



D. BLACK

the shop in 1931. It was Alfred Marshall's opinion that the 'most valuable of all capital is that invested in human beings and of that capital the most precious part is the result of the care and influence of the mother...'.<sup>1</sup> The text with approval to Galton's view that 'the mother's influence is most easily traced among theologians and men of science, because an earnest mother leads her child to feel deeply about great things, and a thoughtful mother does not repress, but encourages that childish curiosity which is the raw material of scientific habits of thought'.<sup>2</sup> It would seem that Margaret Black was such a mother. Certainly Duncan Black had no doubt that his mother was the dominant influence in his life.

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<sup>1</sup> Alfred Marshall, *Principles of Economics* (Variorum Edition, ed. C. W. Gifford, 1961), p. 264.  
<sup>2</sup> Ibid., p. 207.

## Duncan Black 1908–1991

DUNCAN BLACK, son of Scotland, was born on 23 May 1908, in Motherwell, an industrial town situated about 12 miles from Glasgow. His father was born in the western Isle of Mull. Black's grandfather, a blacksmith, died some twelve years after his marriage and his widow left Mull and returned with her young family to her native village, Tayvallich in Argyle. Here, in his teens, Black's father worked on a farm but later when the family moved to Motherwell, he became a boilermaker.

If, on his father's side, Black's ancestors were Highlanders, his mother's family were Lowlanders. His mother, Margaret Brown Muir, was born in Motherwell, her father also having been a blacksmith. At the age of twelve, she was apprenticed to a milliner. A clever woman, it was a great regret to her that she had had to leave school at such an early age. Bible classes and music lessons at the church did something to make up for the loss. Shortly before her marriage, she opened a drapery and millinery shop in Motherwell, which she continued to run after her marriage, indeed, until the coming of buses, which made the large Glasgow stores accessible to Motherwell shoppers, led to a decline in business, and to the disposal of the shop in 1931. It was Alfred Marshall's opinion that the 'most valuable of all capital is that invested in human beings and of that capital the most precious part is the result of the care and influence of the mother . . .'.<sup>1</sup> He refers with approval to Galton's view that 'the mother's influence is most easily traced among theologians and men of science, because an earnest mother leads her child to feel deeply about great things, and a thoughtful mother does not repress, but encourages that childish curiosity which is the raw material of scientific habits of thought'.<sup>2</sup> It would seem that Margaret Black was such a mother. Certainly Duncan Black had no doubt that his mother was the dominant influence in his life.

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<sup>1</sup> See Alfred Marshall, *Principles of Economics* (Variorum Edition, ed. C. W. Guillebaud, 1961), p. 564.

<sup>2</sup> *Ibid.*, p. 207.

for his intellectual development was Dalziel High School, then enjoying a period of high academic achievement. A number of students from this period later joined the faculty of the University of Glasgow. The teachings of Dalziel High School encouraged a love of scholarship. Of his English teacher, Black says: 'One got the feeling of all the treasures of civilization being poured into one's lap'. To Black his school work was a source of great pleasure, the subjects that he most enjoyed and in which he did best being languages and literature. It would have seemed natural that these would have been the subjects which he would choose to study at the University. But when he enrolled at the University, it was to study mathematics. As an honours degree had to be taken in two cognate subjects, he decided to study mathematics and physics. The explanation he gave for what, considering his interests, seems a strange decision, is that he regarded mathematics as a means to truth, a view which he continued to hold throughout his life. But he also added another reason: vanity. Mathematics was difficult and a good degree would win approbation. In all this, one cannot but suspect that Black's Scotch Presbyterian upbringing played an important part. Most of us like approbation but we usually choose the easiest way of securing it.

Black did not enjoy mathematics as it was taught at Glasgow. The mathematical courses were designed for engineers and did not excite him. There were no new materials and nothing about the relation of mathematics to formal logic. The physics lectures were more to his taste but he had no interest in physical phenomena. Consequently he eagerly looked forward to the end of these courses. The award, in 1929, of an M.A. (the first degree at Glasgow) with second class honours may have secured approbation but it afforded little else. Black next turned to the Social Sciences, his intention then being to enter the civil service. With the help of a scholarship of £50 per annum and a similar sum earned as a demonstrator in the Medical Physics Laboratory, he was able to enroll for an M.A. in Political Economy and Political Philosophy. His studies for his second degree proved to be much more congenial than his earlier studies in mathematics and physics. The Professor of Political Economy, W. R. Scott, was a distinguished scholar, the author of works on Francis Hutcheson and Adam Smith and of a three-volume history of joint-stock companies. Scott's main interest was in the relationship between philosophy and economics and the questions he discussed, such as whether the theory of value in economics might benefit from the work of philosophers and whether the philosophers' views on value could benefit from the techniques of analysis employed in economics, struck a responsive chord in Black. Another teacher whose influence on his later work seems evident was

A. K. White, a lecturer in politics.<sup>3</sup> White considered most of the literature on this subject to be of little value and Duncan Black recalled that he spent a large part of one term discussing the possibility of constructing a pure science of politics. Black also remembered that he quoted with approval as a key notion, Miss Follett's description of how an idea develops in a committee.<sup>4</sup> But an equally or more important influence was provided by the class in Moral philosophy and particularly by C. A. Campbell's exposition and defence of the Idealistic doctrine of desire.<sup>5</sup>

In 1932 Black obtained his M.A. in economics and politics, with first class honours. He was awarded (jointly with Alec Cairncross) the Logan Medal (given to the most distinguished graduate in arts). That same year, he was appointed an assistant lecturer at the School of Economics and Commerce, Dundee. In 1934, he became a lecturer in economics at the University College of North Wales, Bangor, where he stayed (with a period during the war in the civil service) until 1945. In 1945 he became a senior lecturer in economics at Queen's University, Belfast but a year later, in 1946, he returned to his alma mater, the University of Glasgow, as senior lecturer in social economics. In 1952, Black became Professor of Economics at the University College of North Wales, Bangor, and remained there until he retired in 1968.

Of all these positions, the first, at the School of Economics and Commerce, Dundee, was the most significant in its effect on his intellectual development. The Dundee School of Economics was founded in 1931 by George Bonar, a leading member of the Dundee jute industry. James A. Bowie, from the Manchester College of Technology, was the first principal. In the planning of the School, assistance was provided by the London School of Economics (LSE), by its Director, Sir William Beveridge (later Lord Beveridge), by its Secretary, Mrs J. Mair (later Lady Beveridge) and by others at LSE. It was therefore not surprising that the first lecturers to be appointed, J. K. Eastman and J. C. Gilbert, both came from LSE. In 1932, two assistant lecturers were added to the staff. One was Black. I was the other. I had been educated at LSE and had been recommended for the post by Professor Arnold Plant. Gilbert had been my tutor during my first year at LSE. Black and I, the two assistant lecturers, saw a good deal of each other and a friendship developed which continued ever since. Eastman had studied economics not only with Lionel Robbins when he was a lecturer at LSE, but also with Allyn Young, the great American

<sup>3</sup> See A. K. White, *The Character of British Democracy* (Glasgow 1945).

<sup>4</sup> Mary Parker Follett, *The New State: group organization the solution of popular government* (New York 1918), pp. 24–5.

<sup>5</sup> See C. A. Campbell, *Scepticism and Construction* (London 1931), pp. 201–11.

economist who had been appointed to the Chair in Economics at LSE after the retirement of Edwin Cannan. Gilbert, who specialized in money and banking, came to Dundee eager to expound the theories of Robertson, Keynes and Hayek. I came to Dundee after having spent a year in the United States on a Cassel Travelling Scholarship, my head, according to Black, full of my ideas on the firm. It is certain (as I have learnt from a letter which I wrote in October 1932), that my first lecture in a course on the organization of the business unit contained the main points which were to appear in my article on 'The Nature of the Firm'. A draft of that article was completed by the Spring of 1934 while still at Dundee. That my article was not published until 1937 was mainly due to our belief that getting it right was more important than getting it published. The discussions between the four of us (Eastham, Gilbert, Black and myself) were lively, thorough and continuous. Whether at meals or elsewhere, the subject we discussed was economics, and particularly those new ideas which emerged, to a large extent in England and often at LSE, in the 1920s and 1930s. All problems in economics seemed to be on the verge of solution. And so our days passed happily by.

The impact of these discussions on Black was dramatic. He came from the University of Glasgow, where economics was still treated, as it had been in the days of Adam Smith, as a branch of moral philosophy. Black came to Dundee with an interest in philosophy and politics as great, or perhaps greater, than his interest in economics. At Dundee, he was brought into contact with the analytical approach to economics which, through the influence of Allyn Young, Robbins, Hayek and Hicks, was dominant at LSE. He also attended Eastham's graduate theory lectures and this gave him a grasp of recent theoretical developments in economics. But if Black increased his knowledge of economic analysis at Dundee, the problems which really absorbed him, although to my recollection he did not discuss them with us, with good reason since we probably would not have understood them, were those which had struck his imagination while listening to the lectures of Scott, White and Campbell at Glasgow. Indeed, Black's major contributions may be regarded as the result of using the analytical approach of LSE to solve the problems which had been raised in his mind by the teaching at Glasgow. The point of view he came to hold was expressed succinctly in an article which he wrote many years later. It was his belief 'that when we do eventually obtain a 'satisfactory' Political Science it will have the same distinguishing marks as Walras' *Elements* or Pareto's *Manuel*—or perhaps Marshall's *Principles*, with the admixture of the rigorously formal and the descriptive treatment—rather than those of the existing texts in Politics. And the core of the treatment . . . will consist of a set of formal or mathematical

propositions'.<sup>6</sup> To find this 'set of formal or mathematical propositions' was to be his life work.

The reference in this account to C. A. Campbell as an influence leading Black to his theory of committees may have caused some puzzlement. In fact, the influence was very real and had been strengthened when, for four years in the 1930s, they were colleagues at Bangor, where Campbell held the chair in Philosophy. At first sight, Campbell's discussion of the Idealist doctrine of desire would seem to have little to do with Black's thinking on the committee. But this was not so. Campbell, according to Black, was wrestling with the problem of the relation of an individual's choices and actions to his various desires. An individual's actions depended on the composition of his desires (some favouring and some opposing each particular action). Substitute individual voters for these desires and the analysis of the committee and of the individual become formally the same. As it happens, Black did not reach his theory of the committee through an analysis of the choices made by the individual but Campbell's way of looking at human choice undoubtedly played its part in the development of Black's thought. I would argue, and I am not sure how far Black held the same view, that the case for thinking of individual choice in the same way as we think of a committee is even stronger than these remarks may have suggested. Substitute genes for desires and it becomes easy to see that an individual's choice among alternative courses of action is in fact determined by a kind of voting system. If I am right, the theory of committees (or something analogous) can be applied directly to the analysis of individual choice and we should not therefore be surprised to find intransitivities or even cyclical movements in individual choices. Such an approach would, of course, mean the abandonment of the assumption, commonly made in economics, that man is a 'rational utility maximiser' and that an individual's choices are consistent, a change in viewpoint which, for my part, I would welcome. The attempt to use the analytical approach of economics to increase our understanding of the political system may therefore have the unexpected result of leading to an improvement in economic analysis itself.

In 1934, after leaving Dundee and going to Bangor, Black began to work seriously on the analysis of a political system, using economic concepts. But although he made some progress, he did not feel that he had secured a handle on the problem and in 1935 active work was put aside. In this connection, I should refer to a statement made by Black in the Preface of his book, *The Theory of Committees and Elections*: 'At a

<sup>6</sup> Duncan Black, 'The Unity of Political and Economic Science', *The Economic Journal*, September, 1950, p. 506.

very early stage I was helped to find the general lines of development by discussion with my colleague Professor Ronald H. Coase on his view of the nature of the firm'. This statement is over-generous. When Black first started to apply the kind of analysis used in economics to the problems of the political system, he certainly used the concept of transactions costs to explain the emergence of political parties and legislative assemblies, and in this was influenced by my approach to the firm. But this part of his work has never, to my knowledge, been published. While it is literally true that my discussions with Black were a stage on the way to his theory of committees, the solutions which he ultimately found to the problems that were vexing him were along lines which owed nothing to my work on the firm. When I discussed this question with him, Black's recollection was that consideration of the firm led us to discuss Edgeworth's treatment of contracting in *Mathematical Psychics* and that it was these discussions which helped him to find his way. In this he could well be right.

The main reason why Black ceased to work actively after 1935 on the problems of the political system was not lack of progress. He had published nothing up to this point and to excuse this lack of publication by explaining that he was engaged on the construction of a pure science of politics was hardly likely to advance the professional career of a young economist. He therefore turned back to a student thesis which he had written under Scott at Glasgow on 'The Incidence of Income Taxes'. Work on taxation was made easier because he was lecturing at Bangor on Public Finance and was pleasurable because he had to study once again the Italian writers on public finance, whose work he had greatly enjoyed in his student days, and which had the added advantage of also being relevant to his real interest, the pure theory of the politics. Articles were published on taxation in 1937 and 1938 and finally his book, *The Incidence of Income Taxes* was published by Macmillan in September 1939, just after the outbreak of the war. The book served its purpose. It was favourably regarded and Black's academic position was secure. Frederic Benham concluded his review in *Economica* by stating: 'Good books on the theory of public finance are rare. It is a pleasure to welcome an addition to their number'. The book was reprinted in 1961.

The outbreak of the war led to Black joining the civil service but his mind never ceased to play on the problems which really interested him and it was in fact during his period in the civil service that he found the key to the problem with which he had wrestled for so long. Black gave an account of the discovery he made in February 1942, in notes which he provided me with. He said: '. . . I was "fire-watching" in case of air raids, around midnight in the green drawing room of Warwick Castle, one of the most stately rooms in the whole of England, though now there was a

strange contrast between the coats of medieval armour and the walls and the long narrow tables strewn about the room and cluttered with civil-service paraphernalia. Acting apparently at random, I took a sheet of civil-service notepaper and wrote down a diagram bearing three curves, and I saw in a shock of recognition that if I interpreted points on the horizontal axis as motions before the committee, and took the preferences of the members in relation to these motions to be represented by the three single-peaked curves, the decision by a committee using a simple-majority procedure must correspond to the median optimum. The diagram showed the relation in which the decision of the committee stood to the preferences of the members. Drawing two more diagrams left the conviction that now I would be able to say things which previously I had only felt and had been unable to communicate or even formulate properly. Not only so but the technique, hit on apparently accidentally, would allow an investigation of government to be made along systematic lines which were fairly clearly delineated. Or so, that night, the future seemed to stretch out'. He added: 'After lying dormant in my mind for some years, the problem to which I had at one time given my full attention had changed its nature: it had become a problem in Mathematics. The queries that arose could be posed as mathematical problems. You arrived at a political theory by translating back from the mathematical symbols, just as in Economics and Mathematical Physics, and as had been the rule in pure science since the seventeenth century'.

In October 1942, owing to the illness of a colleague, Black returned to college teaching. This enabled him to begin serious work on his theory of the committee. He soon discovered the existence of intransitivities and, after writing up parts of his theory, enlisted the help of R. A. Newing, a colleague in the mathematics department at Bangor. Newing suggested the use of a matrix notation to deal with the case of a finite number of motions, and was helpful in other ways. Black was concerned about the complications which arose when the preferences of voters relating to one topic depended on the decisions made on other topics and he and Newing collaborated in an attempt to find a way of handling this problem. Considerable progress was made but at some points the mathematics involved seemed to bulk disproportionately large in comparison with the conclusions it furnished for political theory and the work was put aside. In the meantime, Black had returned to the civil service.

After the war in Europe was over, Black was appointed a senior lecturer at Queen's University, Belfast but the teaching and administration involved in this position left him little time for writing. All this changed when, in 1946, at the invitation of A. L. Macfie, he was appointed a senior lecturer at the University of Glasgow. He now had time for writing. The



years of patient thought on the theory of committees paid off. Four articles were quickly completed and, early in 1947, two were submitted to the *Economic Journal* and two to *Economica*. But Duncan Black's troubles were not at an end. All four articles were rejected. Black also attempted to have his ideas published in book form. A draft of a book, entitled *The Pure Theory of Politics*, was completed by October 1947. The chapter headings give a good indication of its character and scope:

- I. The Problem Investigated
- II. Some Definitions and the Symbolic Representation of a Motion
- III. The Theory of Independent Valuation
- IV. The Decisions of a Committee using a Simple Majority
- V. Correspondence of the Theory with Reality
- VI. Examination of Some Methods of Electing Candidates
- VII. The Decisions of a Committee using a Special Majority
- VIII. The Nature of International Agreements
- IX. The Elasticity of Committee Decisions with an Altering Size of Majority
- X. The Elasticity of Committee Decisions with Alterations in the Members' Preference Schedules
- XI. The Unity of Political and Economic Science

The book was submitted to four British publishers, all of whom rejected it. Economics, however, is an international discipline and Black had, in the meantime, sent his articles to journals published abroad. His first success came when his article 'On the Rationale of Group Decision-Making' was accepted for publication in the *Journal of Political Economy* and appeared in the issue of February 1948. Another article was printed in Italian in the issue of May-June 1948, of the *Giornale degli Economisti*. Finally, two articles were published in the July 1948 issue of *Econometrica*. Black continued to draw on the store of materials he had built up and in March 1949, an article was published in the *South African Journal of Economics* and in May and August 1949, two more articles were published, this time in the *Canadian Journal of Economics and Political Science*.

In August 1949, Black returned to Bangor to spend some time with Newing in the hope that they might be able to finish the work which they had begun some six years before. As a result of three weeks of intensive work, they were successful and, using geometrical methods of exposition, which Black hoped would make their results more accessible to economists, they completed their paper. They examined the situation in which the preferences of voters on any given topic depended on what other decisions had been made and in which therefore the order in which decisions were made played a crucial part in the outcome. They also analysed in detail the conditions in which a majority motion would exist. The title given to

the paper was 'The Decisions of a Committee of Three'. The restriction of the analysis to a committee of three was to facilitate a geometrical treatment, the authors believing that an extension of their results to larger committees would be a routine matter.

The paper, which had been written in August 1949, was revised by correspondence and the final version was submitted to *Econometrica* in November 1949. Black then had a piece of bad luck. *Econometrica* did not give a decision about publication for 18 months. Whether this was due to editorial responsibility for manuscripts submitted by European authors being transferred from Professor Ragnar Frisch to the Managing Editor in Chicago or for some other reason, I do not know. And when the decision came in a letter from the Managing Editor dated 24 May 1951, it had a very peculiar character. The letter stated that he was prepared to recommend their paper for publication 'if the interrelationships with Arrow's recent monograph could be brought out clearly throughout the paper'. Kenneth Arrow's monograph *Social Choice and Individual Values* had been published in 1951 shortly before this letter was written. The suggestion that Black and Newing should revise a paper written and submitted for publication in 1949 so as to relate it to a book which had recently appeared in 1951 (and which they had not even seen) was obviously completely unacceptable. They withdrew the manuscript from *Econometrica* and it was published by William Hodge in 1951 as a booklet of 59 pages with a new title, *Committee Decisions with Complementary Valuation*.

Black had become aware that Borda and Condorcet had written in eighteenth-century France about the theory of elections and at the end of 1948 he learnt more about them from a visit to the British Museum. Deciding to probe deeper, he went to Paris in the spring of 1949 and gathered more information about these French writers and also about Laplace, who had written on the same subject. It was natural that he would try to discover whether he had any British precursors. He soon came across the work of E. J. Nanson. But his search among English writers was to be richly rewarded when, in 1951, he discovered the contributions which Lewis Carroll had made to the theory of the committee. Lewis Carroll showed great insight and skill in handling the analysis, was aware of the existence of cyclical majorities and of the problems of complementary valuation and had even employed the matrix notation which Black had used at the suggestion of Newing. Black's methodical scholarship also led to the discovery of documents relating to Lewis Carroll which had been hitherto unknown.

Black's theory of the committee was dispersed among articles in journals published in the United States, South Africa and Canada. In order to make his theory accessible to more readers and to make clearer the

interrelations between its various parts, he decided to write a book which would bring together the ideas which he had expounded in these articles. In 1958, largely through the support of the philosopher, R. B. Braithwaite and the economist, E. A. G. Robinson, his book, *The Theory of Committees and Elections*, was published by the Cambridge University Press. This book also contained a second part, which gave an account of the work of Borda, Condorcet and Laplace in France and of Lewis Carroll in England. He also reprinted Lewis Carroll's three pamphlets dealing with the theory of the committee.

Black's views did not find a ready acceptance in Britain. We have seen that when he submitted his first four articles on the theory of committees to English journals they were rejected. His 1947 book failed to secure a publisher. This response reflected a general attitude. As I can testify from my personal knowledge, Black's work was regarded as an eccentricity, an attempt to use a mathematical treatment in spheres for which it was completely inappropriate. Nor was I more perceptive than the others. I shared the general scepticism. It was not until Black spent an evening, while I was staying with him in North Wales, taking me through the argument of the booklet which he had written with Newing, that I came to realize how powerful were the ideas that he was developing. With my lack of mathematics, I could never have obtained this understanding of Black's theory by reading his articles. This points to another reason why his colleagues in Britain failed to perceive the importance of the work on which he was engaged. Black in his writing made no concession to his readers and presented his theories in an austere form which, though it might have seemed reasonable to a physicist, reduced his chance of influencing his British colleagues. However, it was Black's devotion to the ideals of high scholarship which, though it made him disinclined to cater to the weakness of his readers, gave him that inner strength which enabled him to persevere in spite of this lack of encouragement.

But, once more, the New World was called in to redress the balance of the Old. In the United States, there had been much more interest in Black's work than had been the case in Britain. In 1962, Black was a Visiting Professor in the Department of Economics of the University of Virginia and in 1963 a Visiting Professor in the Department of Political Science of the University of Rochester. After his retirement in 1968 from the chair of Economics at Bangor, he visited the United States on many occasions. He was a Research Fellow in Law and Economics in the University of Chicago Law School in 1968–9 and in 1970–1 was a National Science Foundation Fellow in the Department of Economics, Virginia Polytechnic Institute. He was a Visiting Professor in the Department of Political Science of the University of Chicago in 1969, 1972, 1973 and 1976,

and was a Visiting Professor in the Department of Political Science of Michigan State University in 1971, 1972, 1973, 1975 and 1976. These appointments were a great source of pleasure to him and this was particularly true of his visits to Michigan State University, where he came to feel completely at home. At all these institutions he found, what he had lacked in Britain, colleagues who were sympathetic to what he was doing and graduate students interested in his approach and of a calibre to benefit from his teaching. In 1981 a festschrift in honour of Duncan Black, edited by Professor Gordon Tullock, entitled *Towards a Science of Politics*, was published by the Public Choice Center in Blacksburg, Virginia. In that same year, 1981, Duncan Black was elected a foreign honorary member of the American Academy of Arts and Sciences.

While this recognition in the United States gave Black much pleasure, the lack of interest in his work in Britain somewhat embittered him. It was therefore a source of great satisfaction when, at the age of 81, he was elected to the newly created category of Senior Fellow of the British Academy in 1989. Up to that time (apart from Honorary Fellows), there had been no provision for the election of fellows above the age of 72. The new category now allows election of scholars over 70 whose work had been undervalued, which was certainly true for Duncan Black in Britain. The Academy's citation spoke of Black's 'pioneering work in the field of tax incidence' and his 'key position as founder of the modern theory of public choice'.

After his retirement Black moved to Cambridge where, in 1977, he suffered a cruel blow through the death of his wife, Almut, who had spared no effort to be of assistance to him. Later he went to live in Paignton in Devon, where he died in January, 1991. Duncan Black continued with his scholarly work until his death, devoting most of his time to reading and writing, 'a mind for ever voyaging through strange seas of thought, alone'. The results of this continuous scholarly activity will not be lost to us. His papers are to be archived at his alma mater, The University of Glasgow. They will be the source for at least two (and perhaps four) books to be published by Kluwer Academic Publishers. The first book will republish both *The Theory of Committees and Elections* and *Committee Decisions with Complementary Valuation*. These books will contain versions based on Duncan Black's annotations plus some published and unpublished articles. The editor will be William Riker of the University of Rochester. The second book will contain Duncan Black's work on Lewis Carroll. It will be edited by Iain McLean of Warwick University. There may be other books based on previously unpublished manuscripts. In this way the academic world will come to learn of the range and power of Duncan Black's ideas.

I cannot end without some personal remarks about my old friend. He was a man of great simplicity, self-effacing, completely honest, conscientious and dedicated to scholarship. To know him was to like him. Although he lived much of his life in England, he had an abiding love for Scotland. In a letter I received from him about a week before he died, he spoke of planning to visit once again Oban and the old camping grounds during the coming Summer. It would have been a source of the greatest pleasure to him had he known that his papers would rest at the University of Glasgow. He had another love; cricket. As a young man, Duncan Black was a fine batsman, playing for Motherwell Cricket Club. He took a great interest in the game until his death. In his will he left his interest in his apartment in Cambridge and his house in Paignton as well as his residuary estate to the Motherwell Cricket Club.

R. H. COASE

*Fellow of the Academy*

*Note.* This memoir is based on my own recollections of Duncan Black, on conversations that I have had with him about his life and on biographical notes which he gave to me. It reproduces a biography that I wrote for *Toward a Science of Politics* (1981) but which I have revised and brought up-to-date.