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been able to indicate possible advances in methods for guiding ships on the high seas and in approaching and maneuvering in harbors. Some of the methods used are peace-time adaptations of ideas first tried during the World War, and others make use of some of the newer developments in short-wave radio.

The original Science Advisory Board, as first appointed by President Roosevelt, included Dr. Isaiah Bowman, President, Johns Hopkins University, then chairman, National Research Council and director, American Geographical Society; Dr. R. A. Millikan, director, Norman Bridge Laboratory of Physics, California Institute of Technology; Dr. Karl T. Compton, *chairman*, president of the Massachusetts Institute of Technology; Dr. C. K. Leith, University of Wisconsin; Dr. W. W. Campbell, then presi-

dent, National Academy of Sciences; Dr. Frank B. Jewett, president, Bell Telephone Laboratories; Dr. John C. Merriam, president, the Carnegie Institution of Washington; Gano Dunn, president, J. G. White Engineering Corp.; and Dr. Charles F. Kettering, president, General Motors Research Corp. The following members of the Board were appointed at a later date: Dr. Roger Adams, University of Illinois; Dr. Simon Flexner, Rockefeller Institute for Medical Research; Dr. Lewis R. Jones, emeritus professor of plant pathology, University of Wisconsin; Dr. Frank R. Lillie, then at University of Chicago and now president, National Academy of Sciences and chairman, National Research Council; Dr. Milton J. Rosenau, Harvard School of Public Health; and Dr. Thomas Parran, State Commissioner of Health, New York.

Science News Letter, December 14, 1935

PHYSICS

Short Wave Radio Effect Found Confirmed by Records

EXISTENCE of the "Dellinger effect," which is the sudden disappearance of short-wavelength radio signals over long distance, is confirmed by the National Broadcasting Company's studies of radio transmission records.

The complete wipe-out of all high-frequency long-distance radio signals on the illuminated side of the globe for short periods is known in commercial parlance as a "drop-out," O. B. Hanson, NBC chief engineer, explained.

Dr. J. H. Dellinger, chief of the National Bureau of Standards' radio section, reported the phenomenon recently and asked other observers to give their experiences. (See *SNL*, Nov. 9) It was seemingly linked to activity on the sun.

"It is one of the vagaries of short wave transmission but our experience indicates that it is a feature of the 27 day cycle of recurrent magnetic disturbances rather than a 54 day cyclic phenomenon," Mr. Hanson said. "During the year 1930, for instance, when magnetic disturbances were unusually extensive, such drop-outs were quite common and were predominantly linked with the 27 day disturbance sequences."

Confirmation of the Dellinger effect was also found in a check of Harvard's short wave radio transmission records since 1933.

Antiquated and now-obsolete govern-

ment radio regulations are preventing scientists from obtaining needed information about the newly-discovered strange wiping out of short wave radio transmission, Dr. Harry Rowe Mimno of Cruft Laboratory, Harvard University, said in reporting the Harvard confirmation. (*Science*, Nov. 29).

Just as a search of old astronomical photographic plates can tell past information about a new star after it has been discovered, so too have Dr. Mimno's radio records described the severe radio fading which every 54 days appears to stop communication on certain short wavelength bands outside the usual home broadcasting range.

It would be highly desirable, Dr. Mimno indicates, to obtain with automatic equipment a continuous record of radio transmission reception during the recurrent radio "storms." But this was impossible he reports, stating:

"Unfortunately no continuous automatic records could be obtained during the 1935 period covered by Dr. Dellinger's report. During the past 16 months the Federal Communications Commission has repeatedly postponed the rephrasing of certain obsolete regulations limiting the use of automatic apparatus, which effectively block the continuation of fundamental research."

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BIOLOGY

Did Life Originate In Unknown Outer Space?

DID LIFE, at least the primitive one called beginnings of it, come to our planet from somewhere else? Are we the descendants of protozoic or prophytic ancestors that "came over" on some meteoritic Mayflower?

Evolution, which has tolerably ready answers for many questions as to how life changed from one form to another, has never had a satisfying solution for the riddle of life's origin itself. Darwin never ventured an answer to this ultimate question, and even after he had become an agnostic he did not change the last sentence in the *Origin of Species*, in which he postulated life as "having been originally breathed by the Creator into a few forms, or into one."

Some speculative biologists and philosophers have undertaken at least to banish this baffling puzzle from this planet, by suggesting that bacteria or other low forms of life may have drifted into the fertile pastures of a young earth, or been borne in from outer space, riding on or in a rushing meteorite.

This view appeared to have gained support at one time through the experiments of Prof. Charles B. Lipman of the University of California, who has found bacteria in all sorts of unlikely places: in coal from deep mines, in the center of large rocks, and finally buried in the masses of stony meteorites.

But now doubt is cast on the validity of his findings, through a repetition of his experiments by a member of the Field Museum staff, Sharat K. Roy, who is versed in the techniques of both geology and bacteriology. Mr. Roy used material from several of the same meteorite falls as those investigated by Prof. Lipman. He sterilized the outsides of these "heaven-stones," tested them to make absolutely sure that they were sterile, crushed them to powder, and planted the powder in a series of twelve tubes of nutrient media.

Nine of the tubes remained without signs of life after weeks of careful incubation. Three showed colonies of bacteria. But when these were examined, it was found that the organisms were common forms on earth. They had either seeped into the stone through crevices and pores, or (more likely) they had somehow got into the culture tubes as accidental contaminations.

So again the concept of life as a celestial hitch-hiker runs up against a Scotch verdict.

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