

Early Scientific Worthies of America.

IN 1661, John Winthrop, son of John Winthrop the first governor of Massachusetts, visited England for the purpose of securing from Charles II. a royal charter for Connecticut, of which colony he had himself for many years held the governorship. Born in 1606, he had travelled and studied, was a capable physician, possessed a knowledge of chemistry and metallurgy, and had promoted the iron and other industries of the American colonies. Twice before he had visited England, but his third visit coinciding with the birth of the Royal Society, at a meeting of the Society in the old Gresham College in December 1661 he was chosen one of the members, and in May 1663, after the Society had secured its charter, his name was included in the list of original fellows.

Already known to many European men of science, after his return home Winthrop became the western correspondent of the Royal Society, and it was mainly through his letters from Newton, Boyle, Hooke, Barrow, and others, and the *Transactions* of the Society that the mathematicians and naturalists in the colonies learnt of the progress of science in Europe. Winthrop's active and useful life came to a close on April 5, 1676, and he was buried in King's Chapel, Boston, where his famous father and some of his distinguished descendants also lie.

Such, briefly, is the biography of the earliest of the scientific worthies of America, to whom Mr. F. E. Brasch refers in two historical articles on the Royal Society of London and its influence upon scientific thought in the American colonies, published in the *Scientific Monthly* for October and November. When Winthrop lived, the colonies were still but sparsely populated, and the conditions of life could have provided little opportunity for the pursuit of knowledge for its own sake. Yet long before he died Harvard College was a flourishing institution, and, as Mr. Brasch shows, with the growth of the college, the effects of the intercourse between the Royal Society and America, which began with Winthrop, were more and more fully felt, with advantage to both the Society and the colonies. To this intercourse may be traced, among other things, the founding of both the American Philosophical Society and the American Academy of Arts and Sciences.

Mr. Brasch's review covers the latter half of the seventeenth and the whole of the eighteenth century, and in that period he recalls no fewer than eighteen

fellows of the Royal Society who were connected with American science in one way or another. Among these were Thomas Brattle, a successful merchant and treasurer of Harvard, whose astronomical observations of the comet of 1680 were of use to Newton and Halley; William Brattle, his brother, the first tutor of philosophy in the colonies; William Byrd, who sent plants and minerals to Sir Hans Sloane; John Leverett, president of Harvard; Cotton Mather, who corresponded with John Woodward and sent him fossils; Paul Dudley, Chief Justice of Massachusetts, who communicated to the Royal Society papers on natural history and is regarded as the first horticulturist in America; and John Winthrop (1681-1747), a diligent collector, to whom the fortieth volume of the *Transactions* of the Royal Society was dedicated.

Valuable as were the efforts of these individuals in furthering the claims and interests of science, of still greater importance was the work of Benjamin Franklin, John Winthrop (iv.), Dr. John Morgan, and David Rittenhouse, who were admitted to the Royal Society in the years 1756, 1766, 1765, and 1795 respectively. Franklin is rightly regarded as the foremost American man of science of the eighteenth century, and not the least of his services was the constant solicitude he showed when abroad for the reputation of his fellow-workers at home. He was "virtually the intellectual ambassador of his fellow-beings".

Mr. Brasch calls John Winthrop (iv.) the first real scientific astronomer and the first Newtonian disciple in America. Born in 1714, eight years after Franklin, Winthrop at the age of twenty-four years was chosen professor of mathematics and natural philosophy at Harvard, a post he held with distinction until his death in 1779. He introduced the study of fluxions, he established a laboratory for experimental physics, for more than thirty years he made astronomical observations, he contributed eleven papers to the Royal Society, and to him can be attributed the founding of the American Academy of Arts and Sciences.

Of John Morgan (1735-1789) it is sufficient to say that he was the founder of the first medical school in America; while David Rittenhouse (1732-1796), who as a boy drew mathematical figures on fences and barn-doors, planned the first observatory in the colony and was the successor of Franklin as president of the American Philosophical Society.

The Physics Workshop at the Imperial College.

ON Wednesday, January 6, during the special session for members of the Annual Exhibition of the Physical and Optical Societies, Prof. C. V. Boys, in the presence of about a hundred subscribers, presented Mr. W. J. Colebrook, formerly superintendent of the physics workshop of the Imperial College of Science and Technology, with a cheque for £100 on the occasion of his retirement. Mr. Colebrook had been connected with the workshop for forty years, and in addition he had acted during the War as workshop consultant to the War Office X-ray Committee, and from 1914 to the present time had been superintendent of the Air Ministry workshop. The testimonial represented the good wishes and appreciation of a large number of scientific workers.

During the course of an interesting address, extracts from which are subjoined, Prof. Boys outlined the early history of the physics workshop, with which he himself had been closely associated, and described how he had 'discovered' Mr. Colebrook.

Lord Rayleigh, who occupied the chair, added that during the years in which he had worked at the Imperial College he had been impressed by the efficiency of Mr. Colebrook's workmanship and his capacity for organising his department with a complete absence of friction and ostentation. Further appreciations were expressed by Lieut.-Col. K. Edgecumbe and Mr. Watson Baker, representing the British Electrical and Allied Manufacturers' Association and the British Optical Instruments Manufacturers' Association respectively, and the former presented Mr. Colebrook with an additional cheque on behalf of fifty-seven exhibitors at the Annual Exhibition of the Physical and Optical Societies, of which he had been organiser during the twenty-one years since its establishment. Mr. Colebrook, acknowledging the testimonials in an interesting and appropriate speech, expressed his gratitude for the invariably friendly relations which had always existed between him and those with whom he had worked.