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**INDUSTRIAL  
FATIGUE RESEARCH BOARD.**

**REPORT No. 51.**

**A Study of Absenteeism in  
a Group of Ten Collieries.**

**By H. M. VERNON, M.D., and T. BEDFORD, Ph.D.**  
(assisted by C. G. WARNER, B.Sc.)

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**1928.**

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## PREFACE.

An investigation was recently conducted for the Industrial Fatigue Research Board,\* the results of which indicated, in conformity with expectation on physiological grounds, that both the working capacity and the accident rate of miners were affected by the atmospheric conditions in which they worked. With the concurrence of the Health Advisory Committee of the Mines Department and with a financial contribution from the Miners' Welfare Committee, this work has since been extended with the primary object of exploring further the effects of the physical environment of the miner.

This second investigation, the results of which are embodied in the present report, is based mainly on the records of absenteeism relating to about 23,000 miners working at a group of ten collieries in the same district, covering periods of twenty-one months to six years. These data, after classification according to the presumed cause of absenteeism, have been examined with the object of measuring the relation of different kinds of absenteeism to various operative factors, and more particularly to depth of working and atmospheric conditions. The principal conclusions are given on page 54, and need not be here repeated, but the Board think it desirable to direct attention to the caution with which, as the authors themselves admit, these conclusions must be accepted. Caution is imposed both by the nature of the subject and by that of the methods applied.

The question of the causes of absenteeism is clearly one of great complexity, involving not only the more physiological factors with which the present report is mainly concerned, but also a number of social factors, such as the "degree of settlement" of the working population, the distance between home and colliery, and the availability of other work for women. In the present instance, the effects of these disturbing causes have been lessened by the fact that the group of collieries studied were in the same neighbourhood and apparently subject to the same social conditions, but the possibility of their affecting to some extent the conclusions reached as to the other causes studied must not be disregarded.

Then again, the investigation from its very nature is inevitably subject to the limitations imposed on all statistical experiences. Correlation between one variable and another, which was the principal test applied in the report, implies association but not causation, for although, for two variable factors standing in the relation of cause and effect, the statistical correlation between their measures must be significant (in the case of direct causation approximating to unity under most conditions), yet the converse proposition is not true, and it cannot be inferred merely from the

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\* Vernon, H. M., Bedford, T., and Warner, C. G. (1927).—The Relation of Atmospheric Conditions to the Working Capacity and Accident Rate of Miners.—*I.F.R.B. Report No. 39.*

fact that two variables are highly correlated, that one is the "cause" of the other; independent evidence is usually called for before this can be regarded as established.

Subject to these necessary limitations, the Board are of opinion that the results of the present inquiry are well worthy of the attention of the industry and of others interested, as disclosing various factors possibly influencing absenteeism which call for further study.

Finally, it is perhaps hardly necessary to point out that the investigation, having been confined to a limited number of collieries, the absolute figures relating to absenteeism given in the report must not be regarded as representative of the country as a whole.

The Board would acknowledge their indebtedness to the members of the Special Committee of Reference, containing representatives of the Mining Industry, for the critical consideration of the results of the inquiry, and to Sir Richard Redmayne, K.C.B., for many valuable suggestions received from him during the preparation of the report for publication.

*July, 1928.*

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# A STUDY OF ABSENTEEISM IN A GROUP OF TEN COLLIERIES.

BY

H. M. VERNON, M.D., and T. BEDFORD, Ph.D., Investigators  
to the Board, assisted by C. G. WARNER, B.Sc.

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