

## TRIALS OF STRENGTH

RECENT publication (by Harper & Row) of *Darwin's Legacy*, edited by Charles Hamrun, embodying the fruits of the eighteenth Nobel Conference (at Gustavus Adolphus College in Minnesota) held on the occasion of the hundredth anniversary of Darwin's death (in 1889), gives reason for reflecting on the general conception of evolution. It was for Darwin a strictly biological process, and for scientists it has remained so. There has been little notice among biologists that Darwin, in 1864, wrote to Alfred Russel Wallace that "I had got as far as to see with you that the struggle between the races of man depended entirely on intellectual and *moral* qualities."

This exceptional expression did nothing to alter the scientific understanding of the evolutionary process. One contributor to *Darwin's Legacy*, the eminent Harvard geologist, Stephen Jay Gould, points out that there is nothing in the theory of natural selection that gives support to the idea of progress—change is involved, but not inherent progress. Moreover, according to Darwin, change has only "random" causes. As Prof. Gould says:

Darwin's theory also challenged the comforting assumption that evolution must be purposive, working toward the good of species or ecosystems. The theory of natural selection, established in perhaps unconscious analogy to the individualistic, laissez-faire economics of Adam Smith (whom Darwin had been studying intensely just before he formulated his theory), speaks only of individuals struggling for personal success. In modern terms, natural selection concerns the unconscious struggle of individuals to leave more of their genes in surviving offspring. Any benefits to species, any harmony in ecosystems, arise merely as a by-product of this struggle among individuals or, in the case of ecosystems, as a natural balance among competitors.

What then of spirit, of vital forces, of God himself? No intervening spirit watches lovingly over the affairs of nature (though Newton's clock-winding

god might have set up the machinery at the beginning of time and then let it run). No vital forces propel evolutionary change.

Thus Darwin, with publication in 1859 of *Origin of Species*, and *The Descent of Man* in 1871, opened up a large avenue for subsequent research, giving inspiration to all the life sciences, while at the same time frustrating the idealistic hungering of his time (and ours) with the restrictions noted by Gould and the identification of humans as descendants of an anthropoid ape. Yet the spontaneous and almost universal longing for belief in progress led to hailing Darwin as its champion, even though no alternative to the ape-origin was proposed in scientific circles. And save for the "survival" meaning of evolution, the biologists gave no encouragement to nineteenth- and twentieth-century believers in Progress.

It seems fair to say that the actual legacy of Darwin is accurately described by Irving Stone, the latest of his biographers: "He unbolted the heavily locked doors of our minds and let them stand open to the sunshine of free inquiry." But there has been little or no connection between the numerous studies of "human progress" and the theories of Darwinist biologists. The release of the Western mind from the Garden of Eden allegory, converted into fact by orthodox Christians, meant rather the development of elaborate theories of human progress independent of biological considerations. For a while cultural historians paid due respect to Darwinism—what else could they do, as scholars endeavoring to be reputable scientists?—as, for example, in the case of James Harvey Robinson's *Mind in the Making*, in which he said (emphasis added):

. . . there *must* have been a time when the man-animal was in a state of animal ignorance. . . . He was *necessarily* self-taught. . . . He *must* have corresponded with his brutish state. He *must* at first have learned just as his animal relatives learn—by

fumbling and forming accidental associations. . . . Of mankind in this extremely primitive state we have *no* traces. . . . Man in "a state of nature" is only a *presupposition*, but a presupposition which is *forced* upon us by compelling evidence, *conjectural* and inferential though it is.

Other scholars were made uncomfortable by the narrow possibilities of development afforded by Darwinism. William McDougall, the British psychologist who came to Harvard, and later established the parapsychological center at Duke University, pointed out the confinements of Darwinism in *The Riddle of Life* (1938):

For the natural selection of Darwin's theory was very rapidly accepted not only as a factor in biological evolution but also, by very many biologists, as the sole and sufficient factor in the genesis of all the varieties of living beings with all their wealth of adaptive structures and functions. And in spite of the ostensible implications of the word "selection," the whole process of organic evolution was thus made to appear as a mechanical process, one in which mind, with its intelligent striving, its purposive activity, its design, its foresight, had no role to play; unless it were merely that of a perfectly inert and helpless spectator of the drama.

Needless to say, these were views which ran counter to the spontaneous inclinations of thoughtful men's minds, leaving a chasm between biological doctrines and the attempt to grasp the meaning of human development. Only the advocates of Pavlov's conditioned reflexes and the followers of John B. Watson's Behaviorism submitted to the biological account of man's origin and nature. Even Thomas Huxley, Darwin's famous champion in nineteenth-century forums of opinion, eventually revised his view. As McDougall says:

[This] most positive of the Positivists, who had eloquently celebrated the iconoclastic thrusts of the mechanical biology, in his famous Romanes Lecture (*Evolution and Ethics*) delivered at Oxford at the end of his life, revoked the main feature of his earlier teaching and called upon mankind to defy the laws of a mechanical nature which throughout his life he had so effectively expounded as all-sufficient. In essentials his new position was identical with that so well stated by Robert Bridges, the poet: "Man is a

spiritual being; the proper work of his mind is to interpret the world according to his highest nature, to conquer the material aspects of the world so as to bring them into subjugation to the spirit."

Huxley said this in 1894, a year before he died. Lest it be supposed that attributing to him the thought of Bridges is an unwarranted exaggeration or indicates a last-minute softening of the old man's views, two years earlier he had published (in *Essays on Some Controverted Questions*, Macmillan, 1892) the idea that what men call "the supernatural" should be regarded as a more inclusive extension of the natural, saying:

Looking at the matter from the most rigidly scientific point of view, the assumption that, amidst the myriads of worlds scattered through endless space, there can be no intelligence as much greater than man's as his is greater than a black beetle's; no being endowed with powers of influencing the course of nature much greater than his, as his greater than a snail's, seems to me not merely baseless, but impertinent. Without stepping beyond the analogy of that which is known, it is easy to people the cosmos with entities in ascending scale, until we reach something practically indistinguishable from omnipotence, omnipresence and omniscience.

Less than half a century after publication of Darwin's *Origin*, Huxley felt able to declare (in his Romanes Lecture, cited by McDougall) that—

The practice of that which is ethically best—what we call goodness or virtue—involves a course of conduct which in all respects is opposed to that which leads to success in the cosmic struggle for existence. In place of ruthless self-assertion it demands self-restraint, in place of thrusting aside or treading down, all competitors, it requires that individuals shall not merely respect but shall help his fellows, its influence is directed, not so much to the survival of the fittest as to the fitting of as many as possible to survive.

Let us understand, once for all, that the ethical progress of society depends not on imitating the cosmic process, still less in running away from it, but in combating it.

Here, one may say, is full justification of the fact that present-day scholars and essayists treat the idea of evolution as a *concept* which may be widely applied, often with no reference at all to

the biological process Darwin described. Even Stephen Jay Gould, often a spokesman for science in debates with the "Creationists," now seems to echo what Huxley said ninety years ago. In a contribution to *Darwin's Legacy* he showed that Darwinism is irrelevant to higher human development, which must find guidance elsewhere:

I am saying that there are no direct answers in nature to our hopes and to our moral dilemmas; but I think that's fine. I don't think you're supposed to look to the facts of nature for the answers to moral dilemmas. I think that's a job for human intellect to construct for itself. That's the job of humanistic scholars; it's a job for all of us as human beings, not the job of scientists to find it in nature.

In short, we are free to think about human evolution quite independently of biological theory—to take from Bridges, (or some other poet) the idea that "Man is a spiritual being," one whose proper work is "to interpret the world according to his highest nature," and to go on from there.

What is it to be a spiritual being? For a tentative answer to this question we need fairly precise accounts of the meaning of "spirit" and "spiritual," since no other terms with transcendental content are so variously used. Let us say, then, that spirit is *consciousness*, and that in beings who are aware of themselves as subjects, active in a world of both other subjects as well as objects, their consciousness is properly termed self-consciousness.

How is consciousness known? It is known immediately, by *being* it. Consciousness cannot be known objectively, but only subjectively, through identification. What shall we call the instrument of reflection through which consciousness becomes aware of itself? Soul seems the appropriate term. If this meaning be adopted, then we can say that spirit—the *given* of bare subjectivity—does not change or evolve, but that soul grows into wider awareness, and that this may be called soul evolution.

Such a conception of human evolution is far from unfamiliar, since it had ancient expression in the great religions of the East, also in Platonism, Neoplatonism. and in the various forms of the revival of Platonism and Neoplatonism in Western history. As the Yale historian? Jaroslav Pelikan, says in *Darwin's Legacy*, the first use of the word "evolution" in English occurred in the seventeenth century, in the writings of the Cambridge Platonists, Henry More and Ralph Cudworth. More used the term in the sense of *emanation*, remarking, "Man's soul not by creation. . . . Wherefore let it be by emanation." This was a Gnostic as well as a Neoplatonic idea, and has expression in the New Testament. In *New Views of Evolution* (Macmillan, 1929), George P. Conger says:

The Fourth Gospel, or Gospel of St. John, like the Book of Genesis, opens with the words "In the beginning," and presents an account of the origin of the world; the Gospel account, although in some translations it employs the terms of creationism, is more open to evolutionist interpretations. Behind it evidently is the old Gnostic philosophy of some of the ancient cults, according to which the world originates by a succession of "emanations," or, as we might say, expressions, or radiations, from God, Who is the primary source of everything. The first expression, or radiation, according to the Gospel, is "The Word" (Logos), which we may understand as a kind of reasonableness or intelligibility in things. It is that quality in the Universe which makes us able to understand it and talk about it. . . . According to the Gospel in the King James version, "all things were *made*" by this Word; but in the original Greek the root idea is rather that all things *become*, or "came into being through" the Word. Further on, in the translation, it is said that "the Word was made flesh," where again the word which may be translated "became" occurs in the original.

With this understanding of evolution, the idea does no violence to Christian scripture, but rather undoes some mistranslation.

A later evolutionary conception in the framework of Christian belief was offered by Pico della Mirandola toward the end of the fifteenth century. In his epoch-making *Oration on the Dignity of Man*, first published in 1496, Pico has

"the Supreme Maker" assign to man, in the person of Adam, his unique evolutionary role:

We have given you, Oh Adam, no visage proper to yourself, nor any endowment properly your own, in order that whatever place, whatever form, whatever gifts you may, with premeditation, select, these same you may have and possess through your own judgment and decision. The nature of all other creatures is defined and restricted within laws which We have laid down; you, by contrast, impeded by no such restrictions, may, by your own free will, to whose custody we have assigned you, trace for yourself the lineaments of your own nature. I have placed you at the very center of the world, so that from that vantage point you may with greater ease glance round about you on all that the world contains. We have made you a creature neither of heaven nor of earth, neither mortal nor immortal, in order that you may, as the free and proud shaper of your own being, fashion yourself in the form you may prefer. It will be in your power to descend to the lower, brutish forms of life; you will be able, through your own decision, to rise again to the superior orders whose life is divine.

With this idea of *human* evolution, we can at least begin to understand ourselves. It is not a struggle for existence, but the moral struggle.

The one thing that we shall all readily admit is that we are animated by purpose. Our purpose may be various, some of them trivial, others subserving larger intentions, but without *some* purpose we are as good as dead. Pico has suggested an ennobling purpose, and the best humans we know, in whatever vocabulary was available to them, seem to have agreed with him. Two hundred years later the philosopher Leibniz proposed that from the One, or Deity, there emanated or radiated units of consciousness which he called "monads," centers of awareness, each with the capacity to reflect other monads? or its surroundings. Monads are souls. The most highly evolved monad, in this view, is a perfect reflector—a universal intelligence which has learned its unity with all the rest. If we think of our history, and of the great instructors vouchsafed to mankind, they may be regarded as high souls who have completed their evolution

and who remain on or come periodically to the human scene as reformers and teachers.

Without evolution, surely, we can divine no meaning in our lives. Meaning is seeking fulfillment, its substance is realization; and every realization becomes the basis for another adventure in growth. But this is no "physical" evolution but a widening of perspectives, a deepening or a lengthening of the radius of awareness—a purpose in which, in quiet moments, we are instructed by some inner voice, the counsel inscribed in the very stuff of our consciousness—the will to know and to be.

Here we may turn to the vision of an English philosopher, W. Macneile Dixon, who said in his Gifford Lectures (1935-37), published as *The Human Situation*:

Whose then is that purpose, or what is it that looks forward to the goal in view? The relationship of the self to time and the passage of time wholly differs from that of any mechanism, for which neither past nor future has any significance. Unless, indeed, we form a totally different conception of matter, endowing it with a nature or qualities unknown to physics, matter, lifeless and inert, has not among its so far discovered gifts the power of learning from past experience; physical movements in the brain cannot give rise to purpose, nor does a machine keep a watchful eye on coming change. If you begin with the parts you will never reach the genius or spirit of the whole. "Multiplicity does not contain a reason for unity." You can see what the body is, an arrangement of tubes, springs, levers, lungs heart, muscles. They do not regret lost opportunities, take courage and determine to do better next time. The soul is not individualized by the parts of the organism. . . . Why in short, should we be ourselves? Why should my ego be in this time or age, and not associated with some other body in the past, or a body to come, not yet born? . . .

Whatever it be, this entity, this I, this being that cares for truth and beauty, the haughty, exclusive, conscious soul its sense of personal identity survives all assaults. . . . There is then something in us which nature has not given, for she had it not to give. Selfhood is not a contingent entity, but the representative of a metaphysical and necessary principle of the universe, a part of its essential nature,

a constituent of reality, nor without it could the Cosmos have attained to recognition, to full consummation or true being. Experiencing souls were a necessity if a universe in any legitimate sense there was to be. . . . In a word, it alone brings everything into view.

How does the evolution of soul proceed? For answer Dixon, along with many others—more numerous from year to year—goes to Plato for reply:

It is Plato's doctrine, and none more defensible, that the soul before it entered the realm of Becoming existed in the universe of Being. Released from the region of time and space, it returns to its former abode, "the Sabbath or rest of souls," into communion with itself. After a season of quiet "alone with the Alone," of assimilation of its earthly experiences and memories, refreshed and invigorated, it is seized again by the desire for further trials of its strength, further knowledge of the universe, the companionship of former friends, by the desire to keep in step and on the march with the moving world. There it seeks out and once more animates a body, the medium of communication with its fellow travellers, and sails forth in that vessel upon a new venture in the ocean of Becoming.

This view of evolution has many attractions.

## *REVIEW*

### MONTAIGNE ON THE ROAD

READING in *Montaigne's Travel Journal* (North Point, Press, 1983, paper, \$11.50), becomes something of a let down as you realize that at least half of these jottings on Montaigne's wanderings—to the watering places of Europe, hoping to ease his sufferings from "the stone," with accounts added of which inns were good, which ones bad, and notes on the architecture and technology of the sixteenth century—that all this is by a secretary whose duty was to keep Montaigne comfortable. This travel journal, the translator, Donald Frame, tells us, had been quite forgotten or lost, and was not discovered till the eve of the French revolution (in 1774). It was then published in mostly a garbled text, and Mr. Frame has done what he could to put it in order with the help of later discoveries.

The journal is a report of his seventeen-month European trip (from June, 1580 to November, 1581), including a stay in Rome. Mr. Frame says:

After enjoying health he called ebullient for his first forty-odd years, for two years he had been prey to the agonizing attacks of the kidney stone, which had tormented and finally killed his father. Advisedly mistrusting the empty pretensions of medicine and convinced that each man could and should be his own best doctor, he viewed the use of mineral waters (for both drinking and bathing) as harmless, since natural, and possibly offering some slight relief and had found some relief himself, in France. . . . Now he proposes to try some others there and abroad. . . . But there is far more to the *Travel Journal* than the clinical record of Montaigne's illness and treatment of it. . . . as a complement to the *Essays* it tells us much about Montaigne that the *Essays* do not. . . . The *Journal* alone reveals fully Montaigne's desire to live the life of the people he visits, which the secretary finds notable enough to mention more than once.

In Augsburg, Montaigne's interest in the technology of the day was amply satisfied. Examples are the waterworks and a remarkable postern gate. The "secretary" relates:

We saw a big channel of water flowing . . . from outside the town by a wooden aqueduct, which runs under the footbridge over which we had passed and above the river that flows through the town moat. This channel of water sets in motion certain very numerous wheels which work several pumps, and by two lead channels these raise the water of a spring, which at this spot is very low, to the top of a tower at least fifty feet high. Here the water pours into a big stone vessel, and from this vessel it comes down through many conduits, and from these is distributed throughout the town.

Along the way the secretary comments, in this century of Reformation turbulence: "Marriages between Catholics and Lutherans are common," there being "a thousand such marriages; our landlord was Catholic, his wife Lutheran." The postern gate, by which visitors gain entry to the walled town, is a complicated affair. At any time of day or night the visitor, afoot or on horseback, must tell his name and give the name of the one he will stay with, and pay an entry charge. He is first allowed into a small room where he supplies this information to a porter, who then rings a bell which alerts another porter on the floor below; and then, "he, by working a spring in the gallery adjoining his room, in the first place opens a little iron barrier, and then, by turning a big wheel, raises the drawbridge, without the visitor's being able to perceive any of these movements, which are concealed by the thickness of the walls and doors; and everything is promptly closed again with a great racket." Then—

Beyond the bridge a big door opens, very thick, which is of wood and reinforced with many big sheets of iron. The stranger finds himself in a room, and all the way along sees no one to speak to. After he is shut up there, they open another, similar door to him, he enters a second room in which there is a light; there he finds a brass vessel hanging down by a chain; there he puts the money he owes for his passage. The money is pulled up by the porter; if he is not satisfied, he lets the man stew there till morning; if he is satisfied, as he customarily is, he opens for him in the same way still another big door like the others, which closes as soon as he passed, and there he is in the town.

It is one of the most ingenious things that can be seen. The queen of England sent an ambassador expressly to ask the city government to reveal the working of these machines: it is said that they refused.

A pleasant feature of this book is an urbane foreword by Guy Davenport. He says in one place:

The emotional center of gravity of the journal is, I like to think, the day in the Vatican library when Montaigne, having gazed lovingly at a manuscript Vergil and other treasures, falls into a conversation with scholars and gentlemen about Plutarch. It was his opinion that Amyot's recent translation of the *Parallel Lives of Noble Greeks and Romans* (1559) and the *Moralia* (1572) had "taught us all how to write." Plutarch had indeed taught Montaigne how to write. It is a common error to say that Montaigne invented the essay. Plutarch invented the essay, and wrote seventy-eight of them; Montaigne invented its name in French and English.

*Renaissance*, rebirth. But most of the rebirths were also transformations, Phida is not reborn in Michelangelo, nor Ovid in Poliziano. For accuracy of regeneration we have to turn to Plutarch and Montaigne. . . . So the *Lives* and *Moralia* were written by a family man in a small town in Boiotia, and the *Essays* were written on a wine-growing estate outside Bordeaux, both by men of the most honest introspection in the history of letters, both skeptics with stoic minds and well-tempered good natures. It has been said of Montaigne, and can be said of Plutarch, that in reading him we read ourselves.

We all lead an inner life of the spirit, on which religion, philosophy, and tacit opinion have many claims. To reflect on this inner life rationally is a skill no longer taught, though successful introspection, if it can make us at peace with ourselves, is sanity itself. The surest teachers of such reflection, certainly the wittiest and most forgiving, are Plutarch and Montaigne.

Guy Davenport concludes his introductory essay:

It is his poor animal body whose urine is full of painful sand that he takes from spa to spa on his journey. It is with a tame animal's willingness to play his master's games (sit up, roll over, heel) that he kisses the Pope's foot (thinking God knows what in the inviolable privacy of his mind). He thought for himself, Monsieur Montaigne of Bordeaux. And

thought so well, so searchingly, with such wit and intelligence, that he remains for us the best example of the sane mind and liberal spirit.

The lover of Montaigne's *Essays* will probably want to know something of this journey "from spa to spa."

The reference to a manuscript Vergil which Montaigne saw in the Vatican library recalled for us a long-forgotten classic, and we found in the MANAS library a 1952. Anchor paperback of the *Aeneid* with a lively translation by Day Lewis. Aeneas, the bravest of the Trojan heroes after Hector, upon the fall of Troy retired with a large number of followers to the mountains of Ida. Then, after construction of a fleet of twenty vessels, these Trojans set sail for Italy, led by the son of Anchises and the goddess Venus. The voyage was filled with mishaps, a storm driving them to the coast of Africa, where they found refuge for a while at the court of Dido, an unhappy queen, but eventually they reached Lavinia, where arrangements were made for the marriage of Aeneas to the daughter of King Latinus, which led to further troubles on land. On the way, Aeneas had first landed at the harbor of Cumae, where he consulted a Sybil in the hope of finding a means of visiting his father, Anchises, in Hades. With the help of the Sybil, who instructed him in what he must do—give burial to a dead companion, and pluck in the forest a golden bough—he completed the requirements, and Charon conveyed him across the Styx. In a deep green valley, his father greeted him with great feeling. After trying, unsuccessfully, to embrace the phantom of his father, Aeneas noticed a vast multitude waiting on the shore of a river, and he asked—

What it might mean, what was that river over there  
And all that crowd of people swarming along its banks.  
Then his father, Anchises, said:—

They are souls who are destined for  
Reincarnation; and now at Lethe's stream they are drinking  
The waters that quench man's troubles, the deep draught of  
oblivion.  
Long, long have I waited to tell you of these and  
reveal them  
Before your eyes, to count them over, the seed of my seed,

That you might the more rejoice with me in the  
 finding of Italy. . . .  
 Each of us finds in the next world his own level  
 a few of us  
 Are later released to wander at will through broad  
 Elysium,  
 The Happy fields; until, in the fullness of time, the ages  
 Have purged that ingrown stain, and nothing is left but pure  
 Ethereal sentience and the spirit's essential flame.  
 All these souls, when they have finished their  
 thousand-year cycle,  
 God sends for, and they come in crowds to the river of Lethe,  
 So that, you see, with memory washed out, they may revisit  
 The earth and wish to be born again.

Anchises revealed to Aeneas the future destiny of particular souls, then waiting for rebirth on Lethe's shore—among them Romulus, who would be the founder of Rome. Julius Caesar, too, was there, and Caesar Augustus. Vergil, perhaps the greatest of the Roman poets, lived from 70 to 19 B.C. He wrote the *Aeneid* in his last years, leaving instructions that it be burned because he was not satisfied with its workmanship, but Augustus commanded that it be preserved—fortunately for both the ancient and the modern world. The *Britannica* (11th ed.) article on Vergil ends by remarking that the secret power of his words is in "the emotions of reverence and yearning for a higher spiritual life, and the sense of nobleness in human affairs . . . the imaginative spell exercised by the past . . . the mystery of the unseen world."



## *COMMENTARY*

### ECOLOGICAL "REVELATION"?

THERE is a clear relation between this week's *Frontiers* discussion of agriculture in Sri Lanka and the "Children" article on social injustice in India. Both have to do with ecological harmony. In Sri Lanka the farmers have been persuaded to abandon their traditional method of using buffalo for tilling the soil, with destructive consequences wholly unforeseen by their Western advisers. In India the law of interdependence has been ignored by prosperous farmers who exploit landless labor, to the extreme detriment of the latter. Even farm animals, one suspects, would not be treated so poorly as these landless laborers are treated by the landlords.

The analysis of Lankan agriculture, its original methods contrasted with modern production techniques, by Ranil Senanayake, is an illuminating study of the interdependence and mutual support that once ordered the use of the land. No doubt the old methods could be improved with the aid of ecological science, but the mechanistic logic now prevailing in Western agricultural education has obviously brought disaster through the abandonment of the old methods.

Once upon a time, as in Kerala, methods were once based upon cultural custom growing out of religious belief, and while the "science" behind such practices may not have been understood, we are now able to recognize practical values that have been lost, along with the sense of reverence for the land and all its living inhabitants.

In India, the trouble may be assigned to the selfishness and moral indifference which grows out of the caste system—a clear failure of ecological understanding in Gandhian terms.

One might say that the ancient restraints of ancestral religion have died out because of the successful materialism of Western techniques. Yet now that these techniques are gradually being shown to be counter-productive, the question

arises: Is there underlying truth with practical applications in the ancient metaphysical philosophies of the East, that for centuries and millennia maintained the balance of both organic life and community life in the villages and towns? And are the ecological studies of the present helping to reveal the laws of balance on which ancient custom may have been based? Might we say that the richest meaning of ecology is scientific religion?

## CHILDREN

### . . . and Ourselves

#### HEALTH EDUCATION IN INDIA

WEEKS ago (in MANAS for last Dec. 28) an editorial drew attention to a book which came in for review from India, the publication of a group calling itself Medico Friend Circle, made up of friends, medical doctors, and public health workers, who share a deep concern for the welfare of the poor villagers in their country—some 80 per cent of the entire population. They conducted meetings to exchange ideas and then began publishing a monthly bulletin or newsletter containing reports of the experience and opinions of members in different parts of the country. In the book, *Health Care—Which Way To Go* (available from Voluntary Health Association of India C14, Community Centre Safderjang Development Area, New Delhi 110 016, India, at \$4.00), a number of these reports are collected.

As a result of conference and collaboration, the members reached this conclusion:

The Medico Friend Circle believes that the present health system will never meet the basic health needs of our people not mainly because of lack of resources but because of their underutilization and maldistribution. The pattern, started during British rule, continues to be followed by a highly professionalized system subservient to the needs of the urban upper class and to foreign domination. Medical care has been reduced to curative services, that, too, oriented towards hospitals in the cities. Interests of the doctors and of the drug industry take precedence over the interests of the people. Medical education and research do not reflect the needs of the majority of our population. All this has resulted in almost total neglect of the basic health-needs of the majority of people, especially in the rural areas.

A fundamental change, therefore, must occur in the existing health system. Within the new system, people must gain maximum control over their own health, nurses and other paramedics must not be regarded as inferior to doctors decentralization should occur as much as possible and traditional forms of medical care must be encouraged to take their rightful place. Alternative approaches to such a system may be numerous, and the Medico Friend Circle

encourages such explorations. Real success is inseparable from a strong popular movement of the people.

For illustration of the ills of the peasantry, a single example may suffice, in this case a nutritional disease called lathryism, or neurolathryism, which is characterized by "a progressive, spastic paralysis of the lower limbs, crippling its victims for life." Its commonest incidence is between the ages of eleven and thirty-five years. It affects males ten times more than the females. What causes this disease? Eating the seeds of a legume known as *Lathyrus Sativus*, grown extensively in Madhya Pradesh and Bihar, and to some extent in Uttar Pradesh, Bengal, Andhra Pradesh and Maharashtra. The seed is commonly known as *Khesari*.

Explanation of why anyone would eat such poisonous seeds becomes complex. First of all, they are easy to grow under adverse conditions, as even a drought crop. The people who grow it do not eat it, while the people who eat it do not grow it, and scarcely anything else. In one rural area studied, 75% of the population are laborers, many of them bonded families (working out their debts). These laborers, who work in the fields, are usually paid in food, in the form of a mixture of food grains—wheat, barley, and other ingredients, including khesari. The mix of grains is called *birri*, which is ground into a flour. The proportion of khesari in this mix varies, depending upon crop harvest, but may be as much as 75 and occasionally 90 per cent. A small amount of khesari is much less likely to cause the disease. And it was found that parboiling would reduce the toxins in the seed, without hurting the taste of the *chapaties* (pancakes) made from the flour. But this solution leaves out of account that when the laborers are paid in lathyrus (khesari) seed, they cannot wait to remove the toxins and many cannot afford the fuel. Scientists have worked out these solutions, which were fine on paper but instead of helping gave the employers of submissive agricultural labor a powerful weapon. They can accuse the laborers of being ignorant and lazy for not using what are for them impracticable remedies.

As long ago as 1961 the government of India issued a ban on the sale or offering for sale of

Khesari seed. This sounded like a true solution, but it was not, since the ban did not include the cultivation of the seed or its being given as wages. Meanwhile, grown as a drought crop, khesari "has turned into a fortune for the landowners and a gross misfortune for the landless."

Pictures of maimed youths and children illustrate this report, which was written seven years ago by Kamala Jaya Rao. A later study by members of Medico Friend Circle found almost no change in the amount of Khesari cultivated. Visiting sixteen villages in Madhya Pradesh, they located 117 cases of lathyrism, and many more were suspected. The number given is of *obvious* cases. The males numbered 15, the females 12. The afflicted were landless laborers and small farmers. No landlord had the disease, and most victims came from the lowest castes.

One village selected for careful study showed that a little over nine per cent of the population suffered from lathyrism—37 cases in a population of 403. These people were noticeably afflicted, while another 16 were diagnosed as "latent" cases. Interviews disclosed that among 148 persons, only 27.7% knew khesari caused lathyrism; over 69.6% attributed it to bad weather, chills, overwork, fate, or to venturing on the edge of the village at night. There is this report:

We could gather that Khesari was being consumed mainly by poorer class, and by the bonded laborers. The higher caste and the landlords most often did not consume it and even when they did, it was with a lot of other cereals like rice and wheat, etc. Hence no question of getting the disease.

The economically backward class had to eat it, because they had not much of a choice, since they were paid in kind—Birri . . . of which Khesari is a major component and the percentage varied with the season and increasing when the drought condition prevailed. In fact when the area had droughts for long periods the workers got only Khesari for payment.

Some of the villagers, when asked why they accepted Birri with Khesari for pay, said that they had to, as bonded laborers, or landless laborers who feared not having work and going hungry as a result. One man with the disease pointed out that the

landlords didn't care if workers became sick since there was plenty of labor available in the area. Others said, "We are being slow-poisoned so that we should always remain weak and be dominated." The report continues:

They get the Birri at the end of the hard day's work and have nothing else in store to eat. Hence there is no time for detoxification by parboiling. . . . Some of the landlords who seemed to have an idea of the real nature of the problem invariably pleaded ignorance when faced with the question, "Why do you give Khesari in Birri? " This "ignorance" sometimes turned into a vehement opposition to the interview, manifesting in refusing to be interviewed.

After this field study, the Medico Friend Circle investigators gathered together and drew some conclusions:

It was obvious to everyone that the roots of the "medical" problem were in social structure. Though the participants criticized the organizers for having failed to provide proper accommodation and food arrangements in the villages, it seemed that they had accepted the hardships sportingly. Walking from 15 to 20 kilometers every day in the hot sunny summer of central India, sleeping under the trees starving for the whole day, tolerating insults by landlords, threats from the police—all these formed memories which they were describing with beaming faces.

Not all the contributions in this book are negative in the sense of strong criticism. There is a useful discussion of how India's ancient Ayurvedic medicine might be combined with modern methods in behalf of the needs of the people. Yet the spectre of economic want, of a misery worse than ordinary poverty, haunts almost the whole of this book.

## *FRONTIERS* Ways Beneficial to Man

WE have expressions such as "linear thinking," which is frowned upon, and "holistic thinking," which is approved, but mostly only vague feelings as to what they mean. An article in a recent issue of the *Ecologist* (Vol. 13, No. 4) by Ranil Senanayake, comparing ancient with modern agriculture in Sri Lanka—formerly known as the island of Ceylon—illustrates well the meanings of both expressions.

Traditional agriculture has been practiced in Sri Lanka for more than two thousand years, based on water storage in tanks constructed as reservoirs. At one time the country had more than ten thousand of these tanks, and farming with these facilities supported a population of from ten to seventeen million people, with schools, universities, libraries, and other cultural amenities. After the invasion by the British, the plantation system was introduced, with production for profit instead of use becoming the motive. As a result, methods that did not serve the interests of the market economy came to be regarded as superstitious. In time, this led to the replacement of the buffalo, for ploughing, tilling, and threshing operations, with the tractor. The *Ecologist* article is a study of the consequences.

The reason for the change is a simple linear equation. Tractor power was more "efficient" because more work could be done in less time. The writer says:

Presently tractorization has spread beyond economically justifiable levels, a process made possible by hidden subsidies and political patronage. The current energy crisis has tended to escalate tractor operation costs until tractor ploughing costs have risen to four times the cost of ploughing with buffaloes; yet the present farming population preferred tractor ploughing even though it incurred extra costs. Therefore the present attraction of the tractor over the buffalo would seem to be due to "cosmetic values" of no utility to the farm economy except to provide speed.

Even farmers who might like to return to traditional practice, restoring buffalo, cannot afford to do so, since their fields would have to lie fallow for two or three years in order to use the buffalo. Meanwhile the modern methods continue to undermine the stability of agricultural ecology. Why?

There are a number of reasons. First, when buffalo were used the pressure of their feet produced a tamped layer beneath the surface of the soil, increasing water retention. Tractors disrupt this "hard pan," reducing the yield. Next, elimination of the buffalo by slaughter for meat has deprived the farmer of milk and curd and brought loss of organic fertilizer. It also meant unemployment for buffalo herdsman.

Another consideration: Buffalo require marsh conditions and in traditional practice the farmers make the low point of their field into a buffalo wallow to which water is led from a river. The wallows become places of survival for needed aquatic organisms after the harvest season, including fish which are later trapped and collected in baskets, and also fished with rod and line. This valuable fish protein is lost by the use of tractors. There are also insectivorous fish which consume the grubs of malaria-carrying mosquitoes. Without these fish there must be spraying of insecticide for malaria control—an added expense. The change in the ecology eliminated the habitat of the nonpoisonous Rat snake which eats the rat and mice population—an important biological control of mammalian pests. The snake needs the vicinity of water. Moreover, the buffalo wallows were once used to condition coconut leaves used traditionally for roof thatch. Without this facility a village can no longer supply its own roofing material and must import tile, which has to be fired, bringing the cost of roofing material to 80 times what it used to be. And the wood fuel needed for firing must be sought in the forests. Senanayake remarks: "With the area under utilizable forest dwindling from a cover of 44 per cent in 1956 to 22 per cent in 1976, and to

6 per cent in 1980, any extra pressure on the forest resources would tend to hasten complete deforestation."

Meanwhile the soaring cost of fossil fuel—all of it imported to Sri Lanka—is requiring enormous government subsidy to modern agriculture. The writer asks:

What reasons then can we attribute to the persistence of the promoters of such a destructive model? During the colonial experience a premium was placed on western education and "this inevitably led to the neglect of the traditional education systems of the colony." A native Sri Lankan has a much greater opportunity to achieve recognition or enter the decision-making process if he or she has received training in the West. Unfortunately, the West had only the western model of agriculture to teach. This model was learned and implemented. Agricultural development became synonymous with "modern agriculture." Further, Western aid to help the "less privileged" was distributed by people who were exponents of "modern agriculture" either by being trained in it or by assuming that the western model was superior in all learning. Lastly, the destruction has been accelerated by unscrupulous businessmen seeking to create new markets for their goods. . . .

If we accept the ecological model, the buffalo ceases to be a thing in itself and becomes a product of its relations to other things. It will be seen that the ecological model is capable of addressing a much wider set of relationships than the mechanical model.

Recognizing the importance and delicate interdependence of that "wider set of relationships" is the holistic way of thinking. Fortunately, there are now Easterners with Western education who are able to demonstrate to Western readers in terms of their own mode of logical analysis that traditional methods are often far more valuable to human beings than superficially impressive production techniques.

In the same issue of the *Ecologist*, an Indian thinker, Krishna Chaitanya, gives "The Hindu View of Man and Nature." Here the forces of nature, instead of being represented by mathematical abstractions—an ultimate reduction, you could say—take on the guise of gods and goddesses, stirring the play of imagination through

allegory and metaphor. In the state of Kerala, the writer points out, by reason of the tradition believed in by the people that every sizeable homestead should have "a sacred wood in a corner of the grounds where the chthonic deities were worshipped," a large deforestation project of the government was prevented by popular protest. In the Himalayan region, however, such traditions are not so strong, and the area "is being denuded at appalling speed." The writer also says:

The mention of the Himalayas brings to mind another instance of tradition seeking benign ends through poetic legend. Siva is the deity of the Himalayas. When the Ganges which was a river of heaven, was prayed to for coming to the earth, she said it could not be done because the force of her descent would shatter the earth. But the matted locks of the great Siva broke the fall and the impetus of the waters did not destroy the earth. The locks stand for the Himalayan forests that break the fury of tropical rain and conserve both the water and the top soil of the slopes in ways beneficial to man.