WILLIAM ERNEST JOHNSON

1858—1931

WILLIAM ERNEST JOHNSON was born at Llandaff House, Cambridge, on 23 June 1858. He was the fifth child and second son of William Henry Farthing Johnson and Harriet Brimley. His father was proprietor and head master of Llandaff House school, a famous Cambridge academy which was owned and conducted by members of the Johnson family from 1823 to 1925.

The Johnsons came from Huntingdonshire, and were strong dissenters (Baptists) in religion and ardent Liberals in politics. The first of them to own the school was W. E. Johnson's paternal grandfather, William, born at Ramsey in 1793, son of Henry, a baker in that town. Grandfather William as a boy had delivered bread to his father's customers. He was taught Latin by a kindly clergyman who sympathized with his aspirations for learning, and he is said to have carried his first Latin grammar with him in the basket with the bread and to have conned it during his rounds. After acting as usher at a private school kept by Mr. Newton Bosworth at Merton Hall, Cambridge, he went back to Ramsey in 1814 and there set up a school of his own. In 1816 he married Miss Eliza Barker, a Ramsey schoolmistress. Meanwhile Mr. Bosworth had removed his school to Llandaff House. In 1823 Grandfather William returned to Cambridge with his wife, and took over the Llandaff House school from Mr. Bosworth. In 1851 he handed over the school to his son, William Henry Farthing Johnson, and retired to Ramsey, where he died at the age of seventy. All those of his eight children who lived to grow up became schoolmasters or schoolmistresses.

W. E. Johnson's ancestors on his mother's side lived in Bedfordshire. His maternal grandfather, Augustine Gutteridge Brimley, was a Bedfordshire farmer who set up as a

grocer in Cambridge and throve so well at his trade that he became Mayor of the town. He married in turn two daughters of James Gotobed, landlord of the *Bull Hotel*, Cambridge. His son, George Brimley, became librarian of Trinity College, Cambridge. His daughter, Harriet Brimley, married W. H. F. Johnson in 1851 and became the mother of W. E. Johnson.

W. E. Johnson's father was born in 1825. He was sent at the age of sixteen to be usher at a private school in Brixton, where he showed himself under difficult circumstances to have in him the makings of a great schoolmaster. He was a large and vigorous youth, who managed to be a strict disciplinarian without losing popularity with the boys. The latter were wont to refer to him as 'Mr. Elephant'. He was at Corpus Christi, Cambridge, from February 1843 to the end of 1846. After that he helped his father at Llandaff House till his own marriage with Harriet Brimley in 1851, when, as already stated, he took over the school.

Harriet Brimley, W. E. Johnson's mother, was a great lover of poetry, and a beautiful reader of her favourite poets, Wordsworth, Tennyson, and Clough. Sympathizing as a matter of course with anti-slavery views, she would read, too, with fervour and expression the *Biglow Papers* of Russell Lowell. For some time after her marriage she taught in the school and acted as matron, but eventually the cares of a growing family of young children made her relinquish these duties, though she continued for many years to take occasional pupils in French and German.

W. E. Johnson was one of a numerous and very closely united band of brothers and sisters. His elder brother, George William, after a distinguished academic career at Cambridge, entered the Colonial Office and became an eminent civil servant and an indefatigable worker in the cause of the oppressed. His sister Harriet carried on the school after her father's retirement in 1893 till 1925, when she relinquished it to a former pupil. His sister Alice was for long Editor and Research Officer to the Society for

Psychical Research, and in that capacity initiated the series of experiments on cross-correspondences in automatic writing, which, whatever may be the right interpretation of them, are among the most interesting and important phenomena with which the Society has had to deal. His sister Fanny kept house for him after the death of his wife, and it is owing to her unceasing and devoted care of him in health and in sickness that he was able to accomplish so much, in spite of constant delicacy and frequent serious illness.

Llandaff House was a building of historical interest and dignity, and it had a deep influence on Johnson and his brothers and sisters. The oldest part of it had a beautiful wide staircase and gallery and panelled rooms, and dated back probably to the time of Queen Anne. It took its name from Richard Watson, Bishop of Llandaff and Professor of Chemistry in the University in the latter part of the eighteenth century. Watson had lived in it and partly rebuilt it, adding two rooms called 'the Parlour' and 'the Great Room' by the Johnson family. Between Llandaff House and the as yet unspoiled fields belonging to Downing College was a shady walk, called 'The Grove'. The authorities of Downing allowed the Johnsons and some neighbours to use this walk, and it was the favourite playground of the children. The Grove was made all the dearer to the family by the fact that it was held on a precarious tenure and might have to be surrendered at any moment.

It would be impossible to depict Johnson's early life and surroundings better than by quoting from a memoir in manuscript which Miss Fanny Johnson has kindly written and lent to me.

> Life indoors for the children was a succession of lessons with a strict governess or still stricter father. Breakfast and midday dinner were taken in silence in the company of the boarders (yclept 'Rough-'uns', a corruption probably of 'Ruffians'). There were family prayers morning and evening, chapel twice on Sunday, and serious occupation in the intermediate hours, or the writing of sermons and other religious exercises. Willie was an adept at the latter, and sometimes composed hymn-verses to his favourite

tunes. It was borne in upon us from our cradles that we were not quite as other men socially or religiously, that we were in fact 'Dissenters'. Theological and politico-religious talk was the staple of conversation when guests were present. The guests, indeed, apart from family connexions, were chiefly ministers who came to 'supply' the pulpit in the occasional absences of our own pastor. Our parents were of the Baptist persuasion, though, as we discovered later, of broader views than the bulk of their co-religionists. Such topics were mooted in table-talk as the importance of immersion as against sprinkling in baptism, the proper forms of church-government, or the more exciting problems of the nature of Hell, of Eternity, or the Atonement, and whether the Resurrection would be universal or partial, i.e. only for the elect. There is a legend that Willie at the age of eight or ten once stood in the middle of Parker's Piece and remarked to all and sundry: 'I am a sturdy little Dissenter'. The occasion was probably an election when open-air speeches were made on Parker's Piece, and party-feeling (in our case Liberal feeling) ran high.

It is interesting to remark at this point how much the Cambridge school of moral science in the nineteenth and early twentieth centuries owed to cultivated Liberal Nonconformist homes, such as Johnson's, with their tradition of plain living and high thinking, and their passion for freedom of thought. The late James Ward and Dr. J. N. Keynes, who is happily still with us, were both nurtured in similar surroundings to Johnson's; and, although Sidgwick was of Anglican origin, he was a protagonist in the fight for the abolition of religious tests in the University. As Johnson grew older he no doubt moved away from the precise theological tenets of his ancestors. In a letter to his sister Fanny, dated 18 September 1883, he writes as follows: 'I agree with you about not calling oneself an Atheist. But I'm blessed if I should call myself an Agnostic either. I should not call myself anything. One's troubles force one to cry out vaguely to some unknown something very often, and sometimes one fancies it has its effects in the best way possible. And, if one can't get on without that, one can't call oneself names of that sort.' He went with his children regularly to church on Sunday mornings, and played

hymns to them in the evening. Until they were of an age to judge for themselves he never made them aware of his own doubts, though his dislike of *extempore* prayers, which had been the bane of himself and his brothers and sisters in childhood, was sometimes referred to. I do not know what position he finally reached about such matters, but I always had the impression that he continued to accept some form of theism. And of course the distinction between the Nonconformist and the Anglican type of mind cuts right across the distinction between Theism and Atheism. McTaggart, though an atheist, could never have been anything but an Anglican; and Johnson could never have been anything but a Nonconformist, whatever his final views about theism might have been.

Johnson's political views, like his religious opinions, developed with time and experience but underwent no essential modification. He remained a strongly convinced free-trader to the end of his life, and could give very impressive arguments for the faith that was in him. He would almost certainly have regarded the return of England to protection, not only as economically futile, but as a kind of moral and intellectual lapse on the part of a nation which had seen and chosen the better part while the rest of the world remained sunk in the folly and wickedness of economic nationalism. His attitude towards the present *régime* in Russia was highly characteristic. He had, of course, nothing but contempt for the constant nagging at all things Russian practised by the stupider members of the Conservative party in England, and no form of religion could be much more alien to him than that of the Russian Church. But he was horrified at the persecution of Russian Christians by the Soviet government, and he had no patience with the disingenuous attempt of many members of the English Labour Party to minimize, to condone, and to suppress the facts. It was far better, he held, to sacrifice trade with Russia than to make ourselves accomplices in the crimes of her government against freedom of thought and worship

In a letter to his sister Fanny of 17 March 1877 there is a passage about his reading *Friendship's Garland*, which is worth quoting in connexion with the development of his early political views. 'Do you know Matthew Arnold's *Friendship's Garland*? That is the staple of my reading—or rather being read aloud to. . . . It is a most brilliantly sarcastic hit on the political ideas of Englishmen from *Miall*ism to *Mill*ism—those two *isms* that you and I, I fear, are steeped in. "Liberty" and "Publicity", "Church-disestablishment" and "to enable a man to marry his deceased wife's sister"—have *we* not been guilty of calling this the all in all to be aimed at, the great Politico-Economical desiderium? If so, let us now submit to the government of the Wisest—after Carlyle—to receive Governmental Education—after Matthew—and perhaps even Military Subordination—after Bismarck.' The earlier part of Johnson's life coincided with the high noontide of Liberalism in England. Gross and palpable abuses were yearly being removed; the country was well and cheaply governed and was abundantly prosperous; and the gloomy forebodings of opponents of free trade and democracy—almost all of which we now see being fulfilled to the letter—were so plainly belied by experience at the time that they could be comfortably dismissed as the ravings of stupid and selfish reactionaries.

By the beginning of this century the shadows of Liberalism were lengthening, and it was never to enjoy glad confident morning again. At last came the disaster of 1914, a crisis which, as his sister says, 'shook Johnson's whole being'. I will quote again from her memoir. 'Sensitive to pain in an extreme degree himself, the infliction of suffering or the sight of suffering in others was unendurable. Yet his mental make-up prevented his becoming a whole-hearted pacifist, and he was denied the consolation of taking definite *sides* with the minority. Of this, as of many other problems, he looked for a logical solution and found none.'

At the age of eight Johnson was attacked by a severe illness which was the beginning of lifelong ill-health. He

became subject to severe attacks of asthma which developed into chronic bronchial trouble. There were few winters in which he was not incapacitated for weeks at a time. In consequence of this his course at school and at the university was much interrupted and hampered. He studied at first under his father, and then for a few years at the Perse School, where he had the advantage of being taught the classics by Heppenstall, one of its most distinguished head masters. For a short time he went as a boarder to the Liverpool Royal Institution School, of which his uncle, Henry Isaac Johnson, was head master from 1874 to 1889. Here he was attacked by so severe an illness that the doctors advised him to winter in the south of France. He spent the winter of 1877 at Hyères. The affliction of bodily sickness was not without its compensations on the side of family affection and personal friendships. It created a specially intimate and lifelong tie with his sister Fanny. In childhood she would play at 'architecture' with him, using a splendid box of bricks which was the chief family toy, and constructing under his direction while he lay in bed models of the Fitzwilliam Museum or Addenbrooke's Hospital. Later, when he became passionately interested in music, they would play duets together in such harmony as to seem almost one. At Hyères he formed a close friendship with the Hon. Mrs. O. N. Knox, daughter of the first Lord Monteagle, who was herself staying there in search of health. Mrs. Knox was musical, and would have been a fine singer but for the consumptive trouble which ended her life some ten years later. Johnson's letters at this time are full of music and the Knoxes. In one of them he remarks: 'My letters, you have observed, are very redolent of Knox. Knox in fact is the order of the day. I am half afraid it "knocks" you up, if you'll excuse the pun'. Mrs. Knox was a cultivated woman and something of a poet, and she brought Johnson into touch with a different social and artistic tradition from that in which he had been nurtured. Her tact and sympathy were of immense help to him at the

critical period of young manhood. For several successive years he spent the winter with this family at whatever place Mrs. Knox's health required her to visit.

Music played a most important part in Johnson's life from first to last. His sister writes: 'There is no doubt that his deepest emotions were uttered through the medium of music. While he interpreted the fugues and preludes of Bach, the sonatas of Beethoven, or the Carnival of Schumann in his own exquisite and inimitable manner he was giving voice to his real innermost self, and listeners felt themselves in touch with a great soul.' He began to play the piano soon after his first illness. He was almost self-taught, save for occasional lessons by means of piano-duets with his sister Fanny. She writes of these early days: 'His taste and exquisite touch on the piano were already admired when he stayed as a young boy at the house of his uncle, Alexander Macmillan, the publisher, where some excellent musicians were *habitués*. He became a perfect accompanist to singers whose taste for good things coincided with his own. More rarely he would accompany players of the violin or other instruments who came from time to time within his orbit.' A common love of music was partly the basis of nearly all his strongest and most lasting friendships, including his marriage. Towards the end of his life, as weakness grew upon him, piano-playing became his main solace.

A letter written on 28 November 1874, to Fanny on her birthday, is full of his practising the violin to play in the *Messiah* at a forthcoming amateur concert. 'I suppose', he writes, 'you know that I am going to add my iota to the desert of sound (if there is such an expression) in the Amateur next concert? Is not it splendid? I have had one practice, in which I first felt as if I was playing every note out of tune; but when we came to the very loud parts I drew my bow boldly and imagined I was doing it all right. And then the Hallelujah Chorus! Was not that splendid? I played that, I think, better than anything else.' In another letter of 27 June 1874

there is a most elaborate discussion of the nature of 'bars' in music. The young musician and logician yet-to-be evolves a theory of 'periods', states his view as to the relation of these 'periods' to 'bars', candidly admits that there are facts which will not square with his theory, and suggests that fact and theory might be reconciled by assuming 'the same kind of licence that is allowed in having *pauses* in bars'. He characteristically ends by saying: 'I don't think that's satisfactory; but I think there must be some truth in it, don't you? And I shall try to get further to the bottom of it.'

One youthful experience of Johnson links him with an eminent professional singer. Staying at an hotel in the Black Forest he met a lively family of boys, one of whom had a glorious voice which Johnson accompanied on the derelict hotel piano. This boy became known to the public a few years later as the famous singer Plunket Greene.

Johnson's lifelong delicacy prevented him from pursuing any active form of sport to great lengths. Cricket played a large part in the thoughts and conversation of the children at Llandaff House. Their father was a good amateur cricketer, and a favourite game of pretence among the children was to assume the names and personalities of famous local cricketers who played on Parker's Piece. But Johnson himself cared more for football, in the rather informal way in which it was then played. He was also devoted to mountain climbing in the Lake district or Switzerland, though his unorthodox costume—trousers and low shoes, without nails—would have shocked the professional climbers of to-day.

It is time to speak of Johnson's academic career. He approached moral science by way of mathematics. He won a mathematical scholarship at King's College, Cambridge, in 1879. In 1882 his name appeared in the mathematical tripos list as 11th Wrangler, bracketed with Ropes of King's and Sanderson who afterwards became the famous head master of Oundle. For some years he made his living as

a mathematical coach, taking over Sanderson's pupils when the latter left Cambridge. He wrote a text-book on *Trigonometry* which was published by Messrs. Macmillan in 1888. The judgement of the publisher's reader, a very eminent mathematician, was as follows:

> This is a very fresh and unhackneyed presentation of the subject and does not take the ground of any English book that I know. When I say that it is like Homersham Cox's *Arithmetic*, or Clifford's *Dynamic*, or Chrystal's *Algebra*, you will understand at once its merit and defect. It is sure to be welcome to the thoughtful teacher, and give him a great deal to reflect upon, and some few in the Universities would find their account in reading it; but the ordinary student would find it an impossible text-book. . . . The book is in fact a good treatise but by no means a manual.

The reader remarks that the publication of the book would be likely to end in financial loss. The publishers took the risk with their eyes open, and the gloomy forebodings of their reader were fulfilled.

From quite early days Johnson had begun to be interested in moral science, and particularly in logic. In a letter of 16 July 1882 to his sister Fanny he mentions that he is studying logic every day before breakfast. In the same letter he embarks on a long and most characteristic discussion on grammar and its relations to psychology, on the one hand, and to logic, on the other. This was occasioned by some suggestions which Fanny had made in an earlier letter for reforms in the teaching of grammar. The passion for neat and accurate divisions, and for inventing new technical terms, which is so noticeable in his later work, here begins to show itself.

In 1883 he was placed in the First Class of the Moral Sciences Tripos, distinguished in Psychology, along with G. F. Stout of St. John's, the eminent psychologist and philosopher. The two shared the actual seniorship of the year, though names had then begun to be placed in alphabetical order.

In those days Economics was included in the Moral

Sciences Tripos, and it was a subject in which Johnson's mathematical, logical, and psychological interests could combine with the happiest results. For a great many years he lectured in the University on the mathematical theory of Economics. His principal published contribution to this subject was an article which appeared in the *Economic Journal* for 1913 (vol. xxiii, p. 483). It is entitled *The Pure Theory of Utility Curves*. It ran to thirty-one pages, and is described by Mr. J. M. Keynes as 'substantial'. Professor Edgeworth contributed a review of it to the *Ecònomic Journal*, vol. xxv, p. 36.

Johnson competed for a prize-fellowship at King's, but at his second and final attempt the electors preferred the claims of Ropes, his 'bracket' in the Mathematical Tripos. This was naturally a great disappointment, and it was of financial importance since Johnson was not well off and had to set about earning his living. Lack of means had forced him to live at home while an undergraduate at King's. The atmosphere of the college was at that time predominantly Etonian; and poverty, ill-health, and difference of social outlook made him unduly bashful. He tended to shrink into his shell and to make few friends in his own college. In a letter to Fanny, dated 29 November 1877, he writes: 'How is it that I always get on better with women than with men? I fear me there is something decidedly womanish in my character. I hardly get beyond monosyllables with any man here. They seem to talk so much upon subjects where my ignorance of the world becomes painful, or at least prevents my joining them'. This letter is written from Hyères, and refers no doubt primarily to the men whom he was meeting there; but it would probably have been true of his relations with contemporary undergraduates also. His Cambridge friendships were formed mainly with men in other colleges. The most permanent of them was with William Bateson of St. John's. The two had in common an ardent love of truth, in spite of divergent interests and temperaments. Had Johnson gained a prize-

fellowship he would have been relieved of financial anxiety, and his self-confidence would have received a much needed encouragement. But he was destined to have to wait many years for adequate recognition and comparative freedom from financial worries.

Johnson's first teaching post was that of lecturer on Psychology and Education to the Cambridge Women's Training College. This office he held for many years, during which he also for some time lectured and examined for the College of Preceptors. Henry Sidgwick early recognized Johnson's worth, and quietly but persistently brought him forward, helping him with practical advice and moral support until he began to be appreciated within the University as an outstanding figure. From 1893 to 1898 he was University Teacher in the Theory of Education. In 1896 he succeeded Stout as University Lecturer in Moral Science. This post he held until 1901. In 1902 he was appointed Sidgwick Lecturer in Moral Science in the University, an office which he continued to hold until his death. For many years he lectured on psychology for Part I of the Moral Sciences Tripos, whilst Dr. Keynes lectured on logic for Part I. When Dr. Keynes became Registrary, Johnson took over the logic lecturing and handed over the psychology to Dr. Moore who now returned to Cambridge as University lecturer. Henceforth Johnson's formal lecturing was confined to logic. But, throughout most of the period, he coached pupils in all subjects connected with Moral Science.

One of the sections in Part II of the Tripos is Advanced Logic. It is not often that a candidate chooses this section, but, whenever one did, Johnson provided the whole of the necessary teaching. In 1909, when the present writer was preparing for another section of Part II of the Tripos, Johnson had not been called upon to lecture on Advanced Logic for many years. But he had rashly advertised in the lecture-list that he would lecture on this subject 'by arrangement' if pupils presented themselves. The chance was too

good to be missed, and three undergraduates, one of whom is now Professor Laird of Aberdeen and another Professor L. J. Russell of Birmingham, appeared and held him to his bond. The result was that we had the most valuable and exciting course of lectures that could be imagined. Johnson had been reflecting for years on logic, probability, and theory of knowledge, and had written down roughly many of his thoughts. Also he had been engaged for years in reviewing for *Mind*, vol. i of Russell's *Principles of Mathematics*. The review never appeared; it would indeed have filled several numbers of *Mind*. But we had the benefit of it and of much else. A great deal of the matter of these lectures was probwards incorporated in his *Logic*; certain theorems on afterability are published, with due acknowledgement, in the formal part of Mr. Keynes's *Treatise on Probability*; but all was new at the time and much has never been published. In those days Johnson was still able to go out to lecture. He used to do so in a class-room in King's. In the winter he would often wear a large red shawl. Latterly for many years he lectured in his own house, to which he was often confined by bronchitis for the whole winter.

Johnson's manner of lecturing was not ideal. He had a tendency to spend a great amount of time on certain points, to let himself be diverted from the main issue, and thus to be forced by lack of time to leave out important slices of the subject. These defects naturally grew on him with age and increasing bodily weakness. The candidates for Part I of the Tripos generally found it expedient to take his lectures twice over in successive years, in the hope that the gaps of one year would not coincide with those of the next. As an examiner in the Tripos or the Intercollegiate Examinations he seemed to the present writer to have the same kind of failing. If one were trying to set a paper with him he would often single out one of the proposed questions and devote so much time and energy to explaining exactly how he would have put it, and what he thought to be the right answer to it, that other and equally important questions had to be

hurriedly settled at the end. In judging a candidate's paper he was very liable at first to concentrate on some small weakness or silliness in one answer, to lose sight of the merits of the rest of his paper, and to mark him down with Draconic severity. But he was always fundamentally just, and, provided that his co-examiner was patient and tactful and had a good case, he could always be brought to judge the candidate's work fairly as a whole. He set extremely good questions, particularly in formal logic and in ethics. Any one who takes the trouble to look through the examples at the ends of chapters in Dr. Keynes's *Studies and Exercises in Formal Logic* will find that the hardest, neatest, and most ingenious problems are marked 'J', which means that they were devised by Johnson. His fertility in producing problems on the syllogism seemed inexhaustible; year after year he supplied them for the Logic papers in Part I of the Tripos or the Intercollegiate Examination.

Whatever may have been Johnson's defects as a teacher for the practical purpose of getting through the Tripos, the many generations of undergraduates who attended his lectures or were coached by him realized that they were in contact with a very great thinker and a personality which was rendered all the more lovable by its occasional oddities and petulancies. On the whole young men form a very accurate estimate of their teachers, and the letters which I have read and the conversations which I have heard show clearly how high this estimate was. Not only was he esteemed by those who became distinguished philosophers themselves and were thus able to view him from approximately his own level; many who had no pretensions to philosophic eminence and engaged in other activities when they went down have acknowledged how much they owed to his teaching and example.

In 1895 Johnson married Barbara Keymer Heaton. Her father was a lecturer in chemistry, her mother the author of a life of Albert Dürer, and many members of her family circle were writers or artists by profession. It is

characteristic of him that, as soon as he became engaged, and before ever the date of the wedding or the means of livelihood were secured, he went forthwith and bought a large grand piano as the most essential ingredient of housekeeping. It was a joke in the family that he must now proceed to have a house built round the piano. The first Long Vacation after his marriage was spent in his beloved Switzerland. His vigour was renewed and his mental activity quickened by his wife's sympathetic understanding. She had the rare gift of comprehending through the affections, and could enter into his interest in 'curves' and other abstruse problems without any formal knowledge of the subject. The aesthetic part of him, already developed musically, responded to her superior acquaintance with the colours and forms of nature. She was well trained by teachers who had studied under Ruskin, and she made charming sketches full of the feeling of that tradition. With her, too, he first began the study of botany, and afterwards handed on to his sons what he had acquired of the elements of a subject which specially appealed to his love of classification. Johnson's married life was ideally happy, but all too short. Two sons were born to him; and in 1902 his wife had the joy of seeing him honoured by his own college, which elected him to a fellowship. But she died suddenly two years later, leaving him with the two young children. He bore this heavy blow with the strength and courage which might have been expected from his character and upbringing, and his sister Fanny henceforth devoted her life to him and his sons.

Even after Johnson was elected to a fellowship he remained almost unknown outside Cambridge, and his financial anxieties were not at an end. Ill-health, diffidence, and a very high standard of achievement had prevented him from publishing any book since his *Trigonometry* 'fell stillborn from the press'. His only philosophical publications had been a series of three articles in *Mind*, N.S., vols. i, ii, and iii, entitled *The Logical Calculus*, and a contribution in

French on *The Theory of Logical Equations* to the International Congress of Philosophy in 1900. The King's fellowship was only for a term of years, and at that time the *modulus* was very small. Whenever the question of continuance came up, the college naturally and rightly required evidence that Johnson was doing work of such merit as to justify the prolongation of his fellowship. In the absence of any publications the only available evidence was the reports of his colleagues and pupils, and it was difficult for workers in other subjects to estimate the value of such reports. There were therefore recurrent periods of acute anxiety as to whether the fellowship would be continued. Happily it always was.

We owe the publication of Johnson's great work on Logic very largely to his pupil Miss Naomi Bentwich. It is unlikely that he would ever have brought himself to undergo the drudgery of preparing his scattered manuscripts for the press had not she relieved him of the labour and almost driven him to face the task. Johnson first broke his long silence in 1918, in two articles in *Mind*, N.S., vol. xxvii, entitled 'Analysis of Thinking'. In 1921 appeared the first volume of his *Logic*, in 1922 the second, and in 1924 the third. In preparing the third volume for the press he received help, particularly in connexion with the analytical table of contents, from his pupil Mr. J. A. Chadwick, afterwards fellow of Trinity. There should have been a fourth volume, dealing with Probability. Unfortunately the physical and mental strain involved in preparing the first three volumes were greater than his friends realized at the time, and he was never able to accomplish the preparation of the fourth, though his friend and former pupil, Mr. R. B. Braithwaite of King's, worked hard and patiently with him to this end. Mr. Keynes's important *Treatise on Probability* had appeared in 1921, with generous acknowledgements of the help and inspiration which the author had received from Johnson. The latter seems to have felt that he could not publish his own work on the same subject without

elaborately noticing and criticizing the theories of Mr. Keynes. Yet he lacked the strength and power of concentration which this would have demanded. Thus in the end he neither criticized Mr. Keynes nor got his own theories clearly stated on paper, but fretted himself in his attempts to combine two tasks, either of which separately was now almost beyond his powers. Some four chapters in typescript taken down by Miss Bentwich remain.

Johnson's *Logic* was at once recognized as a book of the first importance, and its publication won him a long-overdue recognition in the academic world outside Cambridge. In 1922 he was honoured by the University of Manchester with a doctorate in letters; in 1923 he was elected a Fellow of the British Academy; and in 1926 the University of Aberdeen conferred on him the degree of doctor of laws.

It would be out of place here to attempt to give an elaborate account of a difficult book on a highly technical subject. It will suffice to say that Johnson's *Logic* is very much more than a treatise on deductive and inductive logic as ordinarily understood. It contains most valuable and original chapters on fundamental problems of epistemology, metaphysics, and even psychology. The notions of Cause and Substance are elaborately treated; and there are chapters on the nature of magnitude, on the application of the notion of cause to mental events and processes, on the relation of causation to space and time, and so on. Often Johnson will throw out a suggestion of the utmost importance in an incidental sentence, as, e.g. where he distinguishes between the adjectival and the substantival form of the absolute theory of space and time. The third volume contains a mathematical appendix on the application of probability to induction which makes one regret more than ever that the projected fourth volume never saw the light.

The volumes as they appeared were elaborately reviewed in *Mind*, and have formed the subject of discussion in

philosophical circles ever since. Johnson was not a particularly lucid writer, and the conditions under which the work was written and published were not favourable to clearness of exposition. Mr. Joseph, in two articles in *Mind*, vols. xxxvi and xxxvii, entitled 'What does Mr. Johnson mean by a Proposition?', claims to distinguish no less than twenty different senses in which Johnson uses this fundamental term; and even a more charitable or less acute critic than Mr. Joseph must admit that he can discover no one consistent theory on this point in Johnson's book. There was much in Johnson to remind one of Kant, a philosopher whom he greatly admired. There was the same love of making elaborate divisions and constructing technical terminology to name them. There was in both the defect which the late Lord Balfour happily described as 'contriving to be technical without being precise'. But, speaking for myself, I should say without hesitation that the frequent obscurities and pedantries in the writings of the two men never lead one to doubt for a moment that they were great intellects and great characters. The impression that one gets is that of a richness and depth of thought which the verbal medium is at times inadequate to convey. Many of Johnson's technical terms are, however, very happily chosen; they crystallize distinctions which have constantly to be borne in mind, and they are likely to find a permanent place in English philosophy. Among them I may mention the terms *continuant* and *occurrent* as contrasted with *substantive* and *adjective*, *determinable* and *determinate* as contrasted with *genus* and *species*, *logical ties* as contrasted with *relations*, *epistemic* and *constitutive* conditions for the validity of an argument, *problematic* and *demonstrative* induction, and so on.

It seems to be believed outside Cambridge that there is something called 'the Cambridge school' of philosophy, and deserving candidates for the degree of doctor of philosophy spend time and ingenuity in discovering, stating, and criticizing its supposed tenets. It is difficult to know where

Johnson would find his niche in this temple. Though extremely well versed in the works of the great philosophers and in the classical physics, he read hardly any contemporary books on either physics or philosophy. I should doubt whether he had looked into any work by one of his colleagues since the first edition of Mr. Russell's *Principia Mathematica* except Mr. Keynes's *Treatise on Probability*. The chapters in which he discusses physical and psychical substances and causation, and their relations to space and time, were of course written before the post-war excitements of relativity, the quantum theory, and psycho-analysis. But it is doubtful whether he would have wished to alter them, for he seemed to be almost wholly unmoved by these developments. It is difficult at present to say how far this limitation of outlook affects the permanent value of his treatment of these subjects. It may well be that, when the dust of recent physical and psychological theories and discoveries has settled, we shall find that no fundamental change in our old concepts of substance and cause is needed. It has often been the case that revolutionary scientific discoveries seemed to be of profound philosophical importance only so long as the scientists themselves were still groping in the dark. On the other hand, it does seem much more likely that many of our most fundamental concepts will have to be thoroughly overhauled and perhaps replaced by new ones. If so, much of the third volume in particular of Johnson's *Logic* will become of merely historical interest. Again, in matters of pure logic Johnson remained completely unaffected by the work of Dr. Wittgenstein or of recent German theorists on the foundations of mathematics, such as Weyl, Hilbert, &c. Whatever may be the outcome of these later developments much of Johnson's work will remain untouched, and we shall often return with relief and profit to his solid English sanity from the wilder flights of Teutonic speculation; but it may well be that his treatment of the laws of thought and the foundations of mathematics will become out of date. We can neither hope nor expect

that all his work in a subject which is intensely alive and continually advancing will survive the test of time. He was the disciple of no 'school', and he had no ambition to be the master of one.

In 1927 Johnson was affected by a kind of stroke which impaired his speech though not his intellectual powers. He was still able to play at chess and patience, two favourite games of his. By 1928 his speech was almost completely restored and he was able to lecture again, but it was obvious that he was beginning to fail. The last year of his life was one of long and patiently borne suffering, which came to a sudden and merciful end on 14 January 1931.

The main features in Johnson's character will have become clear in the course of the above sketch of his life and work, but it will be worth while to add a few more personal details. His constant ill-health and the long struggle which he waged with *res angustae domi* made it impossible for him to play an active part in the life of King's or the University, but never embittered him or made him a hermit. The following extract from a letter from Mr. J. M. Keynes is of interest in this connexion.

> In my time he seldom or never dined in Hall except perhaps at a feast, but he was a very regular attendant at college meetings, and used particularly to enjoy talking and sipping sherry at the lunches which follow our more important Congregations. It would not be true to say that he was a recluse in the sense in which many Fellows of Colleges are. He was always intensely sociable, and loved conversation and society as much as any one in the world, though too much would soon tire him. It was simply that for some time past he had got into the habit of seeing people in his own house rather than elsewhere. As time went on his asthma confirmed this habit. But for many years he was a familiar figure entering the college to go to his rooms, where he spent a good deal of the day and saw all his pupils. . . . My main point is perhaps that it would be quite wrong to think of him as a recluse. In his early bachelor days the collective Johnson family had been one of the greatest centres of talk and social life in Cambridge, and the little tea-parties that went on at Ramsey House down to quite recent times were in continuous tradition with those at Llandaff House as far back as the '70's.

To these tea-parties, which Mr. Keynes mentions, were invited all the undergraduates who were working with Johnson. There was generally a sprinkling of old pupils, and often one or two dons in other subjects than Moral Science would drop in. Miss Fanny Johnson would dispense tea, and Johnson would sit by the fire wrapped in the old red shawl which was so characteristic of him. He was an extremely good conversationalist, though he never talked for effect. Conversation was generally on 'serious' subjects, literature, philosophy, politics, &c. Johnson always had something original to say and very good reasons for saying it, and this reacted on his guests, who were inspired to follow suit and maintain a high level of thinking and sincerity. After tea there would be music, and Johnson would play one favourite after another on the piano or would induce such of his guests as were competent to do so to play to him.

Apart from subjects which were instinctively congenial, he studied seriously at various periods Hebrew, for which he even won a school prize; German, mainly from the point of view of philosophy; and, as already mentioned, botany. His interest in architecture was constant. Ancient churches and other buildings in various neighbourhoods were thoroughly explored with his children during holidays. The last time that he went out of doors (November 1930) he took a drive through Cambridge to get a glimpse of the many new buildings in the town which had reached or were approaching completion.

He had a good knowledge of the English classics, his favourite among the English poets being Wordsworth. His interest in character, whether in real life or in fiction, was keen and penetrating. He always maintained that psychologists were 'born, not trained'. He shared with the late Dr. McTaggart a cult for Charlotte M. Yonge, and would discuss her characters, and those of George Eliot, Thackeray, and Trollope, as eagerly as if they were living acquaintances. He was a Puritan to the core, and passed by with

dislike those novels in which the main interest is centred upon the physiological details or the psychological concomitants of sexual intercourse. Detective novels attracted him as 'problems', and he found relief in their remoteness from the horrors of actuality.

He had a profound special knowledge of Dickens and Jane Austen. Of each of these he would find something fresh and illuminating to say after each new reading. I should think that he could have rewritten a considerable part of the *Pickwick Papers* if all copies had been destroyed; and, in this connexion, I cannot do better than quote the inscription which a great personal friend wrote in the copy of his own book on *Charles Dickens* when he presented it to Johnson: 'To Will. Johnson, who ought to have written this book, from G. K. Chesterton, who did'. He modestly professed 'not to understand' poetry, but he could throw light on a difficult passage in Shakespeare if he chose. In a letter dated 9 October 1881 he remarks that he has been reading some novels by Henry James, and he tries to sum up his impression of the author in a sentence. 'Morally a stranger to human emotions, yet without a grain of cynicism; intellectually completely conversant with them, yet without a spark of apprehension.' He admits, however, that this 'won't do', and concludes as follows: 'At any rate his all-round and shrewd knowledge of human nature seems strangely combined with an apathetic coldness. The characters interest me without exciting any emotion . . .'

Biography, especially Boswell, was another source of keen interest. Again, when his elder son became a lecturer and wrote on art, he entered into everything that pertained to that subject with the same zest and critical acumen that he displayed in other directions.

It remains to mention the extreme generosity with which Johnson helped by advice and criticism those who were working at the same subjects as himself. In each successive edition of his *Studies and Exercises in Formal Logic*, Dr.

Keynes mentions with gratitude the assistance which he had derived from Johnson; and Mr. J. M. Keynes remarks: 'He was of course extraordinarily helpful and generous to me when I was at work on Probability'. I cannot resist quoting here another passage from Mr. J. M. Keynes's letter. 'He used, when I was a child, regularly to lunch at Harvey Road with my father; I should think almost once a week. My father was then writing his book on logic, which would frequently be a matter of conversation and discussion. They seemed to me in those days to sit endlessly over the meal, and I would be in a fidget to be allowed to get up and go. His voice and manner were quite invariable and unchanged in my memory from those days, more than forty years ago, up to the end of his life.'

The generation of Radical Nonconformists to which Johnson belonged was the finest and, it is to be feared, the last, flower of a very sound and very typically English stock. It had inherited a tradition of hard work, high seriousness, and solid good sense from a long line of ancestors who had 'learned and laboured truly to get their own living, and to do their duty in that state of life to which it should please God to call them'. It had emancipated itself from the narrowness of its older theological outlook without losing its faith in the higher spiritual values, and it had assimilated the best culture available at the time. Above all it really believed in reason and in reasonableness, and strove according to its lights to apply them to the solution of philosophic, political, and international problems. The motto which Johnson prefixed to his *Logic* was the old definition: 'Man is a *rational* animal.' He was fated to survive into one of those unhappy periods of human history in which theory and practice unite to exalt the generic characteristics and to minimize the specific differences of man. To those of us who have henceforth to steer our way as best we can through the cynical disillusionment of the cultured and the sentimental credulity of the mob the memory of such men as Johnson shines like a beacon, diffusing a clear steady light

over angry seas of passion and nonsense. Of him and his generation we may say a little enviously:

> *Vobis parta quies; nullum maris aequor arandum;*
> *Arva neque Ausoniae, semper cedentia retro,*
> *Quaerenda.*

C. D. Broad.

(In writing this memoir I am deeply indebted to Mr. J. M. Keynes; to a privately printed life by Miss Alice Johnson of her brother, George William Johnson; and, above all, to the memoir in manuscript by Miss Fanny Johnson from which I have quoted so largely. I have also to thank Miss Fanny Johnson for kindly lending me a number of letters written in the '70's and '80's by her brother to herself.—C. D. B.)