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The Lost Legion

In recent years a shift in the locus of research has taken place. "Research done in industrial laboratories is now the major portion of research in progress in this country and is increasing steadily" [*Am. Scientist* **46**, 24 (1958)]. In industrial laboratories, and to a lesser extent in research enterprises conducted under university and institute auspices, the team has replaced the individual investigator. The scientist working alone and the majority of those who engage in contract work in universities expect to publish their results. This condition does not prevail to a marked degree in industrial laboratories, where teams of scientists and technicians work on projects that are designed to have commercial value to their employers. Many scientists who enter industrial employment constitute a lost legion so far as publication of research results is concerned.

A young scientist whose only experience has been in the university environment may be unaware of conditions that will limit his professional advancement if he accepts employment in one of the 4834 industrial laboratories listed by the National Research Council. After a period of orientation it is likely that he will become a member of a research team that may or may not be working in the area of his special interest. The research team is primarily a group of specialists working under the supervision of an administrator. It is essentially a managerial control device whose success, from the commercial point of view, has been notable. Industrialists hold the concept of team management in high regard. Howard Joseph Morgens, president of the Procter & Gamble Company, has been quoted as saying, "We all work so closely together that you can't say one man did one thing and another something else" [*Fortune* **56**, 160 (Nov. 1957)].

But consider the effect of team membership upon the professional career of a participating scientist. His superiors will determine the direction of the research and may subdivide the work and shift team members in and out of the group until all record of individual contribution is hopelessly lost. A man may spend years working diligently in an industrial laboratory and have no published record of his research. Later, if he chooses to seek employment elsewhere or is considered for a university appointment, he is unable to present evidence of his status as a productive scientist. He is unknown to his contemporaries outside the small group of fellow workers in his employer's laboratory.

How can the individual scientist protect himself from the tyranny of "team management"? He can choose a university career and work where the right to publish is safeguarded by university policy or contract. But if he genuinely wants the advantages offered by industrial employment—and there are advantages, financial and otherwise—he first should get the facts regarding the publication policy of the company that he is considering. Before accepting employment he should obtain a statement in writing that will protect his rights as a scientist. Otherwise he will find himself at the mercy of those managers who happen to occupy high-level posts at a given time.

A discussion of the conditions of employment and a written agreement about the salient points will be of advantage to the scientist and to the employer. The rights of the former will be recognized, and the latter will discover that the supply of outstanding men seeking industrial employment will increase. As it is now, many university professors hesitate to encourage their ablest students to enter an area where they would be enrolled in the lost legion—RICHARD S. UHRBROCK, *Ohio University, Athens.*