VERNON CHARLES MORTON

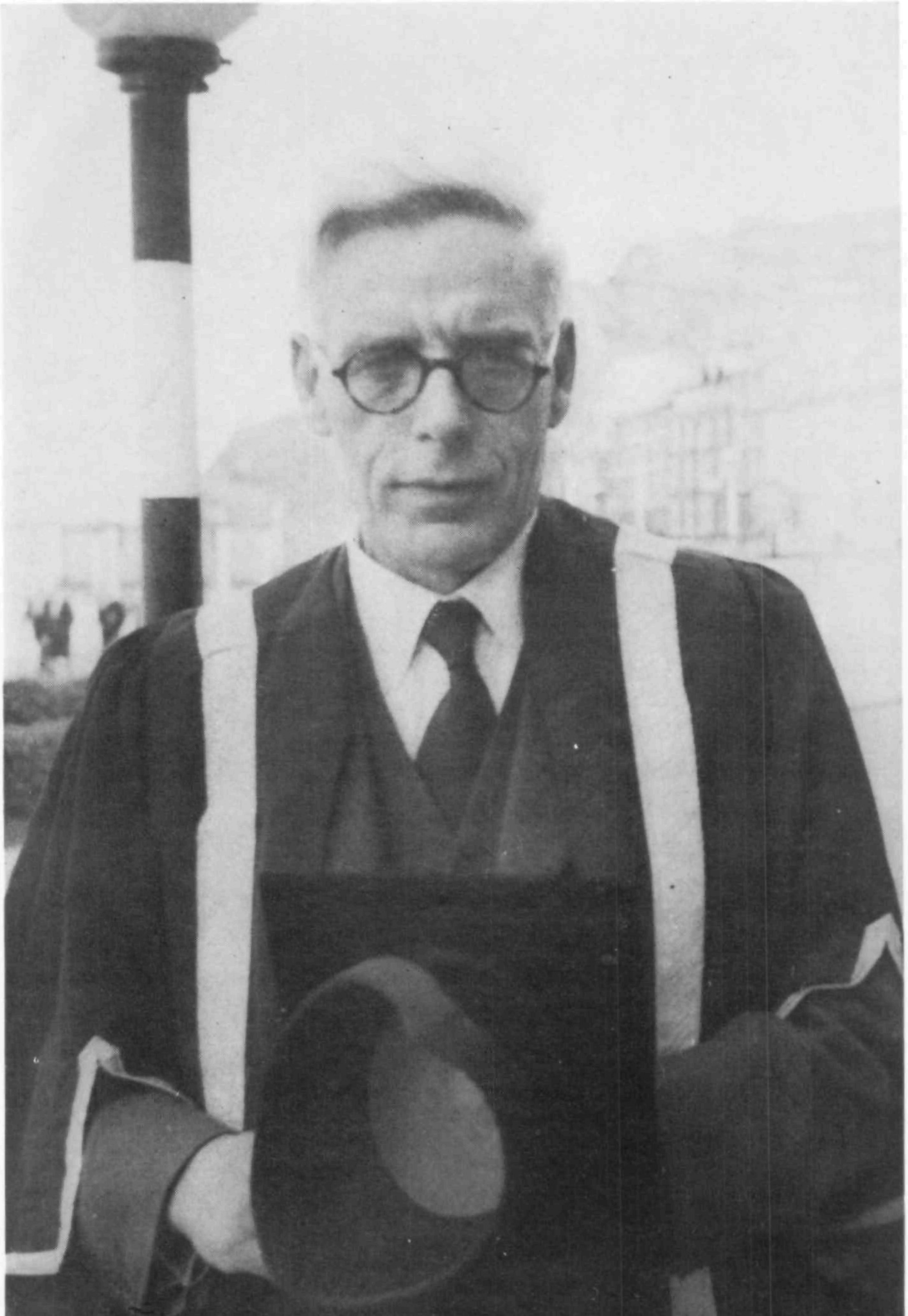
DOROTHY S. MEYLER

Vernon Charles Morton was born in Sheffield on June 26th, 1896, the son of Charles and Florence Morton, née Cadman. He always said that both his mother and his maternal grandmother could beat him at mental arithmetic. From the King Edward VII School, Sheffield, he won an open entrance scholarship to Merton College, Oxford in 1915. In 1916 he joined up and served first in the Glosters. He was badly gassed at Armentiéres and suffered from the effects of this all his life. He was then transferred to the Royal Corps of Signals. On his return to Oxford in 1919 he won the Junior Mathematical Scholarship in 1920 and graduated in 1921 winning the Senior Mathematical Scholarship. A. L. Dixon was his tutor as an undergraduate and his supervisor in 1921–2 when he worked in Algebra. The year 1922–3 was spent as a lecturer at Brighton Technical College and this experience was without doubt valuable in his development as a teacher. In 1923 he was appointed lecturer at the University College of Wales, Aberystwyth, being promoted to Independent Lecturer and Head of the Pure Mathematics Department in 1926 and Professor in 1933. On his retirement in 1961 he was appointed Head of the Mathematics Department at St. David's College, Lampeter for the years 1961–66. In 1925 he married Olive, the witty and beautiful daughter of George and Olive Norris of Oxford. She survives him with their son David Charles and two grandsons, John and Christopher.

A gifted teacher and a stimulating lecturer, clear, cogent and logical, the elegance of Morton's presentation and his enthusiasm inspired his students with his own love of mathematics and aroused their appreciation of its beauty. His influence on the teaching of mathematics in the schools and colleges of Wales was profound and is still felt, while old students such as A. C. S. Pindar and H. H. B. Thomas in the scientific civil service and Professor T. V. Davies, Principal C. W. L. Bevan and former Vice-Chancellor E. J. Richards bear witness to the effectiveness of his teaching in training students for wider spheres.

Morton's services in many capacities were frequently sought and highly valued by the University of Wales and by the College. He was an outstanding Dean of the Faculty of Arts and of the Faculty of Science (on two occasions). His most notable service to the College was as Vice-Principal and particularly as Acting Principal in 1957–58 at a time when his wisdom and charity were of inestimable value. Wise in counsel and disinterested in judgment, his integrity and magnanimity, kindness and humour will long be remembered with gratitude by his colleagues and students.

When Morton came to Aberystwyth his research interests changed to Geometry. In [1] he found that the locus of the vertices of the n-ads formed by the osculating primes of a rational normal curve C of order r at points of a set of an involution g_n^{r-1} on C is a primal V_{r-1}^{n-r+1}. He obtained results on the S_p on this primal and showed that the $\binom{r+k}{r}$ such primals, each through the vertices of r chosen from $r+k$ osculating n-ads of C, meet in a common V_{r-k-1} of order $\binom{n-r+1}{k+1}$. Using Brianchon's theorem to obtain a representation of the double points of a rational plane curve Γ of order r he applied this work to obtain results on the representative points of the remaining double points of a curve Γ which has multiple points of certain given multiplicities.



VERNON CHARLES MORTON 1896-1978

Before 1930 the properties of the three Schur quadrics of a set of three double-sixes associated with one trihedral pair of a cubic surface C had been developed. Morton collaborated with the late Professor A. L. Dixon and with the writer to obtain relations between all the Schur quadrics and properties of the hessian, parabolic curve, Dixon X-points, etc., of the surface. This work viewed the surface in its entirety. By means of a group transformation given in [2] which changes the equations of lines and surfaces connected with one trihedral pair into those of two associated trihedral pairs it was proved that a Schur quadric is mutually apolar to each of fifteen others and that the Dixon quartic surface Q is invariant for the transformation. In [3] this transformation was used to obtain properties of the Dixon X-points and of the parabolic curve of C and it was shown that the six trihedral points of a set of three trihedral pairs are coplanar and form a complete quadrangle. In [4] this plane was shown to touch a certain cubic surface G at the three Dixon X-points which it contains and further that the vertices of the common self-polar tetrads of each of the three sets of Schur quadrics associated with the three trihedral pairs form a Cremona-Humbert desmic trio of the surface G. In [5] Morton gave in a simple form equations for the remaining twelve tritangent planes of the cubic surface not given in [2]. In [6] he proved the algebraic equivalent of the double-six theorem, viz. that given a symmetric non-singular matrix $[a_{ij}]$ of order six, where $a_{ii} = 0$, $a_{ij} \neq 0$ $(i \neq j)$, and $A_{ii} = 0$, $i = 1, 2, \ldots, 5$, then $A_{66} = 0$.

In [7] Morton and Chapple considered the reciprocal relations in a threefold space S between points T and t given by (i) $X_T = ax_t/(a+\theta)$, etc., (ii) $x_t = [(a+\theta)/a]X_T$, etc. They take the point $t(x_t)$ of S as the image of the unique space cubic ρ given by (i) and the point $T(X_T)$ as the image of the line of the tetrahedral complex given by (ii). The cubics ρ are the cubics through the vertices of the tetrad of reference whose chords belong to the complex. Representations of and properties of cubics ρ which have various prescribed intersections with a curve of order n and genus p and/or contacts of different kinds with a surface of order m are found.

Publications

1. " Poristic configurations associated with a rational normal curve ", *Proc. Lond. Math. Soc.*, (2), 30 (1927), 379–400.
2. (With Dorothy S. Meyler) " Quadrics and quadric cones of a set of three associated Steiner trihedral pairs ", *Proc. London. Math. Soc.*, (2), 33 (1930), 177–189.
3. (With A. L. Dixon) " Planes, points and surfaces associated with a cubic surface ", *Proc. Lond. Math. Soc.*, (2), 37 (1932), 221–240.
4. (With Dorothy S. Meyler) " Desmic tetrahedra associated with a cubic surface ", *J. London. Math. Soc.*, 10 (1935), 203–209.
5. "The triple tangent planes of a cubic surface ", *Quart. J. Math.*, 8 (1937), 238–240.
6. " The general quadric primal in (5) which is at the same time inscribed and circumscribed to a given simplex ", *Quart. J. Math.*, 9 (1938), 310–314.
7. (With M. T. Chapple) "A point representation of a system of space cubic curves which pass through four given points and whose chords belong to a given tetrahedral complex ", *Quart. J. Math.*, 19 (1948), 133–139.