

The Angle Orthodontist

*A magazine established by the co-workers
of Edward H. Angle, in his memory. . . .*



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Illinois Reunion Issues edited by WENDELL L. WYLIE

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On the Necessity for Research

In all fields of the healing arts there is a curious barrier between the research man and the clinician—a sort of mutual distrust. The investigator, because of his point of view, decries the empirical approach of the clinician while the clinician belittles the investigator as one who has no experience in and therefore no right to talk on clinical matters. There is some justification on both sides. Not infrequently it happens that research conducted in the laboratory does not prove out in the clinic; on the other hand there is abundant evidence that the acceptance of an empirical hypothesis and particularly if it serves a clinical need, comes to be accepted as fact. Other hypotheses are then built upon it until a whole chain of procedures may be based on a false premise. This stops progress in all involved areas.

All science arose from empiricism but the physical scientist was able to throw off its shackles at an early date because the things he studied obeyed strict laws. He had only to tabulate his observations and reason on them to read those laws. The biological scientist, on the contrary, found himself faced with an infinite number of variables in everything he sought to study. His was the double task of recognizing the independent variables and then attempting to prove their interactive effect on each other. And he had always to start with the end result, the interaction. As Carlson so aptly put it, "When a man kicks a football the result can be predicted with mathematical accuracy but when a man kicks a dog, anything can happen."

The word "Research" has come to connote an activity that is beyond the capacities of ordinary men, an activity that demands certain innate

abilities possessed by relatively few individuals. Actually it requires nothing more than a detached point of view that permits a scrutiny of phenomena or things in such a manner that the bias of the observer is either eliminated or adequately controlled. It has been defined as "1 percent inspiration and 99 percent perspiration." The research mind is not marked by any greater ingenuity than those devoted to other labors, it is merely skeptical, suspicious of too-plausible explanations.

Without research any field is doomed to stagnation. Unchallenged opinions and unchecked hypotheses are passed on from generation to generation; gaining power like old wives tales, until fact is no longer distinguished from opinion. This is the danger in any educational program that does not include research. The general area of the research is relatively unimportant but the critical attitude of mind it fosters is indispensable to progress.

The remark is often made by the clinician that he would like to do research but he does not know what to investigate. This implies a naïve belief that so much is already known that it requires great powers to detect new worlds to conquer. President Bowman of Johns Hopkins, when asked by a student what he could investigate made this reply: "Get any standard textbook in your field and read until you come to the words 'It can therefore safely be assumed—.' Dig your spade right in there!"

It is not to be expected that all clinicians should be experimenters. Their working time is too fully occupied with the rendering of service. They should however, if they wish their services to become increasingly valuable to their patients, make every effort to keep themselves informed on the findings of those engaged in research. Nor should they stop with the investigations pertaining only to their own fields, the more basic or fundamental areas should be scrutinized. Only in this manner can the wide gap between research and its clinical application be narrowed.

A. G. B.