

graphs and allied instruments in use in the Observatory. He showed an early interest in the spectra of novæ, in the characteristics of sunspot spectra and in the comparison of centre and limb spectra in the Sun. His measurement of solar rotation at different levels in the solar atmosphere showed that the higher strata rotate faster and with a smaller equatorial acceleration than the lower strata. His next major contribution to astrophysics, the one for which the Gold Medal of the Royal Astronomical Society was in large part awarded in 1917, was the spectroscopic determination of stellar parallaxes. The first paper with Kohlschütter on the criteria provided by varying relative strengths of spectral lines for determination of absolute magnitudes of stars appeared in 1914. Afterwards Adams extended the work to cover a much wider range of spectral types and he published spectroscopic parallaxes of thousands of stars. His work led to a direct probing of the galaxy to far greater distances than had hitherto been possible except by statistical methods.

Among much other work of his mention must be made of his analysis of high-dispersion spectra and the calibration of Rowland's scale of intensities; in novæ he noted the simple 1 : 2 : 3 relations between the velocity displacements of successive outbursts: high-dispersion spectra enabled him to detect as many as five clouds of interstellar gas in the same direction in space moving with different line-of-sight velocities. Adams also both detected the white dwarf nature of the companion to Sirius and afterwards the relativity displacement to the red of the lines in its spectrum—a displacement of +19 km./sec. as compared with Eddington's predicted value of +20 km./sec. at $\lambda 4500$.

Adams was president of the Astronomical Society of the Pacific and later of the Astronomical Society of America. He was vice-president of the International Astronomical Union during 1935-49, keeping the Union alive during the Second World War. He was the senior associate of the Royal Astronomical Society, a foreign member of the Royal Society and a corresponding member of many other national academies. He was awarded the Draper Medal and the Bruce Medal in America, the Prix Janssen and the Janssen Medal in France as well as the Gold Medal of the Royal Astronomical Society. In his death the astronomical world has lost a much loved and widely revered leader. F. J. M. STRATTON

Mr. P. W. Wood

It would seem strange to anyone in Cambridge to speak of Philip Worsley Wood in any other way than as "P. W.". His passing is a great loss to Cambridge and especially to Emmanuel College, as was that of his namesake Alex. a few years ago. Born in April 1880, he matriculated and entered Emmanuel in 1899.

To one who was his exact contemporary, the passing of "P. W." comes as a reminder that the ranks of those who took the Mathematical Tripos Part I in the days when there was an order of merit are becoming very thin. In 1902 he was Third Wrangler, bracketed with H. A. Webb. In 1903 he was placed in Class I, Division 2 in Part II of the Tripos, and in the next year was awarded a Smith's Prize.

"P. W." had in a high degree that facility in the solution of ingenious problems which counted for so much in the Tripos of that day. But it was not the kind of outlook for which the times were asking. With the passing of the old Tripos, mathematical

fashion was for connected theory, ever widening in scope and in new points of view. Thus Wood became one of that band of teachers who held the fort for that wide range of students for whom mathematical research lay beyond their reach. As such he was an outstanding member of his College and of the Faculty. To his pupils he was devoted, meticulous and challenging. Though he retired at the age of sixty-five under the age limit, he went on teaching for the love of it until the day when he was overtaken by the illness which led to his death ten days later.

Being what he was, his original work was limited. The best known was his Cambridge Tract on "The Twisted Cubic". Not so well known was a series of papers in the London Mathematical Society *Proceedings* on algebraic invariants.

His activities turned early to College administration. A Fellow of Emmanuel for fifty-one years, he served for thirty-five years as lecturer in mathematics, for twenty-six years as librarian and for seventeen years as senior tutor, besides acting for some periods as vice-master. In University affairs he was not so prominent, though he was a junior proctor in 1917-18 and was for many years a much-valued member of the Local Examinations Syndicate.

As a man, "P. W." cannot be put into any class. He was just himself—kind and appreciative but caustic and terse in conversation, diligent in all that he undertook, working hard for little reward. Having no ambition but to serve well, he lived to serve.

Some would say that his hobbies were lawn-tennis and gardening. But truly his College was his hobby and his absorbing pursuit. His home and garden were places of renewal in the companionship of his wife, his two sons and his daughter. Is it possible that he shared with them, as he did with me, in the year 1944, the discovery that that number is just $3^5 \times 2^3$?

EBENEZER CUNNINGHAM

Dr. M. A. Whiteley, O.B.E.

MARTHA ANNIE WHITELEY was born on November 11, 1866, and received her early scientific training at Royal Holloway College, London, where she graduated in 1890. During the following twelve years she held appointments as science mistress at Wimbledon High School, lecturer in science at St. Gabriel's College, Camberwell, and lecturer in physical chemistry at Royal Holloway College. During the last few years of this period, from 1898, she also carried out part-time research at the Royal College of Science, and in 1902 she obtained the D.Sc. degree of the University of London (her examiners at the oral examination being Ramsay and Frankland), and in 1903 the diploma of associateship of the Royal College of Science. In the following year Tilden appointed her to be a teaching scholar on the staff of the Royal College of Science, and she was promoted assistant in 1905, demonstrator in 1908 (by which time the College had become part of the newly constituted Imperial College of Science and Technology), lecturer in 1914, and assistant professor of organic chemistry in 1920.

Her first paper, in 1900, on "The Oxime of Mesoxamide", set the pattern of her research activities on derivatives of malonic acid and barbituric acid. During the First World War, her specialized knowledge in this field enabled her to play an important part in the development of methods for the synthesis

of urgently needed drugs, and she also carried out investigations on lachrymatory war gases; for these services she was made O.B.E. She will, however, be particularly remembered for her teaching, which she greatly enjoyed. At the time of her retirement from Imperial College in 1934 she said, "When I first came to the College in 1898 I little thought to find my life's work here as a member of the teaching staff, but my love for teaching has made it seem all too short. No one who has not passed through an experience such as mine can understand the fascination which is involved in the constantly changing types of students and the human interest attaching to them". She took a particular interest in the women students, and was largely responsible for the foundation, in 1912, of the Imperial College Women's Association, of which she was president for many years. Earlier (1904-8) she had taken a leading part in efforts, unsuccessful at the time, to secure the admission of women to fellowship of the Chemical Society; it was highly appropriate that in due course she should become the first woman to be elected to its Council (1928-31).

During the many years she spent at Imperial College, Dr. Whiteley formed a connexion with "Thorpe's Dictionary of Applied Chemistry" which in later years was to become a source of great happi-

ness to her. She had been associated with Sir Edward Thorpe and with Sir Jocelyn Thorpe in the production of the second and third editions, and after her retirement in 1934 she continued to work on supplementary volumes and on the preparation of the fourth edition, the first volume of which appeared in 1937. After the death of Sir Jocelyn in 1940, she became editor-in-chief, and despite inevitable war-time restrictions and personal difficulties, which included the destruction of her home in an air-raid, the work went on. In the years since the War, her physical health deteriorated, but her mind remained as clear and alert as of old, and with her indomitable will she continued to edit scripts and to read every word of galley and page-proof; it was rarely that an error escaped her. Volume XI, which, apart from a general index, was the last of the fourth edition, appeared in 1954, and the completion of this considerable undertaking gave her much satisfaction, inevitably tinged with some sadness. Her health now became progressively worse, and she died on May 24, 1956, in her ninetieth year.

Martha Whiteley's concepts of duty and service, and her way of life, were sustained by her Christian beliefs; her memorial is in the respect and affection which she engendered in generations of students, colleagues and friends.

L. N. OWEN

NEWS and VIEWS

Royal Meteorological Society: Napier Shaw Memorial Prize

At the meeting of the Royal Meteorological Society on June 20 the president, Dr. R. C. Sutcliffe, announced that the first award of the Napier Shaw Memorial Prize of the Royal Meteorological Office had been made to Dr. Norman A. Phillips, of the Institute for Advanced Study, Princeton, for his paper, "The General Circulation of the Atmosphere: a Numerical Experiment", which was published in the April issue of the Society's *Quarterly Journal*. This Prize has been established as a result of an appeal to the members of the Royal Meteorological Society and to scientific instrument manufacturers for a memorial fund to commemorate the unique position achieved in meteorology by Sir Napier Shaw, the centenary of whose birth fell on March 4, 1954. It was decided to use this fund for the regular award by competition every two or three years of a Napier Shaw Memorial Prize of £100 for original essays on meteorological topics. The first competition was announced in 1954, the topic selected being "The Energetics of the General Circulation", and entries were open to anyone without restriction of nationality.

Chemistry at Hull: Prof. N. B. Chapman

With the appointment of Prof. Brynmor Jones to the vice-chancellorship of the University of Hull (see *Nature* of January 21, p. 116), the G. F. Grant chair of chemistry at Hull which he has vacated has been filled by Dr. Norman B. Chapman, reader in chemistry in the University of Southampton. Dr. Chapman was educated at the Holgate Grammar School, Barnsley, and Magdalene College, Cambridge, where he was successively scholar, research student and bye-Fellow, being University demonstrator during 1945-46. While at Cambridge he carried out

research on oxidation by peroxidase systems, and on chemical warfare and anti-malarial agents. Early in 1947 he went to Southampton, becoming successively lecturer in organic chemistry, senior lecturer and, in 1955, reader. In Southampton he has built up a strong school of research with two principal lines of work: a study of the kinetics of many organic reactions, including the substitution of halogens in aromatic and heterocyclic ring systems; and the synthesis of nitrogen-substituted halogeno-ethylamines, histamine derivatives, and other substances of potential pharmacological importance. He has a wide knowledge of physical as well as of organic chemistry, and among many other interests are cricket, rugby football and opera. The warmest wishes of his many friends at Southampton and elsewhere go with him and his wife to Hull.

Chief Colourist of the Dyestuffs Division, Imperial Chemical Industries, Ltd.: Dr. T. Vickerstaff

Dr. T. VICKERSTAFF has been appointed chief colourist of the Dyestuffs Division of Imperial Chemical Industries, Ltd., in succession to Mr. G. O. Mitchell, who has retired after thirty-seven years of service with the company. After leaving the University of Manchester, Dr. Vickerstaff joined Imperial Chemical Industries, Ltd., in 1935, and was at first engaged in work on problems of dyeing wool, which was carried out in the University of Leeds. This was followed by a short period at the Huddersfield Works of the Dyestuffs Division, and then in 1937 he was transferred to the Dyehouse Department at Hexagon House, which is the administrative headquarters of the Division in Blackley, Manchester. He became closely associated with the work of the newly formed Dyeing Research Section of the Dyehouse Department and was appointed head of the Section in 1942. During this period he made valuable contributions to the study of colorimetry and became a leading