

# SCIENCE

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## ARE THERE PERIODS IN AMERICAN BUSINESS ACTIVITY?\*

By Professor EDWIN B. WILSON

HARVARD SCHOOL OF PUBLIC HEALTH

WHEN I was spending a pleasant and instructive semester here in Berkeley five years ago, one of the talks I gave was on rainfall in Boston from the forty-year record of the Blue Hill Observatory of Harvard University. I showed that dry months had not followed dry months any more or any less than heads follow heads in tossing a coin. This may not seem a very satisfactory result of a considerable statistical study, but it is one of the especial functions of the statistician to discuss precisely this point, *viz.*, as to whether the behavior of phenomena is no more than might be expected of a chance series. We must re-

member that chance refers to the future, to the unknown. If we toss a fair coin fairly there is before each throw an equal chance of heads or tails. After the throw has been made and the result has been observed there is not chance but certainty as to what did happen. There are all too many persons who have a feeling that if throws of a coin have been running to heads, they will continue to run to heads and altogether too many who contrariwise have the feeling that if the throws have been running to heads they must tend to change and run to tails to even the series up. Neither of these feelings is correct; the chance of the next throw coming heads or tails is even and independent of the results of previous throws—always assuming that we are dealing with a fair coin

\* Address before a general session of the American Association for the Advancement of Science, given at the University of California, June 21, 1934.

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