

JOURNAL OF HYDROLOGY

Volume 1

DECEMBER 1962

Number 2

EDITORIAL

HYDROLOGY IN NEW ZEALAND - WHERE TO FROM HERE?

A basic organisation for hydrology has been set up; awareness of the need for hydrology is growing and the demand for hydrological work is established. Present moves in the further development of hydrology are crucial. It is most important that the right steps are taken, not only to satisfy immediate needs, but also to provide for the future. In this respect a quotation from the retiring address* of L.V. Berkner, the immediate past president of the American Geophysical Union is pertinent -

"But we should not confuse the science with the engineering. At any time the engineering must be constructed on the current state of geoscientific knowledge. But that current state of knowledge is merely the foundation on which new scientific knowledge must be elaborated; the great scientific advances may be influenced by developments quite outside the intellectual discipline involved. Therefore the science must be independent from the engineering in order that science can view the basic problems in a completely original way. There is more than a suspicion that scientific meteorology, for instance, lost 50 years through excessive pre-occupation with the engineering problems of forecasting. We must therefore, insist on a clear distinction between science and engineering in the geosciences, if scientific progress is to be healthy."

Such a distinction - between science and engineering, although at present not completely practicable on a staffing basis in this country, should spotlight our future development.

Berkner makes a further reference in his address to hydrology - the science, and water technology - the application. In New Zealand we sometimes use the terms pure and applied hydrology. Pure hydrology is the collection and the scientific analysis of data while applied hydrology refers to the application of data to design. Since design is urgent, water technologists have provided empirical procedures for immediate use, often based on scant scientific hydrological information. Some of these

* Berkner, L.V. 1962: Geophysics Today. Trans. Am. Geophys. Union, 43 (2): 159-66.

procedures have been relatively successful; but perhaps, with some at least, their success lies in the fact that they have not yet been fully tested, either in practice or in theory. With this thought in mind water technologists should become even more conscious of the shortcomings of the empiricisms which they are forced to employ.

It is axiomatic that design methods and standards are only as good as the quality and quantity of scientific knowledge from which they have been formulated. From this it follows that pure, or scientific, hydrology must forge ahead independently - fully aware of, and contributing to, present day design problems, but conscious too of the future needs of a rapidly expanding population: for this populace will in time demand that hydrologists possess very much more scientific knowledge than is required by current design problems.

Therefore, let us make a clearer distinction between pure hydrology - the science, and applied hydrology - the engineering. And in order that the future data requirements of water technologists can be met it is essential that the science of hydrology be fostered today. This requires an increase in the quantity and quality of pure hydrologists in New Zealand.
