Comment

Life sentences: Detective Rummage investigates

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Most of what I have said over the years has probably been wrong or uninteresting and deserves to be ignored and forgotten. Consequently I was pleasantly surprised when I recently received a request for a reprint of one of my old columns, published elsewhere, with the exciting news - to me - that it had been quoted by the late Stephen J Gould in his massive book *The Structure of Evolutionary Theory* and that it had caused him to change his mind on one important issue. I had acquired the book on publication with the intention that as soon as I could find the time I would get down to read all 1,464 pages. Needless to say, all I have now read are the pages that refer to my column. (Incidentally, I have just added another weighty tome to this list, Stephen Wolfram's 1,192 page book, *A New Kind of Science*. My next retirement is going to be a busy one.)

It is very ego-warming to be recognized by quotation. Ever since this first happened to me, I always consult books of quotations to see if I appear there and, of course, I am always looking for opportunities to create epigrams that might appear in future collections. Sometimes, however, it is difficult to trace their source. I recently received an enquiry from an editor who wanted to use a quotation attributed to me in a publication and asked if I knew where it had first appeared. I thought I recalled being the author of the quotation - "Progress in science depends on new techniques, new discoveries and new ideas, probably in that order" - but could not recollect where or when I had said it. However, I believed I knew how to track it down because I remembered it was quoted in Alan Mackay's collection *A Dictionary of Scientific Quotations*. This referred to *Nature*, 5 May 1980. But on checking, I found there is no *Nature* of that date and I did not relish examining variations of the date and possibly even the name of the journal.

There the matter rested, unresolved, until a few weeks ago when I was rummaging through the piles of papers that I have accumulated. There I came across some hand-written notes of a talk I had given at a symposium organised by the Friedrich Miescher Institute in Basel, Switzerland, on 20 March 1980. The symposium celebrated the 10th birthday of the institute and looked forward to the next decade with the title 'Biology in the 1980s'. My role, however, was to look back on the previous decade. In doing so, according to my notes, I told my audience: " I will ask you to mark again that rather typical feature of the development of our subject; how so much progress depends on the interplay of techniques, discoveries and new ideas, probably in that order of decreasing importance."

So there it was - or something like it. All I had to do was to look up *Nature* for a report of the meeting. I found it in the issue of 5 June 1980. It was called "Biology in the 1980s, plus or minus a decade" and was written by an old friend, Miranda Robertson. There in the third column appears the somewhat transformed version of what is in my notes. The words "interplay" and "decreasing importance" are omitted and the latter only implied. The mystery had been solved; Mackay had the date wrong by a month.

Together with the solution came the sobering realization that some things don't change. Here, reproduced from my notes, are some points I made at the time, together with current annotations:

- "The continuous invention of a whole range of powerful physical, chemical and genetic techniques for the analysis of the structure and function of cells means that the answers to many questions can be got by going out into the real world and extracting them. While we can gain enormous satisfaction from that potential... its effects are not altogether happy. Many young biologists feel that there are areas of the subject where what counts are the material resources and command of logistics rather than intellectual ability and ingenuity and there is an increasing sense of loss of identity." (Anybody for a large-scale genome-sequencing project?)

- "One may argue that the symptoms are worse than the disease - if disease it be - but it is necessary for the viability

of biology that there should be a choice for young scientists to try to work on difficult problems and to take up the intellectual challenge of unpopular but important areas of biology." (I could say just the same today; in fact, I have done so on numerous recent occasions.)

- "I hope that the Miescher Institute will allow itself to support those who are before their time and will provide a much needed home for the encouragement of research into basic biology. For on that depends the future; it will not be made otherwise." (And so it still is.)

Twenty years on, young biologists still face many of the same challenges as they did in 1980. And collectors of scientific quotations should feel free to glean further epigrams, preferably with an accurate citation.

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