

If the smaller powers push these arguments strongly in the weeks ahead, the non-proliferation treaty could be held up for another year or more. It is also only sensible to acknowledge that the smaller powers would be entirely within their rights in asking that the treaty should show either greater respect for their right to make decisions on defence policy on their own behalf or, preferably, that it should include some restriction of the right of nuclear powers to keep on manufacturing fissionable material for military purposes. The willingness of the United States and the United Kingdom to

throw their civil nuclear plants open to inspection is a gesture but not a real concession on this point. In the same way, the inclusion in the new draft treaty at Geneva of a general undertaking that signatories will press forward to the objective of general and complete disarmament (or GCD as it is known among the specialists) will be most often interpreted as a formality. In these circumstances, even the more realistic draft treaty which has now been designed may prove too stiff a dose of segregation for many of the smaller nations. The next few weeks should tell.

In for a Penny, in for a Pound

THE European Molecular Biology Organization (EMBO) has made a serious claim on public attention and even sympathy in the years since its small beginning in the early sixties. From the start—which is conventionally taken to be a conference at Ravello in September 1963—it has been plain that there is a valuable job to do in moving people from one European laboratory to another. EMBO has done well to collect enough money to start the ball rolling (and the Volkswagen Foundation, which has provided most of the support, deserves not to be forgotten). It has been something of an object lesson for other informal societies seeking some means of influencing events to see how much, in the last resort, depends on good organization. Because EMBO seemed, at the beginning, to be as much a cosy self-congratulatory club as a more conventional learned society, it is not surprising that it provoked scepticism and even resentment; one of the indirect benefits of the funds which have been made available for fellowships in the past few years is that EMBO has been given a chance to demonstrate that it is a thoroughly open-minded society. That done, it is only natural that most European governments should now be willing to support on a continuing basis the scheme for a mixture of travelling fellowships of various kinds. In spite of the devaluation of sterling, even the British Government seems cheerful about this prospect. The chances are that an international agreement on continuing support will be signed and sealed in April.

The laboratory on which EMBO has set its heart (see page 314) is altogether a different proposition. This, at least, is what some governments have been tempted to suppose. For one thing, a laboratory employing several hundred people is a much more permanent undertaking of the kind from which governments almost instinctively fight shy. It has also inevitably been asked why the molecular biologists are so keen on having a laboratory when there is no ready-made excuse such as the need to operate an expensive piece of equipment in collaboration—the prime justification of CERN. In this connexion, the sceptics are well within their rights to point out how easy it is for laboratories which are established in a vacuum to remain in a vacuum more or less indefinitely. The world is littered with institutions like that. But a more powerful reason why governments have frequently hung back from the creation of an EMBO

laboratory has been the fear that the establishment of a new centre of excellence in molecular biology could only serve still further to deplete the scarce supply of molecular biologists in national universities. This, of course, is an argument which carries weight only with countries which already have a significant stock of molecular biologists and are anxious to do everything they can to husband it, but even then the reactions of similar governments are not entirely predictable. In Britain, for example, the feeling in the Medical Research Council that an EMBO laboratory would thin out still further the laboratories already crying out for experienced men and women has been one of the reasons why the British Government has been conspicuously cautious in its discussions of the laboratory. In France, by contrast, there have been no such inhibitions; to tell from some of the things which Mr M. Schumann, the Minister of Scientific Research, says, the EMBO laboratory comes next in importance only to the *force de frappe* and the *plan calcul*.

What is the truth? And how should European governments react to the proposals now being made to them? Perhaps the most obvious thing to say is that the documents which have been prepared in support of the case for the laboratory are an eloquent disproof of a good many of the doubts about the laboratory which have from time to time been raised. The need for a concentration of resources is particularly well put. For one thing, sheer propinquity is a blessing in a field in which the most skilful operators are often specialists in quite unrelated disciplines. But it is also clear that molecular biologists are itching to undertake a number of large scale projects which share something of the monumental character of undertakings on high-energy physics. Dr F. Crick's "Project K" for making an exceedingly detailed study of the K12 strain of *Escherichia coli* is only one of many examples of how concentration may make it possible to tackle problems which have previously been inaccessible. Given this, and the fact that EMBO has at present such a high reputation that it would probably be able to attract the kinds of people necessary to ensure the success of an international laboratory, there is probably no need to fear that the project for an international laboratory would founder on intellectual grounds.

The fear that an international laboratory would

drain scarce talent from existing institutions is necessarily harder to deal with, if only because so much is bound to depend on estimates of how studies in molecular biology are likely to be stimulated by the creation of an international laboratory. Professor V Weisskopf (page 317) is able to claim that the growth of CERN has not been accompanied by a decline of high-energy physics elsewhere in Europe, and what he has to say is powerful reinforcement for the case in favour of the European laboratory. At the same time, however, it is only possible to guess at what would have happened to high-energy physics in Europe if CERN had not been built. Most probably, the thirteen member nations would have been egged on by competition to spend more, in aggregate, on this branch of physics, but would not have had such good value for money. And in this spirit, of course, the possibility that a European laboratory for molecular biology may drain away people from national laboratories—unrealistic though it may be—is almost irrelevant. What matters is that the people concerned should remain in circulation as innovators and as teachers. If that could be assured, the EMBO laboratory would be at worst a more economical way of doing business than the present system in which funds for the support of research in molecular biology are dispersed throughout the universities of Europe. In reality, there is probably a good deal in the claim of the EMBO council that a European laboratory would be a means by which contributing governments could gain markedly from quite small extra investments. In the long run, it would even be reasonable for them to expect that a successful EMBO laboratory would restrain the strictly national demand for an expanding budget.

All this, however, is hair-splitting of a kind. The truth is that the sums of money necessary for the funding of the EMBO laboratory, large though they may seem in comparison with the scale on which biological laboratories are habitually financed, are an exceedingly small part of what Europe as a whole chooses to spend on research of all kinds. Even if the EMBO venture should turn out to be a sheer waste of money—and all the evidence runs the other way—no great damage would have been done. In the circumstances it will be a great misfortune if the governments whose representatives are now trudging back from Geneva make too much of the issues of principle involved, and neglect the wider opportunities which the EMBO proposals offer. And these, in the long run, are plain enough. Sooner or later it will be necessary to organize a great deal of European science on a co-operative basis. The sooner it is possible to set about the building of common institutions, the sooner Europeans will begin to profit from their common geography.

In that sense, EMBO and its laboratory are splendid opportunities for experiment.

No Academic Spending Spree

THE University Grants Committee has now published details of the allocations of recurrent grants to uni-

versities in Great Britain over the next five years. The figures, which were sent to universities at the end of last year, are published in the UGC Annual Survey for the academic year 1966-67 (HMSO, 3s. 3d.), together with the memorandum which the UGC sent the universities to explain "the strategic attitude" which the UGC has had to adopt in order to make a division of the resources. Sir John Wolfenden is cheerful about the reception the memorandum received from the universities—at least, he said in presenting the report, there had been "no major explosion from the universities" so far. The grants themselves confirm that the growth of universities is likely to move more slowly in the next five years than it has done in the last five. "Plain living and high thinking" was Sir John's recipe for the next quinquennium.

RECURRENT GRANTS FOR BRITISH UNIVERSITIES

	£ (million)
1967-68	150.79
1968-69	152.85
1969-70	153.57
1970-71	164.82
1971-72	171.10

(From 1968-69 onwards, the figures make no provision for equipment for teaching and research, which will be dealt with by separate grants.)

The memorandum lays emphasis on the need to expand undergraduate numbers, in particular in the arts and social sciences. Sir John defends this decision by pointing out that, in 1964, the actual numbers of science students in the first-year sixth forms of British schools declined. Despite this, the UGC has provided for a slight increase in the numbers of science students at universities. But social science and the arts, where the pressure on university places is greatest, must be allowed to expand the fastest. The UGC has not fixed limits on the number of postgraduates which universities can provide for, but the grants awarded do make certain assumptions about the proportion of undergraduates to postgraduates. As the report puts it, "It is, of course, open to any university to admit more than the number of students indicated in its separate allocation letter, if by internal economies, increased 'productivity' or any other means it thinks it can rightly do so".

The UGC has set in train a survey of the reasons why students entering universities fail to finish the course—the "drop-out" or wastage rate. At present in Britain, the wastage rate is running at about 14 per cent, but there is considerable variation both between departments and between universities. Suspicion has sometimes been voiced that some universities admit more students than they can possibly handle, and use the first year to weed them out. The survey, Sir John said, would try to sort out whether there was any truth in suggestions of this sort, and would try to make some estimate of the reasons for wastage. Vice-chancellors, he added, tended to be difficult about publishing this kind of information, so that discussion would be needed before it was finally decided what form the published survey should take.

In making the allocations to universities, the principal criterion is the number of students in any uni-