CHILLING PREDICTIONS

by Bernard Dixon

In February 1977 *New Scientist* contributor Duncan Campbell was arrested along with two other people and charged under the U.K.'s Official Secrets Act. The following November all three were committed for trial under Section 1 of the Act—which carries penalties of up to 14 years imprisonment, and is normally invoked to deal with serious espionage cases. Campbell was said to have received information that could be useful to an enemy. This was a surprising allegation, given that he was free to continue working as a journalist in the intervening period—and as he again continued to do until his trial opened at the Old Bailey, London, in September 1978. Meanwhile, the Section 1 charge had dropped, replaced by a lesser Section 2 charge. Nevertheless, the prosecution failed. When the trial ended in November, Campbell was conditionally discharged. Total cost to the British taxpayer: $470,000.

And what, precisely, has this to do with biotechnology in 1990? The answer is a further question: when does information, collated from separate sources, acquire novelty and a meaning all of its own? Campbell's case was largely based on his considerable skill in correlating variegated material, not itself classified, to produce essentially new knowledge. His area of interest—defense communications—was undoubtedly sensitive. But the information which he put together came from scientific journals, technical manuals, trade magazines, reference books, army newspapers, and brochures picked up at electronics exhibitions. One of the files brandished by the prosecuting attorney at the trial was a notebook containing statements by sales personnel manning stands at an exhibition Campbell covered for *New Scientist* in 1976. His alleged offense was to have processed and orchestrated this material to make something new—something secret.

The Campbell affair, in which I played a minor role, came to mind recently while reading a paper in *Science, Technology, and Human Values* (**15**:65, 1990) in which Michael MacKenzie of the University of Ottawa and two other Canadian academics examined the significance of biotechnology patents in relation to the free flow of information. It's a thought-provoking read, not the naïve diatribe against commercial confidentiality that you might at first expect. MacKenzie and his colleagues trace the history of patents on monoclonals—claims on the basic technology, on applications, and on specific antibodies. But they do not pore over old ground, bemoaning Cesar Milstein and George Kohler's failure to protect their discovery (too late to do anything about that) or arguing that patenting by definition restricts scientific intercourse (quite the reverse: patenting actually compels disclosure). Instead, MacKenzie, Peter Keating, and Alberto Cambrosio show how the patent process *is* altering the "political economy" of science and the way in which its professional exponents behave. Chary about being normative, they then leave us to draw our own conclusions.

Two of the reviews cover the Wistar patents and *Hybritech* v. *Monoclonal Antibodies, Inc.* In the first case, Wistar Institute scientists secured broad patents covering basic hybridoma technology, one for tumor and one for viral antigens. Their attorneys claimed that their technology was novel because Milstein's publications had described monoclonals against sheep red blood cells. The U.S. Patent and Trademark Office agreed. But its British counterpart demurred, stating that this was an "obvious" application, not going beyond prior art, and citing an editorial in *The Lancet* that had suggested the use of monoclonals against virus antigens.

Several U.S. companies, apparently sharing the U.K. view and believing that the Wistar patents would not stand up in court, are now conducting work potentially covered by those patents. However, MacKenzie and colleagues believe that more recent and unexpected decisions regarding "prior art" and "obviousness" in relation to the Hybritech patent may lead many companies to review their attitude towards the Wistar patents.

This second case concerns the patent granted to Hybritech describing a method of using monoclonals in a diagnostic assay, and supposed to protect all kits marketed by the company under the TANDEM trademark. After Hybritech subsequently sued Monoclonal Antibodies, Inc. for patent infringement, the U.S. District Court in San Francisco declared Hybritech's patent invalid because its claims were already in the public domain. Several reputable scientists testified to that effect, in particular claiming that the need for high-affinity antibodies in a sandwich assay was obvious and well known. In reaching his decision, the judge considered not only publications describing actual results and methods, but also papers containing predictions and suggestions.

More recently still, that judgment was overturned on appeal. This time, the court ruled that obviousness could not be established if, for example, monoclonals in assays and monoclonal affinity had been discussed in separate publications. On this ruling, to predict, suggest, or propose something in no way restricts someone else from claiming it as their property.

MacKenzie *et al.* draw two lessons from these stories. Firstly, the authority of scientific testimony can be used in law to support claims (as with the assignment of an "affinity constant" to monoclonals) that are themselves scientifically highly contentious. Secondly, "after the Hybritech decision, scientists who want to protect their conceptions from being appropriated as proprietary information may have to withhold their ideas from the public domain until they are fully formed and can be thoroughly articulated."

One wonders afresh how far the patenting process can be allowed to appropriate information otherwise perceived to be in the public domain. Should reviewers already feel cautious about throwing out bright ideas in *The Lancet*? Biotechnologists would do well to cogitate on these matters.