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A PATTERN LAID UP IN HEAVEN

THE Italian historian, Franco Venture, was recently quoted here as pointing out that old ideas are not necessarily backward-tending or retarding in effect. Reviving them may be part of what is needed in the present—"a fruitful attempt to preserve the most precious aspects of the past in order to transmit them to the future." We have dozens of examples of such efforts before us today—practical ones in the reform of agriculture, scholarly ones in cultural and philosophical anthropology.

But not all the neglected ideas are "old." There are also ideas which men cherish as they might a secret love, seldom speaking of them openly, yet gaining from them immeasurable nourishment. We might call these "back of the head" ideas. It seems possible that, for some men at least, great effort and the capacity for vision are sustained by these usually hidden conceptions, with the result that, when we hear or read something extraordinarily good, there is no way to find out where it comes from, or what may have inspired it. In a fact-worshipping age no one wishing to enjoy the good opinion of his colleagues is likely to disclose the unacceptable sources of his faith. A man who has seen a unicorn at dusk will not report it to an assemblage of zoologists, nor is a physicist who recognizes a principle of discovery in the insight of some mystic likely to credit this source in his footnotes or bibliography.

Yet now and then there are leaks in this reserve. A scientist of assured eminence may feel emboldened to make some curious admissions, and if he is great he may not care at all what people say about him. Another side of the matter would be covered by the difference between the way an original and inventive man really thinks and what the popularizers and codifiers of "modern knowledge" make of him. If he occasionally reveals his back-of-the-head ideas, these will be omitted, one can be sure, in the watered-down textbooks. (There is hardly a better reason for the abolition of textbooks.)

One thinks, for example, of Newton's enduring interest in alchemy, in Boehme's writings, and in theology, almost never mentioned in properly cleaned-up accounts of how he devised the foundations of classical physics; or of William James's lifelong involvement in psychic research. Then there is Thomas Huxley's extraordinary contribution to his *Essays on Some Controverted Questions* (1892), in which this staunch champion of Darwinian evolution—not above occasional nature-faking in behalf of man's supposed ape ancestry—declared it "baseless and impertinent" to assert 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 the black beetle's." He also found it easy, he said, going from analogy of what is known, "to people the cosmos with entities, in ascending scale, until we reach something practically indistinguishable from omnipotence, omnipresence, and omniscience." The abstract logic of evolution doubtless prompted this back-of-the-head foray into polytheistic possibility, although at the same time Huxley remained convinced that "psychical phenomena are dependent on the physical." Darwin, too, has his back-of-the-head convictions. In 1864 he wrote to Alfred Wallace his agreement that the struggle between the races of man depends "entirely on intellectual and *moral* qualities."

Einstein was one of the few who, when asked, were willing to speak openly of their back-of-the-head experiences, although, for him, there seemed little difference between these and the work of his life. His son-in-law, Dmitri Marianoff, tells about a night in Berlin, after other

members of the household had retired, when, as the two sat quietly together, he felt able to ask the physicist a question. Marianoff relates in *Einstein—An Intimate Study of a Great Man* (Doubleday, 1944):

> I had often seen him in abstract meditation, often physically weary, but never had I felt so much peace about him as at that moment. The room was filled with stillness.
>
> "How is it, Albert, that you arrived at your theory?"
>
> "In vision," he answered.
>
> He said that one night he had gone to bed with a discouragement of such black depths that no argument would pierce it. "When one's thought falls into despair, nothing serves him any longer, not his hours of work, not his past successes—nothing. All reassurance is gone. It is finished, I told myself, it is useless. There are no results. I must give it up."
>
> Then this happened. With infinite precision the universe with its underlying unity of size, structure, distance, time space, slowly fell piece by piece, like a monolithic picture puzzle, into place in Albert Einstein's mind. Suddenly clear like a giant die that made an indelible impress, a huge map of the universe outlined itself in one clarified vision.
>
> And that is when peace came, and that is when conviction came, and with these things came an almighty calm that nothing could ever shake again, not while Albert Einstein lives. . .

Marianoff reports that on another occasion Einstein said to him—"the exact phrasing of the words is lost but the fact in them was this—that when the truths of cosmic law and order became the inhabitants of his mind and took full possession they brought with them a tremendous calm and a divine balance, and he was never to know restlessness and impatience again, ever." It seems fitting to recall here what Dr. Einstein told Niccolo Tucci, who interviewed him for the *New Yorker* (Nov. 2, 1948). Learning that the physicist spent an hour each evening reading aloud in Sophocles, Thucydides, and Æschylus, Tucci remarked, "So you too, Herr Professor, have gone back to the Greeks?" Einstein replied:

> "But I have never gone away from them. How can an educated person stay away from the Greeks? I have always been far more interested in them than in science."

Pierre Duhem, author of *Aim and Structure of Physical Theory*, was another theorist who revealed that his back-of-the-head ideas were more important to him than the work he and others seemed to be doing. A review essay in *Science* for April 23, 1954, provides these quotations from Duhem:

> Physical theory never gives us the explanation of experimental laws; it never reveals realities hiding under sensible appearances; but the more complete it becomes the more we apprehend that the logical order in which the theory orders experimental laws is the reflection of an ontological order, the more we suspect that the relations it establishes among the data of perception correspond to real relations among things, and the more we feel that theory tends to be a natural classification.
>
> . . . the physicist is compelled to recognize that it would be unreasonable to work for the progress of physical theory if this theory were not the increasingly better defined and more precise reflection of a metaphysics; the belief in an order transcending physics is the sole justification of physical theory.

The highest achievement of Friedrich Kekulé, whose formulation in 1865 of the "ring" theory of the constitution of benzene has been called the "most brilliant piece of prediction to be found in the whole range of organic chemistry," grew out of what was plainly a back-of-the-head inspiration—a dream. The work on which, at the end of the nineteenth century, three fourths of all modern organic chemistry was said to depend, was born from a "flash" of inspiration which came to Kekulé during a bus rice while visiting London. As he tells it:

> I fell into a reverie, and lo! the atoms were gambolling before my eyes! Whenever, hitherto, these diminutive beings had appeared to me, they had always been in motion, but up to that time, I had never been able to discover the nature of that motion. Now, however, I saw how, frequently, two smaller atoms united to form a pair; how a larger one embraced smaller ones; how still larger ones kept

> hold of three or even four of the smaller, whilst the whole kept whirling in a giddy dance. I saw how the larger ones formed a chain. . . .

That night Kekulé sketched out his dream of the atoms. When done he had evolved a system of formulas to represent the structure of organic compounds. He had dreamed the architecture of the benzene molecule. Later, in Ghent, he dreamed of chains of atoms in snake-like whirls. He saw one of the "snakes" bite its own tail; awaking, he developed what chemists now call the benzene ring. (That sterling source of reliable information, the *Encyclopædia Britannica* [1953], lists all the tributes we have quoted here, but makes no mention of Kekulé's dreams!)

In *The Psychology of Science*, A. H. Maslow suggests that an "exploration of the inner life of good scientists" would be a way of bringing together scientists, artists, "religious" persons, humanists, and all other serious people. He means by this to show how such individuals are linked by what we have termed "back of the head" ideas—apparently transcendent sources of inspiration:

> This is what nonscientists don't know, and this is what scientists are too bashful to talk about publicly, at least until they grow old enough to become shameless. Science at its highest level is ultimately the organization of, the systematic pursuit of, and the enjoyment of wonder, awe, and mystery.

Inventors, when questioned, tell the same story. Years ago, C. G. Suits, then head of General Electric's research division, contributed to *American Magazine* (December, 1945) an article on how inventors get their ideas. "Hard work," he said, "invariably precedes the flash of inspiration." But an attempt to go behind this explanation usually discloses mythic dimensions. One engineer proposed that "hunches" leading to discovery scurry around in the brain like birds in a cage. When one of them sees an opening into the conscious mind—an exit, you could say, from the back part of the head, unbarred by preconception—it flutters out and the inventor has an "inspiration." Another engineer "insists that intuition is awareness of Absolute Truth—a sort of spiritual receiving set that permits the owner to tune in broadcasts of universal knowledge." Still another spoke of a "guardian angel" that whispers advice and prevents mistakes, and a chemist had "the impression that unseen hands are guiding his operations."

If, in the course of an hour or two, it is possible to gather together these several and sometimes impressive instances of the looming presence of back-of-the-head influences—having, of course, some idea of where to look for them—what might result from devoting a year to such research? But if one were to do it, there might be great temptation to offer a "theory" about them, and the chances are we are by no means ready for anything like that. Precocious theory exercises a sterilizing effect, since, seeking acceptability, the theorizer will often avoid hypothesizing the full dimensions of what he proposes to explain.

The evidence of back-of-the-head ideas, one might say, is still—and properly—in its mythic stage. This is not reductive judgment but simply an evaluation of the cultural status quo. Myths give expression to realities we know exist but know better than to attempt to define. Myths are half-way houses between our strongest intuitive feelings and what we are able to say we "know" and to speak of with some precision.

Myths are also utopian goals we can neither realize, here and now, nor do without. The myth is back-of-the-head cultural vision or inspiration, the nourishment of the collective dream of the Good. Who are the actors in myths? Well, they are men, heroes, and gods—in that ascending order. A civilization which fails to recognize the order as real, which shuts out myth, loses its inspiration and abandons itself to the denials and literalism with which we are so tiresomely familiar. As we noted earlier, there is no mention of Kekulé's vision—from which such extraordinary achievements resulted—in the *Britannica.* Such primary sources are not to be taken seriously. Nor, in the *Britannica* account of Arcadia, is there any reference to the qualities

assigned to this region of ancient Greece by Virgil and Sir Philip Sidney, making it a place of mythic meaning. The rapacity of people actually to *live* in the world known to the back of their heads is totally ignored by the learned men of our society. That world does not exist for them, so they make a desert of culture.

In our age, the world of the imagination—for men like Blake, Wordsworth, and Coleridge the true universe of human life—is no more than a resource for literary embellishment. A revealing account of how we use these riches is found in William Rose Benet's preface to *The Reader's Encyclopedia*, which he edited for publication in 1948. He makes a sort of apology for back-of-the-head ideas:

> The curious mind inevitably stores up what it has sometimes characterized as "much useless information." Yet, in literature, it is often these peculiar bits of learning that serve most to adorn and give flavor to a style. I have, however, endeavored to rid the book of all that is merely archaic. I have tried to maintain balance and proportion between the modern world and the world of antiquity. People used to speak of "dead languages." Yet, in English derivations, the dead languages still live. In the same way, the mythology of the past constantly reappears in the poetry of the present; and the classics may furnish groundwork for the most modern fiction. (One has only to think of *Ulysses.*) . . .
>
> Either my memory is at fault or there is one essay that neither Charles Lamb, William Hazlitt, or Christopher Morley ever wrote; one on Reference Books. The phrase for them, now cliché, has been "mines of information." But a mine, at best, is a rather dark and dreary excavation—not to say *dank*, at times. I prefer to think of the book before you as a cave like the famous one stumbled upon by Aladdin. I might go on from there to describe its revelation of treasure of so many varieties and kinds, yet each in its own particular bin.

The image of a cavern of riches is apt for Mr. Benet, but we are thinking—for the source of back-of-the-head ideas—of a universe of life and action, not one merely of literary discourse. It is a meta-physical place, yet not without terrain, topography, and even compass points. Those who visit there return to our earth with dual citizenship, making the two worlds overlap. The continuities of the back-of-the-head world—call it the mythic world, to guard against further definition—are not the same as the ones we rely on here; indeed, they may be conceived of as opposite in character. In *An Essay* on *Man,* Ernst Cassirer speaks of this difference:

> To mythical and religious feeling nature becomes one great society, the *society of life.* Man is not endowed with outstanding rank in this society. He is a part of it but he is in no respect higher than any other image. Life possesses the same religious dignity in its humblest and its highest forms. . . . we find the same principle—that of the solidarity and unbroken unity of life—if we pass from space to time. It holds not only in the order of simultaneity but also in the order of succession. The generations of men form a unique and uninterrupted chain. The former stages of life are preserved by reincarnation. . . .
>
> Many mythic tales are concerned with the origin of death. The conception that man is mortal, by his nature and essence, seems to be entirely alien to mythical and primitive religious thought. In this regard there is a striking difference between the mythical belief in immortality and all the later forms of a pure philosophical belief. If we read Plato's *Phaedo* we feel the whole effort of philosophical thought to give dear and irrefutable proof of the immortality of the human soul. In mythical thought, the case is quite different. Here the burden of proof always lies on the opposite side. If anything is in need of proof it is not the fact of immortality but the fact of death. And myth and primitive religion never admit these proofs. They emphatically deny the possibility of death. In a certain sense the whole of mythical thought may be interpreted as a constant and obstinate negation of the phenomenon of death. By virtue of this conviction of the unbroken unity and continuity of life, myth has to clear away this phenomenon. Primitive religion is perhaps the strongest and most energetic affirmation of life that we find in human culture.

The reference to Plato is of particular interest. Plato, you could say, moved around deliberately in his head—from front to back and back to front—for his several and various purposes. This is discussed by V. E. Walter in an article in *Partisan Review* for September-October, 1954.

> Plato, one of the greatest mythmakers, became the professed enemy of myth in the political realm. Plato's solution to the problem of justice should not be confused with his formulation of the question. The *Republic* itself was intensely conservative, but his dialectics were revolutionary. He demanded that the state be, first of all, *understood* and developed a method to search out systematically for the unifying principles. Then, he declared, a choice must be made between the ethical and the mythical conception of the state. The legal state, the state of justice, excludes mythological construction . . . to construct moral and political life on tradition, Plato argued, meant building on shifting sands. In the *Phaedrus* he told us that the man who is impelled by tradition, proceeding from habit to routine, is blind. Tradition cannot guide him for it is blind itself, without a guiding principle, following impulses neither justified nor understood.

Here is discernment of the weakness, except as inspiration, of myth or tradition—of the vast, primitive affirmation of life. Those who attempt to make *laws* from the moral import of allegory would devise a mechanical union of the two worlds, when the true way of combining them is by catalysis and by osmosis. Yet Plato has wheels within wheels. The *Republic* is itself a myth. As Northrop Frye has said, "Socrates in the *Republic* is not concerned about setting up his ideal state anywhere: what he is concerned about is the analogy between his ideal state and the structure of a wise man's mind, with its reason, will, and desire corresponding to the philosopher-king, soldiers, and artisans of the political myth." Plato's real Utopia "is an individual goal, of which the disciplined society is an allegory."

Plato is one of those few who advocate actually living, but as an individual, in the utopian world of vision. At the end of Book Nine in the *Republic*, when Glaucon says that the ideal city of their dialogue can be found "nowhere on earth," Plato has Socrates declare, in behalf of the true philosopher:

> Well, said I, perhaps there is a pattern of it laid up in heaven for him who wishes to contemplate it and so beholding to constitute himself its citizen. But it makes no difference whether it exists now or ever will come into being. The politics of this city will be his and of none other.
>
> That seems probable, he said.

REVIEW
HISTORIAN, POET, PHILOSOPHER

IN 1969 Johns Hopkins University Press published *Giambattista Vico: An International Symposium*, in tribute to a great but neglected thinker and philosopher on the tercentenary of his birth. The interest aroused was so enduring that a second volume, *Giambattista Vico's Science of Humanity* (496 pp., $16.50), consisting of essays by a number of scholars, was brought out last year. The editors are Giorgio Tagliacozzo and Donald Phillip Verene. Why is Vico of such importance? To what can be attributed this remarkable attention to an obscure Italian born in 1669?

We first came across Vico in some stirring passages early in Edmund Wilson's *To the Finland Station*, probably the best brief account of the origins and impact of modern communism. The part of the book of interest here is the excitement produced in the French historian, Michelet, by reading Vico's *The New Science.* In Vico, Michelet found this seminal idea: "The social world is the work of men." This meant that men are capable of changing the social forms, the governments, under which they live. As historian of the French Revolution, Michelet saw here the principle of its origin. For Wilson, it was a key to Marx, who had said that philosophers only *interpret* the world, whereas the point is "to *change* it."

In the present, however, the collection of essays in the 1976 symposium, *Giambattista Vico's Science of Humanity*, reveals the far wider significance of Vico's power as a humanistic and anti-Cartesian thinker, one justly called "the most unacknowledged source of ideas in the history of philosophy." The range of the essays in this volume indicates that Vico is at last coming into his own. The most impressive single thing about this man is the extraordinary fruitfulness of his thinking, which can be recognized in just about every direction. His value lies not so much in his conclusions as in his method; not in his time-bound opinions, but in his basic assumptions, or rather one assumption in particular: If you want to understand history, or other men of any period, Vico said in effect, study yourself. The human mind is the key to other minds.

These essays demonstrate that Vico's ideas reached far beyond his time, to the present and beyond it. This can be illustrated by quotation from Howard Gardner's "Vico's Theories of Knowledge," in which the writer says:

> Vico called for the founding of a social science which devoted the same attention to human and cultural institutions as was directed by the natural scientists toward the physical world. He embraced adoption of an empathetic, intuitive manner for the study of these phenomena, with the expectation that their principal characteristics and developmental stages would thereby be revealed. . . . Nearly three centuries after the master commenced his labor, the founding of social and cultural sciences is no longer a dream. . . . Many scholars would agree with the thrust of Vico's conclusions, and a number of empirical findings and research traditions can be seen as generally consistent with his claims. And even when we examine a central Vichian tenet—the conflicting nature of scientific and humanistic ways of knowing—we find a basis for his claims.
>
> Because of the breadth of Vico's interests, it is possible to find links between his writings and those of several contemporary social science movements. Yet, of late, it has been claimed that Vico possesses especial affinity with the structuralist movement, with the synthetic efforts of such social scientists as Jean Piaget, Noam Chomsky, and Claude Lévi-Strauss.

The writer then develops the similarities and differences between Vico and these influential thinkers. He concludes:

> How would Vico survey the social sciences today? Vico envisaged a science which would focus particularly on the deep truths and which would be conducted and sustained by the profound commonalities between man as subject and man as object. Yet, as Niels Bohr once remarked, the purpose of science is to eliminate the deep truth. Looking at the majority of social scientists today, feeding punched cards into computers, testing null hypotheses, focusing on stimulus-response

> connections or on questionnaire responses he might well reject the inappropriate, overly technical methods being embraced and the shallow questions being posed. He might also be dismayed at the lack of progress made in resolving the fundamental questions about human society which exercised him and by the spurning of the empathetic methods which he greatly valued. . . . He would come to see anew that "What is important?" is not a question which scientists are equipped to answer. . . .

Yet the picture is not entirely dark:

> Finally he might find solace in the realization that gifted social scientists of succeeding eras, in particular those of structuralist persuasion, have continued working in those areas which his pioneering work almost single-handedly founded—the study of "simpler" societies, the developmental approach to cultural phenomena, the comparative study of economic and political systems, the examination of myths and texts—and that contemporary social scientists are coming increasingly to the conviction that there are fundamental invariants in human societies, human minds, and in the human condition. Even if their resolutions and their resolve do not always coincide with that of Vico, these explorers are asking together with raised voices those questions which Vico first posed alone.

Vico regarded the myth as "true narration," and poetic expression and metaphor as the natural language of primitive peoples. Particular histories were, for him, unique partial embodiments of a universal pattern, the task of men being to see in their experience the classic meaning of universal history. Vittorio Mathieu explains that the nucleus of Vico's philosophy—that history is "the privileged seat of Platonic ideas"—becomes possible through Plotinus' conception that the eternal and timeless can have limited "incarnation" in history, providing opportunity for men to read universal meanings in individual cycles. As Mr. Mathieu puts it:

> The myth, the "true narration," then becomes a common denominator that makes the connection and continuity of periods possible, not only by reason of their very existence, but also in essence, even when they are quite different qualitatively. Only when mythified can history reflect, in its infinite variety, an unchanging truth; conversely, an unchanging truth cannot become history unless it is expressed in mythical form.

Mr. Mathieu offers this comment on recent "scientific" ideas:

> Man is under the illusion that, in setting myth aside, he has reached truth, that he has finally found its "proper, form by eliminating the fanciful superstructures that hid it; and he is encouraged to pursue this illusion when he notices how truth, according to this conception, becomes ever more functional and pragmatically easier to apply. Truth, while it is always a *factum,* has now become a fact appertaining to man, something that man can do by following a technique under his control; it is a scientific truth and can indeed be termed "human," since it belongs to a sphere in which man operates under his own initiative and is no longer guided by a mysterious "inspiration." And yet, at the very moment when truth is humanized it is flattened out and becomes abstract, losing an essential dimension: the dimension of that contact with divine truth thanks to which *fact,* and therefore *truth,* were concrete realities. Science is the only serious attempt to relieve human truth of its inadequacy; but from this point of view it cannot be said to have succeeded. Quite the opposite. Paradoxically scientific truth reveals the greatest inadequacy of all—a radical evaporation of truth.

The lonely Vico, unable to persuade his contemporaries of the importance of his work, was for a time bitter and resentful of the neglect he suffered. However, we see from a letter he wrote that he overcame this self-pity through the strength of his convictions. The essay by Peter Hughes has this concluding passage:

> Vico closes by praising providence for ordering the world of nations in such a way that man—and the scholar above all—might be filled with wonder and veneration at "the matchless wisdom of the ancients" and by "the ardent desire" to attain that wisdom, thereby enabling him to recreate his history. And even though these feelings can be corrupted by what he calls in this same passage "the conceit of scholars and the conceit of nations," Vico clearly did not think they had corrupted him. On the contrary, as he told a friend in a letter written a year after completing the first version of his *Scienza nuova:*
>
> "I no longer lament my hard lot and . . . denounce this corruption of letters that has imposed

> that lot; for this corruption and this lot have strengthened me and enabled me to perfect this work. Moreover (if it be not true, I like to think it is) this work has filled me with a certain heroic spirit, so that I am no longer troubled by any fear of death nor have I any mind to speak of rivals."
>
> From the writer's perspective, this heroic role is the creative analogue of Vico's theory of *recorso*, which "as the principle of universal history is the act by which the human spirit renders present and contemporaneous to itself the life of all the individual nations in their eternal and ideal principles."

The act of *recorso*, Mr. Hughes explains, "is the imaginative telescoping of this order into a single aesthetic perception." It is the consolidation of diverse happenings into a single theme, the making, so to speak, of an emblem which contains by implication all the complex meanings of a period, yet has the unity of self-realization.

To illustrate how this is accomplished in the present, Hughes cites Thomas Kuhn's *The Structure of Scientific Revolutions* as an example. Kuhn brings a unifying self-consciousness to the study of science and its history by the use of models and exemplars, both conceptions employed by Vico.

The genius, according to Vico, is one who, being of "heroic mind," preserves the quality of poetic truth, evident in his "capacity of invention that had seemed to have become extinct, in an age when ideas were gradually congealed." The "poetic" form of truth, as Mathieu says, is "that in which truth is brought closest to man, without losing its devine dimension." But poetry, Vico says, is not essentially different from philosophy, since "the poet teaches by delighting what the philosopher teaches austerely."

COMMENTARY
VICO'S SECRET

ONE of Vico's greatest disappointments was his failure to gain appointment to the chair of law at the University of Naples. He was, it seems, too unorthodox a thinker, and he remained all his life a lowly instructor in rhetoric—"teaching," as Donald Kelley puts it, "the liberal arts to children." In other words, Vico's influence on his contemporaries was slight. This neglect of him in his own time may be contrasted with a present-day historian's estimate of his importance. Paul Hazard has said:

> If only Italy had lent an ear to Giambattista Vico; if only, as at the time of the Renaissance, she had assumed the leadership of Europe, our intellectual history would have had a very different tale to tell. Our eighteenth-century ancestors would not have believed that everything that was clear was necessarily true. On the contrary they would have looked upon clarity as a defect rather than a virtue in the matter of human reason. If an idea is clear, it means that it is finished, rounded off, over and done with. They would have given pride of place in the hierarchy of faculties, not to reason, but to the imagination.

What human beings come to regard as "certain," Vico maintained, is by no means evidence of truth, the discovery of which would go far beyond mere logical clarity to the spirit of things. Yet the search for truth could nonetheless be a science—the *new* science, he called it. As Prof. Kelley says, Vico meant to decipher the book of humanity through the study of language, just as Galileo had deciphered the great book of nature through mathematics. The two methods were radically different, as they should be. In their preface to the Johns Hopkins volume on Vico (see Review), the editors remark that "the need generally felt today to recast much of social scientific thinking in humanistic terms and the need in humanistic thought for a comprehensive theory of man are versions of themes present in the *New Science."*

How did Vico manage to be a pioneer in so many ways? One explanation is given by Prof. Kelley, who points out that by reason of a childhood accident, keeping him out of school, Vico was obliged to be his own teacher. He later pursued these solitary habits of study, "continuing to be, in his own word, an 'autodidact,' and proud of it." He knew quite well, as Col. Ragland told his high-school students, "One day you're going to learn that what you're going to learn is what you teach yourself."

CHILDREN
. . . and Ourselves

OBEDIENCE TO THE UNENFORCEABLE

WE have from a reader the story of a man who, as teacher, left a rare heritage of influence among high school students over a period of eight years. The name of the school where he taught would add nothing to the account and has been omitted for this and other reasons. The writer of the story taught in the same school.

The man is William White Ragland, born in Lynchburg, Virginia, in 1909. His family had only a modest income so he qualified himself to enter West Point to get a college education. This turned out to have been a good plan, he thought, since when he graduated, tenth in a class of three hundred, at the depth of the depression years, he had a job! Years later, part of his work was to lead some Army Engineers in the attack on Utah Beach (a D Day target on the Normandy coast of France in World War II), to blast away obstacles so the infantry could land. He was decorated with the legion of Merit and the Bronze Star.

At this point we are able to add a little to the story. In 1960, a year or so before he retired from his thirty years of service in the army, Col. Ragland wrote to MANAS (at the suggestion of Abraham Maslow) for information about the paper. He subscribed, and our files show that by 1962 he had settled in San Francisco. He later subscribed for a friend named Walt, of whom he said in a brief note: "Walt and a small group of students at S. F. State are making non-violent protests to the work going on at the radiation laboratory at Berkeley."

Then, in 1966, he wrote to ask:

> Do you know of any schools in the San Francisco Bay area that are attempting to act out the philosophy of "Summerhill" or the philosophy implicit in John Holt's *How Children Fail?*
>
> I realize that Mr. Neill says that most, if not all, American "Summerhill-type" schools don't catch the spirit of his school and confuse freedom of choice with license to disregard the rights and welfare of the group. Surely there must be some around who understand Mr. Neill.
>
> At present I am teaching math and physics in a four-year boys' high school. I don't believe that I am "up to" teaching below about 7-8 grade level (you need to know far too much about your subject). I find there is considerable lip-service paid to the importance of the individual and fostering individual growth by educators (administrators) in both private and public schools, but I am afraid that is where it stops with most of them.
>
> I hope you can help me. They can get a mature, dedicated individual who can afford to work for mighty low pay.

MANAS wasn't much help. Two years later (in 1968) he found a place to work and remained there for the rest of his life. The following story by his associate and friend is about those eight years. Col. Ragland died last summer (in July) as the result of an accident with a tractor he was using on his ranch near Angwin in the Napa Valley.

* * *

Col. Ragland's school was never his school. He was on the board of trustees, but that was chiefly a gesture on the principal's part to thank Rags for the many hours, the uncashed paychecks, books, and building materials that he had given us. Rags did attend several trustees' meetings, but he told me in disgust that they were mainly involved with "getting somebody else to do what you thought ought to be done." Rags stopped going to the meetings, and kept contributing in the way that I have seen is probably the best way to make a contribution in a large society, or even in a small school: he was himself.

Each morning before seven, Rags was sweeping the walks in front of the school (carrying along a dustpan and a huge waste container), and sweeping sometimes several blocks in each direction. "People jog to get exercise. This is how I get mine." One neighbor, thanking him for sweeping his walk, was astounded when he found out that Rags swept

each morning, not because he had to, but because he wanted to.

Rags had a bug about how people didn't notice things. He would point to the large bowl of change on his desk and tell his students that they had walked over it all since the beginning of the school year. He had picked it up sweeping. One weekend while he was driving to his ranch in Napa County, Rags spotted something shiny on the road. He stopped and found a Swiss Army knife which looked like it had been run over by a truck. The case had fallen off, but it still worked well, and since he had one, he gave it to me.

It seemed that anything we needed would some day be found on our corner in San Francisco. The police, dressed as PG&E men, left 250 feet of rope on the sidewalk, and we then shingled our roof in greater safety. The house right next to the school kept running drugs and girls as usual.

Since he wasn't running the school, and since he didn't have an organized plan that we were lectured on following, and since he didn't have a philosophy to sell (except by example—lots of them), it's hard to know what his influence was, or where his influence ended.

He didn't say much. He told me that "What a man is, speaks so loudly, that it's hard to hear what he's saying." Sitting under his motto, "Obedience to the Unenforceable," he taught his math class by handing his students the book and saying, "O.K., now you can do it, and learn it, or you don't." When they had questions they came up and asked. The book (books, really, since he taught as many as five levels in one class) explained itself well, and they didn't need "to be led by the hand through it all." "One day you're going to learn that what you're going to learn is what you teach yourself, and not what you're spoon fed."

This method had more to teach than just mathematics, and it worked best with the worst students and the best students.

Years ago Rags talked the principal into not hiring a janitor or maintenance man. It wasn't hard to convince him; it was a hardscrabble school in physical plant, finances, and students. It was the furthest thing removed from a regular private school that one could think of. Teachers taught with umbrellas over their heads while they were inside during rainstorms. One third of the school had been condemned. In eight years, coping daily with emergency maintenance disasters, Rags remodeled and refurbished the school, using mostly materials that he had found, that he didn't want at home any more, or that he had bought for us.

The meter reader used to curse us for keeping so much used lumber in the basement (he had to climb over part of it). We got it from buildings that were being remodeled or torn down in the neighborhood, taking half a dozen kids in the morning from the detention room to go and scavenge from the refuse.

We paid our students $1 an hour to paint on Saturdays. The parents loved it (free baby-sitting). They said that they were glad their kids were learning that what they took for granted (cleaning, fixing, painting, etc.) didn't just happen automatically: there was plenty of hard work. Anyone who has supervised a team of fifteen Jr.-High painters knows that you no more than turn your back and a wall is painted (plus anything else in the way).

Instead of allowing a school to die a graceless death, Rags gave it eight years of rejuvenation, which brought hope to a nearly hopeless situation in which one man, not trying to change a system (he worked mainly by ignoring it), inspired teachers and students who had been nearly as bedraggled and downcast as the school.

JACK FINEFROCK

FRONTIERS

A Trend Without a Future

IN "Patterns of Human Settlement," an article first appearing in *Ambio* (Vol. 3, 1976) and reprinted in Gandhi Marg (July, 1976), E. F. Schumacher quotes from Kingsley Davis, a student of urbanization, on the present concentration of people in cities:

> "The large and dense agglomerations comprising the urban population involve a degree of human contact and of social complexity never before known. They exceed in size the communities of any larger animal; they suggest the behavior of communal insects rather than mammals." Surprisingly he [Kingsley Davis] also holds that "urbanized societies, in which a majority of the people live crowded together in towns and cities, represent a new and fundamental step in man's social evolution."

The rate of this "advance" has been rapidly increasing, as Davis shows:

> "Between 1850 and 1950 the index for urbanization (i.e., the proportion of the population living in cities of 100,000 or larger) changed at a much higher rate than from 1800 to 1850, but the rate of change from 1950 to 1960 was twice that of the preceding 50 years! If the pace of increase that obtained between 1950 and 1960 were to remain the same, by 1990 the fraction of the world's people living in cities of 100,000 or more would be more than half. Clearly the world as a whole is not fully urbanized, but it soon will be."

Mr. Schumacher makes this wry comment:

> For mammals to choose a pattern of living suited to communal insects may be described as a new and fundamental step in their social evolution, but it is not immediately apparent that it is a step in the right direction.
>
> Urbanization of this kind is a very recent phenomenon. The monstrous growth of Megalopolis drains life not merely out of the rural areas but also out of innumerable small and medium-sized towns. There remains then a nightmarish vision like the one worrying French planners—the whole of France becoming "Paris surrounded by a desert." In the United Kingdom there is a seemingly irresistible drain into the southeast, in spite of heroic, or at least incredibly expensive, measures designed to decentralize economic activity into "development areas," which, under one designation or another, cover half the area of the country. Towns which a few centuries ago were world-famous and had enough vitality to adorn themselves with some of the finest cathedrals of Europe, seem to be in the grip of ignominious decline, and the rural areas forming the hinterland of these towns become more remote from the "real life" of the country than ever before.

What are modern cities like? California's Senator Alan Cranston describes a portion of one of them, the South Bronx of New York, which he visited during the Democratic National Convention last summer:

> It is appalling. Building after building, block after block has been burned out, ravaged. It's like a city that's been bombed in war. And the devastation is spreading in all directions.
>
> Nearly a half million people still live in the South Bronx. Forty per cent are on welfare, 30 per cent of the employables are unemployed, 20,000 are drug addicts, 9,500 belong to gangs. They live in unsafe, unhealthy buildings 20 per cent of which are without water and 50 per cent without heat half of the time.

Mr. Cranston adds:

> Fortunately, every American city is not in South Bronx's shape. But the long shadow of the monumental urban failure there is reflected in abandoned city housing and blighted neighborhoods in cities in California and all across the land.

We turn next to Environment, October, 1976, for Kevin P. Shea's historical account of American agriculture. He describes the development during the past hundred years of an intensive technology which, although it brought high food production, also resulted in "the steady deteriorization of rural society, with accompanying severe increases of pressure on urban areas." Mr. Shea says:

> To most Americans, poverty is viewed as a problem of the cities; yet, while its uglier manifestations are indeed urban, the roots of our present situation can be traced to agricultural technology and to public policy which has shown an inability and, in some cases, an unwillingness to recognize the social consequences of its own success. Not only has industrialized agriculture driven people

> from the land to urban centers which have become less able to absorb them in a productive way, but many of those who are unable to move are left to struggle for a living in a rural America that can no longer support them.

Between 1940 and 1960, Mr. Shea says, 22,000,000 people left rural areas for the cities, and the migration, while recently slowed, continues at the rate of about 700,000 a year.

In *Not Man Apart* for Mid-September, 1976, Lester R. Brown, a leading authority on world food supply, points out that today all but four or five countries have food deficits and can survive only by importing grain. Some must import more than half what they need. This necessity reflects a sudden change:

> A generation ago, Western Europe, which was the most urbanized region, was also the only importing region. Each of the other continents was exporting grain in at least some quantity. By 1976, that situation has been changed beyond recognition. Virtually the entire world has come to depend on North American food exports. Asia, Africa, Latin America, Western Europe, and Eastern Europe, including the Soviet Union, are net grain importers. Much of the food imported into these regions is used to feed the cities.

The movement of people to cities depends largely on the availability of energy to agricultural technology. In 1800, only 2.2 per cent of Europeans lived in cities of 100,000 or more. Exploitation of fossil fuels, first coal, then oil, made today's enormous cities possible. When people leave the country for the city, more energy is required to produce food for the growing urban population; and more energy is required again, to transport food to urban areas. Only a fourth of the energy used for food is in production; the other three quarters is consumed by transport. Two statements by Mr. Brown go to the heart of the matter. The first:

> In a world where energy is becoming scarce and unemployment is rising, it makes little sense to substitute mechanical energy for labor in food production in countries with large, unemployed rural populations [one in four in the U.S.].

Second, after showing the probably insuperable problems of safety, waste disposal, and security in the production of nuclear energy, Mr. Brown says:

> The world may well not move from fossil fuel to nuclear, but toward growing reliance on solar energy. If the world moves toward a solar age, the population will need to be broadly distributed, for the simple reason that solar energy itself is broadly dispersed.

Considerations basic to all the questions raised here are presented by David Pimental (and associates) in *Science* for Oct. 8, 1976. His subject is "Land Degradation: Effects on Food and Energy Resources." This article shows what Americans must do, and also stop doing, in order to produce sufficient food. One requirement is to protect the best croplands from urban invasion:

> During the past 200 years . . . about 236 million acres in the United States have been lost from crop production, more than half as much as the United States is now cultivating. Highway construction and urbanization on vital cropland continues, and erosion continues to remove soil much faster than it is formed.