

The first British record of *Nardus stricta* L. (Poaceae)

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ABSTRACT

It is generally accepted that the first notice of *Nardus stricta* L. in Britain is due to Thomas Johnson who recorded it on Hampstead Heath in 1632. Here, I question this orthodoxy and suggest that the plant Johnson saw, and collected, on the Heath was not *N. stricta*. If so the first British record remains Johnson's but refers to his finding it on Chislehurst Common in 1633, as recounted in his revision of Gerard's *Herball* published that year. The identity of the plant from Hampstead Heath is unclear; three possibilities are considered.

KEYWORDS: Mat-grass, Thomas Johnson, Hampstead Heath.

INTRODUCTION

Nardus stricta L. (Mat-grass) is a plant of acid soils which in the south of England grows mainly on open commons and heaths. Eutrophication and habitat loss have led to an overall decline which is particularly pronounced in the districts around London where it was once common. It has, for example, totally disappeared from Hampstead Heath, where quite recently it was "still locally plentiful" (Kent 1975: 593). Since the Heath was, according to the authors most often quoted (Clarke 1900; Druce 1932; Kent 1975), the site where *N. stricta* was first recorded in Britain by Thomas Johnson (c. 1600–1644), this is a matter of some regret.

Johnson left two lists of plants on Hampstead Heath. The first, *Ericetum Hamstedianum*, comprises the second part of *Iter* (Johnson 1629) which is primarily an account of a "herborising" journey through Kent; it records 61 plants, plus a lichen, that Johnson and his companions found on the Heath on 1 August 1629, and a further ten seen in May. Johnson and his friends visited Kent again in 1632. His account of this trip, *Descriptio itineris* (Johnson 1632) includes a section, *Enumeratio plantarum in ericeto Hampstediano locisque*

vicinis crescentium, listing 96 species (and another lichen) "growing on Hampstead Heath and its neighbourhood", of which 33 repeat those in the previous list. Discounting a duplicate record of *Lactuca serriola* L. (Oswald 2000), there remain 133 probably distinct species (of which four are mosses) constituting the first British local flora. An English translation of both books (Gilmour 1972) included scientific names supplied by Francis Rose and Gilmour. In some cases they were unsure of the identity and offered a likely name. A few (see Appendix) appear to be erroneous.

Eleven species are graminiform plants, Johnson's diagnostic name being "Gramen" with a qualifying phrase. Two are *Carex*, two *Juncus*, one *Luzula*, one is *Eriophorum* and five are grasses. One of these appears in both lists with slightly different orthography: "Gram: Sparteum capillaceo folio minimum" (Johnson 1629: B3r) and "Gramen spartium capillaceo folio minimum" (Johnson 1632: 33). Rose and Gilmour interpreted the former as "Probably *Nardus stricta* L." but the latter, curiously, as "*Nardus stricta* L." without qualification. Clarke (1900: 186) and Druce (1932: 374) cited the 1632 name, not that of 1629, as the first British record of Mat-grass. In their *Flora of Middlesex* (1869: 316) Trimen and Dyer too gave Johnson's 1632 record as the first (for the county) but with a query signifying doubt about its identity. Neither Kent (1975) nor other later authors such as Fitter (1945) have expressed any doubt that the plant was *Nardus stricta*. However a careful reading of references elsewhere in Johnson's writing suggests otherwise.

JOHNSON'S ADDITIONS TO GERARD'S HERBALL

In his revised and corrected edition of John Gerard's *Herball* (Gerard 1633), Johnson referred to many of the plants he had seen in Kent and Hampstead, often adding information omitted from *Iter* and *Descriptio itineris*. In a new chapter called "Of divers other Grasses"

he described twelve grasses not mentioned in Gerard (1597); one of these is “Gramen spartium capillaceo folio minimum” whose entry (Gerard 1633: 30b) reads in part:

Vpon Hampsted heath I haue often obserued a small grasse whose longest leaues are seldome about two or three inches high, and these leaues are very greene, small, and perfectly round like the *Spartum Austriacum*, or Feather-grasse: I could neuer finde any stalke or eare vpon it: wherefore I haue brought it into the Garden to obserue it better. In the forementioned Iournall, pag.33 [ie Johnson (1632: 33)] you may finde it vnder the name of *Gramen Spartium capillaceo folio minimum*.

Clarke (1900: 186) mentions this passage. It is hardly a convincing description of *Nardus stricta*, particularly in the lack of flowers or seed which should have been present on 1 August Old Style (12 August New Style), the date of Johnson’s visit in 1629. Though “often observed” the plants were never seen with stems, and unfortunately Johnson nowhere mentions what happened to those he took into cultivation.

More compelling evidence, however, that this plant was not *Nardus stricta* is that Johnson found what undoubtedly was Mat-grass in 1633, just in time for him to describe it in the *Herball*. It is, in fact, the final entry (Gerard 1633: 1630):

In August last whiles this worke was in the Presse, and drawing to an end, I and Mr *William Broad* were at Chissel-hurst with my oft mentioned friend Mr *George Bowles*, and going ouer the heath there I obserued this small *Spartum* whose figure I here giue, and whereof you shall find mention, in the place noted under the title of the figure; but it is not there described, for that I had not seen it, nor could finde the description therof in any Author, but in Dutch, which I neither had, nor vnderstood. Now this little Matweed hath some small creeping stringy roots: on which grow somewhat thicke heads, consisting of three or foure leaues, as it were wrapt together in one skin, biggest below, and so growing smaller vpwads, as in *Schœnanth* [*Schoenus*] vntil they grow vp to the height of halfe an inch, then these rushie green leaues (whereof the longest scarce exceeds two inches) breake out of these whitish skins wherein they are wrapped, and lie along

vpon the ground, and amongst these growes vp a small grassie stalke, some handfull or better high, bending backe the top, which carries two rowes of small chaffie seeds. It is in the perfection about the beginning of August.

This is an excellent description of *Nardus stricta* and the figure Johnson refers to is an equally good illustration from L’Obel (1591), who called it “*Spartum nostras parvum*”, a name used later by Ray (1724: 393), Smith (1828: 1, 71) and others. The “place noted under the title” refers the reader back to an earlier chapter, “Of Mat-Weed” in which Johnson mentioned a plant he then knew only at second-hand (Gerard 1633: 41):

Lobell giues a figure of another smaller Rush leaued *Spartum*, with small heads, but hee hath not described it in his Latine Workes, so that I can say nothing certainly of it.

So at the time he wrote this, probably early in 1633, Johnson had not seen *Nardus stricta* but on coming across it on Chislehurst Common he recognised it and ensured that it was included in the *Herball*. He is therefore still responsible for the first British record, but in Kent, not Middlesex. The implication is that the plant he “often observed” on Hampstead Heath, and tried to grow in his garden to elucidate its identity, was not *N. stricta*.

IDENTITY OF GRAMEN SPARTIUM CAPILLACEO FOLIO MINIMUM

What then was it? Johnson’s description (Gerard 1633: 30b), the first part of which was quoted above, concludes as follows:

It may be this is that grasse which *Bauhine* set forth in his *Prodromus*. pag.11 vnder the title of *Gramen sparteum Monspeliacum capillaceo folio minimum*. I haue thought good in this place to explaine my meaning by these two names to such as are studious of plants, which may happen to light by chance (for they were not intended for publicke) vpon our Iournall, that they need not doubt of my meaning.

Even at that time this was not very helpful. Those “studious of plants” would recognise the reference to Caspar [Gaspard] Bauhin’s *Prodromus theatri botanici* (1620) in which some 600 plants were described, most of them for the first time. Seventy-three were grasses of

which Nos. 29, 30 and 31, none of them illustrated, were varieties of “Gramen sparteum capillaceo folio”, signifying a tough (literally “esparto-like”) grass with hairlike leaves: 29 is “Basiliense maius” (the greater, from Basle), 30 is “Hollandicum minus” (the lesser, from Holland); and 31 is “Monspeliacum minimum” (the smallest, from Montpellier). Bauhin’s Latin diagnosis for this last species indicates white fibrous roots, leaves about an inch long, stems slender, glabrous, three or four inches long, inflorescence short, of very small florets, reddening with age, found in fields near Montpellier in summertime. Johnson, of course, had only roots and leaves to guide him.

These names re-appear in Bauhin’s *Pinax theatri botanici*, published in 1623, a concordance of diagnostic names of great value for discerning the intentions of earlier authors. In his copy of a later printing of *Pinax* (Bauhin, 1671), now in the library of the Linnean Society, Linnaeus identified many species by adding his own binomials; for example, beside “Gramen sparteum juncifolium. Spartum nostras parvum, Lob.” Linnaeus wrote *Nardus stricta*. Unfortunately he did not annotate species Nos. 29 or 31 from *Prodromus*, though alongside 30 he wrote simply *Nardus*. In this he followed Morison (1699: 217) whose “Gramen sparteum capillaceo folio, minus”, omitting “Hollandicum”, appears to be *Nardus stricta*.

Savage (1935) made a thorough study both of Linnaeus’s annotations and of Alphonse de Candolle’s determinations of specimens in Burser’s herbarium, originally formed by Bauhin and the source of many of his diagnostic names. Savage’s interleaved copy of *Pinax*, also in the Linnean Society’s library, shows that de Candolle determined the herbarium specimens of Nos. 30 and 31 as *Aira juncea* (and neither of them as *Nardus*). Of course *A. juncea* Vill., not being native to Britain, could not be Johnson’s plant. Sir James Smith, into whose hands Linnaeus’ copy of *Pinax* passed, apparently did not examine Burser’s herbarium. Citing Dillenius (1719: 172), he identified “Gramen sparteum capillaceo folio minimum” with an even smaller plant, *Mibora minima* (L.) Desv. (Smith 1828: 1, 84). This fits the diagnosis in *Prodromus* very well and is probably the plant Bauhin intended; it is an annual of sandy ground near the coast, common enough around Montpellier but very rare in Britain and surely not to be found on Hampstead Heath, even in

the seventeenth century. Later writers, realising that Johnson’s “Gramen spartium” could not possibly be *Mibora* and perhaps unaware of de Candolle’s determinations, may have equated it by default to *Nardus stricta*.

There are a few other small grasses in the British flora of similar vegetative appearance to Johnson’s plant. One, *Aira praecox* L., was and still is present on the Heath but, having flowered in May, withers to invisibility by August so can be excluded. Three others have never been recorded in Middlesex or indeed anywhere in the London area. *Corynephorus canescens* (L.) P. Beauv. is a rare sand-dune plant like *Mibora*; it appeared in *Prodromus* as “Gramen sparteum variegatum” (Bauhin 1620: 11) and was named (as *Aira canescens*) by Linnaeus in his copy of *Pinax*. Like *Mibora*, its habitat excludes it. The other two are less easily dismissed. *Agrostis curtisii* Kerguelén grows on dry sandy heaths in south-west England, including the Bagshot Sands in Surrey less than 40 km from the same formation which caps Hampstead Heath; conceivably it could once have grown there. It flowers from June to late July and if it was as common as Johnson suggests, he should have seen its flower or seed. *Deschampsia setacea* (Huds.) Hack., a plant of peaty pool margins, is virtually restricted in southern England to a few populations in the New Forest and Surrey (Chiapella 2009) where it seems to appear erratically and is “almost impossible to find in years when it fails to flower” (Lousley 1976). But Johnson was a keen observer, and in his time there were extensive bogs and marshes on Hampstead Heath. The presence of, for example, *Drosera rotundifolia*, *Eriophorum angustifolium*, *Hydrocotyle vulgaris*, *Menyanthes trifoliata*, *Pedicularis sylvatica*, *Ranunculus sceleratus*, and *Sphagnum* sp. in his list of plants indicates habitats suitable for *D. setacea*.

These habitats also suit a plant that does not require a hypothetical extension of range, and has neither flower nor seed. The fern *Pilularia globulifera* L. has tough, filiform bright green leaves a few centimetres long and less than a millimetre in diameter that look like tufts of hair. First recorded in Britain near Petersfield in Hampshire, probably by John Goodyer who, thinking it a grass, named it “Gramen piperinum” (Merrett 1667: 57), it was once not uncommon on boggy heaths near London. Hudson (1762: 393) found it on Hampstead Heath though it is long extinct there. It is plausible that this was Johnson’s plant.

CONCLUSIONS

The plant “Gramen spartium capillaceo folio minimum” that Johnson recorded from Hampstead Heath in 1629 and 1632 was not *Nardus stricta*. Johnson did, however record *N. stricta* on Chislehurst Common in 1633. This is the first British record. The identity of the Hampstead plant is uncertain. *Agrostis curtisii* and *Deschampsia setacea* are possible but have never been recorded in Middlesex. A

more likely candidate, based on its close correspondence with Johnson’s description, a suitable habitat, and subsequent confirmation of its presence on the Heath, is *Pilularia globulifera*.

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APPENDIX

It may be useful to list some erroneous or doubtful identifications of Johnson's diagnostic names in Gilmour (1972), other than *Nardus stricta*. These, with suggested alternatives, are:

“*Filix fœmina*” [Gilmour: *Athyrium filix-femina* (L.) Roth.] *Pteridium aquilinum* (L.) Kuhn.

“*Gramen parvum marinum spica loliacea*” [Gilmour: *Agropyron pungens* (Pers.) Roem. & Schult., or the hybrid with *A. junceiforme* (*A. × acutum* auct.)] *Parapholis incurva* (L.) C. E. Hubb.

“*Quinquefolium peiræum majus*, Tab. Tormentilla facie, Ger. Pentaphyllum album, Matth. exiguum alterum, Tragi.” [Gilmour: *Potentilla reptans* L.] *Potentilla argentea* L.

“*Paronychia altera*, Dod. rutaceo folio, Lob. Alsine petræa rubra, & Paronychia, 3. Tab” [Gilmour: Possibly *Teesdalia nudicaulis* (L.) R.Br.] *Saxifraga tridactylites* L.

“*Lactuca syl. alter* odore magis visoso foliis non dissectis, *Lactuca agrestis* odore opii, Lob. Ad. *Endivia major* & I. Trag. Thesion, Ludg.” [Gilmour: *Lactuca virosa* L.] *Lactuca serriola* L. (Oswald, 2000).

“*Gramen palustre echinatum*, Lob. aculeatum, Ludg.” [Gilmour: *Carex otrubae* Podp.] *Carex viridula* Michx.

Gilmour also suggests that “*Sinapi sylvestre minus bursæ pastoris folio*, Lob. *Sinapi*. 3. Matth. an *Irio Apulus alter levifolio* *Eruca*. Col.” may, like the previous entry “*Eruca sylvestris*, Lob”, be *Diplotaxis tenuifolia* (L.) DC., but there is little evidence to support this; perhaps Johnson himself was uncertain and so gave alternative names.