

clearly unreasonable to expect that the services responsible will refrain from taking steps to know what doses of radiation soldiers can withstand. Those who say that the College of Medicine at the University of Cincinnati should not have accepted a contract from the Department of Defense on grounds like these have no logical alternative but to spend their energies on a refutation of the defence policy to which the governments of the principal powers are committed. But that is a wider issue, not relevant to what is said to have been happening at Cincinnati.

It is also beside the point to complain that therapy should also be used as an occasion for research. In medical research, there is also a long and heroic tradition of willingness on the part of one generation to endure discomfort voluntarily for the sake of a better understanding of some condition or disease. Patients with terminal disease have frequently been concerned with such experiments and, such is the inherent altruism of many people, have participated willingly. But it is clear that the dignity of everybody concerned, and that of the profession of medical science, demands that there should be a full disclosure of all the circumstances to those who are asked to participate. If one objective of a study is to make it easier to know what doses of radiation can be tolerated, by troops or by civilians, it is obviously incumbent on the people in charge to help their patients to understand by giving not merely a laconic description of the purpose of the experiment but also an account of the ways in which the information is likely to be valuable. If the Pentagon is a sponsor of the work, this should be spelled out.

From the reports so far available, it is not clear how far these conditions have been met, although some of those concerned have said that patients were told that "this research will be valuable if somebody is injured on the battlefield". What will need to be determined now is whether it is a sufficiently large step. An especially taxing feature of the Cincinnati case is the allegation by the *Washington Post*—it is no more than that—that many of the patients in the experimental series were in some way or another less able than they might have been to appreciate what was being asked of them. Circumstances like these are necessarily hard to reconcile with the essentials of what should be the code that governs the relationship between a patient-subject and his doctor-experimenter, but the only workable rule is that if a prospective subject is thought to be incapable of understanding fully what is expected of him, he should not be involved. As yet, there is nothing to suggest that the people at Cincinnati have not behaved with great propriety. It is, however, essential for everybody, and for medical research as such, that this should be demonstrated clearly and publicly.

One Way to Europe

WITH the British political parties preoccupied with their invariably introspective party conferences at British seaside towns (Brighton this year), and with the question of whether the British Government will eventually accept the terms of membership offered by the European Communities reduced to questions of which party leader will be able to carry how many of his supporters with him, the

initiative for taking a few practical steps towards Europe has fallen to others. And as luck will have it, there is an obvious and urgent task for universities in Britain and on the mainland. Will they dare?

In the past few months, there have been several declarations of how necessary it will be, once the European Communities are enlarged, for there to be a coordination of European policies on research and development. Because development is necessarily linked closely with industry and with commercial interests, the best place to start devising machinery for collaboration is in basic research, in the universities and government laboratories. This point was put forcefully by Sir Brian Flowers, chairman of the Science Research Council, at the British Association meeting in September. One difficulty is that the coordination of research between European countries entails the free movement of people between one laboratory and another. But there are at present practical difficulties which prevent this happening. And so is there not a case for a serious attempt by European universities to work out among themselves some method of doing this job? On this occasion, as luck will have it, they could act more quickly than their governments.

100 Years Ago



Extract from Helmholtz on the Axioms of Geometry.

With all due deference to so eminent a man as Helmholtz, I must hold that his article includes an *ignoratio elenchi*. He has pointed out the very interesting fact that we can conceive worlds where the Axioms of our Geometry would not apply, and he appears to confuse this conclusion with the falsity of the axioms. Wherever lines are parallel the axiom concerning parallel lines will be true, but if there be no parallel lines in existence, there is nothing of which the truth or falsity of the axiom can come in question. I will not attempt to say by what process of mind we reach the certain truths of geometry, but I am convinced that all attempts to attribute geometrical truth to experience and induction, in the ordinary sense of those words, are transparent failures. Mr. Mill is another philosopher whose views led him to make a bold attempt of the kind. But for real experience and induction he soon substituted an extraordinary process of *mental experimentation*, a handling of ideas instead of things, against which he had inveighed in other parts of his "System of Logic." And the careful reader of Mr. Mill's chapter on the subject (Book II. chapter 5) will find that it involves at the same time the assertion and the denial of the existence of perfectly straight lines. Whatever other doctrines may be true, this doctrine of the purely empirical origin of geometrical truth is certainly false.

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