

*Associate Members*

DENNIS FERGUSON ANDERSON (E. 1962).  
 GEORGE CHARLES CLARK (E. 1938).  
 ALFRED HILEY (E. 1908).  
 THOMAS WILLIAM STANLEY MILLIGAN (E. 1936).  
 DAVID SHEPHERD, B.Sc. (E. 1913).  
 CANAPATHIPILLAI WIJAYANATHAN (E. 1952).

## OBITUARY

PROFESSOR WILFRED MERCHANT, D.Sc., M.A., S.M., who was born on 12 August, 1912, died on 12 October, 1965.

Educated at Manchester Grammar School, he studied engineering at Oxford University, where he took a First in Engineering Science, and later received the degree of M.A.

After early experience in structural engineering work in London, he won a Commonwealth Fellowship, which he held at the Massachusetts Institute of Technology. Here he specialized in soil mechanics and received the degree of Master of Science in 1939.

During World War II he was engaged on the development of jet engines in the gas turbine engineering department of Metropolitan-Vickers Limited, Manchester—work which led to the production of the Sapphire engine (1939–1946). For the next five years he lectured in structural engineering at the College of Technology, Manchester, where he became Reader in Applied Mechanics in 1951. He was awarded the degree of Doctor of Science in 1955, and appointed Professor of Structural Engineering in 1957.

In engineering research he covered a wide field, ranging from soil mechanics and aerodynamic design to structural stability. Many of his findings were of major importance, though the true significance of his work on soil mechanics has only recently been recognized. During the years he spent with Metropolitan-Vickers, he made impressive contributions to the design of axial-flow compressors for jet engines. After 1946 he was mainly concerned with structural engineering, and again the importance of his findings on the combined effects of plasticity and stability on the failure load of structures gained world-wide recognition. Later he supervised erection calculations for the new Forth and Severn bridges and by the use of computer techniques solved many exceptionally complicated problems.

Professor Merchant was a member of the Institution of Structural Engineers and an associate member both of the Institution of Mechanical Engineers and of the American Society of Civil Engineers.

A man of quiet humility, he was admired alike by his colleagues and students. A selection of his writings is given below.

Elected an Associate Member in 1937, he became a Member in 1959.

He is survived by his widow, a son and a daughter.

*Selection of writings:*

'The buckling of pin-ended struts under axial load', *Structural Engineer*, 27, 363. 1949.

'The failure load of rigidly jointed frameworks as influenced by stability', *Structural Engineer*, 32, 185 (1954).

Jointly with W. A. Bolton: 'An introduction to the theory of structures', Blackie, 1956.

'A connection between Rayleigh's Method and stiffness methods of determining critical loads'. International Congress of Applied Mechanics, Brussels. (1956).

Jointly with M. R. Horne: 'The stability of frames', Pergamon Press, 1965.

GEORGE FRANK GARNETT, who was born on 11 December, 1902, died on 13 October, 1965.

Educated at Morgan Academy, Dundee, and Bede School, Sunderland, he spent two years in engineering workshops before taking three years' practical training with Mr W. J. Steel (M) from 1921 to 1924. As an external student of London University he studied engineering and received the degree of B.Sc.(Eng).

After early experience in the City Engineer's Department, Newcastle-on-Tyne, he was engaged as Resident Engineer under Mr J. A. Bean, County Surveyor of Northumberland, in 1925, and over the next 13 years became first Chief Engineering Assistant, then Assistant County Surveyor of Northumberland. In this last position (1937-1948) he was in charge of the technical side of the County Surveyor's Department, including preparation and execution of major road improvements, bridge maintenance and work under the Restriction of Ribbon Development Act.

During World War II he served with the Royal Engineers from 1940 to 1945, retiring with the rank of Major.

He became Deputy County Surveyor of Northumberland in 1949, and in 1951 County Surveyor, responsible for the maintenance of 2600 miles of highway, 1000 road- and 900 footbridges. His department operated its own quarry and gravel depot, plus a repair station for its considerable pool of modern road plant. In the same year (1951), he was appointed Surveyor of the Tweed Bridges Trust, set up to maintain and administer Coldstream Bridge, Norham Bridge and Union Chain Bridge. He was also Engineer to the Tyne Tunnel Joint Committee, responsible for the maintenance of pedestrian and cyclist tunnels under the River Tyne.

Popular among his colleagues and an amusing speaker, Mr Garnett was a member of the Institution of Municipal Engineers and in 1957 Chairman of the Institution's Northern Counties Association. He was the author of several papers on highway administration.

Elected an Associate Member in 1930, he became a Member in 1956.

He is survived by his widow.