

## CORRESPONDENCE

The Editor,

*The Journal of Glaciology*

SIR,

*Electrical crevasse detectors*

Thank you for the clipping you sent me containing Mr. Ward's review (*Journal of Glaciology*, Vol. 3, No. 22, 1958, p. 146) of my first article on the crevasse detector. This review is correct in all essential respects and brings the subject approximately up to date. I am enclosing for your retention a copy of the latest publication (The design of a crevasse detector for polar exploration. *Journal of the Franklin Institute*, Vol. 264, No. 5, 1957, p. 361-77).<sup>\*</sup> It is proposed that future development will take the form of simplification. We may have a third publication containing final test results in about two years.

I was in New Zealand returning from a short sojourn in the Antarctic when the news of Dr. Fuchs's successful return was published. Apparently he did not use crevasse detectors, yet he and Hillary were fairly successful in getting through by purely "mechanical exploration". On the other hand, Albert Crary used a crevasse detector throughout his 1400 mile (2250 km.) traverse of the Ross Ice Shelf, and told me he considered it indispensable. It remains to be seen what the best compromise will be between the two extremes.

*Southwest Research Institute,  
San Antonio,  
Texas*

*19 March 1958*

JOHN C. COOK,  
Manager, Geophysical Engineering Section,  
Department of Electrical Engineering

SIR,

*Glacier advances apparent and real*

I would like to comment on Dr. R. Streiff-Becker's conclusions regarding the advance of the Nisqually Glacier in your *Journal*, Vol. 3, No. 22, 1957, p. 151.

First he draws attention to a small nunatak—it is perhaps one-third of a mile (0.5 km.) from Camp Muir in what is generally termed the Muir snowfield or glacier—indicating that there is an increased exposure of this mass, as shown by a comparison of photographs 1951 and 1955. This is quite apparent; however, it also may be shown, with equal justification, in comparing 1953 to 1955, that there has been an increase in snow cover for this latter period.

To belabor this is fruitless, however, unless the precise time and conditions of photography are known. Even a week may produce quite striking changes in the appearance of snow fields. There is a seasonal pack of as much as 27 feet (8 m.) of dense snow, of unusually high moisture content, at Paradise (elev. approx. 5500 ft., 1700 m.). This melts entirely during the summer so that the extent of firn can easily be miscalculated depending upon the date of observations. Snow pack is probably much greater on Mt. Rainier to at least 8000 and perhaps to 10,000 ft. (2440-3050 m.) in elevation. The nunatak is approximately at 9000 ft. (2740 m.).

Furthermore, snow falls throughout the year at Mt. Rainier; I have seen the ground covered with new snow in August at the 5500 ft. elevation. Last year in August I was in the vicinity of the nunatak under discussion during a storm that left a foot (0.3 m.) of hard packed snow over that area. This snow persisted for a number of days on the rocks and longer over the old snow.

I believe therefore that there is a need for exercising caution in drawing conclusions from undated photographs. Although I agree with Dr. Harrison as to overall advance, his use of undated photographs is open to question: it may have caused Dr. Streiff-Becker and others, to reach erroneous conclusions.

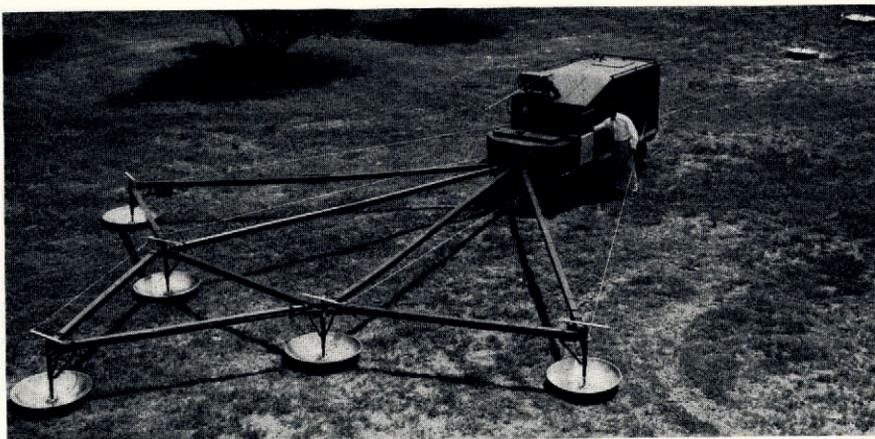
Personal observations, made over the past four summers as a ranger-naturalist at Mt. Rainier National Park, lead me to differ with Dr. Streiff-Becker when he states that firn field levels are falling everywhere. Many trails, formerly snow-free early in the season, are now blocked by snow fields at least four years and probably older in age. I have found that the Paradise Glacier (to the east of the Nisqually) has made a very substantial growth in thickness since its low of some years ago. A pictorial record shows a high nunatak being overwhelmed by an ice cliff perhaps 75 ft. (23 m.) high.

I would criticize Dr. Harrison on a point which Dr. Streiff-Becker did not mention. He has

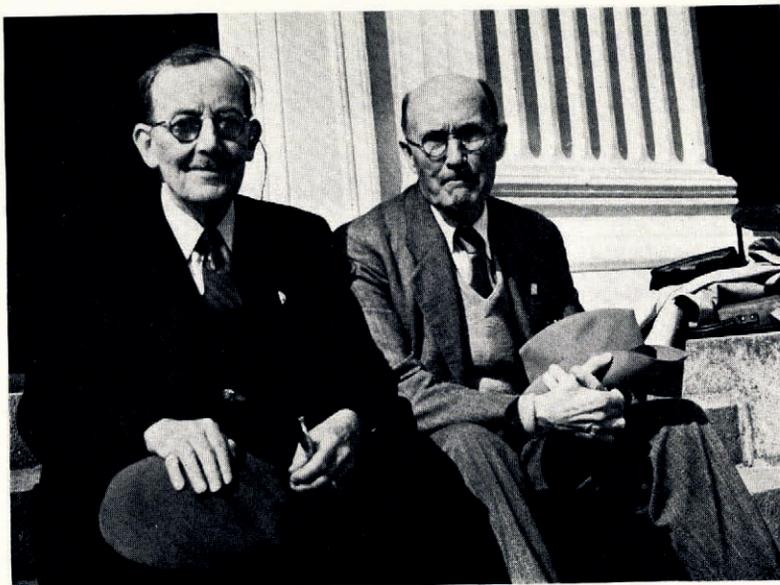
<sup>\*</sup> An illustration of the detector shown in this publication is reproduced on p. 290. *Ed.*



*Polygonal frost  
patterns, see letter from  
Mr. R. Clark  
on p. 328.*



*Double crevasse  
detector (Model  
1), see letter  
from Mr.  
John C. Cook  
on p. 326.*



*Professors  
P. L. Mercanton  
and  
J. E. Church.  
See p. 253-4.*