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## EDITORIAL

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### Erosion and Precipitation

"Soil erosion is intimately related to . . . : vegetation, soil, land form, and physiographic processes. And, more directly, it is related to the climatic factors themselves: to wind velocity, rainfall intensity, temperature, and many other such elements. Thus, whether it is natural or man-induced, erosion finds different expressions from climate to climate, as to both the forms that it assumes and the rate at which it occurs. Soil conservation problems must, therefore, be approached with a clear knowledge of the climatic environment."\*

Of the many climatic elements, precipitation is of foremost importance in any study of erosion in New Zealand. The broad relations between erosion and rainfall were observed and recorded as far back as the 1920s, and subsequent observations have confirmed early views. However, few qualitative studies of erosion and even fewer quantitative ones have been systematically tackled; and until recently little thought had been given to studying the fundamental hydrological aspects of erosion. The experimental basin programme of New Zealand hydrology caters for this approach.

A comprehensive assessment of a particular erosion phenomenon demands that all related factors, including hydrological ones, be studied as exhaustively as the erosion processes and rates themselves. Both climatic and hydrological factors must receive as much attention as the erosion — sometimes more. Moreover all factors, independent and dependent, should be studied both qualitatively and quantitatively.

Furthermore, although for the moment we are often concerned only with the occurrence and severity of erosion on a spatial basis, we should be aware of the variations that take place

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\* Bennett, H. H. 1939: *Soil Conservation*. p.180 McGraw Hill Co.

with time. Such knowledge is the essence of prediction and control planning. In this respect detailed climatological time series analyses — particularly of rainfall — can be very revealing.

We, in New Zealand, have not travelled far into the study of hydrological and physiographic processes and their relations — and there is a long journey ahead. Realising this, the N.Z. Hydrological Society has organised a **Symposium on Erosion and Precipitation** as a contribution for the International Hydrological Decade. This special issue of **Journal of Hydrology** contains a number of papers, and abstracts from papers, to be presented at the Symposium. The technical material gives detailed expositions of several geomorphological processes and makes important incursions into quantitative erosion assessment. Attention is drawn to the fact that some periods are climatically more conducive than others to erosion. Certain features of rainfall and sediment are dealt with.

Although nearly 30 years have elapsed since Hugh Hammond Bennett proclaimed the way to understanding geomorphological processes and solving soil conservation problems, we should take heart because the forthcoming hydrological symposium testifies to the wider technical interest and activity that is now stirring in our country.