Obituary.

Mr. Ralph Todhunter.

With great sorrow we record the death, on 12 July 1926, as the result of a climbing accident, of Ralph Todhunter, Actuary and Secretary of the University Life Assurance Society, who had been joint Editor of the *Journal* of the Institute of Actuaries for more than fourteen years.

The last work he did was for the *Journal*, to which he had devoted so much of his time and energy of recent years. The completed proofs of the July number were brought to his office on the afternoon of Friday, 9 July, and his assistant, Mr. McCabe, took them to him remarking that as he was on the point of starting for his holiday he did not suppose he would want them. "Oh! but I do," he said. "I want to look at them; I will take them in the train with me." His final corrections were made on the journey, and they were received by post on the 12th, the day of the fatal accident.

In drawing up notes of his life, we have been assisted by the recollections of a number of his relatives and friends.

His family traced its descent from Thomas Todhunter, a yeoman of Cumberland in the time of Charles II. Its most famous member was his uncle, Isaac Todhunter, senior wrangler in 1848, whose name was familiar to every British schoolboy and undergraduate for a generation. Another uncle, William Todhunter, proprietor of a private school at Cheshunt, was reputed to be a mathematician as able as Isaac Todhunter, although he had not gone to Cambridge. Ralph's father, Thomas Franklin Todhunter, was a law stationer in Gresham Street, and in 1858 was elected a freeman of the City of London. He was over six feet in height, strikingly handsome, a lover of music and literature, a writer of epigrams, brimful of interesting talk, popular wherever he went, and adored by children, especially by those of his own large family. Ralph, who came about the middle of the family, was born on 31 March 1867. Though physically very different from his father, for he was a small man, Ralph possessed a full share of the mental qualities and interests of his father and his father's brothers. His family affections and his sense of family obligation were strong. From the time he entered business he undertook the main responsibility for the education of his younger brothers and sisters, and some of us were privileged to see his wonderful devotion to his mother, who shared his tastes, and to have glimpses of the grace and the charm and the peace of her declining years. From the time he left College he never parted from her, except for holidays.

"When his mother died", one of his friends says, "I wrote to "him, knowing how much he who had done so much for her would "feel her loss, and I had in reply a letter written in the perfect style we know so well, which gave me in a short space an impression I "shall ever treasure and added to my appreciation of the great "heart inside the small body."

A sister of his mother had married Mr. James Charter, proprietor

of a private school at Belle Vue House, Eaton Park, Norwich, and there Ralph spent the whole of his school career from the age of twelve. As a schoolboy he was full of gaiety and high spirits, and he was just as easily superior in sports and games, in running, cricket, football and lawn tennis, as in school work and examinations. He went to Cambridge in October 1886 as a minor scholar of Clare and subsequently became a foundation scholar. At College he dropped games except lawn tennis, at which he was an expert player. But he took a strong non-playing interest in football. At that period Clare held about the highest position among the colleges in the Rugby game and often with a friend he was spectator of a splendid College match.

When he first went up there was some question, on account of his excellent record for athletics and his light weight, of making him "Cox" of the College boat. His tutor was consulted and said, "You must either read or boat; you cannot do both. You must *not* wear check trousers." It should be explained that the boating men of Clare shared with those of one or two other Colleges the peculiarity of wearing trousers or shorts of a fine check pattern instead of the usual white flannel. Ralph decided to read.

His great friend was Geake, also a mathematical scholar of the College. They worked together, they practically lived together, and they spent many vacations together in Cornwall. With a few others they formed a small circle of intimate friends who called themselves the "Moonlighters" (a term in common use then in another connection), from their frequent nightly meetings, which continued throughout his time at College. They were lovers of good literature, and some of their meetings were devoted to the reading of Browning's plays. One of the circle recalling Todhunter's characteristics at that period, speaks of his great energy and good spirits, his fastidious taste, and his high sense of honour and kindly disposition, which made association with him so agreeable.

He took Part I of his Tripos in 1889. It was a good year for Clare. Macdonald, now Professor of Mathematics at Aberdeen, was fourth Wrangler, and Todhunter and Geake were bracketed eighth.

In their fourth year Todhunter, Geake and Dyson (now Astronomer Royal) constituted the whole class of Sir G. G. Stokes for his advanced lectures on Elasticity. The lectures were supposed to be from 12 to 1, but Stokes' enthusiasm often carried him beyond the hour, and once he went on till 2.30 p.m. All three thoroughly enjoyed the lectures; and if one of them found that an important engagement for lunch or lawn tennis had been upset the enjoyment of the others was not diminished. In after years when they met, he would recall humourously what they had suffered at the hands of Stokes.

In Part II of the Tripos in 1890 all three were successful, and they were soon elected Fellows of the College.

Geake, who had distinguished himself at Cambridge as editor of the *Granta*, became sub-editor of the *Westminster Gazette* under

Spender, was a member of the Eighty Club, and organizer of the Liberal publications department. He died before the War.

Todhunter went down immediately after taking the second part of his Tripos and getting his fellowship. He was a most loyal member of his old College. For very many years he was Auditor of the accounts and continued to act in that capacity to the end of his life. At the College audits for a period of some ten years he regularly met Macdonald, who held the office of Bursar up to the time of his appointment to Aberdeen. He was always willing to give to successive Bursars the benefit of his insight and experience, and his knowledge of finance and his intimate acquaintance with the College estates and revenues were of the greatest advantage to the College.

When he left Cambridge he must have had a very happy sense of triumph and success. His prompt election to a fellowship relieved him from the immediate urgency of making a living, which afflicts so many men at the close of a University career. He took six months to deliberate upon his future plan of life, and we may conjecture that it was during this period that he raised the question of editing a new issue of his uncle's works. The scheme did not meet with encouragement, and academic life without a definite aim in view did not attract him. He finally determined to become an actuary, and it was characteristic of him that he laid down at that time the main lines of his future life, professionally and domestically, and adhered to them to the end.

He came into touch with Mr. A. W. Sunderland, actuary of the National Life Assurance Society, and arranged to enter that office at the beginning of the year 1891. He insisted that to begin with his services could be of no value and for six months he served as probationer without a salary, going through the various stages of office work from the stamping of letters upwards. On the 29th of July he accepted a salaried position, having in the meantime passed the first examination of the Institute in the first class. Sunderland, who had been a scholar of Trinity and 7th Wrangler, was an actuary of the modern school, author of a short treatise on "Finite Differences for Actuarial Students," published in 1885, and a contributor to the *Journal* and to the insurance papers, particularly the *Insurance Record*. He was a retiring man of attractive disposition, and Todhunter was fortunate in coming into association with him.

In 1892 he passed the second actuarial examination in the first class. There is a story of his remarking one day at an Institute class that the examinations did not present much difficulty. His colleagues were amused and thought that he might take a different view when he came to the two sections of Part III (then the final) examination. So far from finding them difficult, however, he passed them both at the first attempt in 1894 in the first class. In G. F. Hardy's class of 1893–1894 he was regarded as the show pupil, although he was naturally quiet and retiring. In the course of the class he often used to intervene by asking G. F. to expand or elucidate an argument, and he usually began, ——but surely,

Mr. Hardy——." One of the examiners in the final remarked in after years that his work was letter perfect and that they should have been examined by him instead of being his examiners.

He soon began to take an important place in the work of the National, and when Sunderland died during the influenza epidemic of 1895, a heavy responsibility was thrown upon Todhunter. The Directors of the National, in conjunction with the Directors of the Mutual, promoted a Bill for the amalgamation of the two companies. It fell to Todhunter to take a leading part for the National in the discussion of the terms of amalgamation, and he fought for his side with persistency and courage. The Directors wished, as was only proper, to recognise his services in the usual way, but he refused to accept any grant of money on the ground that he was merely doing the work he had been paid to do, and it was with some difficulty that he was persuaded to accept a reward in kind in the shape of a life assurance policy for £100. The incidents we have mentioned of his connection with the National were typical of his conduct throughout his life.

The Royal Assent to the bill for the amalgamation of the companies was given in July 1896, and Todhunter was thereupon appointed assistant actuary of the combined company. In June 1900 he became actuary and secretary to the University Life Assurance Society, and he held this post when the shares of the Society were sold to the Equitable in 1919, and afterwards until his death.

He was scrupulously fair and just in all his dealings, and generous in his expenditure of time and help and if need be of money. All who were brought into frequent contact with him in any capacity were his friends, and regarded him not simply with respect but with affection. His mother said once, "Ralph is very considerate with those who have to serve him." He made them feel that they were rendering him a service, and he was not satisfied with giving a pecuniary reward, but felt bound to render them service in return.

If on the administrative side of Insurance work he never took the leading position for which his all-round abilities undoubtedly entitled him, and if his name never appeared in connection with the great public questions on which actuaries were called upon to advise and assist the Government of the country, it was not from ill fortune or from any failure to recognize his high qualities on the part of those who would have been glad to bring him into prominence, but by his own deliberate choice and determination. He did his full share in contributing to the solution of important national problems, but he did it with resolute anonymity. He was essentially a modest-minded man, sedulously avoiding self-advertisement and disliking to be in the limelight. Though his published work was largely mathematical, he was far from being academic in view or limited in range. He was well equipped at all points, broad of outlook and sound in judgment, and there were few practical points on which he could not with advantage be consulted.

Although he seldom allowed his name to appear in connection

with public work, he was identified with the very interesting Miners' Permanent Relief Societies. He was connected with the Northumberland Society from the year 1901, with the Lancashire and Cheshire Society from 1911, and with several others. He had great respect for their officials and for the work they were doing, and they had unbounded admiration for him and greatly valued his advice. His name was widely and familiarly known all over the mining area of Lancashire and Cheshire, and after his death the *Wigan Observer* printed a longer and more interesting notice of him than any other paper in the Kingdom.

Nothing in his professional associations gave him so much pleasure as his membership of the Gallio Club, of which he was one of the founders. On Thursday, 12 March 1903, Todhunter, Douglas Watson, Lidstone, Besant and Archer Thompson met at Parkwood House, Whetstone, the home of the last named. Douglas Watson brought forward the scheme of the club, and it was no sooner formulated than adopted. It was arranged forthwith to invite three more to join, Faulks, Phelps and Hovil, and the club started with eight members, all united by close ties of personal friendship, the inaugural meeting of the club being held on Monday 30 March 1903, at the Blenheim Club. The first chairman was J. E. Faulks, and Todhunter succeeded him, acting as chairman for the session 1904–1905. The Gallios owed to him the witty motto and design at the head of their notepaper. In the earlier years of the club he was the most delightful of companions, and he let himself go in a way that he never did of later years, when with failing health his shyness and sensitiveness became more pronounced. In those meetings he shone and sparkled. His after dinner speeches were little gems, and he often provided the comedy of the evening by the humorous banter with which in a circle where all were friends, he rallied a friend on some foible that was perhaps assuming, in the sunshine of prosperity, undue prominence.

It was no doubt while attending G. F. Hardy's class at 36, Bloomsbury Square in 1894 that Todhunter filled up and defined more clearly the plan of his professional career, by marking out his own special field of work. The Institute never received a more loyal member or one who took more seriously and literally the Institute's motto. He looked, of course, for "countenance and profit", but only to such a degree as would satisfy his own modest needs and the obligations he had voluntarily assumed. In return, he counted himself "a debtor to his profession", and he resolved that he would labour in the field in which G. F. Hardy was such a pioneer by continuing and extending the application of mathematical methods to the problems that arise in actuarial theory and in the work of the practical actuary. He devoted himself to this work not for personal gain, nor even for honour and public recognition, but for the interest of the work itself, and with the unselfish determination to do his share in raising the standard of the profession and increasing the scientific power of its members.

His services to the Institute were of great value. He was elected

to the Council in 1902 and served on it for 17 years, and he held the offices of Secretary in 1913–1915 and of Vice-President from 1915–1918. He had been the Official Tutor for Part II of the Examinations from 1897–1902, and his work in that position was so greatly appreciated that the Council requested him to produce a new edition of the Institute Text Book on Compound Interest.

This turned out to be an entirely new work. It is an advanced and not an elementary treatise, and is recognized as the finest work that has appeared on the subject, complete, well-arranged, mathematically elegant, and abounding in practical applications.

He occupied the post of joint editor of the *Journal* from the time of Mr. Ackland's resignation in December 1911. He had unusual qualifications for that position. He was not only equipped in all the departments of knowledge that enter into the work of an actuary, and well versed in general culture, but he already had a long practical experience of journalism. His connection with Geake and with Sunderland had initiated him from an early period into the elements of an editor's duties, and it is well known that for many years, from 1895 onwards, the leading articles and the notices of companies in the *Insurance Record* came from his pen. He wrote rapidly, and his elegant literary expression, shrewd wit and lightness of touch made his work singularly attractive and valuable.

He had, of course, contributed to the *Journal* before becoming Joint Editor. In this connection reference may be made to the paper he read in 1900 before the Institute of Actuaries "On the "Requirements of the Life Assurance Companies' Act, 1870 in "regard to Valuation Returns, with some Notes on the Classification "and Valuation of Special Policies." It was a lively paper, full of good points, and it represented the high water mark of the practice of the day, especially so in regard to the arrangements that were appropriate to a small office. He had carried through the valuation of his office with one qualified and one unqualified assistant, and had produced the final result within a week of the close of the quinquennial period, and the paper explained the arrangements he had made and the formulas he had used. Unfortunately his suggestions that in certain respects the requirements of the Act of 1870 could be improved upon excited the ire of a fine old actuary of the old school, to whom had been entrusted the duty of opening the debate, and without drawing attention to the strong and constructive points of the paper, he made a bitter attack upon the author, accusing him of the desire to substitute for the elegant simplicity of the Act of 1870 what he would venture to call a veritable actuarial Olla Podrida. This douche of cold water from such an authority spoiled the discussion, and although Todhunter's friends rallied to his defence, the reception of the paper was a disappointment to him.

He was a marvellous reviewer and his reviews of mathematical books and papers in the *Journal* were in a different class from any others that ever appeared in it. He had an original mind and a constructive critical instinct of the helpful, rather than of the destructive order. He had great powers of penetrating to the heart

of a subject and throwing light upon it, and he could generally make useful suggestions for the removal of a difficulty or the elucidation of a difficult point. As an editor he seemed to have the gift of helping the contributor to improve his work without interfering with his individuality, and this means that he was an ideal editor. Such help was not confined to the younger and less experienced contributors, but the most experienced actuarial writers derived much help and inspiration from correspondence with him. A very happy suggestion was handsomely acknowledged in the discussion on G. J. Lidstone's second Z paper; and it is interesting in this connection to note that Dr. A. C. Aitken in his paper on "The Theory of Graduation", *Proc. Roy. Soc.*, Ed. xlvi, page 45 [in which he gives an elegant practical solution of the difference equation involved in Whittaker's method of graduation—see also Aitken, T.F.A., xi, page 31] makes the following graceful acknowledgment: "The "symbolic method of obtaining the earlier solution § 1–8 is due "primarily to R. Todhunter, who communicated it in a letter dated "12/2/24."

His contributions to the *Journal* included important articles on:

"Graduation by Summation", Vol. xxxii;

"On the Approximate Valuation of the Integral for the Compound Survivorship Annuity." Vol. xxxiii;

"Ordinary and Osculatory Interpolation." Vol. l;

"A General method of obtaining Interpolation Formulas." Vol. l;

and among his numerous reviews, signed and unsigned, the following may be particularly mentioned:

"Transactions of the Second International Actuarial Congress." Vol. xxxv;

"Principles and Methods" (G. F. Hardy). Vol. xxxviii;

"Frequency Curves and Correlation" (Elderton). Vol. xli.

In this review there was a typically Todhunter touch from Ruddigore in his remark that "though the expression frequency curves' has "come to have a familiar sound at Staple Inn Hall, it has remained "for most a word like Basingstoke, teeming with hidden meaning."

"On Graduation" (Altenburger). Vol. xli;

"The Theory of the Construction of Tables of Mortality, &c." (G. F. Hardy). Vol. xliii;

"Tracts for Computers." Vol. liii.

The review last mentioned contains most valuable original work on interpolation, &c., and a graduation formula of a new and interesting type.

His reviews remind one of Macaulay's Essays in that nearly all, while perfectly adequate on the purely reviewing side, were much more and, especially in recent years, were used as vehicles of most interesting original thought and work,

There was one side of his life which he had not planned in advance, and on that side destiny took him by the hand and led him into unsought regions of enjoyment and reputation. When he left the

University he gave up games altogether. But he had always been fond of walking, and he took his exercise and his recreation in week-end walks of 25 miles or more a day with one or two chosen companions on the downs of Surrey, Sussex and Hampshire. One of his friends who often accompanied him during the nineties recalls how, starting from Leatherhead or Dorking, they visited Friday Street, the Abinger Hatch and Felday, or they would go to Ranmore Common, Gomshall and Shere, the Silent Pool, Newlands Corner and many other centres of beauty, in the days before motor cars, when those spots were not only beautiful, but peaceful. He kept up the habit of long walks all his life, and another friend, writing of a period during the war, says: "We spent one memorable "Sunday walking from Amberley along the South Downs. I then "discovered how he could walk. For a short man he had a long "stride and a wonderfully springy movement. I felt like a cart-"horse beside a hunter." In his early years in business his holidays were spent in walking tours in the south and west of England and the west of Ireland, and later in Wales and Cumberland, where he loved the mountains, and from the first found himself at home upon the rocks. Beginning as the merest amateur he soon joined the more scientific rock climbers at the Penypass Hotel, where he made one of a band of Cambridge men who were all for the rigour of the game. There or at Wasdale Head in Cumberland it was his practice to spend a few days at Easter, Whitsuntide and Christmas, and his summer holidays were usually spent in the same way.

It is not too fanciful to suppose that he may have reproduced in mind and body the character of that remote ancestor who in some district of Cumberland, with a quickness of wit that could rival the subtleties of the fox, and with a lightness and sureness of foot that could step up the rocks and the crags not less daintily, carved out a career for himself and earned a title which became the family name in such a life as Scott has described in the 25th chapter of "Guy Mannering" as the recognized "tod-hunter" or "fox-hunter", the official exterminator of the enemy of the dalesmen's flocks.

In 1902 he asked his old friend Macdonald to take him to Switzerland, and from that time he spent most of his summer vacations in the Swiss mountains or in the Dolomites, and became well known as an Alpine climber, being elected to membership of the Climbers' Club and of the Swiss Alpine Club. His greatest season was in 1911, when he made a number of successful and remarkable climbs, some of them first ascents, his most famous being his ascent of the Grépon from the Mer de Glace in the company of G. Winthrop Young and H. O. Jones. All three wrote accounts of the ascent, and from a fascinating article by Young in the *Cornhill Magazine* of August 1924, even non-climbers can catch something of the adventure and the thrill. Todhunter's own account will be found reprinted in the *Bulletin* of the Climbers' Club for December 1926.

Once in Switzerland an old and experienced guide, whose son he had taken to climb a high cliff with him, watched them step up the rock and remarked, "That Herr climbs like a guide." He had the

highest reputation among rock climbers for his nerve and skill, and for the vigilant resourcefulness with which he guarded against risk.

When war broke out he was climbing in Switzerland. His guide was called up for the defence of the frontier, and Todhunter found himself in a district not altogether friendly, one of a numerous band of English folk who inevitably turned to him for help and advice and guidance. Their money was soon exhausted and for three weeks or more he toiled without sparing himself on their behalf until at last he was able to leave for England with the last of the party. The anxieties and worries and the actual privations of the war period had a serious effect upon his health. It became apparent that he was suffering from an affection of the inner ear which made him liable when over-fatigued to attacks of dizziness or even swooning, and gradually brought on a difficulty of hearing. He withdrew himself from public and social functions and devoted all his energies to his work, and to the editorship of the *Journal*.

After the War he spent two climbing seasons on the continent, before the present year, and a number of shorter and most successful climbing holidays in England and Wales. This year he had strongly set his mind on such a holiday once again in the Dolomites. His first climb was fatal.

The following account of the accident was drawn up at the time and furnished to the Press by his nephew, Mr. Ernest Bozman, who was his companion in the climb :

"Todhunter and I started from San Martino di Castrozza on "Monday, 12 July, at 7.30, to climb the Rosetta by the S.W. wall— "a recognized route, described by Purtscheller and Hess as 'very "difficult.' The rocks were not very dry, and we climbed in boots, "carrying rubbers. By 1.30 we had reached a steep crack about "200ft. below the summit of the mountain, at the top of which was "a vertical chimney. Todhunter was leading, and I stood weakly "'belayed' at the foot of the chimney, while he climbed it; he "found it difficult, and reached the top rather exhausted by the "struggle. He was then out of my sight, and called to me that he "was well placed, but could not see the way out of the chimney, the "rocks at the top being overhanging and very exposed.

"After ten minutes I offered to send up his rubbers on the rope "(he had left his sack with me), but he declined—probably he was "not well enough placed to get his boots off—and then he called out "that he had decided to unrope and pass his rope inside the jammed "stone at the top of the chimney, thus 'belaying' himself for the "next few steps. This he did, and roped up again. He then said, "'I am "belayed", and I am going on.'

"For about five minutes I heard nothing except a few nail- "scratches. Suddenly he hurtled past me well outside the chimney. "In his flight he was checked for an instant by the rope, which "snapped immediately at the upper belay (the jammed stone). "There was thus no jerk on the end of my rope. I saw him hit a "rock about 50 feet below in a way which must have killed him "instantly, and then he bounded on and on out of sight. He said

" no word and made no cry of any sort. I tried to free the rope for " use in my descent, but found it completely jammed in the stone " 20 ft. above me. Accordingly I unroped and left the rope dangling " with Todhunter's sack tied on the end. I changed into rubbers " and succeeded in climbing down by the way he had fallen until I " found him lying on a ledge about 500ft. below. He was dead. I " covered his head and climbed off the mountain.

" Next morning, at 6 o'clock, I started from San Martino with a " party of 12 guides and porters, led by Zagonel and Dr. Langes. " We reached the body, but as the rocks were streaming with rain " no attempt was made to reach the rope and sack, which were still " hanging at the top of the chimney. About 15ft. of the broken rope " was attached to the body, showing that he fell 30 ft. before the " strain came on the rope ; as this was a sheer drop from an overhang " and not a slither, no rope could have stood the strain."

He was buried in the churchyard of San Martino, just below Rosetta. The guides attended in their costumes and ropes to do honour to such a well-known fellow climber, six of them bearing the coffin and others carrying wreaths. Carabinieri and Alpini followed, and the little procession was closed by the schoolmistress with the school children of the village, who brought bunches of the Alpine flowers, in which he delighted. In San Martino even at the end of the century old people will recall the funeral and will repeat the tale to the third generation, and point to the inscription on the stone in the churchyard :

RALPH TODHUNTER
OF LONDON
KILLED BY A FALL
WHILST CLIMBING ROSETTA
12TH JULY 1926
AGED 59.

In the Hall of Staple Inn his memory will be preserved not only by the work he has done. The papers and notes and reviews he contributed to the *Journal* are a store house from which Actuaries of a new generation will be able to draw ideas and suggestions for further work for the good of the profession to which while he lived he was in such an eminent degree, to quote again the words of our motto, " a help and ornament."

D. C. F.

Mr. Alfred Henry.

By the death of Mr. Alfred Henry, at the early age of 38, and in the fullness of his powers, the actuarial profession and the public service have suffered a heavy loss. The tragic event, which was wholly unexpected, occurred on 23 September, following after a few hours an operation for tumour on the brain.

Alfred Henry was born on 22 November 1887, and entered the Latymer Upper School, Hammersmith, in January 1897. Here, as