded yesterday, thinking that in all such occasions, the most important thing is to lay down a theme that is most suitable for getting across what we intend, and that with such a story we would be very well provisioned. And so, as Hermocrates said, yesterday as soon as I departed from here, I began telling the story as I remembered it. And when I left, I recalled nearly every detail as I went over it during the night. How true is the saying that children have a wonderful memory for what they learn! I for one am not sure if I can recall everything that I heard yesterday. But I would be surprised if something of what I heard a long time ago had escaped me. I listened to it then with a child's delight and the old man was instructing me with eagerness,

especially since I was constantly putting questions to him, so that now the details are indelibly branded in my memory. Moreover, I have told the story to the others this morning so that they can be as versed in it as myself.

And now, Socrates, to return to the point of all this discussion, I am ready to speak not just in generalities but in as much detail as I heard the story. As for the citizens and the city which you described to us yesterday in the form of a myth: we shall now transfer that city to the real world and make her be our own city here, and your imaginary citizens we shall say are those very ancestors of ours of whom the priest spoke. They will fit exactly and there will be no disharmony in saying that it was these men who lived in those days. Undertaking this task in common, we will attempt to meet your request according to our ability. So you must consider, Socrates, whether this story of ours will be suited to what you have in mind, or whether we must seek another instead.

SOCRATES: And what other story, Critias, would we rather adopt in exchange for this? This is particularly well suited to be a tribute to the present festival of the goddess with whom it is connected, and the fact that it is no fictitious myth but a real story is surely a great advantage. How and where shall we find others if we give this one up? No! You go on and speak and good luck to you, and I shall take it easy and listen on in return for my speech of yesterday.

CRITIAS: Take a look now, Socrates, at the arrangements for entertainment we have made for you. We thought of having Timaeus speak first, beginning with the creation of the universe and ending with the emergence of man, since he is the most versed in astronomy among us and has made it his foremost business to know about the nature of the universe; after him, I shall receive the men that he will have created with his speech—and some of whom will have been exceptionally educated by you—and according to both Solon's testimony and his law, I shall introduce them in our midst as before a tribunal and shall make them citizens of this city, as they indeed are those ancient Athenians whom the report of the sacred writings rescued from obscurity, and from that point on we shall speak of them as fellow citizens and Athenians.

SOCRATES: I see that I in turn shall receive a perfect and splendid feast of speeches. So, Timaeus, it seems that it is for you now to speak after you invoke the gods, as is customary.



“ . . . This island was larger than Libya and Asia combined, and from that island travelers in those days could reach the other islands, and from those islands the whole opposite continent which surrounds that true ocean.”

Based on modern archaeological, linguistic, and related evidence, the shaded areas above can be conjectured to have been integral parts of the Atlantic civilization's settlements, entrepots, and trade routes. Recently Soviet researchers discovered what appear to be underwater remains of an early civilization in the vicinity of both the Bahamas and the Azores, on submerged land masses believed to have been major island centers—of which now only the summits are above water—of the Atlantis period.

TIMAEUS: All people, Socrates, who have the slightest degree of thoughtfulness always invoke the gods at the beginning of every undertaking, whether great or small. So if we, who are about to speak about the universe and whether it be created or exists uncreated, are not altogether out of our wits, we must invoke the gods and goddesses and pray that what we say agrees first of all with them and, consequently, with ourselves. Let this be our invocation to the gods. We should also call upon ourselves, for you to understand as well as possible and for me to give proof as well as possible of what I think on the matter before us.

In my opinion, then, the following distinction must be made.

What is the difference between that which eternally exists and has no birth and that which is always coming into being and never exists? The first, being eternally invariant, is comprehended by mentation with the aid of reason; the second, which is ephemeral and never really exists, is imagined by opinion with the aid of unreasoning sense-perception.

Now, everything ephemeral that comes into being must of necessity come into being by some cause; because coming into being without a cause is impossible. Anything whatever, whose form and function its creator hones to perfection by looking up to the invariant and by utilizing the invariant as his exemplar, is by necessity beautiful. Anything that he creates by utilizing an ephemeral exemplar is not beautiful.

We must now ask about the heavens or the order of the universe (or whatever other appropriate name you want to call it) the question that has to be asked at the beginning of any investigation: did it exist eternally, never having been born, or was it born starting from some beginning? It was born, because it is visible and tangible and corporeal, and all these things are of the senses and it was shown that things of the senses, which are grasped by opinion with the aid of sense-perception, are things that come into being and have birth. We also say that what comes into being must necessarily come into being by some cause. To discover the creator and father of this universe is quite a task and, having discovered him, it would be impossible to proclaim him to all people.

The following, however, must be examined regarding the world: which of the exemplars did its creator use to fashion it—the invariant and abiding, or the ephemeral? If this world is beautiful and its creator good, it is obvious that he looked toward the eternal; but if the opposite is the case, which would be blasphemous to say, then he looked to the ephemeral. It is clear to all that he looked to the eternal, because the world is the most beautiful of all creations

and the creator is the best of all causes. And having been born this way, it is fashioned according to that which is comprehended by reason and intelligence and is invariant. This being the case, it is necessary that this world be the image of a certain exemplar.

The greatest of undertakings is to begin everything from proper principle. Therefore, regarding the image and its exemplar, we must determine that the arguments which describe them be akin to their subject matter; arguments which refer to the permanent and the certain and to that which is evident to reason must be permanent and unalterable and, to the extent that arguments can be incontrovertible and invincible, they must be no less than that. But those arguments which refer to that which is an imitation of the permanent and certain, since their subject is similitude, must similarly be verisimilar. As being is to becoming, so truth is to belief. If then, Socrates, in the midst of so much that has been said by so many about gods and the creation of the universe, we are not able to deliver arguments in every instant consistent with themselves and always precise, do not be surprised; we must be content if we can offer one which is not inferior to others, not losing sight of the fact that I, the speaker, and you, my judges, are only human, and so on such matters, having accepted the most likely account, we must not speak any further.

SOCRATES: Excellent, Timaeus, and we must by all means agree to do as you bid us; we have heard your prelude with admiration, now do go on with the theme of the music.

TIMAEUS: Let me tell you then for what particular cause the Composer composed this creation and this universe. He was good and the good never has any envy for anything; being thus beyond envy, he willed all things to be created as like himself as possible. Whoever accepts this foremost and most pervasive principle of the creation and the universe, when it is offered by thoughtful men, is accepting it wisely. God, having willed that all things should be good and that no thing be bad to the extent that it can help it, and having inherited all that is visible in a state not of rest but of disorderly and dissonant motion, led it from disorder to order, deeming order to be in every respect better than disorder.

It never was nor is it now right for him who is the best to commit any deeds other than the most beautiful. After consideration, God found that among those things which are visible by nature, no whole creature which is lacking in intelligence could ever be better than a whole creature which has mind, and that mind cannot come to be in something that has no soul. For this consideration he framed the universe by compos-

ing mind inside soul and soul inside body, so that he might produce a work most beautiful and most perfect by nature.

In this way, according to the language of simile, we ought to say that this world was created by the providence of God as a living organism truly possessing soul and mind.

This being the case, we must now proceed and say in which living organism's likeness did the Composer compose the world. We shall not deem worthy anything which exists only partially, because nothing which is like an imperfect thing could ever be beautiful. But we shall consider the world to be in every respect similar to that exemplar of which all other living organisms, both singly and by species, are parts. Because that exemplar embraces in itself all living organisms that one can think of, just as this world bands together both ourselves and every other visible creature. Because God, having willed to make the world like the most beautiful and the most completely perfect of conceivable things, composed one visible living organism which has within itself all other living organisms that are akin to its nature.

Shall we assert, then, that there is only one universe, or is it more correct to say that they are many and infinite? There is only one, if indeed it has been created according to the exemplar—because that which contains within it every single conceivable living organism could never be coupled with something other; because if that were the case, then a third living organism would be required which would have the other two as its parts and it would thus be more correct to say that the world is the likeness not of the two but of the third which contains those two. Thus, in order for this world to be similar in its uniqueness to the most perfect organism, he who creates worlds did not create either two or infinite worlds, but this universe has been created and always will be one and only-begotten.

That which is created must be corporeal and visible and tangible; but separated from fire, nothing would ever be visible, nor anything be tangible without something solid, nor solid without earth. Therefore God began creating the universe by composing from fire and earth. But it is impossible to put two things beautifully together without a third. There must be some bond between them which shall bring them together. The best of bonds is that which fuses into one both itself and the things which it binds together, and proportion is that which is by nature best suited to accomplish this.

Wherever there are any three numbers or surfaces or volumes that have such a mean that the first is to the mean what the mean is to the last, and the last is to the mean what the mean is to the first, then when the

mean becomes first and last and when both the first and last become mean alternately, they all come to be the same—and when they become the same to each other, they all become one.

If the body of the universe were to be made two-dimensional and without depth, then a single mean would have been sufficient to bind together itself and the terms of which it is the mean. But the world had to be solid and solids are never fitted together by just one mean but always by two. Therefore God fitted together and composed the visible and tangible universe by placing water and air and fire and earth and by making them as proportionate to each other as possible: as fire is to air so is air to water, and as air is to water so is water to earth. For these reasons and by these particular things, the body of the world was created and made harmonious by proportion, and it also derived from these the spirit of love so that, as it assembled itself within itself, it became indissoluble by anyone except him who fitted it together.

The composition of the universe took up the entirety of the four things, because the Composer composed the world from all fire and all water and all air and all earth, leaving out no portion nor multiple of them, for the following considerations.

First of all, in order for the world to thus be a most perfect living organism with all its parts complete; secondly, in order that the world be one, since no material would be left out from which to produce another world; thirdly, in order that the world would be impervious to old age and disease, as God understood that if heat and cold and other powerful forces surround and assault any composite body from the outside, they decompose it prematurely and cause it to decay by bringing it disease and old age. For these considerations, God created the world one, whole, complete, with all parts complete, and impervious to old age and disease.

He also gave the world the appropriate shape of like kind. For the organism that was destined to contain within itself all organisms, the appropriate shape is that which contains all shapes within itself. Therefore God rounded it off in a spherical shape, equidistant from its center to its extremes in every direction, which is the most perfect of shapes and the one in greatest correspondence to itself, because he deemed correspondence to be a thousand times more beautiful than noncorrespondence.

God also, for a number of reasons, made the external circumference smooth and honed it with precision. He did so because the world had no need of either eyes or ears, because nothing visible or audible had been left outside. Also, there was no surrounding air to be breathed, nor did the world need to have any organs for receiving food or for discharging

digested food. Nothing could be subtracted from nor added to the world from anywhere else—as none such exists—because the world was manufactured in such a way as to provide itself nourishment with its own waste and to suffer and act everything within itself and by itself. For the Composer of the world thought that a self-sufficient being would be much more excellent than a being which is in need of others. So the Composer deemed that it was not necessary to attach hands to it, since it did not need them for taking things or for defending itself, nor feet, nor any other organs of locomotion, because God assigned it that kind of motion which is appropriate to the nature of its body and which, among the seven kinds of motion, is the most suited to mind and intelligence. So he set it spinning within itself and around its axis, in an invariant manner, and he made it move spinning in a circle. He also took away the other six kinds of motion and made the world be fixed with respect to them. So, since the orbiting motion does not require feet, God created the world without legs and feet.

This being the entire line of reasoning which the God who exists eternally reasoned out about the God that was to be, he created a body complete, perfect, made of perfect bodies, smooth and even and equidistant from the center. He put soul in its middle and stretched it across everything and with it he immersed the body from the outside and established the universe as a single solitary circle spinning in a circle, capable on account of its virtue of conversing with itself—loving and knowing itself adequately and thus in need of nobody else. For all these reasons God made the universe a happy God.

He also crafted the soul not last, as we are now attempting to report, but first—because he wouldn't allow a union in which the senior would be dominated by the junior. We who are in a certain way part of what is casual and random do speak in this way, but he made the soul prior and senior to the subservient body, its mistress and ruler, and composed her from the following things and in the following way.

From both the substance which is indivisible, eternal, and invariant and the substance which is divided in corporeal things he mixed a third kind right in their middle, and also from the nature of sameness and otherness he similarly composed the substance intermediate between that which is indivisible and that which is divisible. He took these three beings and mixed them all in one kind, forcefully, putting together *otherness* (which is difficult to mix) with *sameness*.

After he mixed these with *existence* and created one from the three, he distributed this whole thing to

appropriate portions, each portion consisting of *sameness*, *otherness*, and *existence*. And he started dividing in the following way:

He first took one portion from the whole, then he took another two times as big as the first, then he took a third portion one-and-a-half times the size of the second and three times the size of the first; then a fourth portion two times the size of the second; a fifth portion three times the size of the third; a sixth eight times the size of the first; a seventh twenty-seven times the first; after this he filled in the double and triple intervals, cutting portions from the whole and putting them in between in such a way as to have two means in each interval: one mean exceeding its lower in the same proportion as it is exceeded by its higher. But as these links formed intervals of one-and-a-half, one-and-a-third, and one-and-one-eighth in between the previous intervals, he filled all the intervals of one-and-one-third with intervals of one-and-one-eighth, leaving outside of each of them one particle whose interval is taken to have the arithmetical proportion of 256:243. He thus used up the entire mixture from which he took all these.

Then, splitting the entire composition lengthwise in two stripes, and superimposing the stripes crosswise one over the other at their middle, he bent them into a circle and joined them together right across their point of intersection. He then surrounded them with that motion which revolves uniformly in the same place and he made one circle to be outside and the other inside. He assigned the outside orbit to belong to the nature of *sameness* and the inside to *otherness*. And the orbit of *sameness* he spun counterclockwise around its diameter and that of *otherness* clockwise around its center; and he gave supremacy to the orbit of *sameness* by leaving it one and indivisible while the inside orbit he took and split six times into seven unequal circles, each according to the interval of double and triple, altogether being three; and he ordained the circles to be against each other in the following way: on the one hand the three are speeding with the same velocity and the other four with velocities different to both each other and to the first three, and on the other hand having orbits proportional to each other.

After the entire composition of the soul had been created according to the mind of the Composer, he gave birth to everything corporeal and, bringing the center of the corporeal to the center of the soul, he fitted the two together. And the soul, completely surrounding the universe from the outside, commenced a divine beginning of endless and wise life for all time.

The body of the universe was created visible but

she, the soul who partakes of reason and harmony, was invisible, created the most perfect of ever-conceivable and existing creatures by the most perfect creator. And because of the fact that she is composed of the three portions of *sameness*, *otherness*, and *existence*, and because she has been apportioned and composed according to proportion, whenever the soul, while revolving around herself, touches any being that is either composite or indivisible, she proclaims with a resonance that pervades throughout her being that which has sameness with her and that which has otherness; and she also proclaims where and how and when anything is in agreement with or is affected by either the ephemerals or the eternally invariant. And this proclamation about beings of *otherness* and *same-ness*, born true to itself and propagating without voice or sound across the domain of the self-moving, when it is issued with regard to sensible things at a time when the circle of *otherness*, coming into a straight position, passes the word throughout its soul, then opinions and beliefs become certain and true; and when the proclamation is issued regarding that which is rational at a time when the well-wheeled orbit of *sameness* declares likewise, then by necessity mind and science is perfected. And if anyone calls these two, in which all is born, anything but soul, he speaks anything but the truth.

When the father who conceived it imagined it moving and alive and a delight for the everlasting gods, he loved it and, overjoyed, he conceived a plan of how to render it still more like its exemplar. And since the exemplar is an eternal being, he set out to complete this universe as closely to that as possible. Given that the nature of the exemplar is eternal, and given that it was impossible to perfectly bestow this eternal quality on a thing which is generated, he invented some moving image of eternity. So at the very same moment in which he set the heaven in order, he also made an eternal moving image of the one and unmoving eternity, an image which moves according to a metric. And this metric we have called *time*. For there were no days and nights, months and years before the creation of heaven, but he engineered their birth together with the establishment of heaven. And all these parts of time, the "was" and "will be," are artificial kinds of time which we, incorrectly, mistake for the eternal substance. For we say that "it was," "it is," and "it will be," when only the "is" represents the precise term when referring to eternity. On the contrary, "was" and "will be" should only be used with respect to the notion of becoming which takes place within time, because these are movements, while the eternally invariant, which remains unchanging and unmoving, cannot become either older

“ . . . He also made an eternal moving image which moves according to a metric. And this metric we have called time.”

or younger throughout the course of time, nor did it ever become so, nor is it becoming so now and neither will it be so in the future, given that absolutely nothing which the act of becoming bestows to the changing realm of the senses belongs to eternity, since these are the forms of time which imitate eternity and revolve according to a metric. Moreover, we have the following to add: what is become *is* become, what is becoming *is* becoming, or yet, what is about to become *is* about to become and what is nonexistent *is* nonexistent—none of which expressions is exact. But perhaps the present is not the opportune time for a precise investigation of these matters.

Time, then, was born together with heaven so that, having been born together, they might be dissolved together, should their dissolution ever come to pass; and it was also born in accordance with the exemplar of everlasting nature in order to resemble that as much as possible. For the prototype is existent throughout all eternity, while time, continuously until the end of all time, is in the process of having

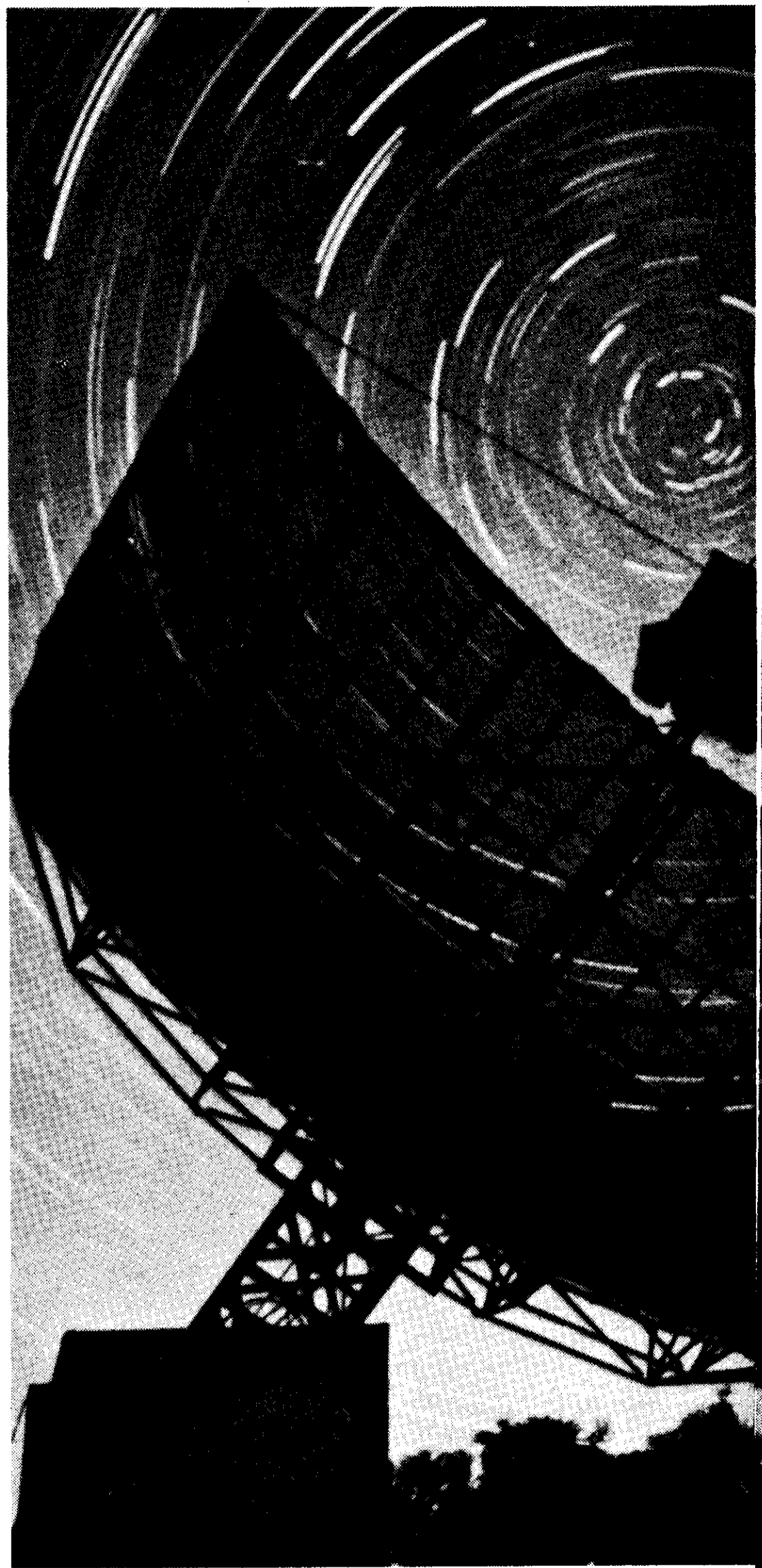
been, being, and about to be. Therefore, as a result of these reasons and considerations of God concerning the birth of time, in order for time to be born, the sun, moon, and the five stars which are known as the planets were created for the purpose of determining and preserving the metric of time.

And God created bodies for each one of them and he placed all seven bodies in the seven circles which are driven by the orbit of *otherness*, the moon in the first circle around the earth, the sun in the second above the earth, and the Morning Star and Mercury in circles moving in circular motion that is equal in velocity to the sun's but which has a contrary direction to the sun's. Thus, the sun, Mercury, and the Morning Star both overtake and are overtaken by each other according to the same law. As for the other planets, if anyone were to explain at length all the orbits in which he placed them and the reasons why he did it, the discussion would represent a greater task than the main topic for which we have undertaken our discussion. Later on, perhaps, these matters may receive the explanation they deserve.

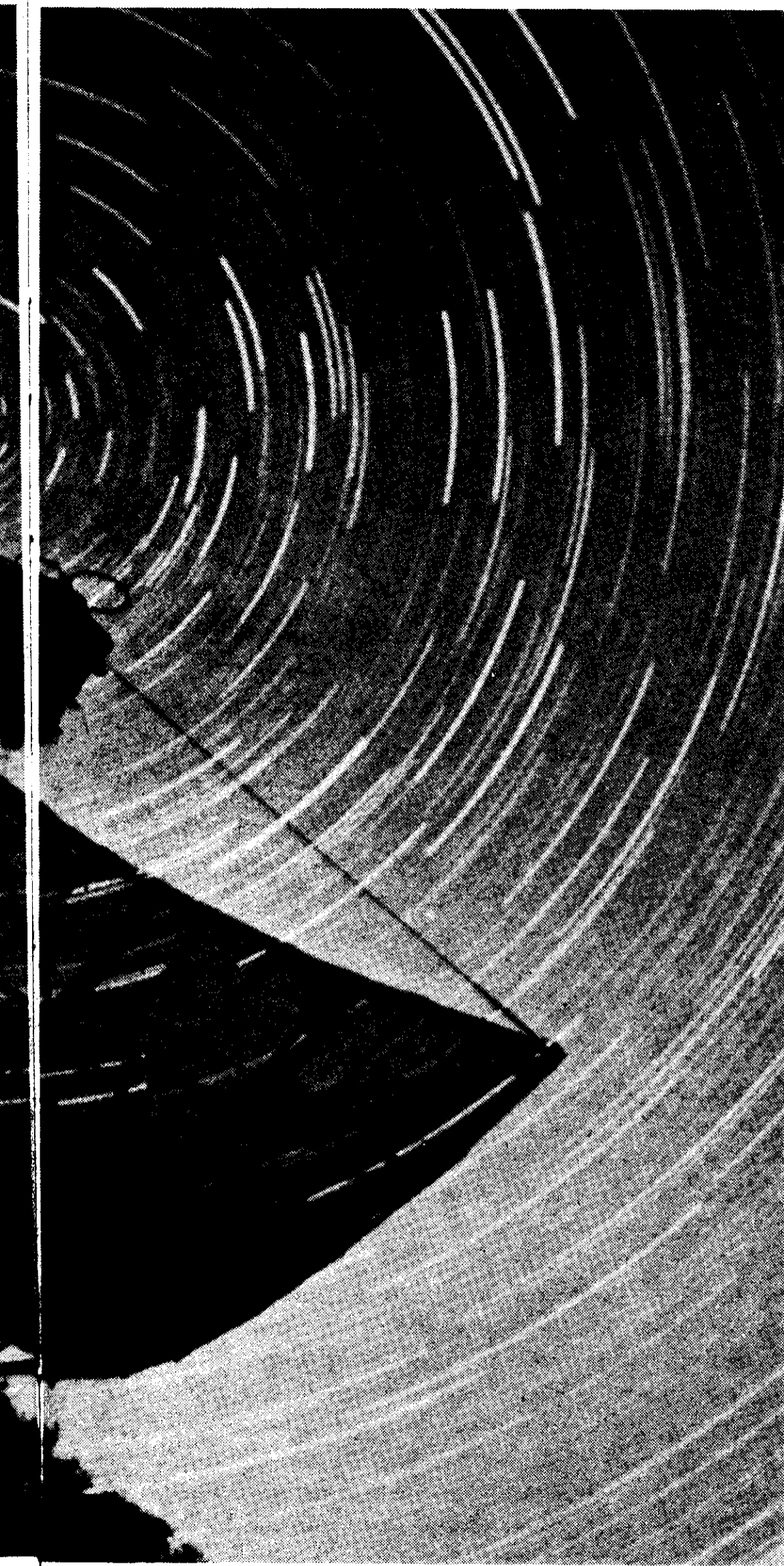
When, therefore, all the bodies whose cooperation is needed for the completion of time acquired the movement appropriate to each and, bound by living bonds, they came alive and learned their appointed task, they proceeded along the motion of *otherness* which is controlled by the motion of *sameness* and runs at a slant through it, with some moving in larger circles, others in smaller ones, those in the smaller revolving faster and those in the larger, slower. And because of the motion of *sameness*, those bodies which revolve faster, even though they overtook the slower ones, appeared to be overtaken by them instead. And because of their simultaneous forward motion in two opposite directions, the motion of *sameness* twists all their circles into the form of a helix and also makes those receding most slowly from the orbit of *sameness*, which is the fastest, appear as though they are keeping up closely with it.

In order for there to be some visible measure of the relative speed and slowness with which they moved around in their eight orbits, God turned on light, which we now call the sun, in the second orbit from the earth. He did this so that it might shine throughout all of heaven and so that all appropriately equipped living creatures might develop the notion of number, learning it from the revolutions of *sameness* and *otherness*.

And so for these reasons night and day came into being, which represent the revolution of the one most intelligent orbit. And when the moon makes the journey of its own orbit and catches up with the sun we have what is known as a month. And whenever



“ . . . God created and bestowed vision on us so that we, contemplating the orbits of intelligence in the heavens, might put them to use by applying them to the orbits of our own reason, which are related to them . . . ”



A time-exposure photograph shows the apparent circling of the stars around the earth's North Pole, reflecting the earth's own rotation; in the foreground is a radio telescope.

the sun has completed his own orbit, we have the year. Now, as for the revolutions of the other stars, only a few men among the many have discovered them and they do not name them by name nor do they calculate their relative measurements by using numbers. Thus, they do not know that time is the wanderings of these planets which are staggering in number and astonishing in variety. Nevertheless, it is possible to conceive that the perfect metric of time fulfills the perfect year when the relative speeds of all eight orbits, measured against the uniformly moving orbit of *sameness*, accomplish the courses together and return to the beginning. In this manner and for these reasons, all those stars that turn themselves around as they travel through the heavens were created, in order for this universe to be as like the perfect and intelligible living creature as possible in what concerns the imitation of everlasting nature.

Now all the rest, up to and including the birth of time, had already been worked out in imitation of that which was to be imitated. But to the extent that the universe had not given birth to all the living creatures within it, it was dissimilar to its exemplar. So, he set to work on this remaining part, copying the nature of the exemplar. Just as *mind* comprehends the inherent forms of the living being and knows how many and of what quality they are, so did God determine that this universe must possess such and so many living beings. They are four: the first is the heavenly class of gods; the second is the winged variety which flies through the air; the third is the aquatic; and the fourth is that class that walks on dry land.

He wrought the divine kind largely out of fire, so that they might be the brightest and most beautiful to behold. And making them similar to the universe, he rendered them spherical and set them in the intelligence of the most excellent to keep company with it, distributing them throughout all the heavens in a circle, to be a true adornment to the heavens, embroidered throughout the whole. To each one of these gods he attached two motions, the one in the same place and uniform because each always conceives the same thoughts about the same things, while the other one is a forward motion dominated by the revolution of the orbit of *sameness*. But with respect to the other five kinds of motion, they are unmoving and at rest, so that each one of them might attain the highest level of perfection. It is because of this that all those fixed stars have come into being, creatures divine and eternal which revolve uniformly and in the same position, eternally at rest. But those stars which swerve and wander have come about in the manner we have already discussed above.

He also fashioned earth, our nurse, winding around the pole that stretches throughout the universe, to be both the guardian and creator of day and night, since she was the eldest of the gods that came into existence within heaven. And concerning the dances of these same stars and the juxtapositions of each one and the retrogradations of their orbits relative to one another and their progressions, and those divine bodies that come alongside one another in their conjunctions and those that face opposite, and those that are behind and in front of one another and at what periods they are hidden from us and reappear again, these matters engender fears and portents of things to come to those who are incapable of reason. For to discuss these things without some visible models of them is an idle task.

These statements are sufficient for this matter. Let us then terminate this conversation concerning the nature of the visible and generated gods.

Concerning the other divinities, it is too great a task for us to say and know their origin, and we must trust those who have spoken in the past since, as they say, they are the descendants of the gods and they clearly know their ancestors. It is impossible to mistrust the children of gods, although they speak without likely or necessary proofs. But since they profess to speak about family affairs, we must believe them in accordance with custom. So, let then this account of the origin of the gods, according to them, be held and reported: Gea and Uranus brought forth the children Oceanus and Tethys, and they begot Phorcys, Cronus and Rhea and as many with them, and from Cronus and Rhea, Zeus, Hera, and all those who are called brothers and sisters were born, and from these came even more offspring. And when all the gods, both those who manifest themselves in their orbits and those who appear only when they wish, had all been born, he who created the universe said the following to them:

“Gods of gods, those works of which I am the creator and father, having been created by me, are indissoluble without my will. For even though the universe which is bound together can be dissolved, to desire to dissolve that which is beautifully bound together and is good comes from an evil will. And so, since you were created, you are not, on the one hand, completely immortal nor indissoluble but, on the other, you will not be dissolved nor be made to bear the doom of death, since you find in my will a bond yet greater and more sovereign than those which bound you together at birth. Now then, learn what I am saying and revealing to you: there are three mortal kinds that have not been born yet. And if these do not come into being, then the heavens will be incomplete.

For it will not contain within it all the kinds of creatures which it needs if it is to be sufficiently perfect. Now if I myself created them and if they participated in life through me, then they would be equal to the gods. So, in order that they might be mortal and in order that the universe might be truly complete, apply yourselves according to your nature to the creation of living creatures by imitating the very power I used in creating you. As for that part of them which is fitting to be called immortal, that part which is called divine and which is hegemonic among those who forever want to follow you and abide by justice, that part I will supply to you after I have sown it and given it a start. As for the rest, while you weave the mortal with the immortal, fashion and give birth to living things and, nourishing them, make them grow, and once they have wasted away, receive them back to you once more.”

So he spoke, and turning again to the bowl in which he had mixed and blended the soul of the universe, he poured the remainder of the ingredients and he mixed them in somewhat the same manner although they were not so pure as before, but of a second and third degree of purity. And when he composed the whole thing, he distributed souls to the stars, setting each soul to her own star and installing them, as it were, into a chariot, and he taught them the nature of the universe and he told them the laws of destiny, namely that the first birth would be ordered to be one and the same for all, so that no one would be slighted by him, and that it was necessary that once each soul had been planted into her proper instrument of time, she should grow into the most godfearing of all creatures; and finally that, since human nature is twofold, the superior of the two is the kind which later should be called man. Since by necessity these souls were to be implanted into bodies and since all sorts of things would be entering and leaving their bodies, it would be necessary for all of them to first have an innate sensation created from violent occurrences; secondly, it would be necessary to impart love mixed with delight and sorrow, and added to these fear and anger and all those feelings which are similar and as many which are dissimilar and fall into the opposite category. Now those who overcome these feelings shall live according to the tenets of justice, while those who are overcome by them shall live unjustly. And he who has lived the time allotted to him in a fitting manner will return to his companion star and he will merit a blessed and agreeable life. But he who has erred in these matters shall be transformed on his second birth into a woman and if, despite all this, he persists in his wickedness, he will be transformed again and again, each time ac-



" . . . He shall not be free from pain until he surrenders to the orbit of sameness within him and until he controls by his own reason that huge mass of fire, water, air, and earth, that noisy and irrational mass . . . "

A punk rock concert in London.

ording to his special kind of wickedness, into some bestial nature modeled after the character of his own evil. During these transformations he shall not be free from pain until he surrenders to the orbit of *sameness* within him and until he controls by his own reason that huge mass of fire, water, air, and earth, that noisy and irrational mass which later adhered to him, and thus returns to the form of the first and best condition.

When he promulgated all these laws to them so that he might not be held responsible for any future evil of any one of them, he began to sow them some on earth, some on the moon, and others in the remaining instruments of time. And after he had sown them, he handed over to the young gods the task of shaping mortal bodies, of supervising the finishing of the remainder of what is necessary to add to the human soul and all things that that entails, and of governing this mortal creature in the best and most beautiful way possible, except insofar as the creature himself might become the cause of his own evil.

And when he had set all these things in order, he

remained in his own accustomed abode and while he stayed thus, his children understood and obeyed their father's command. They took the immortal principle of the mortal living creature and in imitation of their creator they borrowed portions of fire, earth, water, and air from the universe on condition that they would be returned, and they cemented them together, not with those indissoluble bonds by which they themselves were held together, but by means of invisibly small, dense bolts that they fused, thus making each body a unity of all these things.

Moreover, they fastened the orbits of the immortal soul into the body which, being subject to ebb and flow, was as though the orbits of the soul were fastened into a mighty river, such that they could neither overwhelm it, nor it them, but they were violently shaken and shaking so that the whole creature, possessing the faculty of all six kinds of motion, moved randomly about in a disorderly and irrational way, first moving forward and then backward and then right and left again, and upward and downward,

wandering in every direction in all six places. For while the huge wave which furnished the food flooded in and streamed out, the experiences of the bodies falling upon each other caused even greater noise, as when someone's body chances to collide with alien fire outside, or with a solid lump of earth, or with the collapsing waters, or when it is overtaken by a storm of airborne winds, and thus the motion of all these things passed through the body and assaulted the soul. For these reasons these things were later called and are still now known as sensations.

Moreover, in the moment when they caused very massive and widespread motion, moving with constantly flowing stream and shaking the orbits of the soul violently, they blocked the orbit of *sameness* in all directions by flowing contrary to it and they kept it from governing and progressing while they also dislocated the orbit of *otherness*. Because of this each of the three intervals of the double and the triple and the mean connection of the ratios 3:2, 4:3, and 9:8, since these are not completely dissoluble except by the one who bound them together, became twisted in all sorts of turns and caused all manner of ruptures and damage to the orbits. Thus they barely held together the one with the other, and although they moved, they moved irrationally, sometimes opposite, at other times diagonally and sometimes upward, as when someone is standing on his head with his feet touching something. In this position, right and left appear reversed to both the one who experiences it and the other who sees it. This and other effects the orbits of the soul experience violently, and when they encounter something of *sameness* and *otherness* from the outside saying, contrary to the truth, that it is the same as this or different from that, they prove themselves foolish and false.

Consequently no orbit is in a position to lead or govern, and when certain sensations from the outside fall upon the orbits as they move along and drag the whole vessel of the soul along with them, then the orbits give the false appearance of governing, while in fact they are being governed. Thus and for all these reasons, now as in the beginning, as long as the soul is bound within a mortal body, it is at first irrational. But as soon as the flood of growth and nourishment enters in a diminishing amount, and the orbits take advantage of the calm, they proceed on their own course and they are set in order as time progresses.

Then the orbits of the circles are set aright, proceeding according to their natural schema, and they declare *otherness* and *sameness* correctly, and they render the person who possesses them intelligent. And if one also takes advantage of the right nourishment of education, then he becomes completely healthy

and faultless, avoiding the greatest disease. But if he does not pay attention to those things, after having spent a maimed existence during life, he returns to Hades imperfect and foolish. Such things happen at a later stage.

But it is necessary now to deal with greater precision with those current and earlier matters which concern the formation of bodies and their components as well as the soul, and also to examine the reasons and forethoughts of the gods according to which these were created. For we must stick to the most probable accounts, and according to that principle we must proceed.

The gods, imitating the existing revolving schema of the universe, bound the two existing divine orbits into a spherical body which we now call the head, which is the most divine and rules over all in us. To the head the gods assembled and gave the whole body as a servant, for they understood that it possessed all the motions that were to be. And so that the head might not go rolling about the earth, which has all sorts of heights and depths, and in order that it might climb over the one and outside the other, they bestowed upon it a body as a vehicle and a convenient means of transport. Thus the body has length, and through God's planning it grew four flexible and outstretched limbs, since God ordained this as a means of traveling. Thus climbing and supporting itself it is able to walk through all sorts of places, bearing at the top the most divine and holy dwelling. And in this manner and for these reasons, legs and hands were attached to all men. And the gods who considered that the front was more noble and superior to the back gave us movement in that direction. So man had to have the front of the body distinct and different from the back. For this reason, the gods first placed the face on the vessel of the head on that side, and furnished it with organs as provisions for the soul, and they declared that this natural front should be the part sharing in leadership.

And among the organs they first fashioned the light-bearing eyes, and they fastened them in the face for the following reason. The gods designed that part of fire which doesn't have the capacity to burn, but provides instead a gentle light, to be a material substance akin to the light of every day. They made the pure fire within us which is similar to this fire flow through the eyes in a fine stream, and they compacted the whole thing and especially the middle of the eye to be smooth and dense, so that nothing of coarser nature got through and only fire of this type was permitted to filter through, pure and all by itself.

When, therefore, the daytime light surrounds this stream of vision, then like meets like, both fusing

together, and one homogeneous body is formed along the line of vision wherever the light from inside the eyes encounters some external object. And so the whole stream of vision, because of its similarity, is similarly affected, so that if it ever touches some objects or is touched by them, it passes on the movements from these throughout the whole body right into the soul and causes the sensation we call seeing. But when the external fire withdraws into the night, the internal fire is cut off from it; for if as it streams out of the eye, it encounters something different from itself, it is changed and finally goes out since it is no longer related with the neighboring air which no longer contains fire. Then it can no longer see and becomes lulled to sleep. For when the eyelids, the devices protective of vision which the gods made, close, they stop the forces of the internal fire, while the force itself disperses and smoothes out the movements from within. And when they have been smoothed out, rest ensues and if this quiet is profound, then a dreamless sleep befalls us. When, on the contrary, stronger movements are left behind in us, they create internally various kinds and quantities of images depending on their character and the region in which they exist, and these images are remembered by us when we awaken. As for the images in mirrors and all those smooth and reflecting surfaces, it is no longer difficult to understand their formation. Because of the mutually common character of the internal fire and the external fire, every time that one fire is formed on the smooth surface and is changed into many forms, all such reflections necessarily appear, as the fire around the face fuses with the fire around the vision on the smooth and reflecting surface. Left appears right because the opposite part of the external fire comes into contact with the opposite part of the fire of vision, contrary to the usual rule of impact.

On the contrary, right appears right, and left, left, when either the internal or the external fire is reversed upon contacting the other. This is what happens when the surface of the mirror is concave and sends the light which comes from the right side of the object into the left part of the eye and the light which comes from the left into the right part of the eye. But when the curvature is turned horizontally across the face, this same cause makes it appear inverted, thrusting the lower part of the light upwards and the upper part downwards.

Such, then, are those auxiliary causes which God uses as servants for the completion of the form of the best that is possible. But the majority of mankind regard them not as auxiliary but as primary causes which cool and heat, condense and dilute, and pro-

duce similar effects. But it is impossible for such causes to have either mind or reason in anything. For it must be said that of all beings, soul is the only one that has the right to possess mind because soul is invisible while earth, air, fire, and water are visible. For it is necessary that the lover of reason and knowledge seek the first causes of rational nature, and regard as secondary those causes which, being moved by others and themselves, are compelled to move others. We must do likewise. It is necessary for us to speak about two types of causes: those which, endowed with reason, are the creators of the beautiful and good things, and those, on the other hand, which, deprived of wisdom, bring about whatever is random and disorderly.

Enough now about the auxiliary causes which have given the eyes the power they now possess. It is necessary to speak about the greatest task for which the eyes benefit us, for which reason God has given them to us. According to my reasoning, sight was created as the cause of the greatest benefit to us. For nothing of our present discussion of the universe would have been possible if man did not have the power to see the sky, stars, and sun.

But now, as it is, day and night, the months and seasons of the year, and the equinox and solstices are seen by us, have caused the creation of number, and have given us the meaning of time and the answer to the question of the nature of the universe. By that we have been provided with that form of philosophy such that no greater good has ever or will ever be granted to mortal man by the gods. This, I say, is the greatest benefit which the eyes have given. So why praise all those other lesser things over which a nonphilosopher, if blinded, might spill useless tears?

Let us for this reason assert, rather, that God created and bestowed vision on us so that we, contemplating the orbits of intelligence in the heavens, might put them to use by applying them to the orbits of our own reason, which are related to them, even though ours are perturbed while theirs are untroubled; and by learning them in depth, and participating in the rationality of nature, we might imitate the perfectly unerring divine orbits and thus stabilize the wandering orbits within us.

The same must be said about sound and hearing, because they were bestowed by the gods for the same reasons. For not only was speech given these same tasks to which it contributes to the greatest degree, but also that which is useful for hearing the sound of music has been given for the sake of harmony. And harmony, which is akin to the motions of the orbits within our souls, has been bestowed by the Muses upon those who associate with them on the basis of

reason, not to be used for irrational pleasure, as is believed today, but in order to be an ally in bringing the incongruous orbit of the soul to order and consonance with itself. They also gave us rhythm as an assistant, because for the most part our condition lacks in measure and is in dire need of grace.

Everything we discussed so far, with minor exceptions, has presented the things that have been created by *reason*, but we must also discuss those things which are created through *necessity*. Because the birth of this world came forth as the mixed result of the coming together of *reason* and *necessity*, *reason* rules over *necessity* by persuading her to drive the greatest part of the ephemerals toward what is best; and our universe was initially put together when *necessity* was defeated by rational persuasion in this fashion and by these principles. If one is to report how really the universe was created in this way, it will be appropriate to introduce the random kind of cause and how it causes motion. So we must start out once again and assume a different starting point for these same matters and, just as we did with our earlier discussion, begin our new subject from the beginning.

Specifically, we must review the nature and the conditions of fire, water, air, and earth that prevailed before the creation of the universe, because so far nobody has accounted for their creation, but everybody refers to them as though it were known what fire and the other three are, taking them to be the original principles, the alphabet letters, as it were, of the universe, while in fact not even a narrow-minded person should rank them, in this analogy, as much as syllables. What we shall have to say on this is as follows. We are not going to speak about the first principle, or principles (or whatever term you may prefer), of the universe, especially because it is difficult to explain what we think in the style of our present discussion; nor should you assume that I ought to do this, nor would I be able to persuade myself that I would be right in attempting to undertake such a great task; but insisting on what we said in the beginning, that is, the importance of the likely account, I will attempt to give an account of everything in detail that will be no less likely than any other but rather more so, starting from the beginning as before. And once again we begin our discussion after we call upon God to preserve us from odd and unbecoming talk.

Let this fresh start of the discussion of the universe have a fuller subdivision than the previous one, however; for earlier we had distinguished two kinds of species, but now a third must be brought to light. Because those two were sufficient for the matters that we discussed earlier, the one having been hypothe-

sized as a kind of exemplar, conceptual and eternally invariant, and the second as an imitation of the exemplar, having birth and being visible. But we didn't distinguish a third kind then, believing that the two would be sufficient. Now reason appears to compel us to attempt to bring to light, by means of arguments, a difficult and obscure kind.

What properties then and what character must we assume it to possess?

Most of all this: that it be the host of all becoming, like a nurse.

But although all this is true, it is still necessary to speak about it with greater clarity, which is difficult because, among other things, it requires a preliminary discussion about fire and the other things along with fire.

For it is difficult to say with conviction and certainty which of these things we must really call water rather than fire or, indeed, which one we must call by any one name or even by all four. How, then, and in what way can we discuss this matter, and what are the appropriate questions to be raised about these things?

First, that which we at present call water, we see as we regard it condensing that it becomes stones and earth; and upon melting and dissolving it becomes wind and air; and air inflamed becomes fire which, in turn, condensed and extinguished, returns to the form of air; contracted and condensed air becomes cloud and mist, and these, when even more compacted, become running water, which again turns into earth and stones, thus, as it seems, transmitting the process of generation to each other in cyclical fashion.

Hence, as none of these ever appears the same, who would not be embarrassed to definitely maintain that any one of them is this rather than another? Nobody! But it is by far safest to speak about them on the following assumptions.

What we always observe becoming different at different times, such as fire, we should not refer to as a *this* but in each case as a *thus*, nor refer to water as a *this* but always a *thus*; and of those things that we suppose we can indicate by pointing and using the expressions "this" and "that," we should never refer to any of them as if they have any permanence. Because they are elusive and do not submit to the expressions "this" and "that" and "this here," nor to any other expression denoting permanence. We should not use these expressions, but we should call "such-like" ("thus") that which in each and every thing continually recurs as similar, and thus call "fire" that which is such-like throughout every thing, and so on for everything which is subject to the process of becoming.

The only thing that we can refer to by the names "this" and "that" is that in which all things which are generated appear and into which they are again destroyed; but we should not call "this" whatever is hot, or white, or their opposites or their derivatives.

But it is desirable to speak more distinctly on this.

For if a man is molding all sorts of shapes out of gold and never stops remolding each shape into another, and if someone points to one of these shapes and asks what it is, by far closest to the truth would be to say that it is gold, and never say that it is "triangle" or any other of the shapes produced, since they would change while we were answering—and we should be pleased if they even admitted of being called "such-like."

The same argument holds for that nature which receives all bodies. It must be pronounced eternally unchanging, because it never diverts from its characteristics. It continually receives all things and never in any way whatever does it receive any shape similar to that of any of the incoming things. For by nature it lies there as the stuff to be molded by everything, moved and shaped by what enters it, and because of it appearing now this way and now that. And those things which enter it and leave it are imitations of the eternal—formed from them in a marvelous and hard-to-describe fashion which we shall pursue another time.

For the present, however, we must conceive three kinds of things: that which becomes; that wherein it becomes; and that in whose likeness the becoming is born. And it would indeed be appropriate to compare the receiving thing to the mother, the model to the father, and the nature between these to the offspring; we further should realize that, if there is to be an imprint, that itself in which the imprint is situated could not have been well prepared unless it were shapeless with respect to all those forms which it is to receive from elsewhere. For if it were like any one of the things that go into it, then, when things of the opposite or entirely different nature came along, in reproducing them it would assimilate them badly, letting its own features appear along with theirs.

Therefore that which shall receive within itself all the kinds of things must be without any form, much as in the case of scented ointments one skillfully contrives at the beginning of the work to make the liquids which are to receive the scents as odorless as possible. Or anyone who undertakes to take the impressions of shapes in some soft substance allows no shape to be evident therein beforehand, but first makes it as level and smooth as possible.

In the same way, that which is properly to receive many times and over its whole extent likenesses of all

the eternal things should itself by nature be free from all the forms. For this reason, then, we must call the mother and host of what has been created as visible and otherwise perceptible neither earth, nor air, nor fire, nor water, nor anything of which these are made. However, we shall not err if we call it an invisible form, shapeless, all-receiving, partaking of the intelligible in a manner most astonishing and hard to comprehend. To the extent that it is possible to arrive at its nature from what has already been said, one would most correctly say this: that part of it at any given moment appears as fire which has become fiery, that as water which has become liquid, and as earth and air in as much as it receives likeness of these.

But as we are determining these matters, there is the following question that must be thought through by argument: is there such a thing as "fire in itself" and is each of all the things which we describe in this way just a "thing in itself," or are those things which we see and the others which we experience with our bodily senses the only ones that possess such reality? Are there no things but these anywhere in any way? Is it in vain when we say that there is a conceptual kind of anything? Is this nothing more than a word? It is not worthy of us to dismiss the question by asserting that it is so without judgment and verdict, nor should we add a further lengthy digression to what is already a lengthy argument. If an important distinction can be made briefly, that would be the most appropriate thing to do. This, then, is the way I cast my verdict.

If reason and true opinion are two distinct species, then these "things in themselves" indeed exist, as forms that cannot be sensed, but only be thought; but if, as it seems to some, true opinion and reason differ in nothing, then all the things that we perceive by our body must be posited as the most certain reality. Of those (reason and true opinion) it must be said that they are two and distinct because they were created separately and they exist separately, since one is produced by means of instruction and the other by persuasion; the one is always accompanied by true argument, the other is irrational; the one cannot be moved by persuasion, the other can; and of the one, it must be said, all men share—but of reason, only gods and a small part of the human race.

This being the case, it must be admitted that there exists, *first*, the invariant species, unborn and indestructible, neither admitting anything into itself from outside, nor entering into anything else, invisible and incorruptible, and it is this which is the lot of reason to study; *second* is that which has the same name and the same appearance as that species, is perceptible, created, always being moved, being born in a certain

“What we always observe becoming different at different times, such as fire, we should not refer to as a this but in each case as a thus”

place and then vanishing from it, and can be grasped by opinion with the aid of sense-certainty. The *third* kind is *space* which is eternal, does not admit of destruction, provides a position for all things that are born, itself can be grasped by a spurious kind of reasoning in the absence of sensation, is scarcely credible, and as we look upon it we dream and say that everything that exists must necessarily be in some location and occupy some space, and that whatever is neither on the earth nor anywhere in heaven is nothing.

Because of this dreaming state we become unable to awaken, to draw all these and other similar distinctions and speak the truth about the unsleeping and truly existent nature, namely that, as far as a mere image is concerned, because it does not own even the very thing on which it was created, and because it is the ever-wandering apparition of something else, it is appropriate to exist in something else, cling on to existence in some way or else be nothing at all—but that which is truly existent is aided by the precise and true argument that so long as two things are different, neither will ever become one with the other, nor will the two become one and the same and two at the same time.

According to my judgment, the argument, considered in summary, should be delivered as follows:

there exist three distinct things, *being*, *space*, and *becoming*, even before the creation of the universe. And the nurse of *becoming*, being moistened and inflamed and receiving the appearances of earth and air and experiencing whatever other affections go with them, manifested herself to be *manifold*, and because she was not filled with similar or balanced qualities she was not in equilibrium in any part of her but everywhere she was being swayed and shaken by them, while in turn she would shake them while she moved. They, in turn, being moved, were always being separated and carried to different places, just like the things that are shaken by winnowing baskets and other instruments for clearing wheat, where those that are dense and heavy are sifted out in one place while the porous and light are carried and settle in a different location.

So the four kinds were shaken by the host which was acting like a shaking instrument, and those most unlike each other were for the most part separated from each other and those most like each other crowded together very closely, and for this reason they each occupied different places in space even before the well-ordered universe was created out of them. Before then, all these existed irrationally and without measure. When the ordering of the universe was undertaken, fire, water, earth, and air possessed only some vestiges of their characteristics and were generally in that condition which everything is likely to be in when God is absent from it, and this then being the case, God first of all gave them distinct form by means of kinds and numbers. We must always, above all else, bear witness to this, that God composed them to be beautiful and as perfect as possible while they were not so before. Now I shall attempt to present to you, and by unusual argument, the formation and origin of each of these; but, since you are familiar with those paths of learning that my arguments require, you will follow me.

First of all, it is obvious to everyone that fire and earth and water and air are bodies; and that all bodies have depth; and that depth in turn is bounded by surface; and the rectilinear surface is composed of triangles. All triangles derive from two triangles, each having one angle right and the other two acute; of these two triangles, one has two half right angles on either side of its right angle and is isosceles and the other has unequal sides and its smaller angles are unequal parts of the right angle. We shall hypothesize this to be the origin of fire and of the other bodies, following the caveat of the likely account combined with necessity; the further origins of these, God above knows and of men, only he who is loved by God.

We must now ask: which are the four most perfect bodies that can be constructed which, though

unlike one another, can be created out of some of the others after they are taken apart? If we can find the answer to this, we shall possess the truth about the creation of both earth and fire and of those which stand between them as mean terms. For we shall not concede to anyone that there exist any visible bodies more beautiful than these, each being one of a kind. We must now eagerly seek to construct these four kinds of bodies of exceptional beauty and declare that we have adequately grasped their nature.

Of the two triangles, the isosceles is of one type only, the scalene has unlimited varieties. From these unlimited varieties we must select the most beautiful if we are to begin according to our custom. And if anyone can tell us that he has a better way that he prefers for the construction of these things, he shall win, not as an adversary but as a friend; thus, of the many triangles, bypassing all others, we posit one to be the best, that of which two together compose a third which is an equilateral triangle. The reason for this is too long a story; but he who would examine this thing through and discover that this indeed is the case will find the reward agreeable.

Let us resolve, then, that there are two triangles from which the body of fire and those of the others were manufactured—one the isosceles, the other that which has a greater side whose square power is three times the square of its lesser side. Something which was earlier spoken of obscurely must now be made more distinct. It appeared that the four kinds could all be created into one another, but that appearance is not correct; because from the triangles that we selected, all four kinds can be created—three from the scalene, but the fourth alone is fitted together by the isosceles triangle. Thus, not all four can be created from one another by dissolving into many small parts and reforming into fewer large ones; only three of the four can do so, because they are all made from the same triangle and when the larger ones are dissolved, many small ones are formed out of them, receiving their proper shapes and, again, when many small ones have their triangles dispersed, resulting in a single number of large volume, they would form another single great kind. This much, then, about their creation from one another.

The next thing to discuss is the shape of each kind and the numbers of which it is composed. We shall begin with the construction of the simplest and smallest shape, whose element is the triangle with hypotenuse twice the size of its smaller side. If two of these are placed together alongside their diameter, and this is repeated three times, the diameters and the smaller sides resting on the same point as a center, then we have one equilateral triangle made from six triangles. If, then, four equilateral triangles are placed

together, their plane angles meeting together in groups of three, they form one solid angle, the one which comes after the most obtuse of plane angles. When four such angles have been completed, the simplest kind of solid is constructed, which divides that which circumscribes it into equal and similar parts.

The second solid is constructed by the same triangles, placed together to form eight equilateral triangles which make one solid angle of four planes; when six such angles are constructed, the second solid is completed.

The third solid is created from one hundred and twenty basic triangles in combination, twelve solid angles, each contained by five plane equilateral triangles and having twenty equilateral triangular bases.

And now the one of our two basic triangles which created the above three solids is dismissed and the isosceles triangle generates the fourth, placed together in sets of four, their right angles coming together at the center and forming one equilateral quadrangle. Six such quadrangles joined together form eight solid angles, each constructed from three plane right angles; the shape of the constructed solid is cubic and has six plane square bases.

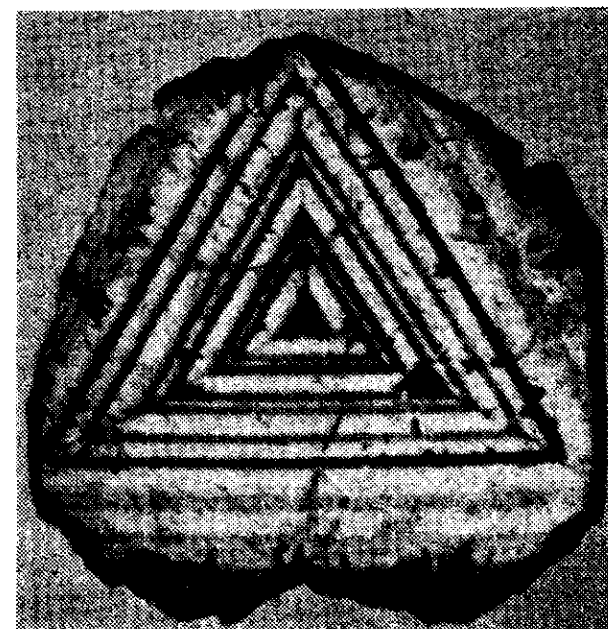
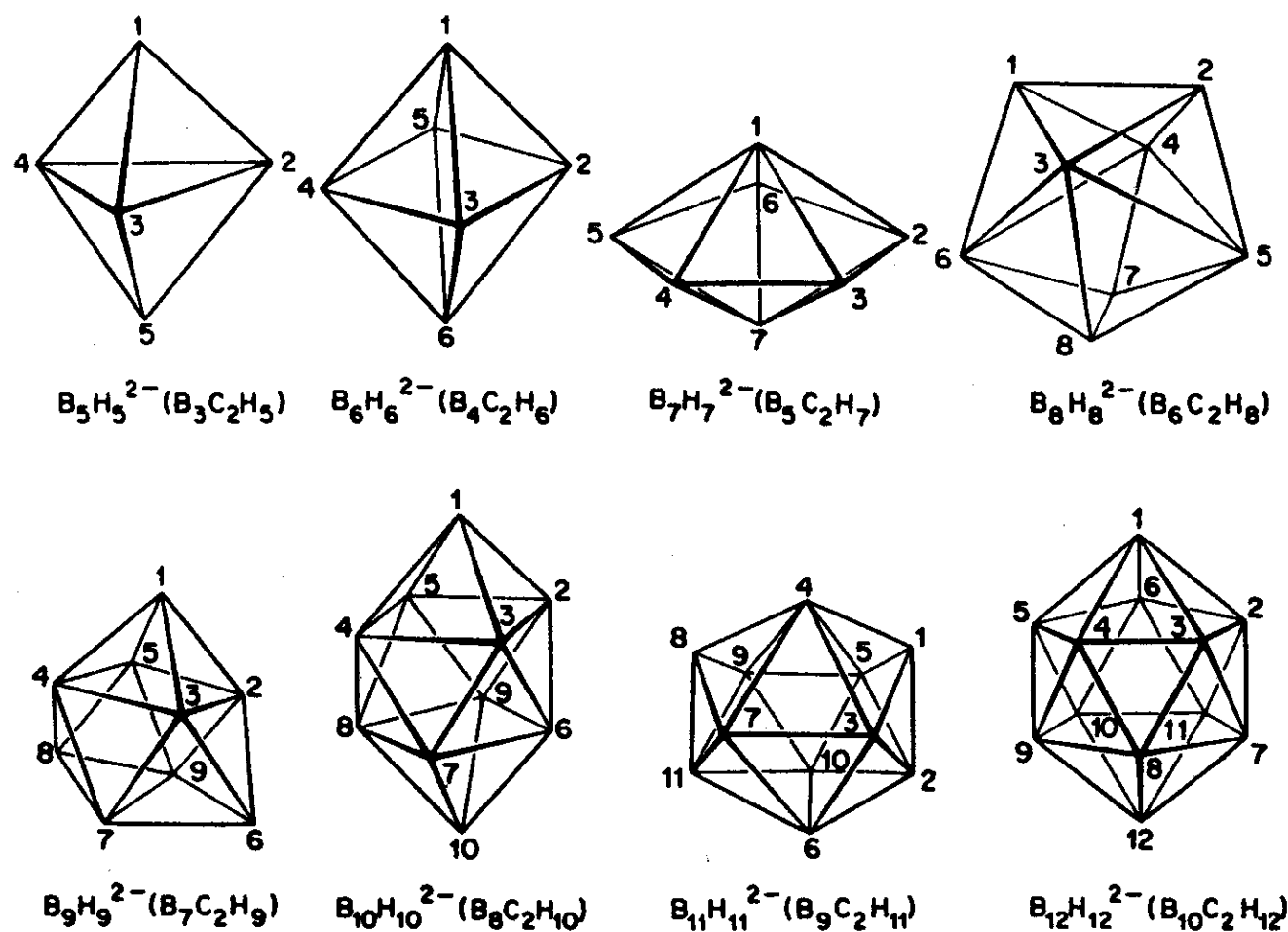
There is yet a fifth construction, which God used to paint the zodiac of the universe.

If someone, taking all these arguments into consideration, properly asks whether to say that the worlds are boundless in number or whether they are bounded, I would answer that to consider them boundless is the opinion of a person boundlessly ignorant on matters about which he ought to have knowledge. But whether it is proper to argue whether the world is truly one or five, he could justifiably puzzle over if he stopped to consider it. Our own argument proclaims the world to have been created by one single God according to the likely account—but someone else who would consider different things will believe otherwise.

Let us dismiss him and proceed to distribute the kinds that we just created by our arguments to fire, earth, water, and air.

Let us give earth the cubical shape, since of the four kinds the earth is the most immobile and most plastic of all bodies and that which has the most stable bases must necessarily be like her; also, of the triangles that we hypothesized in the beginning, the base of the isosceles is by nature more secure than that of the others and, also, the equilateral quadrangle which was constructed from isosceles triangles is by necessity more stable both in parts and as a whole. Therefore we preserve the likely account when we assign this shape to earth.

Of the rest, water is the most immobile, fire the



“God first of all gave them distinct form by means of kinds and numbers.”

This illustration of boron compounds from a modern chemistry text shows geometric ordering of matter at the molecular level; the triangle is also the basis of the prismatic structure of tourmaline, a semiprecious stone (inset).

most mobile, and air is the intermediate between the two; we shall assign the smallest body to fire, the largest to water, and the intermediate to air; and the sharpest to fire, the next to air, and the third to water.

Of all these, the one with the least number of bases will necessarily be the most mobile, being the most cutting and sharpest of all in every way, and also the lightest, since it is constructed from the smallest number of similar parts; the second stands second in these respects, and the third, third.

Let then the pyramid, both according to sound reason and according to the likely account, be the solid shape which is the element and seed of fire; the second solid in order of birth, of air; the third, of water.

We must imagine all these so small that, because of the smallness of each one of each kind, they are invisible to us, but when they assemble in large

numbers, their volume can be seen. Regarding their proportions, their numbers, movements, and all their other properties, God fitted them together proportionately after he perfected them with precision, whenever *necessity* willingly gave in to persuasion.

From the foregoing discussion about the kinds, the following would hold as most probable.

Earth, when she encounters fire and is dissolved by its sharpness, drifts about, either dissolving in that fire, or in some volume of air or water until she becomes earth again whenever her parts encounter one another again somewhere and are again fitted together—because they cannot ever be transformed into another kind.

When water is divided by fire, or even by air, the creation, by construction, of one particle of fire or two of air is possible. From one particle of air dissolved, the fragments can become two particles of

fire. And conversely, when a little amount of fire contained in a large amount of air, or water or perhaps earth, is kept in motion as they are moved and after a fight is defeated and crushed, then two particles of fire are reconstructed into one of air; and when air is overpowered and shattered into small pieces, from two-and-a-half particles one complete particle of water will be forged.

We shall reconsider these matters as follows: when one of the other kinds is seized by fire it is cut up by the sharpness of its angles and edges, and when it is reconstructed into the nature of fire it stops being cut (because each kind which is alike and identical is not capable of either producing a transformation to or being affected by that which is identical and alike), and while it, being weaker, resists being transformed into the stronger, it cannot prevent its dissolution.

And conversely, when a few of the smaller particles are seized by a large number of the larger ones and are shattered and extinguished, then, if they willingly reconstruct themselves into the form of the prevailing kind, they stop being extinguished and air is created from fire and water from air; but if they drive into them and some of the other kinds encounter them and fight, then they do not stop being dissolved until either they are completely repulsed and in disarray they return to their kind, or, vanquished, they form from many pieces one body similar to that of the victor and they stay his denizens. Moreover, during these occurrences they exchange places; because the bulk of each kind stands apart in its own place as a result of the motion of the recipient—and those which each time become dissimilar to themselves and similar to others are carried by the shaking toward the place of those to which they have become similar.

Those bodies which are pure and primary have come into being by such causes. But the fact that there exist other varieties within these kinds must be explained by the construction of each of the basic triangles. Each such construction did not originally produce a triangle of only one size, but of lesser and greater sizes, the number of sizes corresponding to the varieties of kinds. Hence when they are mixed with themselves, and with one another, they are unlimited in variety. And it is necessary for those who intend to employ a probable account concerning nature to keep this variety in view.

Unless we reach an understanding concerning motion and rest, in what way and under what conditions they come about, there will be many obstacles in the way of our subsequent argument. Now, in addition to what we have already said concerning them, there is this consideration also: movement will

never tend to be present within uniformity. For it is difficult, rather, impossible, for something to be moved without something which moves it, or for something to move without something which is moved. There can be no motion with these absent, and it is impossible for these ever to be uniform. Thus we should always place fixed position in uniformity and motion in nonuniformity. For the cause of the nonuniform nature is inequality. But we did not say at the time how the kinds, each separated according to species, do not cease moving and being moved by each other. So we will now investigate this case as follows.

The circumference of the universe, which encompasses all the kinds, being circular and naturally tending to come together with itself, compresses everything and allows no empty space to be left. Therefore, fire, in particular, has permeated through all things, and secondly air, as it is by nature second in fineness, and the others likewise, because the ones made of the largest compounds have the largest voids in their structure and the smallest the least. The contraction involved in the compression compels the small bodies into the voids of the large ones. So when small bodies are placed alongside of large ones, and the smaller force apart the larger, while the larger bring together the smaller, all are borne upwards and downwards to their own places. When each changes in size, it also changes the location of its place. So then, and for these reasons, the preserved existence of nonuniformity furnishes the everlasting movement of these bodies which is and will be perpetual.

Next, it is necessary to consider that there are many varieties of fire, such as flame and the effluence from flame, the kind which does not burn but supplies light to the eyes—and that which remains in the embers once the flame is extinguished. The case with air is similar: the clearest variety is called by the name of ether and the most turbid is called mist and darkness, and other kinds are without a name, all arising through the inequality of triangles. The varieties of water are primarily two: one is the liquid sort and the other is the fusible. The liquid sort, partaking of the small kinds of water which are unequal in size, is movable both by itself and by other things due to its nonuniformity and the shape of its form. But the fusible, formed out of large and uniform particles, is more stable than the liquid and, congealed by uniformity, it is heavy. But when fire enters it and loosens it up, it casts off its uniformity. Its uniformity being destroyed, it partakes of greater motion, and becoming mobile, it is pushed by the adjacent air and is extended over the ground. For each one of these states it has received names—melting for the reduction

of its mass and flowing for the spreading over the ground.

When the fire in turn retreats, it does not pass into a void but pushes into the adjacent air, which in turn compresses the still mobile liquid mass into places formerly held by fire and compacts it. But the liquid mass, being thus compressed, regains its uniformity with the departure of the cause of nonuniformity, fire, and returns to its characteristic state. The cessation of the fire is called cooling, and the contraction that follows its withdrawal we classify as being solid.

Of all the kinds of water which we term fusible, the densest is made of the finest and most uniform particles. This is a kind of unique form combining shine and light color, a most precious possession which is filtered through stones and congealed and is termed gold. And the offshoot of gold which is very hard due to its density, and is black in color, is called adamant [diamond]. The kind that is close to gold but has more than one variety, is more dense than gold and contains a small and fine portion of earth which makes it harder, and which is lighter because of the great interstices within it, and is constructed from brilliant congealed waters, constitutes the species of copper. When the portion of earth which is mixed with it becomes old and the two separate then it can be seen in the copper and it is called rust.

As for other such things, nothing is still difficult to figure out if one pursues the idea of the probable account, which idea can be made into a moderate and sensible sport in life when someone, for the sake of relaxation, sets aside arguments concerning the eternal things and considers probable accounts of ephemerals, and thus gains a pleasure that is not to be regretted. Surrendering our present subject to this method, let us elaborate what is probable about what follows.

The water which is mixed with fire which is called fluid because of its fineness, its moisture, its motion, and the way it rolls over the earth, is also soft and its foundations give way because they are less stable than those of the earth. When this kind is separated from fire and is isolated by air it becomes more uniform, but it is also compressed into itself as a result of the outflow of fire. Thus congealed, that part of it which has undergone this process very high above the earth becomes hail, and that on earth, ice, and the part which has undergone it at a more moderate altitude above the earth, being only half congealed, is snow; and the part congealed on the earth out of dew is called hoar frost.

Now a great many kinds of water are mixed with one another and are strained through plants growing out of the earth. This class as a whole is called juices; through mixing, each one of them is dissimilar to the

others. They produce many other kinds that have no name, but four varieties of the fiery kind, being especially distinct, have been given names. Of these, that which is warming to the soul as well as the body is wine. That which is smooth and distinct in appearance and therefore bright and glittering to the eye, and shiny, is the oily kind, including pitch, castor, olive oil, and all the others that are of the same properties. That kind which spreads the constricted parts around the mouth to their normal state, providing through this property the sense of sweetness, has received the name of honey to be applied to all its forms. And the foamy kind, which dissolves the flesh by burning, being separated from all other juices, is called vinegar.

Considering the kinds of earth, that which is sifted through water in the following manner becomes a stony body. The mixed water, whenever it is broken up in the mixture, is transformed into air. And having become air it rushes up to its own place. But since there was no vacuum above the mixture, it presses against the adjacent air. This being heavy, when pressed and poured around the mass of earth, it crushes it forcibly and compresses it into the places from which the new air came out. And having been compressed by air so as to be insoluble by water, the earth is transformed into rocks, the most beautiful sort of which is the one formed by equal and uniform parts and is transparent; while the poorer sort is the opposite. But that earth which had all the moisture extracted from it quickly through fire and acquired a more brittle character became what we call clay. When sometimes moisture is still left in the earth and it has been fused by fire, when cooled it becomes the dark-colored stony substance. There are two other kinds which, in the same way as the ones above, when isolated from a mixture of large amounts of water, but made from finer components of earth, are salty. Then these become half-solid and are dissoluble again by water. One of them is the kind of salt which washes oil and earth; the other is the kind which is combined in forms agreeable to the sensation of the mouth and has become by law a body dear to the gods.

Some compounds of both of these which are dissoluble not by water but by fire are compressed together in the following manner. The body of the earth is not melted either by fire or air, which, having by nature particles smaller than the interstices in the structure of the earth, move in larger spaces and do not force their way, thus leaving earth unmelted and undissolved. Whereas the particles of water, being by nature larger yet, must use force to make their way out and thus dissolve and melt the earth. For water

alone breaks up earth which has not been forcibly compressed, but when earth is tightly compressed, nothing except fire does, since no entrance is left for anything but fire. Again, water, under extreme pressure can be dispersed only by fire, while under less compression, by both fire and air, with fire altering the structure of the triangles and air penetrating its interstices. But air, when forcibly compressed, is dissolved by nothing, except it can be broken down to its elementary units. Only fire breaks up air which is not so compressed.

Now, considering bodies formed out of earth and water, insofar as the water in such bodies occupies the interstices of the earth and is also pressed together by earth, the particles of water which come against it from without have no entryway and, flowing around it, they leave the body undissolved; but when the particles of fire enter into the interstices of water, they act as water acts upon earth and, therefore, they are the sole cause for such a compound body being melted and flowing. It happens that some of these bodies contain less water than earth, as does the group related to glass and the forms of stone called fusible; while those which contain more water include all the solidified substances such as the various types of wax and incense.

We have now sufficiently illustrated the kinds which vary according to their forms, combinations, and mutual transformations. But now we must attempt to shed light on the causes through which their attributes come to be. First of all, there must be a perception by the senses of the things under discussion here, but we have not yet explained how the body was formed and what is connected to it, nor that portion of the soul which is mortal. Now these questions cannot be considered adequately apart from the attributes of things insofar as they are perceptible, nor, however, can the attributes be considered apart from those; yet to consider both at the same time is also impossible. Therefore one of them must be assumed before the other, and later we will return to discuss our assumptions.

In order now to discuss the attributes of things, let us presuppose the matters concerning body and soul. First let us examine why we say fire is hot, and consider this question by keeping in mind how the dividing and cutting property of fire acts upon our bodies. We all perceive that the experience is something sharp. The fineness of its sides, the sharpness of its angles, the smallness of its parts, and the swiftness of its movement, all of which give fire the force and keenness to cut sharply into whatever it encounters, can all be explained when we recall the construction of its shape. And we can say that it is this and no other

property which divides and slices our bodies into small parts and furnishes that experience which we call heat.

The opposite of this process is clear, but nonetheless it must not lack explanation. When the larger particles of liquids which surround the body enter into it, they push out the smaller; but as they are unable to enter into the places of those expelled, they compress the moisture within us, so from nonuniformity and motion they produce immobility through uniformity and by means of compression they congeal. But that which is contracted contrary to nature fights according to nature and pushes itself into the opposite condition. To this fighting and shaking, quaking and shivering is added, and this whole experience and what produces it we call cold.

Hard is whatever our flesh yields to and that which yields to our flesh is soft. They are related to one another as follows: that yields which rests on small bases (that is, of its triangles), but that which is formed from four-sided bases is firmly based, and is of the class which offers the highest resistance. And so, whatever is of very dense construction is most resistant.

Heaviness and lightness can be made most clear if examined together with the nature of so-called above and below. It is incorrect to believe that the universe is divided by nature into two particular opposite places, one "below," to which anything possessing bodily mass is carried and another "above," toward which bodies move only unwillingly. For the universe being spherical in form, all points which are furthest from the center are equally distant and must likewise be identical extremes. One also must consider the center, in its counterposition, as being the same distance away from all extremes. Given this nature of the universe, which of the bodies mentioned can one place "above" or "below" without appearing to apply a name that is totally inappropriate? For the middle place of the universe cannot rightly be termed either "above" or "below," but only middle. And the circumference is neither middle nor is any part of itself different from any other in relation either to its center or any of the parts counterposed to it.

When some things are by nature entirely alike, could one apply such opposite names to them and still believe he is speaking well? For if some things are equally balanced around the middle of the universe they would never move toward any of their extreme points because of their complete likeness. If someone should go around the universe in a circle, having stood at opposite positions, he would many times have called the same parts of it "above" and "below." The universe being, as we just said, spherical, it is not

rational to term one place "up" and another "down." How then these terms originated and in what circumstances we became accustomed to speak about them, dividing thus the universe, we must determine on the basis of the following hypothesis.

Suppose someone should stand in that place in the universe which is closest to the location allotted to fire, toward which fire tends to move and where its greatest mass is concentrated. If, having the strength to get there, our man should disembark at that place and stand there detaching portions of fire, placing them on the scales, raising the beam and pulling the fire by force into the direction of air which is dissimilar, it is obvious that he will force the smaller mass more easily than the larger. For when two masses are lifted up simultaneously by the same force, the resistance of the smaller to the lifting force will be less than that of the greater, and the greater is called "heavy" and is borne "down" and the smaller "light" and "up."

Now we must investigate how we ourselves do this thing in relation to this place here. For, standing on the earth, we separate earthy kinds and sometimes earth itself, and forcibly and contrary to nature lift them into the dissimilar air, and they both adhere to that to which they are akin, yet that which is smaller follows whatever forces it into the direction of the dissimilar. Therefore we have called it "light" and the place into which we force it "up," and the opposite to these "heavy" and "down." Now the relations of these same things toward each other will necessarily change, given that the greater part of the different kinds is located in positions opposite one another: that which is "light" in one of these locations will be found to be in an entirely contrary, skew, and totally different circumstance to that which happens to be "light" in the opposite location, and so will the "heavy" of one location to the "heavy" of another, and the "down" of the one to the "down" of the others, and the "up" to the "up."

There is, however, one fact that has to be understood about all of them: that it is the passage of its kind to its kindred which makes the moving body "heavy" and the region towards which it moves "down," and those being otherwise are something else. So much for one account regarding the causes of these conditions.

Concerning the causes of the "smooth" and "rough" conditions, everyone should be able to explain them to someone else after reviewing them, for hardness mixed with nonuniformity provides the one, and density mixed with uniformity provides the other.

Concerning the affects common to the whole

*"The circumference of the universe,
which encompasses all kinds,
. . . compresses everything and allows
no empty space to be left."*

body, the most important remaining point is that which deals with the cause of pain and pleasure, and the things acquired through bodily perception which are accompanied by pains and pleasures. Keeping in mind the distinction we made previously between the nature of that which is easily moved and that which is difficult to move, let us now take up the causes of every perceived and unperceived experience. For this is the path along which we must pursue all those things we now intend to capture. Whenever a short experience strikes against that which is easily moved, it sends other particles moving into a circle which transmit the same affects to others until they reach the mind and announce the character of the acting force. But the difficult-to-move bodies, being stable and having no circular motion, do not move any adjacent particles and they experience the affect alone. Therefore, since the particles do not transmit to others, the initial experience remains unmoved within the living organism and the affect remains unperceived. This is the case concerning bones, hair, and all other parts that we possess which are primarily made of earth. What was said earlier above concerned especially the organs of sight and hearing, given that they contain in them a large quantity of fire and air.

Now it is necessary to consider the question of pleasure and pain as follows: that which is contrary to

nature and violent and occurs in us massively, is a painful experience, but the return to the natural condition, in the same manner, is pleasure. For what occurs gently and in small amount is unperceived, while the converse is of a contrary character. What takes place with ease is eminently perceived in its entirety but it does not involve pain and pleasure, such as the experiences relating to the stream of vision itself which, as we described earlier, becomes a corporeal entity which during daytime harmonizes itself with us. For regarding the stream of vision, cuttings and burnings and all other affects do not produce pains nor afterward pleasures when it is restored to its normal state, but they are great and clear perceptions both of what it experiences and of that upon which it falls and touches; for force is not involved when the stream of vision is interrupted and when it is restored.

On the other hand, those bodies which are composed of larger particles [triangles], yielding with difficulty to that which acts upon them, transmit their motions to the whole body, and feel pleasure and pain—pain when they are altered and pleasure when they are restored afterwards to their normal state. But all those bodies in which departure from the normal state and depletion are gradual, while their replenishments are massive and great, are insensible to the depletions but sensible to the replenishments. Consequently they do not give pains to the mortal part of the soul, but great pleasures. This is obvious in the case of scents. Whatever is being altered in a massive manner but restores itself to its original condition, gradually and with difficulty, produces the opposite effects of those mentioned previously. And this is clear when it occurs in relation to burns and cuts of the body.

We have now almost fully covered the experiences common to the whole body and the names which have been established for things which cause them. But we must, if we can, attempt to describe what takes place in particular parts of us, both the feelings and the causes which produce them. First, certain things that we omitted when we were speaking above about the juices, namely about the affect peculiar to the tongue, must be made clear insofar as is possible. Now it appears that these things, like certain others, occur by means of certain contractions and separations but, in addition to this, they involve more roughness and smoothness than other matters. For such particles of earth as enter about the small veins which function as the tongue's testing instruments and extend to the heart, falling into the moist and tender parts of the body and melting down, draw the veins in and dry them up, and seem sour when they are harsh and dry, and when less harsh, dry. But

some substances which cleanse the veins and wash out all the surfaces of the tongue, when they do so beyond the limit of moderation, lay such hold on the tongue as to destroy part of its function. Such for example is the property of the types of sodium, all of which are called bitter, while those which have less of the property of sodium and apply their cleansing power with moderation appear salty without being harsh and bitter, and are more agreeable. And those that share in the heat of the mouth and are made smooth by it when they are inflamed, and then inflaming in turn the part which warmed them, are borne by lightness up to the senses of the head, cutting whatever they encounter. And because of these properties, all such things are called pungent.

Then there are substances which have been made thin by decomposition and which press into the narrow veins, and being proportionate to the particles of earth and air therein, so that moving about one another they twirl, and twirling, they fall about and, entering into other places, also create cavities which envelop the incoming particles. These moist receptacles of air, formed by a cavity of moisture enveloping air sometimes mixed with earth and sometimes pure, become spherical and hollow particles of water and are called bubbles when transparent and surrounded by pure moisture, and effervescence and fermentation when they stir and are borne upward and are mixed with earth. The cause of all these experiences is called acidity. Now to all the things spoken of concerning these matters, there is an experience which is opposite, arising from an opposite cause: whenever the composition of what enters the liquids of the tongue has a character agreeable to that of the tongue and softens down and anoints what was rough and what was unnaturally clustered together or scattered, disperses or brings together respectively, settling all things very much in accord with nature and becoming the pleasant and dear remedy to harsh experiences, this is called sugar.

Such are the matters concerning taste. As to the properties of the nostrils, there are no forms, for all odors are half-bred: and none of the kinds has the proportions necessary for having smell; rather, our veins for smelling are built too narrow for earth and water and more open for fire and air and, on this account, no one has ever perceived any smell of something, but odors arise when things are wet or rotting or dissolving or burning. For odors occur in that intermediate stage when water is changing into air or air into water and all odors are smoke or mist—the smell of things which go from air into water is mist, and of things which go from water into air, smoke. Therefore odors are finer than water and

thicker than air. This is evident when somebody whose breathing has been blocked by something forcibly inhales air, because then no smell filters through, but air alone enters, devoid of smells. Therefore the varieties of smells are these two nameless forms which do not consist of either many or simple types, but only two, the pleasant and the unpleasant: the one roughens and does violence to our entire cavity from the head to the navel, and the other soothes the same region and pleasantly restores it to its normal state.

The third part of sensation that we now have to examine is hearing, and we must explain the causes which correspond to its excitations. Generally we can define sound as the shock which, passing from the ears, is transmitted down to the soul by means of air, the brain, and blood; and we can define hearing as the motion that this shock produces, which originates in the head and ends in the vicinity of the liver; when this motion is rapid, the sound is high-pitched, when slow it is low-pitched. And when the motion is uniform, the sound is even and smooth, when the opposite, the sound is harsh. When the motion is great, the sound is loud, and when small, quiet. Regarding consonance we should speak later on.

We also have a fourth kind of sensation that we must discuss, since it possesses many varieties, all of which together we call color, a flame which flows from each body and which has particles corresponding to those of vision. Having spoken of the causes that give rise to vision earlier, it is now most appropriate to go through a suitable account of the colors.

Of the particles which are emitted from other bodies and fall upon the vision, some are smaller, some are larger, and others are equal to the vision's own particles. Those that are equal produce no sensation and we call them transparent. The larger, which contract the vision, and the smaller, which dilate it, are akin to those which are hot and cold to the flesh, and to those which to the tongue are either sour or burning (pungent, as we called them). The white and the black are similar affections of those particles which have occurred in a different sensory part and for this reason appear different. Thus we must say that white is that which dilates vision and black is its opposite. When a sharper kind of influx, made of a different kind of fire, assaults the vision and dilates it all the way up to the eyes, pushing forcibly and melting the very passages of the eyeballs, it causes a profuse outpouring of fire and water which we call tears. The vision itself being fire, it meets fire from the opposite direction leaping out like lightning, and while the incoming fire is quenched by the moisture, all sorts of colors are created in this turmoil. This

experience we call dazzling and that which produces it radiant and glittering.

Then we have the kind of fire which is intermediate between those two, and which, though it reaches the fluid of the eye and is mixed with it, is not glittering; the gleam of the fire through the moisture with which it is mixed supplies the color of blood which we call red. Radiant mixed with red and white gives us golden color. It would be foolish to say in what proportion these are mixed, even if one knew, because it is impossible in these matters to fairly give either a proof or a likely account. The red mixed with black and white gives purple, and when this mixture is burned and more black is added, you get dark violet. Tawny is made from a mixture of golden and gray, gray being a mixture of black and white. Yellow is made by mixing white and golden. White combined with radiant and plunged into deep black gives the dark blue color; dark blue mixed with white gives azure; tawny mixed with black gives green. As for the remaining colors, it is evident from what we said so far which mixtures they would have to be likened to for the preservation of the likely account.

If someone intends to occupy himself with trying to put these matters to a test, he would be ignorant of the difference between human and divine nature, because God has adequate knowledge and power to mix the many into one and to disperse the one into many, but no man exists now nor will ever exist who would be able to do either.

The creator of the fairest and the best, when he gave birth to the most perfect and self-sufficient God, took all these things that were born of necessity and included them among the created things, using the causes of these things as servants while he himself gave birth to the good that resides in all created things.

Therefore it is necessary to distinguish between two kinds of causes, necessary and divine. The divine kind must be sought in all things of the creation for the purpose of living as ingenious a life as our nature admits. The necessary kind must be sought for the sake of the divine, considering that without the necessary kind it is not possible for us to comprehend those very divine causes that we are so eagerly pursuing, nor to take hold of them nor to participate in them in any other way. Now that we have sorted out the kinds of causes and have them lying next to us like building materials, from which the rest of our discourse will be woven, let us briefly return to our starting point and rapidly retrace the path that led us to where we now are, and let us try to crown our story with a conclusion that befits all that we said before.

As was said in the beginning, these things being

*“For this consideration he framed
the universe by composing mind
inside soul and soul inside body, so that
he might produce a work most beautiful
and most perfect by nature.”*

in disorder, God bestowed upon them every kind of commensurability, both with respect to themselves and with respect to each other, to the extent that each of them was capable of being proportionate and harmonious.

For in the beginning they did not have symmetry and proportion except by chance and nothing existed worthy of the name of what we now call fire, water, and so forth. But first he set all these things in order, and then from these he composed the universe, a single living being containing within it all living beings, mortal and immortal.

He himself became the creator of divine things and he commanded his own offspring to create the birth of mortal things. And his offspring, imitating him after receiving the immortal principle of soul, went on to lathe-chisel the mortal body, and they built for it another kind of soul, the mortal, which possesses stern and necessary passions: first pleasure, which is the greatest bait for evil, then grief, which flees from good, then courage and fear, two foolish counselors, rage, hard to abate, and gullible hope. And mixing these with irrational sensation and with desire that will attempt anything, they put together the race of mortals.

Now fearing to taint the divine, except when absolutely necessary, they housed the mortal part

separately from the divine, in a separate domain of the body, building the neck as a boundary and passage between the head and the breast in order to keep them apart. So they fastened the mortal kind of soul in the breast and so-called trunk. And because one part of the mortal soul is better and the other baser, they built the hull of the trunk with a partition like a house that has separate quarters for men and women, by placing the midriff between them as a separation. The part of the soul which is endowed with manliness and courage, and loves contention, they placed nearer the head, between midriff and neck, so that, obedient to reason, it would join with her in forcefully controlling the tribe of desires whenever they would not willingly obey the commands of the citadel.

And the heart, the knot of veins and source of the blood that races mightily around the parts of the body, was settled in the guardhouse so that, when the heart's might boils, and reason has signaled that a transgression is about to be committed either by outside forces or by desires from within, every sensory part of the body, sharply sensing these commands and threats, obeys and rallies at the passes, to thus champion the continued rule of the best among them all.

But the gods, foreseeing that the throbbing of the heart in anticipation of dangers and the excitement of passions might result in inflammation and swelling, devised a relief, and they formed and implanted the lung, initially soft and bloodless, and subsequently supplied with punctured cavities like a sponge, to enable it to receive breath and drink and thus cooling, to provide respiration and relief from heat.

For this they cut the channels of the windpipe leading to the lung, and placed it around the heart like a cushion, so that when passions run high, the heart, throbbing against a yielding body and being cooled, will suffer less and thus will be able, jointly with passion, to provide better service to reason.

The part of the soul that desires food and drink, and is bound by whatever needs come from the nature of the body, they located halfway between the midriff and the level of the navel, making this whole part like a trough for the nourishment of the body. And they chained it there like a wild creature which had to be fed and kept leashed if any mortal race were to exist at all. In order for this part, which always feeds at its trough, to be settled as far as possible from the deliberative part, and to make as little noise and sound as possible, so as to allow the loftiest part of the soul to deliberate about the public and the private interest in peace, they gave it that position. Knowing that it would not understand reason, and that, if in some way it did become aware of reason, it would not innately care to heed it, but instead would mostly be

allured by images and phantoms by night and by day, God, scheming to take advantage of this, formed the liver and placed it in the dwelling place of the creature, making the liver compact and smooth and bright and sweet, but yet having bitterness, so that the power of the thoughts borne out of the mind and moving in the liver, as in a mirror receiving impressions which furnishes perceptible images, should terrify this part of the soul. Whenever the mind's thoughts impact, making use of a bitterness like that of the liver, and bearing down with harsh threats and spreading the acid throughout the liver, this makes the liver display bilious colors and, by contraction, makes the liver all shriveled and rough; moreover, by bending down and contracting the lobe and the passageways, obstructing and closing them up, it produces pains and nausea. And again, a breath of gentleness from the mind paints opposite phantoms, produces calm from the bitterness by refusing either to move or to touch anything contrary to its nature, and using the liver's own innate sweetness and setting it right until all its parts are smooth and free again; it makes that part of the soul which dwells around the liver calm and cheerful, to enable it to pass through the night in moderation, occupied with divination in its sleep, since it has no part in reason and thoughtfulness.

For they who made us, remembering the command of the Father when he commanded them to make the mortal race as noble as they could, set right our base part by establishing in it the seat of divination, so that it might in some way touch the truth. A reliable omen that that divination is God's gift to man's foolishness is that no person of reason is touched by inspired and true divination except when the power of reasoning is obstructed by sleep, or by disease, or even by divine possession. It takes a man who is in his senses to make out the meaning of utterances and visions that are remembered from the dreams and waking sightings of divination and possession; and it takes reason to clarify them and make out how they are significant and for whom they signify evil or good in the future, and the present, and the past. But it is not for the madman nor for him who indulges in his madness to judge by himself apparitions and voices, as it was well said a long time ago that to attend to one's own and to know oneself has to do with sane people. That is why it is law to superimpose the tribe of prophets as judges over inspired divinations. They are called "diviners" by some who do not know that these men are interpreters of the riddles of oracular sayings and of apparition, and they should best be called spokesmen (prophetai) of the diviners.

The nature of the liver is such, and is located in the place that we described for the sake of divination; moreover, when the creature is living the omens are clear, but deprived of life it becomes blind and its divinations are too vague to mean anything.

The structure and position of the neighboring organ is to the left, for the sake of the liver, to keep it always bright and pure, like a napkin always kept in readiness lying to hand beside a mirror. Thus, whenever any impurities develop around the liver through illness of the body, the porousness of the spleen cleanses and absorbs all of them, since the spleen is woven of hollow and bloodless stuff; thus when the spleen is filled with what has been purged off, it grows large and festering and, conversely, whenever the body is purified, it shrinks back to its original condition.

Concerning the soul, what part is mortal, and what divine, and where, with whom, and for what reasons the two have been housed separately, only with God approving could we confidently affirm that what we say is true; but that it is indeed a likely account we should dare to affirm now, and affirm it more as we consider the subject further, and let it be affirmed.

What follows this should be pursued along the same lines; it is about how the rest of the body was created. It would be most fitting to account for its construction with the following reasoning. They who framed our kind knew the intemperance for drink and meat that would dwell in us, and knew that because of gluttony we would consume many times more than is moderate and necessary. So, in order to prevent swift destruction from illness, and to make provision against the unfinished mortal race being finished off, they placed the lower belly, as it is called, as a receptacle for holding superfluous drink and meat, and there they wound around the bowels, to stop the food from passing quickly through and thus quickly forcing the body to need more food, causing insatiable greed—and thereby through gluttony rendering the whole race incapable of philosophy and culture, and disobedient to the most godly part of us.

Concerning the bones, muscles and things of this sort, the following is the case. The origin for all such things was the generation of marrow. For in it are the bonds of life that fasten the soul to the body, and the mortal race is rooted through these bonds. But the marrow itself is made from other materials.

God, starting with the triangles, whose regular and simple forms were best suited to produce fire, air, water, and earth with precision, divided each from its own kind and mixed them together in appropriate proportions to produce a mixture of seeds of all living

species, from which he distilled the marrow. After this he engendered the different kinds of soul into it and imprisoned them there; and then he divided the marrow itself into structures whose magnitude and quality corresponded directly to the proportions of the different kinds of soul.

And that part of the marrow which the divine seed was to possess as its field God molded into a perfect sphere, and named it the brain, with the intention that every living organism develop a vessel or head to surround the brain as it came to be fully perfected. That portion of marrow intended to hold the remaining, mortal part of the soul he divided into elongated, cylindrical shapes, and called these the marrow. And, as though throwing anchors from this marrow, he constructed cables of the whole soul with which he bound our entire body, starting with a casing constructed wholly of bone.

He compounded bone as follows. Taking earth that had been sifted so it was pure and free of imperfections, he kneaded and moistened it with marrow, and placed it first into fire, then afterwards he dipped it into water; then back into the fire, and back again into the water. And by transferring it many times from one to the other, he hardened the mixture so that neither fire nor water dissolved it. Using this product, he lathe-turned a sphere of bone to enclose the brain, leaving a narrow outlet. And around the marrow, running through the neck and down the back, he molded vertebrae from the same mixture, aligning them vertically like pin sockets, starting at the head and running through the whole trunk. And thus to protect the seed he encircled it with stone-like walls, and taking advantage of the property of *otherness* as an intermediary, he interpolated joints to allow for movement and bending.

Now he saw correctly that the bony substance was rigid and brittle, and that fluctuations due to extreme heat and cold would cause it to deteriorate and rapidly destroy the seed within it. So, in order to allow the body to bend and stretch he manufactured tendons and muscles, and connected all the limbs with them at the sockets to allow tightening and relaxation. And he made the muscles as a shield against the sun's heat and as armor against winter cold; moreover, the muscles would yield in a fall, gently cushioning the body like padded clothing. In summertime the muscles produce a natural cooling by perspiring and by sweating out the warm moisture held within the body over its entire surface; while in winter, on the other hand, the muscles use this warmth to provide a tolerable defense against the frost that encircles and attacks from outside.

So, having thought through these things about

us, the Sculptor mixed and combined water, fire, and earth with a fermentation compounded of acid and salt to manufacture muscles that were soft and moist; the tendons' nature was made by mixing bone with an unfermented muscle compound to produce something whose qualities lay midway between the two, with yellow coloring added. This is why the tendons' quality is tighter and more cohesive than muscle, but softer and more pliant than bone. And so God enclosed the bones and marrow in these, binding the bones together with tendons and covering it all with a top layer of muscle.

Now the most animated bones he fortified least with muscles, while the least animated were given the heaviest and most solid muscles for protection; at the joints between the bones, where reason indicated muscles were not necessary, he let grow only a little flesh; the reason was that the muscles should not stiffen the body by prohibiting bending motions, and so that no thick layers of muscle piled on one another with insensitivity resulting from thickness would be able to make the intellectual parts forgetful and dumb. Hence, the bones of the thighs, shins, haunches, upper arm, forearm, and the rest of our jointless bones, as well as the internal bones, being empty of sense because of the scantiness of soul contained in their marrow, are filled out by muscles; while inversely, those containing greater intellect have fewer muscles. (Although I admit it is possible he made something which itself senses by means of muscles, as in the case of the tongue; but the greatest number of cases are as stated.) For nature, which generates and compounds according to necessity, cannot permit solid bones and thick muscles to coexist with things of keen sensibility. For if they could coincide, then more than anywhere else the structure around the head would contain them, and the human race would, with a head of strong muscles and tendons, more than double and triple its present lifetime, and be healthier and freer from illness. But when the creators of our birth reckoned whether a longer but worse or shorter but better life made a more perfect race, they agreed that the shorter but better life would absolutely be chosen by all over a longer and meaner one. And so they covered the head with scant bone rather than muscles and tendons, since it had no joints.

And for all these reasons the head that was joined to the bodies of men had much keener perceptions and was more discerning, although it is much weaker.

The tendons, on the other hand, for the same reason and in the same manner, were set by God at the base of the head symmetrically in a circle about the neck, and with these he fastened the high points of the jawbones below the face; and the rest of the

tendons he scattered throughout all the limbs, connecting the joints.

The function of our mouth, with teeth, tongue, and lips as it is arranged today, was engineered by those engineers in accordance with the most necessary and best ends, building it as an entrance to serve the ends of necessity, and as an exit to serve for the best; for just as all the food which enters is necessary to provide for the body, so the stream of words flowing in service of reason is the most beautiful and best of all streams.

Further, it was neither possible to allow the head to be made of bare bone only, owing to the extremes of the seasons, nor to have allowed it to become dull and insensate by enshrouding it in a mass of muscle; so a not fully dried peel was separated off the moist flesh, which is now called the skin. And owing to the moisture around the brain, the skin sprouted and spread in a circle, closing in on itself to clothe the head on all sides. The moisture rising up from under the sutures watered and closed up the skin, drawn together like a knot at the crown.

The sutures are of many different varieties, owing to the action of the courses of the mind and of food; the worse the conflict between these two, the more varieties of sutures, and the less, the fewer. And then God punctured the casing of skin with fire, and the juices escaped through the punctures. Those warm juices that were pure and without admixture were totally evaporated, but those that were mixed with the stuff from which the skin was formed were lifted up by the blasts rushing out and stretched forth in threads as fine in diameter as the puncture holes; and because the threads were moving slowly the surrounding air pressure forced them to roll back under the skin and take root. And through this sequence the species of hair grew in the skin, its leathery throngs akin to the skin but tougher and more dense owing to their contraction in the cooling process, in which each hair was separated from the skin and air-cooled. Thus he gave the head its woolly quality, using the causes mentioned, intending that, instead of muscles, hair provide the brain-casing with a light covering for protection, which could furnish both adequate shade in summer and shelter in winter without hindering the clarity of perception.

At the end-points of the digits where tendons, skin, and bone twist off together, a hard skin was congealed out of these three into one common substance, fabricated from these auxiliary causes but caused by the foresight of reason of what was to exist in the future. For those who framed us knew that out of men, women and animals would be created; and moreover, they knew that use of fingernails would be

needed by many of the creatures for many purposes. And so, at the initial creation of humans they outlined in rudimentary form the emergence of claws and hooves. For this reason and through these specific mechanisms the skin was mixed to form hair and nails at the extremities of the limbs.

When all the parts and limbs of the mortal creature were grown, and it so happened that it had, by necessity, to live its life in fire and wind, wasting away as it was being melted by the one and emptied by the other, then the gods came to the rescue. For, mixing a nature similar to human nature with other shapes and attributes in order to make a different organism, they planted what now are tame trees and plants and cultured seeds, all domesticated for our sake by agriculture, while previously only the wild kinds of plants existed, which are older than the domesticated. For everything whatever that shares in living should justly and most correctly be called a living organism; and this organism that we are now talking about shares in the third kind of soul, the one we said resides between midriff and navel, and has no part of opinion, thought, or reason but does have a sensation of pleasure and pain and desires. It always lives in a passive state because nature did not endow it with the ability to discern and reason out its own affairs by reflecting within and about itself and rejecting motions that come from outside.

Accordingly, it lives and is none other than a living organism but, lacking self-movement, it is firmly planted and rooted.

When our betters planted these species as food for us, the weaker, they provided our body with channels, cutting them like irrigation ditches in a garden to irrigate it like a running stream. First, like hidden channels under the place where the skin and the muscles grow together, they cut two spinal veins, corresponding to the twofold nature of the body, with right and left parts. They drew them down the spine, placing the fertile marrow in between them, where it would flourish best, and in order that the stream going downhill would flow freely from there to the other parts of the body, and supply a steady irrigation.

After this they divided the veins around the head, and braiding them, they sent them in opposite directions, turning those from the right parts of the body to the left, and those from the left to the right, in order to provide an additional bond besides the skin for holding the head to the body, since the top of the head was not encompassed by tendons, and to make sure that the experiencing of sensations from each side would be manifested to the whole body. The gods further organized the conduiting of water in the

following way, which is easily understood on the basis of what we agreed earlier, namely that whatever is composed out of smaller parts insulates against greater parts, but things composed out of larger parts cannot insulate against smaller things, and that fire is the smallest of all the kinds of things, and thus it passes through water and earth and air and whatever is made out of them, and nothing is able to hold it. We must apply the same consideration concerning our belly, namely, that it holds food and drink whenever they enter, but it cannot hold air and fire, since their particles are smaller than its own structure.

God made full use of these properties in the water-course from the stomach to the bloodstream, weaving from air and fire a net like a fish-trap, having two lesser inner traps at its entrance, one of which he later bifurcated; and from the lesser traps he stretched cords in a circle reaching to the very ends of the net. He made all of the rope within out of fire, and the inner traps and the main trap out of air, and took it and put it around the newly formed creature in the following way. He dropped the inner traps into the mouth. Since they were two he put one down the windpipe into the lungs, the other from the windpipe into the stomach; he divided the first and placed each part down the channels of the nose, so that whenever the other could not go down the mouth, all its flows would be replenished by this. He then spread the main fish-trap around the hollow part of our body, and he made all this now to flow into the inner traps, gently, since they were of air, and now to flow out of them. He made the net to penetrate into and out of the body as though the latter were porous, and he made the rays of the fire within to follow the air wherever it goes, never ceasing so long as the mortal creature holds together. And we say that the giver of names gave this process the name inhaling and exhaling. But all this labor and suffering has taken place so that our body, irrigated and cooled, is nourished and lives; for when the breath goes in and out, the fire bound up within it follows, and when, moving constantly to and fro, it enters through the stomach and gets hold of the food and drink, it dissolves them, breaks them down into smaller particles, then leads them out through the passages and pours them into the veins as a well pours into irrigation ditches, and makes the currents of the veins flow through the body just as through a pipe.

After this let us look at the experience of breathing, to see what has caused it to exist in the manner it does today. This is the reason: since there exists no vacuum into which something moving can enter, and since breath moves into us from outside, it should already be clear to everyone that breath does not push

*“ . . . The stream of words flowing
in service of reason is the
most beautiful and best of all streams.”*

into a vacuum, but it displaces whatever is near to it; but that which is displaced in turn expels its neighbor and thus by necessity everything is driven around into the area from which the breath came, enters it, fills it up, and then follows the breath from behind—all occurring simultaneously, just like a wheel turning around, because there is no vacuum. Accordingly, the interior of the chest and lungs, when it expels the breath, is subsequently filled by the air surrounding the body, which penetrates and circulates through the pores of the flesh; as the air is expelled in turn and goes out through the body, it pushes the breath in by way of the mouth and nostrils. The cause of the principle of these processes must be set down as follows. Every living organism keeps those interior parts that are around its blood and blood vessels the hottest, like a source of fire residing within; this we have compared to the net of a fish-trap, with everything stretched from the middle made of fire, but all the outer parts of air. Now what is hot, it must be agreed, by nature tends to go toward its kind, to its own region of space outside. But there are two ways out, one through the body, the other through the mouth and nose, and whenever it rushes toward one of these, it pushes the other, and that which is pushed, falling into fire, becomes hot, while that which escapes is cooled. And when the heat is exchanged,

and the particles around the other exit become hotter, the same process is repeated, and that which has now become hotter, hastens toward its own nature, and pushes the air around the other exit. And the air around this exit again, constantly going through the same experience and reciprocating, supplies a cycle which oscillates back and forth and is completed by both exits, and thus inhalation and exhalation take place.

Indeed, the causes of what occurs in the use of the medical cupping glass, as well as the causes of swallowing and of propulsion of objects—both those thrown through the air and those moving along the ground—must also be given in the same way. It is similar with those sounds which appear swift or slow and high-pitched or low-pitched, sometimes discordant on account of the nonuniformity of the movement they produce in us, and at other times harmonious as a result of the uniformity. For the slower sounds overtake the motions of the earlier and faster ones, and when the latter are already resting and have come to uniformity they assault them from behind and set them in motion. And overtaking them, having superimposed on them another motion, they do not stir disorder, but adding to the faster, expiring motion the beginning of a slower impetus, they unify the high-pitched and the low-pitched into one sensation.

From this they give pleasure to the foolish, and good cheer to rational people, as a result of creating an imitation of divine harmony in mortal movements. Again, take all the flows of the waters, or the falling of thunderbolts, and the marvels of electrum [amber: static electricity] and the stones of Heracles [lodestones] in regard to attraction: there is never a "pulling" of any of these things, but the nonexistence of a vacuum pushes them around into one another, and each and every one of them moves by coming together and separating, and exchanging places. But to someone who investigates them from the standpoint of attraction, they will seem to be accomplishing miracles by this complex of experiences in relation to one another.

And indeed, the experience of breathing, the inspiration for our argument, occurs according to the same and through the same principles, just as was said above: the fire divides the food, and is moved by the breath within, which follows along, and this common movement fills the blood vessels by irrigating them with the particles of the cut-up food from the stomach. And through all this activity the streams of nourishment flow in the bodies of all animals.

Freshly cut things from those kindred species, the fruits and vegetables, which God grew for our nourishment, have all kinds of colors on account of their

composition, but it is red which is most prevalent, because its nature is wrought from the cutting action of fire and the impression of this in water. Accordingly, the color of that which flows through the body, which we call blood, is such a color as we have just described, and it is the fodder of the flesh and the whole body, from which everything is watered, and which fills everything that is emptied. The way this filling up and withdrawal occurs is according to the way the movement of everything in the universe has come to be, in which everything kindred is borne toward itself.

All things about us always waste and dispense as they emit to each kind its own, and so the contents of the blood in turn, chopped up inside us and carried around just as if under a heaven composed of each living organism, are compelled to imitate the movement of the universe. When each of the things divided up within us is borne to its kin, what is emptied is afterwards refilled. Whenever what goes away is greater than the flow of nourishment, the whole body wastes away, but whenever the nourishment is the greater, it waxes.

When the entire organism is new, its frame has each kind of triangle afresh, as if brand new, and they are fitted tightly together, while the mass itself as a whole is packed tenderly, since it has just been born from marrow and nursed with milk. And when the triangles from which come food and drink enter and are surrounded, they, being older and weaker than the organism's own triangles, are overpowered and cut up by the younger ones, so the creature grows large nursing from many such things. But when the foundation of its triangles goes slack, as a result of having fought many battles against many things over a long period, it is no longer able to cut the incoming particles of nourishment into triangles similar to its own; on the contrary, its own triangles are easily divided by those entering from without.

Every living creature wastes away when it is overcome in this way, and this experience is called old age. The end comes when the bonds of the triangles fastened around the marrow no longer sustain their task and come apart, in turn releasing the bonds of the soul which, being freed in accordance with nature, flies away with pleasure. For everything that is contrary to nature is painful, but that which occurs in a manner according to its nature is pleasant. And by this same principle, death from diseases and injuries is painful and hard, but death from old age, proceeding to its conclusion in accordance with nature, is the most painless of deaths, and comes with pleasure rather than pain.

What diseases consist of is evident to everyone.

Given that there are four elements from which the body is compacted, earth, fire, water, and air, the following and all other similar situations cause disturbances and disease: their unnatural oversupply or deficiency; their transfer from their own proper place to another; further, since there happen to be more kinds of fire and the others than one, the insertion into the body of any one of those that is not appropriate. When each one of these conditions arises and proceeds contrary to nature, what was before cool becomes hot, what was dry later becomes moist, what was light even becomes heavy, and the body admits of thoroughgoing changes in everything. For it is only, we say, when the same enters into and exits from the same, in uniform and proportionate fashion, that the body is permitted to remain unchanged, safe and healthy. But that which will err in these matters when it exits or enters will cause all varieties and limitless numbers of deformations, diseases, and ruin.

Given, however, that secondary structures have been constructed by nature, there is a second means of observing the diseases for whomever wishes to comprehend them. Since marrow is composed of the primary structures, as are bone, muscle, and tendons, and blood also, although it is formed from them in a somewhat different way, most diseases are contracted in the way we described above. But the most severe diseases occur as harshly as they do because whenever the formation of these structures is reversed, then they are corrupted. For muscle and tendons arise by nature from blood, tendons from fibrin which is akin to blood, and muscle from congealed blood from which fibrin is removed. That, in turn, which derives from tendons and muscle is sticky and oily, and both cements the flesh to the growth of the bones and itself nourishes the bones around the marrow and makes them develop. And that which is filtered through the dense structure of the bones is the purest kind of triangle, and the smoothest and oiliest which, running and dripping from the bones, irrigates the marrow.

When each of them comes to be in this way, then most turn out healthy. But diseases arise when the opposite is the case. When decomposing flesh expels what has been decomposed back into the blood vessels, then the veins are filled, together with air, by a great deal of blood of varied qualities of color, bitterness, acidity, and salinity, which produce every kind of bile, serum, and phlegm. For, having come to be in a manner opposite to what one would choose and being corrupted, they destroy first the blood itself and then, while providing no nourishment whatsoever to the body, they are carried throughout the blood vessels, no longer following the natural order of circulation. And they are at war, first with them-

selves, because they derive no enjoyment from themselves, and also with whatever in the body maintains order and stays in its proper place, causing destruction and disintegration.

When a part of flesh which is very old decomposes, it becomes indigestible and turns black on account of prolonged burning and, bitter as it is as a result of being thoroughly corroded, falls harshly on whatever part of the body is not yet corrupted; then again, sometimes, instead of bitterness, the black color acquires acidity, the bitterness being rather burned away; and when the bitter substance is dyed with blood, it acquires a redder color, but when black is mixed with it, greener. There is also a yellow color which combines with the bitter substance, whenever young flesh is dissolved by fire from flame. The collective name for all these is bile, given, I suppose, either by some physicians, or by someone who has the ability to look into many dissimilar things and to see within them one inner form suitable to be the name for all. And each of the other forms of bile which are spoken of has acquired its own name according to its appearance.

As for serum, that of blood is a gentle fluid, but that of the black and acid bile is savage whenever it is mixed by heat with salinity, and it is called acid phlegm. That of new and tender flesh which is dissolved together with air—when the flesh is filled with air and surrounded by water, and bubbles form from this affliction, each by itself invisible because of its smallness but all collectively making up a visible mass, having a color that is white in appearance, due to the production of foam—all this that is dissolved from tender flesh entwined with air, we say is white phlegm. Now when this phlegm is newly constituted, its serum is sweat and tears and all the other such bodies which daily pour out and cleanse us. All these, too, become instruments of disease whenever the blood is not replenished by food and drink, as is natural, but instead grown in violation of the laws of nature.

Now, when each part of the muscles become separated by disease but their foundations (that is, the bases of their triangles) remain firm, the power of the affliction is reduced by half—for the muscles can still make a recovery with ease. But whenever that which binds the muscles with the bones is diseased, and is neither drawn any longer from the fibrin and tendons as food for the bone, nor becomes a binding of the muscles to the bone, and from being oily and smooth and sticky becomes instead rough and salty, parched by a bad regimen, then everything such as is under the muscles and tendons dries up itself, and separates from the bone, while the muscles, falling from their

foundations, leave the tendons bare and full of salt. And if the flesh falls into the bloodstream afterwards, it makes the previously mentioned diseases worse. But severe though these bodily sufferings are, still more severe beyond them are those which occur when the bones, due to the denseness of the muscles, do not get enough air and become heated by mold, and they become gangrenous and do not accept any nourishment. Then the bone dries up and goes back into the nutriment, and the nutriment goes back into the flesh, and the flesh falls back into the blood; all these diseases are harsher than those discussed above. The last of all, when the nature of the marrow is diseased either from some deficiency or excess, completes our account of diseases which are the greatest and most capable of causing death, which occur when the entire growth of the body is forced to reverse itself.

The third type of diseases must be considered as arising in a threefold manner: from breath, from the phlegm, and from bile. First, whenever the distributor of breath to the body, the lungs, is stopped up by secretions and does not provide pure passages out, the air does not go into some parts, while others receive more than is proper, rotting whatever part does not get ventilated, while in the other parts the air penetrates some of the veins and twists them together and dissolves the body, being trapped in the middle of the body, the part that holds the diaphragm. Countless painful diseases are caused in this way, frequently accompanied by great amounts of sweat. But often, when the flesh is cut up within the body, the air arising within the body and unable to make its way out causes the same pains as that coming from the outside, these being the most severe when the air gathers around the muscles and the veins in the same place, and swells the tendons and the contiguous muscles so that it stretches them backwards. And the diseases from this experience are called tetanus and tetanic recurvation.

The remedy for these is difficult, for in most cases it is the fevers which arise that destroy the disease. White phlegm, severe when it is left behind, due to its bubbles of air, is milder when it reaches the air outside the body, but it causes blemishes on the body, begetting leprosy and kindred diseases. But when it is mixed with black bile and is scattered in the divine orbits in the head, disordering them—more mildly when it enters during sleep and harder to get rid of when it comes down during waking—since it is a disease of a sacred part of our nature, it is most legitimately called sacred.

Sharp and salty phlegm is the source of all the catarrhal diseases; but because of the great variety of places into which it flows, it has received all sorts of

names. All the diseases which are said to inflame part of the body arise from bile being burned and inflamed. Indeed, when bile finds a way out, it sends up all sorts of seething growths, but when it is confined within the body it produces many inflammatory diseases. The most severe is when, mixed with the pure blood, it disperses the fibrous type from its proper order. For the fibrin scatters into the blood so that, having the proper fineness and thickness, it will neither flow out through the pores of the body from heat, since it is liquid, nor, being too dense, move badly and not circulate in the veins. For the fibrin ensures the right proportion of these in the process of nature. And whenever someone gathers the fibrin together, when the blood is dead and kept chilled, all the rest of the blood pours away, but the fibrin is permitted to congeal swiftly with the cold surrounding it. The fibrin having this power in blood, bile, which by nature is old blood and then dissolved from flesh into it, although it is hot and moist when it first falls into the blood, coagulates little by little owing to the power of the fibrin, but when it is coagulated and quenched by force, it causes chills and shivering within. But if additional bile flows in, when it has overwhelmed the fibrin with its heat and boiled it into disarray, it shakes violently; and if the bile is strong enough to dominate until the end, it pierces through to the marrow, and with its burning destroys the cables of the soul therein, as it were of a ship, and lets it go free; but when the bile is weaker, the body holds out against dissolution, and the bile itself is subjugated; then it is either expelled by the body as a whole, or it is pushed through the bloodstream into either the thorax or the abdomen; all falling out of the body like a refugee from civil war, it causes diarrhea and dysentery and all such similar diseases.

The body that is diseased mostly from an excess of fire produces continuous temperatures and fevers; that diseased from air produces quotidian fevers; from water, tertian fevers, because water is more sluggish than air or fire; that diseased from earth, which is four times as sluggish as the others and is cleansed of disease in periods of time four times as long, makes the quatern fevers, which are difficult to get rid of.

The diseases of the body occur in this way, but those of the soul, as a result of its connection to the body, occur as follows: diseases of the soul must be conceded to be unreason, but there are two kinds of unreason, insanity and ignorance. Now every symptom that someone suffers, whatever it is, must be termed a disease, but it must be laid down that the most severe of these diseases is excess of pleasure and pain. For the man who is excessively elated, or the opposite from suffering pain, will hasten to choose



"The fourth kind were creatures of water, created out of the most idiotic and most ignorant people . . . thus was created the order of fishes and shellfishes."

Members of the Clamshell Alliance carry their banner into a demonstration against the construction of a nuclear power complex at Seabrook, New Hampshire.

the former at the wrong time, and to shun the latter likewise, and he will neither see nor hear anything rightly, but in his rage will barely be able to partake of reasoning. Whoever has too many sperm flowing freely from his marrow, like a tree overripe with fruit, has much travail over each thing, but also gets many pleasures from these desires and their offspring, and is maddened through most of his life by such great pleasures and pains. And having his soul diseased and unreasoning because of the body, he is considered not as diseased, but as willingly evil; but in truth, incontinence in sexual pleasures becomes a disease of the soul, in large part due to the condition of one ingredient being too freely flowing and moistening as a result of the porousness of the bones in the body:

And in nearly every case where the inability of the wicked to master pleasure is spoken of, and they are reproached for doing it willingly, this reproach is not made rightly. For no one is willingly evil, but it is because of some base habit of the body or an ignorant upbringing that the wicked man becomes

wicked, and these adversities attack everyone unwilling. And in the same way in the matter of pain, the soul suffers great evil on account of the body. For whenever some of the sharp and salty phlegms or the bitter and bilious juices that wander in the body cannot get a way out, but being shut up within it, mingle and get mixed up with the motion of the soul, they create all kinds of diseases of the soul, stronger and weaker, greater and lesser; and when it has been carried to the three places of the soul, the disease, depending on which of these it attacks, interweaves into it either the forms of fretfulness and depression, or of recklessness and cowardice, or of forgetfulness and mental retardation.

And whenever, in addition to these badly constructed individuals, wicked political constitutions and wicked talk proliferate both publicly and privately in cities, and no knowledge of how to cure them is taught to the young, then all of us who are wicked become wicked through these two circumstances most involuntarily. The cause of these evils

must be laid, rather, to the begetters of the begotten and to the nurturers of those who are nurtured. And one must eagerly strive, whenever one is able, to escape these evils through upbringing and suitable forms of knowledge, and to choose their opposite. But this is another way of speaking.

It is reasonable and proper now to expound upon the complement of all this, the care of the body and the soul and the means by which they are maintained in a healthy state. For it is more right to discuss good than it is to talk about evil. Now all that is good is beautiful and the beautiful is not disproportionate. Thus any living creature that is to be considered as such must be considered proportionate. But while we are sensitive to and discuss the symmetries of small things, about the most important and the greatest we do not reason. For in what concerns health and disease, virtue and vice, there is no greater symmetry or asymmetry than that of the soul to the body. But we neither contemplate nor ponder any such things as when a more feeble and inferior type of body houses a soul that is powerful and great in all things, or when the opposite combination is put together and thus the creature as a whole is not beautiful—for it is asymmetrical in what concerns the greatest of symmetries—while the creature which exists in a contrary state is, for those able to see, the most beautiful and lovable of sights. Therefore any body which has one leg too long or is disproportionate due to some exaggeration is not only ugly, but is also the cause of countless injuries to itself by causing, in the course of common activity, all sorts of pains as well as sprains and falls as a result of its clumsy motion. Together with this we must also consider that creature whose soul is more powerful than its body, and when the soul is in an agitated state, it shakes the whole body violently from within, and fills it up with pains; and whenever the soul pursues some study or investigation with vehemence, it wears down the body; and again, when it engages in teaching and debating both in public and in private, as it carries on through argumentation and contentiousness, it overheats the body, shakes it and brings on discharges, and it deceives the majority of so-called physicians since it causes them to ascribe the illness to opposite causes.

And, on the other hand, when a large body, too big for the soul, is attached to a weak and small intellect, since two desires naturally exist in man—food for the body and wisdom for the most divine of all in us—the motions of the stronger prevail and increase their control, and they cause the soul to become obtuse, dull-witted, and forgetful and produce the greatest of all diseases: ignorance.

But there is one means of salvation from both

these evils: neither exercise the soul without the body, nor the body without the soul, in order that, protected in such a way, they may grow to be equally balanced and healthy. Thus the one who drives his intellect very hard in pursuit of mathematics or any other exercise, must give back motion to the body by engaging in gymnastics, and the one who develops the body carefully must return motion to the soul by pursuing music and philosophy in general, if anyone justly and truly intends to be called both good and beautiful.

And in the same way, the various parts must be cared for in imitation of the manner of the universe. For as the body is heated or chilled from within by the particles entering into it, it is again dried or moistened by those things from outside and suffers the things which follow from both motions. When, on the other hand, someone surrenders his body in a state of rest to these motions, it is overpowered and is utterly destroyed, but if he should imitate that which we earlier referred to as the nurturer and nurse of the universe, and never, if possible, allows his body to fall into a state of rest but keeps it moving and, by continually inducing such movement within it, defends it in nature's way against the motions from within and from without and, moderately jostling those excitations that wander around the body, and arranging their order according to the mutual relations of their parts, following that previous account which we gave of the universe—then he will not allow enemy to be placed against enemy to provoke wars and disease in the body, but he will cause friend to be set beside friend in order to produce sound health.

Moreover, of these motions, the best is that which is caused by the body itself and within itself—since it is most like the motion of the intellect and the motion of the universe. But motion due to the intervention of another agency is worse, and the worst is that motion by which parts of the body are moved by external agents while the body itself lies in a state of rest. The best motion for the purification and rebuilding of the body is gymnastic exercise; the second best is the swaying motion of boats or carriages which cause no fatigue; and the third type of motion, although sometimes useful only to the person driven by dire necessity, is not by any means acceptable to one who has a mind—and this is the medical purification through drugs. Diseases which are not very dangerous should not be irritated by drugs. For the structure of every disease resembles in some way the nature of the living being. The composition of living beings has set periods of time for the species as a whole and, according to this principle, each living being has,

from nature, a predetermined life span, barring accidents caused by necessity. From the very beginning, the triangles of each person were constructed with a capacity to last up until a certain time, beyond which no one could ever continue his life.

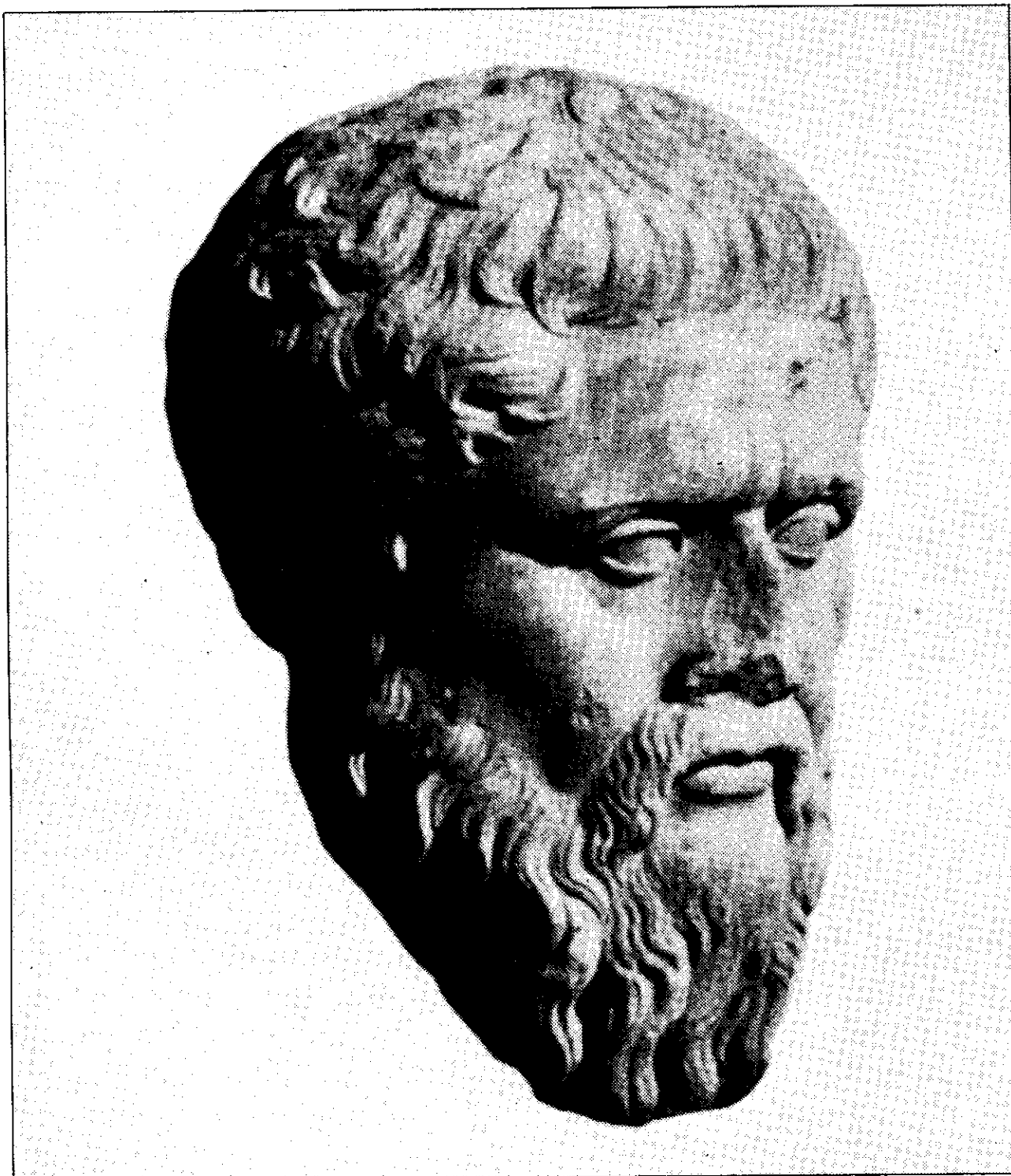
The same, therefore, holds valid for the structure of diseases: when anyone violates them with drugs, contrary to their predetermined time, then both serious and numerous diseases have the tendency to occur, instead of few and minor ones. And it is necessary to ward off all such diseases with proper diet, if there may be time available, rather than inciting a serious evil through drugs.

Enough has been said about the composite creature and its corporeal part, and about the way in which man may be instructed and train himself in order to live according to reason; now we must, above and before all else, provide that that element which is to educate man be the fairest and best in the art of pedagogy. To discuss this subject in detail would be a whole other task all by itself; but if I were

to continue my earlier practice and give a summary view of the matter, it would not be improper to sum up as follows.

Since we have often said that three kinds of souls inhabit us, each having its own motions, I must now very briefly say that those of the three which are idle and desist from their natural activities by necessity become very weak, while those who practice become very robust. Therefore we must take care that the motions of the three kinds of soul are in proportion among themselves.

And we must think as follows about the most dominant kind of soul within us, namely, that God gave each one of us a divine genius, that which, as they say, inhabits the highest part of our body in order to uplift us from the earth toward our heavenly kinsmen, since we are an offshoot not earthly but heavenly. For the divine power, having suspended our head and the rest from the place where the generation of the soul originates, keeps the whole body erect.



“But he who has eagerly pursued love of knowledge and true thoughts and he who, above all, trained himself to think thoughts immortal and divine, if he comes near the truth, must, to the extent human nature can share in immortality, himself be immortal . . . ”

A marble head of Plato done at the end of the first century after Christ, a copy of a bronze executed during or not long after Plato's lifetime.

All the opinions of the man who pursues and eagerly labors for his desires and whims are necessarily mortal, and he himself is mortal to the core, because he cultivated the growth of the mortal part of his soul.

But he who has eagerly pursued love of knowledge and true thoughts and he who, above all, trained himself to think thoughts immortal and divine, if he comes near the truth, must, to the extent that human nature can share in immortality, himself be immortal; and since he is always cultivating the divine and keeps the genius within him well ordered, he will be exceptionally happy. For the cultivation of all things is uniquely this, to give to each its appropriate nourishment and activity, and the activities that are akin to the genius within us are the thoughts and revolutions of the universe; and following these thoughts and revolutions through, every man must make the perceiver and the perceived identical according to the origin of their birth, and having thus made them identical, attain the perfection of life that the gods have set before men for the present and for the future.

Thus we have almost come to the end of what in the beginning we had promised would be a discourse of the universe up to the creation of man. We should further briefly mention how the other animals were generated, which shouldn't take too long, and this way our discourse will be more proportioned. The following should be said on the subject. Of those who were born men, those who went through life in cowardice and injustice may be supposed according to the likely account to have been reborn as women in the second generation. For this reason the gods during that time created the desire for sexual intercourse, putting one souled animal within us and one within woman and having created each in the following way.

The channel for drink by which liquid passes through the lungs, under the kidneys to arrive in the bladder which, receiving it, then ejects it by air pressure, was built to penetrate into the marrow that is formed from the head along the neck and down along the spine, which we earlier called sperm. This sperm, being alive and breathing, and producing a lively desire for emission in the place where it breathes, creates a desire for procreation. Thus the reproductive organ of men, becoming rebellious and autonomous, like an animal heedless of reason, driven by frenzied lust, attempts to dominate everything.

The same is the case with the so-called matrix or womb of women. The animal within which desires to make children, when it remains fruitless for a long time past its season, becomes very angry and discontented, and wandering all over the body, blocking

the passages of breath and preventing respiration, drives the body to extreme distraction and spreads all sorts of diseases, until finally the desire and love of man and woman brings both together; and having, so to speak, plucked the fruit from the tree and having sown the womb as though in soil organisms unshapen and invisibly small, which in turn are separated and nourished to grow within and are afterward brought to the light of day, they thus complete the generation of animals.

Thus were women and everything feminine created. The race of birds was created out of guileless men who were remodeled and grew feathers instead of hair, men who were dumb star-gazers, who in their foolishness imagined that the proofs of heavenly things are to be obtained by sightseeing. The pedestrian wild beasts, in turn, were made out of men who had no use for philosophy and who reckoned that heavenly matters did not amount to anything because they no longer used the orbits inside their heads but only followed the lead of those parts of the soul which are in the breast. As a result of these habits, they had both their front limbs and their heads resting on the earth, where affinity attracted them, and their faces grew elongated and into all sorts of shapes into which the orbits of their souls were crushed as a result of idleness; and thus their kind grew four-legged and many-legged, presumably because God supplied more supports to the more brainless in order that they be better attracted to the earth.

And the absolutely most brainless of them all, who drag their bodies entirely on the ground and no longer have any use for feet, he made limbless, crawling in the mud.

The fourth kind were creatures of water, created out of the most idiotic and most ignorant people, whom the remodelers did not consider worthy of breathing because they had souls filthied by all sorts of offense, and instead of fine and clean air, they were given to breathe the muddy and deep waters; thus was created the nation of fishes and shellfishes and all other aquatic animals, which were given the most abysmal habitat as a result of their most abysmal ignorance. In this way, at that time as well as now, all animals change into one another, becoming transformed as they lose or gain wisdom or folly.

And now we can say we have reached the end of our discourse about the universe; this universe, having received mortal and immortal creatures and having thus been completed, itself a visible living being containing everything visible, a sensuous God who is the image of the intellectual, the greatest, the best and the finest and most perfect, is the one, only-begotten heaven.

Hundreds March to Close Studio 54 Drug Den

Carrying placards reading "Shut Down the Drug Scene" and "Cocaine is Insane—Close Studio 54," 300 demonstrators marched on the high-life disco on Nov. 16, demanding that New York authorities permanently lock the doors of one of the city's most notorious drug distribution centers.

The marchers, holding candles and singing "The Battle Hymn of the Republic," and accompanied by television cameras, reporters, and a contingent of New York police, came to the entrance of the disco, to find two individuals in devil costumes, complete with pitchforks, guarding the door.

The demonstration was under the auspices of the Ecumenical Coalition to Stamp Out Drugs, which includes Catholic and Baptist organizations, the World Community of al-Islam in the West, and the New York-New Jersey Anti-Drug Coalition. Participants attributed the success of the demonstration to a month's-long organizing effort that included enlistment of support from New York City Councilman Luis Olmedo, who is sponsoring a bill to shut Studio 54 down. One Coalition leader said that efforts to undercut the demonstration by trying to dissuade various church groups from taking part were linked to New York Governor Hugh Carey and local Kennedy family allies.

In a presentation to the meeting that preceded the march, Eulalio Fernandez, a member of the National Anti-Drug Coalition,



Demonstrators outside Studio 54 and (below left) one of the "devils" guarding the disco's entrance



charged that Studio 54 is part of an international political network that protects and promotes drug use. He accused Studio 54 attorney Roy Cohn of involvement in the private intelligence agency Permindex, which he said was responsible for the murder of President Kennedy and Martin Luther King.

Is America Ready To 'Recreate a Musical System'?

In the course of a six-week tour across the United States, Anno Hellenbroich, musical director of the Wiesbaden West Germany Humanist Academy, discovered what he called "a very interested and positive response to the idea of creating afresh a musical system in America."

In an interview published Nov. 16 in the biweekly newspaper *New Solidarity*, Hellenbroich explained that by "musical system" he means "something that was characteristic in Germany in the nineteenth century," and was paralleled in the United States during the same period. "The

smallest village had its ensembles and chorus which performed classical music, and which the average working person, and his children, could take part in," he told *New Solidarity*. Hence conductor Wilhelm Furtwängler and his predecessors "had a social basis," Hellenbroich said, "a means to reproduce the spirit of Mozart and Beethoven's music," the conditions that produced musically educated performers and audiences.

Hellenbroich has directed the European musical work of the Academy since its inception in 1977. During his U.S. tour, Hellenbroich worked closely with Humanist Academy collaborators in New Hampshire, New York City, St. Louis, and Chicago, and met with area musical and cultural leaders and educators to discuss plans to rebuild and refurbish American musical institutions. Hellenbroich and his wife Elisabeth, who accompanied him, are both executive members of the European Labor Party.

Based on his discussions with Americans around the country, Hellenbroich said, "people are open to this concept, they want to move against the degradation of rock music." But, he added, "they also know they must have something positive to put in its place."

Not that America lacks high-quality orchestras and musical talent, Hellenbroich said. But he quoted Furtwängler's comment in the 1930s: "American orchestras have commendable technique but they lack soul." And, he noted, performances of "moderns" like Stockhausen and Schoenberg foster the deterioration of both orchestras and their audiences.

Hellenbroich stressed, however, that the point is not to dictate cultural tastes. "The essence of

Continued on page 78

THE 'FOURTH MAN':



Art and Political Intelligence

The "Fourth Man" scandal that rocked Great Britain this November with the revelation that the Queen's own art expert, Sir Antony Blunt, was a long-time "Soviet agent" created an unwarranted shock within the public at large, since it came as less than a surprise to both the intelligence community and leading circles within the art world.

A number of intelligence services succeeded quickly in pinpointing Blunt's role—like that of his cohorts Philby, Burgess, and Maclean—as that of a "triple" agent deployed by British intelligence services. But the precise purpose of launching the scandal at this time can only be inferred by noting how Britain stands to gain from a heightened cold war atmosphere which will strengthen simultaneously the "right-wing" faction orbiting General Haig in the United States and the "left-wing" faction of the Soviet leadership associated with the on-

going activities of Philby and Maclean.

Among art circles, however, Sir Antony's exposure could hardly have been news. In the introduction to his first book, published in 1940, Blunt includes the following tribute to one of the original spy ring: "To Mr. Guy Burgess, the stimulus of constant discussion and suggestions on all the more basic points at issue." What the public does not know, however, is that British art circles have been nothing but a political intelligence operation since their inception.

The Art of Intelligence

First, the founders of modern British art, Sir Peter Paul Rubens and Sir Anthony Van Dyck, both from Antwerp, were leading intelligence operatives for the Habsburg and Genoese oligarchies. (Of course, the humanist tradition has also been served by political intelligence artists, such as Robert Fulton and, most particularly, Samuel F.B. Morse.) The first native British art expert was Jonathan Richardson the Younger. His book, written in 1722, is a pathetic attempt to exalt Lockean empirical methods at the expense of the continental Neoplatonic tradition. Horace Walpole, the son of the prime minister, went so far as to write a sermon against continental art. During the Napoleonic period Europe swarmed with British agents, whose main occupation was to steal everything movable. The usual British business methods were applied; James Buchanan's 1824 *Memoirs* report that art prices rose and fell depending on the stringency of Britain's blockade of France.

The British art tradition next saw the rise in influence of John

Ruskin, the leading factional antagonist of both modern industry and the Renaissance. Ruskin created the myth of the Middle Ages as a period of blissful innocence—in contrast to the worldly and urban Renaissance—as an organizing ideology for a new, British-dominated Dark Age. His followers and students included intelligence agents Cecil Rhodes, Sir Walter Scott, Walter Pater, and Bernhard Berenson. Berenson, an intimate of the circle of Beatrice and Sidney Webb at the end of the nineteenth century, popularized Renaissance art not as the expression of the bloody political struggle waged by city-builders against feudal lords, but as the pickings from a private game reserve of worldly aristocrats. Certainly this view was consistent with his own sales pitch to clients like Henry Frick and Andrew Mellon. Berenson's coconspirator in the dismantling of the real Renaissance tradition was Roger Frey, the art expert of the Bloomsbury set, whose reputation rested on a series of lectures he delivered in London in 1910 titled *Rembrandt and Cezanne*, an insult to Rembrandt that was a milestone in the formalist interpretation of art.

Blunt and the Warburg

Blunt was the product of an oligarchic complement to the Berenson-Frey approach.

In 1922 the Warburg Institute was founded. It was the result of the meeting of Aby Warburg, eldest son of the Warburg bankers of Hamburg, and Fritz Saxl, a Viennese art historian who had mastered the techniques of psychological warfare in the Austrian army. The theoretical perspective of Warburg and his Institute was, simply, that art is the product of

irrationalism. This was only natural, since Warburg had long been hospitalized for schizophrenia and obtained release by delivering a lecture on his cultural hero, the American Indian.

Blunt's career began at the Warburg in 1937. In 1940 he published his *Art Theory in Italy, 1400-1600*, in which his embarrassing praise of Burgess appeared. In keeping with his Marxist cover, Blunt's subsequent work was an amalgam of socioeconomic and psychological studies of the French seventeenth-century artist Nicholas Poussin. In 1947 he assumed the directorship of the Courtauld Institute, whose first director had been Roger Frey.

Tall, thin to the point of emaciation, an alcoholic homosexual, Blunt stood for the Jacobean interpretation of art championed by the Warburg, and he embodied its formal categories in his book on French art. Even before the "Fourth Man" scandal his interpretation had come under attack by the nut faction in Warburg circles, led by the so-called Austrian mafia, Sir Ernst Gombrich and Sir Karl Popper. These two are spokesmen for the extreme view that art has no content, no value, except for the phenomenological experience of vision, in which the constant search for new visual effects is the only artistic criterion. Gombrich and Popper mean to art what Leonard Bernstein and Noam Chomsky mean to music.

Now Blunt's role has been played, in art and in intelligence alike. And rumor has it that the scandal may mean Blunt is not the only British Queen to be dumped. Today belongs to such virile representatives of the Anglo-Saxon tradition as Bonny Prince Charlie.

Blunt Affair Is Key to Global Epistemological Warfare

Once again, as so very often in the past thirty centuries, espionage, reputedly the world's second oldest profession, will afford a new insight into the shaping of philosophy and of pseudo-philosophical novelties.

It is well known among cultured people, and especially among *Campaigner* readers, that Aristotle and the aberration that passes as Aristotelian philosophy was a major intelligence deployment of the Babylonian priesthood of Baal-Marduk into the western Mediterranean.

So also today, the much-touted "systems analysis" method and associated "systems philosophy" is a political intelligence operation into the Soviet Union, which occurred almost at the same time as superspy H.A.R. ("Kim") Philby was redeployed as a "triple" agent into the Soviet Union.

Few people know that Kim Philby is the product of Cambridge University's Apostles Society, which included the other notorious British Establishment spy-masters Donald Maclean and Guy Burgess, and Her Majesty's art curator, Antony Blunt. Even fewer people, however, are aware of the fact that the Cambridge Apostles themselves are only one part of a much more comprehensive and ambitious espionage deployment of Cambridge University.

This broader deployment
Continued on page 78

Blunt Affair

Continued from page 77

principally involves the utilization of computerized Aristotelianism, so-called systems analysis and systems philosophy, to undermine the tendency of the Soviet scientific establishment toward increasing scientific and epistemological clarity. The story of how this matter was launched—how former U.S. National Security Council chief McGeorge Bundy launched this entrapment operation against Soviet science, in collaboration with Sir Maurice Oldfield, and how these men artificially manufactured a group of frauds calling themselves “systems theorists”—will all be told in a forthcoming article in *The Campaigner* which will be unique in that it will be absolute “must” reading for both

intelligence officers and philosophy specialists in all major nations in the world.

To keep you on tenterhooks in the meantime, suffice it to report summarily the following. Since approximately 1965, good old Marxism-Leninism in the Soviet Union is no longer what it used to be, i.e., a Phoenician lie composed of sentimentalisms, a few brilliant and incomplete theoretical statements, a heavy dose of British-spawned Jacobinism, etc. It has instead been transformed into an official “subsystem” of a more generalized systems philosophy which, though created as a sophisticated “belief structure” by a bunch of seasoned “linguist”-brainwashers at Cambridge University and allied institutions, has been fully and unreservedly embraced by the bozos at the Social Science Division of the Soviet

Academy of Sciences in Moscow. Among the chief patron saints of McGeorge Bundy’s systems analysis cult in the USSR is Mr. Afanasyef, the editor-in-chief of *Pravda*, and Mr. Djerman Gvishiani, the Deputy Minister of Science and Technology. Mr. Gvishiani’s wife, the daughter of ailing Prime Minister Aleksei Kosygin, happens to be the immediate administrative superior of Donald Maclean, the Cambridge Apostle now assigned to the U.S.A.-Canada Institute of one Georgi Arbatov, a man very much trusted by the “NKVD cell” in the so-called Communist Party U.S.A., controlled by Thomas and subsequently Corliss Lamont, the chief heirs of Morgan Guaranty Trust Company.

Remain posted for the full story in these pages.

Criton Zoakos

Is America Ready

Continued from page 76

Beethoven’s music itself is that he never spares the audience provocations against banality. A forceful emphasis on Beethoven and Mozart means to ridicule rock and ‘modern’ music as very low, bestial in quality, a quality which becomes actually poisonous,” Hellenbroich said. “What is needed is an approach to teaching, education based on this recognition.”

What is absolutely not the answer, he said, is the kind of music education developed by Karl Orff in Germany, whose idea, Hellenbroich said, “is that children are little baboons. They are given little baboon toys to learn with.” Instead, he said, “We must give children in the six-to-ten age group more to chew on. This means canon singing and compos-

ing. In the Humanist Academy children’s choruses in both New York and Milwaukee, eight- to ten-year-old children are writing good canons. They’re beginning to understand what polyphonic music is. Then they can begin to learn instrumental and ensemble playing.”

Where will the money for all this come from, Hellenbroich was asked. “The Humanist Academy is a nonpartisan, nonprofit institution,” he answered. “Currently we are funded by our members. We also are seeking support from other humanist forces in America and Europe who share our goals. At the same time our resources, such as the musicians collaborating with us, are available to take part in benefit concerts to raise money necessary for cultural recreation centers, instruments, teachers. Our schools right now are totally inadequate for what we have to do.”

Furtwängler Attacked as ‘Führer Figure’

The late German conductor Wilhelm Furtwängler, among the greatest interpreters of Beethoven, has once again come under attack by the enemies of great music. The charge that Furtwängler was an unregenerate Nazi was first made extensively by British occupation forces after World War II. This slander was revived in oblique fashion in the Nov. 10 issue of West Germany’s *Frankfurter Allgemeine Zeitung*, when that anglophile daily attacked what it termed “the cult of Furtwängler” propounded in a European Labor

EDITORIAL

Party pamphlet, "So Denken Wie Beethoven," authored by Anno Hellenbroich. An English translation of the pamphlet, "Think Like Beethoven," appeared in *The Campaigner* in February 1978.

In the pamphlet, according to the FAZ, "from an ultraconservative position, the conductor becomes a panacea against all the evils of our time: against conductors like Karl Böhm, Herbert von Karajan, and Leonard Bernstein, against Adorno, the new music, rock music, sociology, 'Dutch-English liberalism,' and terrorism." The newspaper insists that the pamphlet is concerned less with Furtwängler's musical achievements than with the search, "if not mania, for a really great authority, for a strongman, simply, for a charismatic Führer figure."

The slander that Furtwängler was a Nazi originated in the post-war Anglo-American policy of using the rubric of denazification to stamp out not Nazi culture, but the greatest achievements of German humanism, preeminently the music of Beethoven. When the *Frankfurter Allgemeine Zeitung* fulminates over Hellenbroich's claim of Furtwängler's superiority as an interpreter of Beethoven over the likes of von Karajan, it gives the game away; the latter's lively support of the Hitler regime is well known to Germans, and has been denounced by the Israeli government in recent years.

The pamphlet that has caused the *Frankfurter Allgemeine Zeitung* such concern was published well over two years ago in West Germany. Since then, the campaign it launched as an integrated political effort to revive the scientific and political foundation for humanism in Western Europe has borne patently successful fruit in the policies of the West German and other European governments.

Society of Jesus

Continued from page 3

versity, Notre Dame, Loyola University, Georgetown University, Saint Joseph's College in Philadelphia, Canisius College in Buffalo, and a string of "Ignatius Loyola" colleges and secondary schools across the country. While a lay student with the Jesuits can finish his education at the age of twenty-five, the typical member of the Society continues his education until he reaches the age of thirty-three.

Since its formation, education has been a major concern of the Society, for obvious reasons. While the secret indoctrination given to members of the Society can only be inferred from the writings of Loyola, which are rife with descriptions of self-immolation, and from the cult practices attendant upon the terrorist activities spawned by Liberation Theology, the Jesuits themselves document that everyone who passes through a Jesuit educational institution is effectively brainwashed.

The intellectual life of the Society was and is premised on the revival of the Aristotelian method. *Loyola and the Educational System of the Jesuits*, written in 1892 by Father Thomas Hughes, a Jesuit teaching at St. Louis University, describes classes in which only seven sentences from Aristotle are the subject of a two-and-a-half-hour class. These sentences are read, reread, and discussed word by word. This method of teaching was established in the *Ratio Studiorum* in 1599 and has been the Society's pedagogical guide since. Not only are the works of Aristotle studied exhaustively, but the general method of study is thoroughly Aristotelian. It is prohibited to discuss philosophy in a literature course, or moral theol-

ogy in a class on canon law. In general, students read only one book in any given course, so as to "focus their concentration." In other words, the process of concept formation is deliberately destroyed, and students are programmed through rote repetition.

This is justified by the false claim that at the end of his course the student will synthesize the various subjects he has learned in order to obtain a coherent overview. Since Jesuit education can begin in the secondary school and extend beyond a person's thirtieth year, such training has the effect of destroying a person's ability to reason for the rest of his life. It inclines its victim to accept discipline without thought, or in other words, to become a moral cripple. It was the moral cripple Aristotle, of course, who attempted the spiritual assassination of Plato, and carried out the actual murder of Alexander the Great for putting Plato's political program into practice. It has been adherents of the Aristotelian epistemology, both before and since the historical Aristotle, who have deployed to destroy the humanist conspiracy.

The Jesuit educational system is merely a continuation of medieval Aristotelian scholasticism. The 1599 *Ratio* maintains the study of rhetoric as an important discipline and emphasizes the role of disputation. On one level this is a continuation of the sophistical method of Socrates' and Plato's enemy Isocrates. The student is taught to tear holes in an opponent's argument without regard to any criterion of truth. The aim is to deny the existence of truth and natural law as criteria for practice. In this sense, sophistry and the British empiricism created by Bacon are one and the same. This debating-team approach—typical of universities in the sixteenth cen-

EDITORIAL

ture and carried over by the Jesuits—is a key feature of the so-called modern Delphic method, which takes its name from the opinion-molding practices of the priests of Apollo who ran the oracle at Delphi. The idea is to manipulate a population to adopt opinions considered desirable by the priesthood. It is a form of mass brainwashing.

The debate, or disputation, trains the future Delphic priest, the Jesuit, to shape arguments from any point of view. Therefore he becomes adept at coopting the arguments of an opponent in order to subtly reshape them to his own ends. To the sheep mysticism is made to sound plausibly like humanism. This has always been a key feature in the Aristotelian deployment. Aristotle himself was

sent to infiltrate Plato's Academy by the Delphic priesthood. What else but a Delphic operation is the development of pseudo-religions, cults in the name of religion? The Jesuits are infamous for their ability to "shape" Christianity in the guise of tribal cults. Even more pernicious is their attempt to turn Christianity into a primitive religion. The work of self-styled anthropologist and Jesuit priest Teilhard de Chardin is exemplary in this regard.

Chardin was involved in the Piltdown man hoax, in which the bones of an ape and a recently dead man were stained, spliced together, and passed off as "ape man." While he pretended to offer a scientific Christian alternative to Darwinian "materialism," he was neither Christian nor scientific, nor essentially different from Darwin. Darwin's work was in fact merely pseudo-scientific drapery for Herbert Spencer's Malthusian justification for the nineteenth-century Dark Ages policy of the British oligarchy. (Spencer's survival-of-the-fittest policy was published before Darwin's writings.) Chardin accepts survival of the fittest as a motor-force of evolution, but includes within it a tendency within evolution for the growth of "psychic energy," as demonstrated by the evolution of consciousness. Chardin's "Christian" answer to Darwin is that man is evolution which knows itself. He goes on to assert that the final end of this evolution, the end of the biosphere itself, will be the dematerialization of mankind into a concentration of psychic energy. In this parody of Neoplatonic Christianity, he acknowledges the positive value of science only to subsume it under mystical gibberish. Writing in 1938, he expresses sympathy for Nazi race theories.

How different is this from the occultist notions of the Ayatollah Khomeini, who vows that 35 million Iranians will martyr themselves joyously? This is the ideology of Jonestown, the evil of Manichean Satanism which St. Augustine fought. The Aristotelian force, "psychic energy," is the occult motor of evolution, precisely as Aristotle presents it in his *Physics* and *Metaphysics*. Psychic energy is the crude Delphic substitution for the moral responsibility facing man to live according to the dictates of reason. Not surprisingly, Chardin sees a "nonmaterialistic" fascist collectivism as the stage which will precede the final destruction of the human race.

Yet many otherwise good people who are horrified by kook occultism accept Chardin as a bona fide Christian humanist! The same charlatanry is at the bottom of every Delphic operation. How many Jews are taken in by the cult of Zionism? How many Moslems blush for the outrages of the irreligious Muslim Brotherhood because they accept its bonafides as the religion of Muhammad?

In forthcoming issues of this magazine, we will continue to expose the Jesuit operations and every other Dark Age force. In this issue we begin that exposure most effectively by offering the only true English-language translation of Plato's *Timaeus*. Even in the deliberately distorted versions of Plato's works, such as the translations by Oxford "scholar" Jowett, it is possible to find a clear and beautiful statement of man's essential humanity, of the universality of science and natural law.

Truly translated, the *Timaeus* is a call which cannot go unanswered today. Be a golden soul. No less is demanded if mankind is to survive.

Carol White



the Campaigner
SUBSCRIBE NOW

\$19 for 10 issues (one year)

\$38 for 10 issues foreign airmail

Make check or money order payable to
Campaigner Publications
304 W. 58th Street
New York, N.Y. 10019

