

THE IDEA OF PROGRESS

THERE are certain leading conceptions which are so indelibly a part of all human thought that, no matter how much they seem contradicted by experience, we base our lives upon them. The idea of progress is one of these conceptions. Progress is a movement toward desirable ends. Implicit in the idea of progress are all forms of goal-seeking, even meaning itself. So, when men express discouragement and speak deprecatingly of claims to "progress," they are really reflecting only their dissatisfaction with some particular theory of progress, which seems to be proving false.

The modern idea of progress took hold of the Western mind as a result of the general acceptance of Evolution. There are other sources and versions, of course, but practically all popular conceptions of progress, for a century or more, have been colored by the influence of the biological doctrine of the evolution of the species. Eventually, the idea of development toward some end or higher condition was applied in all directions. Men began to assume without question that everything which exists is "going somewhere"—turning, however slowly, into something better. Thus the idea of progress was conceived to be the very law of life.

Two other ideas seem to have equally inescapable presence in human thought. One is the idea of "reality." However, to say that men think and talk about reality is not to suggest that Reality is known or understood. But in a limited framework of meaning, the word or idea is indispensable. When it is said that a man fails to understand the "realities" of a situation, the statement often conveys usable information. A situation that can be defined so that men recognize its character has a specified reality. Thus, from the experience of coping with the relative realities of daily existence, we find it legitimate to speak,

however vaguely, of a larger Reality which must be at the foundation of the total situation. Even if all attempts to define that reality break down, it seems inevitable that we should make reference to it.

The other idea that has an inevitable part in thinking is the idea of cause—of the "how" of operations in discernible events. Humean skepticism concerning cause-and-effect relations has no effect at all on the calculations and activities of men concerned with making happen things that they want to have happen. Nor can the Humean skeptics themselves avoid enlisting the law of causation in their daily lives.

The point to be made here is that we find ourselves completely unable to abandon these modes of thinking, no matter how obvious it becomes that they often involve us in very grave mistakes—in disastrous misconceptions of progress, of "reality," and of the causes of things.

This is true of individuals, of groups, and of cultures and entire civilizations. Epochs of history obtain their character from the doctrines of progress, of reality, and of means to ends which prevail during these periods. All great religions have made disclosures concerning what is real, what are the ends of human existence, and how these ends are to be gained. What Toynbee named the *high* religions have offered doctrines of great subtlety on these questions, along with forms of popular faith. But the historical practice of religion has been vulnerable to far-reaching mistakes, provoking aggressive correctives which inaugurate in turn new epochs of history. One such mistake, according to Lynn White (see last week's *Frontiers* article), was the assumption by the Christian church that all natural "creation" had been brought into being by the Deity as a kind of smorgasbord for human enjoyment, convenience,

and exploitation. There were other, more physical mistakes, such as those exposed by Copernicus and Galileo, which made a greater impression on the people of Christendom, once they were understood. It was natural enough for men to think that if their religious authorities could be so seriously wrong about natural facts, they were probably wrong, also, about supernatural facts such as the Christian teaching of Salvation. And the "causal" element—belief in the Saviour—in the doctrine of salvation was not of a sort to appeal to men whose daily actions depended upon their personal knowledge of how to make things happen. *Belief* was not in their experience a way to get anything done.

It was in the presence of these disillusioning realizations that the idea of scientific knowledge, of scientific certainty, and the modern idea of Progress took possession of the modern mind. "Reality" became identified with what science studied and dealt with—matter and its motions. Certainty became what science found out about this reality. And Progress, in time, became the orderly development of the uses that could be made of natural reality in behalf of man.

These, at any rate, were the popular doctrines which took the place of the previous religious conceptions. It should be noted, however, that before long responsible scientists began to feel uncomfortable about the great claims made in behalf of their findings. *They*, such scientists were careful to explain, made no pretense at disclosing Reality. *They* would offer no instruction in what ought to be recognized as progress—in fact, early in the twentieth century, most of them outlawed the term from the scientific vocabulary. They were willing to say "change," but they wouldn't say "progress." It was not their task, they said, to make "value judgments."

What did this mean? Well, there was thought responding to value—a basic honesty—in this exemption of science from philosophical responsibility. And there was also the argument that if scientists refused to give definitions of

Reality and Progress and avoided naïve talk about "Cause and Effect," they would be true to their commitment to verification—of not letting themselves make any mistakes. Some went so far as to assert that they didn't really know anything about "atoms"—they just knew about pointer-readings on dials, which told them things that would enable them to make further manipulations of matter. Scientists could help us to *do* things, but they would not make any final definitions nor commit themselves about Meaning. Scientists are not Theologians, they said. We cannot, must not, pretend to be your Guides.

But the passionate interpreters of science and the makers of political revolutions on the basis of scientific discoveries did not opt out. They had new gospels of progress and social salvation to dispense. They dispensed them, and the people, with some few exceptions, believed.

In general, therefore, the modern idea of progress has a twofold basis in popular attitudes. It obtains deep support from the essential purposiveness felt by all human beings, but relies on vague notions of "evolution," technological advance, and undefined utopian conceptions inherited from the nineteenth century for answers to the question of how progress is to be realized in human life. Actual thinking about progress has been very scarce, doubtless because of the philosophical problems which result. Commonplace observations on the subject seem to rest mainly on the idea that if the basic needs and desires of people could be satisfied without conflict or strain, an ideal society would come about as a matter of course. Anyone who questions this idea is usually regarded as a kill-joy or some kind of Puritan, or worse, a crypto-conservative who distrusts Welfarism because of moralistic suspicion of the worthiness of "the poor." Such attitudes create a formidable barrier to intelligent criticism of the idea of progress.

Meanwhile, the genuine moral enthusiasm of the Enlightenment has died away. Progress, in the terms of the eighteenth century, was an ennobling

conception based upon the great principles of the revolutionary epoch—Liberty, Equality, Fraternity. There was a close relation between these ideas and the spirit of science as the search for Truth. All these conceptions were inspiring goals for humanity and it is impossible to read the literature which embodies the eighteenth-century vision without feeling the authenticity of its ideals and accepting the spirit of progress which they implied. An inquiry into the decline of the moral fervor which gave those ideals their energizing power would be a project of importance, but of some difficulty, since it would require understanding of the loss of moral ardor through institutionalizations of its objectives, and would also try to find out how to extend beyond momentary expression the lifting effect of what has been called "revolutionary love."

The question before us is that of "realism" in relation to the idea of progress. Whether or not progress is a "fact" is not at issue. Progress is the basic conatus in human life and it cannot be abandoned through a shallow intellectual gesture, or from the practical discouragements resulting from one line of effort. At issue is the meaning of progress for human beings, and simply to array the most obvious factors behind this issue is to disclose the psychological reasons for keeping the idea of progress undefined.

Affecting this question is the almost total lack, today, of any serious intellectual support for the idea of progress. The rule of not making mistakes or fostering illusions is so thoroughly a part of the attitudes of both science and modern scholarship that the price of being an "idealist" in our society, and of working toward some broad humanistic goal, is loss of support and even interest from establishment science and learning. The defense of this attitude on the part of scholars is that the purity of their discipline must be preserved, which is valid enough, given the usual assumptions of the scientific theory of knowledge. The idea that scientific research must not be exposed to the pressures of moralizing

partisanship is difficult to reject, so long as it is believed that science itself has an origin independent of moral coloring. However, if it can be shown that all science, as Michael Polanyi maintains in *Personal Knowledge*, is founded with a moral orientation, it then becomes necessary to rethink the entire relation of science to the idea of progress, with the obvious consequence of obliging scientists to accept a kind of responsibility that they have been trained to believe would undermine the impartiality of all their undertakings.

But this is a problem for scientists to consider. Here we should like to explore the effects of the inheritance of eighteenth- and nineteenth-century optimism—genuinely related to the scientific spirit in the past, but now only a vague, pseudo-scientific enthusiasm. The fact is that there is no critical frame of reference, no body of serious thought, concerning the meaning of progress against which we can check ideas on the subject. The theological conception of progress—salvation—lost its authority through the breakdown of religious claims about the natural world. The scientific conception of progress lost its status from the abdication of the scientists themselves. And the political conceptions and promises of progress are haunted by practical contradictions so massive that the writers of sociological studies animated by moral emotion are almost entirely critical in their approach. These scholars give us brilliant analyses of how human society has *gone wrong*. A few books have been written about what ought to be done—apart from standard ideological programs and claims—but these, while sometimes excellent, as in the case of Erich Fromm's *The Sane Society*, speak only to very small audiences of thoughtful readers.

There are certain unavoidable consequences for general thought about progress, under these conditions. First, while the thought will continue, since it is rooted in the basic intuitions of all human beings, it will have unexamined

assumptions. Second, any serious attempt to examine its assumptions will be unpopular, since this would be likely to expose the wheel-spinning futility in programs and efforts founded on emotional appeal.

It follows almost inevitably that "progressive" ideas will seek support more from deep-lying, inarticulate longings than from understood or demonstrated principles of growth. There will be a great deal of symbolism used in discussions of progress. That progress is understood will be assumed, not questioned.

There will also be continued externalization of values in the delineation of the steps or stages of progress. This, we may think, is natural enough, in view of our intellectual history. The war between science and theology was fought at the level of externalities. Not moral issues, but geophysical and astronomical issues led to the downfall of theological authority. Not human attitudes themselves, but human attitudes as reflected in political structures, were contested during the revolutionary period. Not self-control, but the control of the environment, has been taken as evidence of the kind of progress we recognize and seek.

In short, a strong habit of externalizing values affects very nearly all the thinking that we do about progress. This habit may be at the root of the confusion in our idea of progress. It has to do with the basic conception of the nature of man.

If this is the case, if through this tendency to externalization—derived from evolutionary doctrine relating to the structures of organisms, as well as from other sources—we have acquired a mistaken conception of human progress, then we need, not merely another view of the human being and his potentialities, but also a theory of progress able to explain the externalizing tendency itself. Where does the predisposition to take the form for the substance come from?

We can hardly answer this question without an extended metaphysical theory of the meaning

of human life. Such a theory would involve teleological thinking about the relation between spirit and matter, between body and mind, and a transcendental view of man as in some sense engaged in a Promethean mission, devoted to raising to a higher level the very stuff of material existence. For example, evolution, in terms of matter and form, seems to involve the elaboration of ever more complex structures through which more varieties of higher intelligence can become manifest. It is at least possible that a climactic point in this sort of evolution was reached with the development of the human brain. But what next? That is always a basic question in evolutionary theory—what next?

We might attempt to assemble some background for an answer to this question by taking note of the fact that the general tendency to externalize views of human progress is not universal. There are—and there always have been—men whose thinking forms an exception to the rule. For these men human evolution or achievement is represented by rising to levels of synthesis in thought and understanding. And the bonding element in this synthesis is always ethical principle. Why have not the ideas of these men, whose lives have been beyond reproach, not gained common assent? Why does the basis of the synthesis they reach remain obscure to the great majority?

If we assume such men to have reached a high plateau in the possible evolution of human beings, we are then obliged to say that the level of popular thinking about "progress" is endlessly preoccupied with illusory goals. This may be the sort of judgment that is usually opposed as contrary to the equalitarian principle, yet it is a judgment very few men hesitate to make at the level of practical affairs. Those who work strenuously for the attainment of some stage of socio-economic progress are commonly found to practice manipulative, even Machiavellian, techniques, and are heard to explain privately that there is simply no other way to deal with the

immaturities and short-run emotional interests of the ordinary run of mankind. These laborers for the common good do not object to the concept of hierarchical order in social life; they object only to admitting it in public, and on a broad philosophical basis.

There is of course extensive historical justification for rejecting the hierarchical or aristocratic principle. This idea has always been the chief defense of élitism, sacerdotalism, casteism, and brutish political tyranny. Only since Gandhi's forthright condemnation of coercive power as the means to social good (or progress) and his advocacy of non-violence as the means of obtaining justice has it been possible to think of hierarchy in human life without the threat of immediate corruption through the abuse of power.

Gandhi obliges us to admit that power is not evidence of human progress. This admission can alone relieve modern thought of its ambivalence in regard to the goals of social evolution. It is argued that social organization through power—in the last analysis, military power—has made possible the emergence, and therefore all the achievements, of the modern nation-state; yet, in almost the same breath, it is declared that the state is not an end in itself, that government is only a means to the good of the individual, and that obviously the control and limitation of state power must lead the way to true progress; and meanwhile, because of many emergencies, we say to ourselves, *but not yet*, and then we demand so complete a subordination of the individual to the requirements of the nation-state that the chief moral product or sign of progress in the twentieth century is protest movements.

One hopeful characteristic of the present is the growing recognition of the intellectual dishonesty of this ambivalence, and of the multiplying moral contradictions which result from defining progress as the achievement of technological complexity. Seeing these things is surely progress of some sort.

But the present has still another characterization. Newold ideas of "reality" are beginning to pervade a sizeable segment of the population. Conceptions of progress on an inward scale are beginning to gain expression and preliminary definition. Some kind of a change in the thinking of men is taking place. This is happening at all levels of human life and throughout the spectrum of social organization. As with all other great changes at their beginning, the growing tips are fragile, their supports not yet strong. There is also the consideration of the subtle nature of the change, which has to do with men's attitudes about themselves and about other human beings, which may mean that such a change will be well along on its way before being generally recognized. In time, then, the institutional forms appropriate for this development may be expected to appear, although at first they are likely to seem transitory or ephemeral to those who acknowledge only externalized development or growth as "real." But the surprising thing about such delicate, humanized institutions may be that they *work*, that they allow cooperative and harmonizing effects to prove themselves in practice, without all the frictions and counter-currents produced by old, heavy-handed methods of social organization. They may then be seen to be in conformity to nature—to the slowly flowering inner and higher nature of man.

REVIEW

MENTAL HEALTH IN BOSTON

DISTRESS IN THE CITY is a report for the general reader on the findings of the 1960-62 Boston Mental Health Survey conducted by Dr. William Ryan, who also wrote the report. The study was jointly sponsored by the three agencies chiefly involved in dealing with the mental health problems of Boston—The Massachusetts Association for Mental Health, the Massachusetts Department of Mental Health (Division of Mental Hygiene), and the United Community Services of Metropolitan Boston. The purpose of the survey was to provide the basis for coordination and improvement of the numerous services offered, initially through the formation of a single planning body. Awareness of the necessity for such a study grew from common realization by the agencies involved "that services for the mentally ill and emotionally disturbed population in the Boston Metropolitan Area were largely a patch-work affair, with specific scarcities in the midst of general plenty, and with many duplications as well as gaps in services."

The reader of this booklet (which may be obtained by writing to the Health Division, United Community Services, 14 Somerset St., Boston, Mass. 02108) is likely to be most impressed by the desperate earnestness and candor of a comparatively small group of people who are trying to cope with human needs whose dimensions are becoming overwhelming. The statistics by no means conceal the depression, pain, and human collapse that lie behind such factual reporting, nor does the report give any evidence of institutional window-dressing or self-justification. The problems are too nakedly real, and the yearning to meet them adequately is evident on every page. Most apparent of all, however, is the way in which the problems of "mental health" burst out of any narrow, diagnostic category to demand larger and more fundamental definition.

Boston, let it be said, is better equipped than most metropolitan areas in the United States to cope with mental illness. This city is a center of education and research for mental health professionals, and, in comparison with the yardstick proposed by the American Psychiatric Association, its faculties exceed "by over one third the number generally considered as an ideal goal." Yet, as Dr. Ryan says:

Even with this vast array of resources, Boston's clinics are not able to accept more than half the patients who apply for help. At the same time, waiting periods are long, waiting lists proliferate, and other agencies and professionals remain understandably frustrated by their inability to make effective referrals to these facilities and to arrange for prompt care of patients in their charge.

In sequence, Dr. Ryan's report deals with the kind of problems people have, the number of those with problems, and the kind of people and places which offer help. In this study, attention is given to all those who suffer sufficiently from mental disturbance to handicap them in life. Examples offered are of a boy of twelve whose excellent school work falls to D's and F's, a girl of similar age who consistently fights with and screams at other girls and leaves to hide and weep inconsolably, an aging woman in good physical health who is overcome by tiredness and filled with complaints, and a woman of thirty who contemplates suicide after a broken engagement. In general: "At the core of all these problems are feelings of distress—feelings of anxiety, depression, of inability to cope with life's problems. And accompanying all these problems is a degree of crippling—emotional crippling that interferes with the major functions of human life."

Of the 700,000 persons who live in Boston, between twenty and twenty-five per cent, Dr. Ryan estimates, have emotional problems that interfere with their lives, disturb their work, and cause difficulties in family and social relationships. This means, he says, that one out of every four or five faces problems that "range from being nervous and making mistakes when the boss looks

over one's shoulder all the way to believing that the Communists are putting bad thoughts in one's mind with atomic machines." Out of 150 such emotionally disturbed persons, only one will finally reach the psychiatrist's office. Eight or nine of the 150 may go for help to a psychiatric clinic, but only four will get treatment, and only two be treated for more than a few weeks. Five or six others of the 150 will have symptoms such that hospitalization seems the only thing left for them. About eighty-five more get various kinds of help, from the medical doctors, from the clergy, from social workers and settlement houses. Many of these obtain chemical relief—"our estimates," Dr. Ryan says, "would indicate that well over 25,000 people are given prescriptions for tranquilizing or anti-depressant medication." This covers about two thirds of the total. Dr. Ryan continues:

But what of the other one third, the others who have been recognized by a professional person as clearly handicapped by emotional disturbance? What is done for them? In a word—nothing.

He adds these general considerations:

For some of these persons, of course, it would be difficult to try to provide help since they are unsure or reluctant to admit that they have a problem or a need for help. But even more important than the question of the motivation of disturbed persons is the issue of resources. Realistically, nothing is "left over" to help this one third of the disturbed population. There is no place, there are no people, there is no time. It must be remembered also that there are many others *who have not been recognized as disturbed*—probably half again as many as those who have been identified. Most of the persons in this group may not be aware of their need for help and it would be hard to reach them. For others it is likely that they simply do not know where to turn to begin the process of seeking help.

On the question of who are the few Bostonians who actually see a psychiatrist, Dr. Ryan points out that more than 70 per cent of them live in a residential section which houses about seven per cent of the city's population. A quarter of these private patients are young women who live within an area of less than 100 blocks. The total number of young women living there is

less than six thousand, and about half of them are able by education and income to seek psychiatric aid. As Dr. Ryan puts it: "In other words, this tiny group of approximately 3,000 young college-educated women in their twenties and early thirties furnish one quarter of the Boston patients in private psychiatric treatment."

In a more general summary the following comparisons are made:

Only about half of Boston's emotionally disturbed persons receive any sort of help at all.

Non-psychiatric physicians provide care for about twice as many emotionally disturbed persons as do all other resources combined.

Casework agencies treat twice as many emotionally disturbed patients as are treated in psychiatric clinics.

Workers in settlements, Boys' Clubs, etc., have twice as many disturbed children in their care as are treated in child guidance clinics.

The number of Boston children referred to the Pupil Adjustment Division of the public schools is about twice the total number of Boston children treated in child guidance clinics.

Clergymen counsel twice as many Bostonians as are in private psychotherapy with psychiatrists.

The number of emotionally disturbed persons in need of help, within the caseload of the Department of Public Welfare alone, exceeds the total number of patients treated in all Boston outpatient psychiatric clinics.

The number of Bostonians advised to seek outpatient psychiatric treatment, or actively referred to outpatient resources, is, at the very minimum, four times as great as the total number of persons who actually apply for help.

The report gives much attention to the system of referring patients to doctors or agencies for help. For a number of reasons, the system works very poorly. Probably the greatest offense of the referral system is the way in which it fosters misconception. Following is Dr. Ryan's account:

The way the system works.—The system assumes that a person is "sick" with a specific "disease" and that the problem to be solved is one of movement—

getting the person from the point at which he is identified as sick into the hands of someone who is skilled in "curing the disease." For example, a public health screening program to identify persons with tuberculosis or diabetes follows up the identification by referring the tuberculous or diabetic individuals to physicians for treatment. This is an example of a clearly appropriate referral and the system for accomplishing it is one that has worked extremely well.

Where it doesn't work.—On the other hand, consider the case of a depressed and defeated working-class housewife turning to someone for help with a multitude of problems that are overwhelming her: an alcoholic husband who disappears for days at a time; the piling up of pressing debts; an eviction notice from the landlord, two children in diapers and a third who is enuretic; a sickly daughter and a neglected oldest son whose school work is worsening daily, headaches and stomach aches; increasing trouble with her neighbors as she becomes more and more short-tempered; and a growing sense of guilt as she finds that she herself is turning more and more to liquor for consolation.

If this woman is viewed in a narrow mental-health context it is possible that she would be diagnosed as suffering from depression and, if she were so diagnosed or so identified, it is likely that she would be referred for psychiatric treatment. Possibly she might be identified as a person with marital problems and then be referred for marital counseling. The question that comes to mind is: how logical is such a narrow identification? It is likely that this woman would not be viewed as a suitable candidate for psychotherapy and this judgment would probably be correct, since she is neither introspective nor verbal, nor does she consider herself "mental." Most important, she would tend to perceive talking to someone once a week for a long period of time about her feelings, and her many worries as a totally inadequate method of helping her solve her problems.

Aside from the probable futility of referring such a client for counseling or therapy, however, one must consider the question of whether it is even appropriate to make such a referral—to abstract, as it were, a "disease" from this complex of problems. Her "depression" is a condition that might seem quite natural in view of what is happening to her. To call her situation a marital problem seems, not only to her but to most people, a rather glaring understatement.

Dr. Ryan speaks of the discouragement to people needing help and the waste of professional time which result from trying to make this unworkable system work. Finally, he points out the ambiguity behind the question of who is "responsible" for providing service to the emotionally disturbed. There is, he says, "a hidden assumption, made by many, that all persons who are handicapped by emotional disturbance are entitled to services to lessen their handicap." In fact and in practice, as he says, "society has made no such commitment and there is no mechanism for providing such services to all who need them, or even to all who request them."

This is the order of magnitude of the dilemmas under constant and growing production in what Herbert Marcuse has called the "one-dimensional society."

COMMENTARY

A TWILIGHT SITUATION

IN the seventh book of the *Republic*, following the allegory of the Cave, Plato points out that both the people finding their way out of the cave and those on the way back in to help others still in darkness are subject to special kinds of bewilderment. We can easily imagine what these bewilderments are like. A man experiences some fundamental intuition—he has the feeling, *this is true*—and then he finds himself in difficulties because this truth fails to match up with facts of experience in his twilight condition.

Similarly with a man re-entering the cave. He is filled with his sense of new-found knowledge. *Of course* people will listen to him. He brings *glad tidings*. It does not occur to him to ask if the people who have never been out of the cave will have sufficient reason to believe what he says. He has forgotten the days of his own blindness.

So there is bewilderment. There is also, characteristically, misunderstanding and injustice. These men are called fools in their goings and comings. Tracts are written against them. Committees are formed to consider their punishment—ostracism, exile, or even death.

The point, here, is not to castigate the angry and suspicious responses of the people who are still in bondage. Given their situation, such responses are practically inevitable. In any event, no good comes of blaming them. What is useful to consider is the equal inevitability of the bewilderment felt by people who are trying to help, but whose helpfulness is harmed by their bewilderment. There is need to understand the causes of this bewilderment, which is not of an ordinary sort.

Plato's allegory of the Cave is a conception of transcendental philosophy. It asserts something about the nature and possibilities of human life. If what it asserts should be true, then Plato's discussion of the bewilderments of those who are getting out of the cave and those who are coming

back in is of great pertinence to the understanding of a large segment of human experience. It throws light on a particularly agonizing kind of human pain—the pain of people who are frustrated in doing good. If they are to go on trying to do good, they will have to understand and learn to tolerate this kind of pain, something very difficult—probably impossible—without the solvent of a transcendental philosophy of life.

CHILDREN

. . . and Ourselves

THE GREAT INTANGIBLES

To see in the educational process the means of assisting moral growth—that is, the formation of character—and at the same time to recognize the uselessness of moralizing: this is surely the art of the teacher. Study of this art involves the search for canons without arguing for externalizing standards. The only authority moral education can make use of is an authority which gains acceptance through individual perception as an act of free intelligence. So, for the discussion of moral education, it is necessary, not to lay out doctrine, but to generate an atmosphere.

A small book by Ordway Tead, *Character Building and Higher Education* (Macmillan, 1953), illustrates well the mood of such undertakings. Dr. Tead was for years Chairman of the Board of Higher Education of New York City. E. I. F. Williams, the editor of the Kappa Delta Pi Lecture Series, of which this book is the twenty-fifth volume, says of Dr. Tead in his introduction: "As chairman of the board which controls a group of publicly supported colleges which enroll the largest number of students in the United States under a single board, he is in a peculiar position to evaluate education as it has impact on American life."

The value of this book lies in the fact that what it has to say can be applied by anyone having to do with education, and this can be done whether or not massive reforms in education are introduced. It is in short a book about attitudes toward teaching—about attitudes which are possible, although often difficult to maintain, under widely varying circumstances. After pointing out that institutions of higher learning are inevitably affected by the "confused moral outlooks in our whole society," Dr. Tead suggests that this situation cannot suddenly be wiped clean but rather provides the raw material of education in the present:

For our schools and colleges will not deal with this situation with the candor and courage which are required if we do not acknowledge a pervasive situation of insecurity, transition uncertainty, and confusion about many matters of personal choice and public decision as characteristic of our society. Indeed, in areas of the modern world beyond our own borders a yeast of unrest and a sense of mankind on the march toward new if undefined goals are dominant attributes. Truly, to live at a period when such profound disturbances are afoot is not easy; but it can be challenging to creative efforts if some dynamic perspective and orientation can be grasped. For either one believes in the inevitability of impersonal forces shaping man and his history, or one concludes, which is my premise here, that by taking thought individuals can have some responsible part in shaping the influences which condition human affairs.

Dr. Tead rejects value-free intellectual discipline:

. . . the cultivation of the life of the mind is itself a moral enterprise. Efforts to be rational and to become wise (not merely to be facile verbalistically) are concerned preponderantly in fact with issues which involve basic determinations of moral (or character) choice. The separation of reason and feeling, of thought and emotion, of knowing and valuing—all this is not psychologically a valid distinction. . . . Character qualities are always permeating the intellectual processes if these are being pursued with the necessary earnestness and desire for fruitfulness of outcome. . . . There is no valid dissociation of moral from intellectual purposes.

What Dr. Tead is arguing for here is the relevance of individual human decision in all the relations of human life and in connection with studies of those relations. The vast if incomplete scaffolding of scientific knowledge about the world must not be allowed to make it seem to the student that his decisions as a human being do not count. Individual moral decision is the principle of social coherence in any society and an education which neglects this fact is anti-social and anti-human in effect. The "good" man of today, Dr. Tead points out, must be more than a traditionally "virtuous" person. There is now "the moral obligation to be intelligent," since we live in a world community "where the repercussion of

stupid action affects everyone with increasing directness and urgency." Being "good" has become "hard work." It is an obligation of education to point this out—to stress, that is, the priority of moral choice.

Not "answers," but problems, are the true subject-matter of the curriculum:

College students need to have their own urgently sensed tensions brought into the open as educational subject matter; and they need to have the problem aspects of the curricular material vividly brought home to them as *their* problems. To plunge the student into difficult situations felt to be real and relevant is the prior condition of much vital learning. And the sense for problems and student awareness of enlarging areas in which problems arise should result progressively as new curricular subjects are opened up. But this progressive enlargement will occur only as the material studied is seen and felt by the student to be his "meat," is seen to relate to the purposes *he* desires to realize, to be patently worth tackling because *he* is bothered or troubled or deeply curious.

How is education of this sort to be worked out practically? Dr. Tead believes that some combination of work and study is the answer. For examples he speaks of "programs like those of the University of Cincinnati and Antioch College, the winter field-work period of Bennington College, and directed summer work in other institutions." He continues:

My contention is that if the student is given the experience of confronting the conditions and demands of the workaday world under some continuing guidance, he is able to acquire *as in no other way* an awareness of the meaning of much that he is studying, a knowledge of some of the kinds of employment the world may offer, a grasp of the basic organic interrelation of thinking and acting, of abstractions to be translated into specific life-situations, and a comprehension of outside community relations to be experienced as aspects of the "social problems" he is studying. Character strengthening feeds on self-reliant action, and students at work under proper supervision are "on their own" in a beneficial way, despite the fumbings, failures, and mistakes some individuals are sure to make. My own experience is that students who have had the benefit of some kind of study-work plan show a greater maturity and sureness of attack immediately

after college than is usual with those who have not had the chance to profit by this kind of program.

Dr. Tead's ideas seem to us a general application of Socratic principles. Education is for him a confrontation with problems, not acceptance of answers. And the combination of learning with life-situations has the effect of "forcing" applications of learning to concrete situations—again, a following of the Socratic model, in which the learner is obliged by the insistent questions of Socrates to think his own way through essential problems. As for combined work-study programs, the exciting example of the Bauhaus should not be overlooked. In the extraordinary industrial design school planned and put into effect in Germany by Walter Gropius and others, nearly fifty years ago, students obtained a basic art education but they also worked on designs which they later executed themselves in the school's workshops, and many of the products originated in this way eventually reached world markets. It is not too much to say that the Bauhaus revolutionized the approach to design of manufactured articles. Further, a survey of the influence of Bauhaus teachers and graduates on art education would doubtless reveal more widely important effects of this magnificent combination of study and work. There must be many applications of the Bauhaus principle yet to be thought of and given experimental trial. (See *Bauhaus 1919-1929*, edited by Herbert Bayer, Ise Gropius, and Walter Gropius [Branford, Boston, 1959].)

FRONTIERS

Art and Science

ART & GEOMETRY, by William Ivins, Jr. (Dover paperback, \$1.25), is a book which may serve various purposes. It might be regarded as a long footnote to the thesis of Eric Havelock in his *Preface to Plato*, to the effect that Plato objected to the poets because they were imitators who bound the mind to convention instead of releasing it to freedom. More in its own right, the book might be read as a substantial contribution to the synthesis of the two cultures—art and science. Some readers may find it a somewhat irritable reassessment of Greek art, which the writer believes to have been wildly over-praised. Mr. Ivins' intent, however, is to show that the Greeks didn't understand visual space and that it remained for a Renaissance artist, Leone Battista Alberti, to perform experiments which revealed the laws of perspective, thereby opening the way to the projective geometry of abstract relations and, conceivably, to the non-Euclidean mathematics on which modern physics is based.

Many years ago, in *Reason and Nature*, Morris Cohen pointed out that formulation of the law of gravitation, besides requiring Galileo's law of falling bodies and Kepler's laws of planetary motion, needed the "daring and unorthodox speculative idea," drawn by Newton from Boehme and Kepler, of a parallelism between the celestial and terrestrial realm; and he showed, also, that Kepler could discover his laws only after adding to Greek ideas about conic sections the metaphysical theories of Plotinus. In short, mysticism and philosophy took part in the founding of modern physical science.

In *Art & Geometry* Mr. Ivins carefully gathers evidence to show that a fifteenth-century painter's work, plus the efforts of a seventeenth-century architect and engineer, stretched the European mind to a point where, eventually, it could accommodate Einsteinian relativity. His book ends with this paragraph:

It is deserving of thought that, at two crucial moments in the course of this history, one in the early fifteenth century when the worship of the rediscovered classical forms was beginning, the other in the early years of the seventeenth century, when a revived Aristotelianism was at the peak of its power and cruelty, it should have been a many-sided artist Alberti, and an architect and engineer, Desargues, laboring at what for them were practical problems of their arts, who took the first of the imaginary revolutionary steps that eventually led to the perspective of central projection and section and through that to the discovery of nonmetrical geometry as the most highly generalized science of order. Looked at in retrospect their discoveries appear to have been among the most decisive "battles" in the long struggle of Western Europe to free itself from the inhibiting burden of the Greek tradition and to provide its new vision with a logical apparatus and a philosophical justification.

Mr. Ivins' book is a "maverick" production. It shows what can happen when an inquisitive imagination supported by a self-reliant mind gets going on a puzzling problem. As curator of prints at the Metropolitan Museum of Art, he wondered what might be the explanation of the queer distortions of perspective in Dürer's prints, and was led to study the history of geometry. He came to believe that Greek geometry was based on a tactile rather than a visual intuition of space. This led him to a consideration of the limitations of Greek art, which he finds lacking in feeling and in a sense of orientation in space. After critical examination of various works, he says:

The simple fact of the matter is that the figures of Greek sculpture are abstract, ideological conformations, devoid of physical, mental, or spiritual histories. Such little emotion or movement as they have has no relation to emotional or volitional states. . . . it may be that Plato's characters knew what they were doing when they talked about the imitation of an imitation of an idea. Plato, after all, was one of the most intelligent men that ever lived, and, as a most consummate artist may be supposed to have had some understanding of the artistic problem. It may be a very foolish idea, but it occurs to me that perhaps one of the reasons for Plato's dislike of the art of his time is its complete failure to deal with the characteristics that imply growth or "becoming."

Throughout this book, Mr. Ivins finds himself on the side of Plato, as critic of his times, and, unlike Aristotle, as a liberating influence on future thought. His views of Aristotle and Plato are conveyed in the following paragraphs:

In a way, we get the summation of the story in Werner Jaeger's remark that Aristotle's "historical importance as the intellectual leader of the West is certainly not lessened by the fact that the evolution of independent philosophical achievement in European culture has taken the form of a five-hundred-years' struggle against him. Seen from the modern point of view, however, he is merely the representative of the tradition, and not a symbol of our own problems or of the free and creative advance of knowledge." . . .

The Greek thinkers who are still of interest in the forward looking intellectual business of life seem to be those like Zeno of Elea and Plato, who, asking endless questions, practiced dialectic but gave few answers and erected no systems.

One further passage is of general interest, in which Mr. Ivins suggests that along with the change in the idea of "truth" brought by the new physics of relativity came the downfall of the fixed academic conception of "beauty" in art:

When men finally began to discuss the problem of the locus of beauty; it did not take long before academic scepticism which necessarily accompanied the idea of beauty as a static absolute that had been revealed once and forever and given into the custody of a self-elected group, gave place to a recognition that the unfolding and fading of beauty is an eternally living, growing activity participated in at all times by all mankind as an evolving process of self-discovery and self-realization. The only thing essential to that expression of human character we call art is its constant "becoming," which is as indefinable as life itself.

We should not fail to point out that the heart of this book is a detailed discussion, illustrated by diagrams, of the discovery of perspective geometry. Mr. Ivins learned geometry to write the book, and while he calls his knowledge "superficial," it does not seem so to the reviewer. Of incidental interest is the frequency with which philosophical figures play a part in the development he describes—men such as Porphyry

and Nicholas of Cusa and Giordano Bruno. Finally, tribute should be paid to the liveliness of the original thinking in *Art & Geometry*. It took Mr. Ivins far afield from matters familiar to him and in respect to the book's thesis he is a self-educated man. But then, as he remarks in another connection, any "man who has a new idea is self-educated.