The "Synoptic Scientist"

Ritchie Calder

The Kalinga Prize for the popularization of science has been awarded to Ritche Calder, well-known British science-writer. He is the ninth winner of the Prize, whose purpose, as stated by its donor, the Indian industrialist Mr. B. Patnaik, is to offer recognition to leading interpreters of science and also to strengthen links between India and scientists of all nations.

Mr. Calder, who is 54, has been science editor of the News Chronicle *and of the* New Statesman and Nation. *He is Professor of International Relations at Edinburgh University. His fifteen books on scientific subjects ranging from medicine to the struggle for life in the Arctic have been translated into a dozen languages.*

----oOo----

The tools of my trade as a science-writer have been — apart from a typewriter — three questions: "What are you doing?" "How are you doing it?" and "Why are you doing it?" With patience on the part of the scientist and patience on the part of the inquisitor, there are few things in science, however apparently abstruse or novel or difficult, which cannot be explained in comprehensible terms.

One of the major difficulties is the terminology —the jargon of science. The scientists in the various branches and disciplines of science

have invented their own language of convenience. Where once the terms were descriptive they are now cryptic—sometimes one feels that like the code-names for military operations, they have been deliberately invented to mislead and, like the sign-language of the medieval crafts, designed to preserve the inner mysteries for the few. ... What the scientist, who in the restricted company of his colleagues uses them as common-place terms, does not always realize is that such words are like index cards; to him they convey a whole filing-cabinet full of meaning, but he forgets that others do not have access to that filing-cabinet. This is, also, inevitable. With the proliferation of science, the scientist is entitled to his "language of convenience" but he must, when necessary, define those terms. A century ago, any man of science was intelligible to any educated man; terms had a common-root etymological meaning and in that sense were descriptive. Today, I repeat, they are cryptic.

I have sometimes described myself as a "babelologist", a student of that babel of tongues which is science. I also boast that I am an expert on experts — one who knows to whom to turn for the information one has not got. In that I personify the science-reporter, who is the trustee for the common man for whom he seeks enlightenment in the common tongue; who never relies on what he knows but turns to the expert sources for current guidance; and who does not make the mistake which many academics do of confusing ignorance with lack of intelligence. I have, after thirty years of trying to explain science, a reinforced confidence in the capacity of ordinary people to grasp what is made intelligible, provided that their interest has been enlisted and their imaginations illumined. But that after all is surely the essence of all good teaching.

The crisis of our times is the breakdown of communications — not just in the sense of political barriers, but in this all-important area of science. Our lives, our hopes, and our survival depend upon the uses which are made of science. To progress, we have to use scientific knowledge and discovery to its utmost advantage. Science, in the advanced countries, is developing so fast that it is almost impos-

sible to keep pace with the knowledge—and the gadgets —which are aggregating. I believe that some 3,000,000 original scientific papers a year are published. No one can compass so much information... One set of scientists does not know what another set is doing, and yet there may be an important affinity which may be of material value to mankind.

There are too few communicators *within* science and the bridges are broken between the humanities and science. Those who have to make the social judgements about science have usually no scientific training—worse, their own education makes them feel that anything which involves such intensive training is beyond their comprehension and that they must "rely on the expert". But there is little in the training of the scientist, preoccupied with all that has to be learned in his own subject, which gives him the capacity for social judgements. We are in danger of being subjected to the tyranny of the experts — faceless men at the elbows of the uninstructed. They are not tyrants by disposition but by our default.

How are we to teach people enough about science to allow them to make judgements, to decide priorities, and to see that science, with all its potential for good or evil, is directed to the advantage of mankind. How much more resources and attention should we be giving to the problems of this planet on which 4,000,000,000 people will have to contrive to live 20 years from now? Is space adventure more important than the food and population problem, for instance? And how, with all the spectacular advances of today, can we close the widening gap between the prosperity of the scientifically-advanced countries and the impoverished ones?

Without arrogating to the science-writer all the wisdom of the world, it is true that he has the opportunity for better undestanding. He is a "synoptic scientist"; he travels across the advancing fronts of all branches of science and can see, at first hand and in survey, what preoccupied scientists cannot see for themselves and what men-of-affairs can never see panoramically. His job is to pass that knowledge on — either along the line of science or to the public. He

TWO NEW MUSCLE RELAXING COMPOUNDS REVEALED

Two new muscle relaxing compounds, said to be five times as potent in animal tests as mephenesin, a presently used relaxant, have been developed in the United States. The new chemicals, based on the compound pyrimidine, block muscle activity by 80 to 100 per cent, according to Dr. Donald E. Heitmeier, a senior organic chemist at Irwin, Neisler and Company in Decatur, Illinois. Besides their muscle relaxing ability. they are sedatives comparable to the barbiturate drugs and also have hypnotic properties, he said. They have not yet been clinically tested.

Muscle relaxants are used to depress body reflexes during surgery and to treat spasms associated with certain forms of paralysis. The new drugs, resulting from chemical changes in phenyramidol, which is both an analgesic and a muscle relaxant, showed "marked enhancement of centrally induced muscle relaxant properties, a sharp reduction in analgesic activity and the appearance of strong, sedative-hypnotic properties," Dr. Heitmeier told a recent meeting of the American Chemical Society.

* * *

is, by the accident of his trade as a collector and disseminator, the prototype of what should exist in academic and public life, the communicator of information on which judgements can be made. In his own working life, his function is to convey to the mass of people the facts about science, but also to convey an interpretation of the social implications of new developments.

I know that many of my colleagues think that they should confine themselves to description and explanations and leave the value judgements to others. I disagree profoundly. Our access to information. our point of vantage on the scientific scene, give us responsibilities which, in the present situation, we must not shirk. — (UNESCO)