

learned his job in C's factory and had had no outside experience for this reason. Before making the move, the management felt that it was advisable to re-check a number of the time studies upon which it expected to establish its piece rates, not only for the purpose of auditing the work of its time study clerk, but to assure itself that its methods of doing the work were reasonably sound. (The operations involved here were quite simple hand operations.) C requested the director to negotiate the loan of a time study man from another factory which had a similar operation to perform. The management in C felt that a time study clerk accustomed to timing similar operations in another plant would contribute a fresh point of view and be able to detect motions that were flagrantly false. D loaned C the time study man, who went to C's plant and remained there several weeks. The results of this transaction were highly gratifying to both parties.

#### Results

Well, what has the M. R. A. accomplished? It isn't possible in all cases to draw a clear line of demarcation between the operation of the M. R. A. and results it has achieved. In some instances, they are one and the same thing. On the other hand, some results can be expressed in terms of dollars and cents savings. For example: within six months after the committee which investigated internal transportation made its report, each of two companies stated that it had figures to show that it would save \$35,000 a year. Again: a company which had appropriated \$15,000 for new air compressor equipment, in the belief that its old equipment was obsolete and inadequate, found that, by operating this equipment in accordance with a method described at a meeting of plant engineers, it was entirely adequate to meet all requirements. The appropriation was thus saved by the company. Also, in connection with air compressors, another company was enabled to increase the efficiency of its equipment so greatly that, without attempting to translate the saving into dollars and cents, it estimated a large amount was involved. Numerous large savings are constantly resulting from information exchanged among the members of the purchasing agents' group. Notable instances have occurred in connection with fuel, lumber, lubricants, iron and other commodities. One company

effected large savings by adopting a scheme of painting its plant in accordance with a plan worked out by another M. R. A. Company. Under this plan, all painted surfaces both inside and outside the plant were measured, classified and listed. The frequency with which each part of the plant would require painting was determined. Estimates of comparative cost as between painting unobstructed walls and ceilings, on the one hand, and surfaces broken and more or less inaccessible on the other, were made. A definite painting program was adopted which covered painting every part of the plant at least one every seven years and some parts at much shorter intervals. This made it possible to employ a regular painting crew composed of the least possible number of men who could complete the program on schedule time. Another company learned how to eliminate completely explosions in its enameling ovens. In the case of most of the above items, and in many more like them, it is possible to estimate their value quite accurately. No attempt has been made to estimate the savings which have resulted from the works managers' criticisms of each other's plants. They are conceded on all hands to be large. It would be only time-consuming to attempt to enumerate improvements that have grown out of the series of plant inspections carried on by this committee.

On the other hand, the Association offers many services which, though they do not lend themselves to a dollars and cents unit of measure, are regarded by our membership as having far greater intrinsic value than some of the measurable results. What the M. R. A. really offers its members is a consulting service which enables them to be guided by the composite abilities of the ablest executives in every activity existing within the group. A little while ago I said that the difference between seeking information promiscuously from unrelated companies and from companies within a group such as the M. R. A. was a difference of degree and quality. In the first case, the thing done is to give out as little information as possible in order to satisfy the interrogator. In the other, the aim is to give just as much information as possible because of the community of interest and mutual confidence which has grown up within the group. Perhaps the point I want to make may be best illustrated by repeating a remark which was blurted out by a high official in one of our companies at a meeting

of the Executive Board about a year or so after the Association was started. It represents the changed point of view which had come over this executive in consequence of his working along Association methods. What was said ran about like this: "If any of you fellows had come to the X Y Z plant a year ago and asked us what we were doing about this thing or that, we would have told you something and made a pretense of being polite to you. But we wouldn't have told you the tenth part of what we are ready to tell you today."

One of our purchasing agents who happened to be attending a meeting of a larger group of purchasing agents inadvertently asked the man sitting next to him a question not usually raised among purchasing agents. "None of your business" was the quick retort that greeted him. Perhaps you think this man didn't take the trouble at the next meeting of M. R. A. purchasing agents to express his satisfaction at belonging to a group pervaded by mutual confidence and where one's motives are not questioned.

The potentialities of a group like the M. R. A. are almost unlimited. In the five years the Association has been operating we feel that we have exploited only the veins of ore lying almost on the surface. The rich deposits from which the largest returns will come are still intact.

A problem which has been ever with us is the development of an M. R. A. Technique—one which would fulfill the needs and requirements of a project such as the one I have outlined. While we are by no means ready to say that we have arrived, we believe that we are justified in feeling that we are "on the way."

The National Industrial Conference Board in its book "A Report on Trade Associations" says:

"Fruitful and practical ideas, as distinct from philosophical speculations and literary fancies are not generally conceived in the cloistered recesses of recluse minds. They are the product of suggestion, correction, addition, adaptation, and revision. They are like the steel which constitutes one of the basic materials of modern economic life—never found in the ultimately serviceable form, but produced only after varied elements have been fused, refined, mixed, tempered and moulded. Cooperative effort provides the most promising basis for effective research undertakings."

#### Discussion

W. V. Bingham.<sup>3</sup> One particular statement in Dr. Person's thought clarifying paper calls for careful scrutiny. "In the present state of the science and the art of quantitative measurement," he states, "generally only those phenomena of conduct are quantitatively measurable which represent mass or group habits."

This generalization, particularly applicable to economic research, is, fortunately, not so pertinent to psychological measurements. The outstanding contribution of experimental psychology has been the light it has thrown on individual differences rather than on mass reactions. In almost any large workshop or office or schoolroom it would be safe to wager that the best quarter of the workers can do from two to five times as much in a given time as the poorest quarter, or do it two to five times as well. And these wide differences between people hold for their interests and emotional reactions, as well as for their intelligence, their motor control or their ability to learn new duties. Industry must measure individual reactions and deal with each executive or employee as an individual.

Then, too, it should be remembered that some of the behavior which is of so much concern to industry and which is often thought of as mass or group behavior, is after all made up of individual reactions—reactions which can be measured, and which can be greatly changed through training, through altered physical conditions or through appropriate appeals to the individuals constituting the group.

What is "good will"? It sometimes bulks large in the assets of a business. Good will has been measured. One way of measuring it is to tabulate the reactions of a sufficiently large sampling of the individuals who make up the group in question. The stimuli presented to them must be pertinent, real, uniform. About four years ago a public service corporation operating in a western community wanted the facts about the good will of its customers in the several districts it serves. To make these measurements it engaged a team of young economists and psychologists connected with the Bureau of Management Research in San Francisco. They prepared a battery of carefully considered, specific questions to ask the customers about the

<sup>3</sup>Director, Personnel Research Federation.