

letters

of the eye is one second of arc, a solid object greater than about two feet in its largest dimensions would be resolved in the binocular field, assuming a distance of 10 miles between the observer and the object.

The second observation was of an off-white light that "switched on" above a long, narrow cloud. The intensity of the light varied at a rate of about one "blink" per second. Within a few seconds, this was accompanied by the transient "random flash-bulb effect," all visible in the seven-degree binocular field. Upon depressing the microphone switch of a 37.1 MHz radio, the blinking light extinguished. No other strange events occurred during the evening, although three viewing stations, two of which were separated by 22 miles, were in operation until 2:00 a.m.

The fact that the off-white lights were observed in conjunction with the flash-bulb effect and the fact that the phenomena was observed at relatively low altitude seem to preclude annihilation as a plausible explanation. Two other members of the research team have witnessed the "random flash-bulb effect" independently and on more than one occasion. After personally recording some 100 anomalous events, it is my contention that there is no simple, physical explanation for the variety of phenomena observed.

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Earthquake noises

I wish to call attention to Cecil A. Nanney's contribution to earthquake prediction; his work was not cited in Carl Kisslinger's March article on that subject (page 36).

Nanney's article, "Possible Correlations Between Earthquake and Microseisms," *Nature* 181 802 (1958) presumably lays a foundation for the prediction of some earthquakes.

In a letter to me before his death in October 1973, Nanney wrote, "It is now well known from material researchers, that solids under strain emit acoustic noises prior to fracture. In fact these noises increase up to the moment of fracture just like microseisms, and decrease after the fracture. This is all I was saying (and the microseisms showed) about the earthquakes except on the scale of the earth."

"I read in the newspapers ... that 'the heartbeat of the moon has been observed,' in an apparent reference to continuous oscillations like microseisms, and that this had been observed prior to the largest moon quake. Of course there is a simple explanation

in that light of the earthquake-microseism correlation."

As Nanney's chief activity and notable achievement at Bell Telephone Research Laboratories was in solid-state physics, he was able to give little subsequent effort to the problem of earthquakes.

I hope this reference to Nanney's previously overlooked work will be of value to investigators of earthquake prediction.

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Volcanoes in repose

Why limit the distinction of "only active volcano in the 'lower 48 states'" to Mount Lassen, California (caption of cover photo, March, page 5)?

If being "active" is based on the presence of fumarole and thermal-spring activity such as that depicted in the cover photo of Bumpass Hell, it should be noted that Mounts Baker, Rainier and Hood have well known fumarole fields of comparable area and vigor as any thermal zone near Mount Lassen. Within the past few years thermal activity has also been documented at Glacier Peak, and Mounts St. Helens, Adams and Shasta.

Also, if an "active" state is based on the recent time of the last eruptions (1914-17 for Mount Lassen), it should further be noted that eruptive products have been dated to the mid-1800's for some of the above-mentioned volcanoes, while historical observations of additional eruptive activity—dubious or otherwise—permeates 19th-century Pacific Northwest literature. Of what importance is 100 years here or there when the state of a volcano is in question?

It is possibly better to discard the terms "active" or "inactive" and instead consider Mount Lassen, as well as most of the other Quaternary strato-volcanoes of the Cascade Range, as merely in the state of repose, with fumaroles, warm ground and thermal springs common to quiescent volcanoes.

DAVID FRANK

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Fear of creativity

If I might be permitted to make some polemical remarks concerning the present cultural state of the profession of theoretical physics, I would say the following: Theoretical physics, like most of the archaic institutional forms of the western world, is rushing toward a fatal disaster for which few establishment physicists have dared to take responsibility. The only way to avoid this is through a mutation in our professional

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