of publication and reprints. In this connection, it is interesting to read the following statement by the American Physical Society: "It is gratifying that with few exceptions, the articles published in all American Physics Journals now receive this institutional support which makes possible publication of a considerable number of pages of scientific material which otherwise could not appear." It hardly needs to be emphasized that a similar procedure, if also adopted in our country, would greatly improve the financial position of the journals.

Apart from these considerations, the introduction of such a procedure would also lead to various other improvements. One obvious defect that is noticed in many of our journals is that the quality of the articles accepted for publication is not as high as would be desirable. This is mainly due to the fact that there is a great tendency on the part of research workers to rush into print every new result, without waiting to consolidate the position. Also, where a paper is particularly good, a report of it is sent abroad for publication in preference to journals in India. This arises mainly from two causes; firstly, since the circulation of many of our journals is not large enough, an important contribution published therein is quite likely to be overlooked; and secondly, the time of publication is also long, and often not definite.

Under these circumstances, the suggestion that the institutions should pay for the cost of publication would go a long way towards removing these difficulties. Clearly, when the financial position of the journal improves the time of publication can also be made quite short, and this should induce good papers being sent for publication to journals in India instead of abroad. Once the standard of our journals is raised, there is bound to be a larger demand for them abroad and in this way the circulation would automatically shoot up. Further, if it is necessary to pay for the publication, there would be a preliminary selection of material at the source itself, so that the quality of the articles received for publication would improve considerably.,

There is, however, a definite class of scientific journalism which is apparently unrepresented in India, *viz.*, semi-popular expositions of scientific results, as in the *Scientific American*, *Science et Vie* or *Discovery*. This class of journalism has a vital role to play in keeping the general public abreast of the latest developments in science and helping them to take an active interest in its progress, which obviously is the only way of obtaining adequate public support for scientific research.

NOBEL AWARDS FOR PHYSICS AND CHEMISTRY, 1951

THIS year's Nobel Prize for Physics has been awarded jointly to the British Physicists, Sir John Cockroft, Director of the Atomic Research Establishment at Harwell and Prof. E. T. S. Walton, of Dublin University, in acknowledgment of their fundamental work on the transmutation of elements. Working at the Cavendish Laboratory, Cambridge, under the direction of the late Lord Rutherford, Cockroft and Walton produced the first artificial transmutation of an element in 1932 by bombarding lithium by means of protons accelerated to a voltage of more than one million volts in a special cascade generator constructed by them. Lithium was thus converted into two α-particles. They also succeeded in transmuting a number of other elements, *e.g.*, boron to beryllium, fluorine to oxygen, sodium to neon, etc. This was the starting point of a new field of nuclear physics and was followed by the construction of larger and more powerful accelerators, such as the van der Graaf generator, the cyclotron and the synchrotron, and ultimately by the well-known developments leading to the release of atomic energy. While these atom smashing machines were used in the early days for the production of new isotopes of known elements, they have recently been able to produce new elements themselves.

Appropriately enough, the Nobel Prize for Chemistry has been awarded jointly to Profs. Seaborg and Macmillan of the California University who have played a notable part in the discovery and study of these new transuranic elements. They and their co-workers have definitely identified five such elements, Neptunium (93), Plutonium (94), Americum (95), Curium (96) and Berkelium (97) and also studied their chemical properties, isolating them in a pure state by ultramicrochemical techniques. None of these elements have been found to occur in nature, because all their isotopes have relatively short half-periods and they are therefore rightly termed "synthetic elements".