



GEORGE JAMES LIDSTONE

MEMOIRS

GEORGE JAMES LIDSTONE

THERE can be few members of the profession who did not feel a sense of loss on learning of the death of G. J. Lidstone on 12 May 1952.

Lidstone was born on 11 December 1870 in London and was one of six children of Thompson Lidstone, who came of a West Country family. Two of his elder brothers and an elder sister died in early middle age, one brother died in childhood, and an elder sister lived to be ninety-four. His mother was Eliza Munnings, and so he was a somewhat distant cousin of the artist who was recently President of the Royal Academy. It may be mentioned that a great-uncle of Lidstone, Captain Josiah Thompson, R.N., was commended for a rather good cutting-out expedition at Arcachon during the Napoleonic Wars. Thompson's sword used to hang in one of Lidstone's rooms.

Lidstone was educated at Kingsland Birkbeck School, where he became 'captain' of the school and received the Runtz Gold Medal for being the most brilliant scholar in his last year at school. The Headmaster's brother, Sir John Runtz, was Chairman of the British Empire Life Office (now part of the Phoenix) and Lidstone went to that office on leaving school. He passed his first examination at the Institute of Actuaries in 1887, and became a Fellow in 1892 when he was only twenty-one. Three years earlier a letter from him on assurances with return of premiums was published in *J.I.A.*

He went to the Alliance Assurance Company in 1893, was appointed Assistant Actuary in 1894, and promoted in 1902 to the position of Actuary, a post which he held until 1905. While he was at the Alliance he sent to the Institute a series of papers that made his name. The first was on using the graphic method of graduation for a small experience by means of comparison with a standard life table, and the next was on the distribution of surplus with special reference to Sprague's contribution method. This was a practical discussion of the methods then in use, and I can well remember how helpful I found it when I was studying valuation for my examination. The next paper—there were in fact two papers—followed a couple of years later, and described what is now known as 'Lidstone's Z-method'. To appreciate its value it is well to remember that, at the time it was written, most actuaries valued endowment assurances by grouping them according to unexpired term and using for the group an annuity based on the arithmetical average of the attained ages (not of the maturity ages!). Lidstone discovered that weighting the ages in geometrical progression gave a much closer approximation, and his method has been used ever since by many assurance companies with excellent results. I should not myself use it in valuation work, but my personal preference for either greater 'accuracy' or another kind of approximation does not blind me to the usefulness of the method. The underlying ideas have been used in recent years by continental writers who have drawn inspiration from Lidstone's work. Both the papers and subsequent notes on the same subject are expressed in his clear, convincing style and contain points of interest in addition to the approximate method of valuation.

There were actuarial notes on other subjects and one, at any rate, needs special mention; it gave the approximation $P_{x:\overline{y}|} \doteq P_{x:\overline{y}|} + P_{y:\overline{y}|} - P_{\overline{y}|}$ which he

evolved by a pretty piece of reasoning. Today the result seems fairly obvious, but it only became so when Lidstone sent it to *J.I.A.* in 1897.

Not long before he left the Alliance he submitted to the Institute the paper on *Changes in Pure Premium Policy-values* (*J.I.A.* xxxix, 209) and he confessed publicly about twenty-five years later that he considered it 'his best piece of work'. If Lidstone had been a proud man, instead of one of the humblest, he might properly have been very proud of it—there is nothing else on that subject to touch it, and one wonders if any paper on any actuarial subject could easily be placed as its superior. I recall the thrill of surprise with which I first read it; a text-book subject came to life as if touched by magic.

But other things were happening during those days at the Alliance: Lidstone helped to found, with a few others, the Gallio Club; he had become a member of the Council of the Institute and had been elected to the Actuaries' Club; and, most important of all, he had married in 1901 Florence Mary, eldest daughter of Robert Gay. She counted much to Lidstone, helped him in very many ways and endeared herself to his friends. To their regret there was no child of the marriage.

In 1905 Lidstone became Actuary and Secretary to the Equitable, where an appreciable amount of 'tidying up' was necessary, and during the eight years he spent there he not only did much for the office but produced a number of actuarial notes together with the papers on the rationale of the summation method of graduation and on approximating to last-survivor annuities. The paper on graduation was one of his best; it appeared in two parts (*J.I.A.* xli, 348 and xlii, 106) and showed how well Lidstone could deal with such a subject and how wisely he could interpret the results. Though many writers have since written about that method of graduation, the paper covers all that it is essential for any practising actuary to know of the subject. The paper on last-survivor annuities (*J.I.A.* xlvi, 1) gave the required annuity value in the form $\alpha + C_1 \times 1st$ correction + $C_2 \times 2nd$ correction, where α represents the annuity value on lives of equal age—the arithmetical average of the actual ages—and C_1 and C_2 depend only on the actual disparities of age so that they are the same for all mortality tables and rates of interest. It was really an ingenious interpolation, set out so that it would reduce the amount of tabulation necessary; but though Fraser, Todhunter, A. E. King and Lidstone added notes subsequently the method has not, one regrets to say, yet been used in practical tabulation.

In addition to all this, Lidstone found time in 1908 and 1909 to see through the Press G. F. Hardy's Lectures, given in 1904-05, on *The Theory of the Construction of Tables of Mortality*. I think I am right in saying that had it not been for Lidstone those delightful lectures would not have been published; but though it must have been a rather hard task, I am sure it was a labour of love from Lidstone's point of view.

Towards the end of his time at the Equitable Lidstone was appointed, in 1912, a member of the Actuarial Advisory Committee of the National Health Insurance Joint Committee and served on it until 1914.

In 1913 he left London on being appointed Manager and Actuary to the Scottish Widows' Fund. He managed the office successfully for seventeen years and was afterwards a director till 1946. He was also a director of the Royal Bank of Scotland and of the Scottish Consolidated Trust. He was elected a Fellow of the Faculty of Actuaries after he had been a few years in Scotland, and was President from 1924 to 1926. In October 1929 came what must have been one of the proudest moments of his life, when the Institute and Faculty

combined in the presentation to him of a gold medal 'In recognition of his unique services to Actuarial Science'. Everyone must feel that the remarks on his work made on that occasion by the two Presidents were exactly in the form that Lidstone would like and his short speech of thanks, with its reference to the way in which he jotted down his ideas, was typical of him.

He was given the honorary degree of LL.D. by Edinburgh University—an honour which, I know, pleased him greatly—and was a Fellow of the Royal Society of Edinburgh. He had been a Fellow of the Actuarial Society of America for many years and was also a corresponding member of the Association of Swiss Actuaries.

During the war he served as a member of the General Claims Tribunal from 1939 to 1942. This Tribunal was set up under the Compensation (Defence) Act, 1939, and consisted mainly of Judges and eminent Counsel; but it included also a banker and an accountant, both leading men in their respective professions. Lidstone, who was appointed to this task by the Lord Chancellor, found the work interesting and the associations pleasant, and regretted when his failing sight compelled him to resign.

Under Scots law a domiciled Scotsman cannot will away all his property if he leaves a wife or child surviving, and if such survivors insist on their legal rights 'Equitable Compensation Schemes' are devised to secure fairness between beneficiaries whose benefits have to be reduced. Lidstone wrote a paper for the Faculty (*T.F.A.* xvi, 29–65) giving guidance to actuaries called in to advise on such schemes. Apart from this he wrote no long paper after leaving London but published in actuarial journals (*T.F.A.* now shared with *J.I.A.*) notes on various actuarial subjects, on interpolation, summation etc. His last contribution was historical, on the origin of the card system. He also wrote a few mathematical papers for other journals. All his work of this kind, and there is much of it, is uncommonly well done; he took great trouble to express clearly everything he wrote and one felt that his algebraic work gave pleasure both to the author and his readers. In a few cases the papers were written jointly. Every reader has his own preferences; among Lidstone's later work I think I enjoyed most the two papers on double and triple geometric laws of mortality (*J.I.A.* LXVI, 413; LXVIII, 535) and the note on Poisson (*J.I.A.* LXXI, 284).

Lidstone's work was so carefully considered by him that he made very few slips; others may not have agreed with all his opinions, but his only effort that was, I think, in error was his note on the calculation of the present value of a series of payments—certain when the reproductive rate of interest differs from the remunerative rate (*J.I.A.* xxxiii, 412). George King and Todhunter both accepted and used his formula, and it was only withdrawn from Todhunter's book in the 1915 edition when it was noticed that in certain circumstances the application of the formula implied that deficits in the amount available for interest were accumulated at the reproductive rate. It was so tantalizingly neat that there is plenty of excuse for everyone. As Lidstone mentioned many years later, he had not discussed in his note its limits of practical use; so perhaps it is a little severe to say he was in error. There was another case when I think he was wrong, but it may well be regarded as merely a matter of opinion; it was in his mild controversy with Steffensen, in *J.I.A.* LXI, about the limiting age and about equal policy values. His arguments on that occasion seem to me to lack his penetrating vision.

There were three other contributions; his Presidential Address to the Faculty, which touches on many things with some pleasing and out-of-the-way quotations,

and his memoirs of G. F. Hardy, Phelps and Hutton. Lidstone felt that he owed much in his student days to Hardy's inspiring lectures and encouragement, and they became close friends. The younger man's admiration for Hardy was great; his memoir shows this, and leaves the reader with the feeling that in writing of Hardy, Lidstone 'honoured his memory on this side idolatry'. To those who knew both men this is what the memoir should have conveyed. The tributes to Phelps and Hutton displayed Lidstone's affection for contemporaries, and this was further in evidence when, in 1944, the chairs and table which Phelps gave to the Institute in 1932 were destroyed; Lidstone decided to replace them for the sake of the Institute and in memory of his old friend.

During Lidstone's Presidency of the Faculty the Clauson Committee was considering the Assurance Companies Act, and the Institute and the Life Offices Association recommended that the lists of whole life assurances etc. in the Fifth Schedule of the 1909 Act should be discontinued. Unfortunately the Faculty disagreed; Lidstone was definitely against the suggestion. Anyone who is interested can read the evidence; we were told that with the Fifth Schedule alternative valuations were possible, and we countered the argument with the so-called *n*-ages method. As there was conflicting actuarial evidence, and as the Industrial Assurance Commissioner and the Government Actuary were in favour of the retention of the Schedule, no change was recommended. I did my best to persuade and convince Lidstone but he disliked the change too much to give me any real chance of success. Lidstone's attitude of sticking to something to which he was accustomed held in some other cases; thus he did not like the idea of publishing a bonus reserve valuation, though I had found when I succeeded him at the Equitable that he had arranged the details for such a valuation, had prepared tables based on the mortality experience of the Equitable to facilitate the work, and had used the bonus reserve valuation in order to be sure the sum carried forward in excess of a $2\frac{1}{2}\%$ net premium valuation was adequate for the bonus system. I think he was afraid that any decrease in published information, as we had suggested to the Clauson Committee, or any considerable change in published valuations might lead to fraud or misunderstanding. I did not and do not agree, but perhaps he was right. In any case these things are matters of opinion.

At the end of his life, Lidstone had been a F.I.A. longer than any other living Fellow. I know how touched he was when on his 80th birthday Penman presented to him, on behalf of the Institute, an illuminated address, and this, and the gift of one of the Phelps chairs that had survived, were events which, with the Gold Medal, are delightful for his friends to remember. With typical forethought he expressed a wish that this chair should be returned to the Institute after his death.

There are many members of the Institute who never saw Lidstone and will want to know what manner of man he was. He was dark, with a slightly sallow complexion and clear cut features; he was above medium height, but thin and erect and so appeared taller than he actually was; he was always carefully dressed; he had a clear, pleasant voice. He was not exactly handsome, but when he came into a room one looked at him more than once. His recreations were lawn tennis and music.

In common with many others I owe a lot to Lidstone; but it must be confessed that some people thought him rather pernickety in business, in spite of his successful business career, and there was a definite idea, especially in his London days, that he was not easy to get on with and was unpopular with his staff. It

did not seem to occur to such critics that Lidstone was intensely shy and could not help retiring into his shell, that it was well-nigh impossible for him to wear his heart on his sleeve, and that he was by nature one of those who wanted to go into every detail to be sure he was doing what was right. He told me, more than once, that he found it hard to decide quickly in business because he saw so many points he wanted to clear up. It was no doubt trying at times to his business friends when he would 'contend for the shade of a word, a thing not seen with the eyes', but it was that quality of complete thoroughness that made his actuarial work so valuable. Another characteristic associated, I think, with this was that he found it difficult to appreciate an alternative view on a subject on which he had himself worked. A trivial example will suffice; in his early days he was concerned with the 1863-93 mortality experience and he thought, rightly, that for 'select' mortality the policy-year method was ideal; he never felt at home with the census method. (Incidentally, one should not overlook his short note on the treatment of incomplete years of exposure, *J.I.A.* XXXI, 304.) Perhaps the Steffensen controversy is another example. The explanation of this kind of difficulty was, I feel sure, that when he was working on anything he concentrated so intensely that, having convinced himself that a method should lead to good results, he had cut out other approaches, not of malice aforethought, but because he had got it all so clearly in his head that from his point of view the 'incident was closed'—there was no need to look elsewhere. Many investigators have shown that characteristic and, after all, such concentration produces excellent work. Those who did not know Lidstone well may find it hard to appreciate how painfully shy he was; but, perhaps, shyness explains why he was never a tutor, seldom an examiner and why, though he contributed to discussions and could speak well, he often made excuse for not speaking and sent a written contribution. He was a judge of himself and just as, though he could not wear his heart on his sleeve, he wrote the most charmingly friendly letters, so also, I think, he trusted himself on paper rather than verbally in discussion.

These, he knew, were defects and as the years went by he largely succeeded in overcoming them, but I like to think that such human weaknesses drew Lidstone still more closely to his intimate friends and to those younger men whom he had helped with encouragement and advice. And though he and I did not always see eye to eye on things actuarial or in business it did not matter; our friendship ripened over our differences.

It is with admiration that the profession, for which he had an almost passionate love, will regard his work; but highly though I regard it, I find myself thinking, as I look back on a long friendship, more of his many kindnesses to me, of his understanding when we differed, of his really charming letters, of happy hours spent with him and his wife, and also, alas! of his loneliness without her after her death, and of his blindness and failing health, which he disguised so well when he gave me his affectionate welcome on my occasional visits. And though I cannot wish him back, I know that I shall miss him all my days. W.P.E.

HORACE RICHARDSON BASSFORD

THE news of the death of Horace Bassford on 12 March 1952 came as a great shock to his many friends in England and in actuarial circles throughout the world.