

efficiency at regular levels of voltage and frequency.

The brightness of the light can be increased in two ways. The strength of the current can be increased by raising the voltage or by quickening the frequency of the alternating field's oscillations.

Both, however, have technical limits. Too strong a current will destroy the insulating properties of the phosphor film and too rapid a frequency will not give the electrons enough time to get "excited," to "calm down," and to emit light.

Even disregarding technical limits, the voltage and frequency of the electrical system would have to be raised to make a panel bright enough to light a room with electroluminescence. Consequently, a luminous ceiling would cost an estimated \$12,000, ten times as much as a luminous ceiling of fluorescent lamps behind diffusing plastic.

Considerable progress has been made since intensive research on electroluminescence began in 1950. America's three largest electric light manufacturers, General Electric, Westinghouse and Sylvania, are conducting extensive laboratory research programs on electroluminescence.

Although low-cost electroluminescence is not just around the corner, it could occur within the next decade. Windows, wall-paper and draperies may light the home.

A Soviet physicist, in 1923, made the first known observation of electroluminescence.

At the city of Nizhni-Novgorod, Oleg Vladimirovich Lossev discovered that a crystal of silicon carbide properly oriented between two direct current electrodes will glow. Thirteen years later, a French scientist, Georges Destriau, found that an alternating current could excite sulfide phosphors to produce light.

However, as Prof. Destriau recently recalled, his electroluminescent source was so dim that "you had to turn out the lights and adapt your eyes to the darkness before you could glimpse its faint light."

Indeed, these early efforts were considered mere laboratory curiosities. It was not until 1950 that industry became interested in electroluminescence.

Science News Letter, September 12, 1959

## GEOPHYSICS

### Radioactivity Found High Off Antarctic Continent

THE AMOUNT of radioactivity in the waters of the Pacific Antarctic is more than twice as great as the natural amount.

Mr. B. A. Nelepo of Moscow State University told the International Oceanographic Congress meeting at the United Nations headquarters in New York that this radioactivity was uniformly distributed over a vast area, indicating that the contamination was caused by the fallout of radioactive products from the atmosphere.

The measurements on which he based his results were taken last year in the south Pacific adjacent to the Antarctic continent east of the Balleny Islands.

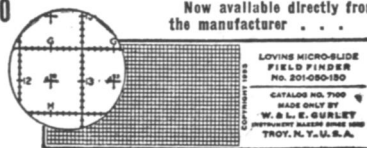
The region of highest activity, he said, was found to be the upper mixed layer of ocean water, about 50 yards in depth. Radioactivity decreased considerably with depth in the layer between 50 and 150 yards.

Science News Letter, September 12, 1959

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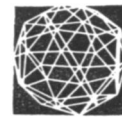
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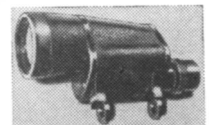
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