is astounding. This is not the place to recapitulate his contributions to enzyme chemistry; reference, however, may be made to the fact that he developed the technique, novel to this field, of selective adsorption in the preparation and separation of enzymes and expounded his theory of the active group associated with a colloidal carrier to explain their constitution. This work formed the subject of his Faraday Lecture given in London in 1927 and of the Willard Gibbs Medal address given at Chicago in 1933. After 1925 he continued to direct research, on a restricted scale, at the Willstätter Laboratory in the University of Munich, his principal collaborator being Dr. M. Rhodewald. What was probably his last publication appeared in 1940 in *Enzymologia*.

Willstätter liked it to be known to his friends abroad that, in the War of 1914-18, his sole contribution was of a humanitarian nature—he was the inventor of the three-layer protective filling of the German gas mask.

Though Willstätter is dead, he leaves behind him a band of former pupils who carry on his tradition in the academic and industrial spheres. There occur to one the names of Stoll, Kuhn, Waldschmidt-Leitz, Asahina, E. K. Bolton, Zechmeister, Forsén, Fourneau, Everest, Clarke, Page and a host of others all gathered together in that volume presented to him by grateful collaborators on his fiftieth birthday in Munich in 1922. The noble spirit that sacrificed itself for a principle, that declined invitations to work in other lands lest, in the acceptance, younger men might be deprived of their opportunities, is an abiding memory with all who had the good fortune to be reckoned among his friends.

THOMAS J. NOLAN.

Mr. F. W. Clifford

FELLOWS of the Chemical Society, and indeed all chemists who have occasion to use that Society's Library, must have learned with profound regret of the sudden death of the librarian, Mr. F. W. Clifford, at his home in Ealing on September 21. His illness in the early part of this year was a source of anxiety to his friends but he recovered and resumed his duties, and even a few days before his death seemed to be his normally cheerful and courageous self.

Clifford began his career in public libraries, first at Willesden Green and later at Hampstead, where he retained a connexion by evening work until 1903. He never lost his interest in this side of library work and was chairman of the Ealing Public Library Committee during 1923-27. In 1897 he accepted an invitation to become assistant librarian at University College, London, and, in the six years he spent there, gained valuable experience in the working of a large special library and himself contributed not a little to reforms in procedure. It was no doubt his experience and his efficiency in that position which led to his selection for the post which he was to hold with such success for the rest of his life.

When Clifford became librarian in 1903, the Chemical Society's Library contained about 15,000 volumes. The number is now about 45,000 and in peace-time is added to at the rate of nearly a thousand volumes a year. It was one of Clifford's greatest achievements that he contrived most ingenious methods of storing this huge accumulation of literature in the restricted space available in the Society's rooms at Burlington House.

Co-operation between British chemical societies

began in 1919 and has now resulted, so far as the operations of the library are concerned, in the provision of a much wider range of technical chemical literature, a great extension of the clientele, and management by a Joint Library Committee on which all the associated and contributory societies are represented. Clifford rejoiced in these developments, and he and his staff worked loyally to promote them. As a result Great Britain now possesses what is probably the best chemical library in the world; it needs and has needed for years adequate housing.

Clifford was a member of many committees concerned with library matters. He provided written evidence for the report on Public Libraries in England and Wales presented to the Board of Education in 1927 and several of his suggestions were adopted in the report. He occasionally reviewed books on bibliographical subjects, and wrote a number of articles, of which one may be specially mentioned, "The Library of the Chemical Society: a Record of a Recent Attempt at Co-operation", published in the *Library Association Record* in 1919. He was a member of the Library Association and served on the council of the Association of Special Libraries and Information Bureaux during 1925-30.

Clifford never pretended to know the contents of chemical literature, but in knowledge of chemical publications of all kinds he probably had no equal. The story is told that on one occasion a candidate for a Ph.D. degree, persistently questioned by his examiner as to what literature he would consult in starting research on a new subject, quoted the usual German handbooks, dictionaries, etc., only to be met with the further inquiry, "And after that?", to which he provided the final answer, "I would then go to the Chemical Society's Library and consult Mr. Clifford." Clifford was always ready to give help of this kind and grudged neither time nor patience in his desire to be of service to inquirers. This kindness was based on a broad love of humanity as exemplified in his enthusiastic work for the St. John Ambulance Brigade, for which he did great service. For this he was made a 'serving brother' of the Order of St. John of Jerusalem in 1926, an officer of the Order in 1936 and in March of this year was given the rank of commander, a fitting tribute to a life spent unobtrusively in the service of his fellows.

T. A. HENRY.

Mr. B. M. Neville

MR. BERNARD M. NEVILLE, who died in April of this year at the age of fifty-five, was a schoolmaster whose outstanding abilities would have made a mark in any circumstances; but they were the more remarkable in view of the distressing disability which from childhood had stunted his growth but which had signally failed to check his enjoyment of life; he would have been the first to acknowledge how much it was due to the devotion of his mother that he refused to admit his physical limitations.

He was educated at William Ellis School, where he was physics master for more than thirty years, until his untimely death, and at Birkbeck College, of which he was a governor for twenty-four years. He was a Neil Arnott scholar of the University of London, and took his honours degree in physics in 1909. Later he became an associate of the Institute of Physics and a fellow of the Physical Society, and he was a prominent member of the Science Masters' Association, being a member of the Committee and

for some years treasurer. He was a skilful experimenter, and his class demonstrations and lessons gave to many boys an enduring interest in science, and an appreciation of accuracy and general scientific technique which stood them in good stead whether they proceeded to more advanced scientific studies or turned to other pursuits.

His loss is mourned by many, to whom he was a patient teacher who spared no effort to help the willing, to whom he was a never-failing inspiration in the courage with which he faced an adversity that (in the words of another) "would have crushed the spirit and soured the nature of all but a very few", and above all, to whom he was a faithful and affectionate friend.

D. G. A. DYSON.

We regret to announce the following deaths :

Prof. G. G. Henderson, F.R.S., emeritus professor of chemistry in the University of Glasgow, on September 28, aged eighty.

Prof. R. C. Robertson, professor of pathology and bacteriology in the University of Hong-Kong, on August 4, aged fifty-two.

Mr. E. T. Sandars, O.B.E., author of popular handbooks of natural history, on September 19, aged sixty-five.

Mr. A. R. Warnes, author of works on coal tar distillation and known for his special study of the restoration of stonework and ancient buildings, on August 25, aged sixty-four.

NEWS and VIEWS

Cultural and Scientific Mission in China

IN amplification of the note on this subject which appeared in NATURE of September 26, p. 369, Prof. E. R. Dodds, F.B.A., of the regius chair of Greek in the University of Oxford, will also be proceeding to China shortly on a mission of cultural co-operation, like Dr. J. Needham, F.R.S., on behalf of the British Council. In Chungking he will be attached to the Sino-British Cultural Association, and he will present letters of greeting to Academia Sinica (the National Academy of China) from the University of Oxford and the British Academy. Prof. Dodds will visit as many as possible of the Chinese universities and cultural institutions, and his stay will certainly do a very great deal to strengthen Sino-British cultural relations. It may be added that Dr. E. R. Hughes, reader in Chinese in the University of Oxford, has already been for nearly a year in China, at Kunming and other university towns, doing similar valuable work. The visit of Prof. Dodds and Dr. Needham was recently noted by the well-known Chinese newspaper, *Ta Kung Pao*, which published a leading article welcoming them in the warmest terms, and expressing the hope that the interchange of scientific workers and scholars between China and Britain may take place in the future on a much wider scale than hitherto.

Research and Research Workers in War-time

THE September number of the *Wireless Engineer* contains an editorial on "Research and Research Workers" with special reference to the demands of the present war effort. Under normal peace-time conditions, fundamental and applied research are carried on in one or more of three places : the colleges and universities ; the various Government laboratories and those of research associations ; and the research and development laboratories of industrial manufacturing companies. The demands of war render it necessary for the workers in these three groups of laboratories to intermingle to a considerable extent and to co-operate as a team in order that useful ideas may be built upon sound foundations and developed as rapidly as possible into practical technique and equipment which can be directly utilized by the Services. There is much controversy over the status of the research worker in the various institutions and laboratories, and the inadequacy of the supply of suitably trained workers with the right

ability has given some of them an exaggerated view of their indispensability. On the other side, some industrialists not infrequently express their disappointment regarding the results of research as affecting their particular line of business. This is sometimes due to the lack of appreciation by the employer of the needs of the research worker, who cannot always produce results to order ; there is on occasion a fault to be sought out and eliminated on the other side.

While the immediate needs of war tend to restrict long-term fundamental researches, it must be remembered that it is this type of research which in the long run yields the new developments in the commercial fields. But the greater intensity of, and the larger number of workers engaged in, applied research during a war period will undoubtedly pave the way for revolutionary developments afterwards. Thus the temporary sacrifice that the scientific investigator has to make at the present time, in abandoning the alluring search for truth for its own sake, is at least partly compensated by the knowledge that the diversion will in all probability yield things of great value when peace returns.

Universities of India

A VALUABLE survey of the work of the universities of India was given by Dewan Bahadur S. E. Runganadhan in a lecture before the India and Burma Section of the Royal Society of Arts on April 10 (*J. Roy. Soc. Arts*, Sept. 18). The paper gives a concise survey of the facilities for scientific research which have been developed in the last twenty-five years ; a list of theses which have been accepted by Indian universities for the award of research degrees in recent years, which is appended, gives some idea of the standard of research work carried out in these universities. The subjects selected for special study under chemistry have a bearing on important economic plants, like jute, and Indian medical plants, and research on zoology includes valuable studies on parasites. The papers on botany indicate that there is considerable scope for the extension of research to more practical aspects of the plant life of India.

The importance of further co-ordination of university work in India is stressed, and the suggestion is made that some body corresponding with the University Grants Committee of Great