

Voyager

ARTHUR C.  
CLARKE

**GREETINGS,  
CARBON-BASED  
BIPEDS!**

A vision of the 20th century  
as it happened

Edited by Ian T. Macauley

HarperCollinsPublishers

## EIGHT

### Kalinga

#### Prize Speech

*Following is the speech Clarke made in New Delhi when receiving the 1962 Kalinga Prize from Rene Maheu, acting director general of Unesco. The Kalinga Prize, awarded for science writing, is a donation of one thousand pounds annually by the Indian industrialist and statesman B. Patnaik, and administered by Unesco. Other winners have been Bertrand Russell, George Gamow, Louis de Broglie, Julian Huxley, and Gerard Piel.*

"I am proud to receive the Kalinga Prize, an honor which I have coveted ever since it was founded." Those words were spoken last year by my distinguished colleague and compatriot Prof. Ritchie Calder, and they express my own sentiments so perfectly that I cannot do better than repeat them.

I would also like to thank the generous donor of the prize, Mr. Patnaik, and the Unesco officials who have organized this meeting. It is my hope that, as the years pass, the great importance of this award will become universally recognized, and its fame even more widespread.

In addition to the pride I personally feel on receiving the Kalinga Prize, I would like to think that it is a tribute to the field of literature in which I have specialized—science fiction. Although at least four of the earlier prizewinners have written some science fiction, it has been only a minute and incidental portion of their output. I can claim that it is a major part of mine, for I have published just about as much fiction as nonfiction.

Many scientists, I am sorry to say, still look down on science fiction and lose no opportunity of criticizing it. For example, they often point out that 90 percent of all science fiction is rubbish—ignoring the fact that 90 percent of all fiction is rubbish. Indeed, I would claim that the percentage of competent writing in the science fiction field is probably higher than in any other. This is because much of it is a labor of love, written by enthusiasts who have considerable scientific knowledge and who are often themselves practicing scientists.

What role does science fiction actually play in the popularization of science? Though it often serves to impart information, I think its chief value is inspirational rather than educational. How many young people have had the wonders of the universe first opened up to them, or have been turned to a scientific career, by the novels of Verne and Wells? Many—distinguished scientists have paid tribute to the influence of these great masters, and a careful survey would, I believe, reveal that science fiction is a major factor in launching many youngsters on a scientific career.

It is obvious that science fiction should be technically accurate, and there is no excuse for erroneous information when the true facts are available. Yet accuracy should not be too much of a fetish, for it is often the spirit rather than the letter that counts. Thus Verne's *From the Earth to the Moon* and *A Journey to the Center of the Earth* are still enjoyable, not only because Verne was a first-rate storyteller, but because he was imbued with the excitement of science and could

communicate this to his readers. That many of his "facts" and most of his theories are now known to be incorrect is not a fatal flaw, for his books still arouse the sense of wonder.

It is this sense of wonder that motivates all true scientists, and all true artists. We encounter it in the writings of such scientific expositors as Fabre, Flammarion, Jeans, Rachel Carson, Loren Easley, as well as many of my precursors at this function; and we meet it again in all scientific romances that are worthy of the name. Any man who can read the opening pages of Wells's *The War of the Worlds* or the closing ones of *The Time Machine* without a tingling of the blood is fit only for "treasons, stratagems, and spoils."

The cultural impact of science fiction has never been properly recognized, and the time is long overdue for an authoritative study of its history and development. Perhaps this is a project that Unesco could sponsor, for it is obvious that no single scholar will have the necessary qualifications for the task. In one field in particular-that of astronautics-the influence of science fiction has been enormous. The four greatest pioneers of spaceflight-Tsiolkovsky, Oberth, Goddard, and von Braun-all wrote science fiction to propagate their ideas (though they did not always get it published!)

In spreading the ideas of spaceflight, science fiction has undoubtedly helped to change the world. More generally, it helps us to face the strange realities of the universe in which we live. This is well put in an article recently sent to me by a science fiction fan who also happens to be a Nobel Prize winner, Dr. Hermann J. Muller, whose discovery of the genetic effects of radiation has inadvertently inspired much recent science fiction and made mutant a modern bogey word. To quote Dr. Muller ("Science Fiction as an Escape," *The Humanist* 6 [1957]):

The real world is increasingly seen to be, not the tidy little garden of our race's childhood, but the extraordinary, extravagant universe described by the eye of science.... If our art ... does not explore the relations and contingencies implicit in the greater world into which we are forcing our way, and does not reflect the hopes and fears based on these appraisals, then that art is a dead pretense.... But man will not live without art. In a scientific age he will therefore have science fiction.

In the same paper, Dr. Muller points out another valuable service that this type of literature has performed:

Recent science fiction must be accorded high credit for being one of the most active forces in support of equal opportunities, goodwill, and cooperation among all human beings, regardless of their racial and national origins. Its writers have-been practically unanimous in their adherence to the ideal of "one free world."

That, I think, is inevitable. Anyone who reads this form of literature must quickly realize the absurdity of mankind's present tribal divisions. Science fiction encourages the cosmic viewpoint; perhaps this is why it is not popular among those literary pundits who have never quite accepted the Copernican revolution, nor have grown used to the idea that man may not be the highest form of life in the universe. The sooner such people complete their education and reorient themselves to the astronomical realities, the better. And science fiction is one of the most effective tools for this urgent job.

For it is, preeminently, the literature of change-and change is the only thing of which we can be certain today, thanks to the continuing and accelerating scientific revolution. What we science fiction writers call "mainstream literature" usually paints a static picture of society, presenting, as it were, a snapshot of it, frozen at one moment in time. Science fiction, on the other hand, assumes that the future will be profoundly different from the past-though it does not, as is often imagined, attempt to predict that future in detail. Such a feat is impossible, and the occasional

direct hits of Wells and other writers are the result of luck as much as judgment.

But by mapping out possible futures, as well as a good many impossible ones, the science fiction writer can do a great service to the community. He encourages in his readers flexibility of mind, readiness to accept and even welcome change-in one word, adaptability. Perhaps no attribute is more important in this age. The dinosaurs disappeared because they could not adapt to their changing environment. We shall disappear if we cannot adapt to an environment that now contains spaceships and thermonuclear weapons.

Sir Charles Snow ends his famous essay "Science and Government" by stressing the vital importance of the "gift of foresight." He points out that men have wisdom without possessing foresight. Perhaps we science fiction writers sometimes show foresight without wisdom; but at least we undoubtedly do have foresight, and it may rub off onto the community at large.

Before concluding, I would like to take this unique occasion of the first Kalinga presentation on Indian soil to speak about the promotion of the scientific outlook in the East. Though this task is important enough in the West, it is even more desperately urgent here. Two of the greatest evils that afflict Asia and keep millions in a state of physical, mental, and spiritual poverty are fanaticism and superstition. Science, in its cultural as well as its technological sense, is the great enemy of both; it can provide the only weapons that will overcome them and lead whole nations to a better life.

For fanaticism is incompatible with the open-minded, inquiring spirit of science-with the readiness to accept the discipline of external reality, even if it conflicts with one's personal hopes and beliefs. The motto of the fanatic is "Don't confuse me with the facts-I've made up my mind." This is the exact antithesis of the scientific outlook.

As for superstition-most of us can remember the events of February 5, 1962. On that date a natural and inevitable grouping of the planets (that has happened about twenty times since the days of the Kalinga empire!) caused needless fear to millions. How many lakhs of rupees were then expended to ward off astral influences? And most of that money was spent by families who could ill afford it.

That was a spectacular example of the evils of superstitions, but there are countless others unnoticed by the world. Recently, not far from my home in Ceylon, a villager was bitten by a snake. He could get no medical treatment because the date was inauspicious; and so he died.

Gentlemen, two years ago M. Jean Rostand, at this very function, referred to your country as "that great nation which welcomes the future without rejecting the past." That is a good policy for any nation-as long as it realizes that there are things in the past that must be rejected. Science, which, after all, is only common sense raised to the nth degree, can tell us what to preserve and what to reject. Heed its voice-if not for your own sake, then for the sake of the lovely, dark-eyed children of Asia and Africa who are born in millions every year-and die in millions the next. Their only hope of a better future lies in science combined with wisdom and foresight. I shall be happy indeed if any writings of mine have helped toward this goal.