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The influence of Leiden on botany in Dublin in the early eighteenth century

E. Charles Nelson

In the late 17th and early 18th centuries, a few men with at least an amateur interest in botany who had attended the medical school of the University of Leiden lived and worked in Ireland, where they studied the native flora or taught in the University of Dublin (Trinity College). The first was Thomas Molyneux, who entered Leiden in August 1683 and later held various important medical offices in Ireland, including the chair of physic at Trinity College, from 1711 to 1733.¹ He was a friend of William Sherard, who, having studied at Leiden under Paul Hermann, visited Ireland between 1690 and 1694, during which time he collected native plants and assisted Sir Arthur Rawdon with his incomparable collection of living Jamaican plants.² Two graduates of the medical school in Leiden, Nathaniel Wood and Francis Vaughan, are known to have prepared a catalogue of native Irish plants about 1696.³

In the mid-18th century, the Quaker John Rutty, also a graduate of Leiden's famous medical faculty, came to Ireland to practice medicine and helped to stimulate the study of native plants.⁴ Patrick Browne, who studied at Leiden under Gronovius and van Royen, lived and practiced as a doctor in Jamaica, but in the latter quarter of the 18th century he returned to his native county of Mayo and there collected specimens and prepared a manuscript flora of Ireland.⁵

There may have been other Leiden students who came to Ireland as casual visitors or as amateur botanists, but their work is not recorded in either publications or extant manuscripts.

The subjects of this paper are two Leiden graduates who taught botany in Trinity College, Dublin, in the early 18th century and were in charge of the college's physic garden. They are Henry Nicholson and William Stephens, successive "Professors of Botany" in the College. Both made small but significant contributions to the study and teaching of botany in Ireland, in which the influence of their days in Leiden may be traced.

W. T. Stearn, summarising the influence which Leiden had on botany in Europe in the 17th and 18th centuries, wrote that "no other university has a more sustained and continuous record of service . . . Credit must be given not only for the achievements in Leiden of such men as Clusius, Hermann and Boerhaave, but also for those made elsewhere by persons trained in its traditions or deriving the means for them from an association with Leiden. It helped to form an educated public receptive to new ideas in science among men unknown to fame but carrying out unobtrusively and effectively their service to humanity. These constituted, of course, the greater part of Leiden's medical students . . ."⁶

Students, especially those instructed by

Hermann Boerhaave, in the early decades of the 18th century, in what was the world's richest botanic garden, later founded or restored botanic gardens elsewhere in Europe, among them Göttingen, founded in 1734, Uppsala, restored by Carl Linnaeus after 1742, Vienna, founded in 1754, and Edinburgh, where Charles Alston began to revitalize the collections in 1720.⁷ In his encomium, Stearn made no mention of any Irish garden, yet as early as 1711 Henry Nicholson, a student at Leiden in 1709, took charge of the Trinity College physic garden and set about expanding its plant collection. His stay in the College lasted only about five years, but Leiden's influence was reasserted a decade later in 1724 when William Stephens took over the management of the garden for a few years until about 1733.

The earliest garden established for scientific or educational purposes in Ireland was that of the Dublin Philosophical Society, which was founded by William Molyneux, brother of Thomas. The only record of this garden is contained in a letter written by William to Thomas while the latter was at Leiden.⁸ The "fair garden for plants" existed in May 1684, but as the Society collapsed in 1687, it is unlikely to have survived for more than three years. Among the members of this learned society was the Provost of Trinity College, the orientalist Robert Huntingdon, who, during his chaplaincy to the Levant Company's factory at Aleppo between 1671 and 1681, sent herbarium specimens to Jacob Bobart the younger at Oxford Physic Garden.⁹ Huntingdon's botanical experience possibly influenced the decision of the Board of Trinity College, at a meeting on 25 June 1687, that "the Kitchin Gardin

should be made a Physick garden at the charge of the College."¹⁰

Previous authors assumed that this was not done; for example, Hoppen concluded that the wars between William of Orange and James II interfered with the project and no action was taken until 1710.⁸ However, the College muniments indicate that by February 1687/8 the "fisick gardening" was in existence.¹¹ The wars do not seem to have interfered with it too much, although records are fragmentary; documents dated 1700 and 1705 state respectively that thorn bushes were purchased for the garden,¹² and that trees were removed from it.¹³ After 1705 there are regular, often quarterly, records of works carried out in the physic garden.

The exact site of this first garden on the College campus is unknown, but on 14 June 1710 the Provost and Fellows "ordered that ground be laid out at ye south east corner of the Physick garden sufficient for erecting a laboratory and an Anatomie Theatre thereupon."¹⁴ The Anatomy Theatre was built and is shown on a map of the campus published in 1756, lying south-east of the Library;¹⁵ the new Berkeley Library, built in 1970, now occupies the site. The physic garden may have occupied part of the ground on which the (old) library was built. However, the garden could not have been exactly coincident with the library's ground; had the sites been the same, the garden would have been destroyed when the library foundations were laid in 1712, and there are references to the original physic garden as late as 1722.

On 16 August 1711 the newly-completed Anatomy Theatre was opened. The ceremony, attended by the Provost and Fellows, included "several publick exercises" by members of College, including a Dr.

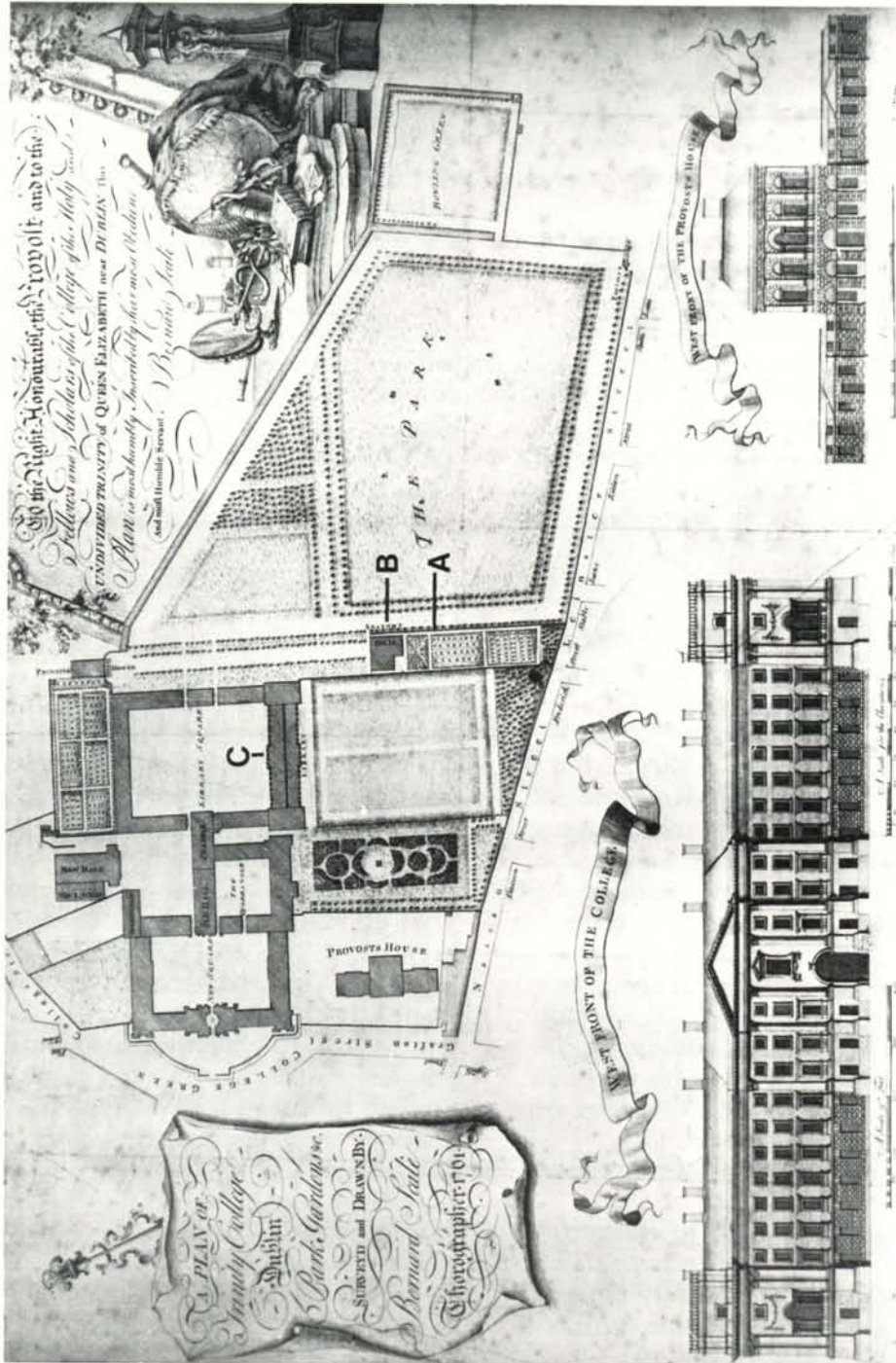


Figure 1. Trinity College, Dublin in 1761. The physic garden formed in 1723 is the rectangular plot (A) lying between the "Anatomy

House" (B) and Nassau Street. The earlier physic garden probably was situated between the "Anatomy House" and the Library (C). By courtesy of Trinity College.

Nicholson who lectured on botany.¹⁶ Henry Nicholson¹⁷ was born at Castlerea, County Roscommon, about 1681, the son and heir of the Rev. Edward Nicholson.¹⁸ He was educated by a Mr. Blair of Dunamon, Roscommon, and entered Trinity College on 26 June 1700, when he was about 19.¹⁹ He did not graduate at Dublin, but a few years later matriculated at University College, Oxford, on 15 February 1705/6.²⁰ According to a contemporary diarist,²¹ Nicholson went to Oxford from Trinity College, Dublin, to obtain the degree of bachelor in law, but in late February 1705/6 "was denied his Degree . . . 3 times, notwithstanding his letter from y^e Chancellor pass'd in Convocation that y^e Terms he had kept in Dublin might be equivalent to his having kept them here." Having failed in his attempt to get a law degree, Nicholson spent part of the next few years writing a theological tract, *The falsehood of the new prophets . . .*,²² and may have started, or continued, to study medicine. On 5 January 1709 Henry Nicholson registered as a student in the medical faculty at Leiden;²³ the fact that he remained at Leiden for only six months suggests that he had studied medicine earlier, either at Dublin or Oxford—at that time it was not unusual for students to spend time at more than one university, or to graduate at a university after studying elsewhere. Nicholson obtained his doctorate of medicine on 13 June 1709, after defending the thesis "De corpore . . ." which was dedicated to several patrons and his father.²⁴

Following Nicholson's graduation, it appears that he returned to Ireland, and on 22 January 1710/11 Trinity College, Dublin, gave him leave "to perform acts of the degree of Bachelor and Dr. in

Physick."²⁵ So Nicholson obtained his doctorate (and presumably his baccalaureate). He needed these Irish qualifications before he could obtain a fellowship of the King's and Queen's College of Physicians of Ireland,²⁶ which licensed physicians, and perhaps also before he could take up a post in the Trinity College medical school; botany was then taught as part of the course in physic and for many years the Professor of Botany in the college had to have recognised medical qualifications. At the same time Nicholson did become a candidate for a fellowship of the College of Physicians, but was not elected.²⁷

By August 1711, when he delivered the address on botany at the opening of the Anatomy Theatre, Nicholson had become "Professor in Botanie" in Trinity College. This does not mean that he held a chair; there is no minute in the College Register recording this appointment, nor does Nicholson's name appear in the quarterly accounts as receiving an emolument from the College. He was not a fellow of Trinity College, and may have been engaged personally by the Professor of Physic, then Dr. Thomas Molyneux.²⁸ That he was at least a tutor or demonstrator is confirmed by a letter Nicholson wrote on 18 October 1711 to the English botanist James Petiver,²⁹ saying that he had "undertaken to furnish a Physick garden here, wch is about setting up by the college of Dublin, wth plants & seeds of all sorts as many as I can procure: & they have obliged me to this task by nominating me their Professor in Botanie."³⁰

It is not clear what Nicholson meant by "about setting up"—there is no record of the destruction of the original physic garden, or the alienation of its site; the

new library building had not been started. The College muniments indicate that during 1711 work in the physic garden continued; a bricklayer was employed on "ye canall &c for ye Physick Garden"³¹ and labourers were engaged to remove rubbish³² and made a new deal door.³³ In April 1711 seeds of "physickal plants" were purchased, perhaps indicating that Nicholson took over management early that year.³⁴

Nicholson set about improving the representation of plants in the physic garden, and it is not unreasonable to suggest that prior to 1711, in the apparent absence of a botanist in Trinity College, the garden was little more than an area on the campus bearing that name, but without a properly maintained collection of medicinal plants.

Nicholson engaged Petiver in correspondence for several years;²⁹ their letters provide valuable information on Nicholson's activities and the physic garden, and indicate that Nicholson was much concerned to get new plants. "I dont know a properer person to apply myself to," he wrote in October 1711, "than you who understand the matter so well. If you'll please to be so kind to order, at some seed shops or gardeners, small specimens of exotick seeds, of the quantity of 2 or 300 several species such as you may judge are scarce to be had commonly in Ireland."³⁰ Nicholson told Petiver that he was "intimately acquainted" with Jacob Bobart at Oxford "& I will write to him";³⁰ they would have met while Nicholson was at University College, Oxford, although at that time he was supposedly trying to obtain a law degree, not one in botany or physic. Nicholson also engaged "people in several parts of [Ireland] to furnish [him]

with" native plants.³⁵ About the end of January 1711/2 Nicholson began to deliver a course of lectures on *materia medica*,³⁶ and was writing the first botanical work to be published in Ireland. The first part of his *Methodus plantarum in horto medico Collegii Dublinensis jam jam dispondenarum*³⁷ was published shortly before 3 May 1712;³⁸ at the time, the second part was unfinished. Nicholson was unhappy with the work, which contained a number of printer's errors; he told Petiver that "I shall very soon have another edition of it more compleat: for I foresaw wt must necessarily happen that the printer not understanding lattin, And I having no friend here that understands the Dialect of Botanists, I was obliged wholly to trust to my own correcting of the press: & the sence running so much in my head; it was impossible for me not to let pass several literal faults."³⁸

Methodus plantarum is essentially a list of plants included in the college physic garden. In the first section the "genera" are explained—these "genera" are groups of plants arranged according to the prevailing systems of classification, and bear no relationship to the modern concept of genera. Nicholson told Petiver that he had "taken Ray's method and reconciled it with Morison's, Boerave's [sic] and Tornefort's; so that at the head of each Genus you have the *notae charact.* of each of these authors; & yet I have no more than 22 *genus's* & but two single plants that are *Anomala's*: all the rest of Ray's *Heterolit.* coming under some regular Genus of some one or all of the other authors."³⁸ Given such an artificial system it is difficult to see any merit in what Nicholson did, and there are indications in the text of the "Explicatio generis" that his understanding of basic botany was

poor. Clearly he did not understand the application of the terms "stamina" and "stylus," for he stated that "in an Apple STYLUS is the little Stalk by which the Apple hangs, to the Tree; STAMINA are the opposite Threads which appear like a Navel."³⁹ His also misinterpreted Malpighius' work on plant anatomy.⁴⁰ In the second part, the "Methodus plantarum," plants are arranged and listed within the various "genera" earlier defined. In marginal glosses, Nicholson gave the medicinal properties of some of the plants, and very occasionally discussed other topics, such as the application of Irish vernacular names. Nicholson generally gave the Latin polynomial and the English name for each plant; over 400 taxa were included, mostly well-known medicinal herbs and plants native in the British Isles.

Nicholson received seed from both Petiver and Bobart. On 25 July 1713, however, he wrote to Petiver begging "the favour if any rare seeds comes in your way that you'll please to send me over some of them," and he said that his "friend Mr Boerhaave" had promised seeds.⁴¹ Thus Nicholson used his experience as a student at Leiden to good advantage; even though only six months elapsed between his registration and graduation there, he may have attended some of Boerhaave's classes. It is regrettable that Boerhaave's manuscripts do not reveal any indication of this contact; Lindeboom⁴² and Heniger⁴³ made no mention of Nicholson, Dublin or Ireland in their extensive publications on Boerhaave.

The Nicholson-Petiver correspondence ended in 1713; with its cessation, information on Nicholson's activities at Trinity College virtually ends too. Brooks and earlier historians suggested

that Nicholson continued to teach at Trinity College until 1733, when they assumed he died.⁴⁴ However, Nicholson left Dublin in 1715 and went to London, for on 1 December 1715 he was admitted as a student at the Middle Temple, one of London's famous law schools.⁴⁵ It must be concluded that he abandoned botany and returned to studying law, in which he had attempted to qualify at Oxford ten years earlier.

Nicholson's reasons for leaving Trinity College are not certain, but it may be that he was displeased that he was not being considered for the new professorship in medicine which was established in 1715; the position went to Nicholson's colleague Dr. Robert Griffith, who was lecturer in chemistry.⁴⁶ However, Nicholson did not utterly abandon science—on 5 April 1716 he was elected a Fellow of the Royal Society of London.⁴⁷ This is the last reference that can be traced to Henry Nicholson; he was not called to the English or Irish Bars and he did not return to Trinity College. He died sometime before 1721.⁴⁸

It is certain that Nicholson was not in charge of the Trinity College physic garden in 1722. However, his contacts with Bobart, Petiver and Boerhaave did enrich the garden's plant collections. On 6 July, probably 1722, Lady Dorothy Rawdon wrote to Sir John Rawdon at Moira, County Down, saying that "we were entertained a few days agoe at the Colledg and saw all the Mathemakicall Apartment. I could have spent a month amongst the Gim-cracks with pleasure. Mr. Maple desir'd me to tell you that the ground for the Physick Garden is not yet ready, and he has no desire to run the Hazard of looseing the Plants you offer him by two removes. They shew'd

me the spot of ground laid out for that purpose, which is not at all in order as yett. When 'tis prepar'd they will thankfully receive your contribution. They have gott 20 sorts of Alos [sic] from Holland, some of them the finest I ever saw and when they increase I believe you may be sure of them."⁴⁹

Lady Rawdon's remarks are most important for two reasons. They indicate that a new garden was being prepared ten years after the building of the Anatomy Theatre and the commencement of the library—surely this shows that these activities did not affect the garden Nicholson took over in 1711. They also indicate that the plant collections included rare and unusual species; that Trinity College had “20 sorts of Alos from Holland,” seven years after Nicholson departed, demonstrates that his contacts with Boerhaave were fruitful, for there were few people likely to have been able and willing to supply valuable plants of this kind. The College muniments confirm that between 1715 and 1720 the physic garden remained under active management, and that a new garden was being prepared late in 1722; in the single quarter beginning in April 1723 a total of £73 was spent “for the new garden” and other money was expended on such works as “digging y^e foundation of y^e physick garden wall.”⁵⁰

There is no mention in the College records of a Professor of Botany in charge of the garden between 1715 and 1724, nor is the reason for moving it from its original site indicated. The new physic garden was situated in a rectangular walled plot between the Anatomy Theatre and Nassau Street.¹⁵ Progress on the new garden was rapid, and the College, bestowed with a new asset, was

eager to show it off to the general public. On 8 May 1725 an advertisement appeared in the *Dublin weekly journal* stating that “The Physic Garden at Trinity College will be opened on Monday 1 June 1725, and a course of Botany will be there begun to continue every Monday, Wednesday and Friday. Tickets will be delivered at the College and at William and John Smith's Booksellers on Blind Quay.”⁵¹

Although the lecturer's name is not stated, it was certainly William Stephens, who was lecturing in the College and in charge of the physic garden, according to his own correspondence, in April 1726. A document in the College muniments may indicate that he was there as early as Christmas 1724.⁵²

William Stephens, born in 1696, was the son of Walter Stephens and was educated in Dublin.¹⁸ He was a student in natural philosophy at the University of Glasgow in January 1715,⁵³ and on 30 September 1716 enrolled in the medical faculty at Leiden.²³ He studied at Leiden for two years and successfully defended the thesis “De elixir proprietatibus . . .,” for which he was awarded his doctorate of medicine on 15 July 1718. He was promoted for his doctorate by Hermann Boerhaave, and the published thesis was dedicated to Boerhaave as well as his other patrons.²³ That Stephens was promoted by Boerhaave must indicate that he was much under Boerhaave's influence and knew him well. Stephens returned to Ireland and in 1724 obtained the degrees of bachelor and doctor of medicine from Trinity College.⁵⁴ As in Nicholson's case, these qualifications would have been necessary before Stephens could have obtained a fellowship of the King's and Queen's College of Physicians; he was

elected a fellow in 1728. He was also elected a fellow of the Royal Society of London, in 1718.⁵⁵

One of Stephens' first tasks when he became "Professor of Botany" at Trinity College was to prepare a catalogue of the plants in the physic garden. On 22 April 1726 he wrote to Thomas Dale, secretary of the Botanical Society of London, asking if the Society would like to have a copy of the catalogue. On 21 June Dale replied that the Society would "receive your catalogue with pleasure and willingly supply you as far as lies in their power with whatever you shall have occasion for." In view of the change of site in 1723, Dale's next remarks are interesting: he wrote that "altho your garden is but in its infancy att present, I entertain great hopes of seeing it shortly much superior to its neighbours under the direction of one of your learning and affection for science." Dale concluded with "hearty wishes that Botany may flourish both in your college and country."⁵⁶

The catalogue was tabled at the Society's meeting on 22 October 1726, and at the meeting on 3 December a letter was ordered to be sent to Stephens, "professor of Botany at Dublin," in which the secretary said that "with great pleasure I obey the orders of the society in sending you a parcel of seeds which they find wanting in your garden. There are some mention'd in your catalogue which are not in our garden here, & others which by the names seem to be new. I trouble you with a catalogue of them, & you will oblige the society in sending seeds of them, that they may be rais'd under our own view."⁵⁶ The letter continued by expressing hope that further lots of seeds could be sent before the following spring, and that "the news of your good success

in the teaching of our science of the improvement of the garden, will be always very acceptable to the Society." About 180 different packets of seed were sent to Dublin, including some African *Pelargonium* species, *Gleditsia triacanthos* and "Argemone mexicana."⁵⁷

Stephen's catalogue of the Dublin physic garden is extant, and as a record of plants grown in Ireland at this period is unique.⁵⁸ It is remarkably detailed, listing over 500 taxa; in the majority of cases, the full synonymy of each plant is given. It is obvious from the list that in 1726 the physic garden was thriving and, although small by Leiden's standards, had a fine collection of plants. It is difficult to summarize the catalogue, but as well as "cultivars" of such flowers as auricula, tulip, narcissus and primula, many common medicinal plants and other garden flowers were represented. Plants from outside Europe included *Mirabilis jalapa*, various "Linaria Americana," cacti (? *Opuntia* spp.), *Pelargonium* species including *P. capitatum* and *P. alchemilloides*, ten species of "Aloe Africana" and "altera varietas," and *Agave foetida*. Apart from flowering plants, ferns and fern allies were represented by *Osmunda regalis*, *Ophioglossum*, and four forms of *Equisetum* (probably representing three modern species).⁵⁹

Like his predecessor, Stephens published a book which directly related to the physic garden, and clearly demonstrated Boerhaave's influence on his students. In a letter to the London society,⁶⁰ Stephens thanked John Martyn for a copy of his *Tabulae synopticae plantarum officinalium*,⁶¹ "a work of that kind so extremely necessary that I don't see how students can readily come att a regular knowledge of plants without some such

memorandum." Stephens remarked that he had "yearly dictated something of that kind to the lads under my care since I began to teach. I am informed that it is now pyratically [sic] printing which if I find true will oblige me to think of publishing it in my own defence, otherwise [I] should have made bold with the use of your tables and have sent for a number of them . . ."62 Stephens published his lecture notes under the title *Botanical elements: Published for the use of the Botany School in the University of Dublin*.63 He made clear that he did this to "avoid the trouble of dictating yearly so many pages to the students of Botany, it being impossible to expect, that they should acquire a distinct and permanent knowledge of the method of botany, by a bare attendance upon one lecture without something farther to assist their memories."64

Stephens' book was based on Tournefort's *Institutions rei herbariae*,65 but it is not just a simple recitation of Tournefort's ideas.66 Stephens so constructed the book that by using the "tables" a student could take a hitherto unknown plant and assign it to its "proper class and range it among its congeners." He left blank pages so that users could insert "families not mentioned . . . in their proper places." In the text, he explained the method of classification used, and detailed the contemporary understanding of the functions of various plant organs; in this feature, and indeed in all his work, Stephens showed a better understanding of botany than did Nicholson. Most importantly, Stephens acknowledged that plants had male and female sexual organs; of the stamens, he stated that the "dust of a particular colour [i.e. pollen] which at certain seasons they shed is supposed to impregnate the eggs which lie at the bottom of the pistill."67

At that time few botanists would have been so confident about this; the influence of Stephens' years at Leiden under Boerhaave is evident!

On 10 June 1717, in the Jardin Royal, Paris, Sebastien Vaillant delivered his famous "Discours sur la sexualité des plantes." Vaillant was one of the first botanists to propose that plants had sexual organs, and his ideas provoked much criticism. They were not immediately accepted. The explicit language of Vaillant's "Discours"—Rousseau remarked that Vaillant "appears to have used a nomenclature [sic] pertaining to animal anatomy and physiology which could not be used freely in polite society"68—meant that it could not be published in France without risking censorship. However, through the influence of Boerhaave, Vaillant's lecture was published in Leiden in 1718, the year Stephens graduated.69 Although Boerhaave did not accept Vaillant's ideas fully, he was prepared to promote the publication of the "Discours" and, as Stearn suggested, the "responsibility of Leiden . . . extended further . . . [for] in his own teachings Boerhaave must have made several generations of students, as well as his friends in Leiden, familiar with the structure and function of the flower."70 Stephens' book is a proof that this did happen, and that Boerhaave was a stimulating teacher.

Stephens concluded *Botanical elements* with a classification of the plant kingdom; the characteristics of each "tribe" and its constituents were given in simple English statements, not in Latin as was more usual in botanical publications of the period. The manuscript catalogue was also arranged systematically according to the categories explained in *Botanical elements*.

As in the case of Nicholson, there is

no mention of Stephens in the bursar's accounts of salaries paid to fellows of Trinity College. Although he did lecture and actively manage the physic garden, it seems likely that Stephens too was personally engaged by the Professor of Physic. During his years at the College, Stephens maintained the exchange of plants begun in 1726. His generosity in sending James Sherard plants of *Euphorbia hyberna* was noted by Jacob Dillenius in *Hortus Elthamensis*.⁷⁰ Stephens also bought plants; the accounts for the second quarter of 1729 include the item "Dr Stevens [sic] for plants for the Physick garden £20."⁷¹

On 17 February 1733 "ye Provost and Fellows chose Dr. Steevens [sic] lecturer in Chymistry in ye place of Dr Smyth deceased."⁷² This ended Stephens' direct association with botany and the physic garden, for on 14 March "Dr Chemys was chosen to be Professor of Botany"⁷³ — his appointment was the first in the field of botany mentioned in the College muniments. With Stephens' move to chemistry, the influence of Leiden on botany in Trinity College ceased. Stephens, however, continued to lead an active academic life; he lectured in chemistry until his death in 1761. In 1733 he was elected president of the College of Physicians of Ireland, and he served a second term in 1744. He maintained an active medical practice and had the distinction of being the first secretary of the Dublin Society, founded in 1731.⁷⁴

Ireland has rarely been in the forefront of botanical studies; its greatest botanists have generally worked outside Ireland. In the 18th century, Irish botanical publications contained little that was entirely original, apart from those which were floristic in nature and content.⁷⁵ There-

fore it is remarkable that the physic garden of Trinity College, Dublin, should have been the first to respond to the masterful teaching and inspiration of Hermann Boerhaave and the University of Leiden.

Henry Nicholson gained, at the least, enthusiasm to revitalise a small teaching garden and to use his knowledge of European sources to enrich its collections, for surely the aloes seen by Lady Rawdon and many of the plants listed by Stephens were obtained by Nicholson or reached Dublin due to his contacts with Oxford and Leiden. In William Stephens' case, there is no catalogue to show what plants he left behind, but his contacts with London produced an exchange of seeds which should have further enriched the Dublin collections. Stephens obviously knew Boerhaave well and respected him, for his teacher's influence is shown by Stephens' assimilation of novel ideas about plant sexuality that were causing excitement and controversy in Europe and which were published in Leiden in his student days. Thus the inspiration of Boerhaave, "Communis Europae Praeceptor,"⁴² extended to the western extremity of Europe.

Note added in proof. According to a letter written to the horticulturist and publisher Samuel Hartlib by Dr. Robert Child, dated "Dublin 28th. October 1653," Dr. Benjamin Worsley and Dr. (later Sir) William Petty "are about a physick garden, & I suppose, will desire your assistance therein" (Hartlib Ms. 15/5/25: University of Sheffield). It is not known if the garden was established, nor are the reasons for the planning of a physic garden recorded, but it may have been connected, through Petty, with a fraternity of physicians which was formed in

Dublin about 1654. Even if it had only a fleeting existence, this planned physic garden indicates that there was an interest in medicinal botany among Dublin physicians 30 years before the establishment of the gardens by the Dublin Philosophical Society and Trinity College. Remarkably, it also extends the influence of Leiden, for William Petty (1623-1687) studied medicine there in 1644.

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 6. The influence of Leyden on botany in the seventeenth and eighteenth centuries. *Leidse Voordrachten* 37: 7-42. 1961.
 7. H. R. Fletcher and W. H. Brown. 1970. *The Royal Botanic Garden, Edinburgh, 1670-1970*. Edinburgh, H.M.S.O. In 1715 William Arthur, who graduated from Leiden in 1707, was appointed botanist to King George I, with charge of the Royal Physic Garden at Holyrood in Edinburgh. However, he was involved in the Jacobite plot of 1715 and possibly never fulfilled his duties.
 8. William to Thomas Molyneux, 14 June 1684; published in *Dublin Univ. Mag.* 18: 481. 1841—the original letter is now lost. See also K. T. Hoppen. 1970. *The common scientist in the seventeenth century: A study of the Dublin Philosophical Society, 1683-1708*. London, Routledge, Keagan & Paul.
 9. H. N. Clokie. 1964. *An account of the herbaria of the Department of Botany in the University of Oxford*. Oxford, University Press.
 10. Ms. Trinity College, Dublin (TCD). Register, vol. 5/1, p. 264. See also E. St. John Brooks. 1954. Henry Nicholson, first lecturer in botany and the earliest physic garden. *Hermathena* 83: 3-15.
 11. Ms. TCD. Muniments, Bursar's vouchers, P4/4/1.
 12. Ms. TCD. Muniments, Bursar's quarterly

- accounts, MUN/V 57/1, f. 90.
13. Ms. TCD. Muniments, Bursar's quarterly accounts, MUN/V 57/1, f. 234.
 14. Ms. TCD. Register, vol. 5/1, p. 431. See also Brooks, *loc. cit.*; Kirkpatrick, *op. cit.*
 15. J. Rocque. 1756. *Exact survey of the city and suburbs of Dublin*. Dublin. The Anatomy Theatre is also shown on a map of the college published in 1761 (see Fig. 1).
 16. D. E. W. Wormell. 1962. Latin verses by William Thompson spoken at the opening in 1711 of the first scientific laboratory in Trinity College, Dublin. *Hermathena* 96: 21-30. See also Brooks, *loc. cit.*
 17. Biographical information published by Kirkpatrick, *op. cit.*, by Brooks, *loc. cit.*, and copied by R. G. C. Desmond (1977. *Dictionary of British and Irish botanists and horticulturists*. London, Taylor & Francis) is confused; Kirkpatrick included at least three different Henry Nicholsons (probably including the grandfather and uncle of the Dublin botanist).
 18. G. D. Burchataell and T. V. Sadlier. 1935. *Alumni Dublinensis . . .*, ed. 2. Dublin.
 19. Nicholson's stated age on entry to Trinity College conflicts with what was reported when he entered Oxford and Leiden universities—if the latter was correct he was born *ca.* 1683. He might have given an older age on entering Trinity College, Dublin.
 20. J. Foster. 1891. *Alumni Oxoniensis*, (L-R). Oxford.
 21. A. Hearne. See C. E. Doble. 1884. Hearne's collections, volume I. *Oxford Hist. Soc.* 2: 197.
 22. *The falsehood of the new prophets manifested with their corrupt doctrines and conversations . . .* By Henry Nicholson, formerly of Trinity College, near Dublin. London, Downing. 1708. Henry Nicholson is also credited with authorship of *A conference between the Soul and Body . . .* (1705, London, Smith) but this was written by his father, Edward Nicholson; see Doble, *loc. cit.*
 23. R. W. Innes Smith. 1932. *English-speaking students of medicine at the University of Leyden*. London.
 24. *Dissertatio physico-chymica inauguralis de corpore . . .* Leiden, Elzevier. 1709. An English translation was also published: *A brief treatise of the anatomy of human bodies . . . demonstrating the circulation of the blood . . .* London. 1709.
 25. Ms. TCD. Register, vol. 5/1, p. 435. On the same day "Dr Thomas Molyneux was chosen professor of Physick . . ."
 26. Kirkpatrick, *op. cit.*
 27. *Ibid.*
 28. This is suggested by the fact that both Molyneux and Nicholson were Leiden graduates; see also note 25. It has to be remembered also that appointments in the University at that time were much less formal than at present, and botany was a very minor subject within the curriculum.
 29. Desmond, *op. cit.*; Brooks, *loc. cit.*
 30. Ms. British Library. Sloane Ms. 4065, f. 4.
 31. Ms. TCD. Muniments, Bursar's quarterly accounts, MUN/V 57/1, f. 426.
 32. Ms. TCD. Muniments, Bursar's vouchers, P4/14/19.
 33. Ms. TCD. Muniments, Bursar's quarterly accounts, MUN/V 57/1, f. 418.
 34. Ms. TCD. Muniments, Bursar's vouchers, P4/16/25.
 35. Ms. British Library. Sloane Ms. 4067, ff. 69-70. Letter dated 25 December [1711].
 36. Ms. British Library. Sloane Ms. 4065, f. 22. Letter probably written in late January 1712, or in February; see Brooks, *loc. cit.*
 37. Two editions of this appeared, which differ in their final pages; see B. Henrey. 1975. *British botanical and horticultural literature before 1800*. Oxford, University Press.
 38. Ms. British Library. Sloane Ms. 4065, ff. 37-38.
 39. H. Nicholson. 1712. *Methodus plantarum . . .* Dublin, Rhames. P. iv.
 40. M. Malpighi. 1675. *Anatome plantarum . . .* London, Martyn.
 41. Ms. British Library. Sloane Ms. 4065, f. 116. Date apparently 25 July, but Brooks gave 26 July.
 42. G. A. Lindeboom. 1968. *Herman Boerhaave, the man and his work*. London, Methuen; 1962, 1964. *Boerhaave's correspondence*. Leiden, Brill.
 43. J. Heniger. 1971. Some botanical activities of Herman Boerhaave, professor of botany and director of the botanic garden at Leiden. *Janus* 58: 1-78.
 44. Brooks, *loc. cit.*; Kirkpatrick, *op. cit.*
 45. Foster, *op. cit.* No call date is recorded, for Nicholson did not practise at the bar (Librarian, Honourable Society of the Middle Temple, *in litt.*, 2 Sept. 1980).
 46. Kirkpatrick, *op. cit.*
 47. In a letter to Petiver (Sloane Ms. 4067, f. 72) which is undated, Nicholson wrote that "I should be extremely proud to be honour'd so far as to be admitted a member of the Royal

- Society . . ."; the letter was certainly written while he was in London. Nicholson's election to the Royal Society is recorded in the Society's Journal Book Copy, f. 116 (Ms. Royal Society, London).
48. This date is derived from a "memorial of deed bearing the date 24th of Augst 1721" which was drawn up by the Rev. Edward Nicholson, in which his son Henry is described as "Doctor of Physic since deceased." A fuller account of Henry Nicholson is in preparation by the author. The "memorial of deed" is contained among unsorted papers relating to the Nicholson estate in the manuscript collection, TCD (Ms. 5827).
 49. Ms. Huntingdon Library, San Marino, California. HA 15638, f. 1a. A partial transcript of this letter is in TCD (Ms. 3741).
 50. Mss. TCD., e.g. Bursar's vouchers, P4/27/42.
 51. E. McCracken. 1979. The Botanic Garden, Trinity College, Dublin. *Gard. Hist.* 7:86-90.
 52. On 26 June 1725 P. Walker was paid for "16 cartloads of Tanners barke w^{ch} I forgot to charge along with y^e carrage y^e last Christm^s. This is over & above y^e 4 loads w^{ch} was then bestowed—upon Dr Stephans [sic]" Ms. TCD. Bursar's vouchers, P4/29/29.
 53. According to the matriculation album of the University of Glasgow, on 7 January 1715 "Gulielmus Stephens Anglo-Hibernus de Littlecot" was a student of Robert Dick, regent in Natural Philosophy (*in litt.*, 16 Sept. 1980). See Innes Smith, *op. cit.*
 54. Kirkpatrick, *op. cit.*
 55. Ms. Royal Society, London. Journal Book Copy, f. 268 (entry for 1 December 1718).
 56. Ms. Botany Library, British Museum (Natural History), London. Minute book of "Botanical Society of London, 1724-26." See P. I. Edwards. 1963. The Botanical Society (of London), 1721-1726. *Proc. Bot. Soc. Brit. Isles* 5:117-118.
 57. This list is recorded in the Minute Book of the Society; see note 56.
 58. Ms. Botany Library, British Museum (Natural History), London. The catalogue is titled "Catalogus plantarum in Horto Dublinensis," and on the fly leaf is an annotation reading, in part, "This catalogue of the plants growing in the Public Garden at Dublin was sent by Dr. William Stephens . . . the latter part . . . from page 41 to the end, is in the hand writing of Dr Stephens"—the "Public Garden" is certainly the Physic Garden of Trinity College.
 59. I hope to be able to publish a complete transcript of the catalogue later.
 60. Letter dated 6 February 1726[7]; see note 56. Although Dale signed the first letter to Stephens, dated 21 June 1726, John Martyn signed the one sent on 3 December 1726, and styled himself "Sec." (Minute Book, p. 12).
 61. J. Martyn. 1726. *Tabulae synopticae plantarum officinalium*. London.
 62. No pirated edition is known.
 63. W. Stephens. 1727. *Botanical elements* . . . Dublin, Risk, Ewing & Smith.
 64. *Ibid.*, Preface, p. [i].
 65. J. P. de Tournefort. 1700. *Institutiones rei herbariae*. Paris. See Stephens, *loc. cit.*
 66. This opinion is given in Kirkpatrick, *op. cit.*, p. 98.
 67. Stephens, *op. cit.*, p. 11.
 68. J. Rousseau. 1970. Sebastien Vaillant, an outstanding 18th century botanist. In P. Smit and R.J.C.V. ter Laage, eds. *Essays in biohistory*. Utrecht, I.A.P.T. (Regnum Vegetabile, vol. 71.) Pp. 195-228.
 69. S. Vaillant. 1718. *Sermo de structura florum* . . . Leiden. The work was published in both Latin and French versions.
 70. J. Dillenius. 1732. *Hortus Elthamensis* . . . London. P. 388. J. E. Dandy (1958. *The Sloane Herbarium*. London, British Museum) stated that Stephens

sent herbarium specimens to Petiver (now contained in H.S. 159, see Dandy, p. 216). One of these specimens is dated 18 August 1709, when Stephens would have been only 13 years old. The specimens are in a volume inscribed "Hortus siccus Americanus" and are mainly American species (A. O. Chater, *in litt.*, 21 April 1980). It is very unlikely that the person who collected these specimens was William Stephens of Dublin.

71. Ms. TCD. Bursar's quarterly accounts, MUN/V 57/2.
72. Ms. TCD. Register, vol. 5/1 (entry for 17 February). Kirkpatrick, *op. cit.*, p. 97 gives the date as 27 February.
73. Ms. TCD. Register, vol. 5/1, p. 601. See Kirkpatrick, *op. cit.*
74. H. F. Berry. 1915. *A history of the Royal Dublin Society*. London, Longman, Green & Co.
75. See, e.g., E. C. Nelson. 1979. "In the Contemplation of Vegetables"—Caleb Threlkeld (1676-1728), his life, background, and contribution to Irish botany. *J. Soc. Bibliogr. Nat. Hist.* 9: 257-273.

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