

CORRESPONDENCE

Freedom of Scepticism

SIR,—In his letter (*Nature*, 232, 355; 1971) Dr Higginson raises a number of points that are perhaps representative of a certain kind of contemporary view and which I shall endeavour to answer.

All of us are influenced by a respect for the authority of properly qualified scientists and by the beliefs of our colleagues. But it is a voluntary alignment and every man must have the right to re-examine sceptically the verities of conventional wisdom.

There are also many well-qualified scientists who set constraints on these freedoms and react unfavourably when the expression of scepticism generates heat rather than light. But public disclosures are the primary means by which we mutually regulate our affairs! Friction may be generated by this exchange. But I believe this comes about when the sceptic is not afforded the same courtesies as is the true believer, and Dr Higginson's letter is a case in point.

For instance, there exist well-documented critiques of most of the published evidence concerning smoking and lung cancer and other health matters—critiques, moreover, that appeared in respected and rigorously reviewed journals. In the past few months articles have appeared by Dr Yerushalmy, evaluating the data on the effect of smoking on the weight and growth of infants born to mothers who smoke (*Amer. J. Epidemiol.*, 93, 443; 1971), and carefully re-examining and rejecting the claim advanced by a number of prestigious (and unreviewed) US Government reports that smokers suffer from a larger incidence of morbidity than do nonsmokers (*J. Amer. Stat. Assoc.*, 66, 251; 1971). The trouble, however, is that Dr Higginson does not care to acquaint himself with the literature of dissent or even acknowledge its existence (although demanding that we document our objections—*again?*).

Or Dr Higginson speaks of the "widely explored area of cigarettes and lung cancer"; but is this impression of such a thorough exploration not created in part, too, because Dr Hammond and others have published over and over again their findings based on a single study? Dr Hammond has produced over a dozen published papers, besides innumerable talks and testimonials, all based on his confidential 1960 population survey. (His procedures had been felt to be inadequate by a number of statisticians who, incidentally, have published their criticisms all along.)

On the other hand, how often can one publish a critical review?

Again, Dr Higginson betrays his extreme displeasure by equating a courteous request by fellow investigators to meet and discuss the possibility of a public review of data, including assurances of all possible safeguards, with a "smear" and hints that the perpetrator of this dark deed somehow is motivated by "the grant reported to have been made recently to his university by certain industrial interests". (I am sure that if Dr Higginson will address a proper request to the administration of Washington University and specify which industrial interest he seeks to expose, this information will be made available to him.)

I understand that centuries ago a number of members of the faculty of Oxford University protested the establishment of laboratories for students. Being men of the highest repute and integrity, they saw no need for students to verify their claims about what was observed in their laboratories at the cost of great bother to them and needless expense to the university. But this took place many years ago; and even at Oxford the faculty has proved to be wrong occasionally.

Yours faithfully,

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Weaned from Confusion

SIR,—“The cow suckles the calf” and “the calf sucks the cow” are descriptions of the one phenomenon, so clear that there should be no difficulty; but there is. During recent fairly extensive reading about this and related topics, I was sometimes so confused by the haphazard use of the two verbs that I was at a loss to know who had been doing what to whom.

Among this reading was a letter¹ written by Cowie and his colleagues and published by you in 1951, which must evidently be blamed for some of the confusion, since some authors have quoted it as their authority for writing “suckle” when they have meant “suck”. Others have muddled the words quite indiscriminately and still others have adopted standard usage. Is it too late to agree that the language of the Psalms, St Matthew, Shakespeare and Lamb is good enough and that we should all use

it to record our observations and express our thoughts as clearly as we can?

Yours faithfully,

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¹ Cowie, A. T., Folley, S. J., Cross, B. A., Harris, G. W., Jacobsohn, Dora, and Richardson, K. C., *Nature*, 168, 421 (1951).

Alluvial Gold

SIR,—In the issue of *Nature* for July 23 (232, 214; 1971) there is a brief item on the proposed exploration for gold and copper by Rio Tinto Zinc in the Mawddach estuary and Snowdonia. I was particularly interested in the statement that RTZ plans to sift or dredge the sediment of the estuary for alluvial gold.

During my doctoral studies from 1961 to 1964, I had occasion to study in detail the sediment from the estuary proper, from the freshwater rivers running into it, and from the offshore area in the immediate vicinity. In particular, I examined the texture and the accessory minerals of the sediments. The results of this examination showed significant similarities in the sediments from the estuary and the offshore environments and significant differences in the sediments from these two areas and that from the freshwater rivers (Mawddach and Wnion). This led me to the conclusion that “. . . it is very probable that the offshore areas are the major source for the sediment in the estuary, at least as far up as Penmaenpool . . .”¹. Put more simply, this means that most of the sand in the Mawddach estuary is brought in from the sea and is *not* derived through the erosion of the gold-bearing rocks near Bontddu.

Also, as part of the overall study, I examined the records of the Barmouth Harbour Trust in the National Library of Wales, Aberystwyth. These records showed that a European firm had been granted a concession to dredge for gold in the Mawddach estuary just prior to World War II, but that the firm had abandoned the project as uneconomic.

The success of any dredging projects for alluvial gold in the Mawddach estuary, or even the need for preliminary exploration, are therefore questionable.

Yours faithfully,

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¹ McMullen, R. M., thesis, Univ. Reading (1964).