

Safety from Rothschild in Numbers

This is the second in a series of comments on the Dainton and Rothschild reports. The author is Professor C. H. Waddington, Institute of Animal Genetics, University of Edinburgh.

It is either frivolous or a symptom of a fixation on academia to suggest that reorganization of the research councils is a panacea for curing the difficulties of British high-technology industry. According to the Rand Corporation both pure and applied research amounts to no more than 5 per cent of the total costs involved in American high-technological products, the remainder being devoted to production development and product application in relation to the market. In the Dainton Report (Appendix D, Table 2), the research council contribution for the last year quoted (1967–68) was only £57.1 million out of £962.1 million, that is of the same percentage as the USA (though Dainton's total is increased by including defence research and lowered by excluding some of the marketing costs included in the Rand figures). Moreover, although 95 per cent of development has been run on the customer/contractor principle which Rothschild favours, it would seem, in view of recent British experience with advanced aircraft, rocket launchers, nuclear power plants, computer hardware and the like, more in need of radical reorganization than the 5 per cent spent on research. The research councils have every reason to refuse to accept the role of scapegoat. They have done, at a modest fraction of the GNP, a pretty good job—*vide* international comparisons of Nobel Prizes *per capita* as a crude but not negligible index.

Rothschild's recipe is straightforward. The principle is that the people responsible for running the affairs of society, that is the civil servants in executive ministries, know best what new knowledge or expertise is required. This means not only that "the person who has to pay . . . is in the best position to know how much he can afford" (Rothschild, para. 4), but also "the customer says what he wants" (Rothschild, para. 6). This short-circuits one of the traditional levels between customer and contractor. A sick man is usually wise to consult a doctor before going to the chemist for some pills; it is sensible to have an architect between a client and a builder. It is true that Rothschild wants each customer ministry to have a chief scientist (presumably with a staff, though little is said about this). But this has been urged since the end of World War II, with little or no effect. There are three snags.

First, unless the ministry's chief scientist has a fairly large, wide ranging

staff, he will simply perpetuate out-of-date scientific orthodoxy. For instance, when I started running a research laboratory for the ARC on genetics in the livestock industry, the ministry, with good scientific advice (from veterinary surgeons), knew just what it wanted—more control over the results of matings between pedigree bulls and cows. Really it wanted something totally different, belonging to a different paradigm—to forget about the Breed Societies, and find out how to operate the Artificial Insemination Centres in terms of hundreds of thousands of matings. But if you were to set up a ministerial science office capable of seeing this far into questions, this would simply be a duplication of the existing research council machinery, with all its expert committees and so on.

Second, this is precisely the pattern of research support in the United States. With the much greater number of people they can call upon for public service, the system of financing research by executive ministries has been quite successful in tactical detail, but so inadequate on a strategic level that they are moving to greater emphasis on a non-executive agency (NSF) and less project-oriented grants.

Third, scientists capable of something better than run of the mill work may be willing to accept a short term contract if it leaves them free to do what they want; but who is going to buy the Rothschild package which combines insecurity of tenure with official direction?

Thus even if the Rothschild scheme was put into full operation, it would have many disadvantages. Its real dangers are that it will be put into half-operation; the customer-contractor system may be set up before the customer ministries have any effective chief scientists, but only someone in administration who does not see why he cannot do the job well enough. The figures and dates given in Rothschild's Table 4 are presumably intended mainly as a provocative cock-shy, but if anything approaching those transferences were made with the haste suggested, there is a very real possibility that the ARC and NERC will be disrupted, to divert much of their funds straight down the drain.

The Dainton Report is at least less dangerous, but does not go far enough. It would bring Britain halfway to where the USA was in the Kennedy era; with a board of research councils coordinating their activity, rather as the US Federal

Council of Science and Technology (FCST) coordinated the American agencies, but still without anything corresponding to the President's Scientific Advisory Committee (PSAC), curtailed though its powers now are.

Finally, a comment which some people will consider frivolous but which is not. The real nature of our research councils is that the person in charge (secretary or what-have-you) has been enabled to operate like a renaissance Pope; his freedom is restricted only by a council and committees whose members he can select himself. It works wonderfully if the Pope is a Medici who likes having his ceilings decorated by Michelangelo. But there is an inherent tendency, in the world as it is, for an enlightened patron, ready to back his fancy for molecular biology in the late forties against the whole biological establishment, to be followed by someone less abrasive and penetrating.

One way of dealing with the situation is to have a fairly quick turnover of heads of councils, with many more people serving for quite short periods on the critical committees—this is what the United States does. We have tended to favour longer periods of service of quite a few people—a major research council may contain only one man in a large field like genetics, and he may stay there for ten years. Then it all depends, is he the right man or not? We have done quite well on the whole, but there is room for improvement. And the obvious step, in this sort of operation, is to have more, smaller, highly personalized research councils, who can pick and choose whom they want to support, and who can be picked and chosen by the scientists who are shopping for a patron.

So long as discussion remains confined to "either Rothschild or Dainton", many of the most attractive improvements will never get a hearing. For instance, what about leaving the research councils with essentially the same financing as at present (except for a few items which are clearly already on a customer/contractor basis), but giving the relevant ministries the chairmanship of some of the appropriate boards or committees which do the donkey work of the councils—the MRC Clinical Research Board, the ARC Animals Committee, and Plants and Soils Committee, and the similar specialist committees in NERC? It would be necessary to strengthen the scientific sections of the ministries to provide them with people who could even chair and make worthwhile contributions to such bodies; but it would provide a means of mutual education between the research and executive interests, and this is, I suggest, what we need, rather than dominance of either one over the other.