

of Ernest Baldwin will be sadly missed, not only in the neighbourhood of Gower Street but also in his old haunts at Cambridge. It was from St John's that he went forth for his early work with friends at the French marine biological stations such as Roscoff and Tamaris; and the Biochemical Institute in Tennis Court Road saw some of his most notable achievements. There he was a particularly active organizer of the International Congress of Biochemistry in 1949, editing for it in collaboration the memorial volume *Hopkins and Biochemistry*. Baldwin was indeed a most worthy disciple of Frederick Gowland Hopkins. A good friend, a kindly director, a fine scientist and a gifted writer has been lost at too early an age to all of us.

Correspondence

Goldfinger no Longer

SIR,—You say that "it is arguable that a research council should divest itself of supporting the routine data collection that comprises much of the work of the institutions. This is not research and only occasionally aids research" (*Nature*, 225, 2; 1970). I doubt whether these propositions are arguable in respect of any major field of science but they are quite untenable in regard to environmental research.

Penetrating research on the natural environment is impossible without programmes of field data collection. In answer to your suggestion that work of this kind should not be done in research institutions, I say that it would be disastrous if it were to be done anywhere else.

If your propositions were to be accepted, it would mean that the NERC would be able to support research on the input components of the natural system (in terms of physiology and biochemistry, for example) but would find it difficult to support analyses of the outputs in terms of field observations; or, at least, you would not support those field studies which deal with extensive time-series or large areas. The point which you have missed is that some kinds of research depend on the availability of collections of observations in the field, often on a scale which can be achieved only by establishing a systematic programme of sampling. The resolution, accuracy and scale of such observations must be determined by the objectives of the research programme. Thus they are as integral to research as a physiologist's laboratory equipment and measurements, for example.

Environmental research cannot exist without the description, analysis and interpretation of events and processes in nature. This is becoming even more essential with the increasing threat of pollution. The detection and measurement of the effects of pollution in the field will always be difficult, and often impossible, without a thorough understanding of the base-lines of natural variation. It would be extremely dangerous to predict the consequences of pollution, or to devise precautions against it, without a sound knowledge of natural ecosystems. Any attempt to monitor pollutants will be pointless unless we also monitor the communities and ecosystems. Essential laboratory studies of topics such as toxicity will be wasted unless they can be related to ecological field studies. Thus fundamental research on natural variations lies at the core of the investigation of pollution as it does of almost every branch of environmental science. The scale of natural variation is such that it demands the analysis of field observations taken frequently over a very long period of years and, often, from a very wide area.

In the past, much so-called ecology has dealt with single species, limited regions or restricted periods, rather than

with communities and ecosystems. Of the many reasons for this, the most important are the severe practical as well as intellectual difficulties in analysing nature; especially, perhaps, in studies of the oceans. However, the revolution in electronics is now beginning to remove these impediments by providing the sensors with which to make the observations, the data loggers on which to record them and the computers with which to analyse them.

My excuse for making so many self-evident points is that your propositions, if unchallenged, would deny environmental science the principal opportunity for advance in this last third of the twentieth century. This is the establishment of research programmes based on the systematic collection and analysis of field data—linked, of course, to the essential experimental and theoretical studies.

In the environmental sciences, at least, applied science is no more than fundamental research on those things which matter to society. Any attempt to define the limits or to isolate either kind of research is bad for science and wasteful for society. I believe that your propositions are both.

Yours faithfully,

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University News

Dr Francis J. Smith has been appointed director of the Computer Laboratory at the **Queen's University of Belfast**.

Dr J. N. Hawthorne, University of Birmingham, has been appointed professor of biochemistry in the **University of Calgary**.

Air Marshal Sir Kenneth Porter, Royal Air Force Maintenance Command, has been appointed director of technical education projects at **University College, Cardiff**.

Professor Maurice D. Kilbridge has been appointed dean of the **Harvard Graduate School of Design**.

Dr James F. Tait, Worcester Foundation for Experimental Biology, has been appointed to the Joel Chair of Physics as Applied to Medicine tenable at the **Middlesex Hospital Medical School**. The title of Professor of Urology has been conferred on **Mr J. P. Blandy** in respect of his post at the **London Hospital Medical College**.

Professor N. Millott, Bedford College, has been appointed director of the newly instituted University Marine Biological Station, Millport, and professor of zoology in the **University of London**.

The **University of Nottingham** has appointed three special professors in the Department of Physiology and Environmental Studies, School of Agriculture: **Dr L. E. Mount**, ARC, Babraham (Environmental Physiology); **Mr K. J. Hill**, Unilever Research Laboratory (Animal Physiology); **Dr W. R. Butt**, United Birmingham Hospitals (Clinical Endocrinology).

Dr Hans Meidner has been appointed to the newly established chair of plant biology in the **University of Stirling**.

Professor Charles L. Miller has been appointed associate dean of the School of Engineering, **Massachusetts Institute of Technology**, and **Professor Peter S. Eagleson** has been named head of the Department of Civil Engineering within the school.