possible resultant effect through the continued application of intermittent stresses repeatedly applied in a given direction. Were it possible to think of extended regions of mobile matter within the earth, then perhaps tides set up in this underlying mobile material could produce, through hydrostatic pressure, far-reaching effects in this connection.

A few years ago I undertook a reinvestigation of the frequencies of the occurrence of major seismic disturbances as possibly correlatable with the position of the moon.[21] While the results were not as conspicuously convincing as one might have wished, there was a definite indication that, at least so far as deep focus earthquakes are concerned, the curve of frequency deduced showed two maxima and two minima during the lunar day. Maximum values coincided with positions of the moon four hours and sixteen hours past the meridian. One might say that there are indications here of a trigger action, such that if through accumulated stresses large earthquakes are about to occur, there is a better chance of their occurrence during a time when the horizontal tidal component of the moon's gravitational force is at a maximum.

A few days ago I received a communication from that venerable and esteemed geologist, Professor William Hobbs of Michigan. Said Professor Hobbs to me, "If you have published material proof of the changes of latitude and longitude, could you send reprints, or else references to place of publication." By training and temperament I think any scientist is reluctant to use the word proof, and while the material I have presented may have fallen far short of what any mathematician could desire as proof, I hope I have fairly and without undue prejudice presented such evidences as exist to encourage a degree of open-mindedness among both astronomers and geologists on so fundamental a question as that of differential movements in the earth's crust now going on. If so, then I will have been successful at least to the extent of having presented material consistent with the subject assigned.

[21] H. T. Stetson, *Proceedings Am. Philosophical Society*, 78: 411, 1937.

OBITUARY

RONALD FRASER MACLENNAN

IN these days, when full millions of men of pre-middle age must necessarily turn their potential physical and intellectual energies into the kinetic form necessary to winning the war, the death of a single member of that age-group may pass almost unnoticed. However, when such an individual was already a teacher and trainer of, and inspiration to, hundreds of students at the upper educational level, the loss reaches into a long and incalculable future.

For this reason the passing of Ronald Fraser MacLennan on May 27, 1944, of coronary thrombosis, at thirty-seven years of age, has more than commonplace significance. He took his A.B. at Oberlin College, in the town of his birth, in 1928, with honors in zoology; an A.M. in 1930 and the Ph.D. in 1932, both at the University of California (Berkeley). He was at once appointed instructor on the zoological staff of the State College of Washington, there advancing to the associate professor level; in 1940 he was called back to his alma mater. While his teaching was an outstanding activity and success, always carrying a heavy schedule, he was never lacking in eagerness for research; eighteen carefully wrought studies in the field of protozoology appeared during the twelve years following attainment of the doctorate. He was also one of "the biologists who, in our opinion, were the best men,—who could speak with authority, to write these chapters" (quoted from preface); MacLennan was thus chosen to present "Cytoplasmic Inclusions" in the large treatise on "Protozoa in Biological Research" (1941) edited by Calkins and Summers.

Oberlin has a new biological laboratory in the offing, and the confidence placed in his judgment is indicated by the action of the administration in releasing him from other duties for a half year while he cooperated with the architects. Further portrayal of the role he was filling can best be given in summary by quoting from the memorial minute adopted by the faculty on June 6:

> All of us had every reason to assume that his would be a long and brilliant career. Of this there was abundant promise. It showed itself in his already numerous and significant scientific publications, in the enthusiastic and affectionate relationships established alike with colleagues and with students, and in many active services for his church and for the village.
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> To those of us who were closest to him in his daily work, his ready and engaging smile, his unfailing wit and good humor, his quick assumption of his full share and more of any task however arduous, and his careful, critical, yet unassuming scholarship were a constant inspiration.

He is survived by his wife, Mrs. Marie Schulte MacLennan, and a son, Frederick; by his mother and two sisters. Memberships in scientific organizations included the American Association for the Advancement of Science, American Microscopical Society, American Society of Zoologists and the corporation of the Marine Biological Laboratory.

ROBERT A. BUDINGTON