VOLUME II, NO. 15
APRIL 13, 1949

GREAT REFORMERS: JOSEPH MAZZINI

WHEN Joseph Mazzini was a student in the University of Genoa, early in the nineteenth century, it was illegal to wear a mustache. All the Italian city states were in the grip of reaction which followed the defeat of Napoleon, and the mustache was taken as the mark of a revolutionary mind. The student who dared to grow one was forcibly escorted to a barber shop between two carabineers. It was an epoch of obvious social evils, and the man of the present age, looking back upon Mazzini's career, is likely to feel a kind of philosophical "envy" for the ideological simplicity of the great issues which confronted him. There were the ideals of republicanism and democracy, and set against them the lingering power of feudal absolutism. While obstacles might bar the way, and the lethargy of the masses delay the cause of freedom, these things could neither obscure nor confuse the objectives of patriots. Rather, the difficulties encountered by the revolutionists only showed them more clearly what they must do.

But why, among the numerous reformers and revolutionists of nineteenth-century Europe, select Mazzini? Because Mazzini, of them all, was the least complacent about the "success" to which the revolutionary movement attained. He was a man in whom political compromises found only an uneasy and temporary resting place—a man whose social conceptions so far outran the "practical" objectives of his contemporaries that he became, instead of the victorious leader of nineteenth-century revolution, the teacher and inspirer of libertarianism in the twentieth, and possibly the twenty-first century. The Young India Movement of the recent past was named after Mazzini's Young Italy Movement.

Another reason for studying Mazzini is that he seems to have understood, as no other, the limiting weaknesses of the revolutions of the eighteenth century and the moral needs of his own time. His discussion of the historic meaning of the French Revolution is largely an analysis of the teaching of Jean Jacques Rousseau and of the misconceptions it fathered upon later generations. Speaking of Rousseau's idea of Popular Sovereignty, Mazzini called it—

> A true principle if considered as the best method of interpreting a supreme moral law which a nation has accepted as its guide, which is solemnly declared in its contract and transmitted by national education; but a false and anarchical principle if proclaimed in the name of force, or in the name of a convention, and abandoned to the caprice of majorities, uneducated, and corrupted by a false conception of life.

Mazzini has been named the prophet of Italian freedom. Today, a century after the peak of his career, he seems instead the prophet of the social and moral disasters so brilliantly chronicled by Ortega y Gasset in his *Revolt of the Masses.* In what is perhaps his greatest essay—"Faith and the Future" (1835)—Mazzini said:

> The word democracy, although it expresses energetically and with historical precision the secret of the ancient world, is—like all the political phrases of antiquity. below the conception of the future Epoch which we republicans are bound to initiate. The expression *Social Government* would be preferable as indicative of the idea of association, which is the life of the Epoch. The word democracy was inspired by an ideal of rebellion, sacred at the time, but still rebellion. Now every such idea is imperfect, and inferior to the idea of unity which will be the dogma of the future. Democracy is suggestive of struggle; it is the cry of Spartacus, the expression and manifestation of a people in its first uprising. Government—the social institution—represents a people triumphant; a people that constitutes itself.

There are, after all, only two kinds of unity for societies of human beings—the unity imposed by force from without, and the unity realized consciously and voluntarily from within. Mazzini believed that freedom is the fruit of the true organic unity of the social community. He believed it in theory and he believed it in practice. When, after the Revolution of 1848, Mazzini became the leader in

shaping the policies of the short-lived Roman Republic, he at once applied to practical government the principles in which he believed. As Bolton King relates in his biography of Mazzini (Everyman):

> At a time when national danger might have excused severe precautions, the press was hardly interfered with; there were few arrests, fewer penalties, for political offenses; conspirators, with barely an exception, were left in contemptuous tolerance, or merely warned not to let the people know of their intrigues. It was this very leniency to the men who were plotting the Republic's downfall that led to the few outrages that stained its name. The civil service and police, left full of enemies and lukewarm friends, lacked vigour to repress the disorderly elements; and here and there a fanatic or a criminal took advantage of the murmurings at Mazzini's tolerance to assassinate a Papalist. But save in a few provincial towns, where political murder was endemic, and for a few isolated outrages at Rome, there was absolute security alike for friend and foe. Mazzini's mild authority stands out in luminous contrast with the Papal terrorism that scourged the unhappy land before and after.

Himself one of the papacy's most insistent critics, during this brief interlude of power Mazzini meticulously observed the principle of religious freedom. He protected the priests from the rage of the population and attempted to improve the financial situation of the poorer clergy. Instead of being an anti-clerical influence, Mazzini inspired and uplifted the people of Rome with his own deeply religious faith. It was the treachery of Louis Napoleon, acting through his agent, Ferdinand de Lesseps, that brought an end to the Roman Republic, and not any inner weakness of the government formed by the Italian patriots. For such betrayals of the cause of freedom, France met retribution at Sedan, and de Lesseps, years later, in the public disgrace connected with the Panama Canal.

Born in 1805, in Genoa, of philanthropic parents with libertarian convictions, Mazzini's early youth was nurtured by four influences which foreshadowed his later career. His mind, he explained, was turned to democratic thinking, first, by the equal courtesy of his parents to every rank of life; second, by talk at home of the French republican wars; third, by his reading of some old Girondist papers which his father kept hidden from prying police inspectors behind his medical books; and fourth, and probably most important of all, by his studies in Greek and Roman history. A boyhood companion of Mazzini wrote that this history of the ancient world—"the only thing taught us with any care at school"—"was little else than a constant libel upon monarchy and a panegyric upon the democratic form of government." From Cato and other ancient spokesmen for free institutions, Mazzini obtained the foundation of his political education.

Mazzini's love of freedom showed itself as soon as he began to think for himself, which was when he began to think at all. He refused confession to a priest as soon as he understood the meaning of the act, and would not attend any compulsory religious observances. His moral qualities at once made him a leader at school. His position among his fellows, Bolton King tells us, grew from "the loyal, justice-loving nature that made him champion of every victim of undergraduate or professorial spite, the purity of thought, that checked each loose or coarse word from those about him."

He began his revolutionary activities as a writer, but the publications he started were suppressed by the government for their radical tendencies. Drawn naturally to literary criticism—his essays on Goethe and Byron are regarded as classics—Mazzini set this interest aside for the ardors of inspiring an Italian revolution. He joined the Carbonari and within its ranks formed the nucleus of another more militant revolutionary organization called Young Italy, with a free and united republican Italian state for its ideal. Mazzini became an active conspirator and propagandist of revolt. This young man who, as a student, had been forced to give up the idea of becoming a physician because he fainted away at the sight of blood, steeled himself to the task of participating in armed rebellion. In enforced exile in France, he flooded Italy with tracts on republican freedom, offering his countrymen "a national religion." The Young Italy movement, through which he obtained distribution of his literature, was more than a political party—it was "a creed and apostolate," teaching that victory would come "by

reverence for principles, reverence for the just and true, by sacrifice and constancy in sacrifice. "

Mazzini's first revolutionary project, launched from Switzerland, was a raid on Savoy (now part of France), for which he prepared by propaganda and the organization of guerilla fighting forces. To be coordinated with this raid of 1834, he planned an uprising in the Piedmontese army. Both plans were abortive failures. The army plot, discovered by the government, led to the suicide of Mazzini's closest friend, who chose this method of avoiding the alternatives of execution or betrayal of his comrades. Exhausted by the strain of his long preparations and by bitter disappointments, Mazzini lost consciousness during the raid. He suffered from profound depression. His plans had come to nothing; precious lives had been lost; and it seemed that his life held nothing but remorse for his revolutionary follies. He was haunted by ideas of suicide, and, alone in Switzerland, he heard the voice of his dead friend calling him in the howling wind.

This was Mazzini's Gethsemane. Its end is described by Bolton King: "Characteristically, mental health returned in the shape of a philosophy of life. It was his theory of Duty, explained till it penetrated every cranny of the individual soul. "

> "When a man, " he writes to a friend, "has once said to himself in all seriousness of thought and feeling, I believe in liberty and country and humanity, he is bound to fight for liberty and country and humanity, fight long as life lasts, fight always, fight with every weapon, face all from death to ridicule, face hatred and contempt, work on because it is his duty and for no other reason.

These ideas were incorporated into Mazzini's revolutionary philosophy, and they became the practice of his life, of which there remained nearly forty years of struggle. Through these years, Mazzini developed into Europe's greatest political idealist and social philosopher. He saw the moral weakness of previous revolutions and fought with his best weapons—ideas—to give moral reinforcement to the revolutions of the future. Fortunately, he left clear statements of his convictions. The following passages are from the Camelot (London) edition of his *Essays:*

> . . . Rousseau . . . had no conception of the collective life of humanity, of its tradition, of the law of progress appointed for the generations, of a common end towards which we ought to strive, of association that can alone attain it step by step. Starting from the philosophy of the *ego* and of individual liberty, he robbed that principle of fruit by basing it . . . on a simple convention, avowed or understood. All Rousseau's teaching proceeds from the assertion "that social right is not derived from nature, but based upon conventions."
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> That first statement, the key of the whole system, is by now proven to be false, and because false, fatal to the development of the principle of popular sovereignty. It is not by the force of conventions or of aught else, but by a necessity of our nature, that societies are founded and grow. . . .
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> Right is the faith of the individual. Duty is the common collective faith. Right can but organize resistance; it may destroy, it cannot found. Duty builds up, associates, and unites; it is derived from a general law, whereas Right is derived only from human will. There is nothing therefore to forbid a struggle against Right: any individual may rebel against any right in another which is injurious to him; and the sole judge left between the adversaries is Force; and such, in fact, has frequently been the answer which societies based upon right have given their opponents. . . .
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> Is this all we seek? Ought man, gifted with progressive activity, to remain quiescent like an emancipated slave, satisfied with his solitary liberty? . . . Because man, consecrated by the power of thought, king of the earth, has burst the bonds of a worn-out religious form that imprisoned and restrained his activity and independence, are we to have no new bond of universal fraternity? no religion? no recognized and accepted conception of a general and providential law?

Such were the great questions which Mazzini—vainly—asked the nineteenth century. Today, his forebodings seem like descriptions of the world in which we live. His own answer was given in his deeply religious, but entirely free, moral philosophy—a philosophy which might have saved Italy and all Europe from the horrors of the present, had Mazzini been more than a prophet crying in the wilderness; had he found a soil ready to receive his seeds of liberty.

Letter from South Africa

SINCE the Nationalist Government under the leadership of Dr. Malan came to power last May, South Africa has been in a state of political turmoil, and the provincial elections which have just taken place (March, 1949) have consequently attracted far greater interest than would normally have been the case.

Provincial elections are not usually made a field for acute political strife. The Councils for which the elections are held only administer and control roads, hospitalization and education, the last of which alone is a subject of political controversy. But both the Nationalists under Dr. Malan, and the Opposition under General Smuts, agreed to regard the provincial elections as an indication of the confidence of the country in the policies of the present government. It is perhaps unfortunate that the results provide no clear-cut answer. Compared to the general elections last May, the Nationalists have lost ground, but they still hold the majority of seats, although the United Party actually polled the most votes, and hold the majority of seats in both the Cape Province and Natal.

Dr. Malan is reported to have stated that he regards the election results as a mandate to proceed with the constitutional changes which his party desire to make. These changes are directed towards the disfranchisement of the coloured population in the Cape Province, and the removal of the representation of three members which the Africans have in the House of Assembly. But whatever Dr. Malan may say, without the votes of the Afrikaaner party under Mr. Havenga he will be powerless to change the constitution.

In the meantime an extreme section of the Nationalist party have shown something of their hand through a pamphlet setting forth their educational policy. This has been compiled by the Instituut vir Christelik-nasionale Onderwys (Institute for Christian-national Education), apparently one of the organs of the Federation of Afrikaans Cultural Associations known as the F.A.K. It is no casual statement of policy, but is presented as the work of a group that has studied the matter for the past ten years. As it was accepted by the congress of the Transvaal Nationalist Party last year, it is a document to be taken seriously, and which the new Transvaal Provincial Council may well take steps to implement. The document deals with the educational policy for the two main white races and demands that they be educated separately. Education is demanded in the mother-tongue only, and so would seek to drive a wedge between the two races and any chances at their arriving at a better understanding of each other. The aim of this segregation is to be in order that the children of Dutch South African nationality may be educated on a Christian-national basis according to the beliefs and policies of the Dutch Reformed Churches. The pamphlet is raising considerable alarm among many Afrikaaners as well as among the English-speaking sections of the community as it would seem to strike at the roots of democratic freedom and to be aimed towards the eventual control of the country by a narrowly fundamentalist religious group.

The elections have tended to push out of the public eye the government inquiry which is being made into the cause of the recent racial riots in Durban. Only the drafting of considerable police reinforcements from other parts of the Union prevented further outbreaks of violence between Africans and Indians. The isolated incidents which have occurred, despite the precautions taken, show that the seething racial bitterness continues.

It is unfortunate that several influential bodies representing both Indians and Africans have withdrawn from giving evidence, owing to the commission's refusal to allow cross-questioning. Had the refusal not been made, the proceedings would have dragged on interminably, and it is desirable that the findings of the Inquiry should be made public as soon as possible.

SOUTH AFRICAN CORRESPONDENT

REVIEW

THE WEB

THERE are stories about people and what is unique about them, and stories about the things all people have in common—their hopes, fears, successes and failures. There are stories about situations and circumstances, and places and things. *The Uninvited,* for example, for all its lurking spectres, seems to be mostly a story about a house—or about a house and what could not be seen, except under special circumstances, about the house.

J. B. Priestley writes stories about the moral problems of human beings. He has no "unforgettable" characters. His manipulation of time sequences and his borrowings from Tibetan metaphysics fade from the mind, but the reaching after a light on the horizon—the spirit of the private will to do justice and good—this, one remembers. There is a deep satisfaction in reading Priestley, from *The Good Companions* on. A kind of generosity of heart pervades his work, inducing a mood that the reader may carry around with him forever after, recalling it with pleasure, now and then. *They Came to a City* has this quality, and now, *The Inspector Calls,* which is printed in full in *Theatre Arts* for April.

One question seems to engage Mr. Priestley above. all others: What will people do when they are helped to see themselves as they are, stripped of the defenses of status, conceit, and hypocrisy? He arranges his plays to produce an answer to this question. His art is in the arrangement and in his common touch with the familiar ingredients of human nature. He "catches" his characters in their personal weaknesses and puts them to the test. Sometimes they pass, sometimes they fail—whatever they do, the test is the essence of the drama.

A clever American critic recently referred to *They Came to a City* as a "watered-down Shavian satire" and a "depressing picture of a well-adjusted socialist utopia." We disagree. This play was only vaguely utopian. The real question was whether or not the people Mr. Priestley assembled at the portal were fit to live in a utopia, and he showed that some of them were not, and why. It had to do with what they thought about themselves and what they were, or were not, willing to give up, and what they wanted of life. Priestley hardly bothered to describe the utopia at all. What was the use, when utopia is first a state of mind, then a pattern of human relationships, and only finally a set of circumstances?

Priestley's circumstances are always secondary and relatively unimportant. In *We Have Been Here Before,* he used the metaphysical circumstances of reincarnation to illuminate the moral problem. The scheme of a spiral-like progress for human beings, from life to life, served to dramatize our bondage to the past. A dream brings to one of the characters a knowledge of what happened to the others in a previous existence, and so the issue is joined. Will they repeat their old tendencies, their past mistakes, or will they start anew?

In *Johnson Over Jordan,* the circumstances are different, but the problem is much the same. "Jordan" is the twilight zone into which the soul passes after death. Here, Mr. Priestley seems to be drawing on the recondite researches of Dr. Evans-Wentz, constructing his play according to the Tibetan theory of the after-death states described in the *Bardo Thödol,* or, as rendered into English, *The Tibetan Book of the Dead.* Other writers, mining the religious and philosophical curiosities of the Orient, try to hold the reader's interest with bizarre metaphysical furniture and drapes. Priestley, however, employs these mechanisms only to throw into relief the moral condition of man. Why Eastern metaphysics lends itself so well to this objective is perhaps a question of some importance, but here we are concerned with the artist's purpose, which is not to exploit a metaphysical scheme, but to dramatize the contests of the human soul, and he welcomes any materials that serve his purpose.

Curiously, while Priestley's plays have enjoyed great success in England, American audiences have not responded in the same way. One reviewer maintains that his characters are so essentially British that people in the United States do not understand

them. This, as an explanation, seems hardly sufficient, but we have no better one to offer. Perhaps the author's obvious preoccupation with morals is found uninteresting, or maybe the plays are not very good, after all, as plays. American critics, at least, have not been kind to Mr. Priestley.

But *An Inspector Calls*, which was presented on Broadway in 1947 with Thomas Mitchell in the role of the Inspector, is good, we think, from any point of view. The theme is the web of personal moral responsibility in which every human being lives, now pulling this strand, now breaking that one; now making tangles of his own affairs and the lives of others, and usually knowing nothing of what he has done. The action of the play never moves from the hearth of a well-to-do English family of the middle class. Each member—the father, the daughter, the mother, the son, and the daughter's upper class suitor—is made to stand, friendless and alone, before the tragedy he has helped to create, and to confess his part in it. The play is filled with expressions like, "I did not know," and "I never thought. . . ."

The time is about 1912, with occasional portents of the first world war in the background. Arthur Birling, a prospering manufacturer, his wife, Sybil, and his daughter and son, Sheila and Eric, are gathered after dinner with Gerald Croft, whose engagement to Sheila is being announced. Early in the evening this happy family is invaded by Inspector Goole, who brings news of the suicide of a girl once employed—in the Birling factory. One by one, the members of the family are linked with the girl's sense of hopelessness and final wish to die. Croft, too, had a part in her discouragement. The Inspector "convicts" them all, by their own confession, then leaves them in the throes of a moral convulsion. Birling, hoping to be knighted, worries about the publicity. His wife nurses a furious hatred for the Inspector for having deflated her arrogant denials of any responsibility for the death of the girl. Sheila and Eric are horrified at their own unconscious cruelty, coming to accept the light brought by the Inspector. But Croft, who had done "what any man would do," found a way of proving that the Inspector was a "fraud"—a fraud, that is, from the viewpoint of the elder Birlings and his own. Goole was unknown to the local police. But Eric and Sheila found Goole more of an "inspector" than any policeman, for he had made them inspect themselves. To their parents, what mattered was what other people knew about them; to Sheila and Eric, what mattered was what they knew about themselves.

Priestley makes three major dramatic approaches to the situation. There is the one we have just described. The second involves the identity of the girl, who changed her name several times during her downward course. After Birling fired her from the factory for "speaking up" during a strike, she seems to have met, successively, all the other members of the family and Croft. The Inspector makes it appear that she is always the same girl, in his reconstruction of the events which led to the suicide. But in the last act, when Goole's visit begins to be regarded as an imposture, it occurs to Croft that there might have been not one but several "girls." Goole had shown each one of them a photograph, but always privately, and perhaps they each saw different pictures. This problem is not quite settled. Finally, the suicide itself turns into a kind of myth, first real, then unreal, and then real again.

So "what was" is set against "what might have been," and the Birlings and Croft reveal themselves anew.

Will there ever be a judgment Day, and if it comes, for what will we be held accountable? Must we face the consequences of our half-conscious social hypocrisy as well as what flows from our deliberate wrongs? How are these totals summed? Mr. Priestley's Inspector makes the reader want to know.

COMMENTARY
WHAT IS "LIBERAL"?

DURING the latter half of the nineteenth century, as Herbert Spencer long ago pointed out, the meaning of "liberalism" was transformed by the humanitarian enthusiasm of its advocates. Initially, as a doctrine of economic philosophy, Liberalism meant the removal of unjust restrictions and the abolition of special class privileges inherited from the Middle Ages. Liberalism was therefore a movement for freedom and equality, and in time came to be regarded simply as a movement for human good. Spencer is at pains to show that, as a result, any proposal forwarded in the name of the general good found little difficulty in becoming known as a "liberal" measure, regardless of its character. He lists British legislation year by year during the nineteenth century to illustrate the change in function of so-called "liberal" legislation from the removal of restrictions to their renewed. imposition.

This change, together with his analysis of the effects of the new restrictive measures, is of course presented by Spencer as an argument for *laissez fare* economics, which is enough to invalidate all his contentions for those who call themselves "liberal," today. And yet, without approving the "rugged individualism" advocated by Spencer, it is possible to recognize the force in his criticisms—or the force in the comparable declaration, made recently by the organ of British Conservatism, *Time and Tide,* "that the mechanism for total State benevolence is inextricably interwoven with the mechanism for State despotism."

There is only one antidote to the political cynicism of the times, and that is to make a beginning at taking the arguments of everyone at face value, without impugning motives. This policy need not be followed naively, but as a matter of principle, showing full expectation of integrity in those who appeal to the people on behalf of legislative programs. To refuse trust is to subvert the democratic process, and to invite, as a final solution, the arbitrament of force.

The same principle might well be applied in international affairs. An act of trust, freely done, has often been the means of reclaiming the character of individuals. It might work the same miracle in respect to nations, and while the process would doubtless take a longer time to accomplish its end, the reward would be correspondingly great.

CHILDREN
. . . and Ourselves

LET us warn our children against Education, if we wish them to learn to think. As a culture, we have come a long way in a dubious direction from the basic approach to the unfoldment of the human mind suggested by Pythagoras, Socrates and Plato—that what we most need to concern ourselves about is *the kind of world we wish to have* rather than the intricacies of the world we presently live in. The word education, by derivation, suggests processes by which either a child or a man is encouraged to draw latent capacities for wisdom out of himself. These capacities have meaning and prove themselves only when put to use in creating improvements in existing conditions. Nothing is of the quality of wisdom unless it moves man toward improvement, and nothing moves him toward improvement unless he is more concerned with where he wants to go than with where he presently is.

Plato did not describe the political and economic structure of his Grecian society; he utilized the whole of the Republic to experiment with all sorts of things, good and bad, which *might be,* showing his faith that "what is" is never more than the shell of man's life, while the heart of his living resides in his imagination. Plato's *Republic* is an educational classic because it drives from men's minds the notion that familiarity with their present surroundings gives them an education.

The children in our elementary schools are not directly confronted with political problems, but they are, for the most part, constantly subjected to the viewpoint of college-trained men and women who have been conditioned to believe that one knows politics when one can describe existing processes of government. Yet even the child needs to discover the essential psychological meaning of politics. What rules for community living would he prefer, what kind of community seems to him most desirable, and why? Does he think capital punishment or conscription good or bad, and in either case, why? If there is a difference between his preference on these matters and existing practices, how may he understand the discrepancy? Children are not interested in national economics, but they can debate among themselves and with their parents the respective values of private and community ownership of playthings. There is no real education, furthermore, without a constant re-asking of Plato's question, "What is a good man, and what will enable us to become good men?"

It seems to us that politics, economics, education, military history, philosophy, psychology and the arts—all need to be approached with constant use of the question, *Why?* When a national government informs us in somewhat vague moral terms that we must support a war or a specified economic program, we need to ask a lot of searching questions. The average citizen seldom does this because his education failed to encourage the habit. The weakness of our democracy lies in what we have neglected to let children know about the social and moral obligations of a thinking man. Unless we feel this obligation, we will never seek "the facts" except to enable us to pass a college course, nor will we understand the need for constantly asking our government embarrassing questions. When we clearly perceive that a war is approaching and that we must discover "why," we *then* need "the facts" as we never needed them while reading history, for we, ourselves, are then faced with making a moral decision. Here the "how" of the development of the catastrophic situation needs a great deal of objective research.

Our formal educators have developed the habit of dehumanizing the various subjects which are their specialties. We are, it is said, to learn to describe events accurately. Moral judgments on political matters are not much in style with historians, being generally regarded as the naive leanings of the non-scientific muddler. But our

politicians are always willing and able to fill up the gap for us. *They* give us moral judgments in plenty. In current politics we are enjoined to think of ends rather than means. We are presented with predigested "human values." On the strength of moral appeal, a nation's leaders swing popular support for a desired maneuver. Even Hitler won certain squeamish German elements to his support by the argument that a militarily strong Germany would prevent future war.

It is much easier for politicians to do such things to us when we have learned to think mechanically about past events. If we, like Socrates and Plato, were supremely interested in the kind of world we *wished* to live in, we would have more values of our own and therefore would need to borrow less in the way of second-rate goods from our political leaders. The two habits—that of thinking too much about the "how" of history when we attend a university, and too much about someone else's "why" at critical junctures in international events, are characteristic of the modern mind. The contemporary presence of these two tendencies in education should not confuse us, for they are psychologically related. Both are totalitarianisms, one intellectual and the other emotional. They lead us to believe that one set of authorities can tell us all we need to know about past history and that an entirely different set of authorities should tell us how we should feel in a present crisis. A common thread of delusion unites these two attitudes.

When we come to world-shaking events such as wars and depressions, our culture encourages us to abandon a careful study of factual processes and adopt the emotional faith manufactured by whatever powers control the channels of propaganda. Hoover becomes a villain, and Churchill's friend, Roosevelt, a savior. Our actions in the war were "good" because the Nazis' and Japanese' were "bad." We do not devote much time in any of our institutions of learning to an objective study of the war-breeding backgrounds of Russia, England, Japan, Germany or America. We assume a noble reason for the things done by the leaders of our own nation—they were building the world That Should Be. But when it comes to the theoretical study of politics, science, economics, business administration, education or the arts, it becomes unscholarly for us to approach a course from the standpoint of human values. A History-of-Philosophy course does not begin with six weeks of argument as to what the various members of the class think the human being is. The class studies in detail the dates and circumstances attending the various philosophical systems of the past. When dealing with such material, modern man is asked to be sufficiently sophisticated and eclectic to refrain from value-judgments as much as possible, but, in the event that our country enters war, we are asked to make certain value-judgments *without* a close study of the attendant facts. We, as parents, can use more facts when our politicians give us theory. We needed more basic theory when our professors were insisting that only "facts" are important.

FRONTIERS

The Problem of "Organization"

EVER since, in 194I, Wendell M. Stanley of the Rockefeller Institute for Medical Research declared that "the principle of the vital phenomenon does not come into existence suddenly, but is inherent in all matter," the endeavor of scientists to solve "the mystery of life" has been replaced by other objectives—or, at least, the idea of what the "mystery" is about has changed considerably.

This change, of course, resulted not only from the Institute program of virus research, but from a number of converging lines of investigation, among which Dr. Stanley's dramatic demonstration that the tobacco mosaic virus may pass from a merely "chemical" or crystalline state into a rapidly reproducing and so-called "living" phase attracted the most attention. Concurrently, the idea of the "spontaneous generation" of life, supposed to have been finally proved impossible by Pasteur, began to receive fresh attention and to gain new advocates. Dr. Robert Chambers, research biologist at New York University, said that he saw no reason for believing that the spontaneous generation of life is not taking place today, under conditions somewhat different from those in the past, when the evolutionary process that led to the appearance of life on earth was started. Dr. Stanley, too, said that the theory of heterogenesis (spontaneous generation) is "most challenging," adding that it would explain the origin of viruses.

It is evident that the old distinction between "living" and "dead" matter no longer has much meaning. What we call organic "life" seems to be simply a special condition of matter—in the case of protoplasm, for example, "dead" cells have a lower magnetic susceptibility than "living" cells, resulting from electrical changes in the protoplasm. Not only is all matter, whether inert or organic, now regarded as electrical in its fundamental constitution, but the vital processes of all organisms seem best accounted for in terms of electrical potentials. As a researcher at Yale remarked not long ago, "Wherever there is life there is electricity." With this identification of life and electricity, the question of what life *is gives* way to the study of how life acts—in other words, it is the *form* of life which now needs explanation.

Prof. Ross G. Harrison of Yale wrote in *Science for* April 16, 1937:

> Living protoplasm is a complex mixture of substances deriving its properties not merely from their chemical nature, but also from their arrangement in space.

R. E. Coker, of the University of North Carolina, said much the same thing:

> It is not the number of chemicals or their weights which give character to protoplasm; it is the *organization* of the substance that is the essence of life, chemically or biologically speaking. *(Scientific Monthly*, February, 1939.)

And Edmund W. Sinnott, leading morphologist, last year's president of the American Association for the Advancement of Science, summed up the new emphasis in research:

> . . . within the last few decades, and recently in increasing numbers, many biologists as well as thinkers who have approached biological problems through the physical sciences and through philosophy, are agreed in emphasizing one particular problem, one general phenomenon of life as of primary and dominant significance. This may be stated in a word as the problem of *organization.* Living things are well termed *organisms.* The activities of their manifold structures are so integrated and coordinated that a successfully functioning whole individual develops. As to how this is accomplished very little is known. *(Science,* Jan. 15, 1937.)

The fields of science concerned with the problem of form, or organization, include animal and plant embryology, cytology, biochemistry, genetics, and numerous other overlapping directions of research, such as. the "electro-dynamic" field theory of life under investigation at Yale University. The recent discoveries in all these areas of study are veritably fascinating. Best

known, of course, is the work done by formal geneticists on mutations, showing that sudden changes in the heredity and therefore the form of living organisms may be induced by subjecting chromosomes—the bearers of hereditary traits—to powerful radiation. But this discovery, like many others, uncovers more problems than it solves. And from the viewpoint of the whole organism, the findings of genetics are meager and incomplete. Prof. Harrison, for example, wants to know more about the larger shaping forces of the organism. The embryologist, he says, "is more interested in the back than in the bristles on the back, and more in eyes than in eye color. . . . Already we have theories that refer the processes of development to genic action and regard the whole performance as no more than the realization of the potencies of the genes. Such theories are altogether too one-sided."

Another puzzling development was the finding by Dr. Ethel Brown Harvey, Princeton biologist, that a fertilized egg from which the chromosomes had been entirely removed will nevertheless develop into a primitive embryo with clearly defined parts. (See the *Biological Bulletin*, 7I, pp. 101-121.) If it is the chromosomes which determine form, how was this possible?

For a basic statement of the problem of form, we return to Prof. Sinnott. While he has written numerous technical articles on this subject, the clearest account of his work that we know of, as well as the most interesting, appeared in the New York *Herald Tribune* for March 29, 1936. We quote at length:

> When a plant develops a seed or when the embryo of an animal takes shape, there are forces at work of which we as yet know nothing. A tiny mass of cells near the stem tip in a plant molds itself into a minute floral primordium, marks out a central, ovule-bearing region and a wall, and develops by a precise series of stages into a fruit, specific in size, form and internal structure.
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> Evidently something is happening in all this which escapes us. These bits of protoplasm proceed about their task in such a precise fashion as to leave no doubt that they are under a very specific inner compulsion of some sort. It is the ultimate task of the student to discover what the modern dynamic phase of morphology— experimental morphology or morpho-genesis—is devoted to an analysis of development from every point of view and every possible means.

Writing of his observation of the processes of development in the Hercules Club gourd, Prof. Sinnott continues:

> From the earliest existence of the tissues of a fruit, even before it reaches the blossom stage, it develops an axis of symmetry and conducts all its operations of growth along this as a base. To the eye, this axis of symmetry is very apparent in the slender, elongated Hercules Club gourd. It may be viewed as a line down the center of the squash. But in the growth operations of the squash this line seems to exist in every cell of the squash. Every cell, no matter how far removed from the center, seems to "know" where that line of symmetry is and how it is coordinated.
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> The individual cells act as if they had position in a blueprint showing the required ratio of length to diameter, and they carry on their controlled activities accordingly. If all the cells divided in one direction the fruit would take the shape of an infinitely long tendril or hairlike structure. If they divided equally in all directions the fruit would be round as a ball.
>
> When the shape of the fruit, according to its inheritance, should have a ratio of three to one the individual cells carry on their divisions through planes that are so oriented that the average net result is that they divide three times as often in one direction as in the other. In the healthy fruit this excess is always in the right direction to produce the proper shape of fruit.
>
> Neither fruits nor plants have any nervous system that can convey to each cell throughout the plant information from a central control organ, as the brain functions in man and the higher animals. Each cell appears to be on its own and to know what to do and how to do it. How this is accomplished is one of the most important problems of biology.

Prof. Sinnott's discussion closes on a speculative note, with the suggestion that the fruit structure has a polarity possessing dynamical properties of form which pervade the whole organism. He adds, however, "Through what

flux, effluvia or ether, this dynamic geometry of vital processes reaches out to influence all cells is beyond safe guessing."

While biologists like Prof. Sinnott speak only guardedly of theories of development and organization which postulate an intangible "morphogenetic field," Yale experimenters with an instrument called the "vacuum-tube microvoltmeter" have been less shy. They present evidence that every life-process is under the "supervision" of a master-pattern—an electric field with lines of force like those produced by a magnet. Living things, it seems, are animated fields of *intelligent* energy, in which the forms we see are fixed, as in a web.

Other investigators working in the field of embryology have discovered that the development of particular organs is governed by "organizers"—the name given to a mysterious "building" property found resident in small regions of tissue. Some parts of an embryo determine the development of other parts, exerting a strong "field" influence on the surrounding cells. As a zoologist, Nelson T. Spratt, Jr., put it, speaking of bits of tissue which were taken from the forebrain and eye region of a chick embryo, and nourished by blood clots: "Development of the forebrain and eyes seems to be the expression of an already existing but invisible structural organization."

So the question, "What is Life?" has become the question, "What makes living forms?" —a much more difficult question to answer. The problem of life, if life is regarded as an undifferentiated and underlying reality, can be fairly met with a philosophical generalization. You can say that life is electricity, or you can say it is energy acting in various patterns, and you have a sort of answer. But the problem presented by an individual living organism can have no simple or "intuitive" solution. Life lives in forms of infinite diversity. Why? What makes the forms? What sustains them?

The next question, with which biologists are already flirting, is the obvious one: *What is intelligence?* For intelligence makes forms, preserves them, and destroys them, even as Brahma, Vishnu and Siva of the Hindu pantheon. Doubtless, in the next few years, there will be new lines of scientific research to converge on the problem of intelligence, and the ultimate conclusion—if we may hazard a prophecy—will be frankly metaphysical. With all our modern knowledge of mechanistic processes, the march of biological discovery seems to move inevitably in this direction.