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COLIN MACLAURIN

A Biographical Note.¹

COLIN MACLAURIN, of West Highland ancestry, a son of the manse, was born at Kilmodan, between the Kyles of Bute and upper Loch Fyne, in February 1698. His father, who was minister there, died soon after, and his mother died when he was 9; the care of Colin and his brothers devolved on their uncle Daniel, who was minister of the neighbouring parish of Kilfinnan. At the age of 11 Colin, already proficient in Latin and Greek, entered Glasgow University, and graduated M.A. in his fifteenth year. It was here that he discovered his mathematical bent, and he is said to have mastered the first six books of Euclid in a few days after finding them accidentally in a friend's rooms.

After taking his degree he entered, almost as a matter of course, as a student for the ministry. Maclaurin was by nature too deeply religious to be satisfied by contemporary Scottish Calvinism, according to which the infinite mercy of God was to be made manifest by the salvation of an elect minority, while His justice would appear in the damnation of the great majority; and after a year's study he gave up the idea of the ministry. During the next few years he lived quietly with his uncle at Kilfinnan, devoting himself to mathematical studies to such good effect that, at the age of 19, he became a candidate for the Chair of Mathematics at Marischal College, Aberdeen.

In these days—and, indeed, until recently—such appointments were competitive, and Maclaurin was matched for ten days against his rival

¹ From a talk to the Edinburgh Mathematical Society on 6th December, 1946. The chief source of information on Maclaurin's life is the biographical memoir prefixed to his posthumous "Account of Sir Isaac Newton's Philosophy."

Bowman, described as a very able competitor. The examiners were Charles Gregory, Professor of Mathematics at St Andrews, and Alexander Burnet, Regent in King's College, and they reported that "they doe think that both the saids Mr John (sic) M'Laurine and Mr Walter Bowman are capable to teach the Mathematics anywhere. In most of the tryalls on the inferior pairts there was no great odds. Only in Euclid Mr Bowman was much readier and distincter. And in the last tryall Mr M'Laurine plainly appeared better acquainted with the speculative and higher pairts of the mathematics." Maclaurin was accordingly appointed in 1717.

During vacations from Aberdeen he was in the habit of visiting London, where he made valuable contacts, particularly with Newton and Halley, and with Martin Folkes, Newton's successor as President of the Royal Society, of which Maclaurin was elected a fellow in 1719. His friendship with Newton seems to have been very real, and he "reckoned it the greatest honour and happiness of his life."

In 1722 he was engaged by Lord Polwarth, British Plenipotentiary at the Congress of Cambrai, as tutor and companion to his eldest son. At twenty-four, Maclaurin must have been a very different person from the boy who came up to Glasgow from a remote Highland manse thirteen years earlier. In Lorraine, where he settled with his ward, the record tells us that "he gained the esteem of the most distinguished persons of both sexes, and at the same time quickly improved that easy genteel behaviour which was natural to him, both from the temper of his mind, and the advantages of a graceful person." At the same time he found leisure to write a treatise on percussion of bodies which was awarded the prize of the Royal Academy of Sciences for 1724. In the following year his continental travels were brought to an end by the death of his charge, and he returned to Scotland.

Meanwhile, Maclaurin's protracted absence had caused unfavourable comment at Marischal College. A substitute was appointed, "on consideration that M'Laurine has been abroad and not attended to his charge for near the three years"; and, on his return to Aberdeen, a Committee was set up early in January 1725 to confer with him "anent 1st his going away without liberty from the Councill, 2nd his being so long absent from his charge." In April Maclaurin appeared before the Council, expressed his regret, and was "reponed."

About this time, James Gregory, of the Edinburgh Chair, was in failing health, and the question of a successor soon narrowed itself to a choice between Maclaurin and "a gentleman eminent for mathematical

abilities, who had good interest with the patrons of the University” whose name history does not relate. In this matter Maclaurin enjoyed the powerful advocacy of his friend Newton, and in 1725 he was appointed joint professor with Gregory, “ipso Newtono suadente,” as the inscription on his tomb tells us. The suasion which Newton applied is recorded in two letters. The first is addressed to Maclaurin, with permission to use it as a testimonial. “I am very glad to hear,” he says, “that you have a prospect of being joined to Mr James Gregory in the Professorship of the mathematics at Edinburgh, not only because you are my friend, but principally because of your abilities, you being acquainted as well with the new improvements of mathematics, as with the former state of those sciences. I heartily wish you good success, and shall be very glad of hearing of your being elected; I am, with all sincerity, your faithful friend and most humble servant, I. Newton.” The second letter was addressed to the Lord Provost of Edinburgh, without Maclaurin’s knowledge; in it he says “I am glad to understand that Mr Maclaurin is in good repute amongst you for his skill in mathematics, for I think he deserves it very well; and to satisfy you that I do not flatter him, and also to encourage him to accept the place of assisting Mr Gregory, in order to succeed him, I am ready (if you please to give me leave) to contribute twenty pounds per annum towards a provision for him, till Mr Gregory’s place become void, if I live so long, and I will pay it to his order in London.” This generous offer was declined, but Maclaurin was appointed, Marischal College being left to discover their loss “by the public newsprints.”

In Edinburgh Maclaurin seems to have taken his teaching duties seriously, perhaps to make amends for his neglect of them at Aberdeen. It is on record that there were generally “upwards of a hundred young gentlemen attending his lectures every year, who being of different standing and proficiency he was obliged to divide them into four or five classes, in each of which he employed a full hour every day, from the first of November to the first of June.” It was not unusual for classes to begin at seven in the morning. The subjects studied were, in the first year, vulgar and decimal arithmetic; Euclid, plane trigonometry, logarithms, with applications to surveying and fortification; the elements of algebra; and geographical lectures once a fortnight. To the second year he lectured on algebra, mensuration of solids, spherical trigonometry and the doctrine of the sphere, conics, with application to gunnery, and astronomy and optics. To the third year he gave a course which included perspective, astronomy and optics, the *Principia*, and the direct and

inverse method of fluxions. In addition, thrice weekly from December to April, he gave demonstrations on experimental philosophy, and, from time to time, on practical astronomy.

He was evidently a brilliant lecturer, and contemporary accounts speak of his pleasant voice and vivid imagination. "All Mr Maclaurin's lectures," we are told, "were given with such perspicuity of method and language, that his demonstrations seldom stood in need of repetition: such however was his anxiety for the improvement of his scholars, that if at any time they seemed not fully to comprehend his meaning, or if upon examining them, he found they could not readily demonstrate the propositions he had proved, he was apt rather to suspect his own expressions to have been obscure, than their want of genius or attention; and therefore would resume the demonstration in some other method, or try if, by exposing it in a different light, he could give them a better view of it."

Maclaurin "had lived a bachelor to the year 1733: but being formed for society as well as for contemplation, and desirous of mixing more delicate and interesting delights with those of philosophy, he married Anne, daughter of Mr Walter Stewart, solicitor-general to his late Majesty for Scotland; by whom he had seven children."

Edinburgh of Maclaurin's time still wore the aspect of a mediaeval city, encompassed by the Flodden Wall. Intellectual life was beginning to revive after a period of stagnation, and by the middle of the century there was in the city vigorous scientific and literary activity, in building up which Maclaurin took a leading part. He was a prominent member of several of the societies of the day from which the Royal Society of Edinburgh later developed. Deeply conscious of the social implications of his science, Maclaurin interested himself in many projects which must have absorbed much time and energy. These included the organisation of surveys of dangerous parts of the Scottish coastline, the preparation of Life Tables for the Churches and Universities Widows' and Orphans' Fund, and the establishment of a physical laboratory and an observatory in the University; the plans for the latter, which was to have been in the neighbourhood of the south-west corner of the present Quadrangle, were near fulfilment, but had to be abandoned in the unsettled political situation of the Rebellion.

When the Jacobites, towards the end of August 1745, got to the southward of the Government forces under Sir John Cope at Dalwhinnie, Maclaurin, always a staunch Whig, seems to have been among the first to realise the danger to Edinburgh. In the diary which he kept

during the critical fortnight, from September 2nd to September 16th, when the defence of the city collapsed, he writes, on Monday, September 2nd, "The accounts from the north becoming more and more unfavourable, above twenty gentlemen of known good affection to His Majesty and the Government, met at Mrs Clark's tavern, and agreed to apply to the Lord Provost that he would give orders for putting the town in as good a state of defence as possible with all expedition . . . in the meantime they appointed two of their number, a gentleman who had formerly been a Bailie, and Mr Maclaurin, to wait on the Provost next morning . . . first, that he would order making moulds for bullets, it having been found on trial that all in the shops had been bought up of late by Cadies (or link boys) who had been sent for them. 2dly, that the sluice of the North Loch, by which the water issues from it, should be shut and secured that it might fill up. 3rdly, that they should propose to his lordship the making a distinction betwixt the inhabitants of known good affection and such as were suspected. . . ." During the ensuing fortnight Maclaurin threw himself into the task of setting the fortifications in order. There were volunteers to be found, guns to be brought up, which he primed with his own hand; fifty cartloads of earth to be thrown up at the Potterrow Port, breaches to be repaired, and a thousand and one other things to be seen to. Day and night the work went on under Maclaurin's personal direction, at what heavy cost to his none too robust constitution may be imagined. In his task he was continually obstructed by the Lord Provost, Archibald Stewart, who was "notourly kend" to be of Jacobite sympathies, and who was some years after brought to trial for neglect of duty in the crisis. In this trial Maclaurin's journal formed the principal evidence for the Crown, a circumstance to which we owe the preservation of extracts from what must have been a most interesting document.

Something of the atmosphere of these days has come down to us in the account of an eye-witness. "Sabbath, September 15, the Highlanders were at Linlithgow and our two Irish Regements of Dragowns stood at the west end of Corstorphin. . . . Sabath night they marched to Winchburgh 3 or 4 miles from Lithgow the Irish Dragowns Generall Hameton and Collonell Gardeners regements marched in towards Edinburgh. The pannick in the good town increased, everyone wished for day light. Monday the 16 came with all confusion and false alarmes. . . . The Highlanders had all the advantages and their leaders all the intelligence they could desire and on they came with there bagpipes and plaids rusty rapiers, matchlocks and fyerlocks and tag rag

and bobtaile was there. . . . I saw the cavillcade and all the Highland wifes along with the baggage and 3 or 400 men as a gwarde. . . .”

Soon after the fall of the city a proclamation of indemnity was made by Prince Charles, but the conditions were such as Maclaurin felt unable to accept, and he had no option but to flee. He took the road to the border on horseback, probably alone and travelling by night. At York he found in Archbishop Herring a host only too glad to give him sanctuary, and there, in his own poignant words, he lived “as happily as a man can do, who is ignorant of the state of his family, and who sees the ruin of his country.” Soon however he judged it safe to return, and by December was back in Edinburgh. The journey had been strenuous—he writes of heavy snow between Morpeth and Wooler—and he had a fall from his horse. He started work again, although conditions were far from settled. “The college began today,” he writes to the Archbishop’s chaplain on December 14th, “but promises poorly. Men’s minds are not settled, and within these few days the Jacobites appear more in the public parts of the town.” His wife, too, had had her share of troubles. “There were no less than 8 men quartered on my house,” he says, “which was much above my proportion; the reason is obvious. My wife thoh indisposed could entertain them well and escaped plunder.”

By this time Maclaurin was a sick man; his malady was diagnosed, vaguely, as a dropsy, which in spite of treatment grew worse. He still continued writing, and it was while composing the final chapters of his account of Newton’s philosophy, which are an affirmation of his faith in a ruling Providence behind natural phenomena, that his eyes began to fail. “In a little time after, he desired to be laid upon his bed, where on Saturday, 14th June 1746, aged 48 years and 4 months, he died.”

This most illustrious and most lovable Scot was both scholar and humanist; he was gracious in person and in manner; industrious and charitable to a fault; public-spirited and free from narrow parochialism; and he had a deep and unaffected reverence for the things that are not seen. He was a Scot who both adorned and transcended his heritage.

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