

our funding of university research arising from the difference between the total value of new grants awarded in a given year and the total expenditure on all grants, new or existing, in that year. The former figure is not expenditure but new commitments extending for several years ahead, depending on the duration of the grants. In steady conditions the figures for both new awards and annual expenditure will move together, but in practice these conditions have never arisen.

	1966/67	1967/68	1968/69	Estimated 1969/70
Total value of new awards (academic year, October–September)	1.8	1.2	0.9	(1.0)
Annual expenditure (financial year, April to March)	0.69	0.89	0.93	(1.2)

In particular, at the end of the last university quinquennium in 1967, a large proportion of existing grants terminated. It was necessary in that year, in order to sustain a steady growth in subsequent annual expenditure, to enter into an exceptionally large commitment on new awards, although this level of new commitment could not, and was never intended to be, sustained. The effect of the transition from one quinquennium to the next can be seen by comparing figures for value of new awards with those for annual expenditure on research grants, both given in millions of pounds.

These figures show that our annual expenditure on university research grants is likely to increase by about 75 per cent over the past 4 years from 1966 to the present time.

The second point concerns the fact that only 15 per cent of NERC's expenditure as shown in our financial statement for last year went to universities. These figures for university support are not, however, comparable as they stand with expenditure on research elsewhere by the council. In particular they exclude capital expenditure on buildings, equipment that is a regular part of the facilities of the department concerned, and supporting costs and services, all of which are provided at universities by the UGC but in our own institutes have to be included in the NERC expenditure. In the marine field the major part of the activities of our Research Vessel Unit, of the RRS John Murray and of the use of marine research equipment held at the Research Vessel Unit, are devoted to the needs of universities. Thus both in actual money and in research effort, our effective support of university research is a substantially larger fraction of our total expenditure than appears from the figures shown in the financial statement under that head for accounting purposes.

Our general policy towards support of university research in the environmental sciences has been dealt with at length in our current annual report. I need only say that we believe our support must be selective, should be guided (but not inhibited) by broad strategic objectives, and ought to link up with the programmes of our institutes whenever it is sensible and productive to do so. This brings me to the third point, namely, the use of the so-called "success rate", that is, the ratio of funds awarded to funds applied for (which last year was just over one-third overall), as a measure of this disappointment.

In fact, this ratio as it stands is a very unreliable index of the true extent to which our support is falling short of the total legitimate and deserving requests. Some of the applications we receive, including the largest ones, are either outside our remit or are for other reasons unsuitable for support. We believe it is right to bring all of them to the attention of one or other of our grant-awarding committees rather than to make the situation look more rosy by pruning them beforehand. Sometimes it is possible to find ways of achieving the desired research objectives more economically, particularly by sharing expensive equipment between universities or with council establishments. In some cases an award is made initially for a shorter period than is requested, with the possibility

of an extension if promising results are achieved. Our grant-awarding committees would be failing in their task of distributing available funds in the best interests of science if they did not give careful and critical attention to such matters.

What my council is concerned to ascertain from our grant-awarding committees is whether, at the end of the day, they feel that a significant proportion of truly deserving applications has had to be turned down through lack of resources. So far, I am glad to say, this has not been the case.

Yours faithfully,  
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### Mild Thaw on Disarmament

SIR,—You state, sensibly enough (*Nature*, 225, 211; 1970), that with regard to strategic arms limitation, "Relations with the nuclear pigmies—Britain, France and China—are also a complication, if only because nobody can at this stage commit himself to permanent restraint in nuclear weapons when there is no certainty that smaller powers will not seek to become top dogs". Certainly; but also vice versa: few among the "nuclear pigmies" (in esse or posse) can "at this stage commit [themselves] to permanent restraint in nuclear weapons when there is no certainty that" the nuclear giants "will not seek to become top dogs" in the nuclear condominium sense. This is the lesson of the non-proliferation treaty negotiations, and Americans and Russians had better not forget it. If, as *Die Welt* reported two weeks ago, there is a Russian-American plan not to consider Russian medium range strategic missiles until agreement has been reached and put into effect on intercontinental missiles, target states of those medium range strategic missiles—for example, France, United Kingdom, Japan, India, etc.—are unlikely to commit themselves to much "permanent restraint". This fact may well complicate negotiations at Vienna, but it will not go away merely because it is inconvenient.

Yours faithfully,  
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### Cover-to-cover Translation

SIR,—Abstracts as a form of journal publication from which subscribers would order full texts as needed are mentioned by your geomagnetism correspondent (*Nature*, 224, 750; 1969) as a possible solution for meeting cover-to-cover translation problems in geophysics.

Such a scheme has been used for some twenty oriental vernacular journals at the Air Force Cambridge Research Laboratories (AFCLR) since 1962. Abstracts are made for each single number of each journal as received, and are circulated to AFCLR scientists. The individual scientist then requests full translation of those articles whose abstracts appear pertinent to his interests. Abstracts from any one journal are eventually bound together and classified by subject subdivisions in order to provide a desk tool for retrospective search. One such oriental abstract translation publication which is available to the public is *Acta Meteorologica Sinica; translated titles and abstracts from volume 27 (1956) through volume 35 (1965)*, published as AD 667 520. There are 360 articles abstracted in this publication, of which 69 (19 per cent) have been requested in full translation.

Your geomagnetism correspondent also suggests that cover-to-cover translation is not the most economical way of bringing Russian work to the attention of western scientists. However, AFCLR records of articles requested