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(For Branch Offices see page 99 A)

Efficiency of Research

WITH research costs increasing about 10% a year, industrial management is starting to take a close look at the operation of its research programs. This, in turn, will focus attention on such factors as cost and efficiency of analytical operations.

The magnitude of industry's research program and the management problems resulting are described in an article on "Research Management: The New Executive Job" by George A. W. Boehm (*Fortune*, October 1957). Today, the nation's annual expenditure for industrial research has climbed above \$7 billion. It now takes about \$35,000 a year to support a professional scientist.

The article indicates that while research is considered desirable and necessary, there is a problem of declining efficiency, particularly in industries which have solved most of their basic technical programs. A survey last year of 120 major companies showed that two thirds of all research projects fail to produce useful results.

One proposed solution is development of the research administrator, the newest executive specialist in the management level. His function is to evaluate research efficiency and methods of selecting broad fields which will yield profitable products.

The job of the administrator of an analytical laboratory is analogous in many ways to that of the research administrator. Based on experience, we believe that laboratory directors have such heavy work loads that they have no time to study and evaluate efficiency of analytical departments. The alert analytical administrator is always seeking faster and cheaper methods to analyze the samples submitted to him. While he may be concerned with the initial cost of the instrumentation which can do the job, he is so intrigued with its capabilities that he fails to analyze carefully the cost per sample analyzed and the effect on his costs of operations.

The time has come when efficiency of test methods must be studied. There is much interest in this subject, as evidenced by the requests for reprints (not available) of two articles relating to a formula for evaluating efficiency of a new test method by Alan Thomas (*Analyst's Column*, *ANAL. CHEM.*, March and April 1957).

Related to efficiency is the question of whether the test itself is necessary. The three greatest areas of waste in time and money in analysis are: (1) slow and outmoded analytical methods; (2) analyses which give no really useful information; and (3) methods which are more precise and accurate than needed.

With management beginning to make critical appraisals of research operations, we venture to state that those responsible for analytical operations will be required to make a careful study of the efficiency and costs of their operations.