

### Fortieth Anniversary of the Liebig Museum

THE Liebig Museum, Geissen, celebrates this year its fortieth anniversary. Although the Museum was not inaugurated until 1920, the idea had long been in the minds of German scientists and, but for the intervention of the First World War, would have most probably materialized many years before. It was decided at the beginning of the present century to set up as a memorial the Laboratory which Justus Liebig had made so famous. In 1909 a committee was formed for this purpose, including such scientists as Prof. Volhard, who at the time was the last living assistant of Liebig, Prof. Sommer, Prof. Behagel, Dr. Merck and many others. It was from this committee that the Liebig Association emerged in 1911. Much of Liebig's original equipment was transferred from the new Institute to the original Laboratory which he had persuaded the Darmstadt government to provide at Geissen in the early nineteenth century. Repair work was carried out on the Laboratory and much of the lost equipment was copied on the strength of drawings which had been found. The First World War delayed the opening until March 26, 1920; but such was its fate that only twenty years later it suffered further damage by yet another World War. However, after thorough reconstruction, for which funds could only be raised by collections, the Museum was reopened during the summer of 1952; the Institute which had proved to be the mother of chemical institutes all over the world was once more established.

### U.S. Federal Funds for Science

THE eighth issue by the National Science Foundation of Federal Funds for Science, dealing with the Federal Research and Development budget for 1958, 1959 and 1960, estimates Federal expenditure on scientific research and development for 1960 at 8,100 million dollars, an increase of 3 per cent over 1959, and compared with a 34 per cent increase in 1959 (pp. iii+74. NSF-59-40. Washington, D.C.: Government Printing Office, 1959. 65 cents). In 1959 the Department of Defence, the Atomic Energy Commission and the National Aeronautics and Space Administration accounted for 6,700 million dollars out of the 7,200 million for research and development. Of the remainder, 244 million dollars was expended by the Department of Health, Education and Welfare, 119 million dollars by the Department of Agriculture, 62 million dollars by the Department of the Interior and 57 million dollars by the National Science Foundation. Profit organizations were responsible for 65 per cent of Federal expenditure on research and development, Federal organizations for 24 per cent, and educational institutions for 9 per cent. Of the estimated expenditure of 1,444 million dollars on research in 1959, 964 million dollars was for the physical sciences, 432 million dollars for the biological, medical and agricultural sciences, and 48 million dollars for the social sciences. Fundamental research accounted for an estimated 488 million dollars in 1959 compared with an actual 331 million dollars in 1958 and an estimated 494 million dollars in 1960; of this, 335 million dollars were for the physical sciences, 142 million dollars for the biological sciences, and 11 million dollars for the social sciences; 49 per cent of the total was expended through educational institutions, 5 per cent through profit organizations and 37 per cent through Federal organizations. Expenditure on research and development plant

increased from an actual 342 million dollars in 1958 to an estimated 662 million dollars in 1959 and 447 million dollars in 1960. Of the latter figure, 136 million dollars in 1959 and 92 million dollars in 1962 were on non-Federal sites, and 531 and 355 million dollars, respectively, on Federal sites. Since 1951, basic research, as a proportion of total research, has increased from about one-fourth to almost one-third. In the same period, expenditure on the biological sciences increased by 118 per cent, on the physical sciences by 56 per cent, and on the social sciences by 60 per cent.

### Funds for Research in the United States

DATA now available from the U.S. National Science Foundation's continuing survey of funds for research and development in the United States indicate an increase in those funds from just over 5,000 million dollars in 1953-54 to 12,000 million dollars in 1959-60, due primarily to an increase of about 160 per cent in the funds used for research and development by private firms and certain types of related organization which constitute the "industry sector" of the Foundation's programme: for industry the rise is expected to be 3,600 million dollars to 9,400 million dollars, more than half of which now comes from the Federal Government. For colleges and universities the corresponding increase is 126 per cent (450 million dollars to 1,000 million dollars), and for other non-profit institutions, 140 per cent (100 million dollars to 250 million dollars). Taking the completed year 1957-58 in comparison with 1953-54, funds for research and development increased from 5,150 million dollars to 10,050 million dollars, and of these Federal Government agencies provided 6,130 million dollars, compared with 2,740 million dollars; for industry the corresponding figures are 3,660 million dollars and 2,240 million dollars; for colleges and universities, 180 million dollars and 130 million dollars; and for other non-profit institutions, 80 million dollars and 40 million dollars. In terms of performance it is estimated that industry was responsible for 76 per cent of research and development in 1956-57 compared with 70 per cent in 1953-54; Federal Government agencies for 15 per cent, compared with 19 per cent; colleges and universities for 7 per cent, compared with 9 per cent; and other non-profit institutions were still responsible for 2 per cent.

### The Metallurgist

BY the issue of the first number of *The Metallurgist*, the Institution of Metallurgists has at last a publication worthy of its growing size and importance (*The Metallurgist*, 1, No. 1; January 1960. Incorporating the *Bulletin of the Institution of Metallurgists*. Pp. 64. Annual subscription, 63s. post paid). It is no function of the Institution to duplicate the journals of the other metallurgical institutes, and the contents of this issue are, therefore, concerned either with matters of domestic importance or with articles of general appeal. Among the former may be included the Institution's revised examination requirements, a most carefully carried out piece of work, and reports on the results of the examinations in 1959 and on national certificate results for which it is responsible. The articles comprise Prof. A. J. Murphy's presidential address, "Some Recollections" by Dr. Harold Moore, the first president, and a most interesting article by Prof. R. W. K. Honeycombe entitled "New Horizons in