

Review

The priority dispute over the function of the lymphatic system and Glisson's ghost (the 18th-century Hunter–Monro Feud)

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Received 12 December 2006; accepted 23 February 2007

Available online 23 April 2007

Abstract

Basic Immunology has had only two significant public priority disputes. The first began in the late 1650s and concerned the recognition of the peripheral network of vessels which collects lymph throughout the body. The publication of this major anatomical discovery prompted a priority feud discussed in a previous paper. The subject of this essay is the second dispute which occurred a century later in the late 1750s. It focused on the function of the lymphatic system and precipitated a heated war of words between a young Scotch medical graduate (Alexander Monro) and a noted London anatomist (William Hunter). Their published charges and responses ranged from feigned respect to ad hominem invectives. But in retrospect, the priority claims of both were precluded by the observations and speculations of an Englishman (Francis Glisson) a full century before. The several editions of his work were unknown to Hunter and Monro at the inception of their feud.

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Keywords: Lymphatic system; Absorption; Priority dispute; William Hunter; John Hunter; Alexander Monro Jr.; Francis Glisson

1. Introduction: the principal participants

The history of basic immunology began with the recognition of the entire lymphatic system.¹ This recognition came in two phases—the elucidation of the system's gross anatomy and the determination of its several functions. The complete anatomical picture was finally realized in the mid-17th-century with discovery of the peripheral lymphatic vessels, i.e., the intricate web of collecting channels which are scattered throughout most of the body and which drain mainly into the thoracic duct. But a function for the lymphoid system was not proposed for nearly another century. Both disclosures generated heated disputes over priority of discovery, the first in Sweden and Denmark and the second in Scotland and England. The first dispute was treated in a previous paper [1]; the second is recounted in this essay and concerns the Hunter–Monro feud.

William Hunter (1715–1783) was a celebrated anatomist-physician-accoucheur of London, who pursued dissecting and teaching mainly at his own anatomy school, initially at Covent Garden and later on Great Windmill Street (Fig. 1). He had verified the observations made a century before about the gross anatomy of the lymphatics. At lectures in 1747 he proposed that the peripheral lymphatics constitute absorbing vessels draining various tissues of the body and that they function much like the lacteals draining the intestinal walls. These lectures were finally published in 1769 as a Royal Society memoir and won

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¹ In this essay I distinguish between clinical immunology and basic immunology. The former could be said to have had its origin in Hippocratic times with the appreciation that survival from the plague generally rendered a person immune to any later exposure—“no one caught the disease twice” [38] However, investigating the myriad facets of immunity required recognizing the organs and cellular elements involved—initially, the lymphatic system and later the lymphomyeloid complex. Elucidation of the gross anatomy of the lymphatics led a century later to understanding one of the system's functions (fluid distribution in the intercellular spaces) and only later its other role (immunological). These early insights were prerequisites for the study of basic immunology.

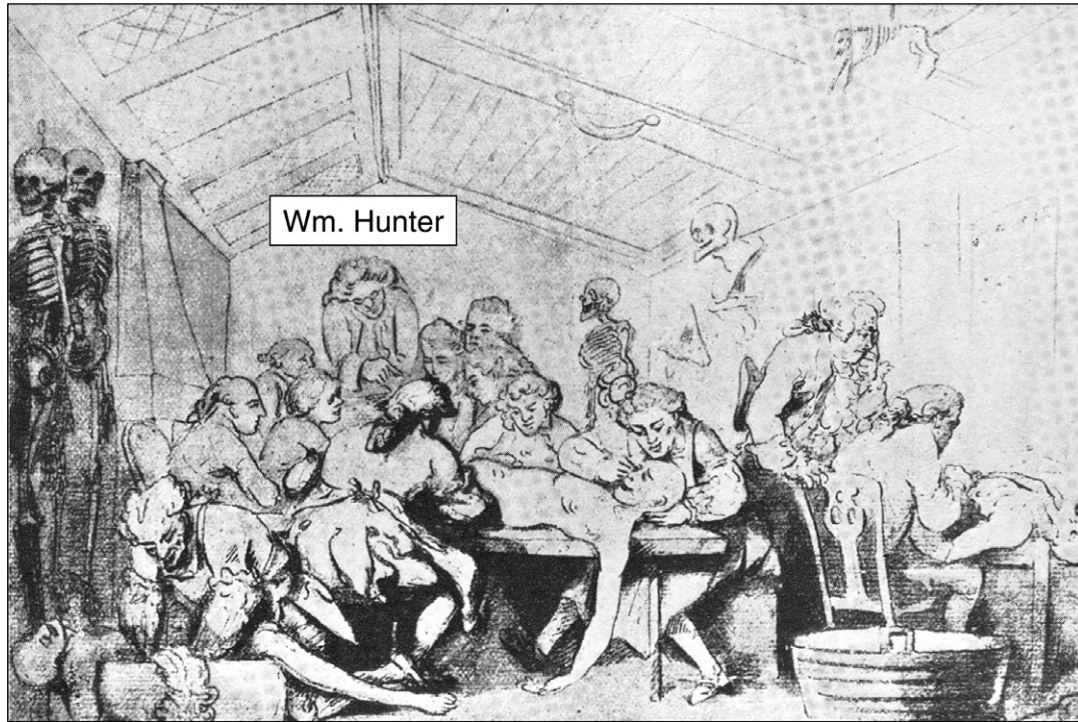


Fig. 1. “The Dissecting Room” of the Anatomy School at Great Windmill Street, by Thomas Rowlandson (1756–1827), from J.B. Bailey, *Diary of a Resurrectionist*, 1896.

for Hunter the Copley medal that year. His recognition of this absorptive role has been ranked as the greatest achievement in physiology second only to Harvey’s discovery of the circulatory system [2]. But Hunter’s precedence in this new proposal was challenged by a young medical graduate from Scotland.

Alexander Monro, Jr. (1733–1817) was Hunter’s disputant and in 1755 was just beginning his career at age 21 as conjoint professor of anatomy at the University of Edinburgh. In the fall of that year he had published his medical school thesis on the anatomy of the testis and its lymphatic drainage. He added, without any supporting elaboration, the sweeping generalization that “[v]alvular lymphatics, in all parts of the body, are absorbent veins”. (Many authors of that period referred to the lymphatic vessels as “veins”.) Over the next five years in treatises and published letters each anatomist sought to persuade the public of his priority in making this discovery. The print-war “was coarse and pungent in the extreme” [3].

Actually, this priority dispute engaged several members in each of two families—mainly Monro secundus and Monro primus, the son and father in Edinburgh, and also the Hunter brothers in London. John Hunter was William’s younger sibling and for over a decade was his pupil, assistant, and collaborator. Apart from his supporting role in Monro–Hunter dispute, John made observations which anticipated several areas of experimental immunology—transplantation and tolerance. But these are outside the main theme of this essay. Brief biographies of William Hunter and the two Monros may aid in understanding this

acerbic 18th-century feud. Finally, this essay concludes with an addendum on Francis Glisson, a remarkable 17th-century English physician-scientist. His observations and speculations about lymphatic function anticipated by a hundred years the claims of priority in the heated Hunter–Monro dispute.

2. The life of William Hunter

William Hunter (1718–1783, Fig. 2a) was the seventh of ten children born at a small farmstead eight miles from Glasgow. As a youth he prepared for the ministry, but his five years at the nearby university (1732–1737) led him to reject abstract, dogmatic theology for empirical medicine [4]. During the next several years (1737–1739) he became a voluntary apprentice to William Cullen (1710–1790), an apothecary-physician in the nearby town of Hamilton [5]. Planning in time to join him professionally as a surgeon, Hunter studied anatomy during a winter session in Edinburgh under Alexander Monro, Sr., as Cullen had done earlier. To further his skills, in 1740 Hunter began teaching anatomy in London under the tutelage of Dr. James Douglas. When the latter died in 1742, Hunter attended anatomical lectures in Paris for five months (1743), where he learned the value of individual cadavers for each student (“the French method”) and the art of preparing anatomical specimens by injecting blood vessels with dyes or colored wax [6]. Meanwhile, in 1744 Cullen moved to Glasgow University, beginning his celebrated academic career there and thus abandoning the idea of a

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