

OBITUARY

Dr. Ida Smedley-MacLean

THE death of Ida Smedley-MacLean on March 2 is a grievous loss to her many friends and has left a blank in her various fields of activity which it will be hard to fill. The British Federation of University Women, which she was largely instrumental in founding, owes much to her for her devoted service and for the breadth of vision she brought to its work. A resolution passed by the fellowship of the International Federation of University Women at a meeting in Washington on May 6 refers to one of the phases of work which she helped to launch and which has grown into a very valuable contribution to original investigation. The resolution reads as follows: "That the Fellowship Awards Committee of the International Federation of University Women records its grief at the grave loss suffered by the International Federation of University Women in the death of Ida Smedley-MacLean who for so many years played a leading part in the establishment and awarding of our International Fellowships, and who in her own work set a high standard in that type of scholarly research which we have tried to foster"

WINIFRED CULLIS.

After graduation at the University of Manchester, Dr. MacLean (then Miss Ida Smedley) worked on certain problems in pure organic chemistry under Prof. H. E. Armstrong, investigating *inter alia* the cause of colour in the dinitrobenzenes. She also acted as demonstrator in chemistry and carried out researches on problems concerning the increase in molecular refractivity of compounds containing a conjugated ethenoid linkage structure. This work resulted in a very interesting communication on the diphenylbutadienes and hexatrienes published in the *Journal of the Chemical Society* of 1908. Shortly after this early work, Miss Smedley was awarded a Beit Memorial Research Fellowship and went to work in the Biochemical Laboratories of the Lister Institute under Arthur Harden, chemist-in-chief. These laboratories had just been constituted by amalgamation of the Laboratories for Pathological Chemistry under J. B. Leathes (later of Toronto and Sheffield), with the Chemical Laboratory under Harden. One must suppose that about this time Miss Smedley developed that intense and lifelong interest in problems of fat metabolism. Study of fat metabolism and fat synthesis had already been actively pursued at the Institute by J. B. Leathes and the school he there established. It was, however, a field in which few then delved. Dr. Hugh MacLean, who later took a great interest in the study of the lipins, arrived at the Institute as one of Harden's assistants about the same time as Miss Smedley, and their marriage took place in 1913.

Dr. Smedley-MacLean perceived early the biochemical significance and importance of fats. Though to-day much is obscure in the biochemistry of fat, her work has made a valuable contribution to our knowledge of the subject, and particularly to those parts of it which deal with the oxidative breakdown of fatty acids *in vitro* and their synthesis by living organisms. Her early investigations in the field led to the deduction of the presence of a decylenic acid in butter fat, a deduction confirmed by isolation at the hands of other workers some years later. In 1912 appeared two papers in the *Biochemical Journal* on a

possible mode of synthesis of fatty acid *in vivo*, in collaboration with Eva Lubrzynska. Laboratory experiments on the condensation together of such simple compounds as aldehydes and pyruvic acid led to the isolation of longer carbon chain substances of a fatty nature. The work crystallized itself in the hypothesis that pyruvic acid was a very probable starting point for the synthesis of fatty acid in the body. It is a hypothesis which merits to this day the most serious consideration by students of the subject. Even now we do not know the actual steps by which fatty acids are built up from carbohydrates *in vivo*. Of added interest and significance in this connexion are the later investigations of other workers on the importance of pyruvic acid in carbohydrate transformations.

With the War of 1914-18, Dr. Smedley-MacLean's energies were diverted to other pressing problems. With Dr. Chaim Weitzmann she worked on the problem of producing acetone on the large scale from starch by fermentation, a project which was eminently successful. With the end of the War, and in spite of greatly increased domestic responsibilities, Dr. Smedley-MacLean again threw herself with great energy into the well-loved work, and many important and interesting papers on the mode of synthesis of fat and carbohydrate in yeast appeared at intervals until about 1939. While seeking a possible laboratory model for the study of the biochemical oxidation of fatty acids, she discovered that hydrogen peroxide in the presence of a cupric salt as catalyst is extraordinarily powerful in its oxidizing action on fatty acids. Within a short time the higher fatty acids may be largely broken down to carbon dioxide, a chemical transformation very difficult or impossible to perform in any other way. This field she cultivated with success up to some few weeks before her death.

From about 1935 onwards interest centred on the fat-deficiency disease of rats discovered by Burr and Burr in 1929 (*J. Biol. Chem.*, **82**, 345; 1929). At the Lister Institute the physiological aspects were more closely studied in conjunction with Miss Hume and Miss Henderson-Smith, while the biochemical side was left to Dr. Smedley-MacLean and myself. Her delight and fascination with this work never left her. Besides many other interesting and significant points uncovered, the position of linoleic acid as the probable precursor of arachidonic acid and other very highly unsaturated acids was established. The nature of the fatty acids stored under conditions of disease and cure was also investigated. Finally, the structure of arachidonic acid itself (originally discovered by P. Hartley in 1909 in the same laboratories) was put forward as a result of investigation on a very small quantity of material. The suggested structure was fully confirmed by subsequent work with larger quantities in the United States.

Much has been omitted from this brief note, but it is hoped that sufficient has been said to indicate the late Dr. Smedley-MacLean's comprehensive and intense interest in the biochemistry of fat. I worked with her for many years, and I retain the sense and knowledge of her masterly grip of her field. She sought out the facts, made very sure of them and then held to them amid much cross-fire. She saw the significant correlations between her facts very clearly and rarely went beyond. As a teacher and colleague she never failed to inspire, and there must be many like myself who look back on their "Lister" days with intensely happy memories.

LESLIE C. A. NUNN.