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MR N SANDERS
10 Downing Street

INNOVATION IN THE UK

Prime Minister

A note from John Ashworth
on the problems you
found in Cambridge.
We will get him in
for a talk as soon as there
is an opportunity.

See - fairly soon
not

1. You told me that during her trip to Cambridge the Prime Minister had encountered two cases of British inventions not receiving the appropriate commercial backing - one involving image intensifying technology at the Mullard radio-astronomy laboratory the other mono-clonal antibody technology applied to interferon production at the Hills Road laboratory of the MRC. You asked if I could let you have a note on the issues raised.

2. Let me start with the one I know most about - mono-clonal antibody technology. First there is no doubt that either Dr Cesar Milstein, the MRC or the NRDC (or some combination thereof) failed lamentably when they omitted to file a patent to protect Milstein's discovery of a method of producing mono-clonal antibodies. The attached photocopy of a news item from the journal Science tells its own sorry story. The NRDC were actually informed, albeit rather late in the day, of this work but they judged that there was little chance of them making a commercially interesting "package" of the discovery and thus they wrote to the MRC saying that they had no objection to Milstein publishing his paper.

3. The NRDC was initially set up in part as a response to the realisation that American companies were deriving the commercial benefits from the discovery, in the UK, of penicillin. It is thus doubly galling to see the same mistake apparently being made by the MRC forty years on. What lessons should be drawn?

4. I think that the three parties to this debacle - the NRDC, the MRC and the individual research worker - must be treated separately.

The NRDC

5. Relations between the biomedical research community (including the MRC) and the NRDC are currently very bad. The Joint Royal Society/ABRC/ACARD working party on Biotechnology, of which I was a member, received considerable

Take up
with
NRDC

evidence of this as the relevant paragraphs in the attached report (3.8, 3.9, 3.10) indicate. I was struck by the extreme defensiveness of the NRDC. The recommendations that the working party eventually arrived at (R11 p.11) will no doubt help but they do not strike at what I sensed to be the fundamental problems:-

(a) the NRDC has monopoly rights over the results of the Research Councils

and (b) the NRDC has largely restricted itself to acting as honest broker between inventor and commercial company and specialised in providing patent and legal advice. It has not provided a 'technology transfer' service along the lines, say, of Battelle or Stanford Research-International (SRI) in the USA.

6. In strictly financial terms the NRDC is very successful but the NRDC's critics say that this is a consequence of their cautious and risk averse policies - policies which they can only get away with as a result of being a monopoly.

7. As a result of this analysis I strongly supported the suggestion that there be established, in the UK, an entrepreneurial company along the lines of those established in Europe and the United States (see paragraphs 3.18, 4.14 in "Biotechnology") which make a commercial business out of technology transfer. This company could only succeed, in my judgement, if it established a privileged relationship with the MRC - a relationship which would de facto break the NRDC's monopoly. Negotiations between the Department of Industry (sponsors for the NRDC), the NEB and the MRC are still going on but the formation of such a company - CellTech, in which the NEB has a 60% interest - has been announced.

The MRC

8. Six years ago the contracts of MRC employees prevented them accepting consultancy fees from commercial companies. Since then there has been a growing realisation amongst the members of the Council that commercial, as well as medical, objectives must become acceptable aims of MRC policies. This change in attitude was greatly helped by the acceptance of the so called 'Rothschild' principle of a customer-contractor relationship by the Government

in 1972/3 and has been exemplified recently by the role the MRC has played in the establishment of CellTech. There has been considerable debate, of course, about how far this process can legitimately go. Some of the debate is reflected in paras. 3.1, 3.2 and 3.3. of 'Biotechnology' and, in view of the sensitive nature of the issues involved, I do not think the Government can usefully do more than ensure that the debate does not, as it did when Sir Harold Himsworth was secretary of the MRC, die away.

The Individual Research Worker

9. Research workers, both in Universities and in the Research Council establishments, are now much more conscious than they were a decade ago of the need for them to take a personal interest in the commercial fate of their discoveries. It is now generally accepted that technology transfer has to be an active process. One particularly interesting private initiative was taken by the Wolfson Foundation in the early 1970's and has led to the establishment of Wolfson Industrial Units in many Universities. The financial benefit of such units to the Universities can be considerable (I know that the units at the University of Southampton earned an income of over £1 million last year, for example) but even more impressive has been the effect on the attitudes of the staff of the University of seeing some of their colleagues engage in this kind of activity - and earn significant consultancy fees in consequence.

10. The Wolfson scheme will probably be extended by the Foundation this year so that something like a National Network of units might evolve. I think that this is a really imaginative example of how private initiative and money can be deployed in a catalytic, pump-priming way and I hope that the Prime Minister would consider visiting one such unit when she has the opportunity. Most provincial Universities now have such units although I believe the University of Southampton (with seven) still has the largest single concentration.

11. One motive behind the recommendation in 'Biotechnology' for an NRDC-led study of the incentives offered academic inventors (R11 p.11) was, of course, to publicise the benefits that can accrue to both Universities and their employees from entrepreneurial activities. Such publicity helps, as would greater financial rewards to academic entrepreneurs or, as recommended by

the CPRS in their report 'Education, Training and Industrial Performance' paras. 78 and 79, as would discrimination against those who do not become entrepreneurial. However, there appears to be a marked reluctance to implement such suggestions or even those, less radical, which the Finniston Committee proposed and which were designed to make engineering education less academic and more commercially orientated.

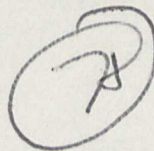
12. This really brings me on to the other case you quoted - the image intensifying technology which is not being developed as a result of the Thorn/EMI situation. Without knowing anything about this in detail it seems to me that here is a case where, if it were Cambridge, Mass. instead of Cambridge, UK, the graduate student(s) and technician(s) who had done the work would have recognised that they were unlikely to have a life-time career in radio-astronomy and would have gone off to a garage somewhere and set up their own little firm designed to sell image intensifiers to radio-astronomy laboratories throughout the world as well as the Hitachi's, GE's and Philips's who make scanners which compete with those of Thorn/EMI. The question to ask thus is why the environment in Cambridge, Mass., encourages such behaviour and that in Cambridge UK inhibits it?

13. The answers that can be given to questions of this kind are controversial and tentative. In its report 'Industrial Innovation' ACARD pointed to some possible answers. The Council is currently taking another look at this topic and I think a letter from the Prime Minister along the lines of the one I put up to Mr Pattison on 27th August in connection with Mr Douglas Fox would stimulate the best response.

14. My own views coincide very much with those expressed in the ACARD report on 'Industrial Innovation' and to which the Government has yet to respond formally. We need to make it easier to found new businesses in the UK and that means we need more decision points for investment in such businesses (paras. 4.9 and 4.10 'Industrial Innovation' suggest a method involving a Government backed loan guarantee scheme whereby this might be done). The Wilson Committee endorsed the specific proposals in 'Industrial Innovation' but these have not yet been implemented - in part due to public expenditure constraints. Of course, if it were easier to trade in tax

loss companies or if we had an 'over-the-counter' market in high technology companies as in the USA then more private (and thus less public) finance would be required to achieve the same end results. However, I imagine that these points will emerge in any response by ACARD to the Prime Minister's letter - and in a more authoritative and more considered way than I can give you now.

15. I attach copies of the ACARD reports quoted.

A handwritten signature in blue ink, consisting of a large, stylized 'A' with a horizontal line through it, enclosed within a circular scribble.

DR J M ASHWORTH

Cabinet Office
70 Whitehall, SW1

2 September 1980