with Stradling in a full-time capacity during the War.

All aspects of civil defence were studied by Stradling's team; but particular attention was given to the collection and analysis of information on the results of air attack. Many trials were organized to determine the effects of explosions on structures of various kinds, and, when the real attack started, the results of the enemy bombing were closely studied. The information gained was of great value to the Ministry of Home Security (as the Air Raid Precautions Department had then become) in developing the necessary protective and precautionary measures. In the later stages of the War it was also widely used in the planning of the Allied offensives. At this phase a considerable group of Americans was successfully integrated into the British research team.

In 1944 Stradling moved to the Ministry of Works as chief scientific adviser, with the principal object of bringing to bear on the post-war building problems the scientific methods of attack which had been so successful in civil defence. Naturally he looked to the Building Research Station for much of the scientific support which he needed. At that time, however, the study of costs and economics and of certain sociological aspects of building was not included in the Station's research programme. To fill this gap, Stradling organized a research team within the Ministry. Considerable progress was made, particularly in the development of machines suitable for operation on the smaller building-sites and in the study of houses of non-traditional types. Later, in April 1950, these research functions, and the staffs involved, were transferred to the Department of Scientific and Industrial Research and became an additional part of the Building Research Station.

Unfortunately, in 1949, Stradling's health deteriorated and he relinquished his post at the Ministry of Works. On his recovery he was appointed dean of the Military College of Science at Shrivenham. He was carrying out his new duties with his characteristic enthusiasm when death came to him suddenly.

Stradling was made a C.B. in 1934 and, for his services to the Ministry of Home Security, was knighted in 1945. In 1943 he was elected to the Royal Society. He was prominent in the affairs of the Institution of Civil Engineers and served on the Council and as vice-president. In 1942 he was awarded the James Alfred Ewing Medal by the Institution. He was also awarded the United States Medal for Merit for his war-time work.

Stradling remained throughout his life a friendly and approachable man, with an enthusiasm for his work that infected those around him. He married Inda, daughter of Alfred W. Pippard, of Yeovil, in 1918, and there was one son and one daughter of the marriage.

F. M. LEA

NEWS and VIEWS

Theory of Chemical Structure in Organic Chemistry: A. M. Butlerov

IN *Nature* of January 19, p. 92, a translation was published of resolutions passed at a conference held in Moscow last June on the theory of chemical structure in organic chemistry. It was stated there that "The Conference has clearly demonstrated the soundness of the theory of the structure of organic compounds due to the great Russian scientist, A. M. Butlerov; this theory lies at the basis of the whole of modern organic chemistry". The theory of resonance or mesomerism was said to be "directly opposed to the basic thesis of Butlerov's theory", and it was condemned as physically untenable and sterile. Such sweeping claims require examination. A. Butlerow (he published his scientific work in German under that style) did distinguished work on the reactions of addition and isomerization of olefins, mainly in the 1870's. Probably his best-known paper (*Annalen*, 189, 44; 1877) is that of 1877 on the isomerization and hydration of the di*iso*butylenes. He interpreted the double-bond shift as arising from the addition and elimination of water. He pointed out that the ready occurrence of such a reversible isomeric change would confer on a substance the power to undergo chemical reactions in accordance sometimes with one and sometimes the other structure. The correctness of these ideas was established by subsequent events. In 1883 Baeyer, having just previously made a study of the chemistry of isatin, suggested that a facile interconversion of structures might cause a substance such as isatin to exhibit the reactions of more than one structure. During 1885–86 Conrad Laar advanced the very different view that such structures did not represent distinct and potentially separable species, but only end-phases of an intramolecular oscillatory situation in a single species. However, in 1896 and afterwards, Claisen, Hantzsch, Knorr and Wilhelm Wisliscenus achieved the isolation of many of the isomeric substances which Laar's theory treated as incapable of separate existence. They were able to observe the controlled interconversion of the isolated tautomers. This led to the firm establishment of tautomerism as a mode of chemical reaction, along the lines of Butlerow's and Baeyer's ideas. Thus the way was prepared for a study of the mechanism of interconversion of tautomers, which has been the special contribution of the present century. Butlerow's and Baeyer's ideas about tautomerism have nothing to do with the theory of mesomerism, which does not describe atomic arrangements, but only the electron distribution in a single and fixed bonded structure of atoms.

William Davidson of Aberdeen

THE tercentenary memorial lecture on William Davidson of Aberdeen (*c.* 1593–*c.* 1669), delivered in Marischal College, Aberdeen, by Prof. John Read, on November 26, 1948, to mark the three-hundredth anniversary of Davidson's assumption of his duties as professor of chemistry in the Jardin du Roi, Paris, has now been published as No. 129 of "Aberdeen University Studies" (pp. 32+4 plates; Aberdeen University Press, 1951; n.p.) and forms a notable addition to this scholarly series. Davidson is remembered in the history of chemistry for many reasons: he was the first professor of chemistry to be appointed in France and the third in Europe; he was the first Scotsman and the first native of the British Isles to occupy a chair of chemistry; and he wrote one of the early text-books of chemistry, "Philosophia Pyrotechnica" (Paris, 1633–35), of the contents of