

TWO VIEWS OF MAN

AN article in the *Scientific American* for last November reports that some 1600 diseases are now known to be caused by defects "in the content or the expression of the genetic information in DNA." The writer, Theodore Friedmann, observes that more than 25 per cent of the hospitalizations of children "are for illnesses with a major genetic component." Then, a little further on, he says that as the result of new techniques of biochemistry and cell biology, "genetic manipulative techniques are being developed through which man may acquire the ability to control aspects of his own evolution, to eliminate disease and even to improve his genetic makeup."

Mainly concerned with evaluating a method of prenatal diagnosis of genetic disease, this article attempts to compare the presumed advantages of this means of detecting hereditary ills with possible dangers to the future offspring. The discussion is inconclusive, since various uncertainties are involved, but what is not uncertain at all is the spread of the biological utopianism apparent in the initial remarks of this writer. A group of articles in *Time* for April 19, 1971, headed "Man into Superman," similarly reveals the extent of this enthusiasm. To herald the promise of the biological remodeling of Man, a *Time* writer quotes Robert Sinsheimer of the California Institute of Technology: "For the first time in all time, a living creature understands its origin and can undertake to design its future."

Since *Time's* lengthy survey of this subject is available in libraries we shall not attempt a review of the background of scientific discovery involved. Here we are interested in anticipations of the future. The *Time* writer says, for example, that "genetic surgery, or correction of man's inherited imperfections at the level of the genes themselves .

. . . may well be practiced before the end of this century." He explains:

When molecular biologists learn to map the exact location of specific genes in human DNA strands, determine the genetic code of each and then create synthetic genes in the test tube, they will have the ability to perform genetic surgery.

Some molecular biologists envisage using beams to slice through DNA molecules at desired points, burning out faulty genes. These then would be replaced by segments of DNA, tailored in the test tube to emulate a properly functioning gene and introduced into the body as artificial—and beneficial—viruses.

Another sort of genetic surgery is thought to be suggested by work done at Columbia to synthesize artificial viruses. The idea is that if this proves possible, "friendly" viruses might also be synthesized for use in curing diseases instead of causing them, since viruses may stimulate the production of the chemical products upon which health and life depend. The *Time* writer then points to further possibilities under consideration:

Prophylaxis is important, but man's molecular manipulations need hardly be confined to the prevention and cure of disease. His understanding of the mechanisms of life opens the door to genetic engineering and control of the very process of evolution. DNA can now be created in the laboratory. Soon, man will be able to create man—and even superman.

What are the molecular biologists thinking about doing in this direction? Well, they talk about life extension, slowing down the aging process. It has been suggested that man needs a larger head, to accommodate more brain cells, and there has been the proposal of an extra thumb and protruding eyes, to enhance manual skill and visual capacity. Another idea is for a two-compartment stomach (cows have four) in case food shortages compel us to eat cellulose to survive, and still another is for more self-

regenerating organs, so that the heart and the lungs will be able to repair themselves much as the liver does now.

Well, as the *Time* writer says, these proposals seem peculiarly uninspired. One might think that some of the geneticists would have said a little about the human need for friendliness and cooperation, which is surely of greater importance than having more brain cells, but these plans are being made by biologists, who are interested in attributes which can be related to the physiological endowment and in traits which are traceable to the physical carriers of heredity. While the noted British zoologist, Julian Huxley, in a paper on eugenics, has declared the need to raise the genetic level of "devotion and duty, and of the capacity to love," and proposed that geneticists should be concerned with increasing the number of saints and moral leaders, he did not give any directions as to how this might be accomplished in genetic terms. It has been suggested that because Mr. Huxley spoke as a eugenicist, it was less than candid of him to omit reference to the fact that geneticists know nothing about the origin of these higher qualities.

As Catherine Roberts observes in *The Scientific Conscience*:

Actually, such traits—the most significant of all for human evolution—may, for all we know, have no direct genetic basis at all. History records numerous instances of human beings who are remembered for their virtue and nobility of character but whose offspring (and/or parents) were either morally neutral or actually immoral and degenerate. As pointed out long ago by Socrates, that rare combination of extreme virtue, intelligence, and emotion, which is called human *arete* and which has ever distinguished the truly outstanding individual, does not appear to be inherited. Twentieth-century geneticists would undoubtedly attribute *arete* to some rare combination of genes, but in the complete absence of proof of such a contention, one can with equal justification regard it, at least in part, as non-genie. Therefore, while I agree wholeheartedly with Huxley in attaching so much importance to "outstanding, gifted individuals," and with his view that our future progress is partly dependent upon the psychosocial transmission of their

creative efforts, I do not agree with him that individuals are outstanding primarily because of their genie complement provided by natural selection. The most outstanding ones appear to have in addition some sort of heightened awareness of their immortal spark and their spiritual heritage, and this attribute seems to be non-inherited and psychosocially activated.

What are the characteristics of these two contrasting views of man? Judging from the *Scientific American* article and the *Time* survey of the work and opinions of the molecular biologists, the contentions of the latter are specific in origin, being based on numerous experiments, although their utopian speculations seem quite extravagant. Both these journalistic accounts of the plans for remodeling the human body are filled with elaborate diagrams and illustrations, making them seem highly "scientific" and grounded in fact. Dr. Roberts' view, which would be endorsed by a number of humanists, is on the other hand based upon general and even philosophical considerations. She raises questions which are never discussed within the context of biological science itself. The origin of the virtues is not a problem in the biological universe of discourse, and when biologists speak of improving man, they mean improving the human organism. As biologists, they think themselves entitled to ask: What else is there to man? We have specific evidence to support what we say and propose.

Dr. Roberts suggests that biological considerations alone do not really touch the essential nature of man, nor do they take any cognizance of essentially human problems. And if the molecular biologists say to Dr. Roberts, Show us your experiments, she can only reply that her evidence lies in her and others' efforts to think wisely and well, as human beings should, and to take into account the full spectrum of human reality and experience.

The difficulty of actual interchange between these two attitudes or outlooks should be obvious. An analogy used by Michael Polanyi in one of his books may apply here. He illustrated the

difference between the mechanistic and the holistic outlook by likening the mechanistic approach to an attempt to understand a great symphonic work by making an exhaustive study of the mechanical working of the brasses. A man may be able to give a minutely detailed account of the principle of tonal production in a trombone, yet remain in total ignorance of the qualities of the music it plays.

In what is only superficially a change of subject, we go to Erich Fromm's epoch-making paper, "Man Is Not a Thing," which appeared in the *Saturday Review* for March 16, 1957. The technical side of psychology, Fromm shows, is incompetent to speak of the nature of man except in one way:

Psychology can show us what man is *not*. It cannot tell us what man, each one of us, *is*. The soul of man, the unique core of each individual, can never be grasped and described adequately. It can be "known" only inasmuch as it is not misconceived. The legitimate aim of psychology, as far as ultimate knowledge is concerned, is the *negative*, the removal of distortions and illusions, *not the positive*, full, and complete knowledge of a human being.

There is, however, another path to knowing man's secret. This path is not that of thought, but of *love*. Love is an active penetration of the other person in which my desire to know is stilled by union. In the act of fusion I know you, I know myself, I know everybody—and I "know" nothing. I know in the only way in which knowledge of that which is alive is possible for man—by the experience of *union*, not by any knowledge our thought can give. The only way to full knowledge lies in the act of love; this act transcends thought, it transcends words.

This is indeed a far reach from the precise and factually defined language of science, and one easily sees why there is so little communication between the one kind of scientist, whom we call "mechanist" for easy classification, and the other kind of person, sometimes a scientist, who refuses to let the methodology of one level of experience close out awareness of other levels where a different sort of apprehension becomes necessary.

The inability of the humanist to apply the techniques of objectification and measurement to

what he regards as the essential qualities of human beings is commonly regarded as a limitation and a defect in the humanist argument. Those people, it is scornfully claimed, are so *vague!* As science progresses in establishing the rule of causality and the application of the deterministic principle, the humanists and vitalists, it is said, withdraw to some subtler stronghold of mystery. This charge may in some instances apply, since we hardly know how the two worlds of freedom and determinism meet and interrelate, and enthusiasts of human freedom may make over-simplifying mistakes in arguing their cause, just as the mechanists exaggerate through enormous omissions the strength of the argument against the reality of human choice.

Yet the question of whether the humanist is culpably vague is not so easily settled. The exactness of the physical sciences, for one thing, is at least partly the result of the nature of the phenomena which they examine. The objects of the sciences are measurable objects, and they are often manipulable. The nature of the field of study dictates the methods that must be used, or should. Before condemning humanists as vague, it would be both just and desirable to enter into the spirit of their inquiries, to read the best advocates carefully, and to discover, if possible, how they obtain such an enduring sense of reality for the innately human qualities they affirm and defend.

We should remember, meanwhile, that the precision of scientific findings is often much less than what is claimed, as both Whitehead and Polanyi have shown, and for the general reader a great deal of "science" is almost entirely a matter of hearsay. What, for example, does the average person know of the experiments of the molecular biologists? What *Time* tells him? Northrop Frye's idea that scientific doctrines become a part of popular culture only in the form of myth has direct application here.

Actually, the criticism most commonly directed against distinguished humanist thinkers

amounts to the charge that they make only very general objections to scientific theories, when they ought to be more specific, and offer evidence as the scientists do. Take for example a section in *Utopia and its Enemies* (Schocken paperback, \$2.95), by George Kateb, in which the author finds much fault with Joseph Wood Krutch's criticism of B. F. Skinner's behaviorist doctrines concerning the design of a utopian society. Mr. Kateb's strictures seem on the whole characteristic, although he also has fault to find with Skinner. He says:

In his essay, *The Measure of Man*, Joseph Wood Krutch gave voice to what must be widespread sentiment indeed: the feeling that there is something indecent or unclean about the whole enterprise of studying human nature with an end to employing the fruits of that study in the task of upbringing and education. It is dear that Krutch intends to defend human dignity by shielding humanity from the probings of scientific psychologists. What is not clear is precisely why Krutch thinks that human dignity is necessarily bound up with ignorance or uncertainty about the facts of human nature. Krutch fears, as all men must fear, the possibility of psychological knowledge coming into the hands of the wicked; but he does not rest satisfied with that fear. In good hands or bad, psychological knowledge, for Krutch, is a danger; is, in fact poisonous. . . . Krutch wishes to link dignity and mystery inseparably.

Since Mr. Kateb's book first came out in 1963, he does not refer to Skinner's latest volume, *Beyond Freedom and Dignity*, in which the behaviorist psychologist makes wholly evident the grounds of Krutch's feeling in respect to Skinner's sort of psychology. It seems clear enough that Krutch found it difficult to regard as "knowledge" an account of human behavior which leaves out both freedom and dignity, not only as unimportant, but nonexistent! Why shouldn't a man like Krutch regard such claims to knowledge as "poisonous"?

But even if the disciplines of mechanistic psychology do accumulate knowledge of a sort, their "imperialism" has a serious displacing effect on human thinking, driving out those attitudes and ideals on which all hope of human goodness,

striving, and transcendence must be based. It delegates the tasks of human development to "experts" who will take charge of our lives, or, in Skinnerian terms, of our pseudo-choices, because Mr. Skinner is firmly convinced that we have no freedom of choice—we only think we have it. And it is this displacing effect with respect to other aspects of human development which makes the biological utopianism of the molecular biologists so questionable a matter. To say nothing of the fact that this sort of "experimenting" with the stuff of human heredity may introduce irreversible tendencies which are not now even imagined.

William James, sometimes called the father of American psychology, practiced and taught what he called "physiological psychology." In the Introduction to the *Briefer Course*, published after his major work, *Principles of Psychology*, which came out in 1890, James proclaimed his intention to work his "materialist" hypothesis "for all it is worth," if only to prove its insufficiency. He would study the action of the brain in mechanical terms, he said, but added that even if the laws of brain-action are mechanical laws, "we do not in the least explain the *nature* of thought by affirming this dependency, and in that latter sense our proposition is not materialism." Later on he remarked that most psychologists "have no hesitation in denying that free-will exists," and speaking for himself he added that "we can hand the free-will controversy over to metaphysics." He continued, however, by saying:

When, then, we talk of "psychology as a natural science," we must not assume that that means a sort of psychology that stands at last on solid ground. It means just the reverse; it means a psychology particularly fragile, and into which the waters of metaphysical criticism leak at every joint, a psychology all of whose elementary assumptions and data must be reconsidered in wider connections and translated into other terms.

At present psychology is in the condition of physics before Galileo and the laws of motion, of chemistry before Lavoisier and the notion that mass is preserved in all reactions. The Galileo and Lavoisier

of psychology will be famous men indeed when they come, as come they some day surely will, or past successes are no index to the future. When they do come, the necessities of the case will make them metaphysical.

The James who wrote this Introduction to a text on physiological psychology, and advocated working the mechanistic hypothesis for all it was worth, was the same James who later wrote the essay on Human Immortality and made extensive forays into psychical research. One could say that he *meant* to pave the way for a metaphysical psychology of the future, and never closed his mind to this great possibility. Not so his successors. They were happy to change the mechanistic methodology from a working hypothesis into a dogma of scientific assumption, and so displaced all serious thought concerning the subjective side of human life and a study of, as independent realities, the human qualities of human beings. This narrow orthodoxy in psychology forced those who looked in other directions to assume the role of rebels and schismatics, so that there is today little or nothing in common between the humanistic and other schools of psychology except the name.

Let us return to the question of the "vagueness" of the humanists. It might be well to accept the challenge of the term without embarrassment or defensiveness. At the outset, vagueness may be a necessary condition of investigating the subjective side of reality. The conversion of feelings and intuitions into more precise knowledge may require years of discipline, even as the development of the sciences—especially those which have had their Galileos and Lavoisiers—has needed hundreds of years. And for the present we may find a fineness of thought in the musings of Lao tse which is not in the least dismayed by the indistinctness of the reality which the Chinese sage was attempting to intimate:

Tao in itself is vague, impalpable,—how impalpable, how vague! Yet within it there is Form. How vague, how impalpable! Yet within it there is Substance. How profound, how obscure! Yet within

it there is a Vital Principle. This principle is the Quintessence of Reality, and out of it comes Truth.

How shall we regard this statement? Well, Lao tse's book has been a veritable magnet to profound intellects for hundreds and thousands of years. Its content compels attention. Platonists have found in it wonderful similarities to the teachings of the great Athenian philosopher. Buddhists have very nearly adopted Lao tse as their own. The *Tao Te Ching* is continually translated into English and other Western tongues. No writer has made a more illuminating use of paradox than Lao tse. His little work is a classic, a jewel, of Humanism. How impalpable, how vague, yet the men who have made such expressions into the substance of their own thought are among the most careful thinkers the world has known. No one who has reflected hard and long concerning the thought of Lao tse, Buddha, Plato, Plotinus, Pico, and other, more recent thinkers who belong to the great tradition of Humanism will accuse these men of being "vague" in the sense of a defect of expression. The "vagueness" is of the sort that attaches to all matters which grow clear only through growth in the tools of awareness possessed by human beings.

REVIEW

INTRODUCTION TO CHINA

ONE Of the earliest translators into English of the philosophical and religious classics of India, Sir William Jones, whose rendition of the *Institutes of Manu* was first published in 1807, urged upon his readers the importance of knowing something of Hindu belief and custom, since there was reason to believe that trade with the Indian people would "add largely to the wealth of Britain." It seems hardly remarkable that, setting out with declared motives of this sort, British scholarship and civilization profited relatively little from this long adventure in imperialism and colonial enterprise.

Today interest in far-off countries seems animated mainly by political rather than commercial concern. One wonders how much "funding" there would be for centers devoted to study of the Far East, were it not for ideological anxieties and the desire of the military for materials useful in "psychological warfare."

Even the expression "international understanding" may be an anachronism before too long. It is becoming obvious that the nation-state has outlived its usefulness as a vehicle for social development, and is now the means of obsessing all the world with fears of its power to destroy. The idea of nationality now survives mainly through fear.

But meanwhile, we have fresh opportunities brought by the changing relationships of international affairs to learn about other peoples of the world. And surely the time has come to try to see these peoples as they see themselves, instead of in order to make decisions about them for economic or political reasons. One thinks for example of the literature which results when writers are inspired by this civilized and civilizing motive, as in the case, say, of Lafcadio Hearn's exquisite books on Japan, or John Collier's profound appreciations of the Indians of the Americas.

Now that relations between China and the United States are being resumed, little by little, there should be various ways to seek an understanding of the Chinese people, with only passing attention to politics. One might start with a brief essay by C. P. Fitzgerald, *The Chinese View of their Place in the World*, published in paperback by Oxford University Press in 1964. Prof. Fitzgerald is an Australian scholar who lived in China from 1923 to 1929, and has written both histories and biographical studies concerned with Chinese culture.

The Chinese, it seems, are so ancient a race and have been isolated from the rest of the world for so long that they think of themselves as the first and most highly developed civilized people. Western scholars once maintained that their culture and skills, such as the mode of writing, came from somewhere else, but this is no longer believed. "In their favored environment they developed a civilization which owed very little to contacts with any foreign people, and had no links with any people of a similar level of development." From even early neolithic times, "the ancient material culture of China shows only indigenous influences." So, Prof. Fitzgerald says:

Disturbingly, the Chinese, it would now appear, have always been in China; it is at least very probable that they developed the art of smelting metal themselves, as a consequence of advanced pottery techniques, and it is virtually certain that they devised the ideographic script from the practice of reading oracles from the shape of the cracks made by applying heat to bones and to tortoise shell. The Chinese view of their own origins, however unscientific in its traditional expression, seems to be more consonant with the evidence of archaeology than the theories of diffusion.

As is often remarked, ancient Chinese civilization was so strong and widespread that it was always able to absorb into itself any outside invaders who happened to be successful. And quite different from European civilization in this, Chinese culture maintained a continuously high level:

There was in China no "Dark Age." At no time did the literature of the past become scarce, books cease to be written, history pass unrecorded. Even in the alien-conquered north this was true. The Chinese soon taught the barbarians to read, they did not forget the art themselves. Language was not transformed so that the old classical language became "dead" except to a small educated minority. The Chinese language continued to be spoken, and written, in north and south alike; it was the foreign tongues which disappeared, leaving, it would seem, very few traces, even in personal names. There was thus a firm basis on which old traditions could be sustained and old practices revived.

While the Chinese had some contact with the Romans, through trade, and came to respect and admire them, the Roman empire was of short duration from the Chinese point of view, and of all foreign influences, the only one with a lasting effect on Chinese civilization was the contribution of Buddhism, which in the seventh century joined Taoism and Confucianism as one of the three "ways" of Chinese religion. India was thought of as the land where Buddha had dwelt, but this had happened in the past. By the time of the T'ang dynasty, no foreign country that China knew of amounted to anything important, since reports from Europe told mostly of the decline and fall of western nations. China, meanwhile, pursued an even course:

The knowledge of these far-off civilized countries and their troubles enhanced by contrast the splendour of the T'ang empire. It was far larger than any competitor, however distant. It was richer; its arts, sciences, and literature were more varied and developed. It was certainly better governed, with a degree of administrative efficiency which was not equalled anywhere else until the eighteenth century. Records of this administration, preserved in the dynastic history, stand to prove that until the empire was weakened by rebellious and military usurpations in its later years it was ruled by a well-trained, highly educated civil service, now recruited by public examinations. No other state evolved these techniques of modern government till more than 1,000 years later.

The experience of the T'ang thus powerfully reinforced the Chinese belief in their own superiority,

and in the relative—or absolute—barbarism of other peoples.

The first "modern" Europeans to visit China were Portuguese adventurers who risked their lives on the long voyage. They were quarrelsome and violent and were not admired by the Chinese. The missionaries who came a little later did not succeed at all in converting China to Christianity. The Christian and the Chinese outlooks, Fitzgerald says, were utterly different. The missionaries contended for revealed truth, in behalf of which they battled against infidelity and heresy and "false gods." The Chinese acknowledged no one revealed truth, and the goal of religion was for them not heaven but righteous behavior on earth. They rejected deism: "They saw the universe as governed by moral law, but to this force they specifically denied personality. The conception of the jealous God, the exclusive truth, was unknown to them." Another obstacle was that Christianity was something foreign, and this objection not even Buddhism had wholly overcome. Finally, "It was the very fact that the Chinese had no overriding religion, no one doctrine, that defeated the missionary enterprise."

So the years rolled by with nothing happening to persuade the Chinese that there was anything in European culture worth their attention. And when in 1793 the ambassador of George III requested an arrangement providing for permanent diplomatic and easier trade relations, the Chinese Emperor replied in a famous edict:

As to what you have requested in your message, O King, namely to be allowed to send one of your subjects to reside in the Celestial Empire to look after your Country's trade, this does not conform to the Empire's ceremonial system, and definitely cannot be done. . . . The Celestial Empire, ruling all within the four seas . . . does not value rare and precious things. . . . We have never valued ingenious articles, nor do we have the slightest need of your Country's manufactures.

This was the confirmed view of the Manchus throughout the eighteenth century, and it was not until fifty years later, with the Opium War, that

China was forced to submit to Western military power. Then China was weak and ill-governed, plagued by rebellions and famine, and made static by complacency. It took a century of humiliation for the Chinese to become wholly persuaded that in order to "save China" they must adopt as much of the Western ways as they needed to beat the West at its own game. So the Chinese set about getting a European education in technology, science, politics, and economics. They ignored Western art and literature as unimportant and unnecessary for their purposes. Western learning would be a tool for Chinese culture, but would not replace it.

The Bolshevik revolution made a deep and lasting impression on the Chinese. Russia had been China's worst enemy, and now, in the hands of the Communists, Russia was willing to treat with China as an equal. However, Fitzgerald believes that the break with Russia by the Chinese and the emphasis on Mao's additions to Marxism-Leninism is the present-day Chinese way of showing that even the European doctrine of revolution has been made Chinese by this modification and adoption, and that the fundamental conception the Chinese have of themselves has not changed.

There is of course a strong element of political interpretation in this reading of Chinese thinking, but it also goes a long way toward explaining the extraordinary pride of the Chinese, their unceasing efforts, and their resourceful self-reliance.

For a closer and warmly human touch with the people, we suggest a reading of *Forever China* by Robert Payne, which is a record of the author's experiences as a teacher of English literature in Chinese universities during World War II. First at Chungking, then Kunming, Payne shared the lot of Chinese teachers and students, ate their food, lived in their houses, and worked and hoped and dreamed with them. The story of Chinese students during the war helps the reader

to understand the miracle of the reconstruction of China in the years since.

COMMENTARY

PLATO'S ART

FOR Plato, the written word was a sorry substitute for oral interchange between two pursuers of the truth, for while in dialogue the course of speech could alter subtly in response to changes in mood and perception, alive to the inspirations of the moment, writing was fixed and rigid, and ruthless in its unbroken continuity. You could not question a text, any more than certain Sophists could be made to answer a question briefly. Make some small query of them, Socrates says in *Protagoras*, "and like a gong which booms out when you strike it and goes on until you lay a hand on it, so our orators at a tiny question spin out a regular Marathon of speech."

What then would Plato do, since he had reasons for wanting to write? He would himself make use of the poetic art, against which he had constructed such a strong case. He would oblige the form of the dialogue to reproduce, however inadequately, the quality of oral communication, yet would never pretend it was more than a mere *introduction* to those matters which could not be made captive to written expression. For this use of art, while only a second best in the pursuit of truth, would have its compensations in perhaps touching the minds of a great many readers. And by recognizing the limitations of the written form, Plato would be able to put it to the best possible use.

How does Plato warn his readers against their own true-believing tendencies in relation to writing? By his "playful" style, and what often seems his inconclusive endings. But it is a play which often reaches climaxes of serious intent, leading the reader across some high bridge of the imagination to the very vestibule of the temple of truth, even though there can be no attempt to cross the threshold, since this, in Plato's view, would amount to fraud. As Paul Friedlander says in his devoted work, *Plato: An Introduction* (Harper Torchbook):

Thus we are perhaps not entirely untrue to his spirit if we interpret, in a preliminary way, the meaning of his written work according to the model of the world of appearances, which, to be sure, is only a *copy* of the eternal forms but a copy of *eternal* forms, though afflicted with all the limitations of transitory existence, yet to the eye which has learned to see, pointing toward eternal being and toward what is beyond being.

And this, indeed, is Plato's idea of the right use of art; as, thousands of years later it was also Tolstoy's—to make it into an invitation to learning for the soul.

CHILDREN

. . . and Ourselves

A PLATONIC INSPIRATION

IN "Toward a Place for Study in a World of Instruction," Robert McClintock lays the philosophical as well as practical foundation for a great reform in education, and since it would apply to both the young and adults, we recommend it highly. The essay appears in the December 1971 issue of the *Teachers College Record*, published at Columbia University in New York. Mr. McClintock teaches at Teachers College and is author of *Man and His Circumstances: Ortega as Educator*, just published by Teachers College Press (reviewed in MANAS for March 15).

What is wrong with present-day education and what is the remedy? The question is presumptuously large, as would be any sort of answer, save at a clearly philosophical level. The trouble lies in a weak and ineffectual conception of man, which results in poor and ineffectual relations between human beings, especially in the crucial relationships between parent and child, teacher and pupil. We have a theory of respect for man, but it lacks substance and does not produce conviction. Hence it is continually violated in practice. Mr. McClintock's brief for study is really a brief for the innate resources and potentialities in human beings. It is for educational practice which really respects human beings by assuming them to be capable of forming their own minds, creating their own knowledge, generating their own understanding.

He contrasts this process, which he names *study*, with "instruction," in which the assumption is that students must be taught what they need to know by a ready-made curriculum. His argument for the importance of study and the comparative unimportance of "teaching" is presented in a historical context. As you read about what Plato, Montaigne, and Goethe thought about these matters, the conviction grows that McClintock is

right. The business of the teacher is to provide the tools for study, not its conclusions. This sort of teaching shows confidence in the mature individual latent within the unschooled learner. The *progress* that is sought is in him, not in his "knowledge" of the times. That knowledge will change—it is so obviously imperfect that we know it ought to change so it is the coping capacity in individuals that needs development, not a body of knowledge, nor is education the transfer of that knowledge into the heads of the students.

This is often said, but much of the time it is not really believed; so, slowly but surely, across the centuries, instruction has replaced study as the significant element in education. With instruction as the mode, and with all that vast supply of information out there to be injected into the student, education was *bound* to fail. The thing is impossible. An educated man is not a reservoir of information; he is a man with a mind which functions like an organism. The educated man has put together the tools for his thinking, little by little, more or less deliberately, and while he may be helped to do this at the beginning, he must more and more take charge of the process himself or he is not educated and never will be. An educated man, in this sense, is a man in control of his mind, in some sense in control of his life. Gaining this control is through what McClintock calls study. As he says:

In this self-formation each man appropriated ideas and skills, tastes and beliefs from the world around him, doing so with a certain selectivity, even on the part of the most humble: this selectivity was the great conundrum to be understood. Did the teacher make the choices that guide the learner? Sometimes, perhaps; but not always, and perhaps not usually: instead there seemed to be an inward, almost inborn power of judgment in every man—as it directed the man would attend. To those who thus recognized each person's autonomy of judgment, education could only incidentally be a process of teaching and learning; more essentially, it had to be a zig-zag process of trial and error, or studious, self-directed effort by which an inchoate, infantile power of judgment slowly gave itself form, character,

perhaps even a transcendent purpose. This effort was study in its most general sense.

Where did this view of education begin in Western history? "Socrates," Mr. McQuintock says, "was the first educator of those whose work we know, to have based his practice in the primacy of study, and Plato was the first theorist to have abstracted from that practice a complete theory of education through study." Plato was very suspicious of words, yet he used them, since he could do little else. He was a consummate artist with words, turning them, so to speak, against their own deceptiveness. One may use words to show the need to get behind them, to see how they are not enough. The student must make the living realities hidden by words rise up in his own mind, and this will be his own truth. The words are provocatives, not the truth. The work has to be done, but there is no one-to-one relation between that work and the discovery sought. What were Plato's most important convictions, on which his conception of study was based?

First, Socrates of historic influence the hero of the early dialogues, depicted himself explicitly as the spiritual midwife, the teacher who could not teach but who could help another give birth to his soul. Plato immortalized this Socrates as the Delphic martyr, the inspiring questioner who provoked others to know that they did not know and thus to join the thoughtful search for self. Second, the doctrine of recollection asserted that words could teach only more words, that all comprehension of things, be they corporeal or intelligible, derived not from words but from prior experience with the things and from inward reflection about them, this doctrine was an early, profound, yet unsatisfactory, effort to make sense of the unsolved mystery of creative thinking, thinking by which men really learn.

Third, the fervid god, Eros, denoted the expectant, fecund force that stimulates man's craving urge, drawing men towards all forms of perfection; thus ardent attraction and vaulting aspiration were unconditioned, they existed in the eager eyes of the beholder, this Platonic eroticism, this insatiable, polymorphous teleology, has not been bettered as an explanation of the student's essential power, his selective attention. Fourth, the theory of forms presented a reasoned idea of transcendent perfection,

its metaphysical fruits and difficulties have been great, but its pedagogical implications were clear as they took place in diverse systems: superficial opinion and commonplace discourse were estranged from reality and hence neither could teach; rather men learned from the ideas, from the logos, principle, reason, form, law—natural or divine—for in searching incessantly for the stable idea behind every appearance men would find form in the flux around and within them. Men in search of wisdom would study form in life, form in their lives, converting the chaos into a cosmos; all else was either preparation or slack evasion.

What these convictions implied for educational doctrine Plato best summed up in his allegory of the cave. Vital truths, he stipulated, could not be taught; they could be learned only through the pains of uncertain, unconditioned, open study, for which every man has the capacity but not necessarily the will. "We must conclude that education is not what it is said to be by some, who profess to put knowledge into a soul which does not possess it, as if they could put sight into blind eyes. On the contrary, our own account signifies that the soul of every man does possess the power of learning the truth and the organ to see it with; and that, just as one might have to turn the whole body round in order that the eye should see light instead of darkness, so the entire soul must be turned away from this changing world, until its eye can bear to contemplate reality and that supreme splendour which we have called the Good." Teachers, Plato added, could not fruitfully instruct those who would not teach themselves, who would respond only passively to the most convenient appearance; the most teachers could do was to convert inert souls to active study. This theory of teaching has sunk deep into our philosophical heritage, but it has not fared well in practice.

The essay traces the course of these conceptions of education through history until modern times, showing how, from various causes, the idea of study has been largely replaced by stress on instruction. One negative influence was the Lockean psychology, holding that the human individual brings nothing with him, opening the way to thinking of education as mostly a conditioning process which would fill the minds of the young with the correct ideas of their time. Education also grew into the tool of the managers of the mass societies—a means of control and

indoctrination. This view of education is of course reinforced by compulsory schooling, which has the effect of making students subservient to their teachers or instructors.

It is a mistake, Mr. McClintock shows, to offer wholesale judgments about "dropouts" from the existing system. Men of original mind and great ability do not fit into systems where instruction is the rule; they need and get for themselves opportunities for study, and so come to maturity on their own, which is the only way in which it can be reached.

The latter part of this paper is devoted to discussion of what might be done in elementary schools and high schools to restore the opportunities for self-guided study. The writer points to the similarities between his criticisms of the educational system and those of Ivan Illich, suggesting that there are ways of accomplishing reform which would make abolishing the schools unnecessary. It would certainly be a good idea to read this essay along with Illich's book, *Deschooling Society*, and another accompanying text might be the first chapter of Ortega's *Some Lessons in Metaphysics*, which is closely related in content to the issues considered by Mr. McClintock.

FRONTIERS Baconian Harvest

RICHARD WEAVER'S declaration that "the final degradation of the Baconian philosophy is that knowledge becomes power in the service of appetite" now seems completely verified. In a consideration of what amounts to the Baconian doctrine in the form of present-day popular belief, René Dubos says in the *Spring American Scholar*:

We have been brainwashed into the belief that progress means doing everything we know how to do, such as pouring an endless variety of useless additives into our foods, putting ever larger numbers of more powerful automobiles on the road, building higher and higher skyscrapers serviced by faster and faster elevators, consuming more and more electric energy to achieve a more artificial life. These accomplishments may have been entertaining in the past but they are now boring and furthermore they will inevitably generate dangerous technological and social problems.

Bacon's unhesitating identification of wisdom with the knowledge that gives man power to manipulate his environment became, as Robert Cushman observes in *Therapeia*, a prime assumption of modern man, and it is obviously the assumption on which American technology has based its claims of high achievement. Truth, for Bacon, was utility of a practical sort, for with this sort of knowledge one can do "anything." Dr. Dubos shows how such knowledge works out in practice:

In a recent issue of the *Bulletin of the Atomic Sciences*, a professor of nuclear engineering at Massachusetts Institute of Technology advocates the rapid development of fast breeder reactors because, in his words, "An abundant supply of electricity . . . is essential to civilized society." The obvious truth, of course, is that there have been many great civilizations before the electric era. Furthermore, even though the consumption of electric power per capita in the United States was very much smaller in 1940 than it is now, there is no evidence that the present American society is more civilized or happier than it was then. Nor are European people less civilized than American people because they consume only half as much electricity per capita. What the

M.I.T. professor really meant is that an ever-increasing supply of electricity is essential for a kind of civilized society that measures civilization by power and therefore by the amount of electricity it consumes—a circuitous argument.

How can we be persuaded to stop doing more of "everything we know how to do"? Well, there are two ways to stop. One would be by thinking about the meaning and ends of our lives, and setting sensible limits to the exploitation of natural resources, changing our relationship with nature to one of moderate use and collaboration. The other, which seems more likely to come about, is to wait for the collapse of the system based upon material excess as the meaning of progress. Dr. Dubos has a curious example from medieval history of how *this* works out in practice:

One of the most common failures of civilizations is to overdevelop, up to the point of absurdity, the skills and characteristics that accounted for their initial successes and for their subsequent power. The architects of the thirteenth century, for example, had such confidence in their skills that they built higher and higher cathedrals, with more and more flamboyant ogives, as if they had become intoxicated with their technical proficiency. In Notre Dame de Paris the vault of the nave was built to a height of 110 feet in 1163 this record was broken by Chartres in 1194 with 114 feet, then by Rheims in 1213 with 125 feet, then by Amiens in 1221 with 140 feet. When the citizens of Beauvais tried to outdo Amiens in 1227 by raising the vault of their own cathedral to 153 feet, its choir collapsed. The Beauvais choir was soon rebuilt but once more it fell. Finally, it was brought to a height of 154 feet on a third trial. The cathedral was completed in 1552 with a lantern tower raised over the transept cross to a height of five hundred feet. But the tower collapsed in 1573, bringing down with it large sections of the transept and the choir. This disaster ended the great period of Gothic architecture.

This is an inoffensive illustration of what may be a law of human nature when unguided by a reflective sense of limit. The facts of the collapse which now threatens American civilization are by no means so innocent. In the *Nation* for March 20, Seymour Melman, who is professor of

industrial engineering at Columbia University in New York, writes on the current ills of American technology under the title, "The Big Machine Breaks Down." Prof. Melman goes from familiar facts, like the power failures in the East during the summer of 1969, to less publicized symptoms of decline and degeneration. First there is the weakening quality of American products—illustrated by safety defects in many of the automobiles on the road, acknowledged tacitly by the reduction of warranty protection by one large manufacturer. Why is the quality of American products declining?

Essentially, Prof. Melman believes, it has been caused by the braindrain of the most competent engineers to research in military technology. It is now quite difficult, for example, for railroads to buy good passenger cars. Inspection of one delivery of ninety-four cars revealed defects in every one of them! The U.S. is falling behind in shipbuilding—now ranking twelfth among nations in the number of merchant ships produced a year. We specialize in nuclear submarines, these days. The American fishing fleet, Melman says, looks like a museum collection.

Housing is poor and neglected by research. Much could be done with mass-produced components assembled at the sites, cutting the cost of apartment dwellings in half, but "there is no research activity in this industry," says Melman, of the kind that is needed.

Automotive research seems mainly directed at maintaining current practice for as long as possible. The manufacturers long delayed installing anti-pollution devices, and they discourage talk of electric vehicles, although such cars were a common sight on the streets fifty years ago. American machine tools are largely dated, and imports of civilian goods increase in volume every year. The Gross National Product keeps growing, but too largely, Prof. Melman suggests, because of the class of products he

terms "parasitic growth," such as military industry and research.

It is true enough that Dr. Dubos and Prof. Melman are not writing about the same thing, but are rather examining different facets of a large and complex field of phenomena. Dr. Dubos looks for relief to a change in attitude toward "things," especially in the young, while Dr. Melman hopes for a withdrawal of American energies from the warmaking technology. These two conceptions of change for the better seem closely allied.