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Editorial

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Editorial

This the first part of volume 2 of the Journal includes an interesting and stimulating paper by S. Landsberger which concerns the matter of quality control in trace element analysis. Dr. Landsberger has raised an issue of considerable importance and not just in the field of trace element analysis, for clearly, the principles which he enunciates apply equally to all other forms of chemical analysis in the environmental field. Equally clearly they also apply to the many toxicological and physiological experiments which are conducted with a view to elucidating the effect and mode of action of wastes introduced into the environment. So that he has opened the door upon very far reaching matters indeed.

No one doubts that certainty is an objective of science and the results of various inter-calibration exercises, for example, suggests that confidence in analytical results currently obtained may be greater than is warranted. Are we, however, sure that we require very accurate results in environmental management for example, or should we be concerned with order of magnitude differences? Further do we need to know accurately the very low concentrations of some substances when we do not yet know from toxicology or physiology that work at such levels is necessary? Come to that do we really know enough of the chemical interactions of a given substance in the environment, the biologically active component and its chemical state for many of these substances and ought we not to be far more concerned about such matters, before worrying too much about absolute accuracy in our results?

Another issue raised by Dr. Landsberger is the matter of the cost of the certified reference materials which he states range from \$40-\$160 (U.S. i.e. £25-£100 (Sterling)). On the face of it, these costs are not unreasonable, but is this true given that any one laboratory set upon their use will probably require many different ones for the National

Bureau of Standards alone has produced about 900 certified reference materials in all disciplines? In these days of financial restraint even the richer countries are feeling the pinch and one of the areas of economy is that of libraries; to this may be added the fact that many of the less wealthy never had very good libraries in the first place so that in these circumstances do you cut your library still further to finance the certified standards?

Like all scientists, I am concerned ultimately with objectivity and certainty and in this respect I find myself very much in sympathy with Dr. Landsberger. On the other hand, I can see perfectly well that it is better that some chemical analysis in relation to ecology be undertaken rather than none because people are frightened off by the likely cost. Finally, since environmental investigations of whatever kind are extremely costly, and human resources are finite, it is a waste of these resources to pursue ends to the point where they have no meaning in the real, living world with which the environmental biologist is concerned.

Thus while subscribing in a general sense to the views of Dr. Landsberger, I feel that they do raise a number of controversial issues of which I have touched on a few. Since these are issues of real importance rather than polemics I would welcome papers or letters from those workers who can make a valid contribution to their resolution.

E. J. PERKINS