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THE SAVILIAN PROFESSORSHIPS

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WHEN Sir Henry Savile, the Elizabethan scholar, in 1619 founded the Savilian professorships of geometry and astronomy at Oxford, he was seventy years of age, and for fifty-eight years had been connected with the University. He began his studies there in 1561 when a boy of twelve, at sixteen he took the degree of B.A. and at twenty-one was made a fellow of Merton College, of which in 1585, after much study and travel, he became Warden. Though also from 1596 Provost of Eton, it was the University of Oxford which had the first place in his affections and none knew better than he the needs of the time. Born in the reign of Edward VI, he lived through the reigns of Mary and Elizabeth and most of that of James I. He was a boy of six when Latimer and Ridley met their deaths at the stake, and reader in Greek to Queen Elizabeth when Bruno lectured at Oxford. He heard much about religious persecutions and wars, but lived peacefully enough, devoted to his College and his books (see also p. 906).

Savile was active at a time when the views of Copernicus were gradually gaining ground, and his life overlapped not only those of the great Elizabethan seamen and writers, but also those of Galileo, Kepler, Gilbert, Bacon and Descartes. Three years before Savile's birth in 1549, the five regius professorships of divinity, Hebrew, Greek, civil law and medicine had been founded at the Universities; but it was only those of medicine which in any way touched science. Edinburgh had founded chairs of mathematics and natural philosophy in 1583, and in 1596, through the generous provision of Sir Thomas Gresham, the seven Gresham professors, including those of geometry and astronomy, had begun their lectures in Gresham's mansion in Old Broad Street, London. But neither Oxford nor Cambridge could boast of such chairs, and Savile no doubt was much influenced by what was being done by Briggs and his colleagues in London. In 1619 he therefore decided to devote a portion of his fortune towards the founding of the Savilian professorships, which have now been in existence three hundred and thirty years and have been held by some of the most eminent of British men of science. In the preamble to the deed of foundation, it was said that geometry was almost totally unknown and abandoned in England, and it was to remove this evil that Savile established the chairs of geometry and astronomy open to mathematicians from any part of Christendom.

There have been thirty holders of the Savilian chairs, a list of whom is given in the accompanying table. With the exceptions of Caswell, Betts and Dr. J. Smith, sketches of their careers are to be found in the "Dictionary of National Biography" and elsewhere. Appointments to the chairs were not always made on the scientific attainments of the candidates, for influence, political opinions and religious views all had their effect. In William Whiston's memoirs will be found the story of how Halley at one time was considered unsuitable for a Savilian chair, and it may perhaps be recalled that it was not until the repeal of the Test Acts that Cambridge conferred a degree on Sylvester, though he had qualified for it forty years before.

LIST OF SAVILIAN PROFESSORS

<i>Geometry</i>	<i>Astronomy</i>
1619 Henry Briggs	1619 John Bainbridge
1631 Peter Turner	1643 John Greaves
1649 John Wallis	1649 Seth Ward
1703 Edmund Halley	1661 Christopher Wren
1742 Nathaniel Bliss	1675 Edward Bernard
1765 Joseph Betts	1691 David Gregory
1766 John Smith	1709 John Caswell
1797 Abraham Robertson	1712 John Keill
1810 Peter Rigaud	1721 James Bradley
1827 Baden Powell	1763 Thomas Hornsby
1860 H. J. S. Smith	1810 Abraham Robertson
1883 J. J. Sylvester	1827 Peter Rigaud
1897 William Esson	1839 G. H. S. Johnson
1919 G. H. Hardy	1842 W. F. Donkin
1931 E. C. Titchmarsh	1870 Charles Pritchard
	1893 H. H. Turner
	1931 H. H. Plaskett

That there was at first a close connexion between Merton College, Gresham College and the Savilian professorships can be seen from the fact that Briggs, Turner, Greaves and Wren all held chairs in London before being appointed at Oxford. This connexion between Oxford and London was further strengthened by the meetings in both cities of some of the earliest Fellows of the Royal Society, such as Wilkins, Ward, Willis, Petty, Boyle and others. Another link was forged by the inauguration of the Royal Observatory at Greenwich, where Flamsteed was succeeded by Halley and he in turn by Bradley and by Bliss. Some of Bradley's most important work was done while he still held only his Oxford appointment.

On the founding of the Savilian chairs, Savile himself read a few lectures on Euclid; but Briggs began his course in January 1620 with an oration, and Dr. John Bainbridge at the same time became his colleague. Both of them had taken degrees at Cambridge, where Briggs while an examiner in mathematics had read the Linacre Lecture in medicine. The turning point in his career was his visit to Napier of Merchiston in 1615, from which time onwards he was ever immersed in the task of compiling the logarithmic tables for which he is remembered. In a sense, Briggs was a professional mathematician, unlike many of his contemporaries holding neither holy orders nor practising as a physician. Bainbridge, on the other hand, was a general practitioner, and from 1618 a licentiate of the College of Physicians. In that year he observed and described a comet, and this led to his acquaintance with Savile and his appointment to the chair of astronomy. The next occupants of the chairs were Peter Turner and John Greaves, both Gresham professors, of whom Greaves is remembered for his travels in the Near East and his arduous measurements of the Pyramids, a reference to which was made by Sir Richard Glazebrook in his Guthrie Lecture to the Physical Society in 1931. In the time of Turner and Greaves, Oxford was the headquarters of Charles I, and it was perhaps natural they should have Royalist leanings. This, however, was their undoing, for on the ascendancy of the Parliamentarians they were

ejected from their professorships and both died in London in 1652. Briggs and Bainbridge, it may be mentioned, were buried in Merton College chapel; but Greaves was buried in St. Benet. Sherehog, in the City of London, and Turner in St. Saviour's, Southwark.

To the vacancies created by the dismissal of Turner and Greaves were appointed John Wallis and Seth Ward, both of whom could be trusted to steer a safe course with Parliamentarians and Royalists. They had taken holy orders and they both became original Fellows of the Royal Society; but whereas Ward abandoned the lecture room for the pulpit and became first bishop of Exeter and then bishop of Salisbury, Wallis continued to hold his chair of geometry for fifty-four years, making important additions to mathematics. All these worthies lived in the difficult times which saw the Civil War, the Commonwealth and Restoration; but Wallis, like Savile before him, continued steadily on his course, once writing that "it hath been my Endeavour to act all along, by moderate Principles, between the Extremists on either Hand, in a moderate Compliance with the Powers in Being . . . and to make the best of what is, and hereby, through God's gracious Providence, have been able to live easy and useful, if not great".

On his great contemporary Sir Christopher Wren, or on Halley and Bradley, there is little need to dwell. Wren's deputy and successor, Dr. Edward Bernard, was an indefatigable collector and translator of ancient mathematical works, and we are told "an Englishman whom few of this age equalled in erudition and in modesty scarcely any". Retiring in 1691, he spent the last six years of his life in a Berkshire rectory.

With the appointment of David Gregory to the chair of astronomy, a new era in scientific instruction in Oxford opened, for with him came his Edinburgh pupil John Keill, and it was they who first explained and demonstrated by experiments, to Oxford audiences, the work of Newton. Unfortunately, Gregory died when only forty-seven, and Keill when but fifty. Their contemporary, John Caswell, had been a servitor at Wadham College for eight years and became vice-principal of Hart Hall. He was fifty-seven when he died on April 28, 1712. Halley, it was said, would have liked the chair vacated by Bernard; but Bishop Stillingfleet and others had misgivings through Halley being a sceptic, and the future Astronomer Royal had to wait until the death of Wallis, when he was given the chair of geometry. In the interval, he had added to his already great reputation by his voyages, which resulted in the publication of his "General Chart of the Variation of the Compass".

Of the other eighteenth-century Savilian professors, special reference may be made to Thomas Hornsby, who was also Radcliffe Observer, Radcliffe Librarian and Sedleian professor of natural philosophy. He spent the whole of his life in Oxford. To him fell the task of superintending the building and equipping of the Radcliffe Observatory and commencing the long series of observations made therein. He was thirty when he succeeded Bradley and he held the chair for forty-seven years. The Radcliffe Observatory was built during 1772-78 by the trustees of the famous Dr. John Radcliffe. Some of its history was given by Mr. Justice Bennett in his judgment delivered in the High Court of Justice in July 1934, when the Radcliffe trustees applied for permission

to devote a sum, derived from the sale of the Observatory and grounds to Lord Nuffield, towards the founding of a new Radcliffe Observatory on 57 acres of land at Klapper Kop, South Africa, given for the purpose by the Municipality of Pretoria. As both Savilian professor of astronomy and Radcliffe Observer, Hornsby was succeeded in turn by Robertson, Rigaud, Johnson and Donkin, after whom the functions of professor and observer were separated.

Another interesting figure among the Savilian professors of more than a century ago was Stephen Peter Rigaud, whose career recalls the scientific work of other French Huguenot families who came to England as refugees. Such were the Dollonds, the Desaguliers and the Demainbrays. The Demainbrays, father and son, were the King's astronomers at Kew, where an observatory was built shortly before that at Oxford. The Rigauds, Stephen Peter and his father, assisted the Demainbrays, and no doubt Royal favours had something to do with Rigaud's appointment to the Savilian chair of geometry, afterwards exchanged for that of astronomy. A Fellow of Exeter College, he became a deputy for Hornsby, and on becoming Radcliffe Observer added to the instruments in the Observatory. He was a copious correspondent, and he published works on Newton, Bradley, John Hadley and James Stirling, and also "An Account of some early Proposals for Steam Navigation".

The part played by Hornsby in the eighteenth century had its counterpart in the nineteenth century when the Rev. Charles Pritchard became Savilian professor of astronomy, for it was under him the "New Savilian Observatory for Astronomical Physics", now the University Observatory, was erected, having among its instruments those given by Warren De la Rue. Though sixty-two when appointed, Pritchard entered upon his duties with the ardour of youth and maintained his enthusiasm until his death at eighty-five. His immediate successor was the late H. H. Turner, while the present holder of the chair is Prof. H. H. Plaskett, son of the eminent Canadian astronomer, the late Dr. J. S. Plaskett. Prof. Plaskett's previous appointment had been that of professor of astrophysics in Harvard University. He is thus the first from overseas to hold a Savilian chair.

Such scientific instruction as was given at Oxford in the eighteenth century was mainly confined to the various branches of physics, the lecturing on which was often entrusted to deputies. As for mathematics, it is common knowledge that both Oxford and Cambridge lagged far behind the Continental schools, and even when, through the labours of Woodhouse, Peacock, Babbage and Herschel, mathematics at Cambridge entered upon its golden age, there was no similar movement at Oxford. It thus came about that the early Savilian professors of geometry, Briggs and Wallis, had no comparable successor until Henry John Stephen Smith succeeded Baden Powell in that chair. Powell's main interests had centred around optics and university reform. Of Irish parentage, and unusually gifted, Smith became, in spite of much ill health, a mathematical lecturer at Balliol College, and in 1860 succeeded to the Savilian chair, which he held until his death in 1883 at the age of fifty-six. His reputation as a mathematician was world-wide, while, wrote Dr. J. W. L. Glaisher, "It is difficult to give an idea of the position Professor Smith held in Oxford and in society generally, so brilliant were his attainments and so great and varied his personal

and social gifts". No Savilian professor has had the distinction of representing the University in Parliament; but according to G. W. E. Russell, in 1879, "The Liberals by a strange perversity of choice brought forward Professor Henry Smith, a mathematical genius of the highest rank but so half-hearted a politician that E. A. Freeman said that he was better qualified to sit as member for Laodicea in the Parliament of Asia Minor".

Smith had been appointed to the chair of geometry at the age of thirty-four; his successor, James Joseph Sylvester, was twice that age, having been born in 1814. A Wrangler in 1837, his Jewish parentage had debarred him from a degree, and before being appointed to Oxford he had held professorial posts in London, Woolwich, Virginia and Baltimore. He continued to lecture at Oxford until about 1892, when through his failing eyesight, William Esson was appointed his deputy and eventually his successor. A Fellow of Merton College since 1860, Esson at one time collaborated with the distinguished chemist, A. G. Vernon Harcourt, and held University offices. To one student Esson's mission seemed to be "to illuminate mathematically the obscure records of chemical velocities". After teaching for a very long period, he died in 1916, and in 1919 was succeeded by Prof. G. H. Hardy, who died at Cambridge so recently as December 1, 1947. *The Times*, in its obituary of him, said that he was "perhaps the greatest pure mathematician of his day—he would certainly be ranked in the first half-dozen—and one of the most familiar 'characters', both of Oxford and of Cambridge. . . ." A tribute to Hardy was paid by Prof. M. H. A. Newman in a broadcast, printed in *The Listener* of January 22 1948. In 1931, Hardy had returned to Cambridge and Prof. E. C. Titchmarsh succeeded to the Oxford chair, having previously held the chair of pure mathematics at Liverpool.

These brief and all too meagre notes will perhaps give some idea of the benefits which have accrued to science in Oxford through the far-sighted action of Savile. It is possible that Oxford can claim a longer list of such benefactors than any other university in the world; Her colleges, halls, chapels, libraries and museums, her professorships, lectureships and scholarships recall the names of kings and nobles, chancellors and prelates, teachers and scholars and men of many degrees. To the visitor to the city it might be said: "If you wish to see their monuments look around". Their influence has spread throughout the world; but among them all, few deserve to be remembered more than Sir Henry Savile, whose memorial, like that of his close friend Thomas Bodley, is to be seen in the chapel of Merton College, which he served so faithfully and so long.

AFRICAN REGIONAL SCIENTIFIC CONFERENCE

THE first African Regional Scientific Conference was held in the University of the Witwatersrand, Johannesburg, during October 17–28, and was convened by the South African Council for Scientific and Industrial Research as a result of a recommendation made at the Commonwealth Scientific Conference held in London in 1946. The object of the African Conference was to consider ways and means of securing a greater measure of co-operation

between the different territories in Africa south of the Sahara in problems involving research of a long-term nature. There were 107 delegates, representing the various African territories concerned and the Metropolitan Governments with direct interests in this part of Africa, present at the Conference. There were also observers from the World Health Organisation, Food and Agriculture Organisation, United States National Research Council, United Nations Educational, Scientific and Cultural Organisation, and the Overseas Food Corporation.

The Belgian delegation was led by Dr. P. Staner, of the Colonial Ministry, Brussels, the French delegation by Prof. J. Millot, director of the Institute for Scientific Research in Madagascar, the Portuguese delegation by Dr. A. A. E. M. Correia, director of the Colonial Training College of Portugal, the United Kingdom delegation by Sir Ben Lockspeiser, secretary of the Department of Scientific and Industrial Research, and the South African delegation by Dr. B. F. J. Schonland, president of the South African Council for Scientific and Industrial Research.

During the period of the Conference, the delegates were the guests of the Union Government. They were entertained at a number of functions and were given the opportunity of visiting some of the scientific institutes in the Johannesburg and Pretoria areas. The University of the Witwatersrand conferred honorary degrees upon the leaders of the various national delegations. At the conclusion of the main business of the Conference, delegates were taken on a short tour of the wild-life sanctuary in the Eastern Transvaal, the Kruger National Park, where they saw a wide variety of animals.

The Conference was officially opened by the Prime Minister of the Union of South Africa, Dr. D. F. Malan, and his opening address was followed by messages of welcome from the heads of the various delegations. On the proposal of Sir Ben Lockspeiser, Dr. P. J. du Toit, formerly director of the Onderstepoort Veterinary Research Institute and now deputy president of the South African Council for Scientific and Industrial Research, was unanimously elected as president of the Conference. This post he filled with great tact and skill, which contributed greatly to the successful outcome of the Conference.

The first two days were devoted to plenary sessions at which delegates from the various territories delivered statements on the general organisation and research in the various countries and regions. Thereafter the Conference was split into six Sections, as follows: (A) physical environment; (B) soils and plants; (C) zoology and animal industry; (D) health and medical research; (E) social research; (F) technology. Chairmen elected for each Section were: (A) Dr. S. H. Haughton, geological adviser to the Union Government; (B) Prof. A. Quintanilha, director of cotton research in Portuguese East Africa; (C) Prof. L. van den Berghe, director of the Institute for Scientific Research in Central Africa (Belgian Congo); (D) Sir Edward Mellanby, secretary of the Medical Research Council in Great Britain and chairman of the Colonial Medical Research Commission; (E) Prof. T. Monod, director of the French Institute for Black Africa at Dakar; and (F) Dr. E. B. Worthington, of East Africa.

Within the sectional meetings, spread over six very full days, 118 papers by delegates and other expert contributors were presented. The papers had been printed in advance, and were only very briefly summarized by the authors at each meeting, the principal