The Life Game : Expectations Disappointed

Professor J. H. Edwards, of the Department of Human Genetics, University of Birmingham, reviews *The Life Game*, shown on BBC TV last Saturday.

NIGEL CALDER, writing in *Nature* last week (245, 293; 1973) stated the aims and the means, and clearly defined the limitations of having to keep millions of viewers awake for over two hours by conducting them, in Faraday's words, "over paths strewn with flowers".

The path was evolution, the flowers the living evolutionists, captured on film and tape and pinned down against the background of their studies. These specimens were brought from as far as possible, preferably from the USA. The inscrutable East was represented by Kimura, who speaks English well, speaking Japanese while awaiting equally inscrutable printed output from a computer.

We may ask, as of a many-authored book, are the parts accurate, are they lucid, do they entertain, are they relevant, is there a central theme, and is it worth the price?

The standard of accuracy was high, and the scrupulous procedure which allowed this unusual achievement was made clear in Nigel Calder's prologue. Lucidity was variable: the static models which furnished the central lecture theatre were rather disappointing, at any rate in black and white. The haemoglobin molecule was not obviously compounded of sub-units, nor were these obviously single stranded.

The DNA spiral, like a rungless ladder, lacked its basic asset. The studio floor showed only the end of evolution and lacked a time scale. These limitations were by no means compensated for by hiring an elephant which stood throughout the programme with dauntless patience.

Some points which needed visual phylogenetic aids, including the gulls of the world, the flies of Hawaii, and the protein sequences of Fitch, were handled in mere words. The scientists did not seem to have access to the sort of models the BBC seems able to fabricate so expertly, or even to have access to a

blackboard. This dominance of editor over scientist—or patron over poet—lost the essence of science, the child's view, the triumph of simplicity over complexity, and the eureka moment. This was not a programme to make viewers rush back to school to change their courses and fit themselves for the frontiers of ignorance.

The most lucid exposition, and the most beautiful, was the dance of Swedish school children dressed as bases and amino acids. Why the BBC went to Sweden was not explained. Unfortunately for lucidity the aesthetic challenge of a revolving spiral somewhat obscured the distinction between replication and transcription and no static models were used to clarify this basic dogma. Mutation was handled with elegance and mystery, but not in the most conventional way, which would have been easy with so many ingredients for childish error. Lucidity did not always flow from the laboratory: in some the 'teams in tidy rooms' relentlessly pursuing truth or rejecting hypotheses suggested the analogy of a war correspondent coming back with films of a regimental parade.

Entertainment value was difficult to assess. The scientists themselves were not as entertaining as they might have been in a less constrained environment: their occasional demonstrations of swimming underwater, piloting aeroplanes, and the distress felt by one over Vietnam, did little to sweeten the pill.

The central theme, which I take to have been 'chance or necessity' provided a far from constant and coherent thread: some parts, including the differentiation of Hydra and chick, seemed of little relevance in spite of their intrinsic interest and excellence. The games theory approach was ingenious but its lucid introduction by Maynard Smith came almost at the end. *The Life Game* differed from *The Violent Universe* and *The Restless Earth* in being less observational and more experimental in content and this made it more difficult to handle as a spectator sport under the dominance and guidance of a director, and even more difficult under a changing cast of directors.

Notwithstanding claims to the contrary, nothing which was expressed required computers: the possibility of displaying synthetic evolution in real time on computer consoles was not realised although this would seem ideally suited to television. Nor were sounds exploi-

ted: the calls of neighbouring gulls, or even the courtship noises of the flies, might have broken the silence or the music.

Finally, was the expense of this extravaganza justified? Unfortunately the cost seems a trade secret: it would be of interest to know how it compared with its illustrious predecessors on earth or sky, or with Bronowski's one-man tour, or with the annual budget of the Open University series, or even with *War and Peace* or *The Forsyte Sage*, those other epics of chance and dissolution.

An apparently reasonable question is why did our national broadcasting company spend so much on travel when many of the problems, and the experts, were at hand? When the haemoglobin molecule was unravelled in Cambridge and both negro immigrants and Africans are at hand, why go to New York to photograph a family being screened for sickle cell disease? When the natural protein variabilities were first extensively studied on man in London, why demonstrate it on flies in Chicago? When Edinburgh is a world centre for repetitive DNA why go to film this in California? When one of Kimura's leading mathematical critics is in Brighton, why track down his major non-mathematical critic in the USA? Why film children's games in Stockholm, rather than Shepherd's Bush? The answer is that the programme is being jointly produced by many countries, each of which presumably needs at least a slice of the action. British taxpayers, unaware of this, might have wondered whether the expense was justified.

The problems are difficult, as Calder points out: it is easy to find fault but not easy to succeed in the challenge to retain uninformed viewers for two and a half hours on Saturday evenings. To have avoided either error or sensationalism is a considerable triumph of integrity over temptation. The investment is, one hopes, not fully exhausted as the many items each justify a programme in their own settings and some, including the Galapagos, have yet to be seen. The reviewer was ill-suited to judge the educational value, lacking the appropriate ignorance of the field. His expectations had been aroused before the programme by David Attenborough's television programme on the giant caves of Borneo earlier that week and by Nigel Calder's prologue in *Nature* on the preceding day, and he was disappointed.