# Not only computing – also art

JOHN LANSDOWN

## Portrait of the artist as a bug

I've long been amused by the fact that, when people in other industries and professions make mistakes, these are called 'errors' or 'mistakes', whilst in computing, our mistakes are called 'bugs'. This is not just a difference in terminology: it's a fundamental difference in attitude in that it assumes that bugs are things that have a life of their own and get into programs independently of our efforts. (How often have you heard your colleagues say something like, 'Yesterday I found a bug which had crept into my plotting routine'? - Come on, you only recently made a remark like that yourself!).

Of course, it's advantageous for unsuspecting clients to believe that, out in the world, there are mysterious creatures bent on frustrating our best endeavours at meeting their requirements. Unfortunately, though, we sometimes fall into the trap of believing this ourselves. I am as guilty of this as anyone. Indeed, I go further and often feel that there are metaphysical forces specifically aimed at preventing my computers from doing what they're told. Some days, given combinations of hardware and software work like a dream - other times, exactly the same combinations resolutely refuse to perform at all, or have to be coaxed along like some ailing steam engine. Lately, I've taken to talking sternly to, or even shouting at, relcalcitrant systems - sometimes with beneficial results. If the new Arthur Koestler Professor of the Paranormal or whatever wants something for his PhD students to do, he could do worse than let them investigate the mysterious appearance and disappearance of system bugs!

Strangely, not all these creatures are malevolent and they sometimes work

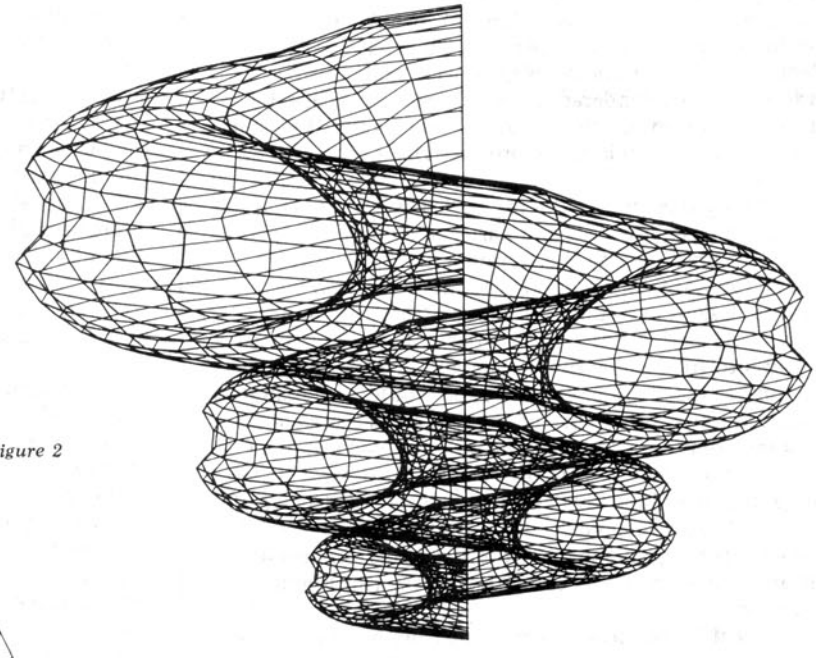


*Figure 2*

*Figure 3*

to our advantage. For example, CAS member, Jonathan Yonge, was using his Calcomp system to prepare views of a shell-like spiral. These were bug-free and are shown as Figures 1 (front cover) and 2. When he called for a perspective, however, the normally well-behaved program gave him the multi-legged creature of Figure 3 – surely, a self-portrait of a bug if ever I saw one.

## What's it all for?

Over the past year and along with everyone else in computing, I've read and listened to a lot of presentations on the Alvey and Esprit projects. Most of these have been interesting and worthy but they lack what I can only call, 'inspirational content', by which I mean the sort of spirit that you might man the barricades for.

When I first read the 1981 Preliminary Report on the Japanese Fifth-Generation Project, in a much photocopied version that was passed around BCS Council members, I was struck not so much by the technical matters that were being outlined, although they were impressive enough, but more by the statements on the 'social requirements expected of computers in the 1990s'. These included:

1 Increasing productivity in fields such as agriculture, fishing and public services because low productivity in these areas 'has been the cause of serious social imbalances'.
2 Assisting in saving energy and resources because 'one of the most important tasks facing mankind in this century is how to use our world's finite resources effectively'.
3 Developing 'streamlined' medical and related information systems and lifetime education systems' because the existence of a society with a continually aging population 'would lead to social problems'.
4 Meeting international competition and contributing towards international cooperation by exploiting Japan's one 'precious asset; a highly educated, top-quality labour force'.

We are not used to seeing such sentiments expressed in an ostensibly technological document and, it must be said that, for a while, many of our top computer people seemed to take the view that the whole thing was simply a propaganda exercise designed, as much as anything else, to scare the wits our of the West. It is not to our disadvantage for us to maintain a healthy scepticism but, for my part, it seems to me that the Fifth-Generation Committee was absolutely right to set the technical ideas into a philosophical context. In the long winter nights when nothing is going right and they begin to despair about achieving the very difficult hardware, software and system goals they have set themselves, they at least know what they are doing it for. Over here, all too many of us see the Alvey and Esprit projects (which could be just as far-reaching) as simply new sources of funding.

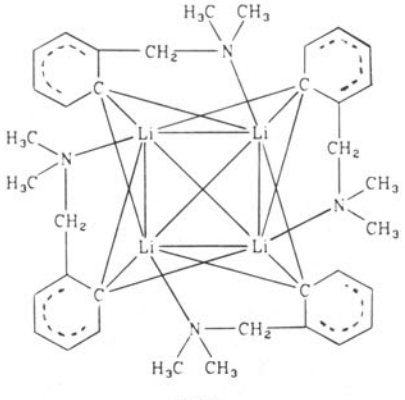
Of course, it's in the nature of things that the Japanese will not achieve all the targets they've set themselves. But they will achieve something and, in doing so, will gain an even greater sense of social purpose.

Those who stayed for the last afternoon of the CAD84 Conference at Brighton will have heard Professor Mizoguchi informally describe the new super personal Fifth-Generation machine which is now ready. I couldn't quite follow whether 'super' was a description of its performance or its size – from the photographs he showed, it is housed in a cabinet fully the height of a man and hardly represents most people's idea of a personal machine. Apparently it is a 16-bit, 16K word, sequential inference machine (20–30 Klips) with a cycle time of 200 nsecs and it runs DEC10 Prolog at the speed of a DEC20/60.

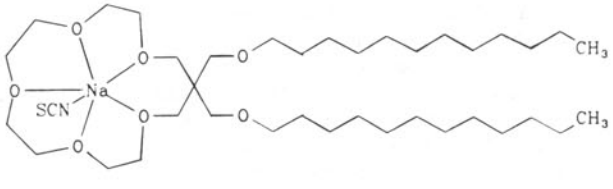
## It's beautiful but what's it all mean?

One of the many things I know nothing about is chemistry but I've always been attracted to the diagrams such as Figure 4 which you see scattered about chemistry texts. I would like to understand them as they seem to encapsulate a large amount of information in a very compact way. Symmetry seems to be important in some: others are almost symmetrical but not quite. Does this asymmetry arise, I wonder, from the physical properties of the stuff? In other words, can a chemist tell just by looking at an asymmetrical diagram that the material is in some sense odd?

As they consist of lines and alphanumerics, it comes as no surprise to know that computers can be used to draw these diagrams. What is surprising however, is that only one person in the country seems to be using a computer to pageset the pictures for printing purposes – a process which must be fairly tedious to do by hand. Kate Crennell, who works at the Atlas Centre of the Rutherford Appleton Laboratory, has devised a program which assists in this task and has sent me some fascinating examples. She, too, stresses the fact that information is much better conveyed by a well-designed layout than by a badly-designed one. Amen to that.




67.25




67.26