QUOTATIONS

SCIENCE AND PUBLIC WORKS

THE economy axe has been wielded with so much zeal, not always according to knowledge, among government bureaus that science has fared badly. Even in prosperous years less than 1 per cent. of the federal budget was appropriated for research. Now there is a reduction of 60 per cent. over 1932. The army and navy, on the other hand, will continue to receive huge sums. So glaring is the discrepancy that various cabinet members have done their best to correct a manifest error of judgment.

The term "public works" is so broad that it can be made to embrace not only such tangible structures as roads, bridges and radio stations, but also the testing of airplane engines in a laboratory that must now stand idle, or the discovery of new alloys. Reasoning thus, Secretary of Commerce Roper applied for grants out of the public works fund to continue research that had to be abandoned. On behalf of the Bureau of Standards, which has been compelled to rid itself of 380 of a staff that once numbered 974, he asked for no more than $450,000. There were also requests to aid the Bureau of Mines ($275,000), the Bureau of Fisheries ($1,072,474), the Coast and Geodetic Survey ($3,300,938) and the Bureau of Lighthouses ($2,355,068), the money to be spent on "new projects." Since buildings and equipments are public property, further applications were made for funds to recondition them. Secretary Ickes appealed for aid to permit the Geological Survey to continue investigations of the highest importance to the mineral industries, and Secretary Wallace stepped into the breach on behalf of the Department of Agriculture.

The first decisions on these applications have now been made. They make sad reading for science. Of the $64,561,542 of the public works funds involved, only $4,255,592 is to be spent by scientific bureaus, and this largely for labor and building material in making necessary repairs. Evidently the term "public works" is narrowly construed. Between public works in the strict sense of the term and laboratory research the choice should be easy. The record of such an institution as the Bureau of Standards speaks for itself. Literally tens of millions have been earned and a score of new industries have been created by research. Besides, there is the question of hundreds of highly trained chemists, physicists and engineers. Are they now to be numbered among the unemployed? They have been the most powerful of all creators of employment. A million entrusted to them returned not only tens of millions but gave us industries of which there was no previous inkling.—*The New York Times.*

SCIENTIFIC APPARATUS AND LABORATORY METHODS

A PHOTOGRAPHIC TECHNIQUE FOR THE STUDY OF EXTENSIVE DATA ON SMALL POPULATIONS[1]

A METHOD which would facilitate the study of interrelationships among extensive clinical observations, physiological measures and test results was required for the investigation of reaction tendencies in psychopathic cases. In order that significant and suggestive interrelationships might be determined without too great expenditure of time and energy, we adopted a procedure which seems applicable in many fields of investigation where there are a great many data on, let us say, less than a hundred cases. Briefly, the method is to copy all data in tables on large sheets of draughtsman's tracing cloth, to cut the table into strips, one strip for each case, to arrange the strips according to any desired grouping or ranking in a printing frame, to blue-print the table thus arranged, and then to search the blue-printed table for measures differentiated by the grouping or ranking.

More specifically, it has been found practicable to list the names of the various measures on which data are available in a wide strip along the top of the table as a universal heading. The individual cases are listed at quarter inch intervals in a column at the left, and the data for each case are transferred to the row opposite the case name in the appropriate data columns. Holes are punched at a uniform distance from the two ends of each row of data before cutting the table into strips. A printing frame is constructed slightly larger than the table, with a row of small nails spaced at quarter-inch intervals on each side. The holes in the left end of the strips fit the nails along the left edge of the frame. A rubber band fastened through the hole in the right-hand end of each strip maintains a moderate tension when it is looped over an appropriate nail at the right of the frame. One of the rows of nails may be in a detachable section of the frame, so as to permit lifting the arranged strips for the insertion of a sheet of

[1] Report from the Behavior Research Fund and the Institute for Juvenile Research, Chicago, Series B, No. 192.