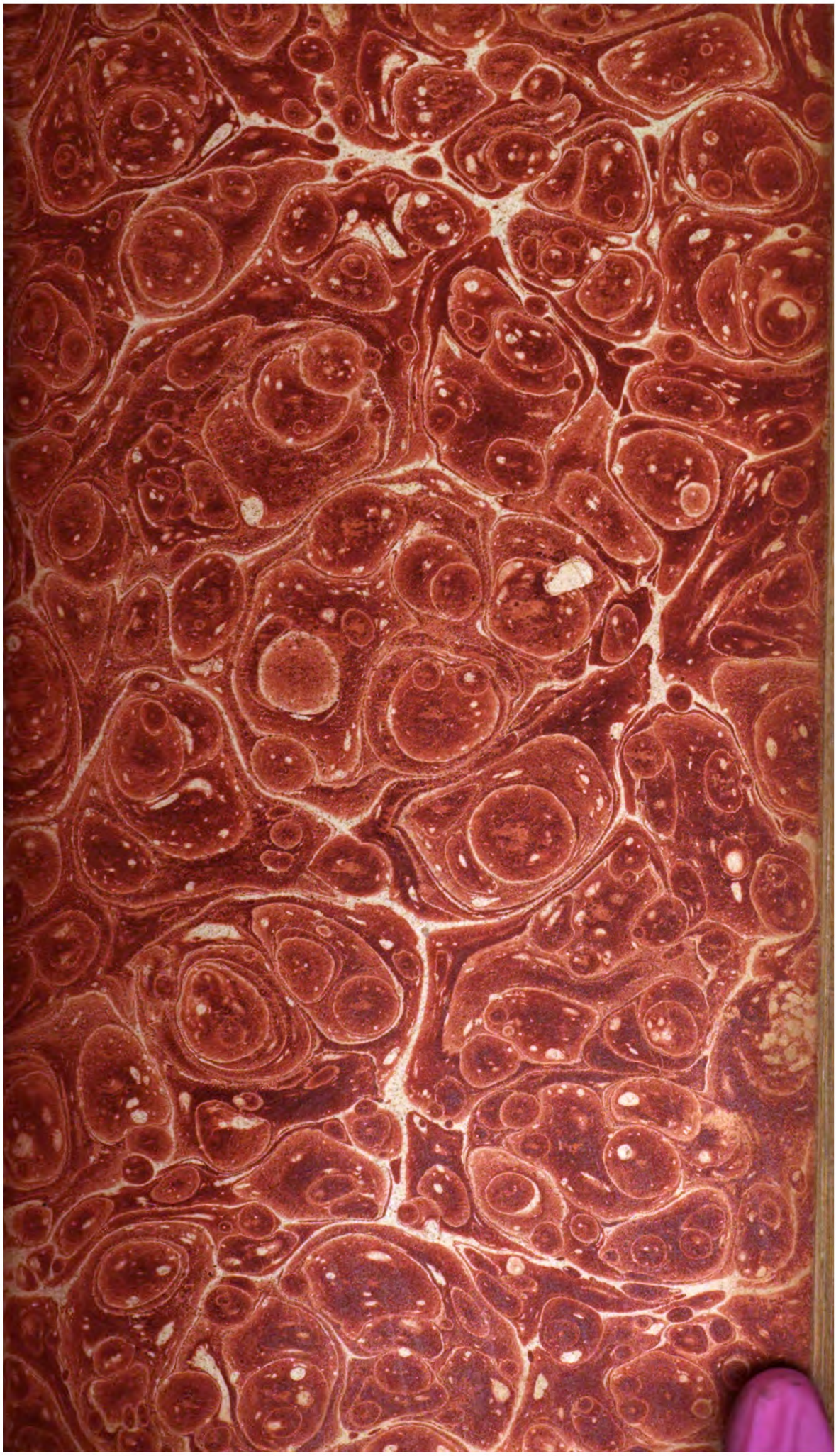
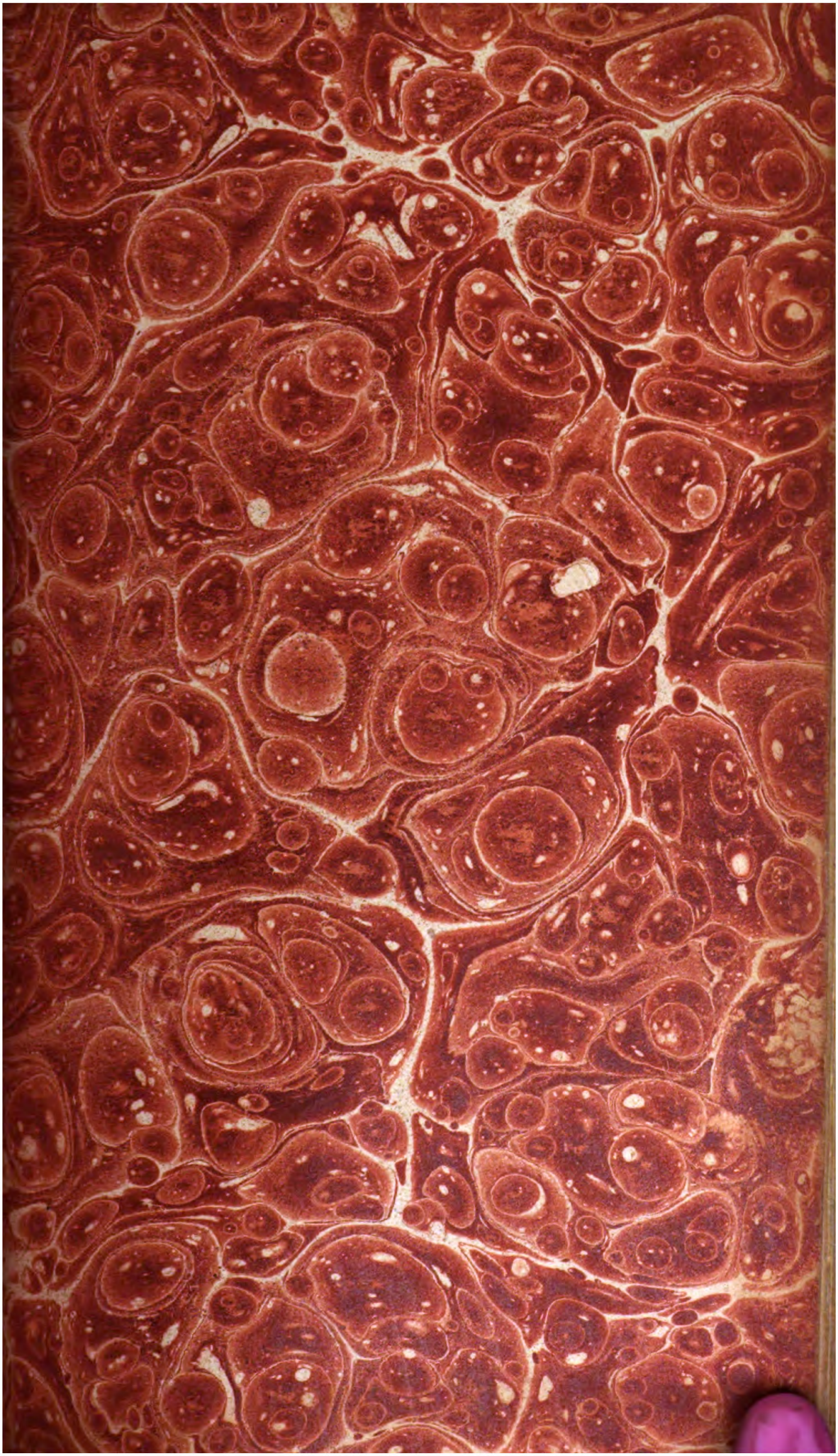




In this volume two cancel pages (viz. 402 [p. 6 in order] & 403 [p. 109 in order] are to be found. The pages so replaced are not in this copy but in the original Bodley copy (191315 d. 6, vol. 6)

C

ENGLISH BOTANY;

OR,

COLOURED FIGURES

OF

BRITISH PLANTS,

WITH THEIR

ESSENTIAL CHARACTERS, SYNONYMS, AND PLACES OF GROWTH.

TO WHICH WILL BE ADDED,

OCCASIONAL REMARKS.

BY

JAMES EDWARD SMITH, M.D. F.R.S.

MEMBER OF THE IMP. ACAD. NATURÆ CURIOSORUM, THE ACADEMIES OF STOCKHOLM, UPSAL, TURIN, LISBON, LUND, PHILADELPHIA, AND THE NAT. HIST. SOCIETY OF PARIS; PRESIDENT OF THE LINNÆAN SOCIETY.

THE FIGURES BY

JAMES SOWERBY, F.L.S.

——"VIRESQUE ACQUIRIT EUNDO."——VIRG.

VOL. II.

LONDON:

PRINTED FOR THE PROPRIETOR BY J. DAVIS,

And ſold at No. 2, Mead Place, near the Aſylum; by Meſſrs. WHITE, Fleet-ſtreet; JOHNSON, St. Paul's Church-yard; DILLY, in the Poultry; and by all Bookſellers, &c. in Town and Country.

MDCCXCIII.

ANTHOXANTHUM odoratum.

Sweet-ſcented Vernal Graſs.

DIANDRIA Digynia.

GEN. CHAR. *Cal.* a huſk of 2 valves, ſingle-flowered *Cor.* of 2 valves, awned. *Seed* 1.

SPEC. CHAR. Spike ovato-oblong. Flowers longer than their awns, ſtanding on ſhort ſtalks.

SYN. Anthoxanthum odoratum. *Linn. Sp. Pl.* 40. *Sm. Fl. Brit.* 31. *Hudſ.* 11. *With.* 58. *Hull.* 7. *Relh.* 11. *Sibth.* 18. *Abbot.* 8. *Curt. Lond. faſc.* 1. *t.* 4. *Mart. Fl. Ruſt. t.* 23.

Gramen vernum, ſpicâ brevi laxâ. *Raii Syn.* 398.

THIS is the only Britiſh graſs, except *Bromus diandrus* and *Carex atrata*, that has fewer than 3 ſtamina, by which mark it is therefore eaſily known. It grows frequently and plentifully in paſtures, flowering in May and June, and is ſuppoſed to have a principal ſhare in cauſing that delightful fragrance ſo well known in a hay-field; for when partially dried it exhales a very ſweet odour, and, even in a recent ſtate, its ſtalks if chewed are found highly aromatic, taſting not unlike thoſe of freſh lavender. It is eſteemed a good food for cattle in general, but we know of no particular experiments that have been made upon it.

Root fibrous, perennial. Stems a foot high, erect, ſimple, with one or two joints, which are often bent, leafy below. Leaves ſhort, flat, pointed, bright-green, a little hairy. Sheath long, ſwelling. Stipula lanceolate, erect, white, membranous. Spike terminal, erect, ſolitary, lanceolate, many-flowered, compound, yellowiſh in decay. Bracteæ ſmall, lanceolate. Flowers lanceolate, generally cloſed. Calyx of 2 unequal huſks, rough on the back, ſometimes hairy. Petals nearly equal, browniſh, briſtly, each bearing an awn on its back, of which the longeſt is jointed. Nectary of 2 ſmall green leaves. Stamina capillary and very long. Antheræ linear, purpliſh, ſplitting at each end. Styles long, downy.


Published by J. Sowerby.

2.

NARDUS stricta.

Mat-grass.

TRIANDRIA Monogynia.

GEN. CHAR. *Cal.* none. *Corolla* of 2 valves.

SPEC. CHAR. Spike slender, erect, the flowers all pointing one way.

SYN. Nardus stricta. *Linn. Sp. Pl.* 77. *Huds. Fl. An.* 22. *With. Bot. Arr.* 54. *Relh. Cant.* 21. *Sibth. Ox.* 33.

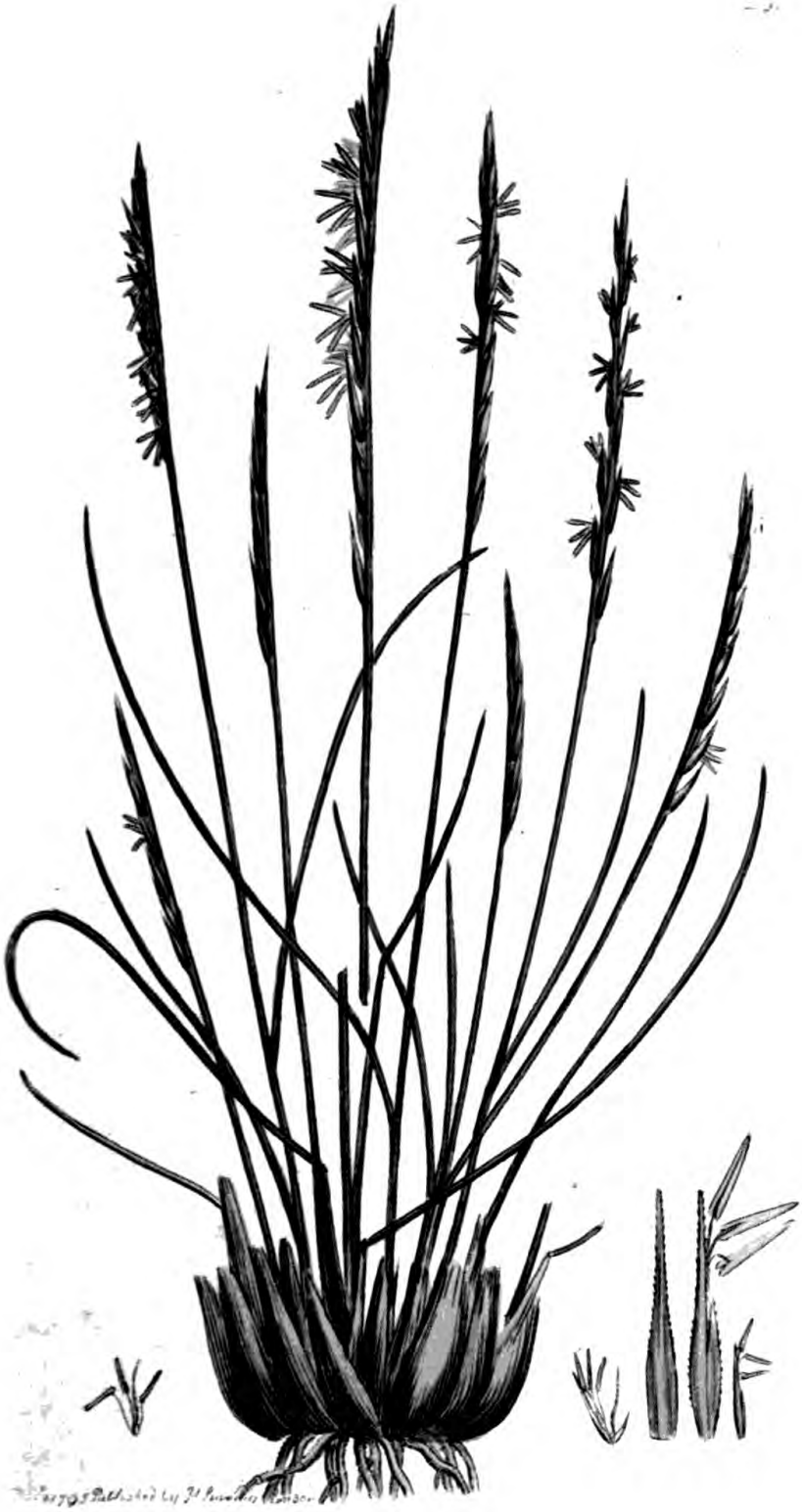
Gramen sparteum juncifolium. *Raii Syn.* 393.

THIS grass may be observed on sandy heaths in most parts of England, especially in moist or moorish spots, where it forms thick tufts of rigid rush-like leaves, which remain through winter

——— "bleaching in the northern blast."

The roots are perennial, fibrous, strong and downy. Leaves linear, very narrow, acute, striated, rough in the margin, very harsh and rigid, suddenly divaricating from their broad sheathing striated base, which envelops the bottom of the stalk, and is itself enveloped with scales externally, and crowned at the divarication with the usual stipula of grasses. Each stalk supports one leaf, and is erect, striated, rough, of the same texture and harshness as the leaves, and a little longer, bearing a very slender spike of equally slender flowers, alternately placed in two rows, but all pointing one way, though very little divaricated at any time from the stalk, and both before and after flowering clapped close to it. Valves of the calyx unequal in length, purplish and rough in the margin. Filaments a little exceeding the longest valve, tipped with nearly linear antheræ. Germen small. Style solitary, slender, downy.

The Mat-grass flowers in May, June, or later. Of its agricultural uses little can be said, for cattle in general refuse it; and though mats or baskets might be made of it, we are supplied from Spain with better grasses for those purposes, particularly *Stipa tenacissima.*



3.

PHALARIS canariensis.

Manured Canary-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 carinated equal valves, longer than the *corolla*, single-flowered.

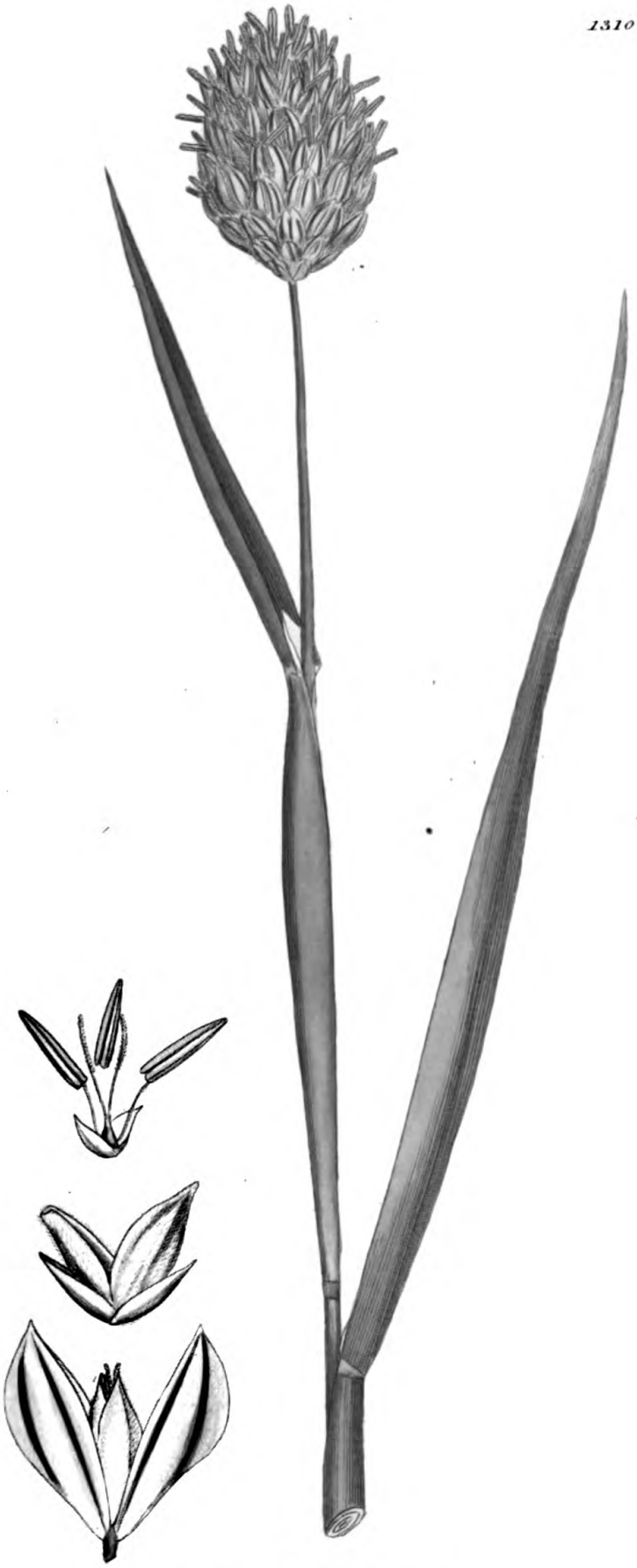
SPEC. CHAR. Panicle ovate, like a spike. Calyx-glumes boat-shaped. Corolla of four valves. Root fibrous.

SYN. Phalaris canariensis. *Linn. Sp. Pl.* 79. *Sm. Fl. Brit.* 62. *Huds.* 23. *With.* 113. *Hull.* 15. *Sibth.* 33. *Mart. Rust. t.* 17.

P. major semine albo. *Dill. in Raii Syn.* 394.

NOW naturalized in cultivated grounds, though probably not originally a native. We gathered it in Kennington fields. It is annual, flowering from June to August. Its small polished seed is well known to those who feed Canary-birds.

The root consists of several white fibres. Stems one or more, 2 feet high, striated, leafy, with brown joints. Leaves broad and acute, soft and pliable, with scarcely any roughness: their sheaths long, inflated, striated. Stipula oblong, obtuse. Spike or panicle solitary, terminal, erect, ovate, dense, compound, elegantly variegated with green and white. Calyx of 2 equal compressed glumes, dilated upward, slightly pointed, and having a very broad keel, which in our specimens is always undivided. They are all over more or less hairy. Corolla much shorter than the calyx, of 2 principal unequal downy valves, invested at their base with 2 smaller acute smooth ones, which some might call an inner calyx. Styles and Stigmas slender. Seed ovate, shining, pale yellow.



May 1. 1804. Published by Jas Sowerby, London.

4

PHALARIS arenaria.

Sea Canary-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of two carinated equal valves, longer than the corolla, fingle-flowered.

SPEC. CHAR. Spike ovato-lanceolate. Glumes ciliated. Stems feveral.

SYN. Phalaris arenaria. *Hudf. Fl. An.* 23.

Ph. phleoides β. *Ait. Hort. Kew. v.* 1. 86.

Phleum arenarium. *Linn. Sp. Pl.* 88. *With. Bot. Arr.* 62.

Gramen typhinum maritimum minus. *Raii Syn.* 398.

FOUND every where about fandy fea-fhores and the neighbouring fields; it has even been obferved upon Swaffham heath by James Crowe, Efq. and on that of Newmarket by the Rev. Mr. Hemfted, who favoured us with this fpecimen. On the fea-coaft the plant is feldom fo luxuriant. It is an annual, and flowers in June.

The root is fibrous, and downy, like the grafs laft defcribed. Stems feveral, dividing from the crown of the root or a little higher as in wheat, fometimes bent at the joints, clothed with leaves, whofe edge is a little rough, their fheaths long, inflated, ftriated and fmooth. The flower-ftalk commonly very little exceeds the uppermoft leaf, and is terminated by an upright rigid fpike, fwelling in the middle, confifting of a great number of erect thick-fet flowers. The calyx is green, with white keel ribs and margin; the valves lanceolate, gradually tapering to a fharp point, and by no means lopped or truncated as in the genus *Phleum*; their keel, and fometimes their margin, is ciliated with white hairs. Corolla of two fhort, crenated, ftriated petals.

The ciliated valves diftinguifh this plant from Phalaris phleoides of Linnæus, certainly of the fame genus, though its different habit and appearance (which we hope one day to have an opportunity of exhibiting) will not allow us to agree with the *Hortus Kewenfis* in making them the fame fpecies. Not one of our Englifh writers has well underftood thefe two graffes, nor Phleum paniculatum of Hudfon, which is very diftinct from both.

5.

PHALARIS phleoides.

Cat's-tail Canary-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 carinated equal valves, longer than the corolla, single flowered.

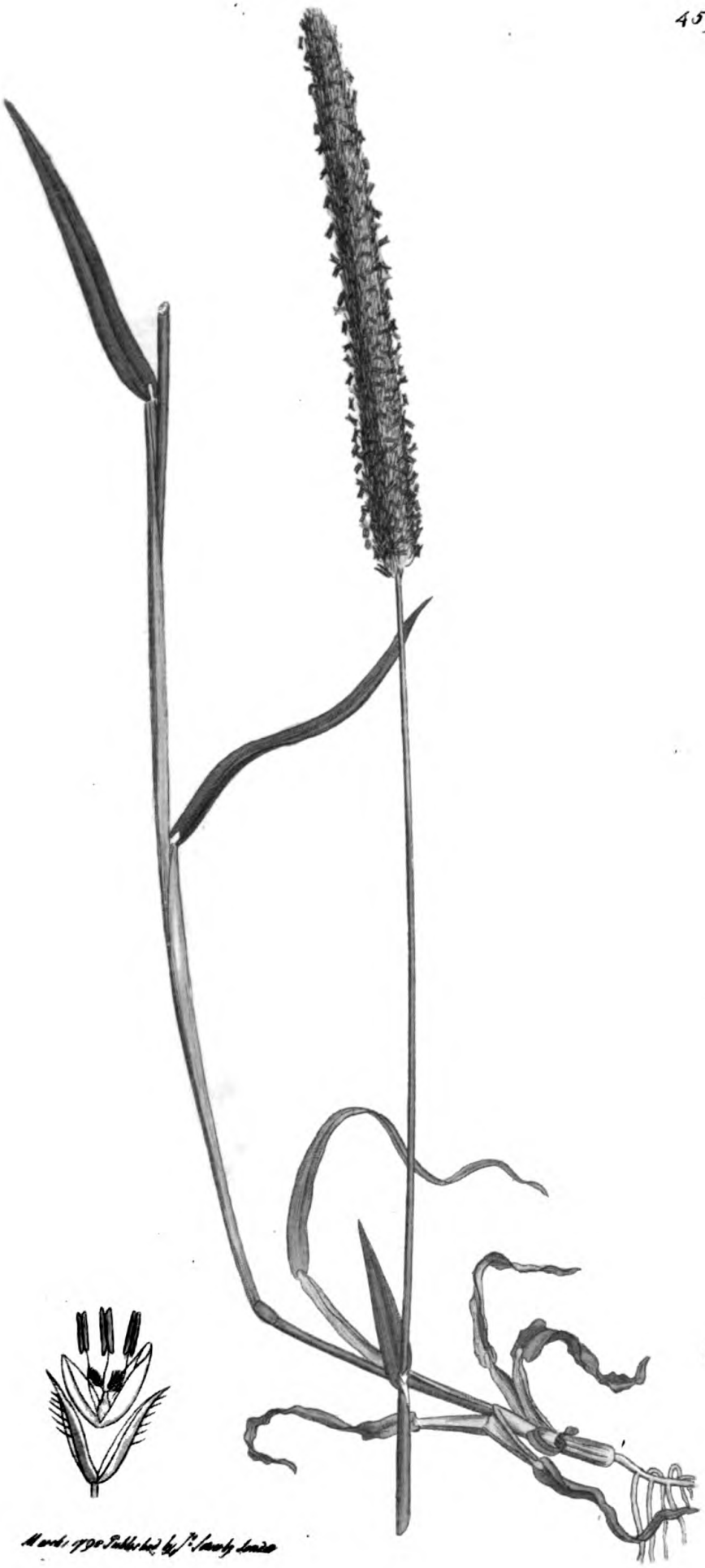
SPEC. CHAR. Panicle nearly cylindrical, in the form of a spike. Glumes linear-lanceolate, smoothish, their inner margin abrupt. Stem simple.

SYN. Phalaris phleoides. *Linn. Sp. Pl.* 80. *With.* 114. *Fl. Dan. t.* 531.

Gramen typhinum, spicâ conoide striatâ, culmo violaceo. *Barrel. Ic. t.* 21.

A NATIVE of high sandy countries, found by Mr. Crowe and Mr. Woodward on Swaffham heath in 1780; but it appears from the Banksian Herbarium that the late Mr. Lyons had previously gathered it in Cambridgeshire, though the two gentlemen above mentioned have the merit of determining it, Mr. Hudson having supposed his *Phleum paniculatum* (a very different grass) to be the *Phalaris phleoides* of Linnæus, which last he probably never saw. The Rev. Mr. Hemsted gathered this specimen on Chippenham Park wall, Cambridgeshire, flowering in July.

Root fibrous, perennial, crowned with tufts of spreading glaucous leaves which endure the winter. Straw simple, generally solitary, most leafy below, round, smooth, purple and shining above, a foot and half high. Leaves sheathing, linear-lanceolate, rough at the edge, their sheaths scarcely inflated, roughish. Panicle terminal, solitary, erect, dense, nearly cylindrical and exactly like a spike, but when bent on one side it separates into lobes or branches of several flowers each. Calyx nearly linear, somewhat constricted near the top, purplish; the valves linear-lanceolate, compressed, pointed, 3-nerved, a little divaricated at the point, and furnished with a white membranous margin which at its summit is in some degree abrupt, approaching to the structure of a *Phleum*; but this species cannot be considered as such, on account of its strict affinity to *Phalaris arenaria*, see our *t.* 222, from which it differs however, as a species, in having a perennial root, a branched or panicled spike, glumes less frequently and completely ciliated, and lanceolate (not abrupt or crenate) petals.——We regret that we have not yet been able to obtain a wild specimen of *Phleum paniculatum*, that it might have been published at the same time with this.



Mandeville Published by J. Lowry London

6.

PHALARIS arundinacea.

Reed Canary-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 carinated equal valves, single-flowered, longer than the *corolla*, which is double, the inner one hardened investing the seed.

SPEC. CHAR. Panicle upright, with spreading branches. Flowers crowded, leaning one way.

SYN. Phalaris arundinacea. *Linn. Sp. Pl.* 80. *Huds.* 23. *Abbot.* 13. *Fl. Dan. t.* 259. *Ehrh. Calam.* 51. *Schrad. Germ. v.* 1. 180. *t.* 6. *f.* 5.

Arundo colorata. *Soland. in Ait. H. Kew. v.* 1. 116. *Sm. Fl. Brit.* 147. *Knapp. t.* 98. *Hall. v.* 2. 35. *Relh.* 44.

Calamagrostis variegata. *With.* 124.

C. colorata. *Sibth.* 37.

Gramen arundinaceum acerosâ glumâ nostras. *Raii Syn.* 400.

MISLED by great authority, I have in *Fl. Brit.* referred this grass to *Arundo*, and Mr. Sowerby by mistake gave its figure in *t.* 402 for *A. epigejos*, really represented in *t.* 403. We wish to correct both errors by this new page of letterpress, and another to replace *p.* 403.

The present plant is extremely common about pools, ditches and rivers, flowering in July. A variegated kind is frequent in gardens. The root is perennial, creeping, and tufted. Stems from 2 to 5 feet high, erect, strong, reedy, smooth and leafy, with several joints. Leaves lanceolate, striated, pointed, smooth, more or less glaucous, with long, ribbed, scarcely swelling sheaths. Stipula short, bluntish. Panicle erect, branched, lobed, its branches spreading, angular and rough. Flowers crowded, leaning one way, often purplish. Calyx-glumes equal, keeled, ribbed. Inner corolla shorter than the calyx, downy; cartilaginous at length, and enfolding the seed; outer of 2 very minute linear, gibbous, hard valves, each bearing a tuft of hairs exceeding their own length.

Dr. Schrader rightly observes that the hardened permanent corolla proves this a *Phalaris*, and that what have been taken for mere tufts of hair, are really outer petals. These parts not being all represented in *t.* 402, we have inserted them in *t.* 2160, at *fig.* 2.

7.

PANICUM verticillatum.

Rough Panick-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 3 valves, fingle-flowered; the third valve very fmall. *Seed* invefted with the permanent hardened corolla.

SPEC. CHAR. Spike whorled; fpikelets in fours. Involucra of two briftles, rough with reverfed teeth, and embracing a fingle flower.

SYN. Panicum verticillatum. *Linn. Sp. Pl.* 82. *Sm. Fl. Brit.* 64. *Hudf.* 24. *With.* 114. *Hull.* 15. *Curt. Lond. fafc.* 4. *t.* 6.

Gramen paniceum, fpicâ afperâ. *Raii Syn.* 394.

FOUND occafionally in cultivated fields, particularly fuch as are fomewhat moift. We believe no place in England is fo certainly known to produce it as the neighbourhood of Batterfea, from whence this fpecimen was taken. It is merely a botanical curiofity, being an ufelefs, if not a noxious, weed to the agricul turift. It is annual, flowering in July or Auguft.

Root fibrous. Stems widely fpreading, leafy, rough above, from 6 to 24 inches high. Leaves lanceolate, harfh, very rough on the margin, pointed, with a fringed ftipula crowning the infide of their fheath. Spike folitary, terminal, erect, green with a purplifh tinge, compofed of many whorled fpikelets, four in a whorl when the plant enjoys a competent fhare of nutriment, and each confifting of feveral flowers. *Involucra* of 2 briftles to each flower, not reaching far beyond the flowers, and thefe briftles are very rough with little fharp teeth *pointing backwards*, by which curious mark this is always, in however dwarf a ftate, clearly diftinguifhable from *P. viride*, as Mr. Curtis firft obferved. For want of attention to this circumftance the plant was formerly thought a luxuriant variety of the *viride*, and I confefs myfelf to have neglected it in writing the *Flora Britannica*, having but lately difcovered in my own herbarium fpecimens of the real *verticillatum* gathered near Norwich along with the *viride*. Other botanifts have very generally fallen into the fame error.

√

8.

PANICUM viride.

Green Panick-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 3 valves, fingle-flowered; the third valve very fmall. *Seed* invefted with the permanent hardened corolla.

SPEC. CHAR. Spike cylindrical; fpikelets crowded. Involucra of feveral briftles, rough with erect teeth, and embracing two flowers.

SYN. Panicum viride. *Linn. Sp. Pl.* 83. *Sm. Fl. Brit.* 65. *Hudf.* 24. *With.* 115. *Hull.* 15. *Curt. Lond. fafc.* 4. *t.* 5.

Gramen paniceum, fpicâ fimplici lævi. *Raii Syn.* 393.

THIS is alfo a native of cultivated ground, but generally in more dry and fandy places than *P. verticillatum*, nor is it efteemed fo rare as that fpecies. We gathered it at Batterfea, and have found it about Norwich. It is annual, flowering at the fame time with the preceding, and is of as little value to the farmer.

Root fibrous. Stems fpreading, from 3 to 18 inches high, leafy, rough above. Leaves and ftipulæ much like the laft. Spike green or purplifh, compofed of fhort, crowded, irregularly-placed fpikelets, not whorled. Flowers generally in pairs, furrounded by *involucra* which greatly exceed them in length, and which are compofed of about 6 briftles, rough with *erect teeth*, not reflexed as in *P. verticillatum*, and the fame difference is obfervable in the roughnefs of the upper part of the ftem in each, fo that they can never be confounded with each other. Indeed the different lengths of the briftles will pretty certainly ferve to diftinguifh them at firft fight.

Notwithftanding the above characters, the Linnæan herbarium affords reafon to doubt whether Linnæus was well acquainted with the limits of thefe two fpecies.

875

✓

9.

PANICUM Crus-galli.

Loose Panick-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 3 valves, single-flowered; the third valve very small. *Seed* invested with the permanent hardened corolla.

SPEC. CHAR. Spike doubly compound; its stalk mostly five-angled: spikelets alternate or in pairs, subdivided. Calyx bearded, rough.

SYN. Panicum Crus-galli. *Linn. Sp. Pl.* 83. *Sm. Fl. Brit.* 65. *Hudf.* 24. *With.* 115. *Hull.* 15. *Curt. Lond. fasc.* 4. *t.* 8.

Gramen paniceum, spicâ divisâ. *Raii Syn.* 394.

GATHERED at Battersea with the two last described. They are all reckoned among our most rare British grasses. They certainly cannot easily be overlooked, especially that now before us, which flowers at the same time with the preceding, and is likewise annual.

Root fibrous. Stems strong, erect or spreading, 2 feet high or more, leafy, striated, smooth. Leaves long and broad, rough, with swelling sheaths, without stipulæ. Spikes erect, twice compound, being formed of spreading branches generally leaning to one side, standing either alternately or in pairs, and each composed of several thick-set lobed spikelets. The common spike-stalk is rough, and more or less constantly 5-angled; which however varies according to its luxuriance. Flowers nearly sessile, without involucra. Calyx ribbed, bristly, its 2 larger glumes either with or without awns, which are rough with erect teeth, and very various in length. Corolla extremely polished and even, tipped with a little point, now and then downy at the summit. A thin elliptical membrane is clapped close to the inner valve of the corolla on the outside, which Dr. Stokes (*With. ed.* 2. 55.) considers as a fourth valve of the calyx, no doubt justly, and mentions having seen it in the *viride* and some other species. We have not however been equally successful in this respect.


Published by J. Sowerby London.

PANICUM ſanguinale.

Cock's-foot Panick-graſs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 3 valves, ſingle-flowered; the third valve very ſmall. *Seed* inveſted with the permanent hardened corolla.

SPEC. CHAR. Spikes finger-like, knotty at the baſe on the inſide. Flowers in pairs, beardleſs. Sheaths of the leaves dotted.

SYN. Panicum ſanguinale. *Linn. Sp. Pl.* 84. *Sm. Fl. Brit.* 66. *Huds.* 25. *With.* 115. *Hull.* 15. *Curt. Lond. faſc.* 4. *t.* 7. *Mart. Fl. Ruſt. t.* 78.

Gramen dactylon, latiore folio. *Raii Syn.* 399.

NONE of the places of growth of this graſs mentioned by Britiſh writers is, we believe, ſo conſtantly to be depended on as Batterſea fields, from whence our ſpecimens were collected. In other parts of the kingdom it occurs but ſparingly or occaſionally, as muſt always be the caſe with ſuch annuals (eſpecially graſſes) as grow only in a rich manured ſoil.

The root is fibrous and annual, and the flowers are to be ſeen from July to the end of autumn. Stems numerous, bent and decumbent at their baſe, ſpreading widely upwards, in length from 12 to 18 inches, ſmooth. Leaves broad, nearly ſmooth, generally ſhorter than their ſheaths, which are ſtriated, and frequently (but not invariably) hairy, each hair ſpringing from a ſmall cartilaginous puncture, but all the punctures do not always produce hairs. Spikes umbellate, or a little diſtant, ſpreading, linear, their ſtalks zigzag, winged, often ſwelled or knotty at the baſe. Flowers in alternate pairs leaning one way, of a dull violet hue. Calyx of 3 very unequal ribbed valves, of which the ſmalleſt is often abortive. Corolla of 2 concave valves, which become quite horny as the ſeed ripens. Antheræ and ſtigmas dark-purple.

It is a hard coarſe graſs, of no agricultural uſe.

March 1 1801. Publish'd by Jas Sowerby, London.

PANICUM dactylon.

Creeping Panick-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 3 valves, single-flowered; the third valve very small. *Seed* invested with the permanent hardened corolla.

SPEC. CHAR. Spikes finger-like, hairy at the base on the inside. Flowers solitary. Calyx of two nearly equal valves, contrary to the corolla. Shoots creeping.

SYN. Panicum dactylon. *Linn. Sp. Pl.* 85. *Sm. Fl. Brit.* 67. *Hudf.* 25. *With.* 116. *t.* 21. *Hull.* 15. *Dickf. Dr. Pl.* 53. *H. Sicc. fasc.* 11. 1.

Gramen repens, cum paniculâ graminis Mannæ. *Raii Syn.* 399.

MR. NEWTON is handed down by Ray as the discoverer of this curious species of *Panicum* on the sandy shores between Penzance and Marketjeu, Cornwall, where it has grown copiously ever since. We are indebted to Dr. Pennick of Penzance for wild specimens. It has never been observed in any other part of Great Britain. In the north of Italy it is common in the streets of several towns.

This grass flowers in July and August, or later. The strong perennial roots are formed of hard polished runners situated horizontally in the sand, and throwing out from each joint a cluster of smooth fibres, not downy as in most grasses that inhabit loose sand. These runners are for the most part clothed with the permanent bases of the leaves, which are alternate, rigid, sharp-pointed and hairy. Stipula a tuft of hairs. Stems a span high, leafy, terminated by a cluster of 3 or 4 linear purplish umbellate spikes, whose stalks are zigzag, angular, but not winged. Flowers solitary, leaning one way. Calyx of 2 valves only; but the strict affinity between this species and *P. sanguinale* forbids us to follow Jussieu and others in making it a separate genus. Corolla certainly of 2 valves, not of one only as described by Jussieu. Those valves being contrary, not opposite, to the calyx, might go further to establish a generic character than any hitherto noticed.

March 1st 1801. Published by Jas Sowerby, London.

PHLEUM pratense.

Common Cat's-tail-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* two-valved, abrupt, pointed, sessile, longer than the corolla, single-flowered.

SPEC. CHAR. Spike cylindrical, very long. Glumes fringed at the back, longer than the awns.

SYN. Phleum pratense. *Linn. Sp. Pl.* 87. *Sm. Fl. Brit.* 68. *Hudf.* 25. *With.* 117. *Hull.* 16. *Relh.* 23. *ed.* 2. 24. *Sibth.* 34. *Abbot.* 13. *Mart. Fl. Rust. t.* 5.

Gramen typhinum majus et minus. *Raii Syn.* 398.

COMMON every where in meadows, pastures and waste ground, where its spikes may be found from June to October. The root is perennial, jointed, and more or less creeping. Stems erect, 3 or 4 feet in height, leafy, except in the upper part, striated. Leaves flat, tapering to a point, roughish to the touch, with long, striated, cylindrical sheaths, crowned by a short, blunt stipula. Spike solitary, upright, cylindrical, obtuse, composed of innumerable closely-crowded flowers, and varying from 2 to 4 or 5 inches in length. The calyx-valves are green, or purplish, with pale nerves, and a dilated, white, membranous margin, their keel fringed, their awns short and a little spreading. The corolla is ribbed with green. The antheræ hang loosely out of the flower, and are most commonly purple. In situations occasionally dried up, every part of the herb is smaller, and the joints of the root become swelled and very succulent. In this state it is the *Phleum nodosum* of Linnæus and other authors.

Professor Martyn has sufficiently shown the inutility of this grass to agriculturists: by his account, it appears to have been celebrated formerly on very slight grounds.

PHLEUM alpinum.

Alpine Cat's-tail Grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* two-valved, abrupt, pointed, feffile, longer than the corolla, fingle flowered.

SPEC. CHAR. Spike ovato-cylindrical. Ariftæ about as long as the glumes.

SYN. Phleum alpinum. *Linn. Sp. Pl.* 88. *Dickf. Tr. of Linn. Soc. v.* 2. 288. *With.* 119. *Fl. Dan. t.* 213.

FIRST difcovered by Mr. Dickfon on mountains near Garway Moor, Scotland, from whence Mr. Don and Mr. Mackay have favoured us with fpecimens. It is a truly alpine grafs, making the principal part of the turf in the moft elevated paftures of Switzerland, and probably is to be found in fimilar fituations in more parts than one of our ifland. It is perennial, and flowers about the end of July.

The root is inclined to be creeping, and a little tuberous. Stem moftly folitary, fimple, afcending, about a foot or more in height; leafy below; naked, fmooth, ftriated and very ftraight above. Leaves broadifh, fharp-pointed, rough in the margin. Stipulæ very fhort, but triangular, and lefs abrupt than in the common *Phleum pratenfe.* The fheaths of the upper leaves are inflated, and longer than the leaves themfelves. Spikes fcarcely an inch long, ovate, or nearly cylindrical, obtufe, tinged with dull purple, of which hue the ftraw, and fheaths of the leaves, moftly partake. The glumes of the calyx are ciliated with long hairs, and are a little divaricated; their keel is green. The *ariftæ* which terminate them being almoft, if not quite, as long as the glumes, diftinguifh this fpecies from the *pratenfe.* The corolla confifts of two unequal valves, of which the largeft is ribbed and bearded.

14.

PHLEUM paniculatum.

Panicled Cat's-tail-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* two-valved, abrupt, pointed, sessile, longer than the corolla, single-flowered.

SPEC. CHAR. Panicle cylindrical, resembling a spike. Glumes naked, tumid in their upper part. Stem branched.

SYN. Phleum paniculatum. *Hudf.* 26. *Sm. Fl. Brit.* 70. *With.* 117. *Hull.* 16. *Relh. Suppl.* 1. 8. *ed.* 2. 24.

Phalaris paniculata. *Ait. Hort. Kew. v.* 1. 87. *Sibth.* 34.

THE merit of making this grass known to British botanists certainly belongs to Mr. Hudson, who has given an excellent description of it, though his synonyms are all doubtful at least, and the citation of Linnæus certainly wrong. It is an annual grass occurring, but very rarely, on dry, elevated ground, flowering in July. Mr. Hudson seems to have gathered it near Bristol. Mr. Relhan has sought for it in vain himself in Cambridgeshire. In the Banksian Herbarium are specimens from Badminton park, Gloucestershire, and Mr. Dawson Turner has communicated it to us from Bedfordshire. The figure is from a garden specimen, compared with wild ones.

Root of several strong short fibres. Stems several, branched, leafy, very smooth. Leaves numerous, upright, roughish, pointed, of a grass-green, not at all glaucous, hue; investing the stem with their long, striated, somewhat swelling sheaths. Stipulæ somewhat oblong and pointed, generally torn. Panicles solitary, erect, and straight, 2 or 3 inches long, exactly resembling the dense cylindrical spike of the other species; but when bent to one side, they are found to consist of many branched lobes, forming a true panicle, which feels rough, like a file, from the short rigid awns of the flower. Calyx variegated with green and white, wedge-shaped, rough under a magnifier, of two equal wedge-shaped glumes, swelling upwards, each tipped with a short awn, and bordered on the inside with the genuine, abrupt margin of a *Phleum*. Antheræ short, whitish.

This plant, unknown to Linnæus, is the *Phalaris aspera* of Retzius, Wildenow, and the French botanists.

15.

PHLEUM Michelii.

Michelian Cat's-tail Grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2, nearly equal, sharp, taper-pointed valves, single-flowered. *Cor.* of 2 beardless valves, included in the calyx, loosely investing the seed.

SPEC. CHAR. Panicle nearly cylindrical, in the form of a spike. Glumes of the calyx lanceolate, somewhat awn-pointed, strongly fringed, and hairy.

SYN. Phleum Michelii. *Allion. Ped. v.* 2. 233. *Schrad. Germ. v.* 1. 187. *t.* 1. *f.* 2.

P. n. 1532. *Hall. Hist. v.* 2. 246.

Phalaris alpina. *Haënke in Jacq. Coll. v.* 2. 91. *Host. Gram. v.* 2. 26. *t.* 35.

Gramen typhoides alpinum, spicâ graciliori delicatâ et villosâ. *Scheuchz. Agr.* 65. *Hall. Enum.* 10. *n.* 264.

DISCOVERED by Mr. G. Don on rocky parts of the high mountains of Clova, Angusshire. His specimen agrees with authentic Austrian, Swiss and Italian ones, sent us long ago by the various authors who have mentioned this curious alpine grass, except in being less luxuriant, owing probably to its more northern, or more barren, place of growth. So rare an acquisition to our *Flora* cannot but be highly welcome. We scruple not to refer it to *Phleum*, as we have adopted the learned Schrader's improved character of *Phalaris*; see *p.* 402. given at the end of *vol.* 30. Our *t.* 222 and 459 should be transferred to *Phleum* likewise.

The root is perennial, tufted, or slightly creeping. Stems a foot or more in height, slender, smooth, erect, leafy more than half way up. Leaves flat, pointed, rough-edged; their sheaths smooth, the upper ones especially lax or inflated. Stipula short, blunt. Panicle upright, cylindrical or slightly ovate, dense, resembling a spike, various in length, green, with more or less of a purple tinge. Calyx-glumes equal, exactly lanceolate, and not abrupt at their inner edge, with sharp, rigid, often inflexed points, their keel strongly fringed, and ribs and sides rough, with white hairs. Valves of the corolla fringed also, unequal, obtuse, shorter than the calyx. Stigmas slender, and loosely feathered.

Apr 1 1831 published by Jas Sowerby London

16.

ALOPECURUS pratensis.

Meadow Fox-tail-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing a single floret. *Cor.* of 1 valve.

SPEC. CHAR. Stem erect, smooth. Spike somewhat lobed. Glumes of the calyx hairy, united at their base.

SYN. Alopecurus pratensis. *Linn. Sp. Pl.* 88. *Sm. Fl. Brit.* 72. *Hudf.* 27. *With.* 119. *Hull.* 16. *Relh.* 24. *Sibth.* 34. *Abbot.* 12. *Curt. Lond. fasc.* 5. *t.* 5. *Mart. Fl. Rust. t.* 6.

Gramen Alopecuro simile glabrum, cum pilis longiusculis in spicâ. *Raii Syn.* 396.

A VERY common and extremely valuable grass in rather moist and fertile (but neither very wet nor very dry) pastures and meadows, flowering in May; for whose properties and advantages we must refer our readers to the *Flora Londinensis*, contenting ourselves with summing up the whole in the words of Prof. Martyn. "It undoubtedly possesses the three great requisites of quantity, quality and earliness, in a superior degree to any other."

To distinguish this grass at first sight by its oblong, cylindrical, thick, somewhat silky and grayish spikes is not very difficult. It may with botanical certainty be known by the lanceolate (not abrupt) calyx, containing only one flower, whose corolla consists of *a single glume* or husk, the character of the genus. Its smooth stem, short stipulæ, and the silky down which clothes the glumes, added to its much thicker somewhat compound spike and perennial root, distinguish it from A. *agrestis*, the only species besides that has the glumes of the calyx united at their base.

I have sometimes seen a kind of *Musca* sticking in considerable numbers to the spikes of this grass, quite dead, but recent, and apparently poisoned, or killed by some sudden cause, without any derangement of its form or position. This was first I believe noticed by my intelligent entomological friend Mr. Marsham.

ALOPECURUS alpinus.

Alpine Fox-tail-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, fingle-flowered. *Cor.* of 1 acute, awned valve.

SPEC. CHAR. Stem erect, fmooth. Spike ovate. Glumes of the calyx downy, without awns, and nearly as long as the awns of the corolla.

MR. G. DONN has favoured us with this new fpecies of *Alopecurus*, difcovered by himfelf on mountains about Loch Nagore in Aberdeenfhire. We find no defcription to which it can be certainly referred, although that of Profeffor Vahl's *A. antarcticus*, fee Wildenow *Sp. Pl. v.* 1. 357, agrees in every point except the length of the *arifta*, which Vahl defcribes as twice the length of the calyx, whereas in our plant it is fcarcely at all longer than the calyx. It is not impoffible that a grafs of the Straits of Magellan fhould alfo grow on the mountains of Scotland. Unluckily we want a fpecimen to decide this point.

A. alpinus has a creeping perennial blackifh root, with many long fibres. Stem about a foot high, bent at the loweft joint, then erect, fimple, leafy, fmooth in every part. Radical leaves narrow; thofe on the ftem broader, fhort, flat, fharp-pointed, fmooth, with long and flightly inflated fheaths, crowned by very fhort ftipulæ. Spike terminal, erect, ovate, blunt, fcarcely an inch long, lobed or branched as in *A. pratenfis*. Flowers ovate. Calyx glumes united at their bafe, fomewhat abrupt at the point, purplifh, clothed with foft white hairs. Corolla of one naked glume, with an awn from its lower part, which fcarcely (if at all) exceeds the calyx in length.

Phalaris utriculata of Linnæus, and *Phleum Gerardi* of Jacquin, both moft unqueftionably belong to this genus. The former is diftinguifhed from the fpecies juft defcribed by its fmooth gibbous calyx, longer awns, and annual root; the latter by its long-awned calyx and more globular fpike.

ALOPECURUS agreſtis.

Slender Fox-tail-graſs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing a ſingle floret. *Cor.* of 1 valve.

SPEC. CHAR. Stem erect, roughiſh. Spike perfectly ſimple, taper. Glumes of the calyx nearly naked, united at their baſe, dilated at the keel.

SYN. Alopecurus agreſtis. *Linn. Sp. Pl.* 89. *Sm. Fl. Brit.* 73. *Hudſ.* 27. *With.* 119. *Hull.* 16. *Relh.* 24. *Sibth.* 35. *Abbot.* 12. *Mart. Fl. Ruſt. t.* 22.

A. myoſuroides. *Curt. Lond. faſc.* 2. *t.* 7.

Gramen myoſuroides n. 1 et 2. *Raii Syn.* 397.

A NATIVE of corn-fields and waſte ground, flowering in July, and the root is annual.

This graſs differs very materially from the Meadow Fox-tail figured in our 759th plate; for as that by its perennial duration, ſituation in meadows and paſtures, and excellent qualities for fodder, may be eſteemed one of the moſt valuable, this on the contrary is rather to be reckoned a weed, exhauſting the ſtrength of arable land to no purpoſe; for, whether it might be acceptable to cattle or not, it cannot be collected for their uſe, nor has any perſon yet thought of cultivating it as a crop.

The root is ſmall and fibrous. Stems ſeveral, about a foot and half high, erect, leafy, roughiſh to the touch, though ſcarcely to the ſight, in the upper part. Leaves pale-green, rough on the upper ſide, with an oblong downy ſtipula. Spike near 3 inches long, very ſlender and tapering, perfectly ſimple, not branched, often of a purpliſh hue. Calyx-glumes united at their baſe, a little downy at the edge, but not ſo much fringed as in *A. pratenſis*; their keel dilated. Corolla ſmooth, with an awn from its baſe.

The n. 2. of Ray appears from Buddle's Herbarium to be merely a ſtarved brown variety, from a barren ſoil.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19.

ALOPECURUS bulbosus.

Bulbous Fox-tail-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing a single floret. *Cor.* of 1 valve.

SPEC. CHAR. Stem erect. Spike simple, tapering. Glumes of the calyx distinct, downy. Root bulbous.

SYN. Alopecurus bulbosus. *Linn. Sp. Pl.* 1665. *Sm. Fl. Brit.* 73. *With.* 120. *Hull.* 16.

A. geniculatus β. *Huds.* 27.

Gramen myosuroides nodosum. *Dill. in Raii Syn.* 397. *t.* 20. *f.* 2.

THIS grass is found in salt marshes only, nor does it appear to be correctly understood by botanists in general. Hudson asserts that in watery places it becomes the *geniculatus;* but this is so far from being correct that it always grows in watery places. We have preserved it unchanged for several years in a garden by means of shade and moisture. The present specimen was gathered by Mr. Lambert near Weymouth. It is a perennial grass, and produces its flowers in July.

Root an oval solid fleshy bulb, or sometimes two bulbs one over the other. Stem solitary, simple, erect, rarely bent at one joint, leafy, slender, smooth. Leaves very narrow, smooth, with long slender sheaths, and shortish stipulæ. Spike quite simple, tapering, nearly erect, green or purplish. Calyx-glumes nearly equal, pointed but not awned, distinct at their base, furnished with soft hairs upon their keel and ribs. Corolla of one obtuse notched glume, with a bent awn from its back twice as long as the calyx.

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ALOPECURUS geniculatus.

Floating Fox-tail-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing a single floret. *Cor.* of 1 valve.

SPEC. CHAR. Stem ascending, bent at the joints. Spike somewhat compound, cylindrical. Glumes obtuse, hairy.

SYN. Alopecurus geniculatus. *Linn. Sp. Pl.* 89. *Sm. Fl. Brit.* 74. *Huds.* 27. *With.* 120. *Hull.* 16. *Relh.* 25. *Sibth.* 35. *Abbot.* 12. *Curt. Lond. fasc.* 5. *t.* 6. *Mart. Rust. t.* 97.

Gramen aquaticum geniculatum spicatum. *Raii Syn.* 396.

VERY frequent in watery situations, by the sides of ditches and ponds, and most commonly floating to a great extent upon their surfaces, flowering in July.

The root is fibrous and perennial. Stems several, various in length, smooth, branched, with many bent joints, the lowermost of which throw out numerous simple radicles when they float on the water. Leaves much broader and shorter than in the last described, smoothish, with long and somewhat inflated sheaths. Stipula oblong, very thin. Spike cylindrical, short in proportion to the stems, bluntish, branched or divisible into lobes, green or purplish. Calyx-glumes nearly equal, blunt, beardless, fringed with long hairs. Corolla very blunt, smooth, crenate, with an awn from the base which varies in length according to circumstances. Nectary none.

We have found this grass occasionally on the top of a very dry wall, in which case its leaves and stem are greatly diminished in size, and the roots become bulbous, with excessively long fibres. This seems to be what Hudson mistook for the real *A. bulbosus* figured in our last plate.

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ALOPECURUS fulvus.

Orange-spiked Fox-tail-grass.

TRIANDRIA Digynia.

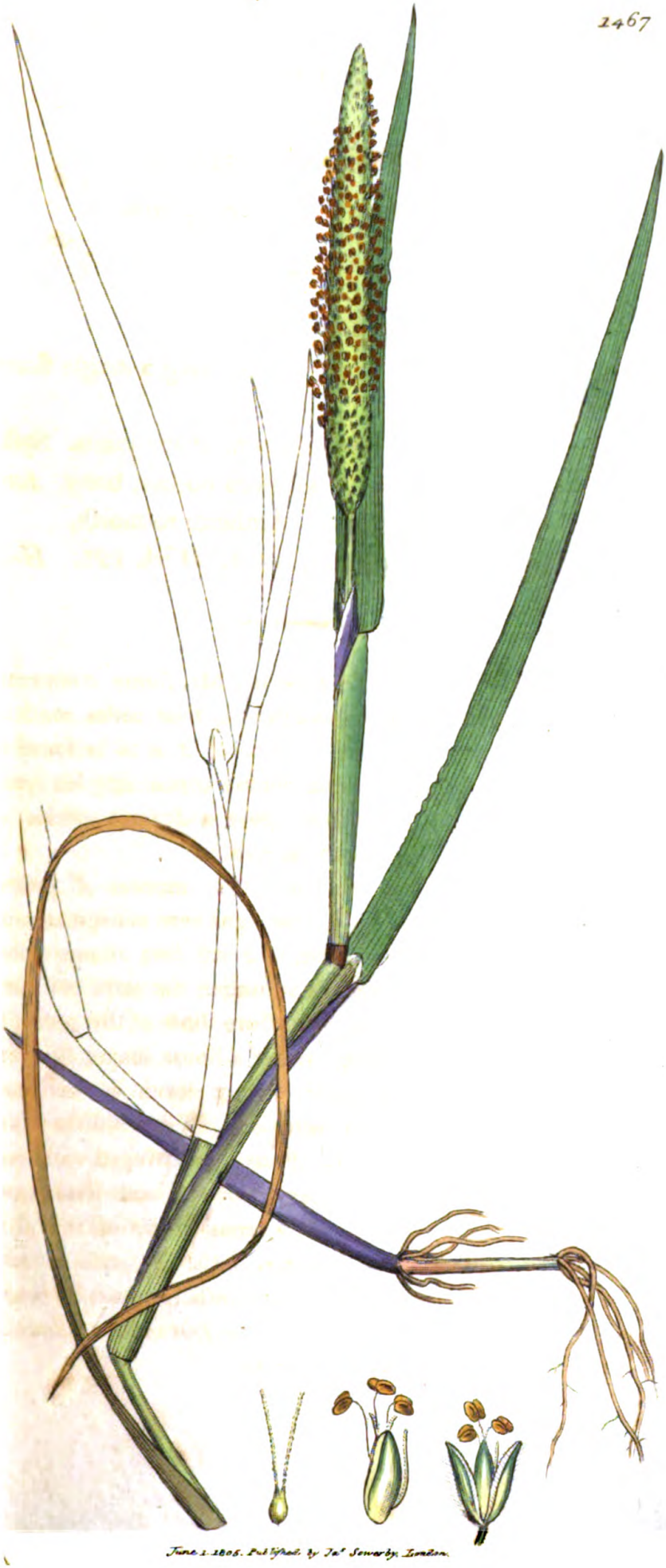
GEN. CHAR. *Cal.* of 2 valves, containing a single floret. *Cor.* of 1 valve.

SPEC. CHAR. Stem ascending, bent at the joints. Spike compound, cylindrical. Glumes obtuse, hairy. Awn the length of the calyx. Antheræ roundish.

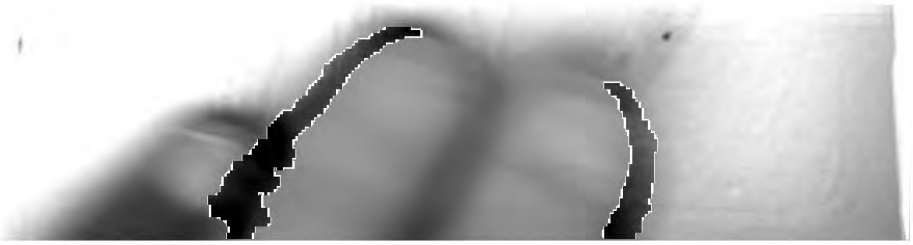
SYN. Alopecurus geniculatus, var. 4. *With.* 121. *Hull.* 16.

WE had never noticed this grass till Mr. Stone communicated it last summer from Swainsthorpe, four miles south of Norwich. The only certain mention of it is to be found in Withering, (for we have great doubts concerning his synonyms,) who suspected it might prove a distinct species, to which we assent without much hesitation.

It grows floating in the water like the common *A. geniculatus, v.* 18. *t.* 1250, but is at first sight very conspicuous on account of the length of its spike, and rich deep orange colour of its antheræ. On a close examination the parts last mentioned are totally different in form from those of the *geniculatus,* being not half so long, nor of a linear shape, but very short, thick, and almost round, deeply cloven at each end, bursting by an oval orifice at each side. When old they turn quite white. The glumes are obtuse, and fringed with very soft hairs. The awn also is peculiarly soft and slender, and not longer than the glumes. The general habit of the plant is much like that of *A. geniculatus,* but larger, and the spike more compound. The form of the antheræ must be considered as its most essential character, as their colour affords its most striking indication at a distance.



June 1. 1805. Published by Jas Sowerby, London.



KNAPPIA agroſtidea.

Early Knappia.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 obtuſe valves, ſingle-flowered, awnleſs. *Cor.* of 1 hairy, abrupt, awnleſs valve. *Flowers* alternate, on a ſerpentine *rachis.*

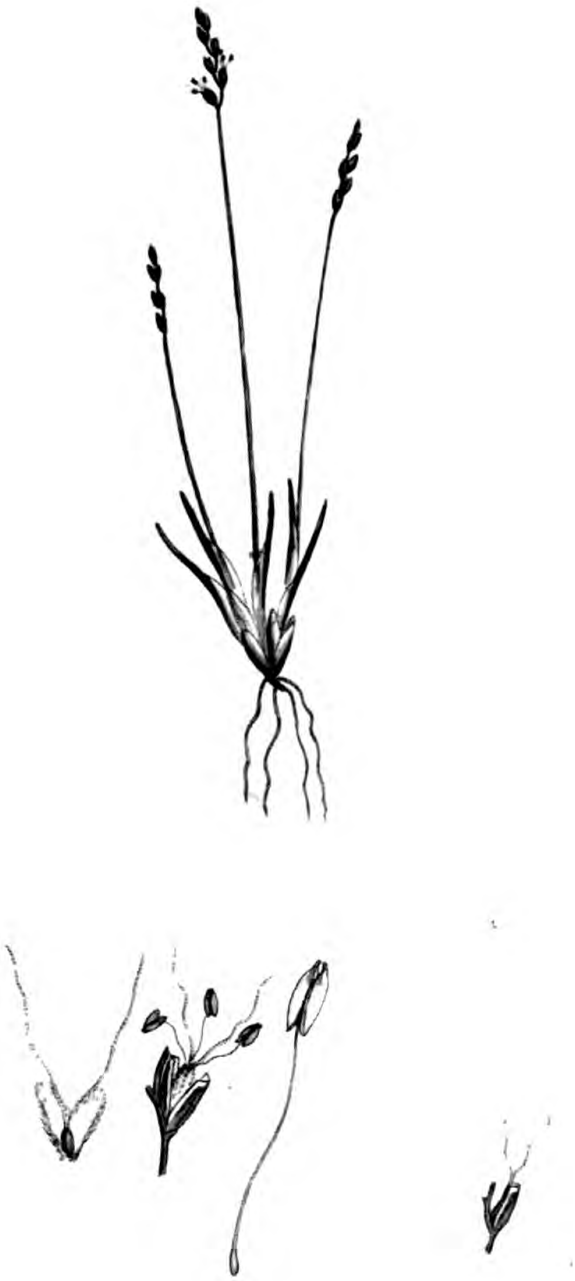
SPEC. CHAR. . . . . .

SYN. Agroſtis minima. *Linn. Sp. Pl.* 93. *Sm. Fl. Brit.* 82. *Hudſ.* 32. *With.* 134. *Hull.* 19.

Gramen minimum Anglo-Britannicum. *Raii Syn. Indic. Pl. Dub.*

THE elucidation of a new ſpecies of graſs in the foregoing page, and of a new genus in this, will we hope juſtify our publiſhing more of one tribe in the preſent number than uſual. Many botaniſts have doubted the propriety of referring the preſent plant to *Agroſtis*, and our own ſuſpicions reſpecting it have at length been confirmed by the opinion of J. L. Knapp, Eſq. F.L.S. whoſe Hiſtory of Britiſh Graſſes, now preparing for the preſs, and illuſtrated with moſt accurate figures, drawn by himſelf from every ſpecies in its native ſituation, will abundantly juſtify our giving his name to the genus we have agreed with him to eſtabliſh.

This curious little graſs very rarely occurs. It grows in ſandy maritime paſtures, flowering in March and April. The Rev. Mr. Davies, to whom we are obliged for wild ſpecimens, mentions its being frequent on the ſouth-weſt coaſt of Angleſea. The root is annual, formed of a few long ſlender fibres. Herbage ſmooth. Stems few, from 1 to 3 inches high, ſimple, ſlender, ſtraight. Leaves almoſt entirely radical, linear, channelled, blunt, enfolding the baſe of the ſtem with their membranous-edged ſheaths. Spike terminal, ſlender, compoſed of 7 or 8 ſmall flowers, alternately placed on a zigzag *rachis* or ſpike-ſtalk. Calyx of 2 equal, oblong, obtuſe, ſmooth, purpliſh glumes, with green keels. Corolla of 1 thin very hairy valve, broader upwards, and very obtuſe or abrupt at its ſummit, ſhorter than the calyx, embracing the germen and 3 ſlender ſtamina, and quite deſtitute of beard or awn. Seed elliptical.



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MILIUM effusum.

Spreading Millet-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, single-flowered, tumid. *Seed* invested with the permanent hardened corolla.

SPEC. CHAR. Flowers loosely panicled, awnless.

SYN. Milium effusum. *Linn. Sp. Pl.* 90. *Sm. Fl. Brit.* 75. *Hudf.* 29. *With.* 122. *Hull.* 17. *Relh.* 26. *Sibth.* 35. *Abbot.* 13. *Curt. Lond. fasc.* 4. *t.* 12.

Gramen miliaceum. *Raii Syn.* 402.

AN elegant grass, not unusual in moist shady places, flowering in June and July.

The root is fibrous, bearing one or more stems, and throwing out several procumbent shoots that produce radicles from their joints. Hence the plant appears to be, as Linnæus and Curtis assert, perennial; and having never cultivated it, we have no solid grounds for supporting a contrary opinion; nevertheless, several truly annual plants, as *Poa annua* and some species of *Polygonum*, do take fresh root during the summer in a similar manner, and it only remains to be examined whether these offsets of the *Milium* flower the same season with their parent or not.

The stems are erect, 2 or 3 feet high, leafy, smooth. Leaves broad, flat, roughish on the margin, and crowned with an oblong stipula. Panicle erect, lax and widely spreading, formed of several alternate fascicles of variously branched capillary flowerstalks. Flowers pale whitish green. Calyx-valves elliptical, concave, 3-ribbed, beardless, nearly equal. Corolla of the same form but smaller, smooth, nerveless, becoming at length horny, the outer valve being smaller, embracing the inner valve and the seed.

Mr. Curtis justly points out the affinity of this grass to the genus *Panicum*, and we think the generic character ought, as in that, to be founded on the hard permanent corolla.

Dec.r 1, 1802. Published by J. Sowerby, London.

MILIUM lendigerum.

Panick Millet-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, fingle-flowered, tumid. *Seed* invefted with the permanent hardened corolla.

SPEC. CHAR. Panicle clofe and fpiked. Corolla awned.

SYN. Milium lendigerum. *Linn. Sp. Pl.* 91. *Sm. Fl. Brit.* 76. *With.* 122. *Hull.* 17.

Agroftis auftralis. *Linn. Mant.* 1. 30.

A. rubra. *Hudf. ed.* 1. 26.

A. ventricofa. *Gouan. Hort.* 39. *t.* 1. *f.* 2.

Alopecurus ventricofus. *Hudf. ed.* 2. 28.

Panicum ferotinum arvenfe, fpicâ pyramidatâ. *Raii Syn.* 394.

IT is difficult to draw a line between the characters of *Milium* and *Agroftis*, nor is the Linnæan definition of the latter correct; hence there will be found in the *Fl. Brit.* a contrariety between that definition (too incautiouffly adopted) and the particular defcriptions copied from nature. If the corolla of *Agroftis* be defcribed *membranous*, inftead of "larger than the calyx," it will probably remove the difficulty. The grafs now before us Linnæus has unconfciouffly mentioned under both genera. We confider it as a *Milium*, becaufe the corolla hardens as the feed ripens, and clofely enfolds it: in the true fpecies of *Agroftis* that part continues membranous and laxly fpreading, though we muft confefs *A. Spica venti* (*t.* 951) does not correctly anfwer to this defcription, nor *A. miliacea*, which laft is furely a *Milium*.

M. lendigerum is an annual grafs, growing (though rarely) in fuch fields as are occafionally overflowed, and flowering in Auguft. Its ftem is branched, erect, leafy. Whole herb pale green, not red. Panicle upright, denfe, fpike-fhaped. Calyx fmooth, polifhed and fwelling at the bafe; tapering and rough upwards. Corolla fhort, ovate, downy, moftly awned; the inner valve narroweft and beardlefs. We know this to be the *Agroftis rubra* of Hudfon's firft edition; that of Linnæus is by no means well afcertained.

Dec.r 1 1804 Published by Ja.s Sowerby, London

25.

AGROSTIS Spica venti.

Silky Bent-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 acute valves, fingle-flowered. *Cor.* of 2 unequal valves, larger than the calyx. *Stigmas* feathery.

SPEC. CHAR. Exterior petal furnifhed with a ftraight ftiff and very long awn, inferted below the fummit. Panicle fpreading.

SYN. Agroftis Spica venti. *Linn. Sp. Pl.* 91. *Sm. Fl. Brit.* 77. *Hudf.* 30. *With.* 126. *Hull.* 18. *Relh.* 26. *Abbot.* 14.

Gramen miliaceum majus, glumis ariftatis, fpadiceis et pallidis. *Raii Syn.* 405.

GATHERED by Mr. Groult in July laft between Kennington and Camberwell. It is by no means a common grafs, but is chiefly to be looked for in fandy corn-fields that are occafionally inundated, where its ample fhining panicles, elegantly waving in the wind, betray it at a confiderable diftance.

Root annual, formed of numerous crooked fibres, peculiarly thick at their origin. Stems feveral, 2 or 3 feet high, leafy, fmooth, furnifhed with 1 or 2 joints near their bafe. Leaves often a little downy above, rough to the touch beneath. Stipula jagged. Panicle varying from 3 inches to a foot in length, the numerous branches cluftered in feveral alternate feries one above the other, their fubdivifions angular and rough. Flowers extremely numerous, fmall. Glumes greenifh-white or purplifh. Thofe of the calyx acute, rough on the keel, unequal in length, though lefs fo than in fome graffes. Outer petal notched, rough on the keel and margin, bearing on its back, below the fummit, a very long ftraight rough awn, which, as far as we know, is never wanting. The inner petal is fmooth, tender, pointed and awnlefs, but has a few fine hairs at its bafe.

√

26.

AGROSTIS canina.

Brown Bent-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 acute valves, single-flowered. *Cor.* of 2 unequal membranous valves. *Stigmas* feathery.

SPEC. CHAR. Calyx ovate, coloured, with one valve rough. Corolla naked, with a dorsal incurved awn. Stems prostrate, somewhat branched.

SYN. Agrostis canina. *Linn. Sp. Pl.* 92. *Sm. Fl. Brit.* 78. *Huds.* 30, α. *Relh.* 26. *Sibth.* 36. *Abbot.* 14. *Knapp t.* 21.
A. vinealis. *With.* 127. *Hull.* 18.

BY no means rare in damp fields, boggy places, or ditches, flowering the end of June or beginning of July.

Root perennial, creeping, its fibres downy. Stems several, forming a dense tuft, creeping and prostrate except the flowering part, which grows ascending or erect. Leaves narrow, light green, roughish on both sides. Stipula minute. Panicle upright; its branches in half whorls, rough, compound, slender. Flowers erect, ovate, shining. Calyx purple, of two nearly equal valves, the larger rough at the back. Corolla white; one valve very minute; the other scarcely so long as the calyx, cloven, bearing from near its base a brownish incurved awn, jointed in the middle, about twice as long as the valve.

We know of no agricultural use for this grass. Its herbage is trifling, but grows so as to occupy much space, and becomes dry and parched often at a very early period.

1856.

Published March 1, 1808 by James Sowerby, London.

V

27.

AGROSTIS panicea.
Bearded Bent-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 acute valves, single-flowered. *Cor.* of 2 unequal membranous valves. *Stigmas* feathery.

SPEC. CHAR. Panicle spiked, dense, lobed and subdivided. Calyx-valves linear-lanceolate, rough, with long capillary awns. Corolla with a terminal awn. Stem upright. Root fibrous.

SYN. Agrostis panicea. *Ait. Hort. Kew. v.* 1. 94.
A. triaristata. *Knapp. t.* 23.
Phleum crinitum. *Schreb. Gram.* 151. *t.* 20. *f.* 3. *Sm. Fl. Brit.* 71. *Sm. Prodr. Fl. Græc. Sibth. v.* 1. 42.
Alopecurus aristatus. *Huds.* 28.
A. monspeliensis et paniceus. *Linn. Sp. Pl.* 89, 90. *With.* 121. *Hull.* 16, 17.
A. maxima anglica. *Raii Syn.* 396.

IF any department of botany requires circumspection and frequent revision and correction, the genera of grasses are in that predicament. I submit to the opinion of Mr. Knapp, which was originally that of the great Solander, founded on the habit of this grass, and strengthened by the analogy of *Agrostis littoralis*, *v.* 18. *t.* 1251, in removing it from *Phleum* to that genus, and have hinted at the propriety of this measure in the *Prodromus Fl. Græcæ* just published. I cannot however adopt a new specific name, which applies equally well to *A. littoralis*, when a better is already in print in the *Hortus Kewensis*.

A. panicea occurs here and there in moist maritime situations. It was sent us from the northern coast of Norfolk by Mr. W. Borrer. It is annual, flowering late in the autumn, and varies much in size according to accidental circumstances. Hence Linnæus has described it twice over. The root is small and fibrous. Stems one or more, upright or ascending, very smooth, leafy. Leaves rough-edged, with long smooth sheaths. Stipula oblong, rough at the back. Panicle pale, dense, lobed and branched, of innumerable flowers, the long shining rough awns of whose calyx-valves give the whole a peculiar silky appearance. The awn of the corolla is much shorter. The calyx-valves, though acute, are cloven, owing to the insertion of the awns.

Feb. 1. 1807. Published by Jas. Sowerby, London.

AGROSTIS littoralis.

Sea-side Bent-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 acute valves, single-flowered. *Cor.* of 2 unequal membranous valves. *Stigmas* feathery.

SPEC. CHAR. Calyx-glumes linear-lanceolate, awned. Corolla smooth, with a straight nearly terminal awn. Stems decumbent.

SYN. Agrostis littoralis. *Sm. Fl. Brit.* 78. *With.* 129? *Hull.* 18? *Dicks. H. Sicc. fasc.* 16. 1.

THIS curious *Agrostis*, distinguished from all other British species by its awned calyx, was first found in salt marshes near Cley, Norfolk, by the Rev. Mr. Bryant, in company with Mr. Rose and others, so long ago as August 1777. It was sent to Sir J. Banks and Dr. Solander, the latter of whom described and named it. Some of the original specimens are now before me; but that in the annexed plate was gathered by Mr. George Jackson, in August 1803, near the powder magazine 4 miles from Woolwich. Mr. Dickson found the same on the Essex coast. Dr. Withering has been very unfortunate in his information respecting this plant, and has figured and described for it the *Phleum crinitum* of *Fl. Brit.* which some person appears to have sent him from Wells.

The root is perennial, creeping and branched. Stems decumbent at their base, with bent joints, leafy, a little branched, smooth. Leaves sharp-pointed, flat, roughish. Stipula lanceolate, entire, slightly downy. Panicle erect, dense, branched and lobed. Flower-stalks rough, capillary, erect. Calyx-glumes nearly equal, linear-lanceolate, obtuse and notched, rough on the edges and keel, purplish upward, each terminating in a straight rough awn, scarcely so long as the glume itself. Corolla of two membranous, notched, nearly equal valves, much shorter than the calyx, the outermost tipped with a straight awn, various in length. The germen is accompanied by the cloven membranous glume, found in most grasses, and called by Linnæus a nectary.

Decr. 1. 1803. Published by Jas. Sowerby. London.

J

AGROSTIS setacea.

Bristle-leaved Bent-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 acute valves, single-flowered. *Cor.* of 2 unequal membranous valves. *Stigmas* feathery.

SPEC. CHAR. Calyx lanceolate. Corolla with a bent awn from its base. Radical leaves bristle-shaped.

SYN. Agrostis setacea. *Curt. Lond. fasc.* 6. *t.* 12. *Sm. Fl. Brit.* 79.

A. alpina. *With.* 128. *Hull.* 18.

A. canina, β et γ. *Huds.* 30, 31.

A. mutabilis. *Sibth.* 36?

THE first knowledge we ever had of this grass was from the late Earl of Gainsborough, who brought it from Hampshire. Mr. Curtis mentions it as very common in the south-west counties. It grows on dry barren turfy heaths, flowering in July and August, and though probably eaten by sheep, is considered as an unimportant object of agriculture.

Root fibrous, perennial. Stem 8 to 12 inches high, spreading, straight, simple, bearing one or two leaves. Radical leaves erect, numerous, glaucous, roughish, very narrow, the margin rolled in so as to make them still narrower, and bristle-shaped: the stem leaves rather broader, especially in rich ground. Stipula oblong, white and thin, often torn. Panicle erect, lanceolate, subdivided, rough. Flowers lanceolate. Calyx-glumes very narrow, acute, nearly equal, rough, white or purplish. Corolla much shorter than the calyx, its larger valve cloven, furnished at the base with a bent rough awn, scarcely extending beyond the calyx: its lesser very minute, bearing a little tuft of hairs at the base.

July 1. 1803. Published by Ja.s Sowerby. London

J

AGROSTIS vulgaris.

Fine Bent-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 acute valves, single-flowered. *Cor.* of 2 unequal membranous valves. *Stigmas* feathery.

SPEC. CHAR. Panicle spreading; with divaricated capillary branches. Calyx-valves equal. Inner petal obtuse, half as long as the other.

SYN. Agrostis vulgaris. *With.* 132. *Sm. Fl. Brit.* 79. *Hull.* 19. *Relh.* 27. *Knapp, t.* 26 *and* 115.
A. tenuis. *Sibth.* 36.
A. capillaris. *Abbot.* 14.
A. polymorpha α. *Huds.* 31.
Gramen miliaceum locustis minimis, paniculâ ferè arundinaceâ. *Raii Syn.* 402.

THIS grass, common in July and August in pastures, fields, and on banks by road sides, was always taken for *A. capillaris* of Linnæus, till his Herbarium came amongst us. See *Pl. Ic. ex Herb. Linn. t.* 54, where the true plant of that name is figured, specimens of which from Portugal I have lately received from Sir Thomas Gage.

The root of *A. vulgaris* is perennial and somewhat creeping. Stem erect, smooth, slender, leafy. Leaves narrow, acute, roughish, with long sheaths. Stipula short and blunt. Panicle upright, purplish, well known by its very numerous, spreading, capillary, zigzag branches, variously forked and subdivided, and its little ovate shining flowers. Calyx-valves nearly equal, lanceolate, rather acute, concave, with a membranous edge. Petals very thin, greenish white; the outermost scarcely so long as the calyx, the other but half as long.

The larger petal has sometimes a dorsal awn, when the plant becomes *A. canina* of Withering, not Linnæus. When dwarf it is *A. pumila* of authors, and in that state varies with or without an awn. Sometimes the corolla is elongated after flowering, as in *A. alba, t.* 1189.

Nov. 1806. Publishd by Ja.s Sowerby London.

J

AGROSTIS stolonifera.

Creeping Bent-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 acute valves, single-flowered. *Cor.* of 2 unequal membranous valves. *Stigmas* feathery.

SPEC. CHAR. Panicle close. Stem branched, creeping. Flowers crowded. Calyx-valves lanceolate, rough.

SYN. Agrostis stolonifera. *Linn. Sp. Pl.* 93. *Sm. Fl. Brit.* 80. *With.* 131. *Hull.* 19. *Relh.* 27. *Sibth.* 36. *Abbot.* 14. *Mart. Rust. t.* 120.

A. polymorpha δ. *Huds.* 31.

Gramen montanum miliaceum minus, radice repente. *Raii Syn.* 402?

G. caninum supinum. *Ger. em.* 26.

GATHERED near Liverpool by Mr. John Shepherd, in wet situations on a clay soil near the shore of the Mersey. We have chiefly seen it in maritime situations. It flowers in July.

The roots are perennial, with downy fibres, and throw out long, procumbent, round, hard and smooth stems, which take root at all their joints, and bear numerous, broadish, pointed, ribbed leaves rough on both sides. Stipula oblong, often torn. Panicle erect, the branches crowded, short dense ones being clustered about the bases of the longer ones. Flowers linear-lanceolate. Calyx of 2 bluntish, purplish, nearly equal, valves, the outer always rough on the keel, and sometimes both of them are rough all over. Petals blunt, shorter than the calyx, unequal, generally without awns.

A small variety occurs in dry places, to which perhaps Ray's synonym may belong.

Decr 1. 1805 Published by Jas Sowerby. London.

AGROSTIS alba.

Marsh Bent-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 acute valves, single-flowered. *Cor.* of 2 unequal membranous valves. *Stigmas* feathery.

SPEC. CHAR. Panicle loose. Stem creeping. Calyx-valves equal, lanceolate, polished, rough at the keel.

SYN. Agrostis alba. *Linn. Sp. Pl.* 93. *Sm. Fl. Brit.* 81. *With.* 129. *Hull.* 18. *Relh.* 27. *Sibth.* 37. *Abbot.* 14.
A. polymorpha ζ, palustris. *Huds.* 32.
Gramen miliaceum majus, paniculâ spadiceâ, et paniculâ viridi. *Dill. in Raii Syn.* 404.
β. Agrostis sylvatica. *Huds. ed.* 1. 28. *Linn. Sp. Pl.* 1665.
Gramen miliaceum sylvestre, glumis oblongis. *Dill. in Raii Syn.* 404.

NOT rare in ditches and marshy fields. The flowers appear in July. The root is perennial. Stems several, spreading, prostrate, or floating, often throwing out fibres from their lower joints; leafy about their middle; naked and smooth above. They vary from 1 to 3 feet in length. Leaves rough, with smooth sheaths. Stipula obtuse, often torn. Panicle loose and spreading, its branches repeatedly subdivided, roughish. Flowers lanceolate, polished, either white or of a purplish brown. Calyx-valves nearly equal, acute, their keel only rough. Corolla of 2 thin unequal valves, generally (but not invariably) destitute of an awn.

A. sylvatica of Linnæus is a curious variety of this, whose corolla is greatly elongated, thickened, and almost of the texture of a leaf. The calyx also undergoes in some degree a similar change, and the lower branches of the panicle are drawn out and naked. It grows in shady places. Other species of *Agrostis* are subject to the same kind of change.

July 1. 1803. Published by Jas Sowerby. London.

A I R A criſtata.

Creſted Hair-graſs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of two valves, two-flowered. *Cor.* of two valves. *Florets* without any imperfect one between them.

SPEC. CHAR. Panicle ſpiked. Calyx longer than its flower-ſtalk. Petals ſharp-pointed, unequal.

SYN. Aira criſtata. *Linn. Sp. Pl.* 94. *Sm. Fl. Brit.* 83. *Hudſ.* 33.

Poa criſtata. *With.* 145. *Hull.* 22. *Relh.* 37. *Sibth.* 42. *Abbot.* 19.

Gramen pumilum hirſutum, ſpicâ purpureo-argenteâ molli. *Raii Syn.* 396.

IN dry calcareous barren paſtures, or on walls, but not very frequent, nor is it a graſs generally well underſtood. Mr. Salt communicated it from the wild romantic rocks of Middleton-dale, Derbyſhire. It is perennial, and flowers about July or Auguſt.

Root of many ſimple downy fibres, crowned with a thick tuft of leaves. Stems ſimple, erect, about ſix inches high, ſmooth, purpliſh, moſt leafy below. Leaves linear, ſmooth, a little rigid, with a ſhort ſtipula, and a long ſheath which is ſometimes downy. Panicle erect, denſe, reſembling a ſpike, compound, of a ſilvery green hue; its flower-ſtalks downy; the partial ones very ſhort and erect. Flowers ovato-lanceolate. Calyx for the moſt part containing two florets, rarely three, nor have I ever ſeen more. It is formed of two unequal ſlightly downy huſks, ſharp-pointed, keeled, and ribbed, with a membranous edge. Outer petals like the calyx; inner much thinner and narrower, very little ſhorter. Sometimes the points of the huſks are lengthened out into ſhort awns.

In habit this is much more like an *Aira* than a *Poa*, and indeed the number of the florets, ſcarcely ever more than two, makes it ſuch. I ſuſpect Linnæus latterly confounded another graſs with it, which has more numerous florets.

AIRA aquatica.

Water Hair-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, 2-flowered. *Cor.* of 2 valves. *Florets* without any imperfect one between them.

SPEC. CHAR. Panicle spreading. Flowers awnless, smooth, obtuse, longer than the calyx. Leaves flat.

SYN. Aira aquatica. *Linn. Sp. Pl.* 95. *Sm. Fl. Brit.* 84. *Huds.* 33. *With.* 135. *Hull.* 20. *Relh.* 28. *Sibth.* 38. *Abbot.* 15. *Curt. Lond. fasc.* 1. *t.* 5. *Knapp. t.* 29. *Ehrh. Cal.* 4.

Poa dulcis. *Salisb. Prod.* 20.

Gramen miliaceum aquaticum. *Raii Syn.* 402.

FREQUENT in ditches and about the margins of ponds and rivers, flowering in May or June.

The root is creeping, perennial, with long white shining fibres, throwing up very long, branched, leafy stems which float upon the water, their long flaccid linear leaves being, many of them, closely applied to its surface, as in *Poa fluitans, t.* 1520. The flowering part of the stem is erect, ending in a large, spreading, smooth, purple panicle, with a stoutish main stem, and numerous, unequal, slender, half-whorled branches. Calyx-leaves unequal, purple, much dilated upwards, notched or angular, one or both furnished with 3 ribs. Florets longer than the calyx, one of them on a stalk. Their glumes equal, obtuse; the outer ones 3-ribbed and somewhat plaited, smooth, beardless; the inner with 2 very prominent ribs or angles. Antheræ large, deep yellow. The flowers abound with honey.

A dwarf upright variety, not 3 inches high, was sent us from Park-gate, Cheshire, by the Rev. T. Gisborne.

Feb.y 1. 1806. Published by Jas. Sowerby, London.

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35.

AIRA cæspitosa.

Turfy Hair-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, 2-flowered. *Cor.* of 2 valves. *Florets* without any imperfect one between them.

SPEC. CHAR. Leaves flat. Panicle spreading. Petals awned, hairy at the base. Awn straight, short.

SYN. Aira cæspitosa. *Linn. Sp. Pl.* 96. *Sm. Fl. Brit.* 84. *Huds.* 34. *With.* 136. *Hull.* 20. *Relh.* 28. *Sibth.* 38. *Abbot.* 15. *Knapp. t.* 33.
Gramen miliaceum segetale majus. *Raii Syn.* 403.

NOT unfrequent in moist shady and hilly places, where it forms large tufts, flowering in June and July. It may occasionally be found about the borders of such corn-fields as are wet and shady, but not so generally as to justify the epithet *segetale*, given by the old authors, and which seems to have originated in some confusion between this grass and *Agrostis Spica-venti*, *t.* 951. Mr. Knapp however informs us that "no plant is so universal in all situations in Scotland as this *Aira*."

Root fibrous, tufted. Stems a yard high, erect, smooth, leafy, with about 2 joints. Leaves narrow, rigid and harsh, flat, but soon rolled in by drying; smooth beneath; ribbed and rough above. Stipula cloven. Panicle large and spreading, not drooping, shining, rough, brownish; pale in very shady situations. Flowers numerous and small. Calyx nearly equal, rough at the back. One floret is sessile, the other stalked, and the stalk is clothed with hairs reaching beyond the base of the floret. Corolla jagged at the top, its outer valve awned at the base.

This is a hard coarse grass, never eaten by cattle but in cases of great necessity.

May 1. 1806. Published by J. Sowerby, London.

AIRA lævigata.

Smooth-sheathed Hair-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, 2-flowered. *Cor.* of 2 valves. *Florets* without any imperfect one between them.

SPEC. CHAR. Leaves flat; with very smooth sheaths. Panicle close. Petals awned, hairy at the base. Partial stalk smooth and very short.

COMMUNICATED by Mr. George Don, who found it on the high mountains of Clova, in Angusshire, as well as at the sea-side near Dundee, and who first distinguished it from *A. cæspitosa, t.* 1453, of which Linnæus, who had the same from Lapland, thought it a viviparous variety. Mr. Borrer and Mr. Hooker have also noticed this grass on Ben Arthur by Loch Long, and other Highland mountains. According to Mr. Don's remark, it is not viviparous by the sea-side. It is perennial, flowering in May or June.

The differences observed by Mr. Don, between this plant and the *cæspitosa*, are, that it is never above half so tall, even when cultivated; and that the sheaths and backs of the leaves are remarkably smooth. The most essential difference however we find in the *rachis*, or partial stalk, which elevates one of the florets, and which is extremely short and quite smooth, though at the very base of the outer valve of the corolla there is a small tuft of hairs. In *A. cæspitosa* the whole *rachis* is hairy, and twice or thrice as long.

It is curious to observe, in the viviparous florets, the actual transformation of the glumes into leaves, evinced by the awn remaining at the top; or rather the base of the awn itself only, in the flower before us, is become leaf, while the glume seems little altered. The other glume, which had no awn, is quite changed to a leaf. The organs of impregnation are obliterated here, but in some cases they may possibly turn to leaves also.

37.

1 2

ARIA flexuosa.

Waved Mountain Hair-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, 2-flowered. *Cor.* of 2 valves. *Florets* without any imperfect one between them.

SPEC. CHAR. Leaves bristle-shaped. Stem almost naked. Panicle spreading, three-forked; its branches wavy. Awns bent.

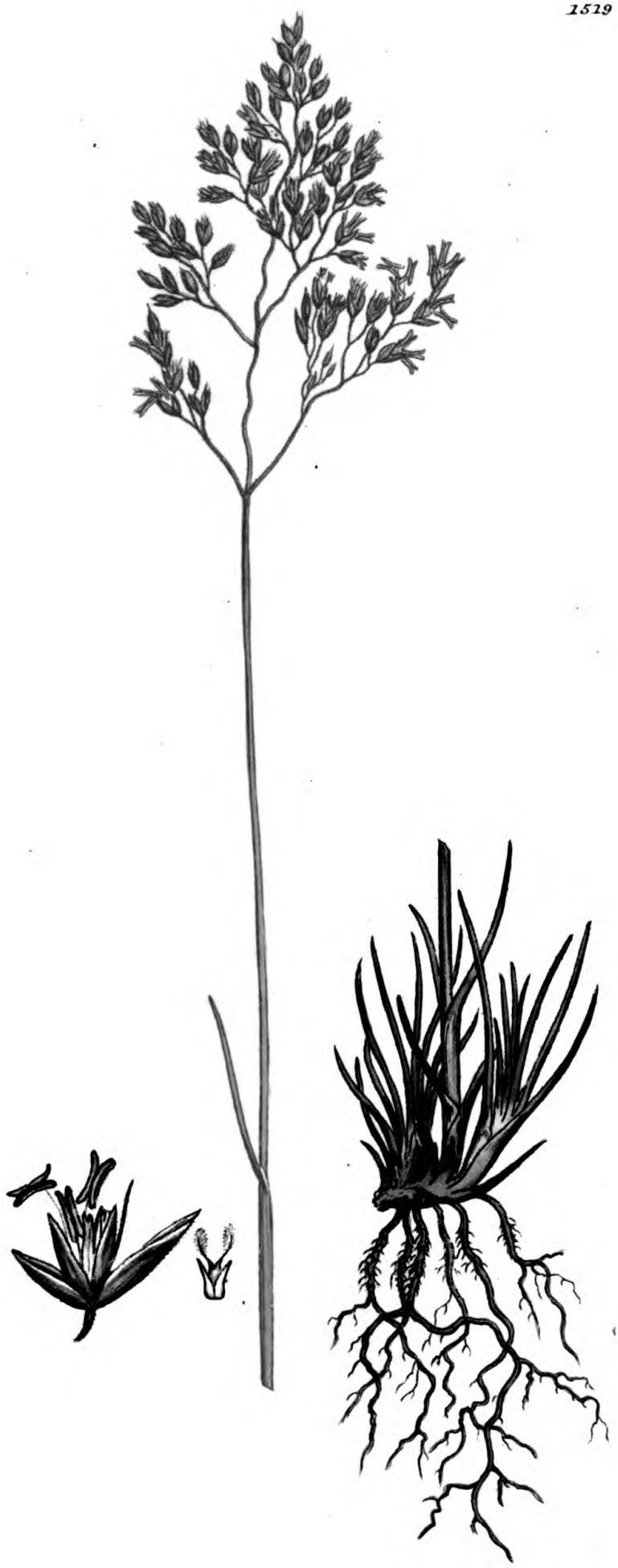
SYN. Aira flexuosa. *Linn. Sp. Pl.* 96. *Sm. Fl. Brit.* 85. *Huds.* 34. *With.* 136. *Hull.* 20. *Relh.* 29. *Sibth.* 38. *Abbot.* 15.

Gramen paniculatum, locustis parvis, purpureo-argenteis, majus et perenne. *Raii Syn.* 407.

A NATIVE of dry elevated turfy or sandy heaths in all parts of Britain, flowering in July.

The root is perennial, consisting of long fibres; and in sandy ground more especially those fibres are woolly. We have observed woolly roots to be common in grasses, whether annual or perennial, that grow in sand. Stem 12 or 18 inches high, with one knot near the base, erect, smooth, almost naked, of a brown or purplish hue. Leaves short, slender, rough-edged, with a broad sheathing purplish base. Stipula short, obtuse, cloven. Panicle loose and spreading, three-forked, rough, remarkable for its shining brown colour, and still more for its crisped or wavy branches. The flowers stand upright on straight alternate stalks. Glumes shining, variegated with brown, green, and a silvery white, all nearly equal in length, jagged at the point. Florets 2, hairy at the base, one of them a little elevated. Awns from the back of the corolla, bent and twisted when dry, rising a little above each floret.

We are almost persuaded, by the remarks of our friend Mr. Knapp, that the two varieties mentioned in *Fl. Brit.* may form a distinct species, which Hudson first described by the name of *setacea*.



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38.

AIRA canescens.

Grey Hair-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, 2-flowered. *Cor.* of 2 valves. *Florets* without any imperfect one between them.

SPEC. CHAR. Leaves slender and tapering. Stem leafy. Panicle dense. Awns swelling upwards, scarcely longer than the calyx.

SYN. Aira canescens. *Linn. Sp. Pl.* 97. *Sm. Fl. Brit.* 86. *Huds.* 36. *With.* 137. *t.* 24. *Hull.* 20. *Dicks. Dr. Pl.* 4.

Gramen miliaceum maritimum molle. *Dill. in Raii Syn.* 405.

A NATIVE of sandy pastures near the sea, but we know not that it has been found on any other than the eastern coasts. On Yarmouth Denes it abounds, as well as in similar stations on the opposite Dutch shore. It flowers in July and August, and is perennial.

The roots consist of long capillary fibres, and produce thick tufts of upright, stiff, bristle-shaped, glaucous leaves, often tinged with a purplish hue, evidently rough when examined with a microscope. Among these spring up several stems, various in height and direction, with many bent reddish joints in their slender lower part, the upper invested with the long sheaths of 2 or 3 leaves. The naked part of the stem is smooth. The stipulæ are lanceolate. The panicle is dense, erect, much branched, rather inclining to one side, of a glaucous silvery hue tinged with purple. Calyx-glumes sharp and rough, longer than the florets. Florets with a tuft of hair at their base, and one of them raised on a little stalk. Awn from the base of the outer petal, of a very singular construction, its lower half being twisted, of a tawny hue, and crowned with a tuft of minute bristles; its upper straight, white, and more or less club-shaped. The purple antheræ add much to the beauty of the panicle.

July 1 1803 Published by Ja.s Sowerby London

39.

AIRA præcox.

Early Hair-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, 2-flowered. *Cor.* of 2 valves. *Florets* without any imperfect one between them.

SPEC. CHAR. Leaves slender and tapering, with angular sheaths. Panicle spike-shaped. Florets sessile, nearly naked at their base, awned at the back.

SYN. Aira præcox. *Linn. Sp. Pl.* 97. *Sm. Fl. Brit.* 87. *Huds.* 36. *With.* 137. *Hull.* 20. *Relh.* 29. *Sibth.* 39. *Abbot.* 15. *Curt. Lond. fasc.* 3. *t.* 7. *Dicks. H. Sicc. fasc.* 4. 4.

Gramen parvum præcox, paniculâ laxâ canescente. *Raii Syn.* 407. *t.* 22. *f.* 2.

COMMON on dry gravelly ground in the spring, flowering in May or early in June, and soon after withering away.

Root fibrous, annual. Stems several, 2 or 3 inches high, straight, leafy, very smooth. Leaves bristle-shaped; the radical ones short, and soon fading; the rest furnished with long, angular, ribbed, smooth, more or less inflated, sheaths. Stipula blunt. Panicle small, erect, dense, but little subdivided. Flowers upright, shining, prettily variegated with green and white. Calyx of 2 equal glumes, rough at the back. Florets both sessile, about as long as the calyx, very slightly pubescent at their base, cloven at their summits. Awn from below the middle of each outer valve, scarcely twice as long as the calyx, jointed in the middle, its lower half purple.

The general hue of this plant is a pale green, frequently tinged with purple from exposure to much light.

It is scarcely necessary to say that this trifling grass has little to recommend it to the farmer's notice. Even Mr. Curtis is silent as to its qualities.

April 1. 1834. Published by Jas. Sowerby London.

AIRA caryophyllea.

Silver Hair-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, 2-flowered. *Cor.* of 2 valves. *Florets* without any imperfect one between them.

SPEC. CHAR. Leaves flender and tapering. Branches of the panicle ternate, fpreading. Florets feffile. Awn from the back of the corolla, twifted.

SYN. Aira caryophyllea. *Linn. Sp. Pl.* 97. *Sm. Fl. Brit.* 88. *Hudf.* 36. *With.* 138. *Hull.* 20. *Relh.* 32. *Sibth.* 39. *Abbot.* 16. *Curt. Lona. fafc.* 6. *t.* 6. *Dickf. H. Sicc. fafc.* 4. 5.

Gramen paniculatum, locuftis parvis purpuro-argenteis, annuum. *Raii Syn.* 407.

THIS pretty grafs, with its elegant filvery panicles, frequently ornaments the moft barren fandy or gravelly fields and hills, flowering about June or early in July, after which it is foon dried up, the root being annual and very fmall, little calculated to refift drought.

From one root arife feveral fpreading flender ftems about a fpan high, fmooth and leafy. The radical leaves foon wither; thofe on the ftem are narrow and tapering, with long fheaths, and lanceolate longifh ftipulæ. Panicle very flender and hair-like, divided and fubdivided in a ternate manner, fmooth and divaricated. Flowers fmall, ovate, green or purplifh, with a fhining filvery hue fcarcely to be expreffed in a drawing. Calyx-glumes rough at the keel, membranous at the point. Florets both feffile, downy at their bafe. Outer valve of the corolla bearing a twifted awn on its back, about twice its own length.

This grafs may contribute towards the early fummer food of fheep, for which reafon probably Mr. Stillingfleet figured it in his work; but it is juftly obferved in the Flora Londinenfis, that fo infignificant an annual can hardly be worth cultivating for the improvement of meadows or paftures.

Published Decr 1. 1800. by Jas. Sowerby, London.

41.

HOLCUS lanatus.

Meadow Soft-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, 2-flowered; one of the flowers with an imperfect germen. *Cor.* of 2 valves; the outer one awned.

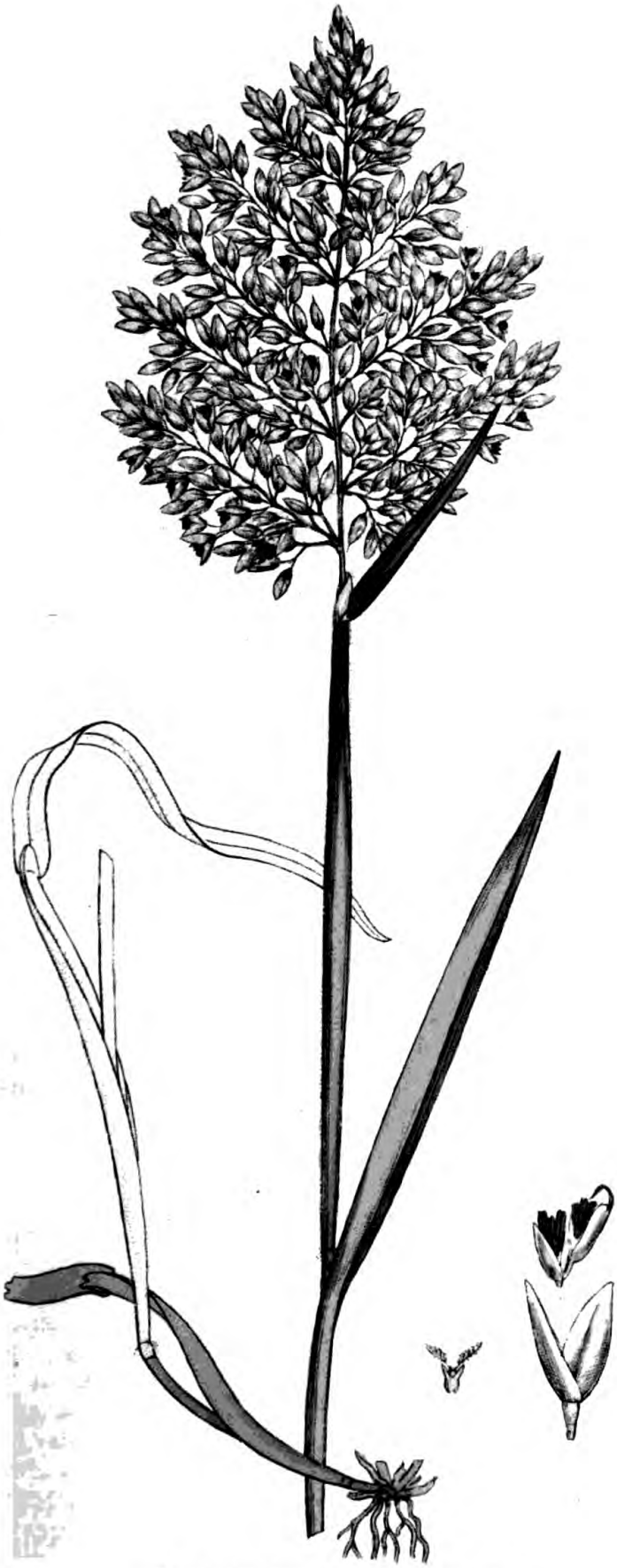
SPEC. CHAR. Calyx-glumes woolly. Hermaphrodite floret beardless: male with an arched recurved awn.

SYN. Holcus lanatus. *Linn. Sp. Pl.* 1485. *Sm. Fl. Brit.* 89. *Huds.* 440. *With.* 134. *Hull.* 225. *Relh.* 30. *Sibth.* 40. *Abbot.* 218. *Curt. Lond. fasc.* 4. *t.* 11. *Dichs. H. Sicc. fasc.* 9. 16.

Gramen miliaceum pratense molle. *Raii Syn.* 404.

FREQUENT and abundant in meadows and pastures, flowering in June and July.

The roots are perennial, tufted, not creeping. Stems several, upright, simple, leafy, round, jointed, clothed, more especially in the lower part, with dense short soft hairs pointing downward. Leaves flat, pale green, sharp-pointed, covered with soft hairs on both sides, but especially beneath. Stipula short and blunt. Panicle erect, compound, often tinged with red, particularly when it first emerges from the long sheath of the uppermost leaf. Its branches are subdivided, capillary and downy. Calyx-husks equal in length, angular, all over clothed with soft woolly down, tinged with purple, often granulated in their upper part. Florets 2 on a common little stalk; the lowermost beardless, furnished with both stamina and pistillum; the upper generally with stamina only, but its outer husk terminates in an awn scarcely projecting beyond the calyx, and when ripe curved back in an arched manner, well compared by Scheuchzer to a fish-hook. This circumstance, though admirably characteristic of the species, and particularly mentioned by the excellent observer just named, has been overlooked by Mr. Curtis and others when labouring to distinguish this grass from the following.



May 1 1803 Published by Ja.s Sowerby, London

J

HOLCUS mollis.

Creeping Soft-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, 2-flowered; one of the flowers with an imperfect germen. *Cor.* of 2 valves; the outer one awned.

SPEC. CHAR. Calyx-glumes nearly equal, partly naked. Hermaphrodite floret lowest and beardless: male with a sharply bent awn. Root creeping.

SYN. Holcus mollis. *Linn. Sp. Pl.* 1485. *Sm. Fl. Brit.* 89. *Huds.* 440. *With.* 135. *Hull.* 225. *Relh.* 30. *Sibth.* 40. *Abbot.* 217. *Curt. Lond. fasc.* 5. *t.* 8. *Dicks. H. Sicc. fasc.* 9. 17.

Gramen miliaceum aristatum molle. *Raii Syn.* 404.

THIS *Holcus* is much less frequent than the preceding, and grows in a different kind of situation, preferring shady copses and hedges. It flowers in July and is perennial, the widely creeping root indeed being very difficult of extirpation, and affording one of the most evident marks to distinguish it from *H. lanatus*. To which may be added that the *mollis* is commonly a more slender and less downy plant; its panicle smaller, but its flowers larger, distinguished by their more prominent awns, which, when fully ripe and dry, either continue projecting and nearly straight, or are bent back at a right angle, by no means arched like those of the other. For this character we must however wait in both instances till the husks are quite mature and dry.

These grasses are considered as of very little value to the farmer, especially that now before us; but we do not, with Mr. Curtis, esteem this formidable as a Couch-grass. It is not common, nor will it thrive in open land. Few botanists really know these species from each other, and we have scarcely found any one who can remember their Latin names, which must be confessed to be altogether inexpressive, and tending to puzzle rather than to assist the memory.

May 1 1803 Published by Ja.t Sowerby London.

HOLCUS avenaceus.

Oat-like Soft-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, 2-flowered; one of the flowers with an imperfect germen. *Cor.* of 2 valves; the outer one awned.

SPEC. CHAR. Calyx-glumes unequal, smooth. Hermaphrodite floret a little elevated, scarcely awned: male with a bent awn. Root knotty.

SYN. Holcus avenaceus. *Sm. Fl. Brit.* 90. *Sibth.* 40.
Avena elatior. *Linn. Sp. Pl.* 117. *Hudf.* 53. *With.* 163. *Hull.* 26. *Relh.* 48. *Abbot.* 25. *Curt. Lond. fasc.* 3. *t.* 6. *Mart. Fl. Rust. t.* 7.
Gramen nodosum, avenaceâ paniculâ. *Raii Syn.* 406.

FREQUENT in bushy places, hedges, and by road-sides, flowering in June and July.

The root is perennial, formed generally of two knots or swoln joints, one above another, throwing out downy fibres. Stem upright, 3 feet high, straight, unbranched, leafy, smooth, consisting of about 3 joints. Leaves of a darkish green, spreading, flat, rough and rather harsh. Stipula short, abrupt, minutely toothed. Panicle upright, the branches half-whorled, and consequently leaning one way, as in many grasses; the branches rough, and mostly subdivided. Calyx shorter than the corolla, and formed of 2 unequal sharp valves, rough on the keel. Male floret sessile, generally furnished with the rudiments of a germen, and always conspicuously awned; the hermaphrodite floret stands on a small foot-stalk, and its awn is very minute, almost terminal, often scarcely visible. Antheræ purplish, pendulous.

This grass has certainly a great affinity to some species of *Avena*; but the small number of its florets, and one of their germens being abortive, justify its removal to *Holcus*, with which it agrees sufficiently in other respects. We are aware what a heterogeneous assemblage there is in this genus (as well as in *Andropogon*), but that does not concern the British botanist.

✓ 44.

MELICA uniflora.

Wood Melic-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, with about 2 flowers, and the rudiment of another between them. *Cor.* of 2 valves.

SPEC. CHAR. Petals beardlefs. Panicle drooping toward one fide, branched. Flowers erect. Calyx containing only one perfect floret.

SYN. Melica uniflora. *Sm. Fl. Brit.* 91. *With.* 139. *Hull.* 21. *Relh. Suppl.* 1. 8. *Sibth.* 40. *Abbot.* 16. *Curt. Lond. fafc.* 5. *t.* 10. *Dickf. H. Sicc. fafc.* 8. 6. *Mart. Ruft. t.* 64.

M. nutans. *Hudf.* 37.

M. Lobelii. *Villars. Dauph. v.* 1. 89. *t.* 3.

Gramen avenaceum nemorenfe, glumis rarioribus ex fufco xerampelinis. *Raii Syn.* 403.

NOT uncommon in groves and thickets, where its red bloffoms, fufpended by capillary and almoft invifible ftalks, feem like infects dancing in the air. It flowers in May or early in June, and is perennial.

Root fibrous or fomewhat creeping. Stem a foot and half high, flender, leafy, rough, terminating in an elegant loofe flender compound panicle, leaning to one fide, but bearing its flowers erect. Leaves flat, green, thin, rough on the edge and back, with downy fheaths crowned by a fhort variable ftipula. Calyx of 2, rather unequal, purplifh-brown, elliptical hufks, fmooth, beardlefs and ribbed, containing only one perfect floret, generally accompanied by an imperfect one ftanding on a little ftalk, and confifting of 2 or 3 membranous hufks. Corolla of 2 elliptical, concave, ribbed valves, notched at their tips. Antheræ a little prominent, deep yellow or orange-coloured. Stigmas very feathery.

Aug. 1 1802. Published by Jas. Sowerby, London.

45.

MELICA nutans.

Mountain Melic-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, with about 2 flowers, and the rudiment of another between them. *Cor.* of 2 valves.

SPEC. CHAR. Petals beardlefs. Panicle clofe, leaning to one fide, nearly fimple. Flowers pendulous. Calyx containing two perfect florets.

SYN. Melica nutans. *Linn. Sp. Pl.* 98. *Sm. Fl. Brit.* 92. *With.* 138. *Hull.* 21. *Dickf. H. Sicc. fafc.* 8. 5. *Curt. Lond. fafc.* 6. *t.* 4. *Mart. Ruft. t.* 65.

M. montana. *Hudf.* 37.

Gramen avenaceum, locuftis rubris, montanum. *Raii Syn.* 403.

THE real *Melica nutans* is a much more rare plant than the fpecies in our laft plate, and is only found in mountainous woods in the north of England; nor does it feem, by Lightfoot's account, to be general in Scotland, this being what he mentions, *p.* 96, as a variety of the common fpecies. They are however moft unqueftionably diftinct. The grafs of which we are now treating flowers rather later than the other; its ftem is more angular, its leaves narrower; but it is fufficiently marked by the almoft perfectly fimple panicle or fpike, and the pendulous flowers, each of which confifts of two perfect and fertile florets, befides the rudiments of two abortive ones.

Aug.1.1802. Published by Jas Sowerby, London.

46.

MELICA cærulea.

Purple Melic-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, with about 2 flowers, and the rudiment of another between them. *Cor.* of 2 valves.

SPEC. CHAR. Petals acute, beardlefs. Panicle denfe. Flowers erect, cylindrical.

SYN. Melica cærulea. *Linn. Mant.* 2. 325. *Sm. Fl. Brit.* 93. *With.* 139. *Hull.* 21. *Relh.* 32. *Sibth.* 39. *Abbot.* 16. *Curt. Lond. fafc.* 5. *t.* 11.

Aira cærulea. *Linn. Sp. Pl.* 95. *Hudf.* 33.

Gramen pratenfe ferotinum, paniculâ longâ purpurafcente. *Raii Syn.* 404.

FREQUENT in the moft barren fandy boggy places, efpecially about pools upon mountainous heaths, flowering in Auguft, and varying in height from 6 to 18 inches, according to the nourifhment it meets with.

Root perennial, of many ftrong fibres. Whole herb harfh, rigid, rather glaucous. Stems with a fort of bulb at their bafe, and one joint a little above it. Leaves upright, fharp-pointed, ftriated, entire, often hairy on the upper furface. Stipulæ of a few hairs at the top of the fheath. Panicle oblong, erect, of a violet hue, branched, but not fpreading. Flowers erect, fmooth; their glumes deeply furrowed, beardlefs. Stamina very flender. Antheræ and ftigmas deep purple. One floret is feffile, the other raifed on a ftalk, which is generally extended above it, and bears one or two imperfect florets befides; but this being not always the cafe, Linnæus and others have formerly referred this grafs to *Aira*. In fhady places the panicle is pale or whitifh.

SESLERIA cærulea.

Blue Moor-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing about 3 florets. *Cor.* of 2 valves; the inner cloven; the outer (mostly) with 3 teeth. *Styles* united at their base.

SPEC. CHAR. Spike ovate-oblong, imbricated. Bracteas alternate. Outer petals with three teeth.

SYN. Sesleria cærulea. *Scop. Carn. ed.* 2. *v.* 1. 63. *Sm. Fl. Brit.* 94. *With.* 140. *Hull.* 21. *Knapp. t.* 43.

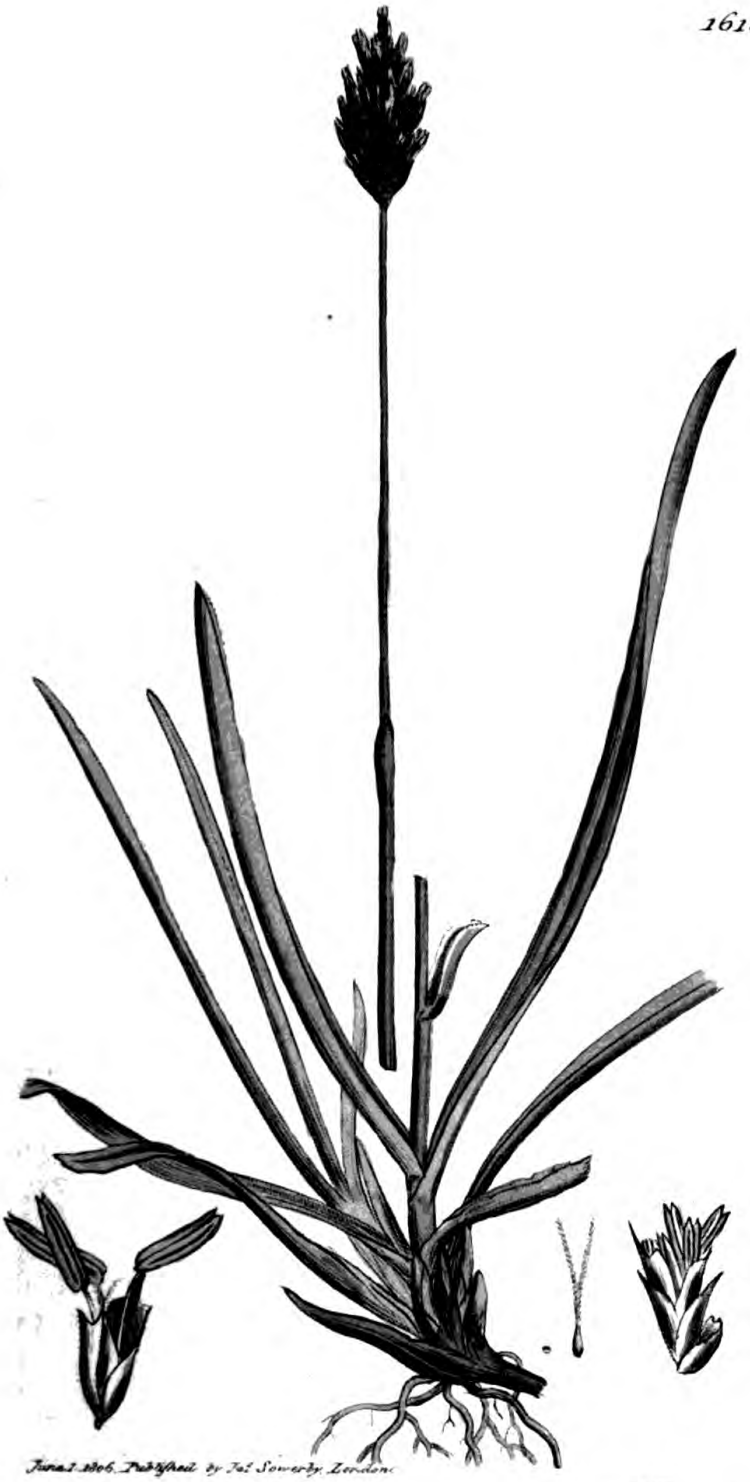
Cynosurus cæruleus. *Linn. Sp. Pl.* 106. *Huds.* 59. *Dicks. H. Sicc. fasc.* 6. 3. *Mart. Rust. t.* 20. *Jacq. Misc. v.* 2. 66. *Ic. Rar. v.* 1. *t.* 21.

Gramen parvum montanum, spicâ crassiore purpuro-cæruleâ brevi. *Raii Syn.* 399.

THIS rare mountain grass grows chiefly in the clefts of calcareous rocks in elevated situations, flowering in the early part of summer. We have received it from different parts of Westmoreland, in which neighbourhood it more frequently occurs than in any other in England, though Mr. Knapp mentions it as common on the Scottish alps. The spike varies in colour, but some of our native ones are as blue as any from abroad.

The root is perennial, tufted, very long. Stem about a span high, simple, without joints, smooth, naked except at the base. Leaves linear, obtuse, recurved, keeled, rough-edged: their sheaths short, tubular, compressed, with a very minute stipula. Spike terminal, solitary, of a shining grey or blue, with solitary, jagged, membranous bracteas at the base of some of the lowermost spikelets. Spikelets mostly in pairs, 2- or 3-flowered. Calyx-valves nearly equal, with short awns. Petals ribbed; the outer with 3 teeth, the middlemost slightly awned; inner with 2 teeth; all the ribs are fringed. Stigmas threadshaped, rough. Styles joined at their lower part.

Dr. Sibthorp found near Constantinople a new species nearly akin to this, but with a white spike, and the outer petals undivided.



June 1. 1806. Published by Jas Sowerby, London.

48.

POA aquatica.

Reed Meadow-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the base. *Cor.* of 2 ovate, pointed, beardless valves.

SPEC. CHAR. Panicle upright, branched, loose. Spikelets linear, of about six florets, which are obtuse and seven-ribbed.

SYN. Poa aquatica. *Linn. Sp. Pl.* 98. *Sm. Fl. Brit.* 95. *Huds.* 38. *With.* 140. *Hull.* 21. *Relh.* 32. *Sibth.* 41. *Abbot.* 17. *Curt. Lond. fasc.* 5. *t.* 12.
Gramen aquaticum majus. *Raii Syn.* 411.

VERY common in ditches and about the margins of clear rivers and pools, flowering in July.

Root perennial, creeping, white. Stems several, upright, often 6 feet high, leafy, a little compressed, smooth, striated, their lower joints throwing out whorled roots. Leaves sword-shaped, broad, flat and straight, rough on the edges and keel, with a very short blunt stipula. Panicle large and much branched, upright, but the branches spread loosely in every direction, being alternately half whorled. They are slender, angular and rough. Spikelets linear, compressed, of 6 florets or thereabouts. Calyx-glumes nearly equal. Florets a little remote, nearly cylindrical, obtuse, rough, purplish, with 7 ribs. Inner glume notched.

Sometimes, as Mr. Davies and Mr. Sowerby have observed, the flowers are viviparous.

It is known from most of our grasses by its great size, and, though coarse, is agreeable to cattle. It makes a great part of the hay in low marshy lands. The chrysalis of the exquisitely beautiful *Phalæna festucæ*, Gold-spot Moth, is sometimes found attached to the leaves.

June 1. 1804. Published by Jas Sowerby, London.

49.

POA fluitans.

Floating Meadow-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the base. *Cor.* of 2 ovate, pointed, beardless valves.

SPEC. CHAR. Panicle branched, spreading. Spikelets close-pressed; cylindrical, many-flowered. Florets obtuse, with seven ribs and intermediate ones at the base.

SYN. Poa fluitans. *Scop. Carn. v.* 1. 73. *Salisb. Prod.* 21. *Sm. Fl. Brit.* 96. *Relh.* 32.

Festuca fluitans. *Linn. Sp. Pl.* 111. *Huds.* 46. *With.* 156. *Hull.* 24. *Sibth.* 45. *Abbot.* 21. *Curt. Lond. fasc.* 1. *t.* 7. *Mart. Rust. t.* 113.

Gramen aquaticum cum longissimâ paniculâ. *Raii Syn.* 412.

FREQUENT in stagnant waters, or about the margins of slow streams, flowering throughout the summer.

Root long and creeping, throwing out many fibres at the joints, its upper part floating in the water. Stems solitary from each joint, ascending, round, striated, leafy, smooth, hollow and tender. Leaves flat, broad, obtuse, smooth; the lower ones floating; all with long, compressed, smooth sheaths. Stipulæ short, pointed, often torn. Panicle nearly upright, smooth, pale, with alternate, more or less spreading, branches. Spikelets alternate, nearly sessile, close-pressed to the branches, linear, cylindrical, with from 8 to 12 florets. Calyx unequal, membranous, obtuse, with a green keel, and no ribs nor furrows. Florets loosely spiked, somewhat cylindrical, obtuse, roughish under a high magnifier, 7-ribbed, with short intermediate ribs at the bottom, their summit membranous, white, and mostly toothed: inner valves notched. Antheræ short and round.

The seeds are said to be collected for food in Holland, and called *Manna Seeds*.—See Curtis.

Nov.r 1. 1805. Published by Jas. Sowerby, London.

50.

POA diſtans.

Reflexed Meadow-graſs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the baſe. *Cor.* of 2 ovate, pointed, beardleſs valves.

SPEC. CHAR. Panicle branched, lax; its branches at length reflexed. Spikelets of five obtuſe, poliſhed, ſlightly five-ribbed florets.

SYN. Poa diſtans. *Linn. Mant.* 32. *Sm. Fl. Brit.* 97. *With.* 141. *t.* 25. *Hull.* 21. *Abbot.* 19.

P. retroflexa. *Curt. Lond. faſc.* 6. *t.* 10.

Aira aquatica *β*. *Hudſ.* 34.

THE firſt Britiſh writer who well knew this graſs was unqueſtionably the author of the *Flora Anglica*, though he erred with Linnæus in making it a variety of the very different *Aira aquatica*. Mr. Curtis, by means of a good figure and deſcription, has now cleared it from all obſcurity. It is perennial, flowering in July and Auguſt, and may be found in moſt ſandy waſte places towards the coaſt (not abſolutely on the beach) and even by the road up Hampſtead hill.

The root is fibrous, not creeping as in *P. maritima*, the only Engliſh graſs which can be confounded with this. Stems many, decumbent at the baſe, then ſpreading or erect, about a foot high, round, leafy, ſtriated, ſmooth. The whole herbage is rather glaucous. Leaves ſmooth, acute, ſtraight, with long ſheaths crowned by a blunt notched ſtipula. Panicle erect, remarkable for the ſtriking manner in which its branches ſoon become rigidly bent downward, which is in ſome degree the caſe occaſionally with *P. maritima*; in that however the florets are larger, longer, and more acute than in the plant we are deſcribing.

51.

POA maritima.

Creeping Sea Meadow-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the base. *Cor.* of 2 ovate, pointed, beardless valves.

SPEC. CHAR. Panicle branched, rather close. Spikelets of five bluntish, cylindrical, slightly five-ribbed florets. Root creeping.

SYN. Poa maritima. *Hudf.* 42. *Sm. Fl. Brit.* 97. *With.* 147. *Hull.* 22. *Lightf.* 98. *Relh.* 32. *Dickf. H. Sicc. fasc.* 11. 2.

Gramen paniculatum maritimum vulgatissimum. *Raii Syn.* 409.

GATHERED by Mr. Groult at Southampton, September 15 last. It is not unfrequent in marshy places on the seacoast, flowering from July to October, and is perennial.

The root creeps, by which this differs from *P. distans*, *v.* 14. *t.* 986, which is moreover less strictly a maritime plant. The stems are very smooth and polished, decumbent at their base. Whole plant glaucous, often tinged in the florets and panicle with purple. Leaves involute, pungent. Stipula mostly blunt. Branches of the panicle rough, straight, spreading whilst in flower, then erect, rarely divaricated. Spikelets linear, longer and larger than in *P. distans*, of about five florets, which are almost imperceptibly five-ribbed, blunt but not retuse, unconnected by any web.

It is a hard scattered grass, not likely to answer any agricultural purposes.

March 1. 1803 Published by Ja.s Sowerby. London

P O A procumbens.

Procumbent Sea Meadow-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* inclining to ovate; glumes ovate, pointed, beardless.

SPEC. CHAR. Panicle lanceolate, pointing one way, condensed, rough; its common stalk round; spikelets about five-flowered; florets bluntish, ribbed.

SYN. Poa procumbens. *Curt. Lond. fasc.* 6. *t.* 11.
P. rupestris. *With.* 146. *t.* 26.

MR. CURTIS first discovered this *Poa*, at the foot of St. Vincent's rocks near Bristol, and has figured it from one of his garden specimens. Sir Thomas Frankland, Bart. to whom we are obliged for this wild one, has found the same grass plentifully on waste ground, which is frequently overflowed, near the floating dock in that neighbourhood, and also on the pier at Scarborough, within the spray of the sea. It flowers in July and August.

Root annual, fibrous. Whole plant glaucous. Stems several, more or less prostrate, about a span long, leafy, smooth, bent at the joints. Leaves flat, acute, nerved, roughish, with very long sheaths. Stipula sharpish, torn. Panicle rigid, leaning to one side, semicylindrical, its main and partial stalks nearly round, rough. Spikelets 2-ranked, sessile, lanceolate, 4 or 5-flowered, smooth. Calyx-valves blunt, very unequal, keeled; the outermost having 5 ribs. Florets blunt, 5-nerved, membranous, and torn at their apex; their inner valves ciliated.

Dr. Goodenough suspects Mr. Hudson's full description under his P. *maritima* may belong to this plant.

This P. *procumbens*, with *maritima*, *distans*, *aquatica*, *Festuca fluitans*, and *Cynosurus durus*, form a very natural tribe of *Poæ*, with blunt florets, whose valves are ribbed, and whose spikelets are scarcely so truly ovate as the character of this genus requires. They are joined to the other species by means of P. *rigida*, and *compressa*, and, no doubt, form a natural genus with them.


Dec. 1798 Published by J. Sowerby London

POA rigida.

Hard Meadow-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the base. *Cor.* of 2 ovate, pointed, beardless valves.

SPEC. CHAR. Panicle lanceolate, two-ranked, dense, smooth, leaning one way; its common stalk bordered. Spikelets of about seven flowers. Florets cylindrical, without ribs.

SYN. Poa rigida. *Linn. Sp. Pl.* 101. *Sm. Fl. Brit.* 99. *Huds.* 42. *With.* 146. *Hull.* 22. *Relh.* 33. *Sibth.* 42. *Abbot.* 18. *Curt. Lond. fasc.* 2. *t.* 4. *Knapp. t.* 48.

Gramen exile duriusculum in muris et aridis proveniens. *Raii Syn.* 410.

NOT unfrequent on walls and in dry gravelly places, where it flowers in June, and soon after becomes entirely dry and bleached. It may be known readily by the extreme rigidity of its stems and panicle, which feel at all times as if made of a stiff wire.

Root annual, fibrous and woolly. Stems several, generally erect, (except on the dry sands of the sea shore,) bent at the lower joint, round, very smooth, often purplish or brown, leafy in their lower part. Leaves acute, involute, smooth beneath, rough above. Stipula blunt and torn. Panicle lanceolate, its branches in two rows, leaning to one side; the common stalks zigzag, bordered, rough-edged. Spikelets linear, smooth, neat and elegant, of from 4 to 8 florets, which are cylindrical, bluntish, roughish towards their summits, scarcely keeled, and entirely destitute of lateral ribs or nerves. Their inner valves are fringed. The calyx-glumes are nearly equal, keeled, acute. Antheræ short, deeply two-lobed.

We know not that any agricultural projector whatever has recommended this grass to notice.

Octr 1 1804 Published by Jas Sowerby, London.

54.

POA compressa.

Creeping Meadow-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* ovate; glumes ovate, pointed.

SPEC. CHAR. Panicle condensed; its branches leaning one way, erect before and after flowering. Stem ascending, compressed.

SYN. Poa compressa. *Linn. Sp. Pl.* 101. *Huds. Fl. An.* 41. *With. Bot. Arr.* 89. *Relh. Cant.* 36. *Sibth. Ox.* 42. *Dicks. H. Sicc. fasc.* 6. 1.
Gramen pratense paniculatum medium. *Raii Syn.* 409.

FREQUENT on the tops of walls that are a little covered with earth, and in other very dry places, where it may be found in flower from June to September, and may be easily distinguished by its compressed stem.

The roots are perennial, creeping, consisting of downy fibres, thrown out from the lowest part of the stem, which is decumbent. The straw rises obliquely, the first joints being geniculated, the uppermost very long and erect. Leaves narrow, with a long sheath, and short obtuse stipula, of a glaucous green. Panicle of the same hue, upright, the common stem contracting very suddenly where the first branches come off. All the branches are in the beginning close and erect, acutely angular and rough, a little zigzag: as they flower they spread considerably, but immediately after the discharge of the *pollen* they become again close-pressed to the main branch, so that the upper part of the panicle looks as if it expanded first. By this mark the grass may be known at a distance. The glumes have a silvery edge, and purplish tip; they vary from 3 to 8 or 9 in each calyx.

This grass can scarcely be put to any agricultural use, though all cattle eat it; it does not thrive in moist or manured ground, and there are many better for dry situations.

POA alpina.

Alpine Meadow-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the bafe. *Cor.* of 2 ovate, pointed, beardlefs valves.

SPEC. CHAR. Panicle loofe. Spikelets heartfhaped, of about four flowers. Glumes ovate, rather ficklefhaped, not connected by a web. Lower ftipulæ very fhort.

SYN. Poa alpina. *Linn. Sp. Pl.* 99. *Sm. Fl. Brit.* 100. *Lightf.* 96.

OUR fpecimens of this truly alpine grafs were gathered on mountains to the north of Forfar, by Mr. G. Donn and Mr. J. Mackay. It is perennial, flowering in July or Auguft.

The fibres of the root are long, flender and fmooth. Stems from 4 to 12 inches high, a little decumbent and rooting at their bafe; leafy and fometimes branched below; naked, fmooth and fhining, often purplifh, above. Radical leaves many, fpreading, flat, ribbed; a little glaucous beneath; rough at the margin; bluntifh, yet tipped with a fhort point: ftem-leaves about two, fhort, with very long fmooth fheaths. Lower ftipulæ fhort and blunt; upper lanceolate, often torn or divided. Panicle fpreading, fhort, fomewhat ovate; its branches angular, generally nearly fmooth. Spikelets ovate, fo broad as to be almoft cordate, fhining, elegantly variegated with green, white, and purplifh brown. Calyx-valves nearly equal, ovate, acute, rather falcate, rough at the keel. Florets about four, ovate, acute, membranous at the edge, the lower part of which is filky, and the keel ftill more fo; feveral longifh hairs alfo clothe the bafe of each floret, but the long complicated web, which connects the florets of moft *Poæ*, is wanting. Inner valve notched, finely fringed.—The flowers in wet feafons are often changed into buds, without any regular fructification.

We are now fatisfied that the *P. pratenfis* β of Hudfon is not this, but a new Britifh fpecies, delineated in our next plate.

1003.

56.

POA flexuosa.

Zigzag Meadow-grass.

TRIANDRIA Digynia.

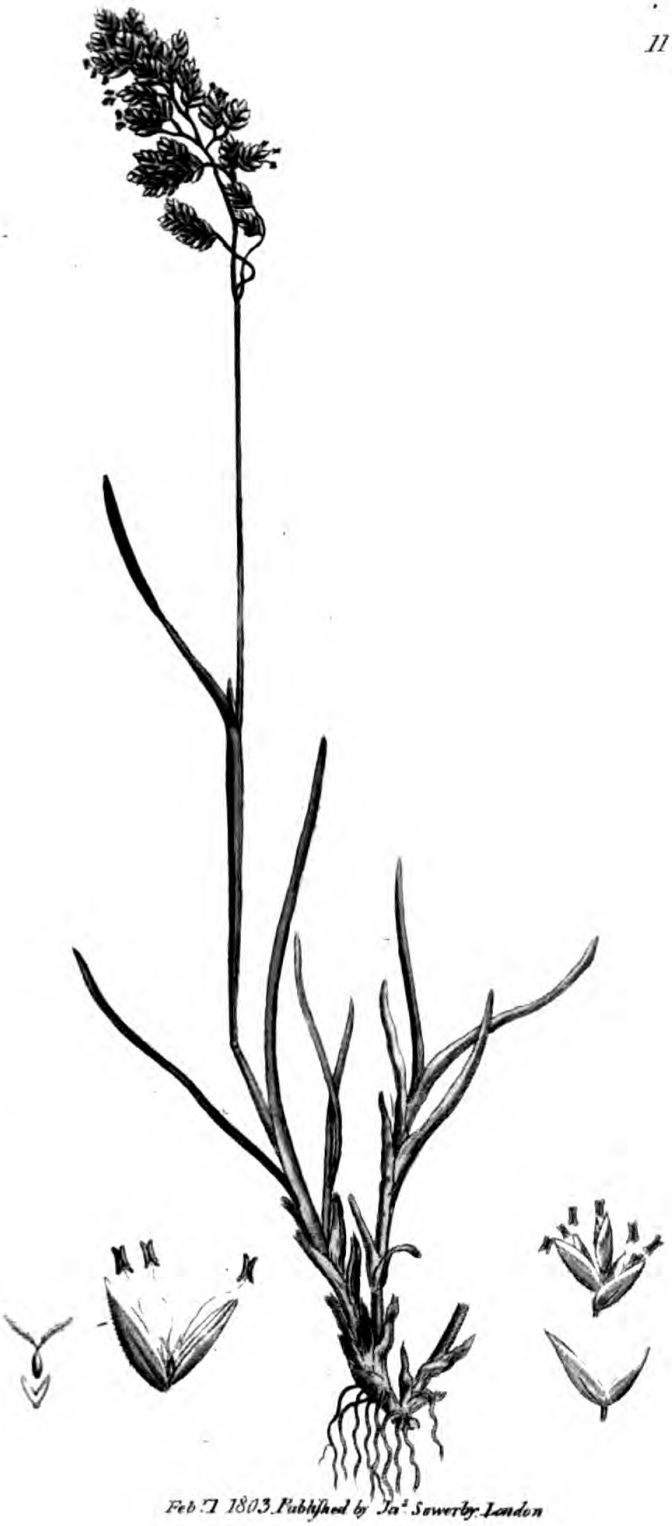
GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the base. *Cor.* of 2 ovate, pointed, beardless valves.

SPEC. CHAR. Panicle zigzag. Spikelets of three flowers. Glumes ovate, connected by a web. Stipulæ all lanceolate.

SYN. Poa flexuosa. *Sm. Fl. Brit.* 101.

THE Scottish mountain of Ben Nevis, amongst a profusion of botanical rarities, has afforded us this new species of *Poa*, discovered there by the late Mr. John Mackay, a young man who sacrificed his repose, and finally his health and life, to the too ardent pursuit of botany and horticulture. His discriminating powers and readiness of communication will long live in the memory of those who knew him. We would never neglect the opportunity of twining a modest garland for the brows of such benefactors to science, even though it were only of grass or moss.

This *Poa*, we believe, has never been mentioned except in the *Flora Britannica*. It is perennial, growing in small tufts, and flowering in July. The colour of the herbage is a light, rather glaucous, green. The stems ascend obliquely, and are often bent at the joints. Leaves spreading, narrow, sharp, roughish above, with long, lax, flattish sheaths. Stipulæ all lanceolate and acute. Panicle ovate, rather dense, its stalks angular, rough, more or less zigzag, especially at the base. Spikelets broad-ovate, rather glaucous, of about 3 florets. Calyx-glumes a little unequal, hardly falcate, acute, rough at the keel, white and thin at the edge, and stained with purple towards that part. Florets shaped and coloured much like the calyx, or rather less ovate; their margin smooth, not silky, their keel rough, their bases connected by long hairs. Their inner glumes are rough at the edge.



Feb.1 1803. Published by Ja.s Sowerby. London

J

57.

POA bulbosa.

Bulbous Meadow-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the base. *Cor.* of 2 ovate, pointed, beardless valves.

SPEC. CHAR. Panicle slightly zigzag. Spikelets of four flowers. Glumes connected by a web. Leaves finely serrated. Stem bulbous at the base.

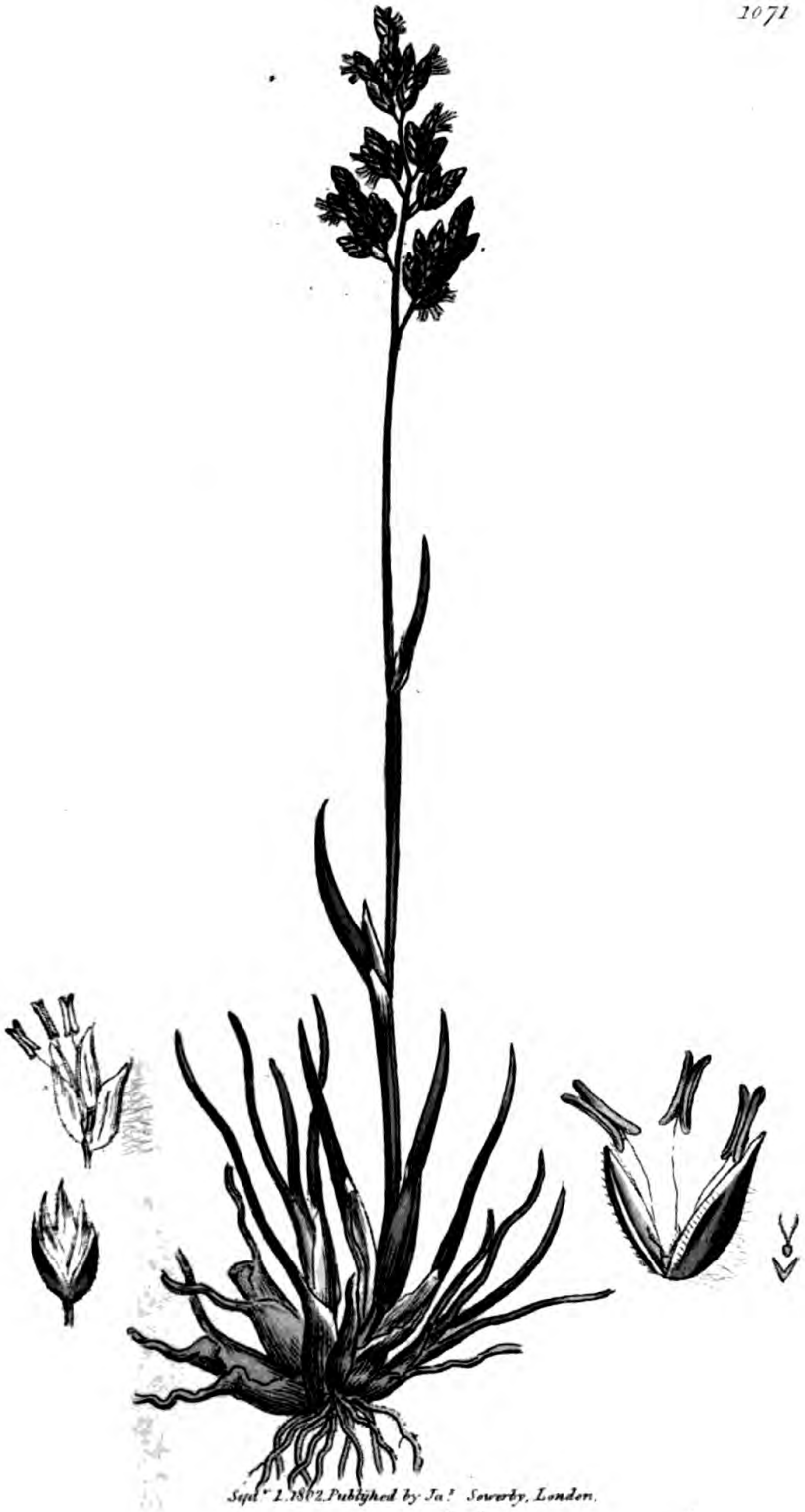
SYN. Poa bulbosa. *Linn. Sp. Pl.* 102 α and γ. *Sm. Fl. Brit.* 102. *Hudf.* 41. *With.* 142. *Hull.* 21.

Gramen vernum, radice Ascalonitidis. *Vaill. Par. t.* 17. *f.* 8.

WHEN the *Flora Britannica* was in the press this grass was so little known I found myself obliged to adopt it on the authority of Hudson, describing it from the Linnæan specimen. Fortunately before the publication of that work Mr. Stone favoured me with a native plant of *P. bulbosa* from Yarmouth Denes, and I was enabled to mention it in the preface. Mr. Turner sent the present specimen from thence, and I have observed great plenty of the same at Lowestoft. Mr. W. Borrer has found it at Little Hampton, Sussex.

This grass is peculiarly fitted to inhabit dry sandy ground. Its bulbs grow in clusters, resembling little onions, and during most part of summer remain inactive, blown about at random. With the autumnal rains they vegetate, fix themselves by long downy radicles, then produce thick tufts of leaves (a grateful spring food for cattle); and in April or May they flower, having in the mean while formed young bulbs, which, as soon as the herbage withers, are dispersed like their predecessors. By these bulbs, the serrated leaves, and the woolly web connecting the florets, added to the broad veinless glumes and small panicle, this species may be known with sufficient certainty.

P. bulbosa β *Linn.* is a viviparous oriental grass, very distinct in species from this, as well as from *P. alpina*. Mr. Afzelius informs me he cannot account for the strange mistake in Withering, *p.* 143, for which he is quoted.



Sept.r 1. 1802. Published by Ja.s Sowerby, London.

58.

POA cæsia.

Sea-green Meadow-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the base. *Cor.* of 2 ovate, pointed, beardless valves.

SPEC. CHAR. Panicle spreading. Spikelets ovate, five-flowered. Glumes lanceolate, silky-edged, unconnected by any web. Stipula very short and blunt.

SYN. Poa cæsia. *Sm. Fl. Brit.* 103.

MY first knowledge of this plant was derived from specimens sent from Scotland to Mr. Fairbairn of Chelsea garden, and I have been obliged to have recourse to that collection for what appears in the annexed plate, having never seen a wild specimen. The late Mr. J. Mackay sent me others from his own garden, the roots of which he had brought from Ben Lawers and other Highland mountains.

This is a perennial grass, flowering in June and July, and remarkable for its glaucous hue. The spikelets are prettily varied with purple, white, green, and a silvery gloss, occasioned by a range of satin-like hairs near the edges of the outer glumes, as well as on the keel. It is one of those *Poæ* whose florets are destitute of that complicated connecting web at the base, so remarkable in several others. The root is fibrous, tufted. Stems about a foot high, round, smoothish, with 2 joints near the bottom. Leaves linear-lanceolate, bluntish, flat, rough to the touch, except on the back near the base. Sheaths roughish, about as long as the leaves. Stipula variable in size and shape. Panicle upright, spreading, much branched, with rough stalks. Spikelets ovate, of about 5 florets, their calyx-valves nearly equal. Florets blunt, a little remote, on a zigzag hairy common stalk; their inner valves rough-edged.

Marzabot Published by Jas Sowerby, London

59.

POA trivialis.

Roughish Meadow-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the base. *Cor.* of 2 ovate, pointed, beardless valves.

SPEC. CHAR. Panicle spreading. Spikelets of three flowers. Glumes lanceolate, five-nerved, connected by a web. Stipula elongated.

SYN. Poa trivialis. *Linn. Sp. Pl.* 99. *Sm. Fl. Brit.* 103. *Hudf.* 39. *With.* 143. *Hull.* 22. *Relh.* 33. *Sibth.* 41. *Abbot.* 17. *Curt. Lond. fasc.* 2. *t.* 6. Gramen pratense paniculatum medium. *Raii Syn.* 409.

IF in a general botanical work like this we cannot always charm the eye with splendid objects, the elucidation of curious or useful truths will surely not be less acceptable. The two grasses figured in this plate and the following are among the most common, but the most useful; and though they differ in essential properties, botanists have scarcely, till lately, known how to distinguish them.

P. trivialis grows every where in meadows and pastures, preferring such as are moist, and flowering from June to September. Its perennial fibrous root forms tufts. The stems are generally a foot and half high, leafy, erect, roughish to the touch, often taking root at their base. Leaves a little spreading, flaccid, roughish underneath and at the edge, with sheaths about their own length, crowned with an oblong pointed stipula, by which this is distinguished from the following in every state of growth. The panicle is large and spreading when in flower. Each calyx generally contains 3 florets, whose glumes have five strong ribs or nerves; a character which distinguishes this, *P. pratensis* and *P. annua*, from *alpina*, *subcærulea*, *bulbosa* and some neighbouring species. The florets are connected by a conspicuous web.

Sept. 1, 1802. Published by J. Sowerby, London.

60.

POA pratenſis.

Smooth-ſtalked Meadow-graſs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the baſe. *Cor.* of 2 ovate, pointed, beardleſs valves.

SPEC. CHAR. Panicle ſpreading. Spikelets of four flowers. Glumes lanceolate, five-nerved, connected by a web. Stipula ſhort and blunt.

SYN. Poa pratenſis. *Linn. Sp. Pl.* 99. *Sm. Fl. Brit.* 104. *Hudſ.* 39. *With.* 141. *Hull.* 21. *Relh.* 34. *Sibth.* 41. *Abbot.* 18. *Curt. Lond. faſc.* 2. *t.* 5. *Dickſ. H. Sicc. faſc.* 14. 3.

Gramen pratenſe paniculatum majus, latiore folio. *Raii Syn.* 409.

THIS *Poa* agrees much with the preceding in habit and general appearance, grows no leſs frequently in almoſt every ſituation, and is as valuable to the huſbandman. It flowers rather earlier, comes ſooner into leaf, and will grow in much drier places than *P. trivialis*; but, according to Mr. Curtis's obſervations, the latter produces a better crop as the ſeaſon advances.

P. pratenſis is known from *trivialis* by the ſmoothneſs of its ſtems when handled, by having generally more florets in a calyx, but moſt decidedly by its ſhort blunt ſtipulæ; an infallible and invariable character, properly inſiſted on by Mr. Curtis, and we believe found out by himſelf, though juſtice to Mr. Hudſon obliges us to recollect it is mentioned previouſly by him in the *Fl. Anglica*. The panicle has more often a purple hue than that of the laſt deſcribed, and the web connecting the florets is peculiarly long and complicated. *P. anguſtifolia* of Linnæus appears to us a variety of this with narrow rigid leaves, and a ſmaller panicle.


Published by J. Sowerby Lond.

61.

POA ſubcærulea.

Blueiſh Meadow-graſs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the baſe. *Cor.* of 2 ovate, pointed, beardleſs valves.

SPEC. CHAR. Panicle looſe. Spikelets heartſhaped, of about three flowers. Glumes ovate, acute, connected by a web. Stipulæ all ſhort and blunt.

SYN. Poa pratenſis β, alpina. *Hudſ.* 39.
P. glauca. *With.* 148.

GATHERED in Angleſea by the Rev. H. Davies, flowering in June. That this is the *P. alpina* of Hudſon, as well as the *glauca* of Withering, we think unqueſtionable. The original *glauca* of *Fl. Dan.* is notwithſtanding widely different, and we have therefore given ours a new name, expreſſive of its blueiſh appearance. Hudſon found this graſs on the mountains of Weſtmoreland and Cumberland, and his opinion in reducing it to a variety of *P. pratenſis* is leſs ſtrikingly erroneous than if his plant had been (as is commonly ſuppoſed) the Linnæan *alpina*, which no good botaniſt could confound with *pratenſis*.

P. ſubcærulea has a creeping perennial root, with much-branched, zigzag, downy fibres, agreeing with thoſe of *pratenſis*. Whole plant glaucous, with tints of purple. Stem 6 to 10 inches high. Leaves ſhort, ſtraight. All the ſtipulæ ſhort and blunt. Panicle ſhaped like that of *alpina*, variegated with purple and glaucous green. Calyx almoſt awned. Florets generally three, connected by a copious ſoft white web, whoſe fibres may be ſeen between them even in their natural ſituation, but become moſt conſpicuous when the florets are pulled aſunder. This web does not exiſt in *P. alpina* or *cæſia*, *Fl. Brit.*, the only 2 ſpecies likely otherwiſe to be confounded with this. It is found in *P. pratenſis*, but in a much leſs quantity; nor can that ſpecies, if its angular glumes be duly conſidered, be by any means confounded with this.

62.

POA annua.

Annual Meadow-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the bafe. *Cor.* of 2 ovate, pointed, beardlefs valves.

SPEC. CHAR. Panicle divaricated. Spikelets ovate. Florets a little remote, five-ribbed, deftitute of a web. Stem oblique, compreffed.

SYN. Poa annua. *Linn. Sp. Pl.* 99. *Sm. Fl. Brit.* 105. *Hudf.* 42. *With.* 143. *Hull.* 22. *Relh.* 34. *Sibth.* 42. *Abbot.* 18. *Curt. Lond. fafc.* 1. *t.* 6. *Mart. Ruft. t.* 98. *Stillingfl. t.* 7.

Gramen pratenfe minus, feu vulgatiffimum. *Raii Syn.* 408.

EVERY where in meadows and paftures, and flowering almoft throughout the year when the weather is mild. The root is ftrictly annual, though the ftems throw out fibres from their lower parts, and feem to creep. Herbage bright green, not glaucous. Stems feveral, obliquely fpreading, compreffed, leafy, fmooth. Leaves linear, flaccid, bluntifh, fmooth, with a little roughnefs at the edges, flat, except a waved or crumpled appearance here and there, very characteriftic of the fpecies, though not abfolutely peculiar to it. Sheaths long, compreffed, fmooth, crowned by a fharp ftipula. Panicle erect, fmooth, its branches in pairs, rather directed towards one fide. Spikelets ovate, variegated with green and white, fmooth and polifhed. Calyx acute. Florets about 5, not crowded, ovate, obtufe, 5-ribbed, membranous at the edge, a little filky at the back, deftitute of a web at their bafe.

This grafs is noted for its great increafe, and the facility with which it occupies almoft any fituation. It affords excellent food for cattle, plentiful in proportion to the richnefs of the foil, and is not damaged, but rather improved, by being trodden.

March 1 1820 Published by J. Sowerby London

POA glauca.

Slender Glaucous Meadow-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the base. *Cor.* of 2 ovate, pointed, beardless valves.

SPEC. CHAR. Panicle glaucous, slender, erect. Spikelets ovate, of about three flowers. Glumes bluntish, silky-edged, unconnected by any web. Stipula very short.

SYN. Poa glauca. *Fl. Dan. t.* 964. *With.* 148. *Sm. Fl. Brit.* 1388. *Hull.* 23.

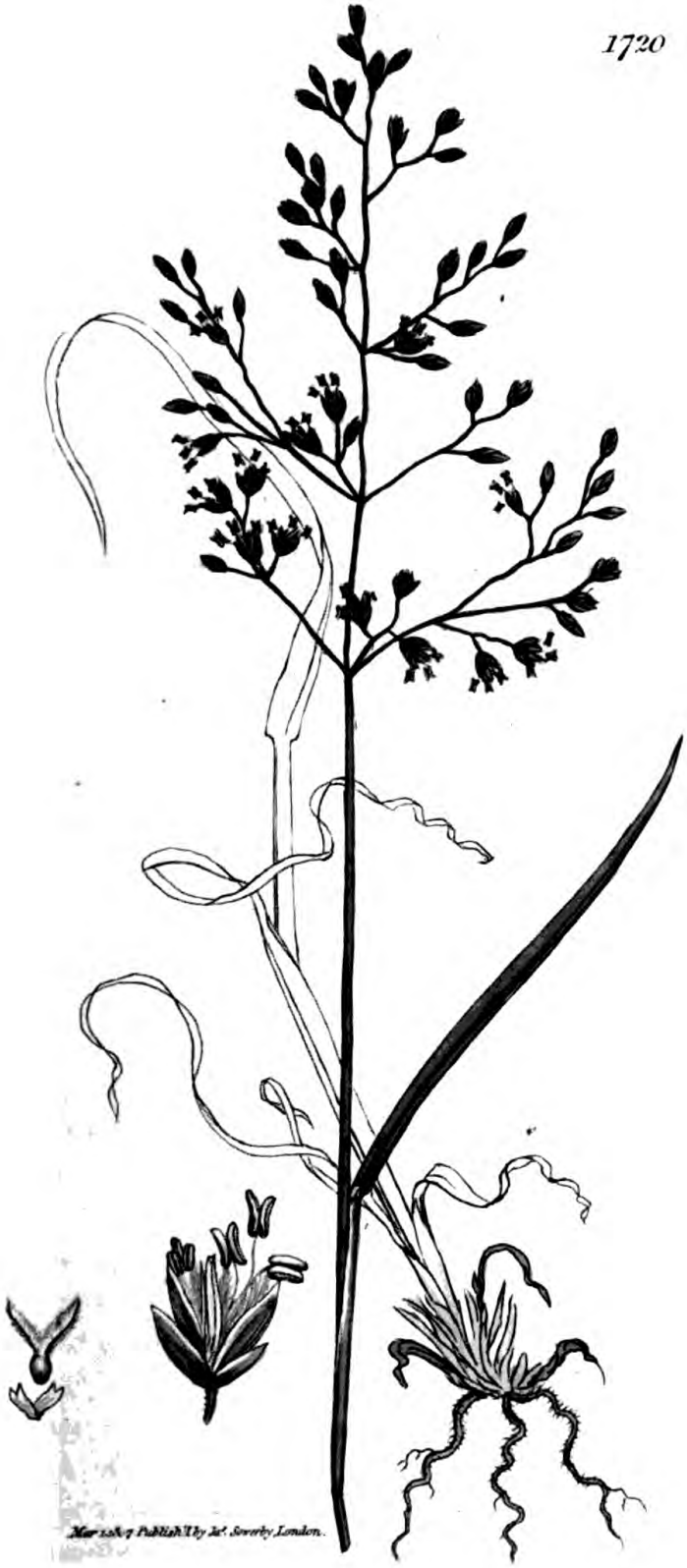
P. cæsia. *Knapp. t.* 56.

P. n. 1468. *Hall. Hist. v.* 2. 224. *Lachenal.*

Gramen paniculatum angustifolium montanum, paniculâ densâ, locustis parvis muticis. *Scheuchz. Agr.* 180.

THE *Poa glauca* of Withering has been communicated to me by Mr. Griffith, the original authority for it in Britain, who found it on Snowdon, and I have no doubt of the correctness of the above synonyms. The specimen in the plate grew in Chelsea garden, and came from Scotland. It is perennial, flowering in June.

The whole plant is very glaucous, the glumes variegated with purple and white, and marked with rows of silvery hairs, as in *P. cæsia*; but the florets are commonly only two, rarely three, in each calyx, and they are also more angular than those of that species. In this last respect they approach *P. nemoralis*, to which the slenderness of the whole plant is, in some degree, similar. The stipula is always small; leaves narrow, with somewhat inflated sheaths. Florets without any complicated web at their base.


Marsh & Publish'd by Jas. Sowerby, London.

64.

POA nemoralis.

Wood Meadow-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the base. *Cor.* of 2 ovate, pointed, beardless valves.

SPEC. CHAR. Panicle and leaves slender. Spikelets lanceolate, of about three flowers. Glumes acute, obsoletely five-ribbed. Stipula very short, notched.

SYN. Poa nemoralis. *Linn. Sp. Pl.* 102. *Sm. Fl. Brit.* 106. *With.* 146. *Hull.* 22. *Relh.* 34. *Sibth.* 43. *Abbot.* 19.

P. angustifolia β. *Huds.* 41.

β. P. angustifolia α. *Huds.* 40.

P. pratensis, var. 2. *With.* 142. *Hull.* 21.

IN the north of England scarcely any wood or grove can be found in which this grass does not compose the tall thin herbage under the trees, in which situations it thrives well. In the south it is less frequent, but abounds in Charlton wood, and other places on a chalky soil, flowering in July and August.

The root is perennial, very slightly creeping. Stems several, erect, a foot and half high, slender, flattish, striated, smooth. Leaves almost all growing on the stem, narrow, taper-pointed, striated, rough to the touch, except the under side of the lower ones. Sheaths shorter than the leaves, compressed, smoothish, each crowned with a very short notched stipula. Panicle nearly upright, loose, slender, rough and zigzag. Spikelets small, lanceolate, acute, purplish and a little shining, smooth, except the keel of the calyx towards the top. Florets from 2 to 4, lanceolate, obscurely 5-ribbed, silky at their back, and hairy at their base, but not connected by long complicated threads.

The variety β, which Mr. Hudson, we know not why, made the original species, is a stouter plant, more like *P. pratensis* and *trivialis*, but differing from them in essential characters.

Sept. 1. 1864. Published by Tal Jewsbury & Co. London.

65.

POA decumbens.

Decumbent Meadow-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* rounded at the bafe. *Cor.* of 2 ovate, pointed, beardlefs valves.

SPEC. CHAR. Panicle generally fimple, condenfed, erect. Spikelets ovate, four-flowered, the length of the calyx. Stipulæ formed of little hairs.

SYN. Poa decumbens. *With.* 147. *Sm. Fl. Brit.* 107. *Hull.* 23.

Feftuca decumbens. *Linn. Sp. Pl.* 110. *Hudf.* 47. *Relh.* 43. *Sibth.* 46. *Abbot.* 22. *Dickf. H. Sicc. fafc.* 11. 3.

Gramen avenaceum parvum procumbens, paniculis non ariftatis. *Raii Syn.* 408.

SPONGY bogs on barren fandy or mountainous ground produce this grafs frequently. It flowers in July and is perennial.

The whole plant is remarkably harfh and rigid, lying clofe to the ground, except when in flower. The roots creep, though to no great extent. The ftem is about a foot long, jointed and bent, fmooth, leafy. Leaves linear, ftraight, horizontal, rather glaucous. Their long fheaths clofely inveft the ftem and are hairy (particularly upwards) and ftriated. The ftipula which crowns their fummit withinfide is formed of numerous denfe hairs. The panicle is zigzag, and confifts of but few flowers. Each fpikelet is ovate, acute, tumid (efpecially as it ripens its feeds), fmooth, generally purplifh. The calyx glumes are about as long as the fpikelet, nearly equal, ovate, acute, flightly ribbed, with a rough keel. The florets are more elliptical, blunter, and notched, very fmooth, nerved, hairy at their bafe; their outer glume has in its notch a fhort intermediate flat tooth, totally different however from the awn of a *Feftuca*, fo that we readily affent to Dr. Withering's alteration in making this grafs a *Poa*. In habit, and ftructure of fome parts, it is, as Linnæus obferves, more allied to *Melica*.

66.

BRIZA minor.

Small Quaking-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing many florets. *Spikelet* 2-ranked. *Cor.* of 2 heart-shaped, obtuse valves. *Seed* depressed, attached to the corolla.

SPEC. CHAR. Spikelets triangular, of seven florets, which are shorter than the calyx. Stipula lanceolate, very long.

SYN. Briza minor. *Linn. Sp. Pl.* 102. *Sm. Fl. Brit.* 108. *Huds.* 38. *With.* 148. *Hull.* 23. *Dicks. H. Sicc. fasc.* 5. 3.

Gramen tremulum minus, paniculâ amplâ, locustis parvis triangulis. *Raii Syn.* 412.

OUR wild specimen represented in the plate was sent from Pensance by favour of Mr. Penneck.

This is one of our rarest grasses, found only in fields near the south-west extremity of Britain and in Guernsey. In the south of Europe it occurs frequently, and is annual, flowering in July.

Root of several small downy fibres. Stem one or more, 10 or 12 inches high, leafy, round and smooth. Whole plant of a light green. Leaves lanceolate, erect, rough-edged, with very long, somewhat inflated, sheaths. Stipula membranous and thin, remarkably long, acute, decurrent. Panicle elegantly divaricated, very delicate, bearing numerous triangular spikelets, which are prettily variegated with green, white, and sometimes purple, and tremulous from the extreme slenderness of the little zigzag rigid stalks. Calyx protruding much beyond the florets, its valves nearly equal, obtuse, boat-shaped, smooth, with membranous edges. Florets like them, but shorter, much more gibbous, and lopped at the point. Inner glume notched, flattish. Nectary deeply cloven. Seed orbicular, depressed, when ripe firmly adhering to the outer valve of the corolla.

June 1. 1804. Published by Jas. Sowerby, London.

67.

BRIZA media.

Common Quaking-Grass, or Cow-Quakes.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, with many flowers; the little spike two-ranked, its valves heart-shaped, obtuse, the innermost smaller.

SPEC. CHAR. Little spikes ovate. Calyx shorter than the florets, which are about seven in number.

SYN. Briza media. *Linn. Sp. Pl.* 103. *Huds. Fl. An.* 38. *With. Bot. Arr.* 92. *Relh. Cant.* 38. *Sibth. Ox.* 43. *Mart. Fl. Rust. t.* 39. *Dicks. H. Sicc. fasc.* 5. 2.

Gramen tremulum. *Raii Syn.* 412.

VERY common in pastures, where, as Professor Martyn observes, it is made into hay with other grasses, but never cultivated alone for any particular purpose. The roots are perennial, and the flowers appear in May.

Root fibrous. Straw upright, from 6 to 18 inches, most commonly about a foot, in height, round, very smooth, with one or two joints near the bottom. Leaves mostly at the root, with one from each joint of the stem as usual in grasses, the sheaths of which last are very long, the stipules very short, blunt, and entire. Branches of the panicle purplish, spreading, the lowermost in pairs, the others alternate, all so extremely slender, and more or less zigzag, that the spikes, which hang drooping from their extremities, tremble at the least breath of air or other cause of agitation; from which circumstance, as well as their elegant form and shining brown colour, they excite the admiration of the most incurious. The calyx is generally of a darker colour than the floral valves, but like them in shape; the florets are about 7, in two ranks, so that the spike is much compressed, and of a broad ovate figure.

69.

DACTYLIS glomerata.

Rough Cock's-foot Grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, compressed; one valve larger, and carinated.

SPEC. CHAR. Panicle crowded, leaning one way.

SYN. Dactylis glomerata. *Linn. Sp. Pl.* 105. *Huds. Fl. An.* 43. *With. Bot. Arr.* 94. *Relh. Cant.* 39. *Sibth. Ox.* 43.

Gramen asperum. *Raii Syn.* 400.

ONE of the most common of all grasses, in pastures, hedges, thickets, &c. remarkable for thriving under the shade and drippings of trees, and thence sometimes (as Dr. Withering mentions) called Orchard Grass. It is a harsh coarse grass, not eaten by cows (according to the experiments of Linnæus), nor much preferred by other domestic animals.

Root strong and perennial. Leaves dark green, carinated, harsh and rough. Stipula bifid, or torn. Stems two feet high, rough, leafy, terminating in a sort of pyramidal branched panicle, consisting of several thick tufts of flowers all leaning one way, by which it may be readily distinguished. The lower branches of the panicle are much divaricated, and sometimes compound. Antheræ reddish, hanging out of the flower on long filaments. Each calyx contains three, four, or more florets, with both petals pointed, and one shortly awned. It flowers from June to August.

July 1st 1790 Published by J. Sowerby London

CYNOSURUS cristatus.

Crested Dog's-tail Grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 husks, containing few florets. *Partial Receptacle* unilateral, leafy.

SPEC. CHAR. Bracteæ pinnatifid.

SYN. Cynosurus cristatus. *Linn. Sp. Pl.* 105. *Huds. Fl. An.* 59. *With. Bot. Arr.* 95. *Relh. Cant.* 39. *Sibth. Ox.* 52. *Leers Herb.* 49. *t.* 7. *f.* 4.

Gramen cristatum. *Raii Syn.* 398.

THIS grass is equally common with the preceding, making a principal part of the turf on high gravelly or chalky soils, in parks, lawns and sheep-walks, and affords good nourishment to those animals as well as to deer.

The root is tufted, perennial, with long simple fibres. Stems very erect, from a foot to 18 inches high, rigid, round, smooth, clothed about the lower part with shortish, alternate, palish leaves. Stipulæ short. Spike green, erect, about 2 inches long, composed of numerous spikelets, all leaning one way, on a zigzag stalk. Each spikelet is accompanied by another abortive one, which Linnæus calls the bracteæ, resembling a small double-toothed comb. These remain long upon the stalk, turning of a yellowish colour in decay. Ray mentions a variety with 4 rows of spikelets. This *Cynosurus* flowers in June or July.


April 1. 1796 Published by J. Rowcroft.

CYNOSURUS echinatus.

Rough Dog's-tail-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing several florets. *Partial Receptacle* unilateral, leafy.

SPEC. CHAR. Bracteæ pinnate, chaffy, bearded. Spike compound, ovate.

SYN. Cynosurus echinatus. *Linn. Sp. Pl.* 105. *Sm. Fl. Brit.* 112. *Huds.* 59. *With.* 150. *Hull.* 29.

Gramen alopecuroides, spicâ asperâ brevi. *Raii Syn.* 397.

THIS grass loves a sandy soil and rather a warm climate. It has not been found in any other part of our island than here and there on the south coast. Sherard found it in Jersey. We have drawn a cultivated specimen, but not more luxuriant than wild ones with which it has been compared. The seeds were gathered in Sussex. It flowers in July, and is annual.

Root of a few downy fibres. Stems one or more, ascending, leafy, round, striated, smooth, about a span high. Leaves lanceolate, ovate at their base, acute, flat, striated, roughish on both sides. Sheaths a little inflated, somewhat compressed or two-edged, furrowed, roughish. Stipula lanceolate. Spike ovate, branched, dense. Spikelets inclined to one side, alternate, ovate, each accompanied by a sort of abortive spikelet, called by Linnæus a bractea, which is pinnate, consisting of alternate, lanceolate, membranous, ribbed, rough husks, each tipped with a straight, rough, purple awn, various in length. Calyx of 2 equal, very thin, beardless glumes. Florets 2 or more, their outer glumes roughish, each bearing a long rough purple awn: the inner finely fringed. Seed clothed with the hardened corolla.

July 1. 1804. Published by Jos. Sowerby, London.

J

FESTUCA ovina,
Sheep's Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, with sharp-pointed glumes.

SPEC. CHAR. Panicle pointing one way, close. Florets roundish, smooth at their base. Straw square. Leaves bristle-shaped, rough.

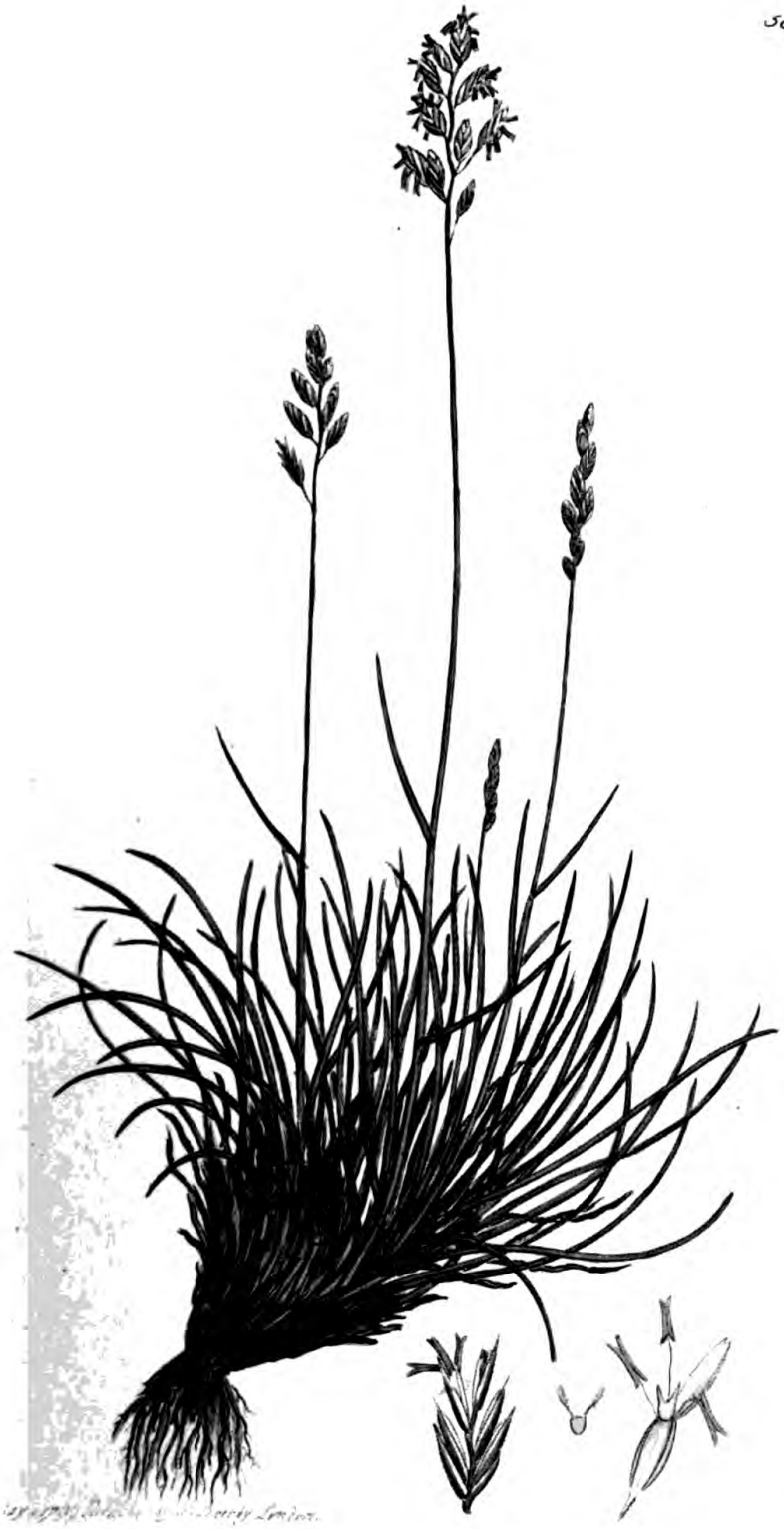
SYN. Festuca ovina. *Linn. Sp. Pl.* 108. *Hudf.* 44. *With.* 152. *Relh.* 40. *Sibth.* 43. *Mart. Fl. Rust. t.* 102.

β. F. rubra. *With.* 153, not of Linn.

γ. F. tenuifolia. *Sibth.* 44. *With.* 155.
Gramen capillaceum, locustellis pennatis, non aristatis. *Raii Syn.* 410.

A COMMON grass in dry exposed pastures, flowering in June, and supposed by Linnæus, Stillingfleet and others to be a peculiarly excellent food for sheep. Those who have recommended it for a crop of hay have probably mistaken for it the F. *duriuscula*, *t.* 470, which thrives much more by culture, and yields a far greater produce. The square stem of F. *ovina* distinguishes them at once without any other mark; the microscopic botanist may recur to the perfectly smooth-edged inner valve of the corolla, which in F. *duriuscula* is finely fringed.

Root perennial, composed of black smooth fibres. Straws a span high, slender, rigid, most evidently square in the upper part, smooth. Leaves bristly, rough, often glaucous, their sheaths smooth, striated. Stipula very short. Panicle short and small. Florets 4 or 5 in each spikelet, roundish, scarcely compressed or carinated, without ribs, smooth at the base, rough with minute points in the upper part, generally beardless as in the variety γ, but often more or less awned as in our figure and the Linnæan specimens. Awns rough. The leaves being erect and pliable, or incurved and somewhat rigid, is not characteristic of either variety, so that we cannot adopt Dr. Sibthorp's *tenuifolia* as a species. The *rubra* of Withering proves by an original specimen to be a purplish variety only, very distinct from the *rubra* of Linnæus and Hudson, which indeed is scarcely red at all.



73.

FESTUCA vivipara.

Viviparous Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle pointing one way, crowded. Florets compressed, keeled, beardless, rather downy as well as the calyx. Stem square. Leaves bristle-shaped, smooth.

SYN. Festuca vivipara. *Sm. Fl. Brit.* 114.

F. ovina β. *Linn. Sp. Pl.* 108. *Huds.* 44. *Lightf.* 101. *With.* 152, *var.* 4.

Gramen sparteum montanum, spicâ foliaceâ gramineâ, majus et minus. *Raii Syn.* 410. *t.* 22. *f.* 1.

IT has been usual to consider this as a variety of *Festuca ovina*, see *v.* 9. *t.* 585, but a very slight comparison of their flowers will surely justify their being kept distinct. The plant before us is found only about the cloud-capt summits of the loftiest mountains. We have dried specimens from Scotland, Wales, and Westmoreland, and the recent garden one drawn in the annexed plate exactly agrees with them. The panicle is produced in July. The root is perennial.

The stems and leaves scarcely differ from those of the common *ovina*, except that the latter are quite smooth. The panicle is upright, for the most part simply branched, the branches leaning one way, angular and rough. Spikelets erect, ovate, compressed, generally clothed with short soft pubescence. Florets 4, 5 or more, lanceolate, pointed, not awned, angular, ribbed, closely imbricated, in which last particular they essentially differ from the species just named. A few of the uppermost florets are mostly viviparous, their glumes being elongated into leaves, and the place of their fructification supplied by a leafy bud, which on falling to the ground becomes a plant, as happens in *Poa alpina* and some other mountain grasses.

Sept.r 1804. Published by Jas Sowerby, London.

FESTUCA cæsia.

Sea-green Heath Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle pointing one way, close, glaucous. Florets cylindrical, roughish, awned; inner glume rough-edged. Straw quadrangular. Leaves compressed, channelled, glaucous.

IN almost the last botanical excursion that I enjoyed with my late friend Mr. Crowe, when we examined the country round Bury, in June 1804, along with our experienced guide Sir Thomas Cullum, we were much struck with the very glaucous aspect of this grass on the dry barren heaths north of that town. We preserved both dry and living specimens; and though the latter have been cultivated ever since in the rich moist ground at Lakenham, and have consequently grown very luxuriantly, their glaucous hue, and all the essential characters above stated, by which they may be known from *F. ovina*, *t.* 585, and *duriuscula*, *t.* 470, remain unchanged. Mr. Dickson informed Mr. Crowe that he had long known this plant on dry ground about Croydon, but could not find any description of it. He thought it near *F. pumila* of Host. Mr. Curtis used to call it *glauca*, but that name is now given by Mr. Winch to another species.

Our plant forms broad perennial depressed tufts, so very conspicuous for their blue-green hue, especially when moist with dew, that they cannot be overlooked. Stems about a span high, naked above, with 4 angles, but the spaces between them are convex. Leaves narrow, compressed, keeled, smooth, marked with a shallow channel above. Stipula minute. Panicle ovate, very glaucous, tinged with purple. Florets 4 or 5 in each calyx, roughish, with short rough awns; their inner glumes downy at the edge.——It flowers in the middle of June.


Jan 7. 1818. Published by Jas Sowerby London.

75.

FESTUCA duriuſcula.

Hard Feſcue-graſs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, ſomewhat cylindrical, with ſharp-pointed glumes.

SPEC. CHAR. Panicle pointing one way, oblong, branched. Florets about ſix, nearly cylindrical, awned. Stem-leaves flat. Root fibrous.

SYN. Feſtuca duriuſcula. *Linn. Sp. Pl.* 108. *Hudſ.* 44. *With.* 153. *Relh.* 40. *Sibth.* 44.
Gramen pratenſe, panicula duriore laxa, unam partem ſpectante. *Raii Syn.* 413. *t.* 19. *f.* 1.
β. Feſtuca dumetorum. *Linn. Sp. Pl.* 109. *With.* 154.

A COMMON graſs every where in paſtures, meadows, and waſte ground, flowering about midſummer.

Root fibrous, perennial. Herbage of a full darkiſh green. Straws a foot or more in height, erect, leafy. Leaves upright, roughiſh: the lower ones ſlender, rigid, acute, compreſſed, ſtriated, their baſe completely ſheathing the ſtraw, with ſcarcely any perceptible ſtipula. Upper leaves broader and flat. Panicle erect, a little zigzag, alternately branched, the branches all leaning one way, the lower ones ſubdivided and moſt ſpreading. Flower-ſtalks all ſharply angular, and rough. Spikelets at firſt cylindrical, but by the florets ſpreading they become flattened, often reddiſh. Calyx of two unequal, carinated, ſharp-pointed huſks. Florets from 4 to 6, the uppermoſt generally abortive, all fixed (a little remotely) to an angular zigzag ſtalk. Outer huſk of the corolla ſtrongly awned, the inner one ſmaller, more delicate and beardleſs. The angles of both are minutely ciliated, or downy; and ſometimes the outer huſk, as well as the calyx, is all over clothed with ſoft pubeſcence, which makes the character of Linnæus's F. *dumetorum*; nor can we, in his own ſpecimens, find any other mark than this, which is a variable one, to diſtinguiſh theſe two ſuppoſed ſpecies. Indeed, his ſpecimens of F. *duriuſcula* are ſome of them downy. The ſwelling in the ſtraw, juſt above the joints, deſcribed in his F. *dumetorum*, ſeems an accidental diſeaſe. What Linnæus calls a *nectarium* in theſe and moſt other graſſes, is a white cloven membrane cloſe to the germen.

The intelligent Mr. Swayne mentions this as a valuable graſs, ſpringing early, being acceptable to all kinds of cattle, growing in moſt good meadows and paſtures, and yielding a good crop.


May 1 1790 Published by J. Sowerby London

FESTUCA rubra.

Creeping Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle pointing one way. Florets roundish, awned. Leaves downy on the upper side. Root creeping.

SYN. Festuca rubra. *Linn. Sp. Pl.* 109. *Sm. Fl. Brit.* 116. *Huds.* 45. *Lightf.* 102. *Hull. ed.* 2. 29. *Stillingfl. Misc. t.* 9.

F. repens, a variety of duriuscula. *Knapp. t.* 119.

Gramen alpinum pratense, paniculâ duriore laxâ spadiceâ, locustis majoribus. *Scheuchz. Agr.* 287. *t.* 6. *f.* 9.

β. Festuca cambrica. *Huds.* 45. *With.* 155. *Hull.* 24.

γ. F. glabra. *Lightf.* 1085. *Huds.* 648. *With.* 154. *Hull.* 24.

δ. F. glauca. *Winch Guide, v.* 2. *præf.* 2.

IT is very hard to say in this genus what may or may not be a species, but we feel much inclined to agree with our observing friend Mr. Knapp, that the 4 supposed species, which we here reduce to one, are not really distinct even from *F. duriuscula, t.* 470. From our figure of the latter its tendency to a creeping root is obvious. In the plant before us, which inhabits the loose barren sands of the sea coast, that part is indeed prodigiously elongated, and acquires long woolly fibres, a change apparently caused by its situation. In alpine specimens the same part spreads less, producing more frequent herbage. The whole plant is strongest and most rigid on the coast, as happens in *Triticum repens*, and occasionally more glaucous likewise. The upper side of the leaves is very downy, and their edges involute. Panicle various in size, as are the awns in length. Florets more or less downy. It flowers in June.

Engraved & published by J. Sowerby London.

FESTUCA rubra.

Creeping Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle pointing one way. Florets roundish, awned. Leaves downy on the upper side. Root creeping.

SYN. Festuca rubra. *Linn. Sp. Pl.* 109. *Sm. Fl. Brit.* 116. *Huds.* 45. *Lightf.* 102. *Hull. ed.* 2. 29. *Stillingfl. Misc. t.* 9.

F. repens, a variety of duriuscula. *Knapp. t.* 119.

Gramen alpinum pratense, paniculâ duriore laxâ spadiceâ, locustis majoribus. *Scheuchz. Agr.* 287. *t.* 6. *f.* 9.

β. Festuca cambrica. *Huds.* 45. *With.* 155. *Hull.* 24.

γ. F. glabra. *Lightf.* 1085. *Huds.* 648. *With.* 154. *Hull.* 24.

δ. F. glauca. *Winch Guide, v.* 2. *præf.* 2.

IT is very hard to say in this genus what may or may not be a species, but we feel much inclined to agree with our observing friend Mr. Knapp, that the 4 supposed species, which we here reduce to one, are not really distinct even from *F. duriuscula, t.* 470. From our figure of the latter its tendency to a creeping root is obvious. In the plant before us, which inhabits the loose barren sands of the sea coast, that part is indeed prodigiously elongated, and acquires long woolly fibres, a change apparently caused by its situation. In alpine specimens the same part spreads less, producing more frequent herbage. The whole plant is strongest and most rigid on the coast, as happens in *Triticum repens*, and occasionally more glaucous likewise. The upper side of the leaves is very downy, and their edges involute. Panicle various in size, as are the awns in length. Florets more or less downy. It flowers in June.

Engraved published by J. Sowerby London.

77.

FESTUCA bromoides.

Barren Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle upright, pointing one way. Florets awl-shaped, awned, rough at the top. Leaves bristle-shaped, shorter than their sheaths.

SYN. Festuca bromoides. *Linn. Sp. Pl.* 110. *Sm. Fl. Brit.* 117. *Huds.* 46. *With.* 151. *Hull.* 23. *Sibth.* 44. *Ehrh. Calam.* 6. *Knapp. t.* 69.

Gramen paniculatum bromoides minus, paniculis aristatis, unam partem spectantibus. *Raii Syn.* 415. *Pluk. Phyt. t.* 33. *f.* 10.

FOUND on dry sandy ground, sometimes on walls, but not common, flowering in June and July. The Rev. Mr. Hemsted sent it from Bedford.

Root annual, of numerous branching fibres. Stems several, forming tufts, about a span high or more, (for the plant varies much in size,) erect, round, very smooth, slender, leafy chiefly in their lower part, and furnished with 3 or 4 brown joints. Leaves light green, upright, slender and involute, acute; smooth at the back; roughish on their upper surface. They are short in proportion to their sheaths, which, except in the lowest leaves, are very long, a little inflated, furrowed, smooth. Stipula very minute. Panicle erect, from an inch to two inches in length, rarely more, spike-like, when luxuriant (as in our specimen) branched at the bottom; its stalks angular and roughish. The spikelets lean towards one side, but do not droop, and are ovate. Calyx-glumes acute, unequal, nearly smooth. Florets about 6, cylindrical, rough at their upper part, crowned with long terminal awns. Seed linear.

P. Curtis del. Published by Jos. Sowerby, London.

FESTUCA Myurus.

Wall Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle drooping, pointing one way. Florets awl-shaped, awned, rough at the top. Leaves bristle-shaped, somewhat keeled, very short.

SYN. Festuca Myurus. *Linn. Sp. Pl.* 109. *Sm. Fl. Brit.* 118. *Huds.* 46. *With.* 151. *Hull.* 23. *Relh.* 37. *Sibth.* 44. *Abbot.* 21. *Dicks. H. Sicc. fasc.* 10. 2. *Knapp. t.* 70.

Gramen murorum, spicâ longissimâ. *Raii Syn.* 415.

THIS is much more frequent than the last in dry barren ground, and especially on the tops of walls, where its long inclining silky panicles, waving with every breath of wind, and growing in large tufts, easily excite attention. It is annual, and flowers in June and July.

It is not easy to define the difference between this and *F. bromoides*, and yet they are surely distinct. In every part of the flower they agree closely. The most striking distinction is the much longer, more slender, and somewhat drooping panicle of that now before us; its leaves also are commonly shorter, broader, and more angular.

Both these grasses are too deficient in herbage to be of any use in agriculture.

Published by Jas Sowerby, London

79.

FESTUCA uniglumis.

Single-husked Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle upright, pointing one way, nearly simple. Florets awl-shaped, compressed, awned. One valve of the calyx very short.

SYN. Festuca uniglumis. *Soland. in Ait. H. Kew. v.* 1. 108. *Sm. Fl. Brit.* 118. *Dicks. H. Sicc. fasc.* 17. 1. *Knapp. t.* 71.

Stipa membranacea. *Linn. Sp. Pl.* 116? *Mant.* 2. 326?

Lolium bromoides. *Huds.* 55. *With.* 169. *Hull.* 27.

Festuca avenacea sterilis humillima, spicâ unam partem spectante. *Dill. in Raii Syn.* 413. *n.* 3. *t.* 17. *f.* 2, but not *Raii Syn. ed.* 2. 261. 4.

FOUND on the sandy sea shore of Sussex, from whence we have several times received specimens. It flowers in June, and varies greatly in luxuriance according to the moisture of the season.

Root biennial, fibrous. Stems several, from 4 to 6 inches high, nearly upright, angular, smooth, leafy, often branched below. Leaves smooth, a little involute, with broad inflated sheaths. Stipula very short. Panicle upright, very little compound, its branches leaning all one way, compressed, with rough edges. Spikelets upright, lanceolate, flattish. Outer valve of the calyx almost as long as the spikelet, awl-shaped, awned, rough: inner very minute, scarcely perceptible without a glass; it is however present, and every analogy requires that it should be called a valve, though so very small, in which particular this species essentially differs from those in *t.* 1411 and 1412. *Stipa membranacea* of Linnæus, a real *Festuca*, seems only a more luxuriant state of this grass.

March 1. 1805. Published by Jas Sowerby, London.

FESTUCA triflora.

Three-flowered Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle spreading. Spikelets three-flowered, with long awns.

SYN. Bromus triflorus. *Linn. Sp. Pl.* 115. *Fl. Dan. t.* 440. *Sm. Tr. of Linn. Soc. v.* 8. 276.

Gramen bromoides, paniculâ sparsâ, locustis minoribus aristatis. *Scheuchz. Agr.* 511. *t.* 5. *f.* 19.

THIS grass, new to Britain, and very little known to botanists in general, was found by Mr. Crowe on his estate at Saham, Norfolk, in the autumn of 1804, when it was in flower, as recorded in the 8th volume of the Linnæan Society's Transactions. His original specimen is drawn in our plate, but he could never again find the precise spot where it grew, nor have I since his death had either opportunity or inclination to visit that sequestered country, where we have together collected several uncommon plants as well as insects.

Less accurate observers than Mr. Crowe may probably have overlooked this plant for *Festuca gigantea, t.* 1820; but besides its smaller size and many shades of difference in its stipula and habit, it is essentially distinguished by having but 3, or at most 4, florets in each calyx, and a more spreading, less drooping, panicle. The florets are slightly 5-ribbed in their upper part. Awns long, rough, alike terminal in all the florets, as far as we can discern, there being only now and then a slight separation of the marginal membrane. Inner glumes minutely rough with depressed short hairs, not coarsely fringed. Root tufted, perennial, with many strong rough fibres.

Aug. 1. 1808. Published by Jas. Sowerby, London.

81.

[1820]

FESTUCA gigantea.

Tall Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle drooping toward one side, branched and spreading. Florets lanceolate, swelling, awned. Leaves lanceolate, ribbed.

SYN. Festuca gigantea. *Villars Dauph. v.* 2. 110. *Sm. Fl. Brit.* 120. *Relh.* 37.

Bromus giganteus. *Linn. Sp. Pl.* 114. *Huds.* 51. *With.* 162. *Sibth.* 48. *Abbot.* 24. *Curt. Lond. fasc.* 5. *t.* 7. *Knapp. t.* 87. *Ehrh. Phytoph.* 52.

Gramen avenaceum glabrum, paniculâ e spicis raris strigosis compositâ, aristis tenuissimis. *Raii Syn.* 415.

THIS grass often occurs in groves and shady places that are rather moist. It flowers in July and August.

Root perennial, fibrous, blackish. Stem 3 or 4 feet high, upright, simple, leafy, round, striated, smooth to the touch. Leaves upright, of a full green, broadish, rather lanceolate than linear, pointed, ribbed, shining beneath, rough on the upper side and at the edge. Sheaths long, smooth. Stipula short, brown, jagged when old, embracing the stem (as Curtis well observes) by an acute appendage at each side. Panicle large, loose, leaning to one side, compound, rough, bearing numerous drooping alternate spikelets, each inclining to an ovate figure. Calyx-valves unequal, ribbed, acute. Florets from 4 to 6, imbricated, ovato-lanceolate, occasionally smooth or roughish, furnished with 5 ribs most conspicuous in the upper part, and with a long terminal rough awn, which is sometimes twisted. The inner valve is about as large as the outer, cloven, minutely downy at the edge as in many species of *Festuca*, not fringed as in the *Bromi*. Seed elliptical, large.

Dec. 1. 1807. Publish'd by Ja.s Sowerby, London.

V

FESTUCA calamaria.

Reed-like Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp pointed glumes.

SPEC. CHAR. Panicle pointing one way, erect, much branched. Florets oblong, angular, beardless. Leaves sword-shaped, striated.

SYN. Festuca calamaria. *Sm. Fl. Brit.* 121.

Poa trinervata. *Schrad. Spicil.* 3. *Wilden. Sp. Pl.* *v.* 1. 389.

A NATIVE of moist rather alpine woods. Our specimens were communicated by Mr. G. Donn of Forfar, who informs us that he has known this grass for 12 years past, having found it in Dumbartonshire and Breadalbane, also near Fort Augustus. We first received it from Mr. Mackay, see *Fl. Brit.* It is not, however, peculiar to Scotland. The Rev. Mr. Butt has found it in a wood near Newtown Barry, Ireland; and Mr. Moseley of Glashampton favoured us lately with living plants from the ledges of a lofty red sand-stone rock in Shrawley wood, near his residence. Of so new and rare a plant we would not omit to mention all its known stations.

It flowers in July, and is perennial. Root fibrous, forming large tufts. Stems erect, a yard high or more, reed-like, round, smooth, leafy, with purplish joints. Leaves upright, broad, flat, long-pointed, striated, roughest at the edge, with sheaths about their own length, roughish but not hairy. Stipula short, notched. Panicle much-branched, very various in density according to its meeting with more or less shelter. Spikelets small, often tinged with purple or brown, roughish under a microscope. Calyx narrow and pointed. Florets 3, 4 or 5, linear-oblong, a little distant; their outer valve largest and keeled; their inner with 2 ribs often folded together so as to look like a simple keel, which gives them a peculiar appearance, and has caused some inaccuracy in the description in *Fl. Brit.* which it is our duty to point out.

Curtis's non Publication

✓

FESTUCA decidua.

Deciduous Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle pointing one way, erect, much branched. Florets two or three, oblong, angular, beardless; the upper ones deciduous. Leaves linear, striated.

SYN. Festuca decidua. *Bellardi Mss.*

GATHERED last summer in Gurness Gill, on the south side of Howes-water, Westmoreland, by the Rev. Mr. Holme, F.L.S. We find his specimens agree in every point with one sent from Piedmont in 1789, under the above name, by our worthy friend Dr. Bellardi, with an inquiry "whether it might be *F. sylvatica* of Villars?" It certainly comes very near that species, which is our *F. calamaria, t.* 1005; a name we preferred, as not clashing with *F. sylvatica* of Hudson, our *Bromus sylvaticus, t.* 729; but which we shall willingly resign to Schrader's decision in favour of the former.

None of the eminent authors just named, any more than Haller or Scheuchzer, as far as we can find, has adverted to the grass before us, even as a variety; nor indeed did these two great Swiss botanists know our *t.* 1005.

The present is a much more humble and slender plant than that. Leaves not above a third so broad, quite linear, tapering to a fine point; their ribs, furrows and rough edges agree, as do their stipulas, the joints of their stems, and their inflorescence. The spikelets however are very different, consisting of two or three florets at most, of which the upper one is generally abortive, and that, as well as the second, soon falls off, leaving the lowermost only to ripen seed. This is too regularly the case in all our specimens to be attributed to accidental starvation, neither does the plant seem to have a very prolific root to account for it. How far its remarkable scales at the bottom of the stems are peculiar, we have not at present the means of deciding.

Apl 1 1803 published by Jn° Emerton London

X

X ✓

FESTUCA loliacea.

Spiked Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Spike two-ranked, drooping. Spikelets nearly sessile, linear-oblong. Florets cylindrical, without awns or dorsal ribs.

SYN. Festuca loliacea. *Huds. ed.* 1. 38. *Sm. Fl. Brit.* 122. *With.* 157. *Hull.* 24. *Relh.* 38. *Sibth.* 45. *Curt. Lond. fasc.* 6. *t.* 9. *Knapp t.* 74.

F. fluitans β. *Huds.* 47.

F. elongata. *Ehrh. Calam.* 93.

Graminis loliacei vulgaris varietas spicis rariùs dispositis. *Moris. sect.* 8. *t.* 2. *f.* 2.

NOT unfrequent in rich, rather moist, pastures and meadows, flowering in July, though its great resemblance to *Lolium perenne, t.* 315, occasions it to be generally overlooked.

Root perennial, fibrous. Stems erect, 2 feet high, simple, slender, leafy, round, smooth. Leaves linear, narrow, flat, ribbed, smooth, with long sheaths and very short stipulas. Spike long and lax, a little drooping, the spikelets upright, mostly sessile, in 2 ranks, alternate, linear-oblong, acute, many-flowered, awnless, smooth. Calyx of 2 very unequal, acute valves; the outermost strongly ribbed, not keeled. Florets somewhat loosely ranged, acute, cylindrical, smooth, without any keel or rib, except 2 small nerves near each margin: the inner valves about as large, flat, downy at the edge.

The 2-valved calyx and paler hue clearly distinguish it from *Lolium perenne,* as the acute florets, without any central ribs, do from all the varieties of *Poa fluitans, t.* 1520. Neither can we conceive this plant to be a hybrid production. Its seeds indeed are rarely ripened, because the roots increase very fast. It is esteemed a good pasture grass.

Dec. 1, 1807. Published by Jas Sowerby London.

85.

FESTUCA pratensis.

Meadow Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle nearly upright, loose, pointing to one side. Spikelets linear, compressed, bluntish. Florets cylindrical, obscurely ribbed.

SYN. Festuca pratensis. *Huds. ed.* 1. 37. *Sm. Fl. Brit.* 123. *Relh.* 38. *Abbot.* 21. *Curt. Lond. fasc.* 6. *t.* 7. *Mart. Rust. t.* 84. *Knapp, t.* 73.

F. elatior. *Linn. Fl. Suec.* 32. *With.* 156, *var.* 2. *Hull.* 24.

F. fluitans γ. *Huds.* 47.

Gramen paniculatum elatius, spicis longis muticis squamosis. *Raii Syn.* 411; but not *Barrel. Ic. t.* 25.

NOT uncommon in meadows and pastures, especially such as are rather moist, where it flowers about the middle or end of June.

Root fibrous, perennial. Stems about 2 feet high, erect, smooth, simple, leafy. Leaves spreading, linear, pointed, flat, of a darkish green, striated; the upper ones rough on both sides to the touch. Sheaths striated, very smooth. Stipula short and obtuse, decurrent, embracing the stem. Panicle nearly erect, its branches spreading chiefly to one side, growing in pairs, unequal in size; the stalks compressed and rough. Spikelets stalked, divaricated, alternate, linear-oblong, bluntish, compressed, smooth, tinged with purple or brown. Calyx-glumes unequal, sharpish, smooth. Florets numerous, a little distant, two-ranked, cylindrical, acute, marked in the upper part with 5 inconspicuous ribs; their margin membranous. Inner valves downy at the edge.

Mr. Curtis, whose whole account of this grass is excellent, recommends it as very hardy, and affording a plentiful crop of good herbage.

May 1 1800 Published by

86.

FESTUCA elatior.

Tall Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle drooping, spreading loosely every way, very much branched. Spikelets ovato-lanceolate, acute. Florets cylindrical, obscurely ribbed.

SYN. Festuca elatior. *Linn. Sp. Pl.* 111. *Sm. Fl. Brit.* 124. *Huds.* 47. *With.* 155. *Hull.* 24. *Relh.* 38. *Sibth.* 45. *Abbot.* 21. *Curt. Lond. fasc.* 6. *t.* 8.

G. arundinaceum aquaticum, paniculâ avenaceâ. *Raii Syn.* 411.

G. paniculatum nemorosum, latiore folio, glabrum, paniculâ nutante non aristatâ. *Dill. in Raii Syn.* 411, but the plant of Micheli is F. calamaria, *t.* 1005.

FOUND in the moist meadows and osier-grounds about the Thames, and in other similar places. Sherard had it from Dover in a very luxuriant state; and from his specimens, which we have compared with those of Linnæus, Dillenius admitted it into his edition of Ray, though (unless I am greatly mistaken) it is not different from the species in that work immediately preceding.

It is perennial, flowering in July. The root is fibrous, forming very large tufts producing abundance of coarse herbage. The stems vary from 3 to almost 5 feet in height. Leaves twice the size of *F. pratensis;* from which it further differs in having a much more branched and drooping panicle, which spreads nearly in every direction, with ovate, acute, less compressed spikelets.

May 1. 1806. Published by Jas. Sowerby, Lond.

87.

BROMUS secalinus.

Smooth Rye Brome-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, 2-ranked. *Awn* from below the top. *Inner husk* fringed.

SPEC. CHAR. Panicle spreading; stalks but little branched. Spikelets ovate, compressed, of about ten distinct, somewhat cylindrical, florets.

SYN. Bromus secalinus. *Linn. Sp. Pl.* 112. *Sm. Fl. Brit.* 125. *Tr. of Linn. Soc. v.* 4. 281. *Hull.* 24. *Relh.* 39. *Abbot.* 22.

B. polymorphus γ. *Huds.* 49. *With.* 159. *var.* 2.

Festuca avenacea, spicis habitioribus, glumis glabris. *Raii Syn.* 414.

SINCE the species of this difficult genus have become better known to botanists, the *B. secalinus* has been observed in corn-fields in various parts of Britain. In Norfolk it often occurs. Our specimens were sent from Copgrove near Knaresborough by the Rev. Mr. Dalton, in the middle of September 1802.

The root is annual. Stem about 3 feet high, simple, round, smooth and leafy. Leaves broadish, flat, ribbed; rough at the edge and underneath; clothed above with short soft hairs: their sheaths furrowed, but not rough. Stipula very short. Panicle various in luxuriance, but the branches are generally not much subdivided; they grow upright, at length spreading, and curved down by the ripe spikelets, which are smooth, ovate, flat, composed of 8 or 10, rarely 12 florets, so far separated at their base when ripe that the common stalk appears between them. Each floret is nearly cylindrical, smooth, rarely downy, marked with 7 slight ribs, and bearing from its back a rough shortish awn. The inner husks are toothed rather than fringed. In an early state the florets are flatter and more imbricated, so that this species may then be confounded with *B. racemosus*, *t.* 1079. For want of attending to their different stages of growth Mr. Hudson has been led into great errors.

June 1 1803 Published by Jas Sowerby, London.

88.

BROMUS multiflorus.

Downy Rye Brome-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, 2-ranked. *Awn* from below the top. *Inner husk* fringed.

SPEC. CHAR. Panicle spreading; stalks but little branched. Spikelets ovato-lanceolate, compressed, of about fifteen, rather imbricated, and somewhat cylindrical, florets.

SYN. Bromus multiflorus. *Weigel. Obs.* 2. *t.* 1. *f.* 1. *Sm. Fl. Brit.* 126. *Tr. of Linn. Soc. v.* 4. 283. *Hull.* 25. *Relh.* 39. *Knapp. t.* 80.

B. secalinus. *Leers.* 36. *t.* 11. *f.* 2. *Lightf.* 1086. *Linn. Fl. Suec. ed.* 2. 33 β.

Festuca graminea, glumis hirsutis. *Bauh. Theatr.* 143. *Scheuchz. Agr.* 250. *t.* 5. *f.* 9.

WEIGEL's figure and description in his rare dissertation leave no doubt of this being his *B. multiflorus*, and he is the first botanist who understood it, though there is little or no doubt of any of the above synonyms. Lightfoot's indeed depends chiefly upon the place of growth, for his account is a compilation. I wish some good botanist would search the fields between Edinburgh and New Haven, where I gathered the specimen here delineated, in July 1782. It is the only British one of which we are quite certain.

This species differs from *B. secalinus*, *t.* 1171, to which it is nearest allied, in having more lanceolate spikelets, consisting of from 12 to 16 florets, with downy glumes. We should however by no means depend on such a difference of number, but there is an essential distinction in their shape. These florets are much less cylindrical, and never so remote as in the *secalinus*, in which respect they more approach *mollis*, *t.* 1078, but those are only concave, and never cylindrical at all. To understand this genus truly, the spikelets must be observed in their several stages of growth, and then I believe the species cannot be confounded.

May 1 1808. Published by Jas Sowerby London.

89.

BROMUS mollis.

Soft Brome-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, 2-ranked. *Awn* from below the top. *Inner husk* fringed.

SPEC. CHAR. Panicle erect, close, compound. Spikelets ovate. Florets imbricated, depressed, ribbed, downy.

SYN. Bromus mollis. *Linn. Sp. Pl.* 112. *Sm. Fl. Brit.* 126. *Tr. of Linn. Soc. v.* 4. 284. *Hull.* 25. *Curt. Lond. fasc.* 1. *t.* 8. *Mart. Fl. Rust. t.* 99. *Relh.* 45. *ed.* 2. 39. *Sibth.* 47. *Abbot.* 23.
B. polymorphus α. *Hudf.* 48. var. 1. *With.* 159.
Festuca avenacea hirsuta, paniculis minùs sparsis. *Raii Syn.* 413.

VERY common and abundant in pastures, also on waste ground, walls, &c. flowering early in June, when it makes a considerable part of the general crops of hay.

Root annual, of a few simple fibres. Stem erect, about 2 feet high, simple, generally smooth, sometimes hairy; the joints swelling, and often thickly clothed with hairs. Leaves and their sheaths thickly covered with soft hoary pubescence. Stipulæ bluntly pointed. Panicle 2 or 3 inches long, erect, close, a little spreading when in full flower; its branches half-whorled, the uppermost simple, some of the rest always more or less subdivided, various in length, all angular, and downy. Spikelets nearly upright, ovate, acute, rather tumid. Florets from 7 to 10, rarely fewer, closely imbricated, elliptical, concave, and depressed, not cylindrical; their outer valve downy, marked with 7 or 9 strong, green ribs, and bearing a rough awn about their own length, a little below their summit; inner valves membranous, with a thick green fringed edge. Seed elliptical, large, depressed and nearly flat.——In a starved condition the panicle of course becomes simple, consisting sometimes of only 3 or 4 spikelets; which constitutes the *B. nanus* of Weigel, and is frequent on the sandy sea shore.

Oct.r 1. 1802 Published by Ja.s Sowerby, London

90.

BROMUS racemosus.

Smooth Brome-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, 2-ranked. *Awn* from below the top. *Inner husk* fringed.

SPEC. CHAR. Panicle nearly erect, spreading, simple. Spikelets ovate, of about six imbricated, depressed, ribbed, smooth florets.

SYN. Bromus racemosus. *Linn. Sp. Pl.* 114. *Sm. Fl. Brit.* 128. *Tr. of Linn. Soc. v.* 4. 286. *Hull.* 25.

B. polymorphus β, δ. *Hudſ.* 49. var. 3, 4. *With.* 160.

Festuca avenacea, spicis strigosioribus, e glumis glabris compactis. *Raii Syn.* 414.

Gramen avenaceum pratense, glumâ tenuiore glabrâ. *Dill. in Raii Syn.* 414.

THERE is reason to presume that this species of *Bromus*, though long overlooked by the generality of botanists, is not extremely rare. Since its characters have been more amply explained than heretofore, we have received it from various quarters. It mostly occurs in arable land, flowering in June. The present specimen grew at Battersea.

This is an annual plant, like the *B. mollis*, with which it much agrees in general habit, except being rather more slender. The hairs which clothe the sheaths of the leaves generally point downward. It is however best known by the following marks. The panicle is simple, for even in the most luxuriant specimens it is hard to find a branched or divided flower-stalk: the spikelets scarcely ever consist of more than six florets, and are always perfectly smooth and shining, elegantly variegated with green and white, and having less prominent ribs than those of *B. mollis*. The awns are about the length of the valves, as in the last-mentioned species.

Oct.r 1 1802 Published by Jas Sowerby. London

91.

BROMUS squarrosus.

Corn Brome-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, 2-ranked. *Awn* from below the top. *Inner husk* fringed.

SPEC. CHAR. Panicle drooping; stalks simple. Spikelets ovate, of about twelve imbricated depressed florets, with divaricated awns.

SYN. Bromus squarrosus. *Linn. Sp. Pl.* 112. *Sm. Fl. Brit.* 129. *Tr. of Linn. Soc. v.* 4. 288. *Huds.* 49? *With.* 160? *Hull.* 25?

Festuca graminea, glumis vacuis. *Scheuchz. Agr.* 251. *t.* 5. *f.* 11.

Gramen phalaroides majus acerosum, nutante spicâ. *Barrel. Ic. t.* 24. *f.* 1.

MR. HUDSON mentions this grass as growing in fields near Glastonbury, Somersetshire, and Marshfield, Sussex, but no other person has been able to find it. Mr. Knapp, the great investigator of British grasses, has never met with it, and I have hinted my doubts on the subject in the *Fl. Brit.*, since which I have received *B. secalinus* from Sussex as *squarrosus*, from a friend of Mr. Hudson's, though not indeed with his authority. Wishing this work to contain all the British plants, as enumerated in the *Flora Britannica*, we think it right to introduce a figure of every such plant, not *proved* to be a mistake, from foreign specimens when no other are to be had. Very few indeed are in such a predicament, and our figures will lead practical observers to decide each point in dispute, for the profit of those who come after us. Having so nearly reached the termination of our labours, we would leave nothing undone.

This is a small annual species, remarkable for its large ovate spikelets, with turgid (but not cylindrical) many-ribbed florets, whose inner glumes are comparatively very small, fringed with remote teeth. The awns are singularly divaricated. The hairs on the sheaths of the leaves point downwards.

May 1.1808. Published by Ja.t Sowerby London.

92.

BROMUS arvensis.
Taper Field Brome-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, 2-ranked. *Awn* from below the top. *Inner husk* fringed.

SPEC. CHAR. Panicle spreading, drooping, compound. Spikelets lanceolate, acute, about eight-flowered. Florets elliptical, imbricated, smoothish, with two close ribs on each side.

SYN. Bromus arvensis. *Linn. Sp. Pl.* 113. *Fl. Suec. n.* 97. *Sm. Tr. of L. Soc. v.* 4. 289. *Fl. Brit.* 130. *Rel. Rudb.* 15. *Leers t.* 11. *f.* 3. *Ehrh. Calam.* 64.

B. spiculi-tenuata. *Knapp t.* 81.

B. verticillatus. *Cavan. Ic. t.* 590.

Festuca elatior, paniculis minùs sparsis, locustis oblongis strigosis aristatis purpureis splendentibus. *Raii Syn. ed.* 2. 261.

TWO distinct species have been confounded under *Bromus arvensis* in England. This, to which all the above synonyms, as well as the rest in Fl. Brit. after Ray's, and the description, certainly belong, was gathered by Sherard near Southampton, by Mr. W. Backhouse and by Mr. Knapp on the coast of Durham. The latter botanist rightly distinguished it, but was unfortunate in its name, not suspecting it to be the true original *arvensis*.

It is an annual plant, flowering late. The stem is often a yard high, with a very large, branching, many-flowered, drooping, and at length pendulous panicle, whose lowest stalks mostly have bracteas at their base; a great peculiarity. Leaves downy. Sheaths of the lower ones clothed with dense short deflexed hairs. Spikelets slender, lanceolate, shining, variegated with purple, of about 8 florets with upright awns.

We must therefore substitute for the letter-press of *t.* 920 the following character and synonyms.

v. 13. *t.* 920.

BROMUS pratensis.
Tumid Field Brome-grass.

SPEC. CHAR. Panicle spreading, compound. Spikelets ovate, turgid, eight- or ten-flowered. Florets elliptical, broad, imbricated, smoothish, with three equidistant ribs on each side.

SYN. Bromus pratensis. *Ehrh. Calam.* 116.

B. arvensis. *Knapp t.* 82. *Dicks. H. Sicc. fasc.* 18. 5.

THIS is the Earsham plant, found also by Mr. Lambert at Boyton, Wiltshire. Our description at *p.* 920 requires correction, as having been made with some reference to the true *arvensis* above.

Feb 1 1809 Published by Ja^s Sowerby London

V

93.

BROMUS arvensis. Nutans

Field Brome-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, 2-ranked. *Awn* from below the top. *Inner husk* fringed.

SPEC. CHAR. Panicle spreading: its stalks branched. Spikelets lanceolate, about eight-flowered. Florets elliptical, imbricated, depressed, smoothish.

SYN. Bromus arvensis. *Linn. Sp. Pl.* 113. *Sm. Fl. Brit.* 130. *Tr. of L. Soc. v.* 4. 289. *With.* 162. *Hull.* 25. *Leers. t.* 11. *f.* 3.

B. erectus *β. Hudf.* 50?

Festuca elatior, paniculis minùs sparsis, locustis oblongis strigosis aristatis purpureis splendentibus. *Raii Syn.* 414.

HOW much uncertainty has attended this grass as a native of Britain may be seen in Withering. We doubt whether Hudson or Lightfoot ever knew it. *Fl. Dan. t.* 293. may be intended for an awnless variety; but we have never seen such, and the pubescence is incorrect. Sherard's herbarium contains the true plant, gathered by him near Southampton, and well known to Dillenius, as well as Linnæus. Our accurate friend Mr. Woodward first observed the same in the borders of a field at Earsham, Norfolk, many years ago, and supplied us with fresh specimens last June.

The root is annual. Stem simple, 2 or 3 feet high, leafy, striated, smooth. Leaves bright-green, a little downy on each side, their sheaths thickly clothed with soft hairs pointing downwards. Stipula short. Panicle erect, many-flowered; its branches whorled, many of them compound and subdivided, at least in luxuriant specimens, for the plant often grows much larger than in those now before us. Spikes lanceolate and erect at first, afterwards more ovate and drooping, formed of about 8 or more imbricated, elliptical, depressed (not cylindrical or distant) florets, variegated with green, purple, and white, but little downy, and remarkable for a glossy appearance scarcely observable in other *Bromi*. The antheræ are occasionally purple or yellow.

94.

BROMUS erectus.

Upright Brome-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, 2-ranked. *Awn* from below the top. *Inner husk* fringed.

SPEC. CHAR. Panicle erect, a little branched. Florets numerous, slender. Radical leaves very narrow, fringed with white scattered hairs.

SYN. Bromus erectus. *Hudf.* 49. *With.* 160. *Sibth.* 47. *Relh. Suppl.* 2. 8.

B. agrestis. *Allion. Ped. V.* 2. 249.

B. perennis. *Villars Dauph. V.* 2. 122.

Festuca avenacea sterilis, spicis erectis. *Raii Syn. ed.* 2. 261. *ed.* 3. 413. the synonyms erroneous.

THIS grass prefers a sand on a chalky soil. Mr. Crowe observed it at Holkham, Norfolk. The Rev. Mr. Hemsted sent this specimen from Cambridgeshire. It was first found by Sherard, near Oxford, from whom (through Bobart) it became known to Ray, as we find by the Sherardian Herbarium at Oxford, where, also, by the favour of the present liberal and scientific professor, Dr. Williams, I have learned to decypher the synonyms of this whole genus, which have not been understood by Dillenius, nor any subsequent author, even Linnæus having lent his hand to the almost inextricable confusion.

Root perennial, by which this *Bromus* differs from *arvensis* with which it has been confounded. Straw 2 or 3 feet high, leafy, upright, jointed, sometimes a little downy. Radical leaves numerous, harsh, upright, narrow, fringed unequally with long white scattered hairs, pointing upwards. The stem-leaves are much broader, and have fewer or none of these hairs. Panicle erect, as are all its branches, most of which are simple, one or two only being sometimes branched; all are rough, various in length. Glumes compressed, carinated, purplish, shining, sometimes very downy, sometimes naked, but with a roughish keel and awn, which last, though of course a continuation of the keel, actually separates from the glume a little below its membranous summit. The inner valve of the corolla is finely fringed, though less conspicuously than in most *Bromi*, at least the annual ones. The calyx contains from 7 to 9 or more florets, being in that respect very various. Awn shorter than the husks. Antheræ of a fine saffron colour. Vaillant has well figured this grass, *t.* 18. *f.* 2; but Morison's *sect.* 8. *t.* 7. *f.* 13, however like it, is done from another species.

95.

BROMUS asper.

Hairy Wood Brome-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, 2-ranked. *Awn* from below the top. *Inner husk* fringed.

SPEC. CHAR. Panicle drooping, branched. Florets lanceolate, almost cylindrical, but slightly ribbed. Leaves uniform: the lower ones hairy.

SYN. Bromus asper. *Linn. Suppl.* 111. *Sm. Fl. Brit.* 133. *Tr. of Linn. Soc. v.* 4. 293. *With.* 161. *Hull.* 25. *Relh.* 40. *Mart. Rust. t.* 126.

B. nemoralis. *Huds.* 51.

B. hirsutus. *Curt. Lond. fasc.* 2. *t.* 8. *Sibth.* 48. *Abbot.* 23.

Gramen avenaceum dumetorum, paniculâ sparsâ. *Raii Syn.* 415.

THIS gigantic grass often appears in moist woods and hedges about July and August, extending its wide-spreading drooping panicle over the tops of ferns and bushes, being often 6 feet in height.

The root is annual or biennial, consisting of many strong pale fibres, not creeping. Stem erect, round, leafy, smooth in the upper part. Leaves spreading, broad, of a full green, flat, ribbed, rough, and also clothed with long spreading hairs. They are all nearly of equal breadth, in which respect added to many others this differs from *B. erectus, t.* 471. The sheaths are cylindrical, very rough with deflexed hairs. Spikelets linear-oblong, pendulous, often brownish, a little downy. Calyx-glumes very unequal. Florets about 9, imbricated, at length loosely spreading, lanceolate, somewhat cylindrical, obscurely 3-ribbed, roughest on the keel. Awn rough, from below the top, and shorter than the husk. Inner husk closely fringed, its membranous edges bent in. Antheræ saffron-coloured.

If the dorsal awn and fringed inner husk be duly attended to, this can never more be confounded with *Festuca gigantea.*

June 1. 1803. Published by Ja.s Sowerby, London.

96.

BROMUS ſterilis.

Barren Brome-graſs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, 2-ranked. *Awn* from below the top. *Inner huſk* fringed.

SPEC CHAR. Panicle drooping, moſtly ſimple. Florets lanceolate, ribbed, furrowed. Leaves downy.

SYN. Bromus ſterilis. *Linn. Sp. Pl.* 113. *Sm. Fl. Brit.* 134. *Tr. of L. Soc. v.* 4. 295. *Hudſ.* 50. *With.* 162. *Hull.* 25. *Relh.* 46. *Sibth.* 47. *Abbot.* 23. *Curt. Lond. faſc.* 1. *t.* 9. *Mart. Ruſt. t.* 125.

Feſtuca avenacea ſterilis elatior, ſeu Bromos Dioſcoridis. *Raii Syn.* 412.

ONE of the moſt frequent graſſes in waſte ground, about hedges, and even in cultivated fields, flowering in June and July. The elegantly pendent panicle renders it conſpicuous; but this ornamental quality will ſcarcely compenſate for its inutility to the agriculturiſt, which by common conſent has procured it the name of *ſterilis*. In fact its leaves, though eatable for cattle, are too few and ſhort-lived to render it of any uſe, and the harſh ſtems and panicle will ſcarcely be touched while other food is within reach.

The root is annual and ſmall. Stem 2 feet high, erect, jointed, leafy. Leaves ſpreading, flat, ſhortiſh, clothed with ſoft down. Stipula torn. Panicle large, ſlender, ſpreading, rough, its branches very ſeldom ſubdivided. Spikelets pendulous, lanceolate, compreſſed, browniſh green, of 6 or 8 lanceolate, keeled, rough, long-bearded florets, each marked with 7 or 9 ribs. Stamina 3, by which it is diſtinguiſhed with certainty from *B. diandrus*, *t.* 1006. In both theſe ſpecies the ſtyles grow laterally out of the germen, a peculiarity pointed out by Mr. Curtis.

Lond. Pub. Published by J. Sowerby.

97.

BROMUS diandrus.

Upright annual Brome-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, 2-ranked. *Awn* from below the top. *Inner husk* fringed.

SPEC. CHAR. Panicle upright, spreading, scarcely subdivided. Florets lanceolate, ribbed, furrowed, with only two stamina.

SYN. Bromus diandrus. *Curt. Lond. fasc.* 6. *t.* 5. *Sm. Fl. Brit.* 135. *Tr. of L. Soc. v.* 4. 296.

B. madritensis. *Linn. Sp. Pl.* 114. *With.* 161.

B. muralis. *Hudf.* 50. *Sibth.* 48.

Festuca avenacea sterilis, paniculis confertis erectioribus, aristis brevioribus. *Raii Syn. ed.* 2. 261.

OUR specimens of this *Bromus* were gathered at St. Vincent's rocks, Bristol, by the Rev. Mr. Hemsted. It grows mostly on sandy barren ground, walls, and waste places, but not commonly. Mr. Curtis, who is entitled to great praise for first observing the flowers to be diandrous, found it at Battersea. The late worthy Dr. Withering made the same remark in Portugal, and we are thus enabled clearly to distinguish the present species from the common *B. sterilis.* Indeed it differs from that also in being lower, less downy, with an erect more compact panicle, which, though somewhat spreading, is never lax or pendulous. The hue of its spikelets is also more frequently purplish. The nerves of the glumes are in general less prominent, and the two principal ones most conspicuous on each side stand in this species peculiarly close together.—The root is small and annual; the flowers are perfected in June. Dr. Withering was persuaded that this grass, sown in the autumn, might afford a good crop of early fodder in the spring, and be worth the husbandman's attention.

April 1, 1809 Published by J. Sowerby Lond.

98.

BROMUS ſylvaticus.

Slender Wood Brome-graſs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, 2-ranked. *Awn* from below the top. *Inner huſk* fringed.

SPEC. CHAR. Spike ſimple, drooping, leaning one way. Spikelets ſeſſile, roundiſh. Awns longer than their huſk. Leaves hairy.

SYN. Bromus ſylvaticus. *Tr. of Linn. Soc. v.* 4. 300. *Sm. Fl. Brit.* 136. *Hull.* 26.

Feſtuca ſylvatica. *Hudſ. ed.* 1. 38. *With.* 158. *Relh.* 44. *Sibth.* 46. *Mart. Fl. Ruſt. t.* 114. *Dickſ. H. Sicc. faſc.* 13. 9.

Gramen avenaceum dumetorum ſpicatum. *Raii Syn.* 394.

FREQUENT in copſes and thickets by the ſides of ſhady lanes, more eſpecially on a gravelly or ſandy ſoil, flowering in July, when its ſlender form, riſing above the ſurrounding herbage, renders it conſpicuous. It becomes ſtill more ſo in the latter part of ſummer by aſſuming a yellowiſh or tawny hue, eſpecially in the lower leaves. It is of no agricultural uſe.

The root is fibrous, tufted, perennial. Stem 2 feet or more in height, round, leafy, ſmoothiſh, tapering, very ſlender and a little drooping in the upper part. Leaves ſpreading, flat, pointed, a little rigid, rough, ribbed, more or leſs hairy, bright green. Sheaths ſtraight, cloſe, hairy. Stipula ſhort, blunt, torn. Spike ſimple, drooping, zigzag, formed of 6 or 7 alternate, ſeſſile, cylindrical, linear-lanceolate ſpikelets, all inclining towards one ſide, generally downy. Glumes of the calyx unequal, tipped with ſhort awns. Florets from 6 to 9, imbricated, at length a little ſpreading and ſomewhat cylindrical, in the upper part ſtrongly ribbed and rough. Awn terminal, rough, generally much longer than the glume. Inner glume blunt, fringed with rigid briſtles, on which I am perſuaded the eſſential character of *Bromus* depends more than on the inſertion of the awn.

99.

BROMUS pinnatus.

Spiked Heath Brome-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, 2-ranked. *Awn* from below the top. *Inner husk* fringed.

SPEC. CHAR. Spike ſimple, erect, two-ranked. Spikelets ſeſſile, roundiſh. Awns ſhorter than their huſk. Leaves almoſt naked.

SYN. Bromus pinnatus. *Linn. Sp. Pl.* 115. *Tr. of Linn. Soc. v.* 4. 301. *Sm. Fl. Brit.* 137. *Hudſ. ed.* 1. 41. *Hull.* 26.

Feſtuca pinnata. *Hudſ.* 48. *Relh.* 44. *Sibth.* 46. *Abbot.* 22. *Dickſ. H. Sicc. faſc.* 13. 8.

Gramen ſpicâ Brizæ majus. *Raii Syn.* 392.

THIS graſs is found on open commons or heaths in a free-ſtone ſoil; not unfrequently in Yorkſhire, Oxfordſhire and Kent, but rarely elſewhere. It is perennial, and flowers in July. Many botaniſts have united it with the preceding; but its greater ſmoothneſs, firmneſs and rigidity, indeed its whole aſpect, ſeem to authorize a ſpecific diſtinction.

The root is ſomewhat creeping. Stem hardly 2 feet high, very ſmooth, altogether erect, and ſcarcely tapering in the upper part. Leaves very rarely clothed with a few hairs on the upper ſide. Sheaths quite ſmooth and poliſhed. Spikelets in 2 ranks, and not leaning to one ſide, long, linear, a little downy. Calyx-glumes rather elliptical, many-nerved. Florets more numerous than in B. *ſylvaticus*, cloſely imbricated. Awn terminal as in that ſpecies, which induced Mr. Hudſon and others to refer both to the genus *Feſtuca*. This awn in the preſent plant is ſhorter than its glume; ſometimes ſo ſhort as to be hardly viſible. Inner glume very blunt, fringed with ſtrong rigid briſtles, not merely downy as in true *Feſtucæ*.—This graſs is even leſs fit for the food of cattle than the laſt.

V

STIPA pennata.

Feather-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, single-flowered. Outer valve of the *Corolla* terminated by a very long *awn*, jointed at the base.

SPEC. CHAR. Awns feathery.

SYN. Stipa pennata. *Linn. Sp. Pl.* 115. *Sm. Fl. Brit.* 138. *Huds.* 29. *With.* 163. *Hull.* 17.

Gramen sparteum pennatum. *Dill. in Raii Syn.* 393.

THIS is one of the few plants admitted, with a mark of doubt, into the *Fl. Brit.* on the authority of books alone. The accurate Dr. Richardson and Mr. Lawson informed Dillenius they had found the Feather-grass on lime-stone rocks, overhanging a little valley called Long Sleadale, Westmoreland. They could not be mistaken as to its identity; and though it has often since been sought there in vain, it may, like *Ligusticum cornubiense*, reward the searches of some future botanist. There being no coloured figure of it extant, added to its great elegance, is a sufficient motive for its publication here. In curious gardens it is cultivated for the sake of its plumy awns, which are sometimes worn by ladies as feathers, or used to decorate the chimney-piece in winter. In the latter situation, the air of the room keeps them in perpetual motion.

This grass is perennial, and flowers in June. The leaves are upright, long, slender, acute, and roughish. Stems a foot high, leafy, smooth, simple, with 3 or 4 joints. By mistake they are said in the *Fl. Brit.* to have none. The simple panicle bursts from the very long and large sheath of the upper leaf. The permanent outer valve of the corolla is crowned by a feathery awn of immoderate length, twisted below, which conveys the seed to a distance: the valve, being very sharp and barbed, works its way into the ground, and the awn then separates from it by means of the brittle joint.

Sept.r 1. 1804 Published by Jas. Sowerby London.

AVENA fatua.

Wild Oat, or Haver.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing several florets. Outer valve of the *corolla* bearing a twisted awn on its back.

SPEC. CHAR. Panicle erect. Flowers drooping. Calyx containing about three florets, which are hairy at the lower part, all awned, and ribless.

SYN. Avena fatua. *Linn. Sp. Pl.* 118. *Sm. Fl. Brit.* 139. *Huds.* 52. *With.* 164. *Hull. ed.* 2. 34. *Relh.* 42. *Sibth.* 49. *Abbot.* 24. *Winch. v.* 1. 12. *Mart. Rust. t.* 81. *Knapp. t.* 93. . *Leers.* 42. *t.* 9. *f.* 4.
Ægilops quibusdam, aristis recurvis, seu Avena pilosa. *Raii Syn.* 389.

A PERNICIOUS weed in corn fields, especially among barley, flowering in July or August.

Root annual, with downy, somewhat whorled, fibres. Stem erect, simple, about a yard high, slightly leafy, very smooth. Leaves linear, spreading, ribbed, rough, occasionally hairy as well as their sheaths, which are thinner than the leaf itself, and generally smooth. Stipula obtuse, toothed and jagged. Panicle much branched, erect, the branches half whorled, rough, spreading, partly divided, capillary and drooping near the summit, but greatly thickened at the top. Flowers the size of the cultivated Oat, with a large, green, ribbed, smooth, nearly equal-valved calyx, rather longer than the florets, which are about 3, hairy in the lower part and around the scar of insertion, which is obliquely placed, not transversely like *A. sativa*. The corolla is scarcely ribbed, sharp-pointed, with a strong long awn from the middle of its outer valve, which, like the corolla, turns dark brown, and the hairs tawny, as the seed ripens. This awn is a celebrated hygrometer among natural philosophers. That of the exotic *A. sterilis* is still larger and more remarkable.


Published by J. Sowerby, London.

AVENA strigosa.

Bristle-pointed Oat.

TRIANDRIA Digynia.

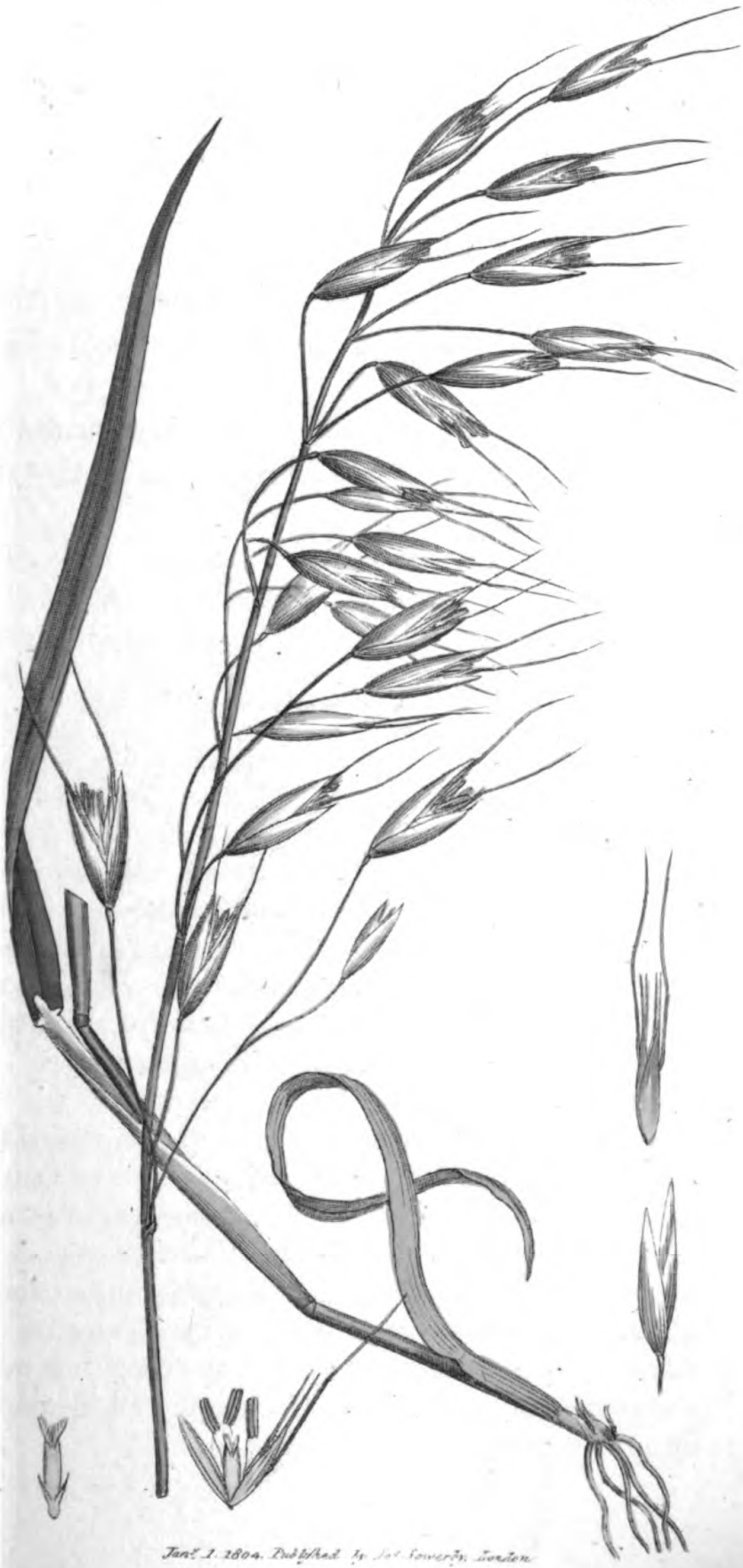
GEN. CHAR. *Cal.* of 2 valves, containing several florets. Outer valve of the *corolla* bearing a twisted awn on its back.

SPEC. CHAR. Panicle oblong, its branches pointing one way. Florets two in each calyx; their outer valves tipped with a double bristle.

SYN. Avena strigosa. *Schreb. Lips.* 52. *Retz. Obs. fasc.* 1. 11. *With.* 166. *Hull.* 26. *Willden. Sp. Pl. v.* 1. 446. *Host. Gram. v.* 2. 41. *t.* 56.

ALTHOUGH Dr. Withering had admitted this on the list of British plants, I left it out of the *Flora Britannica*, conceiving his specimen to have sprung from some accidental importation of foreign seed. Since that time, however, we have had such authentic information from Mr. Brodie, the Rev. H. Davies, Mr. Robson, Mr. E. Forster, and other friends, of its being a common weed in corn-fields in Scotland, Wales, Yorkshire, and even on the downs of Cornwall, that it seems to have a good claim to be reckoned among our natives. It is annual, flowering in July.

It resembles the common Cultivated Oat in general habit and size; but the panicle when it comes forth shows a striking difference, being oblong and somewhat crowded, its branches all leaning to one side. The essential difference resides in the outer glumes of each floret being each tipped with two straight, prominent, reddish, rough bristles, over and above the great awn at the back; which circumstance gives the whole panicle a remarkably bristly or *strigose* appearance. The florets, naturally 2 in each calyx, vary to 3 or 4.



Jan.y 1. 1804. Published by Jas. Sowerby, London.

AVENA pubescens.

Downy Oat-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing several florets. Outer valve of the *corolla* bearing a twisted awn on its back.

SPEC. CHAR. Panicle erect, nearly simple. Calyx containing about three florets. Receptacles bearded. Leaves flat, downy.

SYN. Avena pubescens. *Linn. Sp. Pl.* 1665. *Sm. Fl. Brit.* 140. *Huds.* 52. *With.* 165. *Hull.* 26. *Relh.* 42. *Sibth.* 49. *Abbot.* 24. *Lightf.* 105. *Knapp, t.* 90.

A. sesquitertia. *Linn. Mant.* 1. 34; the syn. of Scheuchzer erroneous.

Gramen avenaceum 7, seu glabrum (potius hirsutum) paniculâ purpuro-argenteâ splendente. *Raii Syn.* 406. *t.* 21. *f.* 2.

A NATIVE of limestone or chalky hills and pastures, in which situations it is not uncommon, flowering in June. Mr. W. Borrer sent it from Sussex.

Root perennial, somewhat creeping. Stem a foot or two in height, erect, straight, unbranched, smooth, leafy. Leaves flat, obtuse, spreading, short, except when luxuriant; clothed on both sides, as are also the sheaths of the lower ones, with soft spreading hairs. Stipula acute, triangular. Panicle upright, scarcely subdivided, but bearing 3 or 4 flowerstalks (which are rough to the touch) at each subdivision. Spikelets purplish, generally containing 2 perfect florets and an abortive one, on a long bearded stalk. Summit of the glumes shining and transparent. Awns twice as long as the calyx, brown, rough and twisted.

It is of no use in husbandry.

Sept.r 20 1808, Published by Jas. Sowerby London.

104.

AVENA pratensis.

Narrow-leaved Oat-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing several florets. Outer valve of the *corolla* bearing a twisted awn on its back.

SPEC. CHAR. Spike erect. Calyx containing about five florets. Receptacles hairy. Leaves involute, finely serrated, naked.

SYN. Avena pratensis. *Linn. Sp. Pl.* 119. *Sm. Fl. Brit.* 141. *Huds.* 52. *With.* 165. *Hull.* 26. *Relh.* 42. *Sibth.* 49. *Abbot.* 24. *Lightf.* 105.

A. bromoides. *Linn. Sp. Pl.* 1666.

Gramen avenaceum montanum, spicâ simplici, aristis recurvis. *Raii Syn.* 405. *t.* 21. *f.* 1.

A NATIVE of dry chalky or limestone pastures and heaths, where it flowers in July.

Root perennial, fibrous, downy, bearing many tufts of rigid, smooth, linear leaves, whose edges are rolled in, and finely serrated, and whose broad sheathing bases are of long continuance. The stems are few, 12 or 18 inches high, erect, stiff, with one joint only, which is near the bottom, and clothed in their lower part with the long sheaths of 2 or 3 broad short leaves. The flowers grow erect, in an upright, mostly unbranched, spike, rather than a panicle; but the stalks of the lowermost are generally, one or more of them, lengthened out in some degree; the rest are very short or none at all. Calyx-valves narrow and sharp, nearly equal. Florets 4 or 5; their stalks within the calyx hairy; their outer husks purplish, with a membranous point, and bearing from their backs a purplish twisted awn, nearly twice their own length: their inner husk is finely fringed.

Linnæus by the mistake of Gouan was led to describe this grass a second time under the name of *A. bromoides*.

Aug.t 1 1808 Published by Ja.s Sowerby, London.

105.

AVENA planiculmis.

Flat-strawed Oat-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing several florets. Outer valve of the *corolla* bearing a twisted awn on its back.

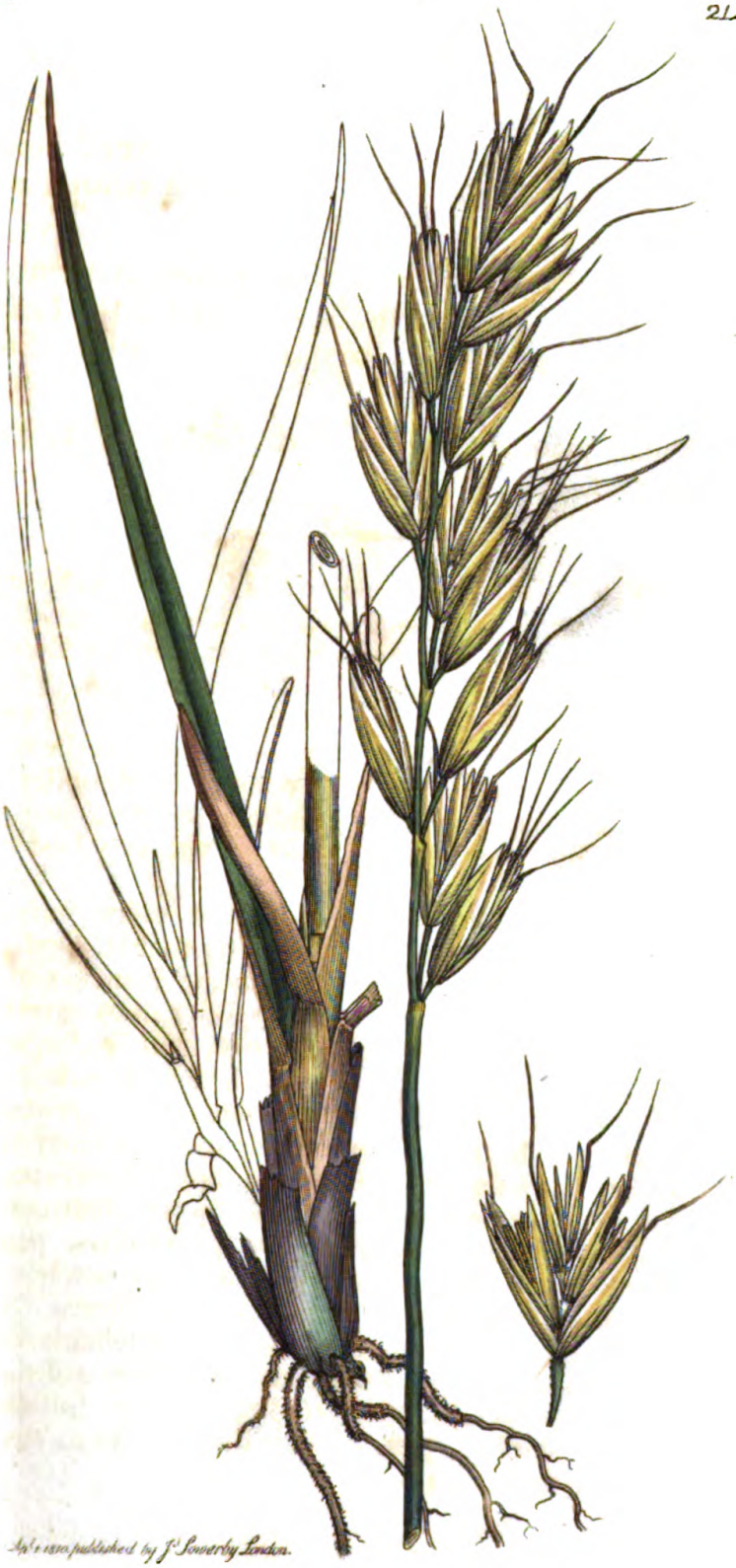
SPEC. CHAR. Panicle erect. Calyx containing about five florets. Receptacles bearded upwards. Leaves naked, finely serrated, with rough sheaths. Stem compressed.

SYN. Avena planiculmis. *Schrad. Germ. v.* 1. 581. *t.* 6. *f.* 2.

DISCOVERED in 1807, by Mr. G. Don, on rocks upon the summits of the highest mountains of Clova, Angusshire. I had but just sent a description of this grass to the Linnean Society, by the name of *A. alpina*, when the 1st vol. of Prof. Schrader's *Flora Germanica*, printed so long ago as 1806, came to my hands. I greet with pleasure this excellent fellow-labourer in European botany, who is no compiler nor copyist, but an original observer, and whose *Flora* is justly announced by his countrymen as one of the very best that has ever appeared.

His long description answers in almost every minutest point to our plant, except that, according to Mr. Don, our roots are tufted, not creeping; nor can the branches of the panicle be called "*capillacei.*" This species most agrees, in general aspect, with *A. pubescens*, *t.* 1640, but is larger in every part. The leaves are never clothed with soft hairs, nor are their edges even, but finely serrated as in *pratensis*, *t.* 1204, from which they differ in their rough, greatly elongated sheaths. The flowers differ from both those species, not only in their much greater size, but in the hairiness of their partial stalk being crowded up into a very dense pencil-like tuft, under each floret, not dispersed over the whole stalk. The roots are perennial, with strong downy fibres. Stem from 2 to 3 feet high, according to Schrader's remark compressed, as well as the sheaths, which I had supposed owing to pressure in drying. Panicle spreading while in full flower only. Glumes shining, and partly pellucid. Awns strong, twice as long as the florets.

2141.



Apl. 1820. published by J. Sowerby London.

106.

AVENA flavescens.

Yellow Oat-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, containing several florets. Outer valve of the *corolla* bearing a twisted awn on its back.

SPEC. CHAR. Panicle much branched, loose. Calyx unequal, containing about three florets. Receptacle hairy. Leaves flat, a little downy.

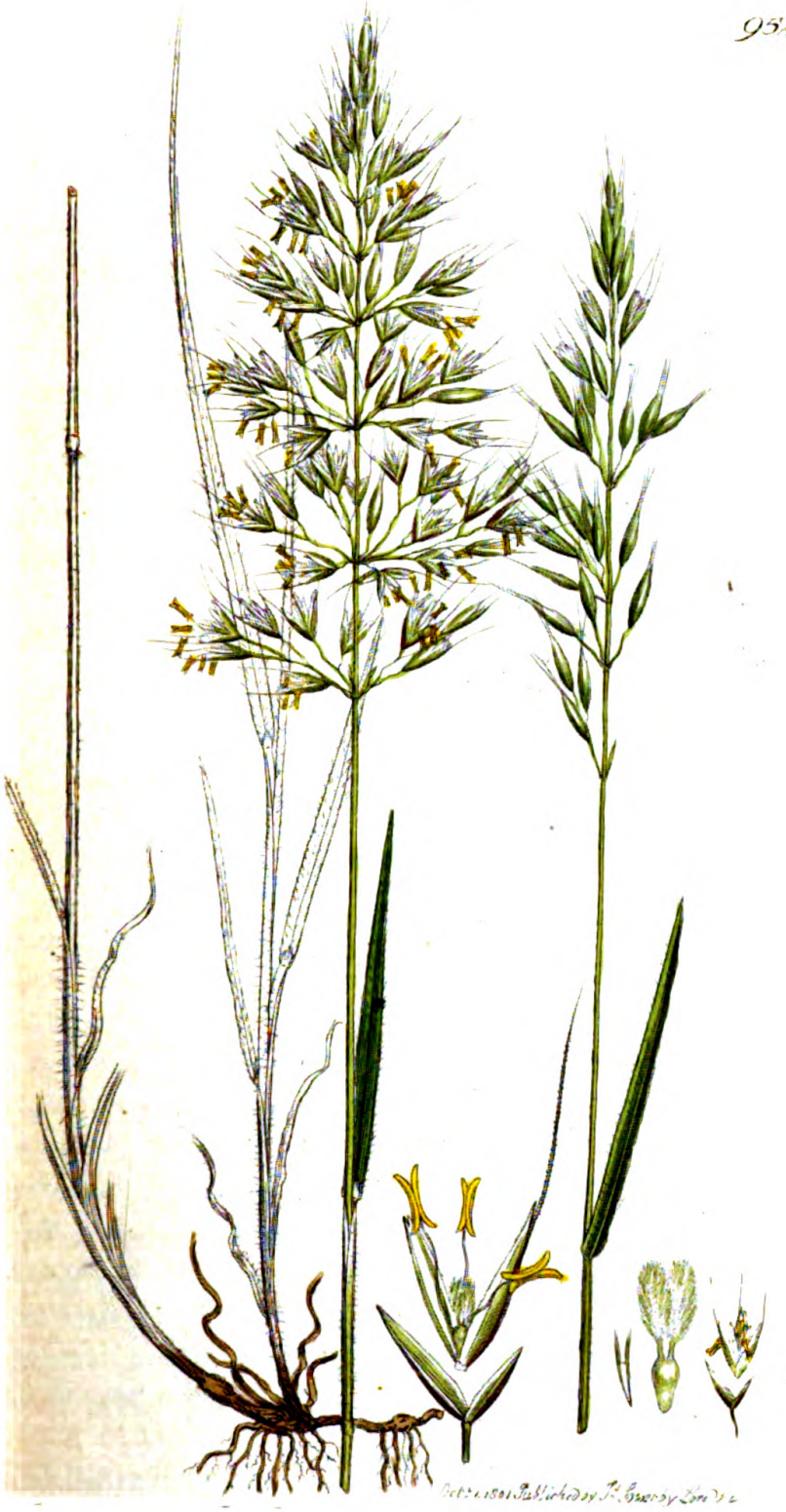
SYN. Avena flavescens. *Linn. Sp. Pl.* 118. *Sm. Fl. Brit.* 142. *Hudf.* 53. *With.* 165. *Hull.* 26. *Relh.* 51. *Sibth.* 49. *Abbot.* 25. *Curt. Lond. fasc.* 3. *t.* 5.

Gramen avenaceum pratense elatius, paniculâ flavescente, locustis parvis. *Raii Syn.* 407.

COMMON in chalky or limestone countries; sometimes on dry sandy soils, where the shining yellow of the panicle is seen in its greatest perfection. It is a perennial grass, flowering in July.

Root creeping, especially when luxuriant. Stems erect, curved at the bottom, slender, about a foot high, leafy, with about 3 joints. Leaves narrow, taper-pointed, more or less downy, especially their sheaths; and the joints of the stem are often furnished underneath with a circle of deflexed hairs. Stipula bristly, short. Panicle spreading, many-flowered, sometimes a little drooping; its branches capillary, rough, zigzag; its ultimate subdivisions alternate. Spikelets small, spreading, shining with yellow and a pale tinge of red, composed of 2 or 3, rarely 4, florets. Calyx-valves acute, with a rough keel; one of them twice as large as the other, and having a pair of lateral nerves. Outer petal much like the larger valve of the calyx, but bearing below its summit a longish rough awn, twisted when dry. Common receptacle of the florets bristly.

We can confirm Mr. Curtis's opinion of the value of this grass, as being highly agreeable to cattle, and forming a great share of the best upland pasturage in open dry countries.


Dickinson Published by J. Sowerby London

LAGURUS ovatus.

Hare's-tail-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, single-flowered, with feathery awns. Outer valve of the *corolla* with 2 terminal awns, and a dorsal twisted one.

SPEC. CHAR. . . . .

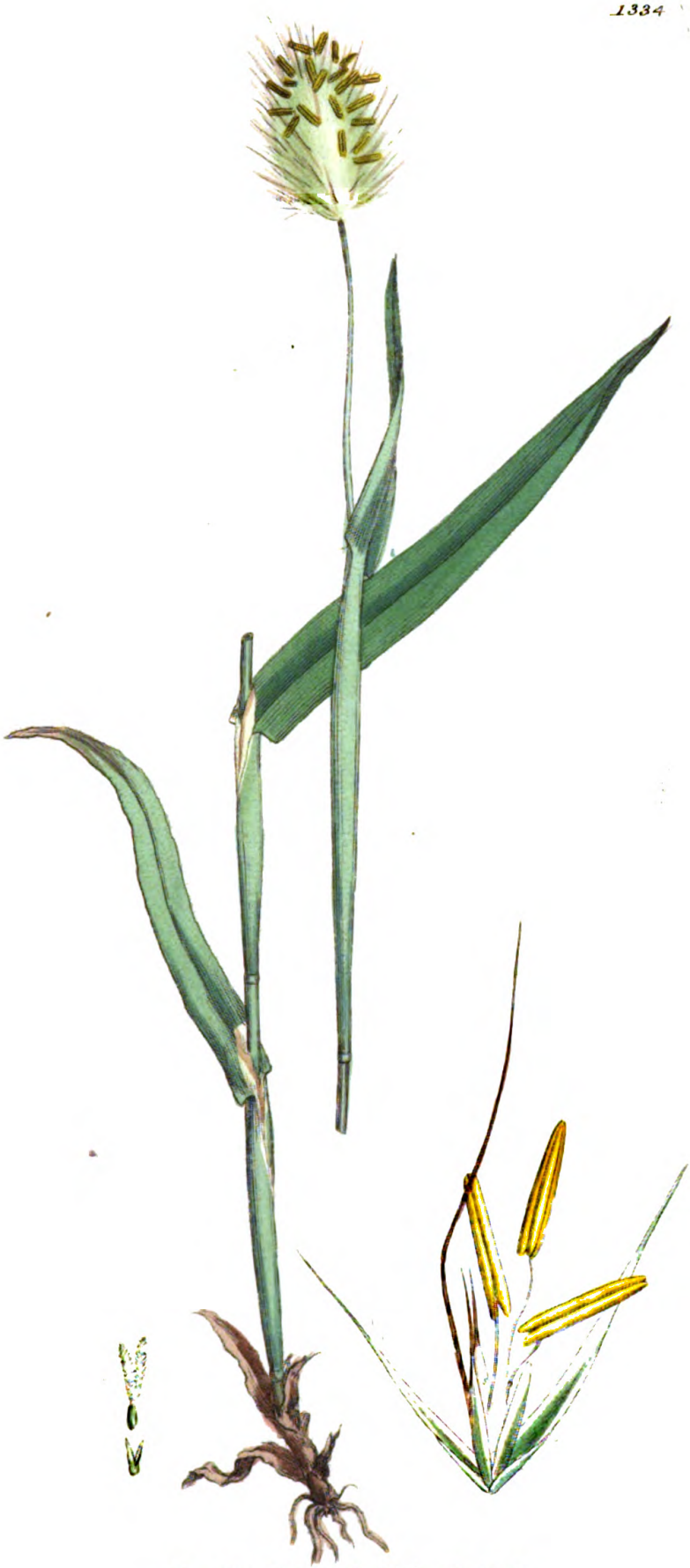
SYN. Lagurus ovatus. *Linn. Sp. Pl.* 119. *Sm. Fl. Brit.* 143. *With.* 166. *Hull.* 17. *Dicks. H. Sicc. fasc.* 7. 1.

Alopecuros spicâ rotundiore. *Moris. sect.* 8. *t.* 4. *f.* 1.

WE have received this from Guernsey. It was first observed there by Mr. Gosselin, who sent specimens to Mr. Dickson. It grows in sandy open places, flowering in June, and remains for some time afterwards bleaching in the wind.

The annual root consists of a few thick downy fibres. Stem solitary, various in height and thickness, erect, leafy, jointed, round, very smooth. Leaves lanceolate, ovate at the base, flat, soft and downy, with very long, inflated, downy sheaths. Stipula oblong. Spike at first erect, but most commonly driven toward one side by the wind, which has great power over its light feathery form, so that it becomes somewhat drooping. Its shape is ovate and blunt. Flowers numerous and crowded. Calyx of 2 equal, narrow, long glumes, finely fringed or feathered with long, soft, dense, white hairs. Floret solitary, sessile, lanceolate, bristly at the base and keel, terminated by 2 rough straight awns, and bearing from the back a much longer and stronger, rough and twisted, awn. The inner glume is thin, beardless, and cloven.

Lagurus cylindricus of Linnæus is now justly esteemed a *Saccharum;* the specific character of that here described becomes therefore superfluous.



July 1. 1804. Published by Jas. Sowerby, London.

108.

ARUNDO Phragmites.

Common Reed.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Florets* ſurrounded with long down.

SPEC. CHAR. Calyx containing five florets. Panicle looſe.

SYN. Arundo Phragmites. *Linn. Sp. Pl.* 120. *Hudſ. Fl. An.* 53. *With. Bot. Arr.* 116. *Relh. Cant.* 51. *Sibth. Ox.* 50.

A. vallatoria. *Raii Syn.* 401.

NOTHING can be more common than the reed here repreſented, in ditches, ponds, and the margins of rivers, where it flowers in the middle of ſummer, after which its waving ſilvery plumes, conſiſting of long down remaining in the brown huſks of the calyx, continue to ornament many a dreary fen throughout the autumn, lifting their heads high above all other herbage, till their dry ſtalks are cut for thatching or ſome ſuch uſe. They are for no purpoſe more uſeful, than to make warm ſheltered encloſures for a kitchen garden.

The roots are perennial, running far into the mud. Straws annual, about 6 feet high, erect, round, jointed, very ſmooth, leafy. Leaves alternate, long, lanceolate, tapering to a fine point, ſtriated, ſmoother and paler beneath, their edges a little rough; their baſes ſheathing the ſtraw and each other, and crowned with an extremely ſhort jagged ſtipula, accompanied on each ſide by a ſmall portion of ſilky down. Panicle nearly erect when in flower, purpliſh, but after impregnation its branches become more looſe and drooping. The calyx-valves are unequal, containing about five flowers (ſometimes fewer) placed in two ranks upon a ſmall ſtalk. Corolla of two valves, one of them very long and pointed, to the baſe of which is attached externally a tuft of long ſoft ſlender hairs, which are lengthened after flowering, and, ſpreading in every direction, give the feathery appearance above mentioned. The ſtamina are very ſlender. Styles reflexed, with thick tufted ſtigmas.

ARUNDO epigejos.
Wood Reed.

TRIANDRIA Digynia.

Gen. Char. Cal. of 2 valves. *Florets* surrounded with long down.

Spec. Char. Calyx single-flowered, longer than the corolla, taper-pointed. Panicle erect, close. Flowers crowded, leaning one way, with a dorsal awn nearly as long as the down and calyx.

Syn. Arundo epigeios. *Linn. Sp. Pl.* 120. *Sm. Fl. Brit.* 145. *Huds. ed.* 2. 35. *Reth.* 43. *Knapp.* t. 37. *Scopol. Carn.* v. 1. 211. *t.* 4. *f.* 1. *Ehrh. Cultiv.* 74.

A. Calamagrostis. *Huds.* 54. *Lightf.* 106.

Calamagrostis lanceolata. *With.* 122.

Gramen arundinaceum, paniculâ molli spadiceâ, majus. *Raii Syn.* 401. *Scheuchz. Prod.* 21. *t.* 5.

THIS grows in moist woods and about shady ditches, flowering towards the end of July, three weeks later than *A. Calamagrostis*, *t.* 2159, a description of which was by mistake originally annexed to our *t.* 403, and that page we wish to replace by the present.

The root is creeping and perennial. Stem nearly as tall, but rather more slender than *A. Phragmites*, *t.* 401, much stouter than *A. Calamagrostis*, *t.* 2159, often branched at the bottom, leafy, smooth. Leaves linear-lanceolate, pointed, chiefly glaucous at the back, roughish, twice or thrice as broad as in *Calamagrostis*. Sheaths close, striated, smooth, except the uppermost which is roughish. Stipula lanceolate, acute, torn. Panicle erect, much branched, slightly spreading every way when in bloom. Flowers crowded, leaning in clusters towards one side, on rough rather rigid stalks. Calyx-valves purplish, nearly equal, lanceolate, narrow, long-pointed, rough. Petals half as long as the calyx, white, unequal, cloven at the top; the larger having 3 rough ribs, and bearing from about the middle a rough awn, whose extremity reaches nearly to the points of the calyx. The down is likewise almost as long as the calyx. A flower of this species will be found in *t.* 2160. *f.* 3.

Linnæus having misquoted Scheuchzer under this and the *Calamagrostis*, caused them to be misunderstood.


May 1 1797 Published by J. Sowerby London

110.

ARUNDO Calamagrostis.

Small Reed.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Florets* surrounded with long down.

SPEC. CHAR. Calyx single-flowered, longer than the corolla. Panicle erect, diffuse. Flowers scattered, erect. Awn terminal, short. Down longer than the corolla.

SYN. Arundo Calamagrostis. *Linn. Sp. Pl.* 121. *Sm. Fl. Brit.* 146. *Hull. ed.* 2. 35. *Relh.* 44. *Knapp. t.* 96. *Fl. Dan. t.* 280. *Schrad. Germ. v.* 1. 214. *t.* 4. *f.* 4. *Ehrh. Calam.* 84.

A. epigejos. *Huds.* 54.

Calamagrostis epigejos. *With.* 123.

C. minor, glumis ruffis et viridibus. *Raii Syn.* 401.

NATIVE of moist woods, and fenny places, flowering early in July. It is rather an uncommon plant, chiefly noticed hitherto in the counties of Norfolk, Cambridge, and Lincoln.

Root fibrous, or slightly creeping, perennial. Stems erect, 3 or 4 feet high, round, very smooth, much more slender than in *A. Phragmites* or *epigejos*, leafy, sometimes branched. Leaves linear, pointed, narrow, bright green, roughish beneath, sometimes a little hairy above. Sheaths long, close. Stipula lanceolate, obtuse, often torn, smooth, decurrent. Panicle erect, much branched, loosely spreading. Flowers scattered, erect, very numerous, on capillary rough stalks. Calyx-valves bright brown or purplish, nearly equal, lanceolate, pointed, keeled, roughish, slightly ribbed, much longer than the corolla, whose valves are white, unequal, torn at the top, the larger bearing a minute awn between its terminal segments. The down is longer than the corolla, but scarcely so long as the calyx.

This is certainly the Linnæan *A. Calamagrostis*, and what we described in our *v.* 6. *p.* 403, though a wrong figure was there annexed to the description, an error which we shall correct by a new page of letterpress to *t.* 403.

Sowerna published by Jas Sowerby London

ARUNDO stricta.

Smallest Close Reed.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Florets* surrounded with long down.

SPEC. CHAR. Calyx single-flowered, full as long as the corolla. Panicle erect, close. Flowers scattered, erect, with a dorsal awn. Down shorter than the corolla. Stipula very short.

SYN. Arundo stricta. *Schrad. Germ. v.* 1. 215. *t.* 4. *f.* 5.

A. neglecta. *Ehrh. Calam.* 118.

DISCOVERED by Mr. G. Don, in June 1807, in a marsh called the White Mire, a mile from Forfar. We had but just communicated this discovery to the Linnæan Society, under Ehrhart's name *neglecta*, when we received Dr. Schrader's 1st vol. of his valuable *Flora*, and we now prefer the name he had, unknown to us, adopted from a publication of Timm which we have never seen.

This plant is perennial, flowering in June. It is next akin to the foreign *Agrostis arundinacea*, which is likewise surely an *Arundo*, as Linnæus originally, and Schrader recently, has made it. See *A. sylvatica*, Schrad. n. 8.

The present is by far the smallest British Reed, being scarcely 2 feet high. It differs from *A. Calamagrostis*, *epigejos* and *Phragmites* in having the calyx simply acute, not with elongated points. The corolla moreover is as long as the calyx, (but the down is shorter,) its glumes abrupt, jagged, and coloured, the larger bearing a short dorsal awn, scarcely projecting beyond the calyx. Root creeping, perennial. Stem simple, with 2 joints, smooth like the sheaths. Leaves narrow, acute, rough above. Stipula very short, abrupt, and entire. Panicle of a purplish or bronze-coloured brown, somewhat resembling luxuriant *Melica cærulea*.


1.
2.
3.

ARUNDO arenaria.

Sea Reed, or Marram.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of two valves. *Florets* ſurrounded with long down.

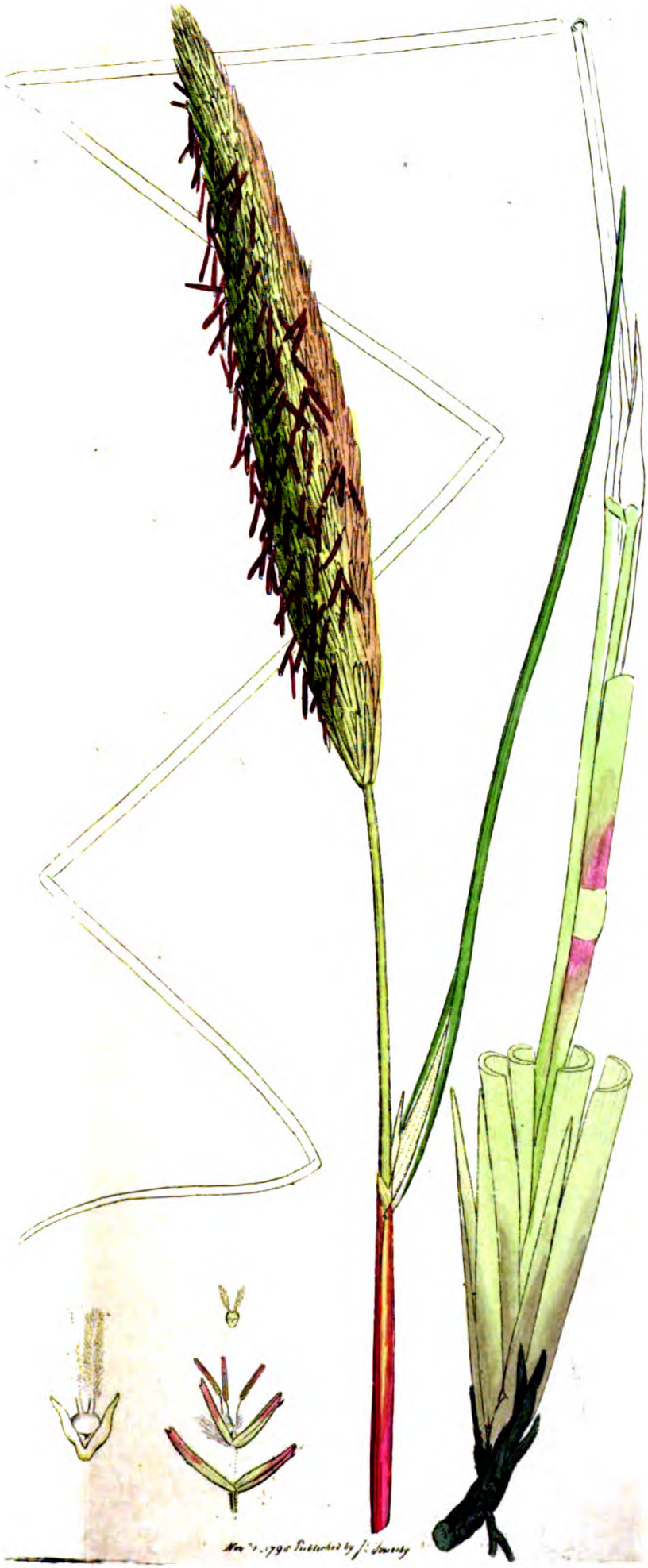
SPEC. CHAR. Calyx ſingle-flowered, longer than the corolla. Panicle ſpiked. Flowers erect, beardleſs. Leaves involute, pungent.

SYN. Arundo arenaria. *Linn. Sp. Pl.* 121. *Hudſ.* 54. *Mart. Fl. Ruſt. t.* 32. *Dickſ. H. Sicc. faſc.* 12. 5.
Calamagroſtis arenaria. *With.* 123.
Gramen ſparteum ſpicatum, foliis mucronatis longioribus, vel ſpicâ ſecalinâ. *Raii Syn.* 393.

FREQUENT on the ſea-ſhores in looſe blowing ſand, to which it ſeems intended by Nature to give ſtability, and thus to raiſe a bulwark againſt the encroachments of the waves. On this account its growth is much encouraged on the coaſts of Norfolk, where it is confounded with *Elymus arenarius*, and even *Carex arenaria*, under the name of *Marram*, and acts of parliament have been made for its preſervation. It flowers in July.

Root perennial, creeping to a great extent, jointed. Stem nearly erect, three feet high, hard, round, ſmooth, jointed, leafy. Leaves a little ſpreading, rigid, ſharp-pointed, glaucous, ſmooth, their edges rolled in; furrowed above; very ſmooth beneath, as well as their ſheaths. Stipula long and lanceolate, pointed, torn. Panicle erect, reſembling a ſpike, as the branches are ſhort and cloſe-preſſed. Flowers greeniſh-white, erect. Calyx-glumes a little unequal, lanceolate, compreſſed, keeled, ſlightly three-nerved, their keels rough. Floret ſolitary, with ſhort hairs at the baſe, its glumes like the calyx, but ſhorter. Antheræ purple. Germen inveſted with a bivalve membranous nectary, as in moſt graſſes. Stigmas long and feathery.

Gmelin's genus of *Calamagroſtis*, divided from *Arundo* merely becauſe the calyx is ſingle-flowered, ſeems to us unnatural, and the name is totally inadmiſſible, being compounded of two already in uſe, *Calamus* and *Agroſtis*.


Mar. 1. 1790. Published by J. Sowerby

LOLIUM perenne.

Perennial Darnel, or Rye-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of one husk, fixed, many-flowered.

SPEC. CHAR. Flowers beardless. The little spikes compressed, longer than the calyx.

SYN. Lolium perenne. *Linn. Sp. Pl.* 122. *Huds. Fl. An.* 55. *With. Bot. Arr.* 120. *Relh. Cant.* 52. *Sibth. Ox.* 50. *Leers Herb.* 47. *t.* 12. *f.* 1.

Gramen loliaceum angustiore folio et spica. *Raii Syn.* 395.

THIS very common species of grass is well known to the farmer by the name of Rye-grass, Ray-grass, or Crap. Its agricultural merits were first discovered in Norfolk, and from thence the seeds have been distributed throughout the kingdom, those who bought them little suspecting the plant was already a weed in their own fields. Its chief use is for an early crop of hay upon high or sandy lands. It makes a fine turf; but though the roots are perennial, it does not last many years, except (according to Stillingfleet) the soil be very rich.

Root of a few simple fibres. Stems a foot high, round, smooth, rigid, with swelling purplish joints. Leaves dark green; stipulæ short and entire. Spike two-ranked and compressed, the common stalk zigzag. Husks lanceolate and acute. Antheræ cloven at each end, purple. Stigmas sessile, downy above. Germen roundish. Seed linear.

The spike is sometimes branched in an alternate manner, and more frequently very much condensed into a flat oval form. It flowers in June.


April 1 1790 Published by J. Power by London.

LOLIUM temulentum.

Bearded Darnel.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 1 valve, fixed, many-flowered. *Florets* in 2 ranks.

SPEC. CHAR. Flowers bearded. Spikelets ſhorter than the calyx. Florets elliptical. Stem rough in the upper part.

SYN. Lolium temulentum. *Linn. Sp. Pl.* 122. *Sm. Fl. Brit.* 150. *With.* 168. *Hull.* 27. *Relh.* 45. *Abbot.* 26.

L. album. *Raii Syn.* 395.

AN annual weed, found occaſionally in fields among wheat, barley or flax, coming to perfection in July.

The root is formed of a few ſhort downy fibres. Stem one or more, erect, two feet high, round, ſtriated, leafy; ſmooth and ſhining below; rough upwards. Leaves lanceolate, ſpreading, graſs-green, ribbed, rough above. Their ſheaths are alſo roughiſh. Stipula ſhort, blunt, crenate. Spike long and upright, with an angular rough ſtalk. Spikelets alternate; in 2 ranks, a little tumid. Calyx of one, linear, flattiſh, beardleſs huſk, rough to the touch, moſtly accompanied, in the lower ſpikelets, with a much ſhorter elliptical inner valve, preſſed cloſe to the excavation of the common ſtalk, ſo that the generic character is not ſtrictly exact in every caſe. Florets cloſely ranged in a two-ranked ſpikelet, which does not in general reach above half the height of the correſponding calyx. Their glumes are elliptical, tumid, each tipped with a long ſtraight, rough awn; the margin of the outer glume membranous, of the inner rough. Seed flattiſh.

The ſeeds of this graſs are reported to be intoxicating to men, beaſts, and birds, and even to bring on convulſions and death. It is not common enough with us to be extenſively dangerous.

Feb.y 1 1803 Published by Ja.s Sowerby London.

115.

LOLIUM arvenſe.

Annual Beardleſs Darnel.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 1 valve, fixed, many-flowered. *Florets* in 2 ranks.

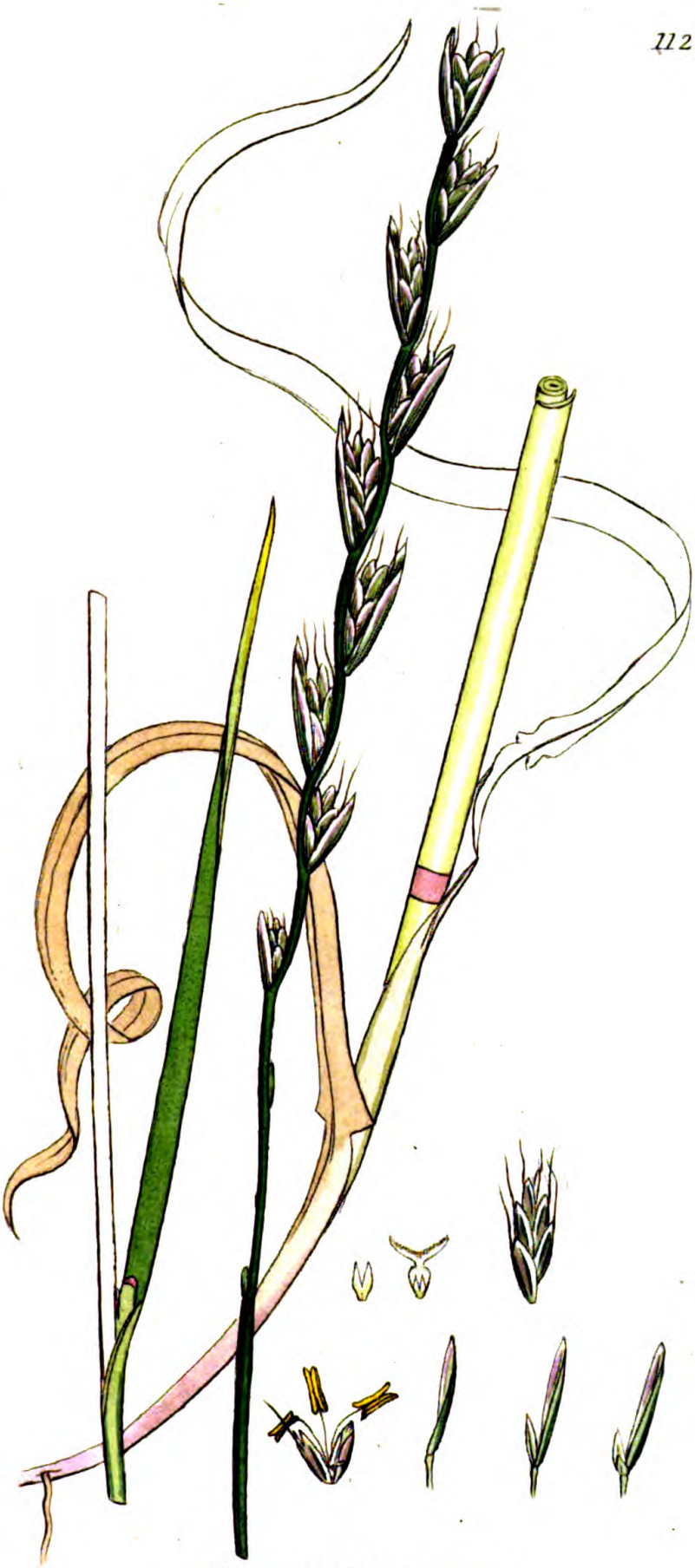
SPEC. CHAR. Flowers almoſt beardleſs. Spikelets as long as the calyx. Florets elliptical. Stem very ſmooth.

SYN. Lolium arvenſe. *With.* 168. *Sm. Fl. Brit.* 151. *Hull.* 27. *Relh.* 46.

L. temulentum. *Hudſ.* 55.

THIS ſmaller ſpecies of Annual Darnel is not, we believe, more frequent than the laſt, with which Linnæus confounded it. The ſpecific character given by Mr. Hudſon convinces us this was his *L. temulentum.* We have received it from Walthamſtow by favour of Mr. E. Forſter, who has in ſome ſpikelets obſerved 2, or even 3, ſmall inner valves to its calyx. Mr. Groult found it at Kennington without any ſuch appendages. In time of flowering and duration it agrees with the preceding, but differs in being rather ſmaller; in having a perfectly ſmooth ſtem and ſpike-ſtalk; in its ſpikelets being as long as the calyx, or very nearly ſo, their florets either quite beardleſs, or at moſt furniſhed with ſhort, lax, very weak ſmooth briſtles.

We learn from Mr. Relhan's new edition of the *Flora Cantabrigienſis* that this ſpecies (as well as the preceding) is found in that county. It has not yet been detected in Norfolk.



Feb.y 1 1803 Published by Ja.s Sowerby London.

116.

ROTBOLLIA incurvata.

Sea Hard-grafs.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* fixed, moftly fingle-flowered, fimple, or divided into 2 parts. *Flowers* ranged alternately on a jointed common ftalk.

SPEC. CHAR. Spike round, awl-fhaped. Calyx-glume awl-fhaped, divided, clofe preffed to the ftalk.

SYN. Rotbollia incurvata. *Linn. Suppl.* 114. *Sm. Fl. Brit.* 151. *With.* 169. *Hull.* 29. *Relh. Suppl.* 2. 8.
Aegilops incurvata. *Linn. Sp. Pl.* 1490. *Hudf.* 441.
Gramen parvum marinum, fpicâ loliaceâ. *Raii Syn.* 395.

FOUND on the fea coaft and in falt marfhes in feveral parts of the kingdom, flowering in Auguft and September.

Root fibrous, annual. Stems numerous, procumbent in their lower part, branched, jointed and bent, very fmooth, leafy. Leaves linear, pointed, recurved, rough on the edges and upper fide; their fheaths a little inflated, ftriated, fmooth, crowned by a fhort blunt ftipula. Spikes terminal, folitary, erect, a little curved, cylindrical, flender, very fmooth, confifting of many flowers ranged alternately along one common jointed ftalk, which is fculptured with a little cavity on one fide of each of its joints to receive each flower, and both before and after flowering the cloven valve of the calyx fo exactly clofes thefe cavities, as to form almoft an uniform furface with the ftalk. Calyx ftriated, beardlefs, fmooth. Corolla of 2 white membranous hufks. Germen invefted with the ufual cloven nectary of graffes. All the flowers are hermaphrodite and fertile. The joints of the flower-ftalk, feparating, fall to the ground and difperfe the feed.

No agricultural ufe is attributed to this grafs.

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117.

ELYMUS arenarius.

Upright Sea Lyme-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* lateral, aggregate, of 2 valves, containing (mostly) several flowers.

SPEC. CHAR. Spike upright, close. Calyx lanceolate, the length of the spikelets. Leaves with a spinous point.

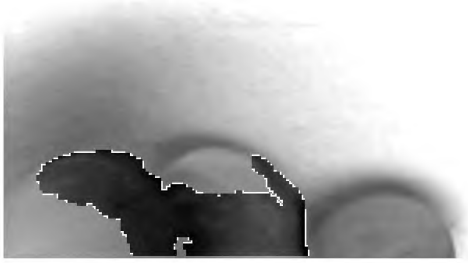
SYN. Elymus arenarius. *Linn. Sp. Pl.* 122. *Sm. Fl. Brit.* 152. *Huds.* 56. *With.* 170. *Hull.* 27. *Mart. Rust. t.* 31. *Knapp, t.* 108.

Spartum herba 4 Batavicum. *Clus. Hist.* 2. 221.

ONE of the most valuable creeping-rooted grasses for binding the loose sand on the sea shore, in which its roots run to a very great extent. See p. 520 and 928 for remarks on this subject.

Elymus arenarius is found on the sandy coasts of Britain in various places, but does not often produce spikes. On the north side of Norfolk, at Wells, Mundesley, &c. it is abundant. Roots brought from thence by Mr. Crowe many years ago, and planted on a gravelly bank at Lakenham, have greatly increased, and blossom more or less plentifully every year in July. From these our specimen was procured. The stem is 3 or 4 feet high, erect, strong, round, very smooth, striated, most leafy at the base. Leaves hard and rigid, long, involute, spinous-pointed, very glaucous; marked on the upper side with strong rough furrows; smooth beneath. Stipula very short, by which the plant may at any time be distinguished from *Arundo arenaria*. Spike erect, dense, glaucous, not half so long as that of *E. geniculatus, t.* 1586, from which it is also known by the greater proportionable breadth of its calyx-valves, which do not exceed the spikelets in length, and moreover, as Mr. Sowerby observes, by not having the common stalk of its spike bordered or winged as in that species.

Nov. 1. 1806. Published by Jas. Sowerby, London.



118.

ELYMUS geniculatus.

Pendulous Sea Lyme-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* lateral, aggregate, of 2 valves, containing (mostly) several flowers.

SPEC. CHAR. Spike bent perpendicularly downward, loose. Calyx bristle-shaped, spreading, longer than the spikelets. Leaves with a spinous point.

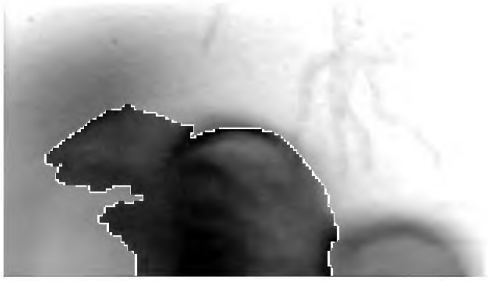
SYN. Elymus geniculatus. *Curt. Brit. Grasses*, 46. *Sm. Fl. Brit.* 153. *Knapp, t.* 109.

Elymus. *Linn. Am. Acad. v.* 7. 192. *t.* 2. *f.* 5. *With. v.* 1. 134. *t.* 2. *f.* 26.

DISCOVERED in marshes near Gravesend by Mr. Dickson. Mr. Curtis first made it known to the botanical world as distinct from *E. arenarius*, for even Linnæus seems to have confounded them. Our specimen grew in the Liverpool garden. July is the season of its flowering.

Root perennial, downy. Herb glaucous. Leaves hard and rigid, long, narrow, involute, furrowed above, smooth beneath, ending in a sharp spine. Stipula very short. Stem round, very smooth, 3 or 4 feet high, ending in a simple lax spike, a foot and half or 2 feet in length, remarkable for being, in the course of its flowering, bent down at an acute angle, about the second or third spikelet, and so becoming perfectly pendulous, nor can it be unbent without breaking. Calyx-glumes very narrow and tapering, smooth, commonly about half as long again as the spikelets they enfold, each of which consists of 3 or 4 alternate downy florets, standing on a stalk which is sometimes elongated and naked.

April 2. 1806 Published by Jas. Sowerby, London.



119.

ELYMUS europæus.

Wood Lyme-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* lateral, aggregate, of 2 valves, containing (mostly) several flowers.

SPEC. CHAR. Spike erect. Spikelets two-flowered, bearded. Calyx without furrows.

SYN. Elymus europæus. *Linn. Mant.* 35. *Sm. Fl. Brit.* 154. *With.* 170. *Hull.* 27. *Sibth.* 51.
Hordeum sylvaticum. *Huds.* 57. *Abbot.* 27. *Mart. Rust. t.* 45.
Gramen secalinum majus sylvaticum. *Raii Syn.* 392.

A NATIVE of woods and thickets on a chalky soil. We have received it from Yorkshire and other parts of England, flowering in June.

Root perennial, fibrous, rather tufted, downy. Stems about 2 feet high, erect, straight, simple, leafy; naked, smooth and striated above. Leaves lanceolate, sharp-pointed, flat, ribbed, broadish, rough; their sheaths ribbed, more or less rough with deflexed hairs. Stipula very short, crenate. Spike erect, or a little inclining, straight, close, 2 or 3 inches long; its main stalk zigzag, angular, furrowed, rough. Spikelets in alternate parcels of 3 together, erect, each with a 2-valved, parallel, equal, linear calyx, very smooth and even at the base, angular and roughish above, tipped with a long rough awn. Florets 1, or mostly 2, on short stalks, all generally perfect and fertile, lanceolate, awned, ribbed and roughish at the summit, broader than the calyx-valves, but about as long; their inner glumes beardless. Germen downy.

This is a harsh grass, of no known use in agriculture, nor does it appear to have been attended to by any experimental farmer.

Tom. I. 1804. Published by Jas. Sowerby, London.

HORDEUM murinum.

Wall, or Mouse Barley.

TRIANDRIA Digynia.

GEN. CHAR. *Calyx* lateral, of 2 valves, containing a single floret, and growing 3 together.

SPEC. CHAR. Lateral flowers male, awned. Calyx-valves of the intermediate flower lanceolate, fringed.

SYN. Hordeum murinum. *Linn. Sp. Pl.* 126. *Sm. Fl. Brit.* 155. *Huds.* 56. *With.* 171. *Hull.* 28. *ed.* 2. 37. *Relh.* 46. *Sibth.* 51. *Abbot.* 26. *Curt. Lond. fasc.* 5. *t.* 9. *Mart. Rust. t.* 43. *Knapp. t.* 104. *Dicks. H. Sicc. fasc.* 13. 10. *Sm. Rel. Rudb.* 12. *f.* 2.

Gramen secalinum et Secale sylvestre. *Raii Syn.* 391.

ONE of the most common of grasses by way-sides under walls, and in waste ground among rubbish, flowering all summer long.

Root annual, fibrous, whitish. Stems numerous, a foot or thereabouts in length, spreading in all directions at their base, but bent at their joints and ascending, smooth, leafy, round. Leaves loosely spreading, acute, rough, of a brightish green, with short stipulas, and smooth, slightly inflated, sheaths, of which the uppermost is much the longest. Spikes solitary, erect, 2 or 3 inches long, dense, their common stalks very brittle, rough-edged. Flowers 3 together, the whole imbricated in 2 rows. Calyx-valves of the 2 outer flowers bristle-shaped, rough; those of the inner one lanceolate and fringed; all tipped with longish very rough awns. Florets solitary in each calyx, lanceolate, very smooth, their outer valve only having a longer and equally rough awn with the calyx. The central flower is sessile, and has both stamens and pistil, with a short rough bristle at the base of the inner valve, which is smooth; the lateral ones are smaller, stalked, and have stamens only. Their inner valve is fringed. ——This is a worthless grass, but has not the bad property of hurting horses' gums like the Squirrel-tail Grass, *t.* 1205, with which, as we have there mentioned, Mr. Curtis confounded it.

Jan. 1. 1809. Published by Jas. Sowerby, London.

121.

HORDEUM pratense.

Meadow Barley.

TRIANDRIA Digynia.

GEN. CHAR. *Calyx* lateral, of 2 valves, containing a single flower, and growing 3 together.

SPEC. CHAR. Lateral flowers abortive, aristated. Calyx-valves bristle-shaped, rough.

SYN. Hordeum pratense. *Huds. Fl. An.* 56. *With. Bot. Arr.* 126. *Relh. Cant.* 54. *Sibth. Ox.* 51. *Mart. Fl. Rust. t.* 108.

H. nodosum. *Linn. Sp. Pl.* 126.

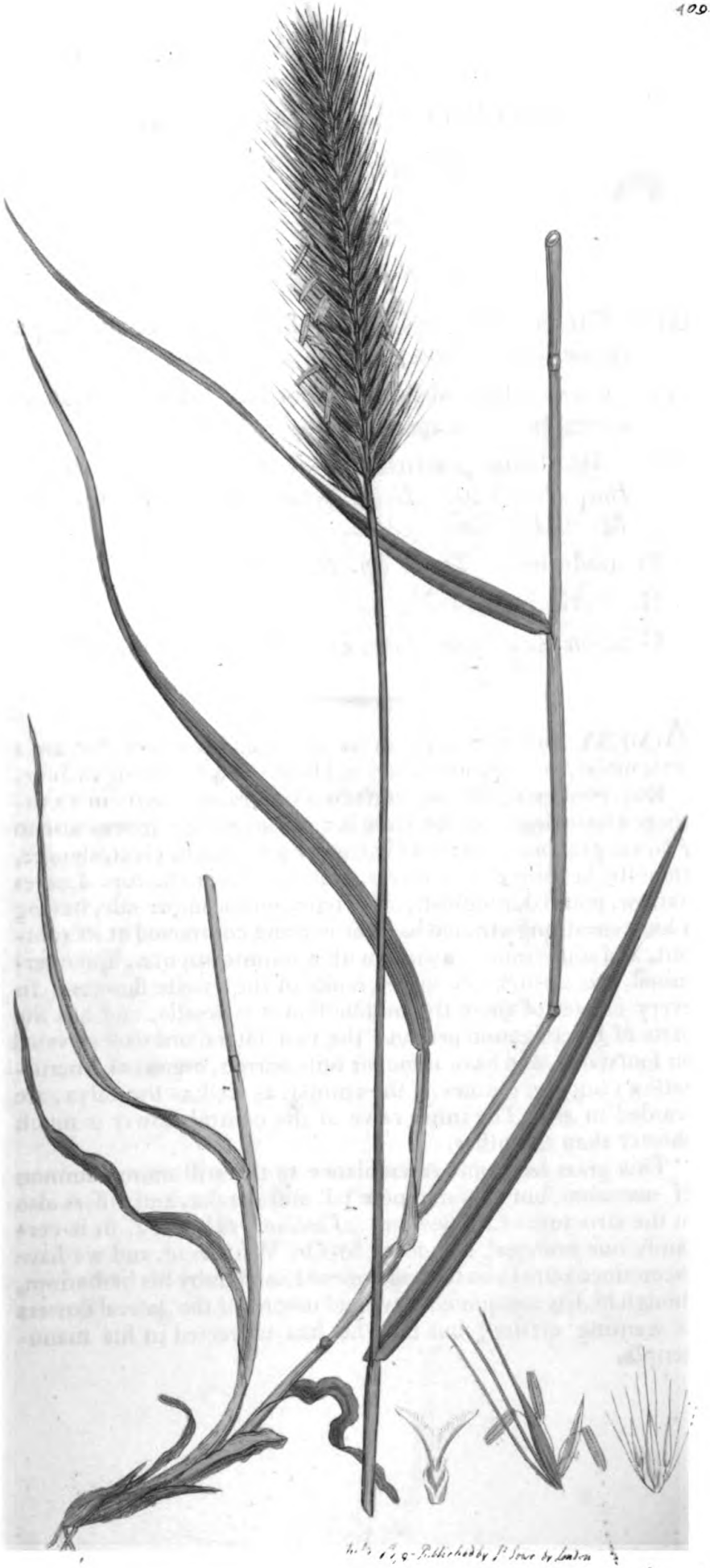
H. murinum β. *ibid.*

Gramen secalinum. *Ger. em.* 29.* *Raii Syn.* 392.

A VERY common grass in meadows and pastures that are a little moist, as in the north part of Hyde Park, flowering in June.

Root perennial, fibrous, but often becoming knotty in a situation whose degree of moisture is fluctuating, as happens also to *Phleum pratense*. Straw 18 inches or 2 feet high, erect, slender, smooth, bearing 3 or 4 leaves, but none near the top. Leaves narrow, pointed, roughish, often hairy on the upper side, having a long sheathing striated base, brown and contracted at its summit, and sometimes crowned with a minute stipula. Spike terminal, erect, thick-set with 2 ranks of the ternate flowers. In every cluster of these the middle flower is sessile, and has the parts of fructification perfect; the two lateral ones are elevated on footstalks, and have none, or only barren, organs of fructification; but the glumes of the corolla, as well as the calyx, are bearded in all. The inner valve of the central flower is much shorter than the other.

This grass has some resemblance to the still more common H. *murinum*, but is much more tall and slender, and differs also in the structure of its flowers. *Vaillant, tab.* 17. *f.* 6. is certainly our *pratense*, as quoted by Dr. Withering, and we have ascertained ours to be the *nodosum* of Linnæus by his herbarium, though he has misquoted Ray, and described the lateral flowers as wanting *aristæ*; but that he has corrected in his manuscripts.



Published by J. Sowerby London

HORDEUM maritimum.

Sea Barley. Squirrel-tail Grass.

TRIANDRIA Digynia.

GEN. CHAR. *Calyx* lateral, of 2 valves, containing a single flower, and growing 3 together.

SPEC. CHAR. Lateral florets male, with shorter awns; their inner husk half-ovate.

SYN. Hordeum maritimum. *Sm. Fl. Brit.* 156. *With.* 172. *Hull.* 28. *Relh.* 47. *Mart. Rust. t.* 44.

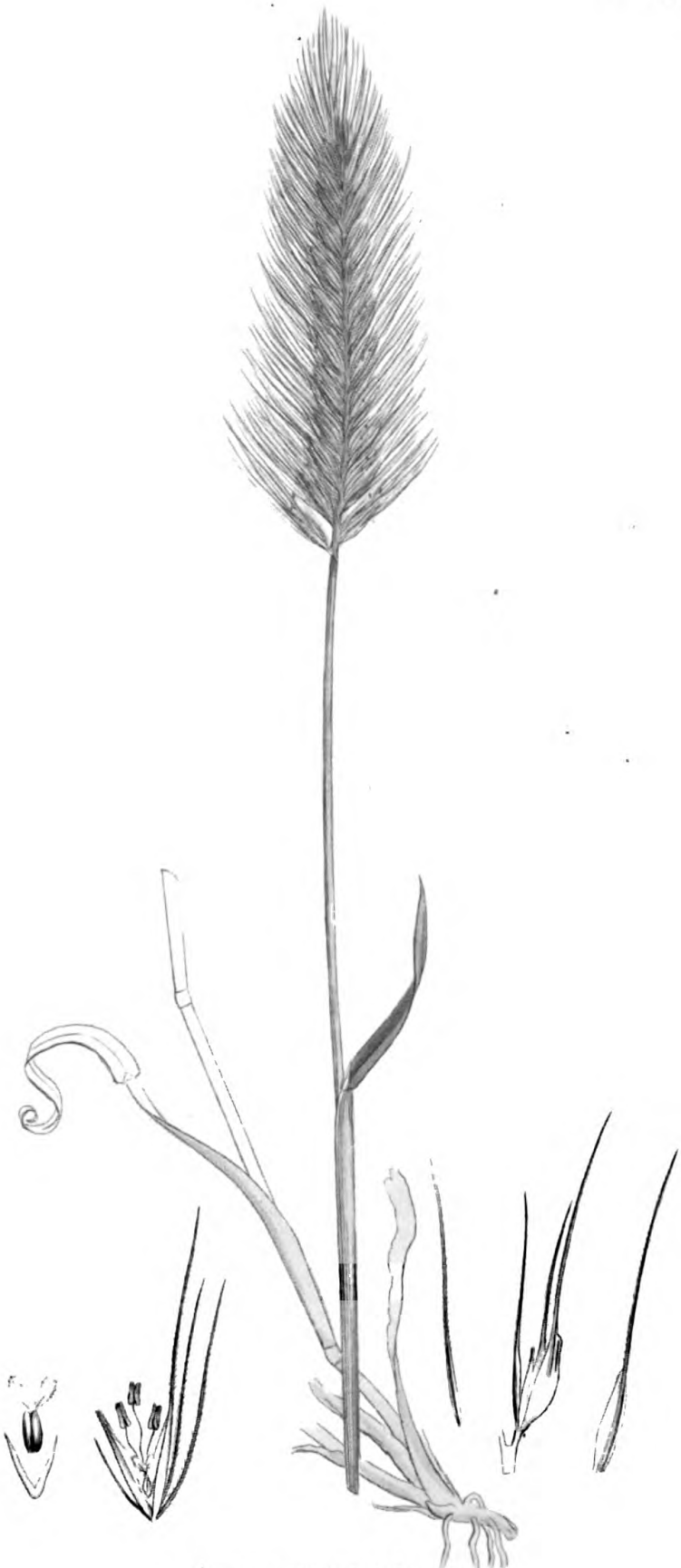
H. marinum. *Huds.* 57. *Dicks. H. Sicc. fasc.* 5. 4.

Gramen secalinum palustre et maritimum. *Raii Syn.* 392.

HUDSON has very clearly distinguished this grass, which is confined to pastures near the sea, from the *H. murinum*, so common every where by road-sides and path-ways. We cannot therefore but wonder at their being confounded in the *Flora Londinensis*, where every thing related of the Squirrel-tail Grass under *H. murinum*, belongs to the *maritimum*.

The present species is annual, flowering in June and July. Root fibrous. Stems several, spreading at the base with bent joints, straight above, leafy and smooth. Leaves smooth, of a light, somewhat glaucous, green. Spikes terminal, solitary, pyramidal, dense, of numerous sessile flowers, on a jointed common stalk, which becomes very brittle as the seeds ripen. The flowers or florets stand 3 together in a common calyx, formed of 3 pairs of rough bristly awns, of which the internal one of each outermost pair is singularly dilated at the base into a half-ovate figure; which circumstance abundantly distinguishes the species.

The rough awns are said to be pernicious to horses, where this grass makes a part of their hay, by sticking in their gums and producing irritation. See Curtis, *fasc.* 5, under *t.* 9.



Aug.t 1803 Published by Ja.s Sowerby London.

TRITICUM junceum.

Sea Rushy Wheat-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, solitary, many-flowered, upon a zigzag toothed *rachis*.

SPEC. CHAR. Calyx blunt, five-flowered. Leaves rolled inward, sharp-pointed.

SYN. Triticum junceum. *Linn. Sp. Pl.* 128. *Sm. Fl. Brit.* 127. *Hudf.* 58. *With.* 173. *Hull.* 28. *Dickf. H. Sicc. fasc.* 6. 9.

Gramen maritimum, spicâ loliaceâ, foliis pungentibus, nostras. *Dill. in Raii Syn.* 391.

NOT uncommon in the loose sand of the sea-coast, which its long tough creeping roots, throwing out numerous woolly fibres, help to confine and keep stationary; to which purpose this grass co-operates with *Carex arenaria*, *Elymus arenarius*, and *Festuca rubra*. It flowers in July.

The whole plant is very glaucous; the lower part of the stem is however of a more or less vivid violet hue, and very smooth or shining. Leaves rigid and sharply pungent, perfectly smooth at the back; their upper side marked with numerous longitudinal rough furrows. Stipula very short. Spike solitary, erect, straight and stiff, much broader in proportion to its length than that of any other British *Triticum*, and consisting of numerous alternate flat spikelets, of 5 or 6 florets each, perfectly smooth and beardless. The glumes are furrowed and blunt; the interior valve of the corolla flat, and fringed.

The two varieties, *Raii Syn.* 391, *n.* 5 and 6, prove, by original specimens, to differ very little from this. A maritime variety of *T. repens*, *Raii Syn.* 390, *n.* 3, is often taken for *T. junceum*; and Mr. Relhan, anxious as every true naturalist ought to be for the promotion of truth, has authorized us to say that his *T. junceum*, *p.* 55, is no other. Some able botanists have on the other hand taken this variety, and others the true *T. junceum*, for *Elymus arenarius*.

Dec. 1. 1800. Published by Jas. Sowerby, London.

TRITICUM repens.

Creeping Wheat-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, solitary, many-flowered, upon a zigzag toothed *rachis.*

SPEC. CHAR. Calyx awl-shaped, many-nerved, five-flowered. Florets sharp-pointed. Leaves flat. Root creeping.

SYN. Triticum repens. *Linn. Sp. Pl.* 128. *Sm. Fl. Brit.* 158. *Hudf.* 57. *With.* 173. *Hull.* 28. *Relh.* 55. *Sibth.* 52. *Abbot.* 27. *Mart. Fl. Rust. t.* 124.

Gramen spicâ triticeâ repens vulgare, caninum dictum. *Raii Syn.* 390.

THIS very troublesome and pernicious weed is but too well known to gardeners by the name of Couch, Quick, or Dog-grass. It thrives in all kinds of cultivated ground, flowering from June to September, and insinuating its long creeping perennial roots so deeply into the earth as to be with great difficulty extirpated; for a very small piece of the root left behind, soon sprouts forth into a fresh crop. The fibres moreover are downy, which seems a provision of Nature for the peculiar benefit of such grasses as are favoured with it, being found in most that occupy very dry or barren situations.

The stems are slender, upright, 2-feet high. Leaves linear, flat, spreading, often all directed to one side, which gives the grass a picturesque and Indian-like aspect. Sheaths tight, ribbed, smooth, crowned with a short stipula. The spike or ear is 2 or 3 inches long, flat, composed of numerous spikelets, all whose glumes are sharp-pointed, and often more or less bearded. Sometimes the common zigzag stalk is hairy.—A glaucous variety, common on the coast, is often mistaken for *T. junceum*, see our *t.* 814, and was the *Elymus arenarius* of Mr. Hudson's 1st edition.

Aug.t 1801 Published by J.s Sowerby London.

125.

TRITICUM caninum.

Bearded Wheat-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, solitary, many-flowered, upon a zigzag toothed *rachis.*

SPEC. CHAR. Calyx pointed, four-flowered, with about five nerves. Florets awned. Leaves flat. Root fibrous.

SYN. Triticum caninum. *Huds.* 58. *Sm. Fl. Brit.* 159. *With.* 173. *Hull.* 28. *Relh.* 48. *Sibth.* 52. *Abbot.* 27. *Knapp. t.* 112.

Elymus caninus. *Linn. Sp. Pl.* 124.

Gramen caninum aristatum, radice non repente, sylvaticum. *Raii Syn.* 390.

FOUND in woods and about hedges on a chalky or limestone soil, more generally than the *Elymus europæus, t.* 1317. It flowers in July, and is perennial.

The root is composed of downy fibres, not at all creeping. Stems several, straight, erect, about 2 feet high, leafy, round, minutely striated, but very smooth to the touch. Leaves almost upright, flat, acute, rough, and sometimes hairy, on both sides. The sheaths of the upper ones are smooth, those of the lowermost hairy. Stipula very short. Spike 3 or 4 inches long, nearly erect, but at length drooping. Spikelets alternate, except sometimes the lower ones, each of 3 or 4 flowers, which are lanceolate, ribbed, tipped with long straight rough awns. The inner glumes are fringed. The valves of the calyx are equal, lanceolate, shortly awned, each having 3 or 5 ribs.

If the opposite calyx-valves be attended to, this grass can never be taken for an *Elymus;* its fibrous root, and whole structure, keep it sufficiently distinct from *T. repens.* We presume it is, to the farmer, as unprofitable as the latter, though far less troublesome.

Oct. 1. 1804. Published by Jos. Sowerby, London.

TRITICUM cristatum.

Crested Wheat-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Calyx* of 2 valves, solitary, many-flowered, [illegible] zigzag toothed rachis.

SPEC. CHAR. Calyx elliptical, awned, keeled, obscurely ribbed. Florets awned. Spikelets closely imbricated two-ranked, depressed, straight. Stems simple.

SYN. Triticum cristatum. *Schreb. Gram. fasc.* 2. 12. *t.* 23. *f.* 2.

Bromus cristatus. *Linn. Sp. Pl.* 115. *Willd. Sp. Pl.* v. 1. 479.

Festuca culmo spicato, spiculis multifloris. *Gmel. Sib.* v. 1. 115. *t.* 23.

Gramen triticeum, spicâ latiore compactâ. *Buxb. Cent.* 1. 53. *t.* 50. *f.* 3.

WE cannot resist the temptation of adding a third new British grass to our present monthly publication, and especially so rare and little known a species as this, which Mr. G. Don discovered on steep banks and rocks, by the sea side, between Arbroath and Montrose, flowering very sparingly. Gmelin says it is common throughout Siberia. His own specimens agree with ours, but his figure is as bad as Buxbaum's.

The roots are perennial, with very long, strong, and very woolly fibres, destined to grow in sand. Stems ascending, twelve or eighteen inches high, simple, zigzag, slender, rigid, leafy, hairy at the top. Leaves linear, shortish, with long, close sheaths; their upper surface in our specimen is very hairy, but Gmelin says that character is variable. Spike elliptic-oblong, compressed, of numerous pale oblong spikelets, so crowded as to depress each other, close, smooth or hairy, variable in the number of florets. Calyx-valves elliptical, their side-ribs obsolete or smoothed away; not turgid and curved as in *Triticum prostratum*, which is akin to this, but has an annual root and branched stem.

Aspinwall sculpt. & pub. by J. Sowerby London.

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TRITICUM loliaceum.

Spiked Sea Wheat-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of two valves, solitary, alternate, upon a zigzag *rachis*, and containing several obtuse, but pointed, florets.

SPEC. CHAR. Calyx many-flowered. Spike simple, compressed; spiculæ ovate, all leaning one way.

SYN. Triticum unilaterale. *Ait: Hort. Kew. v.* 1. 122. but not of Linnæus.

T. maritimum. *With. Bot. Arr.* 130.

Poa loliacea. *Hudf. Fl. An.* 43. *With. Bot. Arr.* 91. *Relh. Cant.* 37.

Gramen pumilum Loliaceo simile. *Raii Syn.* 395.

Gr. loliaceum exile durius. *Smith Rel. Rudb.* 13.

GATHERED by the Rev. Mr. Bryant, on the northern coast of Norfolk. It occurs on the sandy beach in many parts of England, according to Ray and Hudson, flowering about Midsummer.

The root is annual, consisting of long downy fibres as in most grasses that grow in pure sand. Several short rigid curved stems arise from it, clothed with sheathing leaves, which are involute when dry. A short notched beardless stipula crowns the inside of their sheaths. The general spike is terminal, erect, composed of from 8 or 9 to 12 or 15 erect flowers or spiculæ, placed alternately on each edge of the common *rachis* or stalk, but all directed to one of its flat sides, which is by that means completely hidden, while the other is visible behind. The calyx-husks are lanceolate, equal, reaching to the top of the lowest florets. The partial rachis is zigzag, and exactly like the general one; an argument for the propriety of considering the latter as a part of the fructification, and consequently making the plant a *Triticum*, not a *Poa*. The florets are numerous; their outer valves very blunt, with a sharp point, the inner lanceolate and acute. Nectary a minute concave scale. Stamina and pistilla short.

Linnæus has wonderfully erred in confounding this with his T. maritimum, which is a large branched grass with linear spiculæ and acuminated florets, well described in *Sp. Pl.* and which has hitherto been found only in the South of France. T. unilaterale is no less distinct, and is well figured by Morison, *vol.* 3. *sec.* 8. *t.* 2. *f.* 3.

MONTIA fontana.

Water Chickweed, or Blinks.

TRIANDRIA Trigynia.

GEN. CHAR. *Cal.* of 2 leaves. *Cor.* of 1 irregular petal. *Capsula* with 1 cell, 3 valves, and 3 seeds.

SPEC. CHAR. . . . . .

SYN. Montia fontana. *Linn. Sp. Pl.* 129. *Sm. Fl. Brit.* 161. *Huds.* 60. *With.* 175. *Hull.* 29. *Relh.* 49. *Sibth.* 53. *Abbot.* 28. *Curt. Lond. fasc.* 3. *t.* 8.

Alsine parva palustris tricoccos portulacæ aquaticæ similis. *Raii Syn.* 352.

COMMON in small rills and plashy spots, especially on a gravelly soil, flowering in April and May.

The root is annual, small and fibrous. Stem much branched from the very base, prostrate in the lower part, and (as we have observed respecting some other annual plants) frequently taking root at the joints. Leaves opposite, spatulate, entire. Flowers small, white, expanding at eleven o'clock for about an hour, but only in the brightest sunshine, and standing on clustered stalks about the ends of the branches. Corolla in 5 unequal segments. Stamina shorter than its border. Styles 3, united at their base. Capsule of 3 valves, but of only one cavity, containing 3 large black kidney-shaped seeds. The valves of the capsule at length become rolled into a cylindrical form. The whole plant is smooth and somewhat succulent. It is not known to be of any particular use. *Elatine Hydropiper*, figured in our 14th volume, *t.* 955, is the only British plant at all resembling it.

Micheli's name of *Montia* was retained by Linnæus, in preference to *Cameraria* previously given to this genus by Dillenius, because Plumier had already given the latter name to an American plant more worthy to commemorate so great a botanist as Camerarius.

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HOLOSTEUM umbellatum.

Umbelliferous Chickweed.

TRIANDRIA Trigynia.

GEN. CHAR. *Cal.* five-leaved. *Cor.* of five petals. *Capsule* one-celled, nearly cylindrical, bursting at the top.

SPEC. CHAR. Flowers in umbels.

SYN. Holosteum umbellatum. *Linn. Sp. Pl.* 130. *With. Bot. Arr.* 132. *Rose's Elements (Appendix)*, 445. *t.* 2. *f.* 4.

Cerastium umbellatum. *Hudf. Fl. An.* 201.

THIS plant was first discovered in England by Mr. John Pitchford, a most accurate and indefatigable botanist, who found it in the spring of 1765, on the walls of Norwich. We are informed it was a long time before this gentleman's discovery met with any credit, some of the first English botanists mistaking this plant for Cerastium semidecandrium. Mr. Rose however described and figured it, with its proper synonyms, in his Elements of Botany, published in 1775; a work which has eminently contributed to explain and recommend the system and principles of Linnæus in this country. Soon afterwards Mr. Hudson admitted it into the second edition of his Flora, under the genus of Cerastium, with which it agrees in habit, and to which the number of its stamina and styles are said often nearly to approach. We have not however found the petals so regularly bifid as they are in Cerastium; nor have we seen more than three stamina, and as many styles, in each flower; though it must be confessed we have found the capsules with five valves. Content with delineating every part as it occurred to us, we leave the matter to the decision of future observers.

The root is fibrous and annual; the whole plant a little glaucous, and remarkably smooth, except some glandular hairs on the stem, at a little distance from the flowers. The petals are occasionally white or reddish, and irregularly notched at the top. The flower stalks are variously divaricated at different stages of their growth. This specimen came from Bury.


J. Sowerby del. Aug.t 1. 1791

POLYCARPON tetraphyllum.

Four-leaved All-ſeed.

TRIANDRIA Trigynia.

GEN. CHAR. *Cal.* 5-leaved. *Petals* 5, ovate, minute. *Capſ.* of 1 cell and 3 valves. *Seeds* numerous.

SPEC. CHAR. . . . . .

SYN. Polycarpon tetraphyllum. *Linn. Sp. Pl.* 131. *Sm. Fl. Brit.* 162. *Hudſ.* 60. *With.* 176. *Hull.* 30. *Dickſ. H. Sicc. faſc.* 17. 6.

GATHERED by A. B. Lambert, eſq. on the beach at Weymouth towards Portland iſland, flowering in the latter part of ſummer. It grows on ſeveral parts of the ſouth-weſt coaſt of England, and ſeems to have been firſt noticed there by Mr. Hudſon. In the ſouth of Europe it is frequent in dry waſte ground, not being confined to a maritime ſituation, nor to any particular ſeaſon of flowering.

Root ſmall, annual. Stem much branched, and ſpreading flat on the ground, leafy, terminating in numerous forked panicles. Leaves oppoſite, obovate, entire, ſmooth, a little fleſhy, in the lower part of the ſtem croſſing each other in double pairs. Stipulæ and bracteæ membranous, white, pointed. Flowers ſmall, greeniſh-white. Petals ſhorter than the calyx, blunt. Fruit of 3 ovate or lanceolate concave poliſhed valves.

This genus belongs to the ſame natural order as *Stellaria*, *Ceraſtium*, &c. nor (as its ſtipulæ and leaves would at firſt ſight lead us to ſuſpect) is it allied to *Illecebrum*. The *Donatia* of Forſter is ſurely without any reaſon referred by the younger Linnæus to *Polycarpon*, from which its 3-leaved calyx, 9 petals, and totally different habit (whatever its fruit may prove when known) keep it widely ſeparate.