

stages of the depression generally was succeeded by a period of adjustment or maladjustment. These conclusions conform so readily to common sense impressions that they may probably be applied with reasonable safety to other families. Although the data contained in this study have been carefully and exhaustively analyzed, the number of cases is too small to furnish adequate proof of each type of reaction, as the authors themselves point out.

LOUISE KENNEDY KISER

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TWO MEDICAL STATISTICAL BOOKS¹

THE introduction of the medical worker to the field of elementary statistical analysis is not a difficult problem to solve. It entails providing him with (1) a grounding in terminology, (2) an introduction to statistical methods and, to borrow medical usage, their "indications and contraindications," and (3) an introduction to the increasingly specialized literature of the field.

Dr. Mainland's book, *THE TREATMENT OF CLINICAL AND LABORATORY DATA*, meets all three of these requirements well, and the attention paid throughout to the problem of small sample study adds greatly to its usefulness. *PRINCIPLES OF MEDICAL STATISTICS* by Hill meets the first two requirements well and includes, among methods, discussions of life tables and standardization of rates although the "indications" for the use of both of these methods could have been made more comprehensive.

Both books adequately show the need for an understanding of statistical methods on the part of the medical worker. They also explain that analysis is but the last of a series of steps in statistical procedure, the first of which should consist of planning the study or experiment, and the next of collecting the data. A third preliminary step, and one which deserves more attention than it usually gets, is the recording of the data for much is lost in this process of making the data available. These steps which precede that of analysis are not accorded the same attention by the two authors. Mainland regards them as peculiarly in the province of the

¹ Mainland, Donald: *THE TREATMENT OF CLINICAL AND LABORATORY DATA*. Edinburgh, Oliver and Boyd, 1938, 340 pp.

Hill, A. Bradford: *PRINCIPLES OF MEDICAL STATISTICS*. London, The Lancet Limited, 1937, 171 pp.

medical worker, while Hill ventures somewhat more boldly into this phase of the work with most useful comments on selective factors and pitfalls. The fact is that medical observations, particularly when embodied in clinic records and notes, are highly individual things well adapted to a highly individual end. The manner in which each item of observation takes its place, prediscussed for its clinical limitations, in a delicate process of induction leading to a diagnosis, prognosis, or opinion on the effect of therapy, is beyond the reach of anything but the admiration of the statistician. These same records, collectively used for analysis, however, are likely to be his despair, for here individual items of observation must be able to stand alone or carry a good degree of certainty. This means, often, some modification of the usual clinical method of observation or collection, inclusion of a number of items of little clinical value, and usually, also, a very definite modification of the method of recording. The result is primarily a statistical, not a clinical, record. Although work with routine medical records is admittedly a special case, enough has been said to show that the statistician has more to offer the medical worker than suggestions on the final phases of his study. It is this preliminary aspect of the work which has to be treated in medical terms, for that is where the special techniques of medicine with their special limitations are applied. Both authors feel that R. A. Fisher's *DESIGN OF EXPERIMENTS*² covers this aspect satisfactorily but the examples here are largely taken from other applications of statistics, and the problems peculiar to the medical worker's field are few indeed. It is more difficult for the medical man to translate into his own ideology the ideal plan and execution of an agricultural or economic experiment than to convert to his own uses the concepts of the statistical analyst: urns, dice, coins, and all.

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² Oliver and Boyd, Edinburgh, 1937.