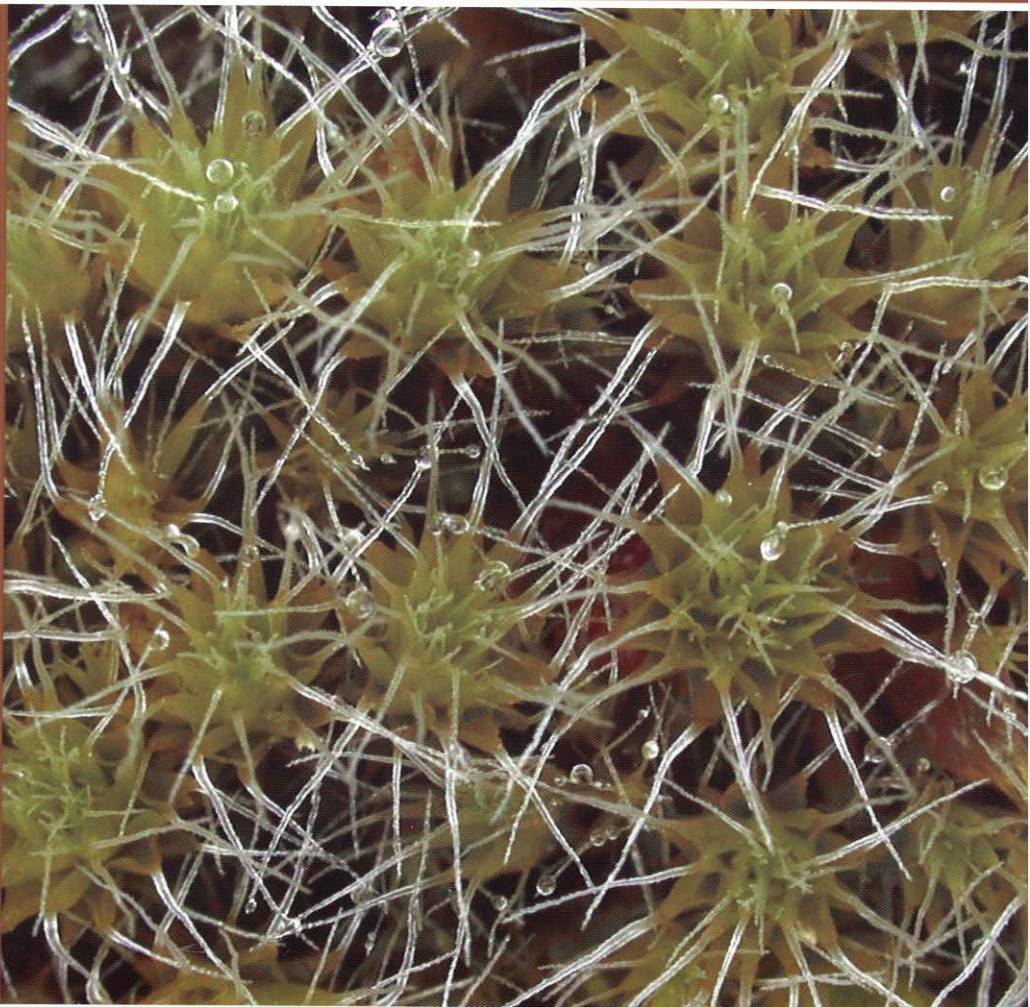


A Checklist and Census Catalogue of British and Irish Bryophytes

Updated 2008

M.O. Hill | T.H. Blackstock | D.G. Long | G.P. Rothero

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British Bryological Society

P. Stanley
2008

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in consultation with the BBS Nomenclature Committee



www.britishbryologicalsociety.org.uk

Published in 2008 by the British Bryological Society, Ivy House, Wheelock Street, Middlewich, Cheshire CW10 9AB, UK

For information about British Bryological Society Publications please contact the Secretary – see the Society's website at www.britishbryologicalsociety.org.uk

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Updated 2008

M.O. Hill, T.H. Blackstock, D.G. Long & G.P. Rothero

ISBN: 978-0-9561310-0-3 paperback

Printed by *Latimer Trend & Company Ltd, Plymouth, UK*

Design *Ian Atherton, Hampshire*

Front cover: *Campylopus introflexus* at Rossadillisk, near Cleggan, Connemara, West Galway, Ireland (H16), growing on thin peaty soil on coastal rocks (1 July 2007). *David G. Long*

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Introduction

This publication is the successor to *A Checklist and Census Catalogue of British and Irish Bryophytes* by Blockeel & Long (1998). In the intervening years several bryophyte taxa have been added to the British and Irish lists, and vigorous recording by members of the British Bryological Society has resulted in numerous amendments to the known distributions of the taxa, especially in Ireland. Two new floras have been published (Paton, 1999; Smith, 2004), as well as new European checklists of liverworts (Grolle & Long, 2000) and mosses (Hill *et al.*, 2006). At the same time taxonomic research has advanced at an unprecedented pace, using new data revealed by DNA sequencing. Although only 10 years have elapsed since the previous edition, there is now a clear need for a new one. This new edition not only provides an updated account of vice-county distributions, but it also serves as a complete checklist of British and Irish bryophytes.

Vice-county recording and its advantages

For the purposes of botanical recording, Great Britain is divided into 112 vice-counties (including the Isle of Man); Ireland is divided into 40 vice-counties. The Channel Islands, though geographically part of Normandy, are treated conventionally as a British vice-county.

The system of vice-county recording adopted by the British Bryological Society is as follows. Additions to the recorded distribution are accepted only if supported by a voucher. In most cases the voucher is checked by the Recorder for Hepatics or the Recorder for Mosses as appropriate, but some critical specimens are checked by other competent bryologists, whose authority is then cited along with the records. Voucher specimens sent to the Recorders are normally retained and

deposited in the herbarium of the Society (BBSUK). They are therefore available for checking again in future if necessary. New records are published in *Field Bryology* once a year. The records are transferred to the Society's database, currently held in the Biological Records Centre at Wallingford.

Vice-county recording is often criticized as archaic; and vice-counties are admittedly not ideal as the basis of a modern recording system. Their major drawback is that they are not indicated on Ordnance Survey maps. The British boundaries can, however, be inspected at high resolution on the National Biodiversity Network Gateway (www.searchnbn.net), and agreement between grid references and vice-counties can be checked at 1-km square resolution using datasets downloadable from the Biological Records Centre (www.brc.ac.uk).

The vice-county recording system has many advantages. It ensures that, at a broad scale of resolution, distributional data are checked by a competent expert. It ensures that herbarium material from a wide range of localities is available if a species needs to be revised. It allows bryologists to publish occasional finds that they may make, and at the same time provides a verification service for checking their specimens.

Perhaps the greatest advantage of the system is in encouraging amateurs and beginners. Bryologists anywhere in Britain and Ireland can get some idea of the taxa that they are likely to find in their area. For a beginner, it is a great encouragement to make a new find for an area and have it published. Indeed the encouragement provided by the system has been a major factor in raising the standard of field bryology in these islands, so that it is now one of the highest in the world.

Finally, the vice-county records are a valuable complement to data accumulated and mapped on a grid-square basis in the Society's database. Localized records can be inspected on the NBN Gateway (www.searchnbn.net) simply by typing in the name of the species. The existence of vice-county data of high quality allows data from general recording to be checked both for errors and omissions. In practice, such checks are applied only at intervals, and there are ordinarily some records in the BBS database that are accepted for the NBN Gateway but which are not present in the current *Census Catalogue*.

 History of distributional recording

The Moss Exchange Club was founded in 1896. At about the same time, new floras were published by Dixon & Jameson (1896) and Lett (1902). Interest in the distribution of British bryophytes soon increased to the point where it was possible to publish a census of their occurrence in the vice-counties of Great Britain and Ireland (Ingham, 1907; Macvicar, 1905). From these early Census Catalogues, the present system of vice-county recording has developed.

The following chronology lists the main events in the progress of distributional recording in Britain and Ireland.

- 1881 *London Catalogue of British Mosses*, ed. 2 (Lees, 1881), with distribution in 18 'provinces' of Britain. This came at about the time of a marked increase in publication of county lists of bryophytes, records appearing in the *Report of the Botanical Record Club* and other journals.
- 1896 Formation of the Moss Exchange Club; this lasted until 1922 (Foster, 1979), and on 1 January 1923 was formally reconstituted as the British Bryological Society.
- 1897 E.C. Horrell published a note in the circulating notebook of the Moss Exchange Club, indicating that by that time fairly good lists of mosses had been published for about 50 British vice-counties. He intended a census; but he was not a good organizer, and the scheme lapsed.
- 1902 Publication of a hepatic flora by Lett (1902), including (very incomplete) vice-county distributions for each species.
- 1905 *Census Catalogue of British Hepatics* ed. 1 (Macvicar, 1905).
- 1907 *Census Catalogue of British Mosses* ed. 1 (Ingham, 1907).
- 1909 Vice-county records were indicated by an asterisk in the *Report of the Moss Exchange Club*. This practice continued until 1946, when publication of the *Report of the British Bryological Society* (as it then was) ceased and a new format was introduced for the Society's *Transactions*. However, until 1937, new vice-county records were not published unless material was submitted for distribution in the annual exchange.

- 1913 *Census Catalogue of British Hepatics* ed. 2 (Ingham, 1913).
- 1923 J.B. Duncan became Recorder of Mosses for the newly founded British Bryological Society and opened an official BBS book of moss records. All vice-county records and amendments made between 1907 and 1961 were entered in this book, with the exception of the period 1926–34, for which they were entered in an interleaved copy of the 2nd edition of the moss catalogue. Thereafter, new moss records have been entered (by means of a cross-reference to the published lists) in the Recorder's copy of the current Census Catalogue. An official B.B.S record book for hepatics was opened in 1923 likewise by A. Wilson. This was superseded in 1963 by annotations in the Recorder's copy of the current Census Catalogue.
- 1926 *Census Catalogue of British Mosses* ed. 2 (Duncan, 1926). Sphagna were entered according to two systems, Dixon's and Warnstorf's. However, Dixon's system was not used after this date, and the Warnstorfian system of recording sphagna was maintained by W.R. Sherrin.
- 1929 Issue of a first supplement to the moss catalogue, bringing distributions up to date. Records were indicated by amendments only, without recorder, locality or date.
- 1930 *Census Catalogue of British Hepatics* ed. 3 (Wilson, 1930).
- 1935 Supplements to both *Census Catalogues* were issued by the BBS in the same style as the 1929 supplement, and including all the records given there.
- 1937 Full details of new vice-county records subsequent to the 1935 supplements were published in the report for 1936. From this time onwards, all new records have been published with details of locality, recorder and date. This year also saw publication of a first *Census Catalogue of British Sphagna* (Sherrin, 1937); a second edition of the sphagnum catalogue was published in 1946 (Sherrin, 1946).
- 1946 The BBS was re-formed and revitalized after the 1939–45 war. From this time onwards, new records have been published only if supported by a voucher. Prior to this, records were sometimes accepted on the basis of manuscripts lists.

-
- 1952 Following publication of a new checklist of mosses by Richards & Wallace (1950), the Warnstorffian system of recording sphagna was dropped. The group ceased to have a separate Recorder.
- 1960 A scheme for mapping bryophytes in 10-km squares of the National grid was launched. Maps were published in the *Transactions of the British Bryological Society* from 1963.
- 1963 *Census Catalogue of British Mosses* ed. 3 (Warburg, 1963).
- 1965 *Census Catalogue of British Hepatics* ed. 4 (Paton, 1965). The nomenclature in this catalogue was largely based on a checklist by Jones (1958).
- 1975 New vice-county records were published in the *Bulletin of the British Bryological Society* (and from 2004 its successor *Field Bryology*) rather than in the *Journal of Bryology* (and its predecessor, the *Transactions of the British Bryological Society*).
- 1978 *Provisional Atlas of the Bryophytes of the British Isles*, with dot maps of 104 species on a 10-km grid (Smith, 1978a). Publication of *The Moss Flora of Britain and Ireland* (Smith, 1978b) stimulated work leading to the production of a new edition of the *Census Catalogues*.
- 1981 *Distribution of Bryophytes in the British Isles, a Census Catalogue of their Occurrence in Vice-Counties* (Corley & Hill, 1981). For the first time, liverworts and mosses were combined in a single edition.
- 1991 *Atlas of the Bryophytes of Britain and Ireland* Volume 1 Liverworts (Hill, Preston & Smith, 1991). This was the first of three volumes which were the end product of the BBS Mapping Scheme, initiated in 1960. Volume 1 contained an introductory paper, by C.D. Preston, on the history of bryophyte recording in Britain and Ireland.
- 1992 *Atlas of the Bryophytes of Britain and Ireland* Volume 2 Mosses (except Diplolepidaceae) (Hill, Preston & Smith, 1992).
- 1994 *Atlas of the Bryophytes of Britain and Ireland* Volume 3 Mosses (Diplolepidaceae) (Hill, Preston & Smith, 1994).
- 1998 *A Check-list and Census Catalogue of British and Irish Bryophytes* (Blockeel & Long, 1998).

<i>Recorder of hepatics</i>		<i>Recorder of mosses</i>	
1905	S.M. Macvicar	1906–07	T. Barker
1906–23	W. Ingham	1907–23	W. Ingham
1923–46	A. Wilson	1923–46	J.B. Duncan
1947	Miss G. Wigglesworth	1946–65	E.F. Warburg
1948–59	C.P. Castell	1966	A.R. Perry
1960–76	Mrs J.A. Paton	1967–75	A.C. Crundwell
1977–86	M.F.V. Corley	1976–85	M.O. Hill
1987–97	D.G. Long	1986–96	T.L. Blockeel
1998–2008	T.H. Blackstock	1997–	G.P. Rothero
2009–	S.D.S. Bosanquet		

Accuracy of vice-county records

It can be seen from the foregoing history that the system of recording has only gradually evolved to its present state. In the early years, a much less critical attitude was adopted. The first editions of the *Census Catalogue* were based mainly on literature records and manuscript lists.

Certain areas and groups of taxa were revised at an early stage, and contain relatively few errors. For example, Macvicar (1910) published a complete list of the known records of hepatics in Scotland. The Scottish data for this group are therefore generally reliable. Likewise, for some counties such as Dorset (v.-c. 9) the original list of mosses was based on specimens that had been verified by a competent bryologist (in this case H. Boswell). But the data for several other counties contained many inaccuracies.

As time has passed the more glaring errors have been eliminated. Warburg (1963) and Paton (1965) revised several distributions for their editions of the *Census Catalogue*, and Corley & Hill (1981) did likewise for their volume.

In addition to revisions of particular species, there has been a steady flow of county floras and county lists, most of which are listed in the UK Bryodiversity section of the BBS website. Some such floras involved critical revision of the list of species for particular vice-counties. In these cases, the necessary amendments have generally been included along with the year's new vice-county records.

The Society's Mapping Scheme led to the creation of an Atlas database of bryophyte records, from which the published maps were plotted. As further records were added, this developed into the BBS database, which is currently held at the Biological Records Centre at Wallingford. In addition, the BBS maintains the Threatened Bryophyte Database, which is managed by N.G. Hodgetts.

The availability of this large mass of data in electronic form has provided a check on vice-county distributions presented in post-1990 Census Catalogues. For species, but not for all varieties, Blockeel & Long (1998) excluded counties if there was no corresponding record in the BBS database. This practice has been continued in the present compilation.

Blockeel & Long (1998) likewise used the BBS database to distinguish counties that lacked a recent record (i.e. a record made in the previous 50 years) by bracketing. We have done the same for the present volume, bringing the first date for 'recent' forward to 1960. No doubt, many post-1960 records have been accidentally omitted from the database. In addition, many post-1960 records are imprecisely dated and appear in the database only as post-1950. We take the view that it is simplest to apply the post-1960 rule rigorously, hoping that recorders will send in fresh specimens that can be dated accurately.

The main disadvantage of unnecessarily bracketing some counties is that, this will create extra work for the Recorders. We believe and hope that the size of this extra burden will not be excessive.

Tracing distributional records

The chief sources of records listed here are the first editions of the *Census Catalogue* and the lists of additions and amendments published over the years by the BBS. Moreover, all vice-counties listed for a species correspond to localized records in the BBS database. Almost all are open for inspection on the internet, as the database is posted on the NBN Gateway. However, many records lack details other than a 10-km square (hectad) and an approximate date.

Even when details are lacking in the database, vice-county records should be traceable. Those accruing since 1935 have almost all been published. Most are represented by specimens in the BBS's herbarium

(BBSUK). The sources of Irish records are listed by Holyoak (2003). Details of British records can generally be had from the notebooks and other sources kept by the Recorders. For revisions of critical taxa, lists of verified specimens and their locations are generally available with the appropriate Recorder.

Vice-counties of Great Britain and Ireland

The Vice-counties of Great Britain were originally defined by Watson (1852). The vice-counties of Ireland were defined by Praeger (1901). Since those times, county boundaries have frequently changed. Vice-county boundaries are fixed. The boundaries of British vice-counties were described and mapped at 1:625,000 by Dandy (1969). Accurate boundaries, based on Dandy's more detailed base maps held at the Natural History Museum, were digitized in 2004, and are available for inspection on the internet.

Webb (1980) clarified the position of vice-county boundaries in Ireland. Both Dandy and Webb assert the principle that the vice-county boundaries were fixed for all time at the moment of creation.

Maps showing the general disposition of the vice-counties are given here, but they are not adequate to locate borderline cases. Where greater detail is needed for British records, bryologists should consult the authoritative boundaries that are displayed on the NBN Gateway (www.searchnbn.net).

The boundaries of the Irish counties have changed less than those of the British ones, with the result that modern maps are still fairly useful for identifying the vice-county boundaries. The map published by Scannell & Synnott (1972) is also a useful guide, but bryologists working regularly or extensively in Ireland are strongly advised to consult Webb's (1980) authoritative account. However, an important correction to Webb's account is noted by Holyoak (2003) following Kelly (1984), namely that the famous oakwood at Derrycunihy is in H1.

Names of vice-counties

The names given here are the full, unabbreviated names of the vice-counties, and are the same as those posted on the BBS website. Alternative names, some of them still in common use, are indicated in brackets.

Great Britain

1	West Cornwall with Scilly	31	Huntingdonshire
2	East Cornwall	32	Northamptonshire
3	South Devon	33	East Gloucestershire
4	North Devon	34	West Gloucestershire
5	South Somerset	35	Monmouthshire
6	North Somerset	36	Herefordshire
7	North Wiltshire	37	Worcestershire
8	South Wiltshire	38	Warwickshire
9	Dorset	39	Staffordshire
10	Isle of Wight	40	Shropshire (Salop)
11	South Hampshire	41	Glamorgan
12	North Hampshire	42	Breconshire (Brecknockshire)
13	West Sussex	43	Radnorshire
14	East Sussex	44	Carmarthenshire
15	East Kent	45	Pembrokeshire
16	West Kent	46	Cardiganshire
17	Surrey	47	Montgomeryshire
18	South Essex	48	Merioneth
19	North Essex	49	Caernarvonshire
20	Hertfordshire	50	Denbighshire
21	Middlesex	51	Flintshire
22	Berkshire	52	Anglesey
23	Oxfordshire	53	South Lincolnshire
24	Buckinghamshire	54	North Lincolnshire
25	East Suffolk	55	Leicestershire with Rutland
26	West Suffolk	56	Nottinghamshire
27	East Norfolk	57	Derbyshire
28	West Norfolk	58	Cheshire
29	Cambridgeshire	59	South Lancashire
30	Bedfordshire		

60	West Lancashire	87	West Perthshire (incl. Clackmannanshire)
61	South-east Yorkshire	88	Mid Perthshire
62	North-east Yorkshire	89	East Perthshire
63	South-west Yorkshire	90	Angus (Forfarshire)
64	Mid-west Yorkshire	91	Kincardineshire
65	North-west Yorkshire	92	South Aberdeenshire
66	Durham	93	North Aberdeenshire
67	South Northumberland	94	Banffshire
68	North Northumberland (Cheviot)	95	Moray (Elginshire)
69	Westmorland with Furness	96	Easternness (incl. Nairnshire)
70	Cumberland	97	Westernness
71	Isle of Man	98	Main Argyll
72	Dumfriesshire	99	Dunbartonshire
73	Kirkcudbrightshire	100	Clyde Isles (Buteshire)
74	Wigtownshire	101	Kintyre (Cantyre)
75	Ayrshire	102	South Ebudes
76	Renfrewshire	103	Mid Ebudes
77	Lanarkshire	104	North Ebudes
78	Peeblesshire	105	West Ross
79	Selkirkshire	106	East Ross
80	Roxburghshire	107	East Sutherland
81	Berwickshire	108	West Sutherland
82	East Lothian (Haddington)	109	Caithness
83	Midlothian (Edinburgh)	110	Outer Hebrides
84	West Lothian (Linlithgow)	111	Orkney
85	Fife (incl. Kinross-shire)	112	Shetland (Zetland)
86	Stirlingshire		

Ireland

H1	South Kerry	H9	Clare (incl. Aran Islands)
H2	North Kerry	H10	North Tipperary
H3	West Cork	H11	Kilkenny
H4	Mid-Cork	H12	Wexford
H5	East Cork	H13	Carlow
H6	Waterford	H14	Laois (Leix, Queen's County)
H7	South Tipperary	H15	South-east Galway
H8	Limerick		

H16 West Galway	H29 Leitrim
H17 North-east Galway	H30 Cavan
H18 Offaly (King's County)	H31 Louth
H19 Kildare	H32 Monaghan
H20 Wicklow	H33 Fermanagh
H21 Dublin	H34 East Donegal
H22 Meath	H35 West Donegal
H23 Westmeath	H36 Tyrone
H24 Longford	H37 Armagh
H25 Roscommon	H38 Down
H26 East Mayo	H39 Antrim
H27 West Mayo	H40 Londonderry
H28 Sligo	

C Channel Islands

Maps of vice-counties

The detailed maps are at a scale of approximately 1:5,000,000. The scale can be inferred from the grid squares, which are of side 100 km.

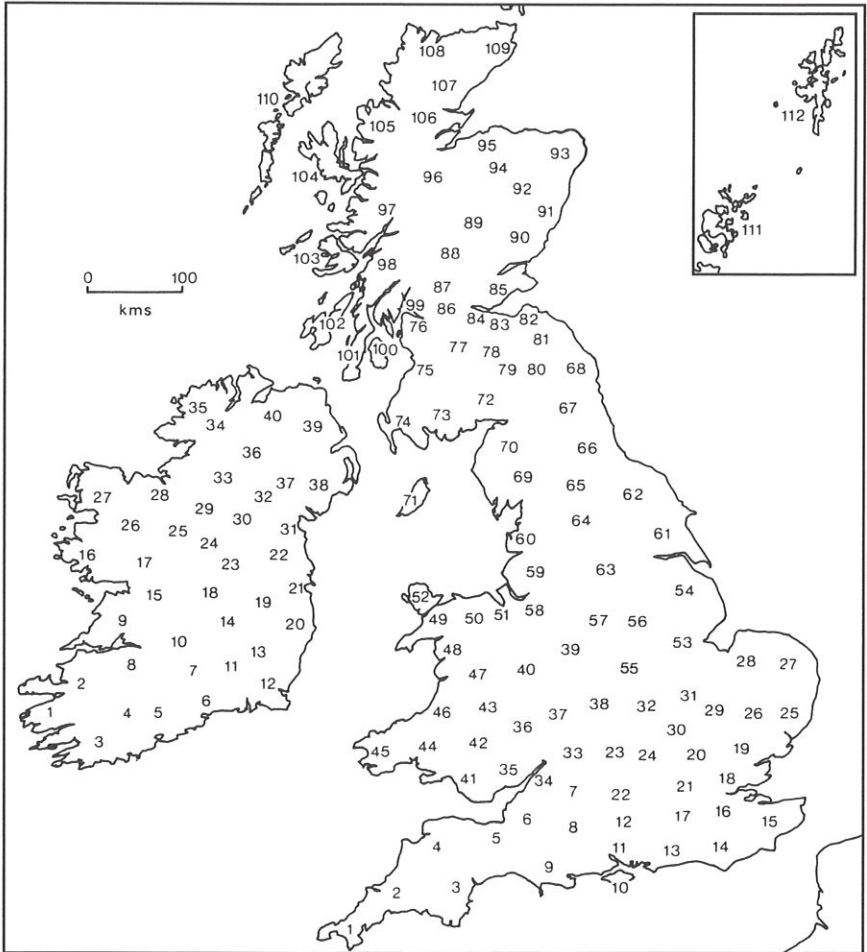


Fig. 1. General disposition of British and Irish vice-counties; vice-county boundaries have been omitted, but are indicated in the more detailed maps that follow (Figs 2-6).

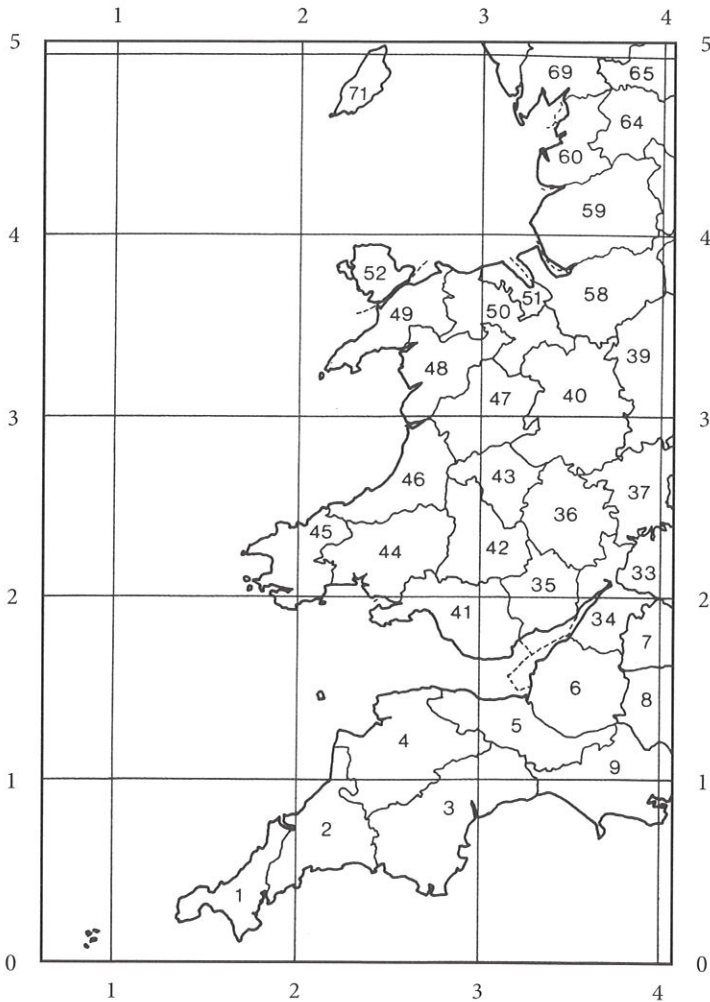


Fig. 2. Vice-counties of south-west Britain; the lines of the National Grid are spaced at intervals of 100 km.

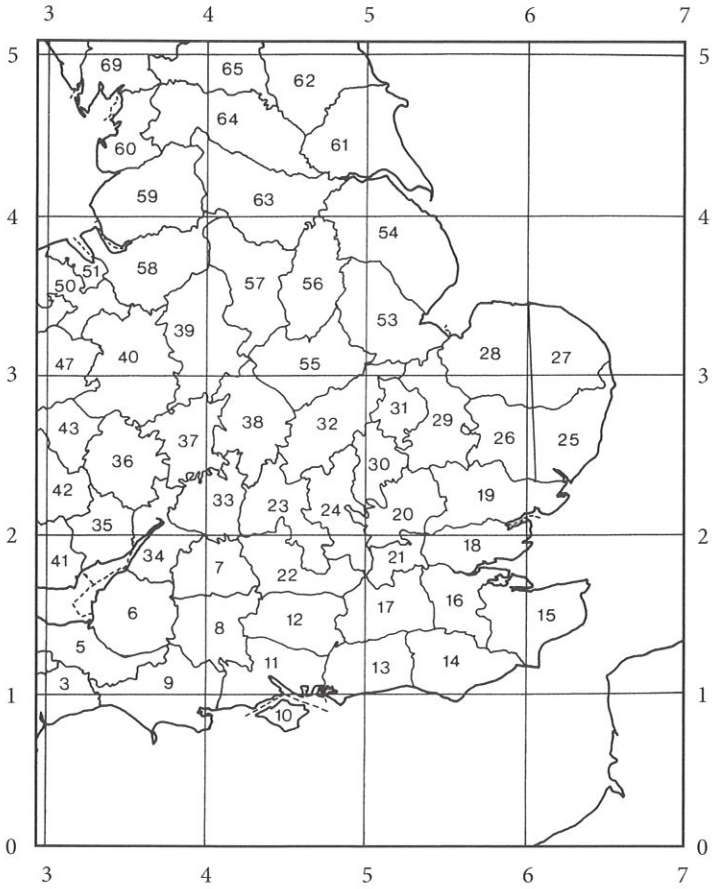


Fig. 3. Vice-counties of south-east Britain; the lines of the National Grid are spaced at intervals of 100 km.

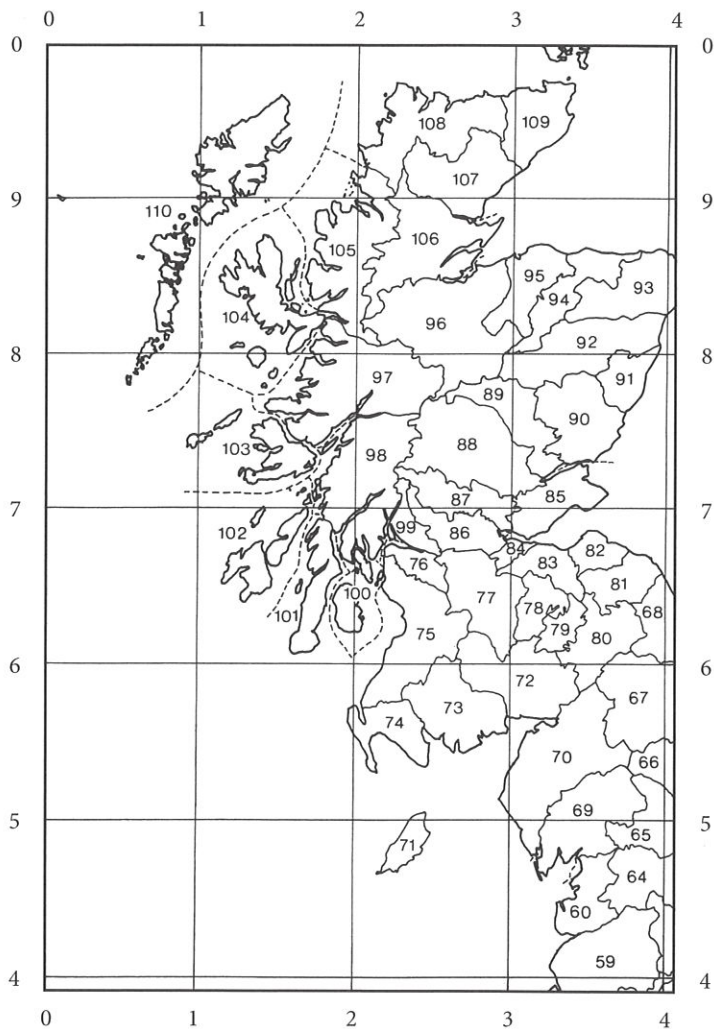


Fig. 4. Vice-counties of north-west Britain; the lines of the National Grid are spaced at intervals of 100 km.

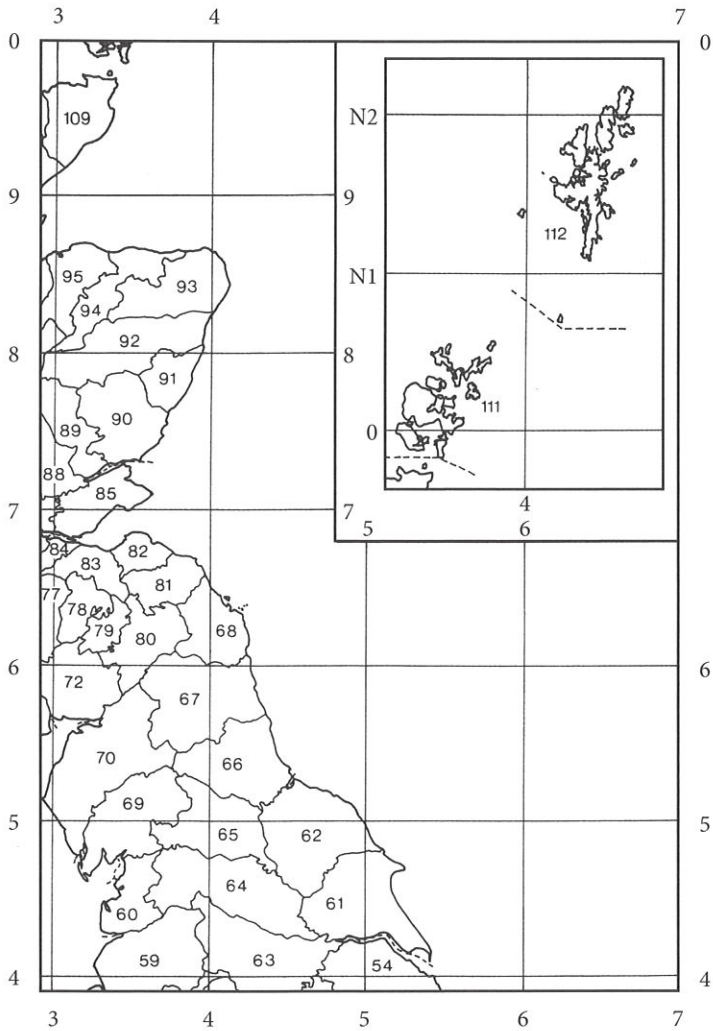


Fig. 5. Vice-counties of north-east Britain; the lines of the National Grid are spaced at intervals of 100 km.

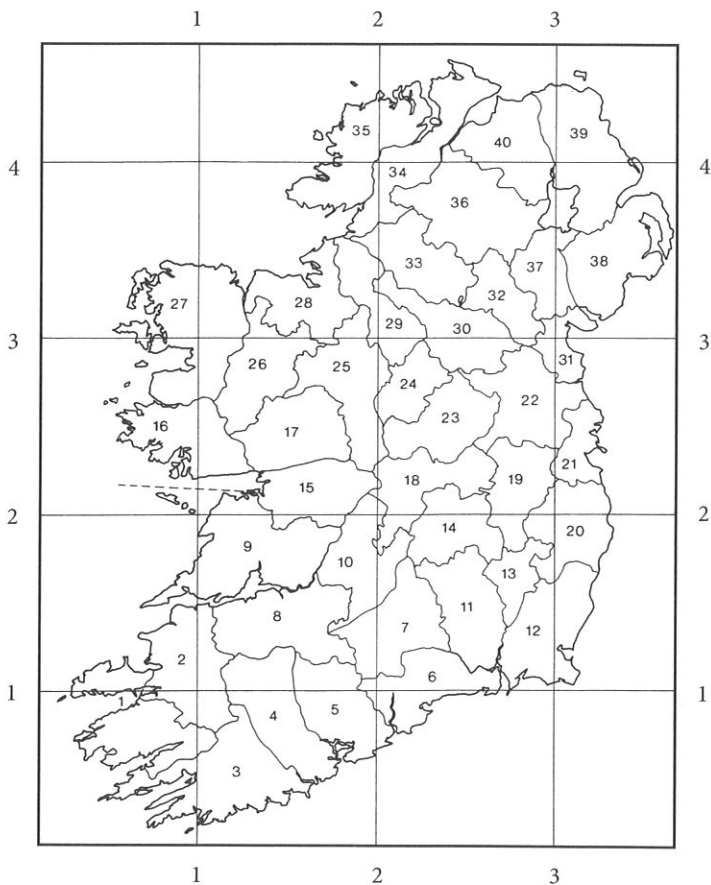


Fig. 6. Vice-counties of Ireland; the lines of the Irish National Grid are spaced at intervals of 100 km.

The Checklist and Census Catalogue

The taxa whose distributions are listed below are those whose occurrence in Britain or Ireland is well authenticated. Taxa that have been deleted, added or reinstated since the floras of Paton (1999) and Smith (2004) are accompanied by an explanatory annotation.

Arrangement and supra-generic taxonomy

In previous Census Catalogues, species were listed in order following current British and Irish floras or checklists. Here, we follow liverwort and moss classifications in recent global revisions (Crandall-Stotler, Stotler & Long, 2008; Goffinet & Buck, 2004). These classifications will be relatively unfamiliar to readers from our islands. They are substantially based on relationships found by sequencing DNA. They are therefore likely to reflect true underlying relationships and should be fairly stable in future. The moss classification is broadly similar to that in Smith (2004), differing mainly in the placement of Funariaceae, Oedipodiaceae and *Amphidium*. The liverwort classification has many new features, of which the most striking are the placement of *Pleurozia* in an otherwise thallose group including *Metzgeria*, the transfer of *Haplomitrium* to a completely separate class, and the removal of *Calyptogeia* from any close proximity to the Lepidoziaceae.

For those unfamiliar with higher taxa, it may be useful to explain the endings. At the top level, there are three phyla, the hornworts, liverworts and mosses. Each of these has a scientific name ending in 'phyta'. Below phyla come classes, which end in 'opsida', orders, ending in 'ales', and families, ending in 'aceae'. We have not given authorities for these higher taxa; those who require them should refer to the

publications cited above, or for mosses to the more up-to-date classification by Stech & Frey (2008). These authors follow Hedderson *et al.* (2004) in placing *Catoscopium* alongside (as 'sister' to) the Haplolepidaceae, rather than in Bryales; they also recognize Bartramiales as a distinct order. Their classification is otherwise broadly similar to that used here. Authorities for genera and species are given in the main enumeration.

ANTHOCEROTOPHYTA

ANTHOCEROTOPSIDA

Anthocerotales

Anthocerotaceae

1. Anthoceros
2. Phaeoceros

MARCHANTIOPHYTA

HAPLOMITRIOPSISIDA

Calobryales

Haplomitriaceae

1. Haplomitrium

MARCHANTIOPSISIDA

Blasiales

Blasiaceae

2. Blasia

Sphaerocarpaceae

Sphaerocarpaceae

3. Sphaerocarpos

Lunulariales

Lunulariaceae

4. Lunularia

Marchantiales

Marchantiaceae

5. Marchantia

6. Preissia

Aytoniaceae

7. Reboulia

Cleveaceae

8. Athalamia

Conocephalaceae

9. Conocephalum

Ricciaceae

10. Riccia

11. Ricciocarpos

Targioniaceae

12. Targionia

Dumortieraceae

13. Dumortiera

JUNGERMANNIOPSISIDA

Pelliales

Pelliaceae

14. Pellia

Fossombroniales

Petalophyllaceae

15. Petalophyllum

Fossombroniaceae

16. Fossombronia

Pallaviciniales

Moerckiaceae

17. Moerckia

Pallaviciniaceae

18. Pallavicinia

Pleuroziales

Pleuroziaceae	Lepidoziaceae
19. Pleurozia	40. Bazzania
Metzgeriales	41. Kurzia
Metzgeriaceae	42. Lepidozia
20. Metzgeria	43. Telaranea
Aneuraceae	Lophocoleaceae
21. Aneura	44. Lophocolea
22. Riccardia	45. Chiloscypus
Porellales	46. Heteroscypus
Porellaceae	47. Leptoscyphus
23. Porella	Plagiochilaceae
Radulaceae	48. Plagiochila
24. Radula	Adelanthaceae
Frullaniaceae	49. Adelanthus
25. Frullania	Jamesoniellaceae
Jubulaceae	50. Jamesoniella
26. Jubula	51. Pedinophyllum
Lejeuneaceae	Cephaloziaceae
27. Aphanolejeunea	52. Cephalozia
28. Cololejeunea	53. Cladopodiella
29. Colura	54. Hygrobiella
30. Drepanolejeunea	55. Nowellia
31. Harpalejeunea	56. Odontoschisma
32. Lejeunea	57. Pleurocladula
33. Marchesinia	Cephaloziellaceae
34. Microlejeunea	58. Cephaloziella
Ptilidiales	Scapaniaceae
Ptilidiaceae	59. Gymnocolea
35. Ptilidium	60. Barbilophozia
Jungermanniales	61. Anastrepta
Pseudolepicoleaceae	62. Tetralophozia
36. Blepharostoma	63. Sphenolobopsis
Trichocoleaceae	64. Anastrophyllum
37. Trichocolea	65. Tritomaria
Mastigophoraceae	66. Lophozia
38. Mastigophora	67. Diplophyllum
Herbertaceae	68. Douinia
39. Herbertus	69. Scapania

Myliaceae	2. Andreaea
70. Mylia	
Acrobolbaceae	OEDIPODIOPSISIDA
71. Acrobolbus	Oedipodiales
Arnelliaceae	Oedipodiaceae
72. Gongylanthus	3. Oedipodium
73. Southbya	
Calypogeiaceae	POLYTRICHOPSISIDA
74. Calypogeia	Polytrichales
Mesoptychiaceae	Polytrichaceae
75. Leiocolea	4. Atrichum
76. Liochlaena	5. Oligotrichum
Jungermanniaceae	6. Pogonatum
78. Jungermannia	7. Polytrichastrum
79. Nardia	8. Polytrichum
80. Solenostoma	
Geocalycaceae	TETRAPHIDOPSISIDA
81. Geocalyx	Tetraphidales
82. Harpanthus	Tetraphidaceae
83. Saccogyna	9. Tetraxis
Antheliaceae	10. Tetrodontium
84. Anthelia	
Gymnomitriaceae	BRYOPSISIDA
77. Eremonotus	Buxbaumiales
85. Gymnomitrium	Buxbaumiaceae
86. Marsupella	11. Buxbaumia
	Diphysciales
	Diphysciaceae
BRYOPHYTA	12. Diphyscium
	Timmiales
	Timmiaceae
	13. Timmia
SPHAGNOPSISIDA	Encalyptales
Sphagnales	Encalyptaceae
Sphagnaceae	14. Encalypta
1. Sphagnum	
ANDREAEOPSISIDA	Funariales
Andreaeales	Funariaceae
Andreaeaceae	15. Funaria

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| 16. Entosthodon | 42. Rhabdoweisia |
| 17. Physcomitrium | 43. Cynodontium |
| 18. Aphanorrhagma | 44. Oncophorus |
| Disceliaceae | 45. Dichodontium |
| 19. Discelium | 46. Dicranoweisia |
| Grimmiales | 47. Arctoa |
| Grimmiaceae | 48. Kiaeria |
| 20. Coscinodon | 49. Glyphomitrium |
| 21. Schistidium | Schistostegaceae |
| 22. Grimmia | 50. Schistostega |
| 23. Racomitrium | Dicranaceae |
| Ptychomitriaceae | 51. Aongstroemia |
| 24. Ptychomitrium | 52. Dicranella |
| 25. Campylostelium | 53. Dicranum |
| Seligeriaceae | 54. Paraleucobryum |
| 26. Blindia | Leucobryaceae |
| 27. Brachydontium | 55. Dicranodontium |
| 28. Seligeria | 56. Campylopus |
| Archidiales | 57. Leucobryum |
| Archidiaceae | Pottiales |
| 29. Archidium | Pottiaceae |
| Dicranales | 58. Scopelophila |
| Fissidentaceae | 59. Eucladium |
| 30. Fissidens | 60. Weissia |
| Ditrichaceae | 61. Tortella |
| 31. Pleuridium | 62. Trichostomum |
| 32. Pseudephemerum | 63. Pottiopsis |
| 33. Trichodon | 64. Pleurochaete |
| 34. Ditrichum | 65. Hymenostylium |
| 35. Saelania | 66. Anoetangium |
| 36. Distichium | 67. Gyroweisia |
| 37. Ceratodon | 68. Gymnostomum |
| 38. Cheilothela | 69. Molendoa |
| Bruchiaceae | 70. Leptobarbula |
| 39. Bruchia | 71. Micromitrium |
| 40. Trematodon | 72. Ephemerum |
| Rhabdoweisiaceae | 73. Paraleptodontium |
| 41. Amphidium | 74. Diallytrichia |

75. Pseudocrossidium	Bartramiaceae
76. Bryoerythrophyllum	104. Plagiopus
77. Leptodontium	105. Bartramia
78. Barbula	106. Conostomum
79. Didymodon	107. Philonotis
80. Stegona	108. Breutelia
81. Pterygoneurum	Bryaceae
82. Aloina	109. Plagiobryum
83. Tortula	110. Anomobryum
84. Phascum	111. Bryum
85. Microbryum	112. Rhodobryum
86. Henediella	Mielichhoferiaceae
87. Acaulon	113. Mielichhoferia
88. Leptophascum	114. Pohlia
89. Syntrichia	115. Epipterygium
90. Cinclidotus	Mniaceae
Splachnales	116. Mnium
Splachnaceae	Cinclidiaceae
91. Tayloria	117. Cinclidium
92. Tetraplodon	118. Rhizomnium
93. Aplodon	Plagiomniaceae
94. Splachnum	119. Plagiomnium
Meesiaceae	120. Pseudobryum
95. Paludella	Aulacomniaceae
96. Meesia	121. Aulacomnium
97. Amblyodon	Orthodontiaceae
98. Leptobryum	122. Orthodontium
Orthotrichales	Rhizogoniales
Orthotrichaceae	Rhizogoniaceae
99. Zygodon	123. Leptotheca
100. Orthotrichum	Calomniaceae
101. Ulota	124. Calomnion
Hedwigiales	Hookeriales
Hedwigiaceae	Daltoniaceae
102. Hedwigia	125. Achrophyllum
Bryales	126. Calyptrochaeta
Catosciaceae	127. Daltonia
103. Catoscopium	Hookeriaceae

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| 128. Hookeria | 158. Helodium |
| Pilotrichaceae | Brachytheciaceae |
| 129. Cyclodictyon | 159. Pseudoscleropodium |
| Hypnales | 160. Scorpiurium |
| Fontinalaceae | 161. Plasteurhynchium |
| 130. Fontinalis | 162. Eurhynchium |
| Climaciaceae | 163. Platyhypnidium |
| 131. Climacium | 164. Rhynchostegium |
| Amblystegiaceae | 165. Rhynchostegiella |
| 132. Palustriella | 166. Cirriphyllum |
| 133. Cratoneuron | 167. Oxyrrhynchium |
| 134. Campylium | 168. Kindbergia |
| 135. Campyliadelphus | 169. Sciuro-hypnum |
| 136. Amblystegium | 170. Brachythecium |
| 137. Hygroamblystegium | 171. Scleropodium |
| 138. Leptodictyum | 172. Eurhynchiastrum |
| 139. Conardia | 173. Brachytheciastrum |
| 140. Drepanocladus | 174. Homalothecium |
| 141. Tomentypnum | Myriniaceae |
| 142. Sanionia | 175. Myrinia |
| 143. Hygrohypnum | Hypnaceae |
| 144. Pseudocalliergon | 176. Campylophyllum |
| Calliergonaceae | 177. Calliergonella |
| 145. Warnstorfia | 178. Taxiphyllum |
| 146. Sarmentypnum | 179. Pylaisia |
| 147. Straminergon | 180. Homomallium |
| 148. Hamatocaulis | 181. Hypnum |
| 149. Scorpidium | 182. Ptilium |
| 150. Calliergon | 183. Ctenidium |
| Leskeaceae | 184. Hyocomium |
| 151. Leskea | Pterigynandraceae |
| 152. Pseudoleskeella | 185. Habrodon |
| 153. Pseudoleskea | 186. Heterocladium |
| 154. Lescuraea | 187. Pterigynandrum |
| 155. Ptychodium | Hylcomiaceae |
| Thuidiaceae | 188. Pleurozium |
| 156. Abietinella | 189. Rhytidiadelphus |
| 157. Thuidium | 190. Loeskeobryum |

191. <i>Hylocomiastrum</i>	Cryphaeaceae
192. <i>Hylocomium</i>	205. <i>Cryphaea</i>
Rhytidiaceae	206. <i>Dendrocryphaea</i>
193. <i>Rhytidium</i>	Leucodontaceae
Plagiotheciaceae	207. <i>Leucodon</i>
194. <i>Myurella</i>	208. <i>Antitrichia</i>
195. <i>Platydictya</i>	209. <i>Pterogonium</i>
196. <i>Orthothecium</i>	Neckeraceae
197. <i>Plagiothecium</i>	210. <i>Neckera</i>
198. <i>Isopterygiopsis</i>	211. <i>Homalia</i>
199. <i>Pseudotaxiphyllum</i>	212. <i>Thamnobryum</i>
200. <i>Herzogiella</i>	Leptodontaceae
Entodontaceae	213. <i>Leptodon</i>
201. <i>Entodon</i>	Lembophyllaceae
Pylaisiadelphaceae	214. <i>Isothecium</i>
202. <i>Platygyrium</i>	Myuriaceae
Sematophyllaceae	215. <i>Myurium</i>
203. <i>Hageniella</i>	Anomodontaceae
204. <i>Sematophyllum</i>	216. <i>Anomodon</i>

Nomenclature

Nomenclature below the level of family mainly follows that of the two standard floras by Paton (1999) and Smith (2004). Names differing from those in the standard floras are signified by annotations, each of which is referenced by a number in square brackets (e.g. [20]).

Synonyms include most of those given by Blockeel & Long (1998), together these authors' approved names if they have now been superseded. A few additional names used by Paton (1999), Smith (2004) and other recent authors have been included.

Author abbreviations follow the recommendations of the International Plant Names Index (www.ipni.org), which are based on the work of Brummitt & Powell (1992). Author citations closely follow those in recent European checklists (Grolle & Long, 2000; Hill *et al.*, 2006).

Symbols and conventions

Records in round brackets signify vice-counties from which a species has not been seen since the beginning of 1960. For example *Anomodon attenuatus* has the distribution (88), 90, signifying that it has only ever been found in vice-counties 88 and 90, with a post-1959 record for vice-county 90 and no recent record from 88. The application of brackets is based on data held in the British Bryological Society's main database at the Biological Records Centre (BRC), now in Wallingford. Where a vice-county is bracketed this may be either because there is no record in BRC made after 1959, or because any records in BRC are poorly dated, or because the vice-county was bracketed in Blockeel & Long (1998) and no voucher has subsequently been sent to the appropriate Recorder. For a vice-county to be listed without brackets, it must either have been listed without brackets by Blockeel & Long (1998) and have a post-1959 record in the BRC database, or have been sent in as a voucher after 1997.

An exception to the 1959 rule has been made for Co. Tyrone (H36), for which even *Barbula unguiculata*, *Brachythecium rutabulum*, *Kindbergia praelonga* and *Lophocolea bidentata* lack recent records. For this county only, 129 species have been left unbracketed on the basis of records from the 1950s. The criteria to select these species are: (i) all species that have a recent record in the 7 adjoining vice-counties; (ii) all species with a recent record in 6 of the 7 adjoining vice-counties and at least 5 post-1950 records in Tyrone; and (iii) all species with a recent record in 5 of the 7 adjoining vice-counties and at least 10 post-1950 records in Tyrone.

Irish vice-counties are signified by the prefix 'H', from Hibernia, the Latin name for Ireland. Thus the distribution of *Lejeunea hibernica* is H1-3, 16, 27, indicating that it has been found only in Ireland, in vice-counties 1, 2, 3, 16 and 27. The abbreviation 'C' is used for the Channel Islands.

HORNWORTS (ANTHOCEROTOPHYTA)

1. **Anthoceros** L.
 1. **punctatus** L.
1–4, (5, 6, 8), 9–11, (13), 14, (16), 17, 22, 25, 30, (34), 35, (38), 43–45, 47–49, 52, 54, 59, (61, 67, 70), 71–73, (74), 75, 76, 81, 85–87, 90, 93–98, (99), 100–103, 105–107, 109, 110. H1–9, 12, 13, 16, 27, 29, 31, 32, 34, 35, (38). C.
 2. **agrestis** Paton
1, 2, 4, 5, 9, 10, (11), 12–14, 16–19, 22–24, 27, (30), 32, (34), 35, 36, (37, 38), 39–41, 44, 46, 47, (48), 50–52, 54, (55), 56, 58, 59, 63, 65, (68), 69, 72, 73, (74), 75, 76, 80, 81, 83, 86, 89–91, 98. H31, 35, (36).
2. **Phaeoceros** Prosk.
 1. **laevis** (L.) Prosk.
1, 3, (5, 8), 9, (18, 36, 43), 44, 45, 47, 59, 64, 70, 73, 88, 90, 98, (100), 102, 104, 107, 110. H1, 2, 5, 6, 8, 11, 13, 14, 16, 19–24, 27, 29, 31, 32, 34, 35, (36), 37, 38, (40). (C).
 2. **carolinianus** (Michx.) Prosk. (*P. laevis* subsp. *carolinianus* (Michx.) Prosk.)
2, (13), 17, (18), 24, 35, 40, 44, 45, (46), 69, (72), 80, 81, (86), 87, 89, (99), 103.

LIVERWORTS (MARCHANTIOPHYTA)

1. **Haplomitrium** Nees nom. cons.
 1. **hookeri** (Sm.) Nees
1, (3, 11, 13), 42, 44, 45, 49, 59, (61), 66, 68–71, 74, 77–79, 83, 87–90, 92–98, 101, 103–110, 112. H1–3, 16, 20, (21), 27, 28, 30, 34, 35, 39.
2. **Blasia** L.
 1. **pusilla** L.
1–6, (7, 8), 9–15, (16), 17–20, (21), 22, (23, 25), 27, 28, (32–34), 35–38, (39), 40–53, (54, 55), 56, 57, (58), 59, 60, (61), 62–65, 67–70, (71), 72–112. H(1, 2), 3, 5–7, 9, (12), 16, 18, (19), 20, 21, 26–30, (31), 32, (33), 34–40.

3. **Sphaerocarpos** Boehm.
 1. **michellii** Bellardi
1, 5, 11, 14, 16–19, (20), 21, 22, (23), 24–30, 32, (34, 36), 37, 54, (55), 61, (62). C.
 2. **texanus** Austin
1, (9), 12, 13, (16), 17, 24–27, 34, 36, 37. C.
4. **Lunularia** Adans.
 1. **cruciata** (L.) Lindb.
1–98, (99), 100–108, (109), 110–112. H1–13, (14), 15–32, (33), 34–40. C.
5. **Marchantia** L.
 1. **polymorpha** L.
 - a subsp. **polymorpha** (*M. polymorpha* var. *aquatica* (Nees) Gottsche et al.)
1–4, (5), 6, 11, (12), 13, 14, 17, 19, 20, (22, 23), 24–32, 34, 35, (36, 38, 39), 40–45, 49–53, 57, (58), 59–65, (66), 67, (68), 69, 70, 72–86, (87, 88), 89, 90, (92), 93–95, (96), 98, (99), 101, (104), 106, 108, (109), 110, (111), 112. H(1, 2), 5–11, 13, 15, 16, (18), 19–23, 25, 27–30, 32–37, (38–40).
 - b subsp. **ruderalis** Bischl. & Boisselier
1–6, 8–13, (14), 15–21, (22), 23, (24), 25–37, 39–42, 44–46, (48), 49, 52–55, (56), 57–69, (70), 71, (73), 77, 78, 80–83, 85, (86), 88, 89, (90, 91), 92–96, (97), 98, 102, (103), 107, 108, 111. H(1), 4–7, 9, 11, 12, 16, (17), 21–23, 25, 29, (30), 32–34, 36, 37, (38), 39. C.
 - c subsp. **montivagans** Bischl. & Boisselier (*M. alpestris* (Nees) Burgeff)
35, 42, 52, 62, 64, 65, 68, 70, (72), 77, 80–83, (85), 88, (89), 90, (91), 92, 93, 95–98, 105, 106, 108, 112. H(28), 29.
6. **Preissia** Corda
 1. **quadrata** (Scop.) Nees
(3, 4), 6, 11, 22, (26–28), 32, 35, 36, 39, 41, 42, (43), 44, (45), 46–50, 52, (54, 55), 57–70, 72, 73, (74), 75–92, (93), 94–112. H1–3, (6), 8, 9, 14–18, (19), 20, (21), 22, 23, 25–29, 31, 33–35, (36), 38–40.
7. **Reboulia** Raddi
 1. **hemisphaerica** (L.) Raddi
1–3, (4), 5–17, 20, (22), 26, 27, 30, (33), 34–37, (38), 39–52,

- (55), 57, (58, 59), 60, (61, 62), 64–69, 72, (73–77), 80–84, (85, 86), 87–90, 92–94, 96–106, 108, (109), 110. H1, (2), 4, 5, 7–9, 11, 16, (17, 21), 23, 25–29, (33, 35, 38–40). C.
8. **Athalamia** Falconer
1. **hyalina** (Sommerf.) S.Hatt. [1]
92.
9. **Conocephalum** Hill
- 1*. **conicum** agg. (*C. conicum* (L.) Dumort. and *C. salebrosum* Szweyk. et al.) [2]
1–20, (21), 22–112. H1–23, (24), 25–31, (32), 33–40. C.
1. **conicum** (L.) Dumort. [2]
3, 7, 13, 15–17, 19, 20, 25–27, 29, 32–37, 39–46, 48–52, 55, 57–59, 61, 64, 67–72, (73), 79–83, 85–88, (90), 92, 93, (97), 98, 103, 107, 110, 112. H1, 3, 7, 11, 16, 19, 27, 29, 33, 34, (38).
C.
2. **salebrosum** Szweyk. et al. [2]
27, 28, 33–37, 39–46, 48–51, 57, 59, 63–65, 67–70, 72, 73, 77, 79–83, 85–88, (90), 93, 98, 103, 107, 112. H9, 11, 16, 18, 29, 33, 34, 39.
10. **Riccia** L.
1. **cavernosa** Hoffm.
1, (4), 5, 6, 8, 9, 11, 13–15, 17, 18, 20–24, 26, 28, 29, (30), 32, (33), 35, 36, (38), 39, 40, (41), 44–46, 48, (49), 52, 53, 55, (56), 57–59, 61, 63–65, 67, 83, 85, 88–90, 93, 95, (101), 102, 103, 110, 111. H(1), 3, 9, 15, 17, 25, 27, 30, 35, (38), 39.
2. **crystallina** L. emend. Raddi
1, 76.
3. **huebeneriana** Lindenb.
2, 3, (9), 13, 14, (17), 42, 44, 46, 47, (52, 58), 59, 64, 65, 67, 100. H20.
4. **fluitans** L.
3–6, (7), 9–32, (33, 34), 35–40, (41), 44, 47, 50, 51, 53–55, (56), 57–61, (62), 63, (64), 66, (69). H7, 8, 10, 13, (19), 20, (21), 23, 25, (29), 31, (32, 36), 37, (38, 39), 40.
5. **rhenana** Lorb. ex Müll.Frib.
1, 7, 15, (17), 18, 20, 24, 28, 29, 37, 58. H17.
6. **canaliculata** Hoffm.
13, 40, (48), 52, (58), 83, 86–89, 99.

7. **sorocarpa** Bisch.
1–29, (30, 31), 32–37, (38), 39–98, (99), 100–108, 110. H(1),
2–6, 8–10, 12, 13, 15, 16, 19, 20, (21), 22, 23, 25–28, 31–37,
(38), 39, 40. C.
8. **nigrella** DC.
1, (37), 43, 48. C.
9. **glauca** L.
1–30, (31), 32–37, (38), 39–65, 67, 69, 71–73, (75), 80–82,
(83), 84–90, 92–94, 96–98, (99), 100–103, 106, 107. H1–7,
9–14, (15), 16, 19–23, 25, 26, 28, 31, (33), 34, 37, 38, (39), 40.
C.
10. **subbifurca** Warnst. ex Croz. (*R. warnstorffii* auct. non Limpr.
ex Warnst.)
1–3, (4), 5–8, 11, 12, (13, 14), 16, 17, 20, 22, 24, 28, 29, (34),
35–37, 40–44, (45, 46), 47, (48), 49, 52, 56, 57, 61, 63, 64, 69,
73, (74), 81, 82, 88, 93, 96–98, (99), 100–103, 106, 108. H(1),
2–6, 9, 12, 14, 16, 22, 23, 27, 28, 33–35, (36), 37, 38, (39), 40.
11. **crozalsii** Levier
1–3, (14, 35, 48, 49), 52. H3. C.
12. **bifurca** Hoffm.
1.
13. **beyrichiana** Hampe ex Lehm.
1, 2, 26, 41–43, 45, (46), 48, 49, 52, 54, (59), 60, 64, 65, (69),
73, 74, (75, 76, 82), 83, 84, (85, 86), 88, 90, 98, (99), 100–104,
110. H(1), 3, 9, 15, 16, (20), 26, 27, 34, 35, 37–39. C.
11. **Ricciocarpos** Corda
 1. **natans** (L.) Corda
(6), 9, 12, 13, (14), 15, 16, 18–20, (21, 22), 24, 25, (26), 27–29,
31, 32, 35, (36, 38), 39, 40, 50, 53–55, (58), 61–63, (64), 65,
66. H7–9, (15), 19, (20, 21), 22, 23, (25), 30, (31).
12. **Targionia** L.
 1. **hypophylla** L.
2, 3, (4), 5, (6), 12, 13, 17, (26), 36, (37), 39, 40, 42–45, 47–49,
(52), 57, 70, 80, (85), 87, 88, (90), 98, (99), 101, (104). H(1, 2,
4, 39). C.
13. **Dumortiera** Nees
 1. **hirsuta** (Sw.) Nees
1, 2, (3), 4, 14, 71, 98, 102. H1–4, 6–11, 20, 29, (39).

14. **Pellia** Raddi
 1. **epiphylla** (L.) Corda (*P. borealis* Lorb.)
1–30, 32–112. H1–16, (17), 18, 20–40. C.
 2. **neesiana** (Gottsche) Limpr.
1–9, 11–13, (14), 17, 18, 21, 22, 24–27, 29, 31–36, (37), 38–54, 57–60, 62–75, 77–83, 87–99, 101–112. H1–3, 6–10, 12, 13, 15, 16, 18, 20, 21, 23–30, 32–35, (36), 37, (38), 39, 40. C.
 3. **endiviifolia** (Dicks.) Dumort.
1–20, (21), 22–75, (76), 77–112. H1–30, (31), 32–40. C.
15. **Petalophyllum** Nees & Gottsche ex Lehm.
 1. **ralfsii** (Wilson) Nees & Gottsche
1, 3, 4, (6), 28, 41, 44–46, 48, (49), 51, 52, 59, (62), 68, 105.
H1, (2), 9, 16, 21, 27, 28, 35, (39, 40).
16. **Fossombronia** Raddi
 1. **foveolata** Lindb.
1, 2, (3), 8, (9), 11, 12, (13, 14), 17, (22), 25, (27), 28, 37, 40, 45, 46, 48, 49, 52, 54, (58, 59, 61, 62), 69, (74, 86, 87), 88, 92, 95–98, (99), 101–106, 108–110, 112. H1–3, 9, 16, 20, 26, 27, 35, 37, (39).
 2. **angulosa** (Dicks.) Raddi
1, 2, 45, (48), 49, 110. H1, 3, 16, 27, (34), 35. C.
 3. **caespitiformis** De Not. ex Rabenh. (*F. husnotii* Corb.) [3]
1–4, (6), 7–9, 13, 14, 17, (23, 34), 35–37, (39), 40–42, (44), 45, 49, (58–60, 69). H1, 3, 5, 9, 16, 27, 34. C.
 4. **pusilla** (L.) Nees
1–20, (21), 22–32, (33), 34–37, (38), 39–55, (56), 57–60, (61), 62–67, (68, 69), 70–83, (84), 85, 86, 88–90, (91), 92–94, 96–98, (99), 100–104, 106, 107, 109. H1, (2), 3–13, 16, 19–22, (23), 24–29, 31–35, (36), 37, (38), 39, 40. (C).
 5. **maritima** (Paton) Paton (*F. pusilla* var. *maritima* Paton) [4]
1, 2, 11, 45, 49. H3, 27. C.
 6. **wondraczekii** (Corda) Lindb.
1, 2, (3), 4–9, (10), 11–20, 22, (23), 24, 25, 27–29, (30), 31, 32, 34–52, 55–60, (61), 62–74, 76–90, 92–94, 96–99, 101–107, (109), 112. H1, 3–7, 9, 10, 12, 13, (15), 16, 20, 21, 24–27, 29, 31–35, 37, (38). C.
 7. **mittenii** Tind. (*F. crozalsii* Corb.) [5]
(4), 7, (22).

8. **incurva** Lindb. [6]
1–3, 9, 11–14, 16, 25, 35, 37, 40, 42, 44–46, 49, 54, 55, 57, 58, 62, 63, 69, 70, 74, 77, 78, 80, 83, 88, 89, (90), 93–98, 101, 102, 104–107, 112. H1, 3, 6, 16, 27, 28, 30, 35, 36, 38–40. C.
9. **fimbriata** Paton
42, 45, 57, 68, 78, 79, 88, 96–98, 101, 104, 106. H27, 28.
17. **Moerckia** Gottsche
 1. **hibernica** (Hook.) Gottsche [7]
88, (90), 92, 96, 112. H(20).
 2. **flotoviana** (Nees) Schiffn. [7]
(1, 4), 17, 26–28, (41), 42, 44, (45), 46, 48, 49, (50), 52, 58, 59, 62–64, (65), 66–70, 72, 78–80, (82), 83, 85, 88–92, 94–97, 103, 105, 106, 108, 110–112. H1, 9, 14, 16, (17), 18, (21), 23, 26–28, 33–35, (38–40).
 3. **blyttii** (Moerch) Brockm.
87–90, 92, 94, 96–98, 105–108.
18. **Pallavicinia** Gray
 1. **lyellii** (Hook.) Carruth.
6, 10, 11, (13), 14–18, 22, 25, 45, 46, 48, (59, 62, 64, 65), 69, 70. H(1–3), 8, 11, (19), 20, 27.
19. **Pleurozia** Dumort.
 1. **purpurea** Lindb.
73–75, 86–89, 92, 96–98, (99), 100–112. H1–3, 9, 10, 16–18, (20, 21, 23), 24–30, 33–35, (36, 38), 39, 40.
20. **Metzgeria** Raddi
 1. **violacea** (Ach.) Dumort. (*M. fruticulosa* auct.) [8]
1–15, (16), 17–49, 51–68, 70–91, 93–104, 106–112. H1–16, (17), 18–35, (36), 37, (38), 39, (40). C.
 2. **consanguinea** Schiffn. (*M. temperata* Kuwah.) [9]
1–14, 16–25, 32–38, 40–50, 52, 57–60, 64, 65, 67, 69–73, (74), 75, 80, 81, 83, 86–88, 97–102, 104. H1, 3–9, 12, 13, (15), 16–18, 20, 22, 24, 25, 27, 29, (31), 32–35, (36), 38, 39. C.
 3. **furcata** (L.) Dumort.
1–112. H1–31, (32), 33–40. C.
 4. **conjugata** Lindb.
1–6, (13), 14, (33), 34–37, 39, (40, 41), 42–50, 52, 57, 60, (62), 63–65, 67–76, (77), 78–83, (85), 86–90, 92, 95–106, 108, (109), 110, (111). H1–3, 6–11, (12, 13), 16, (17, 18), 20, (21),

- 22, 27–30, 33–35, (36), 37, (38), 39, 40.
5. **leptoneura** Spruce
44, 46, 48, 49, 69, 70, 72, (73, 75, 76), 86–88, 97–106, 108, 110, (111). H1, 2, (3), 7, 16, 27–29, 35, 39.
6. **pubescens** (Schrank) Raddi (*Apometzgeria pubescens* (Schrank) Kuwah.) [10]
34, 35, (36), 39, 40, 47, 48, 50, 51, 56, 57, 60, 62–70, 72, 73, 78–83, (85), 86–90, (91), 92, (93), 94–99, 101, 104–108, (109). H39, 40.
21. **Aneura** Dumort. (*Cryptothallus* Malmb.)
1. **pinguis** (L.) Dumort.
1–112. H1–40. C.
2. **mirabilis** (Malmb.) Wickett & Goffinet (*C. mirabilis* Malmb.) [11]
2–4, (6), 8, 9, 11–17, 22, 24, 25, 27, 28, 30, 40, 41, 43–50, 69, 75, 83, (86), 89, 92, 94–101, 105, 106, 108. H1, 2, 16, 20, 35.
22. **Riccardia** Gray
1. **multifida** (L.) Gray
1–5, (6, 8), 9–18, (19), 20, 22–29, (30), 34, 35, (36), 37, (38, 39), 40–52, 54–60, (61), 62–83, 85, (86), 87–90, (91), 92–112. H1–9, (10), 11–13, 15, 16, (17), 18, (19), 20, 21, 23, (24), 25–40. C.
2. **chamedryfolia** (With.) Grolle
1–74, (76), 77–86, 88–112. H1–16, 19–30, 32–40. C.
3. **incurvata** Lindb.
1, 2, 9, 11, (13, 14), 17, 26, 28, 32, 44, 45, 48, 49, 52, 53, 58–60, 63, 65, 66, 69–71, 73, 74, (75), 78–80, (81), 82–85, 88–90, 92, 94–98, 101, 102, 104–108, 110, 112. H1, 9, 16, 20, 27, 29, 35, 38.
4. **palmata** (Hedw.) Carruth.
2, 3, 9, 11, 13, 17, 24, 35, 39–46, 48–51, (58), 62–64, 66, 67, (68), 69, 70, 72, 73, 75–92, 94–112. H1–3, 6, 7, 9, 11, 15, 16, 20, 23–30, 33–35, (36), 39, 40.
5. **latifrons** (Lindb.) Lindb.
1–13, 17, 22, (26), 27, 28, (35), 40, 42–52, 67, 70, 73, 74, 77–81, 83, 88, 90–93, (94), 95–98, 101–110, 112. H1–3, 6–9, (10), 11–13, (14), 15–20, (21, 22), 23–25, 27–29, 33–35, (36), 37, 39, 40. C.

23. **Porella** L.

1. **platyphylla** (L.) Pfeiff.
1–20, (21), 22–55, (56), 57–60, 62–70, (71), 72, (73), 75, (76),
77–83, 85–91, (92), 93–95, 97–102, 104, 106, 108, 112. H1, 2,
4, (5), 6–9, 11, (12), 13, 14, 16–20, (21), 22–26, 28–31, (32),
33, (36), 37, (38), 39, 40. C.
2. **cordaeana** (Huebener) Moore
2–5, 11, (13), 17, 36, 37, 39, 40, 42, 43, (44, 45), 47–52, 55, 57,
60, 64–70, (71), 72, 73, 75, (76), 77–99, 104–108, (109), 112.
H1, (5), 6, 7, 9, 13, 15, 20, 22, 23, 28, 29, 31, (32, 33, 36), 37,
(38, 39), 40.
3. **arboris-vitae** (With.) Grolle
1–6, 9–13, (14), 16, 17, 22–24, (33), 34–37, 39, 40, 42–50,
52, 57, 60, 62, 64–67, 69, 70, 72, 73, (74), 75, 77–80, 82, 83,
85–90, 96–105, 108, 112. H1, 2, (3, 5), 6–8, (9), 16, 20, 23,
26–30, 33, (34), 35, 39, 40. C.
4. **obtusata** (Taylor) Trevis.
1–3, (4, 5), 6, 9, 10, 15, (34), 42, 45, 46, 48–50, 52, 69, 72–75,
81, 82, 85, 86, (87–89), 90, 91, (96), 97–105, 107, 108, 110–
112. H1–4, (5), 6–8, 16, 18, 20, 27, 28, 34, 35, 38, 39. C.
5. **pinnata** L.
1–5, 36, 42–46, 48–50, 69. H1, 2, 4–6, 8–10, 12, 13, 15, 20, 28,
(30), 32, 37.

24. **Radula** Dumort.

1. **complanata** (L.) Dumort.
1–37, (38), 39–55, 57, (58), 59, 60, (61), 62–75, (76), 77–83,
(84), 85–112. H1–40. C.
2. **lindenbergiana** Gottsche ex C.Hartm.
1–3, 45, 49, 52, 64, 65, 68–70, 72, 73, (75–77), 78, 85, (86),
87–90, 92, 95–99, (100), 101–106, 108, 109, (110), 111. H1–
3, 6, 8, 16, 27–29, 39. C.
3. **voluta** Taylor ex Gottsche et al.
48, 49, 70, 73, (75), 86, 97, 98, 101–105. H1–3, 6, 7, 16, (27),
28, 35.
4. **holtii** Spruce
H1–3, 27.
5. **aquilegia** (Hook.f. & Taylor) Gottsche et al.
46, 48, 49, 69, 70, 73, 86, 87, 96–98, (99), 100–108, 110, 112.

- H1-3, 6, 7, 16, 27-29, 34, 35.
6. **carringtonii** J.B.Jack
97, 101, 103, 104. H1-3, 27.
25. **Frullania** Raddi
1. **tamarisci** (L.) Dumort.
1-17, 19, (20), 22-24, (26), 28, 29, 31-52, 54, (55, 56), 57-60,
62-83, (84), 85-112. H1-31, (32), 33-40. C.
2. **teneriffae** (F.Weber) Nees
1-3, 45, 46, 48, 49, 52, 64, 69-75, 85, 88, 97, 98, (99), 100-
105, 108, 110-112. H1-9, 16-18, (19), 20-22, 25, (26), 27-
31, 33-36, 38-40. C.
3. **microphylla** (Gottsche) Pearson
a var. **microphylla**
1-5, (42), 44, 45, 48, 49, 64, 69-71, 73-75, (86), 97-105, 108,
110, 111. H1-3, 6, 7, 16, 27-29, 33-35, 39, 40.
b var. **deciduifolia** Grolle
42, 49.
4. **fragilifolia** (Taylor) Gottsche et al.
1-4, 7-9, 11, 14, (34), 35, 36, (40), 42-50, 52, 60, 64, 65, (66),
67-75, 78-83, (85), 86-90, (91), 92-108, (109), 110-112.
H1-3, 6-9, 16, 19-21, 27, 29, 30, 33-35, (36, 38), 39, 40. C.
5. **dilatata** (L.) Dumort.
1-60, (61), 62-112. H1-16, (17), 18-40. C.
26. **Jubula** Dumort.
1. **hutchinsiae** (Hook.) Dumort.
1-5, (34), 35, 42-50, 63, 64, 69-71, (72), 73-75, (76), 86, 97,
98, 100-105, 110. H1-4, 6, 8, 16, 20, 27-29, 34, 35, (36), 38,
39.
27. **Aphanolejeunea** A. Evans
1. **microscopica** (Taylor) A.Evans
44, 46, 48-50, 64, 65, 69, 70, (72), 73, 74, (75, 86), 87, (88),
96-108, 110. H1-3, 6-10, 15, 16, 20, 26-29, 33, 35, (36), 39,
40.
28. **Cololejeunea** (Spruce) Schiffn.
1. **calcareo** (Lib.) Schiffn.
34, 35, (36), 41, 42, 44, 46-50, 57, (59), 60, 63-65, (66), 67-
70, 72, 73, 75, 76, 78, 80, 82, 83, 86-92, 94, 96-109, 111. H1,
2, 7-10, 15, 16, (21), 27-30, (31), 33-36, (38), 39, 40.

2. **rossettiana** (C.Massal.) Schiffn.
3, 5, 6, 8–10, 34–37, 39–41, 43, 45, 50, 52, 56, 57, 59, 60, 63–67, 69, 70, (72), 75, 80, 81, 91, (98), 99. H2, 4–6, 8, 9, 14–16, (21), 22, 28, 29, 33, 34, (36).
3. **minutissima** (Sm.) Schiffn.
1–4, 6, 8–15, (16, 17), 20–23, 25, 29, 30, 34–38, 40, 41, 43–46, 48–50, 52, 57, 59, 74, 75, 97, 98, 100–104, 110. H1–4, (5), 6, 8–13, 15, 16, (17, 18), 20, (21), 23–30, 32–35, 38–40. C.
29. **Colura** (Dumort.) Dumort.
 1. **calyptrifolia** (Hook.) Dumort.
1–3, 6, (14), 35, 40–42, 44–50, 52, 64, 70, 72, 73, 80, (86), 87, 97–99, (100), 101–105, 108, 110, 111. H1–10, 12–16, 20, (21), 24–30, 32, 33, 35, (38), 39.
30. **Drepanolejeunea** (Spruce) Schiffn.
 1. **hamatifolia** (Hook.) Schiffn.
2, 48, 49, 64, (65, 69), 70, 73, (86), 87, 97–105, 108, 110. H1–6, 8, 9, (14), 15, 16, (17, 20, 21), 25–29, (31), 33–35, (38, 39), 40.
31. **Harpalejeunea** (Spruce) Schiffn.
 1. **molleri** (Steph.) Grolle (*H. ovata* (Hook.) Schiffn.) [12]
1–3, 11, 44, 46, 48–50, 64, 65, 69, 70, 72, 73, (75, 86), 87, 97, 98, (99), 100–105, 108, 110. H1–3, 6, 7, 9, (15), 16, 27–29, 33, (34), 35, (38), 39, 40.
32. **Lejeunea** Lib.
 1. **cavifolia** (Ehrh.) Lindb.
1–9, 11–20, (21), 22–26, 29, (30), 31–37, (38), 39–50, 54, 57–60, 62–70, 72–75, 77–93, (94), 95–109, 111, 112. H1–8, 10, (13), 14–16, (17), 20, 21, 23, 25–30, 33–35, (36), 37, (38), 39, 40.
 2. **lamacerina** (Steph.) Schiffn.
1–6, 8–11, 13, 17, 34–37, 39–52, 55, 57, 59, 60, 62–65, 67, 69–75, 78–82, 85, 86, 88, 90, 96–105, 108, 110. H1–13, 15, 16, 20, 21, 25, 27–29, 31–36, (37), 38–40. C.
 3. **patens** Lindb.
1–4, 35, 41–50, 60, 63–65, 67, (68), 69–76, 78–80, (83, 85), 86–89, 94, 96–112. H1–12, (15), 16, 17, 20, (21), 25–31, 33–35, (36), 37, 39, 40.

4. **flava** (Sw.) Nees subsp. **moorei** (Lindb.) R.M.Schust.
H1–3, 6, 16, 27.
5. **hibernica** Bischl. et al. ex Grolle
H1–3, 16, 27.
6. **eckloniana** Lindenb. (*L. holtii* Spruce) [13]
102. H1–6, 10, 13, 16.
7. **mandonii** (Steph.) Müll.Frib.
1, 97, 104. H1, 2, 29.
33. **Marchesinia** Gray
 1. **mackaii** (Hook.) Gray
1–6, 9, 10, 34–36, 39–52, 56, 57, 60, 63–65, 69–75, 86, 97–
105, 110. H1–11, 14–16, (17), 20, (21), 22, 23, (26), 27–29,
31, 33, (34), 35, (38), 39, 40.
34. **Microlejeunea** Steph.
 1. **ulicina** (Taylor) A.Evans (*Lejeunea ulicina* (Taylor) Gottsche
et al.)
1–18, 20–24, 30–37, 39–50, 52, 57, 59, 60, (62), 64, 65, 67,
69–76, 80, 83, 86–88, 97–105, 108, 110. H1–18, 20–29, (30,
31), 32–40. C.
35. **Ptilidium** Nees
 1. **ciliare** (L.) Hampe
2–5, 8, 11–13, 15, 17, (19, 21), 22, 24–28, 30, 34–40, (41),
42–55, (56), 57–108, (109), 110–112. H1, (2), 6, 8, 12, (20),
21, 22, 27, 35, (36, 39), 40.
 2. **pulcherrimum** (Weber) Vainio
5–7, (8), 9–20, 22–44, 47, 48, (50, 51), 53, 54, (55, 56), 57–70,
72, (75), 77, 78, 80–83, (84), 85, 86, 88–96, 99–101, 105–107,
(108). H(31).
36. **Blepharostoma** (Dumort.) Dumort.
 1. **trichophyllum** (L.) Dumort.
1, (3), 4, 14, 16, (23), 33, (34), 35, (36), 37, (39, 40), 41–44,
46–50, (54), 57, 59, 60, 62–70, (71), 72, 73, (74), 75–83, (85),
86–90, (91), 92, 94–112. H1–3, 6, 16, (20), 27–29, (31, 33),
34, 35, (38), 39, 40.
37. **Trichocolea** Dumort.
 1. **tomentella** (Ehrh.) Dumort.
1–6, 8, 9, 11–17, (18, 20, 21), 22, 24, (26, 34), 35–38, (39), 40–
50, (52), 57, (58), 59, 60, 62–67, (68), 69–73, (74), 75–83, (85),

- 86), 87–90, (91, 92), 93–105, (106), 108, 109, 111. H1–6, 8, 9, (10, 13, 14), 16, (18, 20), 26–30, 33, (34), 35, (36, 38), 39, 40.
38. **Mastigophora** Nees
1. **woodsii** (Hook.) Nees
88, 96–98, (99), 103–108, 110, 112. H1, 2, 16, 27.
39. **Herbertus** Gray
1. **stramineus** (Dumort.) Trevis.
48, 49, (70), 86–90, 96–99, 103–108, 110–112.
 2. **aduncus** (Dicks.) Gray subsp. **hutchinsiae** (Gottsche) R.M.Schust.
48, 49, 69, 70, 73, 75, 86–88, 97–108, 110–112. H1–3, 6, 7, 16, 27–29, (33), 34, 35, 39.
 3. **delavayi** Steph. (*H. borealis* Crundw.) [14]
105.
40. **Bazzania** Gray
1. **trilobata** (L.) Gray
1–5, 11, 13, 14, 34, 35, (36), 37, 39–50, 52, 57, 58, (59), 60, 62–65, (66), 67–75, 78–80, (81, 85), 86–92, 94–106, 108, 111, 112. H1–3, (5), 6, 9, 12, (13), 16, 20, (21), 25, 27–30, 33–35, 37, (38), 39, (40). C.
 2. **tricrenata** (Wahlenb.) Lindb.
(42, 44), 48, 49, 60, (64), 65, 69, 70, 72, 73, 75, (76), 78, 79, 86–90, 92, 94, 96–112. H1–4, 6–8, 10, 16, 20, 27–30, 33–35, (36), 39, (40).
 3. **pearsonii** Steph.
92, 96–98, 104–108, 110. H1, 2, 16, 27, 35.
41. **Kurzia** G. Martins
1. **pauciflora** (Dicks.) Grolle
1–5, (6), 8–15, (16), 17, 22, (23), 24, (25, 26), 27, 28, (34), 35, (39), 40, (41), 42–46, (47), 48–50, 52, 54, (55), 57–60, (61), 62–75, (76), 77, 78, (79), 80, 81, (82), 83, (85), 86–92, 95–112. H1–3, (5), 6, 7, 9, (10), 11–20, (21), 22–29, (30, 31), 33–35, (36, 38), 39. C.
 2. **sylvatica** (A.Evans) Grolle
1, 2, 4, 5, 9, 11, 13, 14, 16, 17, 28, (37), 39, (42), 44–52, 60, (62), 63, 64, 68–70, 73, 75, 80, 82, 83, 90, 92, 95–99, 103–105, 108, 110, 112. H1, 2, 4, 6, 8, 15, 16, 20, 26–28, (33), 34, 35, 38. C.

3. **trichoclados** (Müll.Frib.) Grolle
2, 5, 39, 44–46, 48–50, 57, 60, (62), 63–65, 67, 68, (69), 70, 74,
76–78, 81, 83, 88–92, 94–108, (109), 110–112. H1–4, 6–10,
12, 13, 16, 17, 20, 25–27, 29, 30, 33–35, (36), 39, 40.
42. **Lepidozia** (Dumort.) Dumort.
 1. **reptans** (L.) Dumort.
1–6, (7), 8–55, (56), 57–112. H1–10, 12, 13, (14), 15–18, 20,
(21), 22–31, 33–40. (C).
 2. **pearsonii** Spruce
44, 46–49, (50), 57, (59), 60, 63–65, 67–71, (72), 73, (74, 75),
76, (78), 80, 83, 86–88, 90, 92, 94, 96–106, 108, (109), 110–
112. H1–3, 7, 16, 20, 27–30, 33–35, 39.
 3. **cupressina** (Sw.) Lindenb.
1–5, 34, 35, 40, 42–50, 52, (58), 60, 63, 64, 67, 68, 70, (71, 75),
86, 92, 96–105, 108, 110–112. H1–3, (5), 6, (8), 12, 16, 20,
(21), 25–30, 33–35, (36), 39, 40.
43. **Telaranea** Spruce ex Schiffn.
 1. **europaea** Engel & G.L.S.Merr. (*T. nematodes* auct. eur.)
[15]
1. H1–3, 6, 16, 27, 35.
 2. **murphyae** Paton
1, 9, 11.
 3. **tetradactyla** (Hook.f. & Taylor) E.A.Hodgs. (*T. longii* Paton)
[16]
17, 98.
44. **Lophocolea** Corda [17]
 1. **bidentata** (L.) Dumort.
1–112. H1–30, (31), 32–40. C.
 2. **bispinosa** (Hook.f. & Taylor) Gottsche et al.
1–3, 9, 11, 13, 17, 98, 102. H36.
 3. **heterophylla** (Schrad.) Dumort.
1–75, (76), 77, 78, (79), 80–91, 93, 95–106. H1–3, 5–8, 11–
16, (19), 20–25, (27), 29–33, (34), 35, (36), 37–40. C.
 4. **semiteres** (Lehm.) Mitt.
1, 2, 10–13, 17–19, 22, 24–28, 30, 39, 45, 48, 53, 54, 59, 61, 63,
77, 78, 83, 84, 86, 98, 100. H38.
 5. **brookwoodiana** Paton & Sheahan [18]
17.

6. **fragrans** (Moris & De Not.) Gottsche et al.
1–6, 9, 10, 14, 35, 40–42, (43), 44–50, (52), 57, 60, 69–71, (72), 73–76, 81, 87, 97–105, 108, (110). H1–3, 5, 6, 8–12, (13, 15), 16, 20, 24–29, 33–37, 39, 40. C.
45. **Chiloscyphus** Corda [17]
1. **polyanthos** (L.) Dumort.
1–26, (30), 31, (32), 33–52, 54, 55, (56), 57–60, (61), 62–112. H1–16, 18–20, (21), 23, 25–30, (31), 32–40. C.
 2. **pallescens** (Ehrh. ex Hoffm.) Dumort. (*C. polyanthos* var. *pallescens* (Ehrh. ex Hoffm.) C.Hartm.)
1–20, 22–32, (33), 34–54, 56–60, (61), 62–65, 67–74, 76, 78, 80, 81, (82), 83–85, (86), 87–92, 94–98, (99), 100–112. H1, 2, 4, (5), 6–9, 12, 13, 16, 20, (21), 22–30, 32–35, (36), 37, (38), 40.
46. **Heteroscyphus** Schiffn.
1. **fissistipus** (Hook.f. & Taylor) Schiffn. [19]
H1.
47. **Leptoscyphus** Mitt.
1. **cuneifolius** (Hook.) Mitt.
48, (87, 88), 97–105, 108, 110. H1–4, 7, 16, 27, 29, 33, 35.
48. **Plagiochila** (Dumort.) Dumort.
1. **carringtonii** (Balf.) Grolle
88, 90, 92, 94, 96–100, 102–108, 110–112. H16, 27.
 2. **porelloides** (Torr. ex Nees) Lindenb.
1–17, 19, 20, 22–24, 30–37, (38), 39–112. H1–18, 20, 22–40. C.
 3. **asplenioides** (L. emend. Taylor) Dumort.
1–20, 22–111. H1–6, 8–18, 20–23, (24), 25–37, (38), 39, 40. C.
 4. **britannica** Paton
3, 33–37, 39–45, 49–52, 57, 60, 62–69, 75–78, 80–82, 86, 88–91, 94–99, 101–106, 110. H2, 8, 9, 16, 24–29, 33, 35, 37, 40.
 5. **norvegica** H.H.Blom & Holten
9.
 6. **heterophylla** Lindenb. ex Lehm. (*P. atlantica* F.Rose) [20]
46, 48, 49, 69, 70, 97–99, 101–105, 108. H(1), 2, 3.
 7. **spinulosa** (Dicks.) Dumort.
2–4, (5, 11, 34), 35, (37), 40–49, (50, 57, 59), 60, (63), 64, 65,

- (67), 69, 70, 72, (73), 75, 76, 78–80, 82, 83, (85), 86–88, 95–108, 110–112. H1–10, (11), 13, 16, 25–28, 30, 33–35, (36), 38–40.
8. **bifaria** (Sw.) Lindenb. (*P. killarniensis* Pearson) [21]
1–4, (6), 9, 11, (14), 43–50, 52, 64, 69–71, (73), 74, (75), 86–88, 95–98, 100–105, 108, 110, 111. H1–3, 5, 6, 8–11, 16, 20, 23, 25, 27–29, 31, 33, 35, 39, 40. (C).
9. **punctata** (Taylor) Taylor
1–5, 42–49, 64, 65, 69–71, (72), 73, (75), 86–88, (96), 97–106, 108, 110, 112. H1–3, (5), 6–10, 13, 16, 20, 26, 27, 29, 30, 33–35, 39, 40.
10. **exigua** Taylor (*P. corniculata* auct. non (Dumort.) Dumort.)
44, 46–49, (64), 65, 69, 70, 73, (75), 86, 87, 97, 98, (99), 100–105, 108. H1–3, 6, 16, 27, (28), 35, (39), 40.
49. **Adelanthus** Mitt.
1. **decipiens** (Hook.) Mitt.
2, 3, 46, 48, 49, 69, 70, 73, 86, 97–105. H1–3, 6, (7), 16, 25, 27–29, 33–35, (39, 40).
2. **lindenbergianus** (Lehm.) Mitt.
102. H16, 27, 35.
50. **Jamesoniella** (Spruce) F. Lees
1. **autumnalis** (DC.) Steph.
2, 3, 5, (14, 34), 35, 37, 40, 42–44, 46, 48, 49, 60, (64), 69, 70, 73, 86–88, (90), 96–99, 101, 105.
2. **undulifolia** (Nees) Müll.Frib.
(1), 2, (34), 40, 69, 98, 101.
51. **Pedinophyllum** (Lindb.) Lindb.
1. **interruptum** (Nees) Kaal.
57, 60, 64, 65, 69, 98. H(1), 9, 28, 29, 33.
52. **Cephalozia** (Dumort.) Dumort.
1. **bicuspidata** (L.) Dumort.
1–30, 32–112. H1–18, (19), 20, 21, 23–40. C.
2. **ambigua** C.Massal. (*C. bicuspidata* subsp. *ambigua* (C.Massal.) R.M.Schust.)
88, 92, 94, 96.
3. **catenulata** (Huebener) Lindb.
1–4, 11, (13), 14, 41, 42, 44, 48, 49, 52, 62, (63), 64, 67, 68, (69), 70, 71, (72), 73–75, 80, 83, (88), 92, 95–99, 102–105,

- 108, 110, 112. H1–3, 7, (9), 13, 16, (17, 18), 20, (21), 25, 27–31, 33–35, (36, 38, 39).
4. **macrostachya** Kaal.
a var. **macrostachya**
2, 3, 8, 10–13, (14, 15), 17, (24), 28, 39, 40, 45, 46, (48), 50, (58), 62, 70, 80, 99, 102, 104, 105, 108, 110. H1, 10, 25, 28, 35, 37.
b var. **spiniflora** (Schiffn.) Müll.Frib.
(9, 11, 13, 17, 39), 46, 52, 67, (68), 72, 74, 75, (80, 81), 83, 84, (89, 96), 99, 102. H7, 9, 20, 34, 35.
5. **leucantha** Spruce
1, 2, (17), 48, (49), 50, 68, 70, 72–75, (77), 78, (81–83, 86, 87), 88–90, (91), 92, (93), 94–110, (111), 112. H1, 3, (9, 12), 16, 20, 25–30, 33–35, (36), 40.
6. **lunulifolia** (Dumort.) Dumort.
1–9, 11–17, 20, 22, 23, 25, 29, 31, 32, (34), 35, (36), 37, 39, 40, 42–51, 54, (55, 56), 57–60, (61), 62–75, (77), 78, (79), 80–83, (84, 85), 86–112. H1–11, 13, 15, 16, (18), 20, 21, 26–29, (30), 33, 34, (35), 36–40.
7. **pleniceps** (Austin) Lindb.
2, 4, 6, (11, 14), 27, 35, 42–46, 48–50, 52, (70), 79–81, 83, 88, 89, (90), 92, 93, (94), 95–98, 103–106, (108), 112. H1, 9, 20, 23, 25–27, 35, 39.
8. **loitlesbergeri** Schiffn.
46–48, 50, 60, (64, 66), 70, 73, 74, (77), 79, 83, 88–90, 92, (94), 95–98, 102, 104–108, (109), 112. H9, 16, 22, 24, 35.
9. **connivens** (Dicks.) Lindb.
1–6, 8–20, 22, (23), 24–30, 32, 34, 35, 38–52, 54, 55, 57–75, (76), 77, 78, (79), 80–106, (107), 108–112. H1–3, 6–14, (15), 16, 17, (18), 19, 20, (21), 22–25, 27–29, 31–37, (38), 39, 40. C.
10. **crassifolia** Lindenb. & Gottsche (*C. hibernica* Spruce ex Pearson) [22]
H1, 2, 16, 27.
53. **Cladopodiella** H. Buch
1. **fluitans** (Nees) H.Buch
1–3, 8–13, (14), 15, 17, 22, (27), 28, 35, 39–50, 57–60, 62–64, (65), 66–69, (70), 73–77, 80, (83, 88, 92, 95), 96–99, 101–108,

- (109), 110, 112. H1, 2, 9, 10, 16, 18, (20, 21), 23–27, 33, 35, 36, (37, 38), 39.
2. **francisci** (Hook.) H.Buch ex Jörg.
1–3, 8, 9, 11–13, (14), 16, 17, 22, (24–26), 27, (28, 34, 35), 40, 41, (45, 48), 52, (58), 61, 62, (64, 71), 88, 90, (91), 92, 95–99, (100), 101–105, (110). H1, (3, 21, 27), 29, 35, 38, (39).
54. **Hygrobiiella** Spruce
1. **laxifolia** (Hook.) Spruce
(14), 42, 44, 46, 48–50, 57, 62–64, (65), 66–70, (72), 73, 75, 76, (77), 79, 83, (86), 87–92, 94–108, (109), 110, 112. H1–4, 6, 7, 16, 20, (21), 27–29, (33), 34, 35, (36), 38, (39), 40.
55. **Nowellia** Mitt.
1. **curvifolia** (Dicks.) Mitt.
1–9, 11–14, 16, 17, 22–26, 28, 29, 31–52, 57–112. H1–3, (5), 6, 7, 9, 11, 15–18, 20, (21), 23, 25–31, 33–35, (36, 38), 39, 40.
56. **Odontoschisma** (Dumort.) Dumort.
1. **sphagni** (Dicks.) Dumort.
1–5, 8, 9, 11–17, (21), 22, (23), 24, (25), 27, 28, (29, 34), 35, (37), 39–52, 54, (55, 57), 58–84, (85), 86–112. H1–9, (10), 11–20, 22–30, 32–40.
2. **denudatum** (Mart.) Dumort.
2–5, 8, 9, 11–14, 16, 17, 22, 25, 26, 39–52, 57–62, 64, 66–70, (71), 72–75, 77–81, 83, (84, 85), 87–89, 91, (94), 95–108, (109), 110, (111), 112. H1–3, 7, 9–11, 13, (14), 16, (17–19, 21), 22–31, 33–35, (36), 37, 40.
3. **elongatum** (Lindb.) A.Evans
87, 88, 92, 94, 96–98, (99), 102, 104–108, 110, (111), 112. H3, 12, 16, 27.
4. **macounii** (Austin) Underw.
88, 97, 98, 105, 106.
57. **Pleurocladula** Grolle
1. **albescens** (Hook.) Grolle
88, (89), 90, 92, 94, 96–98, (100), 105, 106.
58. **Cephaloziella** (Spruce) Schiffn.
1. **spinigera** (Lindb.) Warnst. (*C. subdentata* Warnst.)
1, 2, 4, 8, 12, (13, 14), 17, 22, (34), 46, (52), 67, 69, 70, 81–83, (88, 92), 96–98, 105, 112. H1, 9, 10, 20, 23, (27), 29, 35.

2. **elachista** (J.B.Jack ex Gottsche & Rabenh.) Schiffn.
8, 11, 12, 14, (22), 27, 40, 45, 58, (61), 69, 70, 81. H(21), 23.
3. **rubella** (Nees) Warnst.
4–7, 9, (11), 12–14, 17, 20, 22, (23), 24–26, (28, 29), 30, (33),
34, 35, (37, 38), 40–42, 46, 48, 50, (51, 56), 57–63, (64), 67,
(68), 69, 71, 72, (74, 76), 78, (80), 81–83, (85, 86), 87–93,
(94), 95–99, 103, 105, 106, (107), 110, (111). H9, 20, 23, 34,
37, (39). (C).
4. **hampeana** (Nees) Schiffn.
1–7, 9–20, 22, (23), 24, 26–29, 34, 35, 39–52, 55, (56), 57–60,
(61), 62–75, (76), 77–80, 82, 83, 85–99, 101–110, 112. H1–
13, 16, (18), 20–25, 27–30, 32–35, (36), 37–40.
5. **baumgartneri** Schiffn.
9, 10, 13, (14), 15, (17).
6. **divaricata** (Sm.) Schiffn.
1–9, (10), 11–28, (29), 30–32, (33), 34–37, (38), 39–55, 57–
73, (74), 75, 77–108, 110–112. H(1), 2–4, 6–10, 12, 13, 16,
20–23, 26–29, (30), 33–40. C.
7. **stellulifera** (Spruce) Schiffn.
1–6, 10, (13, 14, 16, 33, 34), 35, 36, (37), 41, 44–49, (50), 52,
(56), 57, 61, 64, 66, 71, (77), 87, 92. H1–3, 6, 9, 20, (27), 34,
35. C.
8. **massalongi** (Spruce) Müll.Frib.
1–3, 48, (49, 52). H2, 3, 6.
9. **nicholsonii** Douin
1, 2, (3), 4, 46, (48), 58. H3.
10. **dentata** (Raddi) Steph.
1.
11. **turneri** (Hook.) Müll.Frib.
1–3, 10, (11, 13, 14), 16, (33), 34, 35, (36, 38), 44, 45, (48),
101. H(2, 3), 20, 35. C.
12. **integerrima** (Lindb.) Warnst.
1, 2, (7, 13, 14, 22). H3, 6, 34.
13. **calyculata** (Durieu & Mont.) Müll.Frib.
1, 2, 6, 41, 45.
59. **Gymnocolea** (Dumort.) Dumort. [23]
 1. **inflata** (Huds.) Dumort.
1–5, (6, 7), 8–25, (26), 27, 28, 30, 32, (33), 34–112. H(1), 2,

- 3, 5–7, 9, 10, 12, 13, (14, 15), 16, (18), 20, 21, 23–30, (33), 34–40. C.
2. **acutiloba** (Schiffn.) Müll.Frib. [24]
48, 96.
60. **Barbilophozia** Loeske [23]
1. **quadriloba** (Lindb.) Loeske
88, 89, 92, 98.
2. **kunzeana** (Huebener) Gams
35, 42, 51, 64, 67, 68, (71), 80, 88, 90, (92), 95, 96, (97), 108, (110), 112. H(28).
3. **floerkei** (F.Weber & D.Mohr) Loeske
2–5, (6), 28, 35–37, 39–52, 55, 57–60, 62–112. H(1), 2, 3, 6–8, 10, 13, 16, 20, (21), 27–30, (33), 34, 35, (36), 38–40.
4. **atlantica** (Kaal.) Loeske
39, 40, 46–52, 55, 57–60, 62–65, (66), 67–73, 79, 80, 83, 86, 89–92, 94–99, (100), 101, 102, 105, 108, 109, 111, 112. H6, (34).
5. **attenuata** (Mart.) Loeske
1–6, (9, 11), 12–14, 16–18, (20), 22, (23), 24, 27, 28, 30, 34–37, 39–52, 54, 55, 57–60, (61), 62–108, (109). H(1), 3, 6, (7), 12, 13, 16, (20), 21, 25, 27–29, 31, 33–35, (36), 37, (38), 39, 40. (C).
6. **hatcheri** (A.Evans) Loeske
(26), 28, 40, 43, (48), 49, (50), 55, 64–70, 72, 77–99, 105–110.
7. **lycopodioides** (Wallr.) Loeske
(64), 65, 68, 69, (70), 88–90, 92, 94, 96–98, 104–106, (107), 108.
8. **barbata** (Schmidel ex Schreb.) Loeske
2, (14, 25), 26, 28, 35, 36, (37), 40–44, 46–51, 54, (55), 57, (59), 60, 62–70, 72–76, (77), 78–99, 101, 103–108, (109). H(1, 12), 20, (21, 27, 30, 35), 40.
61. **Anastrepta** (Lindb.) Schiffn. [23]
1. **orcadensis** (Hook.) Schiffn.
4, 46–50, 60, 64, 65, 68–70, 72, 73, 75, 77, (78), 83, (85), 86–90, 92–112. H1–3, 16, 20, 27, 29, (33), 35.
62. **Tetralophozia** (R.M.Schust.) Schljakov [23]
1. **setiformis** (Ehrh.) Schljakov (*Chandonanthus setiformis* (Ehrh.) Lindb.)
68, 88–98, 105, 106, (108), 109.

63. **Sphenolobopsis** R.M.Schust. & N.Kitag. [23]
1. **pearsonii** (Spruce) R.M.Schust.
44, 46–49, 64, 69, 70, 73, (75, 87), 96–98, 101–106, 108, 110.
H1, 2, (3), 6, 7, 16, 27, (31), 33, 35, 40.
64. **Anastrophyllum** (Spruce) Steph. [23]
1. **minutum** (Schreb.) R.M.Schust. (*Sphenolobus minutus* (Schreb.) Berggr.)
4, (11, 14), 35, 36, 42, 44, 46, 48, 49, 52, 57, (60, 62, 63), 64, 65, (66), 67–70, 72, 73, (74), 75–77, (78), 79–83, (85), 86–98, (99), 100–108, (109), 110, 111, (112). H(1), 2, 3, 6, 7, 13, 16, 20, 21, 25, 27–30, 33–35, (36), 38.
 2. **hellerianum** (Nees ex Lindenb.) R.M.Schust. (*Sphenolobus hellerianus* (Nees ex Lindenb.) Steph.)
41, 42, 44, 47, 48, 69, 70, 88, 92, 95–98, 101, 104, 105, 108.
H33, 40.
 3. **saxicola** (Schrad.) R.M.Schust.
92, (95), 96, 108.
 4. **donnianum** (Hook.) Steph.
88, 92, 94, 96–98, 104–108.
 5. **joergensenii** Schiffn. [25]
92, 94, (96), 97, 105, 106, 108.
 6. **alpinum** Steph. [25]
105–108.
65. **Tritomaria** Schiffn. ex Loeske [23]
1. **exsectiformis** (Breidl.) Loeske
1–5, (7), 8, 9, (10), 11, 12, (13), 14, (15), 16, 17, 22, (23), 24, (25–27, 30, 34), 35, (36), 37, 39, (40), 42–49, 51, 52, 54, 57, (58, 59), 60, 62–65, (66), 67–70, 72, 73, (74), 76, 77, (78), 80, 81, 83, 85–92, (93, 94), 95–108, (109), 110–112. H1–3, 5–10, 13, 17, 20, 22–30, 33–35, (36), 37, 39, 40.
 2. **exsecta** (Schmidel) Loeske
(35, 40), 42, 44, 48, 49, 70, 72, 80, 86–88, 97–101, 103–105, 108. H1–3, 16, 27, 35.
 3. **quinquedentata** (Huds.) H.Buch
2, (3), 4–6, 35–37, 39, 40, 42–52, 57, 59, 60, 62–70, 72–83, (84), 85–112. H1–3, 6–9, 16, 20, 27–31, 33–36, (37), 38–40.
 4. **polita** (Nees) Jörg.
87–90, 92, 96–98, (99), 104–106, 108.

66. **Lophozia** (Dumort.) Dumort. [23]
1. **longidens** (Lindb.) Macoun
48, 65, 66, (70), 88–92, (94), 95–99, 104–106, 108.
 2. **ventricosa** (Dicks.) Dumort. [26]
1–6, (7), 8–18, (20, 21), 22, 24, (25, 26), 27, 28, (29), 30, (32),
34–52, 54, 55, (56), 57–60, (61), 62–112. H1–10, 12, 13, (14),
15, 16, 18, 20–37, (38), 39, 40. C.
 3. **longiflora** (Nees) Schiffn. (*L. guttulata* (Lindb.) A.Evans)
[26]
96.
 4. **wenzelii** (Nees) Steph. [26]
70, 90, 105.
 5. **sudetica** (Nees ex Huebener) Grolle
2, 3, 35, 40, 42–50, 57, 58, 60, 63–66, 68–73, 75–85, (86), 87–
99, 101, 103–106, (107), 108, (109), 110, 112. H(1), 2, 3, 12,
(13), 16, 20, (21), 25, 27, (28, 30), 35, (36), 37, (38), 39, 40.
 6. **excisa** (Dicks.) Dumort.
1–6, (7), 9, (10), 11–20, 22, 23, 25–30, 32, (33, 34), 35–40,
(41), 42–50, 52, 54, (55, 56), 57–60, (61, 62), 63–75, (76, 77),
78–85, (87), 88–99, 101–107, (108), 109, 110. H1–6, (7, 16),
20, 22, 27–29, 33–40. C.
 7. **perssonii** H.Buch & S.W.Arnell
15, 16, 18, 21, 24, 27, 29, 57, 63, 64, 66.
 8. **herzogiana** E.A.Hodgs. & Grolle
12, 93.
 9. **obtusa** (Lindb.) A.Evans
(48), 49, 65, 67, (71), 80, 88, 89, 92, 95–98, (99), 104–106,
108.
 10. **capitata** (Hook.) Macoun
9, (11), 12, 14, 17, (19), 22, 24, 28, 58.
 11. **incisa** (Schrad.) Dumort.
1–6, (9), 11, 13–17, (25–27), 28, 35–37, (39), 41–50, 52, (55),
57–60, (61), 62–75, (76), 77–112. H1–11, 13, 14, 16–30, 32–
37, (38), 39, 40.
 12. **opacifolia** Culm. ex Meyl.
69, 87–90, 92, 94, 96–98, 105–108, 110. H16, 27, 35.
 13. **bicrenata** (Schmidel ex Hoffm.) Dumort.
1–6, (7), 8–19, (20, 21), 22–28, 30, 32, (33), 34–37, (38), 39–

- 54, (55), 56–60, (61), 62, 63, (64), 65–72, (73), 74, (75), 77–84, (85), 86, 88–92, 94–98, (99), 100–106, 108, (109). H(1, 2, 4), 6, (7), 8, 10, 12, 13, (16, 20, 21), 22, 28, 35, (36), 37, (38), 39. C.
67. **Diplophyllum** (Dumort.) Dumort. [23]
1. **albicans** (L.) Dumort.
1–25, 27–30, 32–52, (53), 54, 55, (56), 57–112. H1–18, 20–40. C.
 2. **taxifolium** (Wahlenb.) Dumort.
(49, 69), 87–90, 92, 94, 96–98, 105–108.
 3. **obtusifolium** (Hook.) Dumort.
1, 2, (3), 4–6, 9, 11, (13, 14, 16), 17, 22, 27, 34–36, 39–41, 43–50, (61), 69, 72, 73, (74), 77–82, (85), 86–93, 95–99, 104, 106, (108, 112). H1, (3, 4), 6, 13, 20, 21, 32, 34, (37).
68. **Douinia** (C.E.O.Jensen) H. Buch [23]
1. **ovata** (Dicks.) H.Buch
1–4, 42–46, 48, 49, (57, 65), 68–70, (71), 73, 75, 78, 80, (86), 87–92, (94), 95–99, (100), 101, (102), 103–108, (109), 110, 112. H1, 2, 6, 8, 10, 12, 16, 20, (21), 27, (31, 34), 35, (38), 40.
69. **Scapania** (Dumort.) Dumort. [23]
1. **compacta** (A.Roth) Dumort.
1–6, 8–11, 13–17, (20), 22, 24, (25, 26), 27, 28, (32), 34–37, 39–50, 52, 54, (55), 57, (59), 60, (62), 63–65, (66), 67–85, (86), 87–90, (91), 92, 93, (94), 95–106, (107), 108–110, (111), 112. H1–4, 6, 8, 9, 12, 13, 16, 20, (21), 27, 28, 31, 34, 35, 37, (38), 39, 40. C.
 2. **gymnostomophila** Kaal.
44, 49, 89, 90, 92, 97, 98, 104. H26, 34, 35.
 3. **callicola** (Arnell & J.Perss.) Ingham
42, 87–90, 92, 96–98, 104, 106, 111.
 4. **cuspiduligera** (Nees) Müll.Frib.
35, 40–42, 44, 47, 49, 57, 64–67, 69, 83, 88–92, 94, 97, 105, 108–110. H28, 35.
 5. **scandica** (Arnell & H.Buch) Macvicar
1–5, 35, 36, 39, 41–44, 46–51, 57, 59, 60, 62–70, 72, 73, 75, 77–85, (87), 88–92, 94–99, 102–108, 110–112. H1, 2, 6–8, 10, 20, 27–29, 34, (36).

6. **curta** (Mart.) Dumort.
1, 2, (12), 13, (14, 15), 16, 60, 63, 64, 95, 96. H27.
7. **lingulata** H.Buch
42, 44, 45, 49, 52, 57, 81, 89, 90, 92, 95–98, 104, 106, 108.
H10, 27.
8. **praetervisa** Meyl.
(64), 88, 91, 95.
9. **parvifolia** Warnst. [27]
87, 88, (97), 98.
10. **umbrosa** (Schrad.) Dumort.
1–5, (13), 14, 16, (34, 37), 39, 42–50, 57, (58), 59, 60, 62–70,
72, 73, (74), 75–84, (85), 86–92, (93), 94–112. H1–3, 6–10,
12, 13, 16, 20, 21, 25–30, 33–35, (36), 37, (38), 39, 40.
11. **nemorea** (L.) Grolle (*S. nemorosa* (L.) Dumort.)
1–7, (8), 9–18, (19), 20, (21), 22, (23), 24, (25–27), 30, 31,
(32), 33–37, (38, 39), 40–52, 54, (55, 56), 57, 59–73, (74), 75,
76, (77, 78), 79–81, 83–90, (91), 92, 93, (94), 95–112. H1–10,
12, 13, 16, 20, (21), 25–40. C.
12. **irrigua** (Nees) Nees
1–5, (6), 7–9, (10), 11–24, (25–27), 28, (30, 33), 34–37, (38),
39–52, 54, (55), 56–75, 77–112. H1–12, 15, 16, (17), 20–30,
(31), 32–35, (36), 37–40.
13. **degenii** Schiffn. ex Müll.Frib. [28]
65, 66, 70, 87–89, 92, 94–98, 104, 105, 107, 108, 112.
14. **paludicola** Loeske & Müll.Frib.
2, 35, 41, 42, 46–50, 64.
15. **undulata** (L.) Dumort.
1–6, (7), 8–18, (19, 20), 21–23, (24), 27, (32), 34–37, (38),
39–52, 54, 55, 57–60, 62–112. H1–16, 18, 20, 21, 24–40. C.
16. **subalpina** (Nees ex Lindenb.) Dumort.
2–5, 42–44, 46–49, (50, 51), 60, (64), 65–70, 72–81, 83, (85),
86–99, 101–110, (111), 112. H(1), 6, 7, 16, (20, 27), 34, 35,
(36, 38), 39, 40.
17. **uliginosa** (Sw. ex Lindenb.) Dumort.
36, 46, 48, 49, 60, (62, 64), 69, 70, (86), 87–90, 92, 94, 96–98,
(99), 103–108, 112.
18. **paludosa** (Müll.Frib.) Müll.Frib.
48, 49, 70, 88–90, 92, 94, 96–98, 105, 106, 112.

19. **aequiloba** (Schwägr.) Dumort.
35, 42, 44, 48, 49, 64, (65, 66), 68, 69, (70), 72, 77–80, 83, (85), 86–92, 94, 96–99, 101, 104–108, 110. H1, 7, 28, 29, 34, 35, (39).
20. **aspera** Bernet & M.Bernet
3, 6, 8–14, 17, (20), 23, 24, (32), 33–37, 39–45, 47–53, (55), 57, 59, 60, 62–70, (71), 72, (76), 78–83, 86–90, 92, 94, (95), 96–111. H1, 2, 8–10, (13), 14–16, 18, 22–30, 33–36, 39, 40.
21. **gracilis** Lindb.
1–5, 9, 11, 14, 16, 34, 35, (36, 39), 40–52, 57, 59, 60, 62–76, (77), 78–81, (82), 83–90, (91), 92–112. H1–10, (11), 12–16, 18, 20, 21, 25–31, 33–40. C.
22. **ornithopodioides** (With.) Waddell
49, (69), 70, 87, 88, 92, 94, 96–98, (99), 100, 102–108, 110, 112. H1, 16, 27, 35.
23. **nimbosa** Taylor
(49), 87, 88, (92), 94, 96–98, (102), 103–108, 110. H1, 27, 35.
70. **Mylia** Gray
 1. **taylorii** (Hook.) Gray
2–4, 36, 39, (42), 43, 44, 46–50, 57–60, (61), 62–70, (71), 72–75, (76), 77–81, (82), 83, (84, 85), 86–88, 90–112. H1–4, 6–10, 12, 13, (14), 16, (17–19), 20, (21), 25–30, (31), 33–40.
 2. **anomala** (Hook.) Gray
1–5, (6), 8–17, 22, (24, 25), 27, 28, 35, 39, 40, 42–52, (55), 57–112. H(1), 2, 3, 7–11, 13, (14), 17–20, 22–30, (31), 32–35, (36), 37, (38), 39, 40.
71. **Acrobolbus** Nees
 1. **wilsonii** Nees
97, 98, 101, 103, 104. H1–3, 16, 27, 35.
72. **Gongylanthus** Nees
 1. **ericetorum** (Raddi) Nees
1. C.
73. **Southbya** Spruce
 1. **tophacea** (Spruce) Spruce
1, 41, 45, 51, 52. H20, 28.
 2. **nigrella** (De Not.) Henriq.
9, 10.

74. **Calypogeia** Raddi
1. **fissa** (L.) Raddi
1–54, (55), 56–112. H1–30, (31), 32–40. C.
 2. **muelleriana** (Schiffn.) Müll.Frib.
1–6, 8–30, 34–52, 54, 55, 57–112. H1–14, 16–18, (19), 20–31, (32), 33–40. C.
 3. **azurea** Stotler & Crotz (*C. trichomanis* auct. non (L.) Corda)
35, 40, 42, 48–50, 52, 57–60, 63–70, 72, 73, 78, 80–83, 87–90, 92, 93, 96–98, (99), 101–103, 105, 106, 108, 110–112. H2, 3, 6, 7, 16, 20, 27, 33–35, (36), 40.
 4. **neesiana** (C.Massal. & Carestia) Müll.Frib.
3, 11, 13, 17, 40, 42, 44–50, 58–60, 62, 63, 67–70, 72, 73, 75, 77–81, 83, 85, 88–93, 95–98, 101, 102, 104–110, 112. H2, 7, 10, 13, 15, 16, 20, 22, 23, 26–30, 33–35, 40.
 5. **integristipula** Steph.
8, 14–16, 39, 57, 58, 60, 62–64, 66–68, 70, 72, 74, 78, 83, (86), 92, 96, 97, 101, 105, 106. H(2), 33, 39.
 6. **sphagnicola** (Arnell & J.Perss.) Müll.Frib.
2, 3, 8, 9, 11–14, (15), 17, 22, (26), 28, 39, 40, 42, 44–50, 58, (60), 64, (65), 66, 67, 70, 73, 74, 77, 79–81, 83, 84, 87–90, 92, 93, 95–98, 101–112. H3, 6, 7, 9–11, 14, 16, 17, 19, 22–25, 27–29, 32–35, (36), 37.
 7. **suecica** (Arnell & J.Perss.) Müll.Frib.
96–98, 101, 103, 105–108. H1, 33, (36).
 8. **arguta** Nees & Mont.
1–29, 32–88, 90, (91), 93, 94, 96–106, 108–112. H1–13, (14), 15–17, (18, 19), 20, 21, (23), 24–40. C.
75. **Leiocolea** (Müll. Frib.) H. Buch
1. **rutheana** (Limpr.) Müll.Frib.
a var. **rutheana**
(27), 69, 79, 80. H27.
b var. **laxa** (Schiffn. ex Burrell) Paton
22, (27), 28.
 2. **gillmanii** (Austin) A.Evans
64, 65, 68, 88, 89, 92, 97, 98, 105, 106, 108, (109), 110, 112.
H27.
 3. **bantriensis** (Hook.) Jörg.
35, 36, 38, 40–42, 44, 47–50, 52, 59, 60, (62), 64–67, (68), 69,

- 70, 72, 73, (75), 77–83, (85, 86), 87–98, (99), 100–111. H1, 2, (3), 7, 9, 14–16, (20, 27), 28, 29, 31, 33, 35, 36, (38), 39, 40.
4. **fitzgeraldiae** Paton & A.R.Perry
49, 88, 96–98, 103–105, 108, 111. H27–29, (33).
 5. **collaris** (Nees) Schljakov (*L. alpestris* (Schleich. ex F.Weber) Isov.) [29]
(34), 35, 36, 39–42, 44, 46–50, 56, 57, 60, 62–67, 69, 70, (71), 72, 73, 75–80, 82, 83, (85), 86–92, 94–98, (99, 100), 101–108, (109), 110–112. H1, 2, 16, 26–29, 33, 35, (36), 39.
 6. **heterocolpos** (Thed. ex C.Hartm.) H.Buch
42, 44, 46, 48–50, 65–69, 72, 83, 86–89, 92, 94–98, 101, 103–108. H39.
 7. **badensis** (Gottsche) Jörg.
1, 2, 4, 5, (6), 9, 12, (13), 14, 16–18, 20, 22–24, (25), 28–30, 32, (33), 34–36, 39–42, 44, (48), 49–52, 57–60, 62–70, 72, 75–77, (78), 79–90, (91), 92, 94, 97, 98, 101, 102, 104–106, 108–111. H4, 7, 9, 11, 13, 15, 16, (17), 18–20, 22, 23, 25–29, 33, (34), 35, (36, 39), 40.
 8. **turbinata** (Raddi) H.Buch
1–20, (21), 22–37, (38), 39–47, (48), 49–52, 54, 56, 57, (58), 59–78, 80–85, (87), 89–91, 93–104, 106, (107), 108, 109, 111.
H1, 2, 4, (5), 6–16, (17, 18), 19, (20), 21, 22, 24–29, 31, (32), 33–35, (36), 37, (38), 39, 40.
76. **Liochlaena** Nees [30]
 1. **lanceolata** Nees (*Jungermannia leiantha* Grolle)
(14, 62), 64, (69), 105.
 77. **Eremonotus** Lindb. & Kaal. ex Pearson [31]
 1. **myriocarpus** (Carrington) Pearson
42, 48, 49, (69), 70, (87), 88–91, 96–99, 101, 103–106, 108, 111. H1, 2, 16, 27, 34, 40.
 78. **Jungermannia** L. [30]
 1. **atrovirens** Dumort.
(1), 2–9, 12–14, (23), 32–37, 39–52, 55–60, (61), 62–73, (74), 75–112. H1–3, (4), 5–10, 16, 20, 22, 23, 25–37, (38), 39, 40.
 2. **pumila** With.
1–5, (6), 12–16, 34–37, 39–52, 57–60, 62–85, (86), 87–90, (91), 92–106, 108, 109, (110), 111, 112. H1–8, 10, 11, 13, 16, 20, 26–30, (31), 33–35, (36), 37, (38), 39, 40.

3. **polaris** Lindb.
88–90, 92, 94, 97, 111.
 4. **borealis** Damsh. & Váňa
42, 44, 49, 88–90, 92, 96–98, 101, 104–106.
 5. **exsertifolia** Steph. subsp. **cordifolia** (Dumort.) Váňa [32]
35, 42, 44, 45, 47–51, 57, 59, 60, (62), 63–70, (71), 72, 73,
(76), 77–83, (85, 86), 87–93, 95–98, (99), 101–112. H1–3, 6,
16, 27, 34–36, (38, 39), 40.
79. **Nardia** Gray
1. **compressa** (Hook.) Gray
2–4, 14, 35, 41–50, 57–60, 62–67, 69–73, 75, 76, 80, 83, 86–
92, 94, 96–108, 110–112. H1–3, 6–8, 10, 12, 13, 16, 20, (21),
26–30, (33), 34, 35, (36), 38, (39).
 2. **scalaris** Gray
1–6, (7), 8–18, 20, (21), 22, 23, (24, 25), 27, 28, 30, 32, (33),
34–52, (54), 55–60, (61), 62–112. H1–10, 12, 13, (14), 15, 16,
(18), 20–22, 25–31, (33), 34–40. C.
 3. **geoscyphus** (De Not.) Lindb.
(3–5), 11, 12, (13), 14, 16–18, 22, (28, 34), 35, 38, 40, 41, 45,
48, 49, 54, 57–60, (61, 62), 63, (64, 65), 66, 67, (69), 72, 77,
79, 87–90, 92, 93, 95–98, 101, 102, 104–108, (109), 112. H2,
13, 16, 27, 34, 35.
 4. **insecta** Lindb.
67.
 5. **breidlereri** (Limpr.) Lindb.
87–89, (90), 92, 94, (96), 97, 98, 105, 106.
80. **Solenostoma** Mitt. [30]
1. **sphaerocarpum** (Hook.) Steph. (*Jungermannia sphaerocarpa*
Hook.) [30]
3, 4, (36), 39, 41–44, 46–50, (55), 57–60, 62–73, (75), 80, 83,
(86), 87, 88, (89), 90–92, 96–99, 101, 102, 104, 107–109, (110),
112. H(1–3), 9, 16, 20, 21, 27, 29, (31, 33, 36–39), 40. C.
 2. **confertissimum** (Nees) Schljakov (*Jungermannia confertis-*
sima Nees) [30]
44, 65, 66, 79, 88, 89, 91, 92, 96–98, 104, 105.
 3. **gracillimum** (Sm.) R.M.Schust. (*Jungermannia gracillima*
Sm., *S. crenulatum* Mitt.) [30]
1–25, (26), 27, 28, (32, 33), 34–37, (38), 39–60, (61), 62–83,

- (84, 85), 86–112. H1–3, 5–10, 12, 13, (14), 15, 16, 20, 21, 25–30, (31), 32–40. C.
4. **caespiticium** (Lindenb.) Steph. (*Jungermannia caespiticia* Lindenb.) [30]
2, (10, 17, 33), 43, 57, 63, 64.
 5. **hyalinum** (Lyell) Mitt. (*Jungermannia hyalina* Lyell) [30]
1–5, (6), 7, 8, (9, 10), 11–13, (14), 15, 16, (17, 20), 21, 22, (23), 27, (33, 34), 35–40, 42–51, (55), 57, (59), 60, 62–73, 75, 76, 80, (83, 85, 86), 88–92, 96–104, 107, 108, 110. H(1), 2, 3, 5, 8–10, 15, 16, 20, 25, 27, 28, 30, (31, 33), 34, 35, (36), 37, 39, 40.
 6. **paroicum** (Schiffn.) R.M.Schust. (*Jungermannia paroica* (Schiffn.) Grolle) [30]
5, 12, 35, 39, 41–43, (44), 46–50, 57, 59, 60, 62, 63, (64), 65, 67–73, (75), 77–83, 86–91, 93, 95–98, (99, 100), 101–112. H1, 6, 8, 16, 27, 34, 35, (36, 38), 39, 40.
 7. **obovatum** (Nees) C.Massal. (*Jungermannia obovata* Nees) [30]
41–50, 57, (58, 59), 60, 62–71, (72), 73, (74), 75–78, (79), 80–83, 86–92, 94–99, (100), 101–108, (109, 110), 112. H1–4, 6–8, (9), 16, 20, 21, 27, 29, 30, 33–35, (36, 38), 39, 40.
 8. **subellipticum** (Lindb. ex Kaal.) R.M.Schust. (*Jungermannia subelliptica* (Lindb. ex Kaal.) Levier) [30]
2, (5), 35, 42, 48, 49, 62, 64, 65, (67), 70, 72, 79, 80, 82, 83, 87–92, 94–98, 101–104, 106, 108, 110–112. H16, 27–29, 34, 35, 39.
81. **Geocalyx** Nees
1. **graveolens** (Schrad.) Nees
97, 104, 105, 108, 110. H1, 27, 33, 35.
82. **Harpanthus** Nees
1. **flotovianus** (Nees) Nees
69, (73), 88–90, 92–94, 96–98, 104–108, (109), 111, 112.
 2. **scutatus** (F.Weber & D.Mohr) Spruce
2, 3, 14, 16, (36), 45–49, 60, 62, 64, 67, 69, 70, (72), 80, (86, 87), 97–102, (103), 104, 105, 108, 111. H1–3, 6, 16, (20), 27–29, 33, 35, (36), 39, 40.
83. **Saccogyna** Dumort.
1. **viticulosa** (L.) Dumort.
1–6, 11, 14, 34–37, 39–50, 52, 59, 60, 62–65, (66), 67, 69–78,

- 86–88, (90), 93, 96–108, 110–112. H1–11, (12), 13, 14, 16, (18), 20, (21), 25–31, (32), 33–35, (36, 38), 39, 40. C.
84. **Anthelia** (Dumort.) Dumort.
1. **julacea** (L.) Dumort.
42, 46–49, 64, (65), 68–70, (71), 72, 73, 75, (85), 86–90, 92, 94–98, (99), 100–108, 110, (111), 112. H1–3, 6, (7), 13, 16, 20, 27, 28, 34, 35, 38, (40).
 2. **juratzkana** (Limpr.) Trevis.
(48), 49, 87–90, 92, 94, 96–98, 100, 101, 103–108, (109, 110), 112. H16, 27, 34, 35, 39.
85. **Gymnomitrium** Corda
1. **concinatum** (Lightf.) Corda
2, 47–49, (64), 68–70, 72, 73, (75), 77, 78, 80, 86–98, (99), 100, 101, 103–108, (109), 110. H(16), 34, 35, 39.
 2. **obtusum** Lindb.
2, 4, 40, 46–50, 65, 66, (67), 68–70, 72, 73, 75, 77, 78, 80, (85, 86), 87–100, 103–108, (109), 110. H1, 6, 13, 16, 20, 27, 35, 38, 40.
 3. **corallioides** Nees
(49), 88, 89, 92, 97, 104, (105), 106, 108, (109). H(1), 34.
 4. **crenulatum** Gottsche ex Carrington
(3), 4, 45, 46, 48, 49, 68–70, 72, 73, 75, 78, 88, 90, 92, 96–98, (99), 100–108, (109), 110–112. H1–4, 6, 7, 12, 13, 16, 20, (21), 27–30, (31, 33), 34, 35, (36), 38–40.
 5. **apiculatum** (Schiffn.) Müll.Frib.
(92), 94, 96, 97.
86. **Marsupella** Dumort.
1. **emarginata** (Ehrh.) Dumort.
a var. **emarginata**
1–6, 13–16, 34–37, 39–50, 52, 57–60, 62–70, (71), 72–112.
H1–10, 12, 13, (14), 16, 20–22, 25–40. C.
b var. **aquatica** (Lindenb.) Dumort.
(3), 4, (36), 41, (42), 43–48, (49), 57, (59, 60, 62, 65, 66, 68), 69–71, 73, (74, 76, 78, 80, 83, 86–92), 94, 95, (96–100), 101, (102–104), 105, 107, (108–111). H(1–3), 4, 6, (13, 16, 20, 21), 26, 27, (28), 29, 30, 33, (34), 35, (36, 38, 39).

- c var. **pearsonii** (Schiffn.) M.F.V. Corley
 (3, 42), 46, (48), 49, (65, 68), 69, 70, (73, 88), 90, 96–98, (99),
 103, 105, (108, 110, 112). H(1, 2), 16, (20, 27, 31), 34, 35, (38,
 39).
2. **arctica** (Berggr.) Bryhn & Kaal.
 92, 94.
 3. **sphacelata** (Gieseke ex Lindenb.) Dumort.
 4, (42), 48, 49, (62), 65, 70, 73, (86), 88–90, 92, 94, 96–106,
 108, (110). H6, 20, 27, (33), 35.
 4. **funkii** (F. Weber & D. Mohr) Dumort.
 (1), 2, (3), 4, (7, 9, 14, 37, 40), 42–44, 46–50, (58), 65, 68–70, (72),
 73, (75), 79, 83, 86–90, (91), 92, 94–99, (100), 101, 103–106,
 108, 110. H(2), 3, 7, 12, 16, 20, 27, 31, 35, (37, 38), 39. C.
 5. **sprucei** (Limpr.) Bernet
 1–3, 13, 42, 44–46, 48, 49, (62), 64, 65, (66), 67–70, 72, 73, 76,
 78, 79, (87), 88–90, 92, 94, 96–99, 101–106, 108. H1, (2), 16,
 20, 27, 35, (36), 38, 39.
 6. **profunda** Lindb.
 1, 2.
 7. **sparsifolia** (Lindb.) Dumort.
 92, 94, 97.
 8. **boeckii** (Austin) Kaal.
 92, 96–98.
 9. **stableri** Spruce (*M. boeckii* var. *stableri* (Spruce)
 R.M. Schust.)
 48, 49, 69, 70, 88, 90, 92, 94, 96–98, 103–106, 108.
 10. **condensata** (Ångstr. ex C. Hartm.) Kaal.
 88, 92, 94, 96, 97.
 11. **adusta** (Nees emend. Limpr.) Spruce
 48, 49, 69, 70, 72, 73, (77), 87–90, 92, 94, 96–98, (99), 103–
 106, 108, 110. H1, 27, 35, 36, 38–40.
 12. **brevissima** (Dumort.) Grolle
 87–90, 92, 94, 96–98, 104–108.
 13. **alpina** (Gottsche ex Husn.) Bernet
 48, 49, 69, (70), 73, 87, 88, (89), 90, (91), 92, 94, 96–98, 103–
 106, 108.

MOSSES (BRYOPHYTA)

1. **Sphagnum** L.

1. **austinii** Sull. (*S. imbricatum* subsp. *austinii* (Sull.) Flatberg)
3, 4, 46, 48, 49, 66, 67, (69), 70, 73, 74, (75), 78–81, 83, 88–90,
92, 94–98, 102, 104, 105, 107–112. H1, 2, 9, 10, (14), 15, 16,
(17), 18, 20, 22–30, (33), 35, (36, 39), 40.
2. **affine** Renauld & Cardot (*S. imbricatum* subsp. *affine*
(Renauld & Cardot) Flatberg)
48, 49, 69, 70, 72–75, (86, 87), 88, 92, 96–100, 102, 104–107.
H1, (2), 16, (37).
3. **papillosum** Lindb.
1–6, 8–17, 20, 22, 24, (26), 27, 28, 34–54, 57–112. H1–32,
(33), 34–40.
4. **palustre** L.
a var. **palustre**
1–6, (7), 8–32, 34–37, (38), 39–50, (51), 52–112. H1–18,
20–40. (C).
b var. **centrale** (C.E.O.Jensen) A.Eddy
29, 30, 49, (60, 62, 71).
5. **magellanicum** Brid.
2, 3, 8, 9, 11–17, 22, 24, 27, 28, 39, 40, 44–51, 57, (58), 59, 60,
62, 64–70, 72–84, 86–93, 95–112. H1–3, 7–11, (14), 15–20,
22–29, (30, 31), 32, (33), 34, 35, (36), 37, (38), 39, 40.
6. **squarrosum** Crome
1–3, 5, 6, 8–15, (16), 17–22, (23), 24–32, 34–112. H(1), 2,
3, (4), 5–7, 9, 12–14, 16–18, (19), 20, (21), 22–25, 27–30,
32–35, (36), 37, (38), 39, (40).
7. **teres** (Schimp.) Ångstr.
3, (4), 9, 11, (13, 14), 17, (25), 27, 35, (38), 39–50, 55, 57–59, 62–
70, (71), 72–74, (75), 76–83, 85–98, (99), 100–112. H1, 6, 15,
(20), 22, 23, 25, (27), 28, 30, 32, 33, (34), 35, 37, 38, (39, 40).
8. **fimbriatum** Wilson
1–6, 8–31, 34–104, 106–112. H(1), 4, 6–10, 13, 16, (18, 19),
20, (21), 22–25, 27–29, (30), 32, (33), 35, (36–40).
9. **girgensohnii** Russow
(5), 30, (38), 39, 43, 44, 46–50, 53, 56–75, (76), 77–83, (84),
85–112. H1, 3, 6, 20, 28, 29, (34), 35, (36), 37, (38), 39, 40.

10. **russowii** Warnst.
 (5), 13, (17), 22, (26), 27, 29, 30, 39, 40, 42, (43), 44–50, 57–60, 62–73, (74), 75–85, (86), 87–96, 98–101, 104–112. H(3), 7, 10, 12, 13, 20, (21), 28, 29, (30), 33, (34), 35, (36), 37, (38, 39), 40.
11. **quinquefarium** (Braithw.) Warnst.
 2–5, (35), 37, 39, 40, 42–50, 57, 59, 60, 62–70, 72–74, 76–85, 87–92, (93), 94–111. H1–3, 5–10, (14), 16, 20, (21), 27–30, 33–35, (36, 37), 39, 40.
12. **warnstorffii** Russow
 42, 43, 46–50, 57, 60, (62), 64–66, (67), 69, 70, 72–74, (77), 78–81, 83, 87–90, 92–98, (99), 100–102, 104–108, 110, 112. H14, 16, 25, 27, 32, (40).
13. **capillifolium** (Ehrh.) Hedw.
 a subsp. **capillifolium**
 3, 11, 13, 45, 49, 50, 57, 59, 63, 64, 67, 70, 75, 77, 85. H9, 20.
 b subsp. **rubellum** (Wilson) M.O.Hill (*S. rubellum* Wilson)
 1–6, 8–20, (21), 22, 24, 25, (26), 27, 28, 30, (32, 34), 35–37, (38), 39–112. H1–20, 22–40.
14. **fuscum** (Schimp.) H.Klinggr.
 9, (13), 46, 48, (60, 65), 66–70, 72–74, 77–81, 83, 86, 88–98, 102, 104–112. H2, 9, 10, 15–19, 22–25, 27–30, (32–34), 36, 39, 40.
15. **subnitens** Russow & Warnst.
 a var. **subnitens**
 1–6, 8–19, (20, 21), 22–30, (31), 32, 34–38, (39), 40–112. H1–13, (14), 15–40. (C).
 b var. **ferrugineum** (Flatberg) M.O.Hill (*S. subnitens* subsp. *ferrugineum* Flatberg)
 H16, 25, 27, 39.
16. **skyense** Flatberg
 46, 104, 110. H6.
17. **molle** Sull.
 1, 3, (5, 8), 9, 11, 12, 14, 17, 22, (26), 28, (34), 45, 47–50, 55, (57, 59, 62, 66), 67–70, 72, 73, 75, 77, 79, 80, 83–85, (86), 87, 88, 91, 92, 94, 96–98, (99), 100–110. H1, 2, (3, 15), 16, 20, 25, 27–30, 33–36, (38, 39), 40.

18. **strictum** Sull.
48, (69), 73, 75, (86), 87–89, (92), 96–98, 100, 101, 103–108, 110, 111. H1–3, 16, 27, 34, 35, (39, 40).
19. **compactum** Lam. & DC.
1–6, 8, 9, (10), 11–18, (19), 20, (21), 22, 24, (26), 27, 28, (34), 35, 36, 40, 41, (42), 43–54, 58, (59), 60, (61), 62, (63), 64–73, (74), 75, 77–112. H1–10, (12, 14), 15, 16, (20, 21), 24, 25, (26), 27–30, (31, 33), 34, 35, (36), 37–40.
20. **subsecundum** Nees
3, 5, 11, (12, 17), 27, 28, 35, 42, 43, 45–50, 63, 69, (70), 73–75, 77, 79, 81, (86), 87–90, 95–99, 104, 106–108. H16, 18, 25, 27, 35.
21. **inundatum** Russow (*S. auriculatum* var. *inundatum* (Russow) M.O.Hill, *S. denticulatum* var. *inundatum* (Russow) Kartt.)
1–6, 8, 9, 11–14, 16–18, (19–21), 22–28, (29), 30, 34–37, (38), 40–55, 57–83, 85–92, 94–112. H1–4, 6–10, 12, (15), 16, (17), 18, (19), 20, (21), 22, (24), 25, 27–30, (31), 32–35, (36), 37–40.
22. **denticulatum** Brid. (*S. auriculatum* Schimp.)
1–25, 27–29, 34–108, (109), 110–112. H1–13, (14), 15–31, 33–40. C.
23. **contortum** Schultz
3, 5, 9, 11, (13, 14, 16), 27, 28, 40, 42–52, (58, 59), 60, (61), 62, 64, 65, 67, 69–74, 76, 77, 79–81, 83, 85, 88–90, 92–112. H1, (3), 6, (9), 12, (15), 16, 17, (20, 21), 22, 23, 25–29, (30, 31), 33, (34), 35, (36), 37, (38–40).
24. **platyphyllum** (Lindb. ex Braithw.) Warnst.
42, 44–46, 48–50, 52, (60, 65, 69), 72–74, (87), 88, 89, 92, 95–98, 103, 104, 107, 108, 110, 112. H1, 16, 27, (33).
25. **tenellum** (Brid.) Pers. ex Brid.
1–5, 8, 9, 11–14, (15, 16), 17, (18, 19), 22, 24, 27, 28, (29, 34), 35, 36, (37, 39), 40–50, 52, 54, (57), 58–60, (61), 62–81, 83, 84, (85), 86–112. H1–9, (10), 11–20, 22–32, (33), 34, 35, (36), 37–40.
26. **cuspidatum** Ehrh. ex Hoffm. (*S. viride* Flatberg)
1–6, 8–19, (20, 21), 22, 24, 25, 27, 28, 30, 35, 36, (37, 38), 39–112. H1–9, (10), 11–13, (14), 15–20, (21), 22–31, (32, 33), 34, 35, (36), 37, (38), 39, 40.

27. **majus** (Russow) C.E.O.Jensen
67, 88, (90), 96, 98, 108, 109.
 28. **balticum** (Russow) C.E.O.Jensen
46, (58, 59), 63, 67, 72, 92, 96.
 29. **pulchrum** (Lindb. ex Braithw.) Warnst.
9, 40, 46, 47, 49, 50, (58, 60), 67, 70, (71), 73, 74, 77, (97), 98,
104, 107. H1, 2, 16, 17, 23, 25, 35, (38, 39), 40.
 30. **fallax** (H.Klinggr.) H.Klinggr. (*S. fallax* subsp. *isoviitae*
(Flatberg) M.O.Hill, *S. isoviitae* Flatberg, *S. recurvum* var.
mucronatum (Russow) Warnst.)
1–6, 8–22, 24–31, (32), 34–50, (51), 52–112. H1–4, 6–13,
(14), 15–17, (18), 20–32, (33), 34, 35, (36), 37, (38), 39, 40.
 31. **flexuosum** Dozy & Molk. (*S. recurvum* var. *amblyphyllum*
(Russow) Warnst.)
2, 3, 5, (6), 8, 9, 11–14, 17, 20–22, 24, 25, 27, 30, 34, 35, 40,
(41), 42–49, (50), 51, 57, 58, 60, (61), 62–64, (65), 69–71, 73,
76, 79–81, 83, 85, 86, 88–90, 94, 95, 97, 102–105, 109–112.
H3, 16, 25.
 32. **angustifolium** (C.E.O.Jensen ex Russow) C.E.O.Jensen (*S.*
recurvum var. *tenuis* H.Klinggr.)
(4), 5, 9, 11, 14, 22, 25, 39–50, 55, 57–60, 64, 65, 67, (69), 70,
72, 75, 77, 79–81, 83, 87–90, 92–98, 101, 104, 105, 107–111.
H1–3, 6, 10, 16, 18, 23, 25–27, 29, 32, 33, 39.
 33. **obtusum** Warnst.
(59, 60).
 34. **riparium** Ångstr.
22, 52, (58, 60, 61), 64, 67, 69, 77, 80, 88, 90, 92, 94, (95), 96,
97, (106), 107, 109, 112.
 35. **lindbergii** Schimp.
88, 90, 92, 94, 96, 97, 105, 106, 108, 112.
2. **Andreaea** Hedw.
1. **alpina** Hedw.
42, 44, 46, 48, 49, (64), 65, (66), 68–70, 72, 73, (74), 75, 77,
78, 86–90, 92, 94, 96–98, (99), 100–108, 110, 112. H1–3, 7, 8,
16, 20, (21), 27, 31, 35, 38–40.
 2. **rupestris** Hedw.
a var. **rupestris**
(1), 3, 4, 35, 40–50, 57, (59), 60, 62, 64–72, (73, 75), 76–90,

- (91), 92–100, 102–111, (112). H1, 3, 4, (6), 7, 8, (13), 16, 20, 21, 27, (29), 30, 31, 34, 35, (36–40).
- b var. **papillosa** (Lindb.) Podp. (*A. obovata* var. *papillosa* (Lindb.) Nyholm, *A. obovata* var. *sparsifolia* (J.E.Zetterst.) Nyholm)
48, 49, (70).
3. **alpestris** (Thed.) Schimp. (*A. rupestris* var. *alpestris* (Thed.) Sharp)
90, 92, 94, 96, 97, 106.
4. **mutabilis** Hook.f. & Wilson
46, 48, 49, (60, 65, 68–70), 72, (73), 77, (85, 87, 88), 89, 90, 92, 94, 96–98, 103–106.
5. **sinuosa** B.M.Murray
92, 94, 97, 105, 106.
6. **rothii** F.Weber & D.Mohr
a subsp. **rothii**
1, 2, (3), 40, (41), 45, 49, (60), 63, (64), 65, (69, 71, 73), 80, (82, 87, 88, 90), 93, 94, 103–105, (106), 107. H(1, 2), 3, 4, 6–9, 12, (13), 16, 20, 21, 27, 29, (30), 31, 34, 35, (36, 38).
b subsp. **falcata** (Schimp.) Lindb. (*A. crassinervia* subsp. *huntii* (Limpr.) Amann)
1–4, (5, 34), 35, 36, (37), 41–50, 52, 57, 58, 60, (62), 63–70, (71), 72, (73), 75–78, 80, 81, (82), 83–92, (94, 95), 96–100, 102–108, 110, (111), 112. H(1), 2, (3, 5, 6), 7, 9, 10, 16, 20, 21, 25–28, (29, 30), 31, (33), 34–36, (38, 39).
7. **frigida** Huebener (*A. rothii* subsp. *frigida* (Huebener) Schultze–Motel)
(65), 70, 92, 94, 96.
8. **megistospora** B.M.Murray
45, 46, (48, 66), 70, 73, (74), 78, (87, 88), 92, (96), 97, 98, (99), 100, 104, 105, 108, (110). H1, (3), 16, 27, 34, (38).
9. **blyttii** Schimp.
92, 94, 96, 97, 105, 106.
10. **nivalis** Hook.
(88, 90), 92, 94, 96–98, 105–107.
3. **Oedipodium** Schwägr.
1. **griffithianum** (Dicks.) Schwägr.
(42), 44, 47–50, (64), 65, 68–70, 72, 73, 75, (78, 80, 86), 87,

- 88, (89), 90–92, 96–100, 103, 104, (105). H(1), 27, (35).
4. **Atrichum** P.Beauv.
 1. **crispum** (James) Sull.
1, 3–5, 17, 39–50, 57–60, 63–65, 69–71. H20, 25, 29.
 2. **tenellum** (Röhl.) Bruch & Schimp.
1, 2, (7), 11, 15–17, 42, 46, 58, 73, 75, 76, 78, 81, 83, (85), 86,
88, (89), 90, 95–98, 105, 106. H1, 3, 9, 16, 27, 35, 38.
 3. **undulatum** (Hedw.) P.Beauv.
a var. **undulatum**
1–112. H1–40. C.
b var. **gracilisetum** Besch.
(17, 37, 40, 59).
 4. **angustatum** (Brid.) Bruch & Schimp.
13–16, (17, 19, 33, 37, 44, 87). H(36, 38).
 5. **Oligotrichum** DC.
 1. **hercynicum** (Hedw.) Lam. & DC.
(1), 2–4, 39–50, 57–60, 62–75, (76), 77–83, (85), 86–108,
(109), 110–112. H1, 2, 4, (5), 6, 7, 9, 10, 13, 16, 20, 21, 27,
(29, 31, 33), 34, 35, (36), 38–40.
 6. **Pogonatum** P.Beauv.
 1. **nanum** (Hedw.) P.Beauv.
1–6, (7), 8–11, (12), 13–17, (18, 19), 20, (21), 22, 23, (24, 25),
26, 27, (29, 30, 32, 33), 34–37, (38, 39), 40–42, (43), 44–49,
(50, 51), 52, (55, 57–64, 66), 67, 68, (69), 70–73, (75, 76),
78, 79, (81), 83, (84–87), 88–92, 94–98, (101), 103, 104, 106,
108–110, 112. H(2, 4, 5, 10, 12, 20), 21, 22, 25, (27, 28), 31,
(32, 33, 35, 36), 37, (38), 39, 40. C.
 2. **aloides** (Hedw.) P.Beauv.
1–6, (7), 8–22, (23), 24–28, (29), 30, (32, 33), 34–37, (38),
39–52, (53), 54, 55, 57–60, (61), 62–112. H1–16, 18, (19),
20–22, 24–32, (33), 34–40. C.
 3. **urnigerum** (Hedw.) P.Beauv.
1–6, (7), 8, 9, (10), 11–17, 20, (21), 22, 24, (26), 27, 28, (30,
32, 33), 34–37, (38), 39–53, (54), 55, 57–60, (61), 62–112.
H1–10, 12–18, 20–22, 25–32, (33), 34, 35, (36), 38–40. (C).
 7. **Polytrichastrum** G.L.Sm.
 1. **alpinum** (Hedw.) G.L.Sm. (*Polytrichum alpinum* Hedw.,
P. alpinum var. *septentrionale* (Sw.) Lindb.)

- 2, (3, 4, 34), 35, 36, (37), 39, (40), 41–50, 57, (59), 60, 62, (63), 64–75, (76), 77–83, (84), 85–90, 92–112. H1–4, 6–8, 12, (13), 16, 20, 21, 27, 28, (29), 30, (33), 34, 35, (36), 37–40.
2. **longisetum** (Sw. ex Brid.) G.L.Sm. (*Polytrichum longisetum* Sw. ex Brid.)
(1), 3, 5, (6, 7), 8, 9, (10), 11–29, (30), 31, (32, 33), 34–44, 46, 50, 51, 53, 54, (55, 56), 57–64, (65), 66, 67, (68), 69, 70, 72, 73, (74), 75, (76), 77, 78, (79), 81–84, 86, 87, (88, 89), 90–92, 94–98, 103, 105, 106, 108, (110, 111), 112. H(1, 2), 3, (7, 8, 12–14), 15–18, (19, 20), 22–28, (29, 30, 32), 33, (36), 37, (38–40).
3. **formosum** (Hedw.) G.L.Sm. (*Polytrichum formosum* Hedw.)
1–112. H1–18, (19), 20–40. C.
4. **sexangulare** (Brid.) G.L.Sm. (*Polytrichum sexangulare* Hedw.)
88–90, 92, 94, 96, 97, 105, 106.
8. **Polytrichum** Hedw.
1. **commune** Hedw. [33]
a var. **commune**
1–6, (7), 8–112. H1–40. C.
b var. **perigoniale** (Michx.) Hampe [34]
(3, 12), 18, 22, (32), 35, (36–39), 45, 46, (51, 54), 57, (59), 62, (63, 85, 88), 89, 90, (95), 97, 98, 103, (104), 105–108, (111).
H7, 12, 21, 23.
2. **piliferum** Hedw.
1–6, (7), 8–112. H1–10, 12, 13, (14), 16, 17, (19), 20–22, 24–40. C.
3. **juniperinum** Hedw.
1–112. H1–16, 18–40. C.
4. **strictum** Menzies ex Brid. (*P. alpestre* Hoppe)
2–5, (6), 11, 12, (14), 17, 22, 25, 28, 35, 39, 40, (41), 42–52, 54, 57, 58, (59), 60, (61), 62, (63), 64–84, 86–92, 94–112. H1, 6–10, (14), 16, 17, (18), 19, 20, (21), 22–25, 27–32, (33), 34, 35, (36), 37–40.
9. **Tetraphis** Hedw.
1. **pellucida** Hedw.
1–78, (79), 80–108. H1–8, 10, (11), 12, 13, 16, (18), 20, 21, 23, 25–30, 33–40.

10. **Tetrodontium** Schwägr.
 1. **brownianum** (Dicks.) Schwägr.
3, 4, 14, 16, 34, 35, (36), 39–42, 44, (46), 47–49, 57–60, 62–72, (73), 75–78, 80, 81, 83–88, 90, 91, 96–101, 103–108, 110.
H1, 8, 16, 20, (21), 33, 35, (36, 39), 40.
 2. **repandum** (Funck) Schwägr.
(14, 62).
11. **Buxbaumia** Hedw.
 1. **aphylla** Hedw.
(17), 22, (23, 27), 37, 40, 43, (47, 48, 57–59), 63, (64), 66, (67, 68), 72, (73), 77, (78, 79), 80, (81), 82–86, (87), 88–92, (96, 98, 99). H(1).
 2. **viridis** (Moug. ex Lam. & DC.) Brid. ex Moug. & Nestl.
89, (90), 92, 94–96, 106.
12. **Diphyscium** D.Mohr
 1. **foliosum** (Hedw.) D.Mohr
1–5, 14, (23), 35, 36, (39), 40–50, (57), 58, (59), 60, (62, 63), 64–80, 83, 86–93, 95–108, 110, 112. H1–3, 6–8, 13, 16, 20, 27–29, 31, 33–35, (36, 37), 38–40.
13. **Timmia** Hedw.
 1. **austriaca** Hedw.
88, 89, (90). H28.
 2. **norvegica** J.E.Zetterst.
87, 88, 96–98, 104. H28, 29.
 3. **megapolitana** Hedw.
27.
14. **Encalypta** Hedw.
 1. **streptocarpa** Hedw.
1–17, 20, 22–24, 26, 28–37, (38), 39–73, (74), 75–98, (99), 100–111. H1–17, 19–31, 33–40.
 2. **alpina** Sm.
(49), 64, 88–90, 96–98, 104, 108. H28.
 3. **rhaptocarpa** Schwägr.
(49), 64, 65, (66), 68, 69, 82, (85), 87–90, 92, 94, (96), 97, 98, 104, 105, 107–110, 112. H(9, 27), 28, (29), 40.
 4. **vulgaris** Hedw.
1–10, 12, (13–15), 16, 17, (19), 20–24, (25), 26, 28–47, 49–57, (59), 60–69, (70, 77), 79–83, (84), 85, (86), 87–92, 94, 95,

- (96), 100, 106, 108, 110. H2, (4), 5, (6, 7), 9, 11, 13, (14, 15, 18, 19, 21), 22, (23), 24, 25, (27, 32, 33, 35), 37, (39), 40.
5. **brevicolla** (Bruch & Schimp.) Ångstr.
(90).
6. **ciliata** Hedw.
35, (36), 42–44, 48, 49, (59), 64, (65), 66, 68–70, (72, 75, 78, 80), 82, 83, (85), 86–90, (91), 92, 95–98, (99), 101, 104, 105, (106), 107, (108). H8, (39, 40).
15. **Funaria** Hedw.
1. **hygrometrica** Hedw.
1–112. H1–40. C.
16. **Entosthodon** Schwägr.
1. **muhlenbergii** (Turner) Fife (*Funaria muhlenbergii* Turner)
(3), 6, (9, 34), 35, (36), 39–42, 44, 47, (48), 49, 50, 55, 57, 60, (62), 64, 69, (88). H(4, 5).
2. **pulchellus** (H.Philib.) Brugués (*Funaria pulchella* H.Philib.)
2, (3), 6, 9, (13, 34), 41, 47, 49, 51, 52, (60), 94.
3. **attenuatus** (Dicks.) Bryhn (*Funaria attenuata* (Dicks.) Lindb.)
1, 2, (3), 4, 5, 42–50, 52, (58–60, 62–65), 66–71, (72, 73), 74, 79, (83, 86–88, 91), 96–112. H1–3, (4, 5), 6–9, 12, 16, 20, (21), 25, 27–29, 31, 33–35, (36, 38), 39, 40. C.
4. **fascicularis** (Hedw.) Müll.Hal. (*Funaria fascicularis* (Hedw.) Lindb.)
1–5, (6, 7), 8–20, 22–27, 31, (32), 33–37, (38), 39–41, (42), 43–46, (47, 48), 49–52, (55), 56, 57, (58, 59), 60, (61, 62, 64, 66), 67, 69, 71, (72, 73), 74, (75, 76, 81, 85, 90, 91). H(1, 2), 3, 5, 6, 8, 11, 12, 19, 20, (21, 27, 36, 38–40). C.
5. **obtusus** (Hedw.) Lindb. (*Funaria obtusa* (Hedw.) Lindb.)
1–5, (7), 9–12, (13, 14), 15–17, (20), 22, (27, 34), 35–37, 40–52, 57, 58, (59–61), 62–74, (75), 77–81, 83, (85, 86), 88–93, 95–112. H1–4, 6–10, (12), 13, (14, 15), 16, 20, (21), 25–30, (31), 32–40. C.
17. **Physcomitrium** (Brid.) Brid.
1. **pyriforme** (Hedw.) Bruch & Schimp.
1–37, (38), 39–68, (69), 70–72, (73), 74, (75, 76, 79), 81–85, 88, (89), 90, 91, 93, 94, 97, 98, (99), 100–103, 107, 108, (109), 110–112. H1, (2), 4–6, 8–10, (11), 12, 13, 16, (18–21), 22,

- (23), 24, 25, 27, (28), 29, (30), 32–35, (36, 37), 38–40. C.
2. **eurystomum** Sendtn.
20, 28.
 3. **sphaericum** (C.F.Ludw. ex Schkuhr) Brid.
(14, 17, 39), 42, 44, 57–59, 63, 64, 76, 83, (85), 86, 99. H39.
18. **Aphanorrhagma** Sull.
1. **patens** (Hedw.) Lindb. (*Physcomitrella patens* (Hedw.) Bruch & Schimp.)
1–9, 11–32, (34), 35–40, (41), 42, 44–46, 48, 50–55, 57–65, (66), 67, 68, 76, 78, (79), 82, 83, (84), 85, 99, 101. H(4), 6, 8, 9, 11, 12, 14, 15, 17, 18, (21), 22, 24–27, 29, 30, 32, 34, 37, 39.
19. **Discelium** Brid.
1. **nudum** (Dicks.) Brid.
2, 3, 14, 15, (32), 34, (37), 39, 40, 43, 46, 47, 49, 50, 57–60, 62–67, 69, (70, 75), 77, (82, 88), 99, 106. H29, 30, 33.
20. **Coscinodon** Spreng.
1. **cribrosus** (Hedw.) Spruce
2, 4, 44–50, 57, 62, 64, (69), 70–72, (73), 83, 88, 94.
21. **Schistidium** Bruch & Schimp.
1. **maritimum** (Sm. ex R.Scott) Bruch & Schimp.
1–5, 44–46, 48, 49, 52, (58, 59), 60, 62, (66), 68–71, 73–75, (76), 81–85, 90, 91, 93–95, (96), 97–112. H1, 3, 4, (5), 6, 8, 9, 12, (13), 16, 17, (21), 27–29, (31), 34, 35, 38–40. C.
 2. **rivulare** (Brid.) Podp. (*S. alpicola* var. *rivulare* (Brid.) Limpr.)
2–5, (34), 35, 36, (37–39), 40, 42–52, (55), 57, 58, (59), 60, 62–70, (71), 72–75, (76), 77–98, (99), 100, 101, 103–106, 108, 109, 111, 112. H1, 3, 4, (5, 6), 7–9, 16, 20, (21), 25, 29, 30, 33–35, (38), 39, 40.
 3. **platyphyllum** (Mitt.) H.Perss. (*S. alpicola* auct. non (Hedw.) Limpr., *S. rivulare* subsp. *latifolium* (J.E.Zetterst.) B.Bremer)
35, (36), 39, 41, (42), 43, 44, 47, 54, 56, 57, 59, 60, (62), 63–67, (68), 69, 70, 72, 80, (81), 83, 84, (86), 88–90, (96), 104, 108, 112. H1, 8, 9, (19), 28, 33, 34, 36, (39, 40).
 4. **agassizii** Sull. & Lesq.
48, 49, 65, 66, 69, (70), 72, (73), 88, 90, 92, 98, (105), 107, 108. H35.

5. **apocarpum** (Hedw.) Bruch & Schimp.
1, 2, (3, 6), 9, (23), 26–28, (33), 34–36, 39–45, (47), 49–52,
(55), 57, 58, 63, 65, 66, 70, 72, 75, 78, 80–82, (84, 85), 87, 89,
90, 92–98, (99–101), 103–108, 110, 111. H1–4, 6–10, 15–17,
19, 20, 25–29, 31–39.
6. **trichodon** (Brid.) Poelt
(49), 64–66, 69, 70, 87–90, 92, 96–98, 108. H29, 33.
7. **papillosum** Culm.
42, 48, 72, 88–90, 92, 97, 104.
8. **pruinatum** (Wilson ex Schimp.) G.Roth
57, 81, 83, (85, 87), 88–90, 92, 97, 98, 103, 104, 107.
H(39).
9. **strictum** (Turner) Loeske ex Martensson
(3, 37), 41–44, 46, 48, 49, (57), 64–66, 68, 69, (70), 72, 73, 75,
78, 83, 86–90, 92, 94–98, (99, 101), 103–108, (109, 110), 111.
H1, (2), 3, (4), 6–8, 13, (18), 25, 27–29, (30, 35, 39).
10. **dupretii** (Thér.) W.A.Weber
(83), 88, 90, 97, 107.
11. **robustum** (Nees & Hornsch.) H.H.Blom (*S. apocarpum* var.
homodictyon (Dixon) Crundw. & Nyholm)
60, 64, 65, 69, (88), 89, 90, 92, 94, 95, 97, 98, 101, 104, 105,
107, 108. H28, 29.
12. **confertum** (Funck) Bruch & Schimp. (*S. apocarpum* var.
confertum (Funck) H.Möller)
(3), 28, 43, 46–48, (49), 64, (65, 69), 70, (76), 77, 79, (83,
85, 87–89), 90, 96–98, (99), 107, 108. H(26, 31, 32, 38–
40).
13. **flaccidum** (De Not.) Ochyra
49, 103.
14. **frigidum** H.H.Blom
a var. **frigidum**
42, 46, (47, 49, 65), 72, 89, 92, 96, 97, 104, 108.
b var. **havaasii** H.H.Blom
49, (65, 72), 88, 104.
15. **atrofusum** (Schimp.) Limpr.
88, 89, 92, 94, 96.
16. **crassipilum** H.H.Blom
1, 2, 4–6, 8, 9, 11–13, 16–19, 21–23, 25–29, 31–37, 39–45,

- 47, 49–51, 53, 55, 57, 62–67, 69, 70, 73, 75–77, 80–83, 85, 87–89, (92), 93–98, 103–108, 110, 111. H1, 3–14, 16, 18, 20–26, 28–36, 39.
17. **elegantulum** H.H.Blom (incl. *S. elegantulum* subsp. *wilsonii* H.H.Blom) [35]
19, 33–36, (37), 40, (41), 45, 52, 57, 65, 69, 98, 104, 105, (108). H4, 5, 9, 11, 20, 24, 33.
18. **flexipile** (Lindb. ex Broth.) G.Roth [36]
104.
22. **Grimmia** Hedw.
1. **anodon** Bruch & Schimp.
69, 83.
 2. **crinita** Brid.
2, (38).
 3. **laevigata** (Brid.) Brid.
1, (2), 3, 4, (7), 13, (14), 15, (16), 22, 34–37, 40, 42, (43), 44–47, (48, 49), 50, (52, 55), 57, (71), 82, 83, 85, (87–90, 99), 100, 104. H(3, 5, 39). C.
 4. **tergestina** Tomm. ex Bruch & Schimp.
7, 19, 23, 33, 34, 49, 98, 103.
 5. **montana** Bruch & Schimp. [37]
3, (35), 40, 43, (48, 49, 52, 65, 70), 72, (73), 80–83, (85), 86, (90), 92, 93, 98. (C).
 6. **sessitana** De Not. [37]
75.
 7. **alpestris** (F.Weber & D.Mohr) Schleich. [37]
48, (82, 90).
 8. **donniana** Sm.
3, 4, (5), 6, 35, (36, 37), 40, 41, (42), 43–51, (52), 57–59, (60), 63–83, 85, (86), 87–101, 103–105, 108, (110), 112. H(1, 2), 6, 7, 16, (19), 20, (21), 27, 31, (34, 37), 38, 39.
 9. **arenaria** Hampe (*G. donniana* var. *curvula* Spruce)
46, 48, 49, (50), 70.
 10. **elongata** Kaulf.
46, 48, 49, (68), 69, 70, (73), 90, 92.
 11. **longirostris** Hook. (*G. affinis* Hornsch.)
(3), 4, 13, 35, (39), 43, 49, (55), 68, (69), 83, (85), 87–90, (91–93), 97, 98, 101, (102), 103–105, 108. H(1, 4, 38, 39).

12. **ovalis** (Hedw.) Lindb.
10, 13, (16, 19, 34), 35, 36, 42–44, 50, 66, (69), 70, (73), 81, 82, (83, 85, 87), 88–90, 96, 98, 107, 108.
13. **unicolor** Hook.
90, 108.
14. **atrata** Miel. ex Hornsch.
46–49, (69), 70, 72, (88), 89, 90, 92, 96, 98, 101, 103, 106, H35.
15. **incurva** Schwägr.
40, 45, 48, 49, 68, 69, (70, 73), 80, 89–92, (94), 96, 98.
16. **pulvinata** (Hedw.) Sm. (incl. *G. pulvinata* var. *africana* (Hedw.) Hook.f. & Wilson)
1–112. H1–40. C.
17. **orbicularis** Bruch ex Wilson
1–4, 6, 9, 13, (14), 16, 22, 23, 33, (34), 36, (37), 40, 41, 45, (48), 49–52, 60, (64, 65), 67, (69, 82), 83, 85, (88, 89), 94, 97, 101, 102, 104, 108. H(4), 5, 11, 21.
18. **torquata** Drumm.
42, 44, 48–50, 64, (65), 66, 68–70, 72, 73, 75, (78), 86–90, 92, 95–101, 103–108. H1, (2), 6–8, 16, (20), 27, 28, (39).
19. **funalis** (Schwägr.) Bruch & Schimp.
45, 47–49, 64, (65), 66, 69, 70, 72, 73, 75, 77, 78, (85), 86–90, 92, 94, 96–99, (100), 101, 103–108, (109), 110. H1, (4), 6, (7), 16, (20), 27, (31), 34, (35, 38, 39), 40.
20. **trichophylla** Grev. (*G. austrofunalis* auct. eur. partim non Müll.Hal., *G. trichophylla* var. *stirtonii* (Schimp.) H.Möller) [38]
1–13, (14), 16–18, 20, 22, 24–26, 28, 29, 32, 34–37, (38), 39–50, 52, 54, 55, 57–75, (76), 77–108, 110–112. H1, (2), 3, 4, 6–9, 12, 13, (14), 16, 18, (19), 20–22, 26–29, (30), 31–35, (36, 37), 38–40. C.
21. **lisae** De Not. (*G. austrofunalis* auct. eur. partim non Müll. Hal., *G. britannica* A.J.E.Sm., *G. trichophylla* var. *robusta* (Ferg.) A.J.E.Sm., *G. trichophylla* var. *subsquarrosa* (Wilson) A.J.E.Sm., *G. retracta* Stirt.) [38]
1–3, (4), 13, 29, (34), 42–44, 48–50, (52, 69, 70, 73), 75, 81–86, 88, (89), 90, 92, (93), 96–99, 101, (102), 103, 104, (105), 107. H1, (2), 3, 5, 6, 8, 9, 16, 22, 31, 35. C.

22. **dis simulata** E.Maier
12, 19, 25, 26, 29, 33, 57, 64, 106. H9, 15.
23. **muehlenbeckii** Schimp. [38]
75, 86, 94, 98, 101, 104. H6, 40.
24. **hartmanii** Schimp.
2, 3, (34), 36, 42–45, 47–50, 52, 64, (66), 67–70, (72), 73, 74, (75), 81, 86, (87), 88–99, 101–108, 110. H2, 3, 7, (16), 20, (26), 27–29, (31, 34), 35, (38, 39), 40.
25. **decipiens** (Schultz) Lindb.
1, (2–4), 7, 13, (14), 16, 22, 26, (35), 36, 42, (43), 44, 45, (47), 48, 49, (52, 55, 62, 66, 68), 69, (70), 73, (79), 80–83, 85, (86–89), 90, (92, 94), 96–98, 100–105, 107, (108, 110). H6, (16), 20, 27, (31), 38, 39. C.
26. **elatior** Bruch ex Bals.–Criv. & De Not.
(90), 107.
27. **ramondii** (Lam. & DC.) Margad. (*Dryptodon patens* (Hedw.) Brid., *G. curvata* (Brid.) De Sloover)
2, 3, 42, 44, 45, 48, 49, (57, 65), 68–70, (71), 72, 73, (75), 76, 78, 80, (82), 86–90, 92, 94–99, (101), 102–108, (109), 110, 112. H1, 2, (3), 6, 7, 16, 20, (21), 27, 34, 35, 38–40.
23. **Racomitrium** Brid.
1. **ellipticum** (Turner) Bruch & Schimp.
48, 49, (65), 69, 70, (72, 73), 75, 76, (86), 88, 90, 92, (94), 96–98, (99), 101–108, 110, 112. H1–3, (4), 16, (20), 27, 31, 34, 35, 38–40.
2. **aciculare** (Hedw.) Brid.
1–5, (6), 13, (14), 15, (16), 17, 19, 20, 25, 27, 30, 32, 34–52, 55, 57–60, 62–112. H1–4, 6–10, 12–16, 18, 20–22, 25–40.
3. **aquaticum** (Brid. ex Schrad.) Brid.
1–6, 35, 36, (37), 40–50, 52, (55), 57, 58, (59), 60, 63–73, (74), 75–78, 80, 82, 84–92, 94–112. H1–8, (11), 12, 13, 16, (18), 20, 21, 24–31, (32), 33–35, (36), 37, (38), 39, 40.
4. **fasciculare** (Hedw.) Brid.
1–5, (6), 8, 11–14, (16), 17, 19, 20, 22, 24, 26, 30, 32, (33), 34–37, (38), 39–51, (52, 55), 57–60, 62–112. H1–4, 6–13, (14), 16, (19), 20–22, 24–32, (33), 34–40.
5. **macounii** Kindb. subsp. **alpinum** (E.Lawton) Frisvoll
42, 44, 48, 49, 69, 88, 90, 92, 94, 96, 97, (98), 105, 106, 108.

- H1, 3, 27.
6. **sudeticum** (Funck) Bruch & Schimp. (*R. affine* auct. non (F.Weber & D.Mohr) Lindb.)
4, 40–42, 44–50, (52), 57, 59, (60), 63–65, (68), 69, (70), 71, 72, (73), 75, 76, 78–80, (81, 86), 87–90, 92–94, 96–108, (109, 110). H1, 3, 4, 6–8, 12, 13, 16, 20, 21, (27), 28–31, (33), 34, 35, (38, 39).
 7. **affine** (F.Weber & D.Mohr) Lindb.
3, 4, 9, 13, 14, (15), 16, 17, 35, 36, 40–44, 46–48, (49, 50), 55, 57, 59, (60), 62–66, 69, 70, (72, 73), 75, (79), 82, 83, 85, (86, 87), 88, 89, (90), 93, (94), 96–98, 103–105, (106), 107, 108, 110. H6, 8, 16, 20, (27), 32–34, 36, 38, (39).
 8. **heterostichum** (Hedw.) Brid. (*R. obtusum* (Brid.) Brid.)
1–8, (11), 12–14, (16), 17, 19, 20, 22–25, 29, 32, (34), 35–37, 40–50, 52, 54, 55, 57, 59, 60, 62–64, (65), 66–72, (73), 75–81, 83–85, (87), 88–90, (91), 92–99, (100), 102–108, (109), 110, (112). H1–4, 6–9, 12, 13, 15, 16, (19), 20–22, 24–30, (31), 33–35, 37, (38), 39, 40.
 9. **himalayanum** (Mitt.) A.Jaeger
88, 98.
 10. **lanuginosum** (Hedw.) Brid.
1–6, 8, 9, 11–13, (14, 16), 17, 19, 20, 22–24, 27, 29, 30, 32, (33), 34–51, (52), 55, 57–60, (61), 62–81, (82), 83–112. H1–18, 20–40.
 11. **ericoides** (Brid.) Brid. (*R. canescens* var. *ericoides* (Brid.) Hampe)
1, 2, (3), 4–6, (9), 12, 13, (19, 23, 27), 29, 30, (33, 34), 35, 36, 38, 40–51, (52, 54), 55, 57, 59, 60, 62, 64–67, 69, (70), 71, 72, (73), 75–77, 79–89, (90), 92, 94–99, (100), 101–108, 110–112. H(1), 2, (3), 5, 8–10, 12, 13, (15), 16, 18, (19–21), 25–29, (30, 31), 32–36, 38–40.
 12. **elongatum** Ehrh. ex Frisvoll
2–4, (9), 11, (12), 17, (20), 26, 28, 40, (42), 43–50, (52), 57, 60, 66, 67, (68), 69, 70, 72, 74, 77, 80–83, (85, 86, 88), 89, 90, 92–94, 96–99, 104–106, 108, 112. H20, (39).
 13. **canescens** (Hedw.) Brid.
(5), 6, (14, 17, 23), 26, (27), 28, (30), 35, (36, 37), 41, 47, 52, 54, 66, 69, 70, 82, 84, 85, 88–90, 92–95, 97, 103, 104, 106, 107,

109. H21, 22, 38. (C).
24. **Ptychomitrium** Fürnr.
1. **polyphyllum** (Dicks. ex Sw.) Bruch & Schimp.
1–6, 9, 13, 23, (32, 33), 34–37, (38, 39), 40–50, 52, (55), 57–60, (62), 63–75, (76), 77–94, (95), 96–112. H1–14, (15), 16, 19–22, 25–40. C.
25. **Campylostelium** Bruch & Schimp.
1. **saxicola** (F.Weber & D.Mohr) Bruch & Schimp.
3, 12–15, (16, 36), 42, 46, (48), 49, 57, (58, 59), 60, 62, (64, 67), 68–70, 72, (77), 80, (86), 98, (99), 103, 104. H(1, 2, 20, 21), 28, 29, 40.
26. **Blindia** Bruch & Schimp.
1. **acuta** (Hedw.) Bruch & Schimp.
1, 2, (3), 4, 35, 36, 40–50, 52, 57–60, 62–73, (74), 75–112. H1–4, 6–8, 13, 16, 20, (21), 26–29, 31, 33–35, (36), 37–40.
 2. **caespiticia** (F.Weber & D.Mohr) Müll.Hal.
(86), 88, 97.
27. **Brachydontium** Fürnr.
1. **trichodes** (F.Weber) Milde
1–3, 12, 13, 16, 17, 30, 34, 35, (36), 39, 42–44, (48), 49, 57–60, 62–65, (66, 67), 68–70, 72, (73), 76, 77, (78), 80, (81, 83), 84, 86, 87, (88), 89, 90, (92, 95), 96–98, (99), 103, 104, (105), 111. H(20, 21, 28), 29, 35, (38, 40).
28. **Seligeria** Bruch & Schimp.
1. **pusilla** (Hedw.) Bruch & Schimp.
3, 6–9, 23, 33–37, (38), 39, 41–44, 48, 50–52, (54), 57, (59), 60, 62, 64–67, 69, (72, 74), 78, 80, 83, 88, 89, (90, 92), 94, 95, 97, 98, 101, 102, 104, (108). H28–30, 33, 39.
 2. **acutifolia** Lindb.
6, 7, 9, 23, 33–35, (36, 39), 41, 42, 44, 47, 57, 60, 64, 65, (66), 69, (70), 89, 97, 98, (104). H9, 16, 24, 28–30, 33, (39), 40.
 3. **brevifolia** (Lindb.) Lindb.
49, 57, 87, 89.
 4. **diversifolia** Lindb.
62, 97.
 5. **campylopoda** Kindb.
(13), 24, 34, 35.

6. **recurvata** (Hedw.) Bruch & Schimp.
(3), 11, 12, (13, 14, 24), 34–36, (37), 39, 40, 42–44, 46–51,
57–60, 62–70, 72, (73, 74), 75–78, 80, 81, 83, 84, (85), 86–90,
(91), 92, 94, 97–109, 111. H1, (3), 7, 16, 27–29, 31, 33–35,
(36).
7. **calycina** Mitt. ex Lindb. (*S. paucifolia* auct. non (With.)
Carruth.)
3, 6–17, 20–24, 26, 28–30, 32, 33, 54, 61. H(39), 40.
8. **calcareo** (Hedw.) Bruch & Schimp.
3, (6), 7–18, (19), 20, (21), 22–26, 28–30, 32–34, 37, 53–55,
(57), 61. H39, 40.
9. **donniana** (Sm.) Müll.Hal.
6, (7), 16, 22, 23, 29, 32, 33, 35, (36), 37, 39, 40, 43, 48, 49, 57,
60, 62–67, (68–70, 72, 75–77), 80, 83, 86–92, 94, 96–99, 101,
103–108. H9, 14, 16, 28–30, 33, 35, 39.
- 10*. **trifaria** agg. (*S. trifaria* (Brid.) Lindb. and *S. patula* (Lindb.)
I.Hagen) [39]
35, 42, 57, 64, 65, (69), 89, 105, 108. H28, 29, 33.
10. **trifaria** (Brid.) Lindb. [39]
105.
11. **patula** (Lindb.) I.Hagen [39]
35. H28.
12. **oelandica** C.E.O.Jensen & Medelius
H28, 29, 33.
13. **carniolica** (Breidl. & Beck) Nyholm
67, (80).
29. **Archidium** Brid.
 1. **alternifolium** (Hedw.) Mitt.
1–17, (18, 20, 21), 22, 23, (24, 29, 30, 33, 34), 35–37, (38),
39–49, 51, 52, (54), 55, 57, (58), 59, 60, (61), 62–74, (75–77),
78, 79, 81–90, (91, 92), 93, 95–112. H1–3, 5, 8, 9, 12, 13, 16,
20, (21), 25–30, 34, 35, 38–40. C.
30. **Fissidens** Hedw.
 1. **viridulus** (Sw. ex anon.) Wahlenb. (*F. exiguus* auct. eur.
partim) [40]
1–55, 57, (58, 59), 60–66, (68), 69, (70), 79, (80), 81, 82, 86,
90, 94, 100, 101, 103, 105. H1, 5–7, 9, 11, 12, 15, 19, 22–24,
26–29, 31, (32), 33–35, (36, 37, 39).

2. **crispus** Mont. (*F. limbatus* Sull.) [41]
1–4, (6), 8, 9, 11, 12, (14), 20, 22, (35), 39–42, 44, 45, 47–50, 57, (59), 60, 61, 69, (71), 73, (83, 84), 98, 101–104. H(1), 2, 3, 15, (21), 27. (C).
3. **pusillus** (Wilson) Milde (*F. exiguus* auct. eur. partim) [40]
1, 2, 4–6, (7), 8–12, 14–16, (17), 19, (20), 22, (23), 24–27, 30, 32–42, (43), 44–52, 54, 57, (59), 60–69, (70), 71, (72–75), 76–89, (90, 91), 93, (97), 98, (99), 100–104, 106–108, (109). H1–9, 13, (15, 16), 20, 22, 23, 26–29, (30), 32, 33, 35, (38), 39.
4. **gracilifolius** Brugg.–Nann. & Nyholm (*F. pusillus* var. *tenuifolius* (Boulay) Podp., *F. viridulus* var. *tenuifolius* (Boulay) A.J.E.Sm.)
3, 6–18, 20–24, 26, 28–37, (38), 40, 41, 44, 45, 49–51, 53–57, 60–64, (65, 68), 69, (70), 77, 80, 81, 83, 86, 88, (89), 101. H2, 7–9, 11, 14, 23, 24, 28–30, 33.
5. **incurvus** Starke ex Röhl.
1–6, (7), 8–45, 47, 49–64, (65), 66, 68, (69), 70, 71, (75, 77), 81–84, (85), 90, 91, 100. H5, 7, 9, 11, 15, (18, 21), 24–26, 29, 31–33, (37, 38), 39, 40. (C).
6. **bryoides** Hedw.
a var. **bryoides**
1–37, (38), 39–112. H1–16, (19), 20–25, 27–30, 32–40. C.
b var. **caespitans** Schimp. (*F. curnovii* Mitt.) [42]
1–6, 35, 41–50, 57, 59, (64), 68, (69), 70, 71, 73, (86), 88, 97–104, (105), 108, 110, 112. H1–3, 5–7, (12), 16, 20, 27, 31, (34, 38). (C).
7. **rivularis** (Spruce) Schimp.
1–6, 9, 14, 34–36, 40–44, 46, 48, 57, 73, 86, 101. H2, 6. (C).
8. **monguillonii** Thér.
2–5, 44, 45, 49, 52. H25, 29, 30, (33).
9. **crassipes** Wilson ex Bruch & Schimp.
1–13, (14), 15–17, 19–30, 32–44, 50–55, 57–70, (71), 72, 75, 77, 78, 81–85, (86, 91), 93. H2, 5, 6, 8, (9), 10, 11, 13, (14), 16–19, 22, 25, 28–31, (33), 34, (36), 37, (38), 40.
10. **rufulus** Bruch & Schimp.
35–37, 40–44, 60, 62, 64–66, 68–70, 72, 77, 79–81, 89, 90. H(6), 19, 20, (33), 34, (38).

11. **exilis** Hedw.
1–6, (7), 8–45, 47–50, (51), 52–67, (68, 69), 70, 71, (72, 77),
78, 81–84, 86, (88), 89, 90, 99, 101, 103. H8, (19), 21, 22, 32,
(38–40). (C).
12. **celticus** Paton
1–6, 10, 13–17, 34, 39–50, 52, 57, 60, 64, 65, 69–71, 73–75,
97–99, 101–104. H1–5, 7–10, 16, 25, 27, 36–38, 40.
13. **curvatus** Hornsch. (*F. algarvicus* Solms)
1, 2, (3, 33), 43, 44, (45), 48, 49. H(1).
14. **osmundoides** Hedw.
1–3, 5, 11, 35–37, 40–52, 57, (58), 59, 60, 62–75, (76), 77–80,
(81), 82, 83, (85), 86–90, 92, 94–112. H1–4, 6, 7, 9, (10, 12),
14, 16, (18, 19), 20, (21, 24, 25), 27–31, (32), 33–35, (36), 37,
(38), 39, 40.
15. **taxifolius** Hedw.
a var. **taxifolius**
1–112. H1–40. C.
b var. **pallidicaulis** (Mitt.) Corb.
3, 9, 11, 39, 42, (44), 48, 49, 57, 60, 62, 63, 76, 88, 97–104,
108, 112. H1, 7, 16, 27, 35, 40.
16. **dubius** P.Beauv. (*F. cristatus* Wilson ex Mitt.)
1–26, (27), 28–30, 32–112. H1–23, 25–40. C.
17. **adianthoides** Hedw.
1–20, (21), 22–37, (38), 39–112. H1–20, 22–30, 32–40. C.
18. **serrulatus** Brid.
1, 3, 48. H1, 27.
19. **polyphyllus** Wilson ex Bruch & Schimp.
1–3, 47–49, 98, 101, 102. H1–3, (4), 6, 20, (28).
20. **fontanus** (Bach.Pyl.) Steud. (*Octodiceras fontanum* (Bach.
Pyl.) Lindb.) [43]
2, 4, 7, 8, 17, 19–23, (24), 32, 33, (34), 35–40, 45, 55, 56, 58,
59, 62–64. H16, 29.
31. **Pleuridium** Rabenh.
 1. **acuminatum** Lindb.
1–32, (33), 34–37, (38), 39–52, 54, 55, 57–60, (61), 62–72,
(73), 76–84, (85), 86–91, (92), 93, 94, (95), 96–98, (99), 100–
104, (105), 106, 107, 111, 112. H1, (4), 5, 7–9, 11, (14), 16, 19,
22, 25, 27–30, 32, 33, (34), 35, (36), 37, (38, 39), 40. C.

2. **subulatum** (Hedw.) Rabenh.
1–7, 9–20, (21), 22–31, (32), 33–47, (48), 49–53, (54, 55), 57, (58), 59–71, (73), 74, 76, 78, 80–85, (88, 89), 90, (91), 92–96, 98–101, 103, (104), 105, 106, 108, 109, 111. H(1–3), 4, 6, 7, 9, 12, 13, 21–23, 28, 31, 32, 36, 38, (39). C.
32. **Pseudephemerum** (Lindb.) I.Hagen
 1. **nitidum** (Hedw.) Loeske
1–26, (27), 28–52, 54–84, (85), 86, 87, 89, 90, (91), 92–104, 106–109, (111), 112. H1–10, 12, 13, (15), 16, 17, 20–22, 25–27, 29–32, (33), 34, 35, (36), 37–40. C.
33. **Trichodon** Schimp.
 1. **cylindricus** (Hedw.) Schimp. (*Ditrichum cylindricum* (Hedw.) Grout)
1–29, (30), 31–112. H1–4, 6–8, 10–14, (15), 16–20, 22, 23, 26–35, (36), 37, (38), 39, 40. C.
34. **Ditrichum** Timm ex Hampe
 1. **pusillum** (Hedw.) Hampe
2, 3, 13, (14, 16), 17, 22, (46), 48, 49, 54, 58, (60, 62, 64), 76, 89, 90, 95, 97–99, 101, 104, 108, 109. H(5, 12, 32, 38, 39).
 2. **cornubicum** Paton
1, 2. H3.
 3. **lineare** (Sw.) Lindb.
2, 43, 44, 46–49, 69, 73, 88–90, 92, 94, 96–98, 103, 104, 110. H3, (28, 39).
 4. **plumbicola** Crundw.
1, 6, 44, 46, 47, 49, 50, 67, 71, 77, 88.
 5. **heteromallum** (Hedw.) E.Britton
1–5, (6), 9–17, (19), 24, (27, 32), 34–52, 55, 57–60, (61), 62–108, (109), 110–112. H1–10, 12, 13, 16, 18, 20, 21, 25–30, (31, 32), 33–35, (36), 37, (38), 39, 40.
 6. **zonatum** (Brid.) Kindb. (incl. var. *scabrifolium* Dixon) [44]
44, 46–50, (68), 69, (70), 72, 73, 75, 78, 87–90, 92, 94, 96–98, 100–106, 108, 110. H16, 20, 27, 35, (39).
 7. **subulatum** Hampe
1, 2, (3, 15), 44, 45.
 8. **flexicaule** (Schwägr.) Hampe
8, 10–12, (14, 17), 26, (29), 32, (35), 36, 39, 41, (42, 44, 48),

- 49, 50, 52, (55), 56, 57, (59), 60, 62, 63, (64), 65, (66, 69), 82, 88–90, 92, 94, (98), 103, 108. H(10, 27, 39).
9. **gracile** (Mitt.) Kuntze (*D. crispatissimum* (Müll.Hal.) Paris)
1, 3, 6, 8–10, 12, (17), 20, 22–24, 26, 28, 29, 32–37, (39), 40,
42–45, 47, (48), 49–54, 57, 59, 60, 62, 64, 66, 68, 69, (72), 83,
87–90, 93, 96–98, 101–104, (106), 108, 110. H1, 9, 15, (21),
25, 28, 31, 33–35, (38), 40.
35. **Saelania** Lindb.
1. **glaucescens** (Hedw.) Broth.
90, 96.
36. **Distichium** Bruch & Schimp.
1. **capillaceum** (Hedw.) Bruch & Schimp.
1, 2, (35), 42, 44, 48, 49, (50), 57, 59, (60), 62–70, 72, (73, 77),
80, 82, 83, (85), 86–98, (99), 100–112. H1, (9), 12, 16, 20,
27–29, 33–35, (39), 40.
2. **inclinatum** (Hedw.) Bruch & Schimp.
1, 6, 41, 42, 44–46, 50, 52, 56–60, 62–64, (65, 66), 68, (69), 70,
(72, 75), 82, (83), 85, 87–90, 93, (94), 97, 98, 101–103, 105,
108–112. H16, 26–29, 34, 35, 39, 40.
37. **Ceratodon** Brid.
1. **purpureus** (Hedw.) Brid.
1–112. H1–40. C.
2. **conicus** (Hampe) Lindb. (*C. purpureus* subsp. *conicus*
(Hampe ex Müll.Hal.) Dixon)
(22), 23, (32, 33), 38, (53).
38. **Cheilothela** Broth.
1. **chloropus** (Brid.) Broth.
3, 6.
39. **Bruchia** Schwägr.
1. **vogesiaca** Nestl. ex Schwägr. [45]
2.
40. **Trematodon** Michx.
1. **ambiguus** (Hedw.) Hornsch.
(88).
41. **Amphidium** Schimp.
1. **lapponicum** (Hedw.) Schimp.
42–44, 48, 49, (64), 65, (66), 68–70, 72, (73), 75, (86), 87–90,
92, 94, 96–98, (99), 103–108. H1, 27.

2. **mougeotii** (Schimp.) Schimp.
1–5, 35–37, 40–50, 52, 57–60, 62–112. H1–4, 6–8, 10, 11, (13, 14), 16, 20, (21), 26–40.
42. **Rhabdoweisia** Bruch & Schimp.
 1. **fugax** (Hedw.) Bruch & Schimp.
1–5, 35, (39, 40), 41–50, (63, 64), 65, 66, 68–73, (76), 80, 82, (85), 87–92, 96–99, 101, 103–108, 112. H(1), 6, (7, 16), 20, (21, 31), 35, 38, (39), 40.
 2. **crispata** (Dicks.) Lindb.
1–4, 35, 40–50, 57, (59), 60, 64, 65, (66), 68–70, (71), 72, 73, (74), 75–79, 83–91, (92), 93, 96–101, 103–108, (109), 110, 112. H1, (2), 3, 6–8, 10, 12, 13, 16, 20, 27, 29, (31, 33), 34, 35, (36), 38–40.
 3. **crenulata** (Mitt.) H. Jameson
41–43, (44), 46–50, 58, 64, 66, 68–70, 72, 73, (74, 75), 76, 78–80, 86–88, 97–101, 103–105, 108, 110. H1–4, 6, 7, 16, 26–28, 33, 35, (36), 38, 40.
43. **Cynodontium** Bruch & Schimp.
 1. **bruntonii** (Sm.) Bruch & Schimp. (*Oreoweisia bruntonii* (Sm.) Milde) [46]
1–3, (4), 5, 6, (16), 34–37, 40–50, 52, 57, (58, 59, 62, 63), 64, (65, 66), 67–72, (73), 74, 75, (76), 77, (78), 80–83, (84), 85–92, 95–100, 105–109. H1, 4, (5), 6–8, 12, 13, 20, 29, 30, (36, 39). C.
 2. **strumiferum** (Hedw.) Lindb.
89, 90, 92, (93), 96, 104, 106.
 3. **jeneri** (Schimp.) Stirt.
48, 49, 68, 69, (70), 72, (73, 75), 78, 80–82, 87–93, 95–98, 101, (105), 107, 108. H35.
 4. **polycarpon** (Hedw.) Schimp.
48, 68, (70), 90, 92, (96).
 5. **fallax** Limpr.
(90).
 6. **tenellum** (Schimp.) Limpr.
81, (87, 88), 89–92, (95), 96.
44. **Oncophorus** (Brid.) Brid.
 1. **virens** (Hedw.) Brid.
69, 70, 87–90, 92, 96–98, (104, 107), 108.

2. **wahlenbergii** Brid.
88, 89, (90), 92, 96–98, (99), 104, (105), 106.
45. **Dichodontium** Schimp.
 1. **pellucidum** (Hedw.) Schimp.
1–6, 8–17, 21, 22, (27, 30, 33), 34–37, (38), 39–54, (55), 57–60, 62–112. H1–10, 12, 13, (14), 15, 16, (18), 20, 21, 24–40.
 2. **flavescens** (Dicks.) Lindb.
1, 2, 35, (37, 40), 41, 44, 47, (49, 50, 52), 57, (58, 59), 60, 62, 64, (65), 67, (68), 69, (70, 72, 73), 75, (77), 80, (86), 88, 89, (90), 91, 95, (96), 97, (98), 104, 106, 108. H1, 3, 6, 8, 10, 11, 16, 18, 20, (21, 29), 39, 40.
 3. **palustre** (Dicks.) M.Stech (*Dicranella palustris* (Dicks.) Crundw.)
1–6, (14), 34–37, 39–52, 57–60, 62–112. H1–8, (9), 10, 12, 13, (14), 15, 16, (18), 20, 21, 25–40.
46. **Dicranoweisia** Milde
 1. **cirrata** (Hedw.) Lindb.
1–107, 109, 110, 112. H1–9, 12, 13, 20–22, 25, 28, (31), 32, 34, 35, (36), 37–40. C.
 2. **crispula** (Hedw.) Milde
49, (65), 69, 70, (72, 73), 75, (86), 87–90, (91), 92, 96–98, (99), 103–106, (107), 108.
47. **Arctoa** Bruch & Schimp.
 1. **fulvella** (Dicks.) Bruch & Schimp.
(48), 49, (65), 69, 70, 72, 73, 75, 77, (86), 87, 88, (89), 90, 92, (94), 96–98, 100, 103–106, 108, (110). H1, 16, 35.
48. **Kiaeria** I.Hagen
 1. **falcata** (Hedw.) I.Hagen
49, (65, 66, 69, 70, 72, 78, 86), 87–90, 92, 94, 96–99, 104–107, (108), 110. H35.
 2. **blyttii** (Bruch & Schimp.) Broth.
45–49, (65), 68–70, 72, 73, 75, 77, 78, 80, 83, 85, (86), 87–100, 103–108, 110. H6, 7, 20, 27, 34, 35, 38, 40.
 3. **starkei** (F.Weber & D.Mohr) I.Hagen
(65), 69, 86–90, 92, 94, 96–98, (103), 104–107, (108).
 4. **glacialis** (Berggr.) I.Hagen (*Dicranum glaciale* Berggr.)
88, 90, 92, 94, 96–98, 105, (106), 108.

49. **Glyphomitrium** Brid.
 1. **daviesii** (Dicks.) Brid.
 (2, 3), 45, (48, 49, 52, 69), 70, 75, (86), 93, 97, 98, (99), 100,
 102–105, 108, 110. H1, 2, (3), 16, 27, 35, (38), 39, 40.
50. **Schistostega** D.Mohr
 1. **pennata** (Hedw.) F.Weber & D.Mohr
 1–5, 9, 12, (13), 17, 28, (32), 34–40, 42–50, 55–59, 62–65, 68,
 (69), 70, (76), 85, 86, 88, (97). C.
51. **Aongstroemia** Bruch & Schimp.
 1. **longipes** (Sommerf.) Bruch & Schimp.
 88, 89, 95, 96, 98, 99, 102, 106, 107. H27.
52. **Dicranella** (Müll.Hal.) Schimp.
 1. **schreberiana** (Hedw.) Dixon
 1–37, (38), 39–71, (72), 74–86, (87), 88–95, 97–99, 101, 102,
 104–112. H1–32, (33), 34, 35, (36), 37–40. (C).
 2. **grevilleana** (Brid.) Schimp.
 88, 89, 97, 98, 106, 108. H(20), 28, 29.
 3. **crispa** (Hedw.) Schimp.
 1, 2, (3, 13), 14, (15–17, 21, 25, 38, 39, 48), 54, 55, (57, 58), 59,
 (62–64), 65, 66, 68, (69, 70), 71, (72, 76, 81, 85, 86), 88, (89),
 90, (91), 94, 95, 97, 106, 107, 109, (111). H(1, 2, 5, 16), 28, 29,
 34, (38), 39, (40).
 4. **subulata** (Hedw.) Schimp.
 (1), 2, 3, (4, 10, 17), 34, (35), 39, 41–50, 57, 58, (59), 60, 62,
 (63), 64, 65, (66), 67–69, 71–73, 75, 76, 78, 80–83, (85, 86),
 87–90, (91), 92–98, (99), 101, 104–106, 108–110, (111), 112.
 H1, (3), 5–8, (12, 13), 16, 27, 34, 35, (36, 38, 39), 40.
 5. **varia** (Hedw.) Schimp. [47]
 1–20, (21), 22–75, (76), 77–112. H1–40. C.
 6. **staphylina** H.Whitehouse
 1–99, 101–109, 111, 112. H2–14, 16–27, 29–40. C.
 7. **rufescens** (Dicks.) Schimp.
 1–9, 11–20, 22, (23, 25, 27), 32, (33), 34–37, (38), 39–53,
 (55), 57–60, (61), 62–74, 76–84, (85), 86–112. H1, (2), 3–10,
 12, (14), 15, 16, 18, 20, (21), 26–30, (31), 32–40. (C).
 8. **cerviculata** (Hedw.) Schimp.
 (1–4), 5, (6), 8–13, (14), 15–20, (21), 22, (23, 24), 25, (26),
 27–30, (31–33, 35), 37–40, (42, 43), 44, (45), 46, 48–50, (52),

- 54, (55), 57–65, (66), 67–70, 72–74, (76), 77, 78, 81–85, (86, 88, 89), 90, (92, 96), 97–99, 102, 104, (105), 107, 108, 111, 112. H(1–6), 13, (14, 16, 17), 18, 22, (23, 25), 26, 27, (28, 29), 30, (31–33), 34, 35, (36), 37, (38–40).
9. **heteromalla** (Hedw.) Schimp.
1–112. H1–17, 19–40. C.
53. **Dicranum** Hedw.
1. **polysetum** Sw. ex anon.
11–13, 17, 22, 25–28, 30, (31, 34, 38), 40, 52, 54, 55, 58, 59, (61), 62–64, 69, (70, 73, 80, 85, 87–89), 90, 92, 95, 96.
2. **bonjeanii** De Not.
1–28, 30, 32–37, (38), 39–52, 54, 55, 57–112. H2, 3, 7–9, (10), 11, 12, 15, 16, 18, 20, 22, 23, 25–29, 32–35, (36), 37, (38), 39, 40. (C).
3. **leioneuron** Kindb.
42, 46, 47, 67, 70, 88, 92.
4. **scoparium** Hedw.
1–112. H1–40. C.
5. **majus** Sm.
1–6, (7), 8–18, (19), 20, (21), 22–28, (29), 30, (32), 33–37, (38), 39–52, (53), 54–60, (61), 62–112. H1–9, (10–13), 14, 16, 20–22, 25–30, (31), 33–36, 38–40. C.
6. **spurium** Hedw.
(3), 5, 8, 9, 11–13, (14), 17, (22), 27, 28, (38), 54, (61), 62, (63, 64), 66, (68, 69, 72, 85, 87), 88–90, (91), 92, (95), 96.
7. **undulatum** Schrad. ex Brid. (*D. bergeri* Blandow) [48]
40, 46, 50, 58, (59, 68), 70, (80), 81, 88, 89, 92, 95, 96, 109. H18.
8. **fuscescens** Sm.
1–3, (5), 11, 13, 14, 17, 25, 26, 28, 31, 34–36, (37, 38), 39–51, 53, 57, (58), 59, 60, (61), 62–70, 72–83, 85–112. H1, 2, (3), 4, 6–10, 12, 13, 16, 20, (21), 25, (26), 27–30, 33–35, (36), 38–40.
9. **flexicaule** Brid. (*D. fuscescens* var. *congestum* (Brid.) Kindb.)
(66), 68, (88), 92, (94), 96, (97), 98, 105–108, (109, 110).
10. **elongatum** Schleich. ex Schwägr.
(68, 90), 92, (96, 97, 105, 109, 112).

11. **scottianum** Turner ex R.Scott
1–5, 14, 16, (34), 35, (36, 39), 40, 41, (44), 45–50, 52, (58, 62), 67, 68, 70, 73, 75, 80, (86, 87), 88–90, (92), 97–105, 108, 110, (111). H1–4, (5), 6–9, 16, 20, 25, (26), 27–30, 33–35, (36, 38). C.
12. **tauricum** Sapjegin
3, 6–9, 11–41, 47, 50, 51, 53–70, 76, 78, 81–86, 94–96, 99, 106.
13. **montanum** Hedw.
6–8, 10–32, 34, 36, 37, (38), 39–44, 47, 48, 50, 53–55, 57, 58, 60, 62–67, (68), 69, 70, 77, 80, (81), 83, 88–90, 95, (96), 99, 107, 112.
14. **flagellare** Hedw.
3, 12–17, 19–23, 30, (38), 39, 41, 42, 47, 54, 64, 73.
54. **Paraleucobryum** (Limpr.) Loeske
 1. **longifolium** (Hedw.) Loeske
88, 90, 92, 94, 96, 108.
55. **Dicranodontium** Bruch & Schimp.
 1. **uncinatum** (Harv.) A.Jaeger
69, 70, 73, (86, 88, 90), 92, (94), 96–98, (99), 102, 104–108, 110. H(2), 16, (20), 27.
 2. **asperulum** (Mitt.) Broth.
49, 67, 80, 86, 87, (88), 90, 92, 94, 96–98, (99), 102, 104–108. H29, 30, 33.
 3. **denudatum** (Brid.) E.Britton
2, (3), 11, 13, 14, 39, 41–50, 57–60, 62–67, 69, 70, 72, 73, 75, 77, 78, 80–84, 86–90, (91), 92, 96–108, 110, 112. H1–3, 6, (14), 16, (20, 21), 27, 28, 30, 33–35, (36, 39), 40.
56. **Campylopus** Brid.
 1. **subporodictyon** (Broth.) B.H.Allen & Ireland (*Dicranodontium subporodictyon* Broth., *Dicranum subporodictyon* (Broth.) C.Gao & T.Cao)
97, 104, 105.
 2. **subulatus** Schimp. ex Milde
2, 4, (11), 14, 17, (36), 41, (42), 43, 44, (45), 46–49, 64, 66, 69, 70, (72), 73, 75, (88, 89), 90, 91, (95, 96), 97, 98, (99), 101–105, 108, 110, (111). H(2, 3), 27, (29, 34), 35, 36, (39). C.

3. **schimperi** Milde
(86, 87), 88, (89), 90, 96–98, (99), 100, 103–105, (106), 108, 110, (111), 112. H(1, 2, 20), 35.
4. **gracilis** (Mitt.) A.Jaeger (*C. schwarzii* Schimp.)
46–49, (69), 70, (73, 86), 87, 88, 90, 96–98, (99), 100, 101, 103–108, 110, 111. H1, 2, 4, 7, 8, 16, (20), 27, 28, (30, 34), 35, (36).
5. **fragilis** (Brid.) Bruch & Schimp.
1–6, 9–11, 13, 14, (15), 16, (23), 25, 26, (27), 28, 29, 31, (33), 34–37, 40–52, (54), 57–60, 62–75, 78, 79, 81–83, (84), 85–90, 92, 95–112. H1–10, 15, 16, 18, 20, 23, 25, 27–31, 33–40. C.
6. **pyriformis** (Schultz) Brid. (incl. *C. pyriformis* var. *azoricus* (Mitt.) M.F.V.Corley) [49]
1–37, (38), 39–50, (51), 52–112. H1–13, (14), 15–18, (19), 20–30, (31), 32–40. C.
7. **flexuosus** (Hedw.) Brid. (*C. paradoxus* Wilson, *C. pyriformis* var. *fallaciosus* (Thér.) M.F.V.Corley)
1–55, 57–112. H1–13, (14), 16–20, (21), 22–40. C.
8. **setifolius** Wilson
48, 49, (69), 70, 73, 97, 98, 100, 103–105, 108, 110. H1–3, 7, (15), 16, (20), 27, 28, 31, 34, 35, 38.
9. **shawii** Wilson
(97), 103–105, 108, 110. H1–3, (27).
10. **atrovirens** De Not.
a var. **atrovirens** (incl. var. *gracilis* Dixon) [50]
1–4, 40–50, 52, (57), 60, 62, 64–67, 69–73, (74), 75–79, (85), 86–90, 92–112. H1–4, 6–9, 12, (14), 15–17, 20, (21), 24–31, 33–35, (36), 37–40.
b var. **falcatus** Braithw.
(69, 75), 102–105, 108, 110, 112. H(1, 3), 16, 27, 28, (35), 39.
11. **pilifer** Brid. (*C. polytrichoides* De Not.)
1–3, 45, 48, 49, 102, 104. H1–3, 16, 27. C.
12. **introflexus** (Hedw.) Brid.
1–108, 110–112. H1–40. C.
13. **brevipilus** Bruch & Schimp.
1–5, (6, 7), 8–14, (15), 17, 22, (24, 25, 27), 28, 29, (34), 41, 45, 46, 48, 49, 52, (58, 60, 61), 62, (67), 69–72, (73, 81, 87), 88,

- (89), 90, (91), 92, 93, 96–98, 100–105, (106), 107–112. H1–3, 5, (7, 8), 9, (10, 12, 15), 16, 17, 20, (21), 25–29, (31, 33), 34, 35, 38, (39). C.
57. **Leucobryum** Hampe
1. **glaucum** (Hedw.) Ångstr.
1–6, (7), 8–30, (32), 34–55, 57–84, 86–112. H1–13, (14), 15–20, 22–40. (C).
 2. **juniperoideum** (Brid.) Müll.Hal.
1–5, 8–14, 16–25, 30, 34, 35, 37, 39–49, 55, 58, 60, 63, 64, 69, 70, 86, 97–99, 101, 103. H1–3, 6, 13, 16, 38.
58. **Scopelophila** (Mitt.) Lindb.
1. **cataractae** (Mitt.) Broth.
1–3, 41, 46, 49, 71. H3.
59. **Eucladium** Bruch & Schimp.
1. **verticillatum** (With.) Bruch & Schimp.
1–17, (19), 20, 22–29, (30), 32–47, (48), 49–54, (55), 56–72, (73), 74–91, 93–95, 97–112. H1–5, (6), 7–14, 16, (17), 18, (19), 20–25, (26), 27–31, 33–40. C.
60. **Weissia** Hedw.
1. **controversa** Hedw.
a var. **controversa**
1–20, (21), 22–37, (38), 39–75, (76), 77–112. H1–14, (15), 16, 17, 19–40. C.
b var. **crispata** (Nees & Hornsch.) Nyholm
1, (3), 6, 8–10, 17, 28, (33), 37, 40, 44, 45, 49, 50, 52, (60, 64), 69, (80, 81, 83). H7, 9.
c var. **densifolia** (Bruch & Schimp.) Wilson
1–6, (36), 41, 44–47, (48), 49–51, (60), 64, 65, 67, 70, 71, (81, 84, 87). H1–3, (10), 18, 27, 33, 34.
d var. **wimmeriana** (Sendtn.) Blockeel & A.J.E.Sm. (*W. wimmeriana* (Sendtn.) Bruch & Schimp.)
(96).
 2. **perssonii** Kindb.
1–4, (36), 41, 44–46, 48, 49, 52, 69, 71, (73), 74, 75, 98, 100–104, (105), 106, 108, 111, 112. H1, 3–5, (6), 9, 16, 17, 27, 28, (34), 35, (38), 39. C.
 3. **rutilans** (Hedw.) Lindb.
1–4, (5), 6, (7), 9, 10, (11), 12–16, (17), 18, 19, (20), 22, (23),

- 34–37, (38), 39–45, 47–50, 52, (57), 58, (59), 60, (61, 62), 63, (64), 67, (68, 69), 71–73, (77), 79, 82, (83), 84, 85, (88), 92, 96–98, 101, 104, 105, 107–109. H8, 9, (35, 38), 39, (40). (C).
4. **condensa** (Voit) Lindb. (*W. tortilis* (Schwägr.) Müll.Hal.)
3, 6, 9–11, 13, (14), 15, 16, (17), 33, (81). H5, 33.
5. **brachycarpa** (Nees & Hornsch.) Jur. (*W. microstoma* (Hedw.) Müll.Hal.)
a var. **brachycarpa** (*W. microstoma* var. *brachycarpa* (Nees & Hornsch.) Müll.Hal.)
1–3, 6, 8–11, 14, (15), 20, 22, (23), 24, (32), 36–38, 44, 45, 50, 53, 54, 57, (61), 62–64, 66, 76, 81–84, 98, 109. H33.
b var. **obliqua** (Nees & Hornsch.) M.O.Hill (*W. microstoma* (Hedw.) Müll.Hal. var. *microstoma*, hom. illeg.)
1–4, (5), 6, (7), 8–20, (21), 22–30, 32–37, (38), 39–41, 43–45, (48), 49, 51–61, (62), 63–75, (76, 77), 79–85, (86), 88–90, 92–94, 97, 98, (99), 102–105, 107–112. H(1), 4, 5, 15, 16, (21), 22–26, 28, (31, 34), 35, 37, (38), 39, 40. C.
6. **squarrosa** (Nees & Hornsch.) Müll.Hal.
(3), 10, (13–16), 17, 22, 24, 29, 31, (32), 33–35, 37–40, 45, (55, 57–60, 62, 64, 69, 85).
7. **rostellata** (Brid.) Lindb.
3–5, 9, (13), 14, (15, 17, 22, 23), 29, 35–37, (38), 40, 44–46, 52, (55), 56–58, 61, 63, 64, 67, 83. H16, 26, 29, 30, 39.
8. **mittenii** (Bruch & Schimp.) Mitt.
(13, 14, 17).
9. **multicapsularis** (Sm.) Mitt.
1–3, (13, 14, 16), 23, 35, (58).
10. **sterilis** W.E.Nicholson
(3), 8–17, 20, 22, 24, 29, 30, 33, (37), 47.
11. **levieri** (Limpr.) Kindb.
3, 6, 41.
12. **longifolia** Mitt.
a var. **longifolia**
1–3, 5, 6, 8, 9, (13), 14, 15, (16, 17), 18–20, 22–33, (34), 35–37, (38), 40, 41, 44, 45, 49, 50, 52–56, 62, (65), 66, 81, 82, 99.
b var. **angustifolia** (Baumgartner) Crundw. & Nyholm
1–3, 5, 6, (7), 8–15, (16), 17, 19–24, (25, 26), 28–32, 34, 37, (38, 39), 40, 41, (43), 45, 49, 50, 53, 54, (55), 57, (58), 61, (62),

- 63, 64, (65), 66, (67). H11, 19, (21), 23, (35, 38, 39).
61. **Tortella** (Müll.Hal.) Limpr.
1. **tortuosa** (Hedw.) Limpr.
2–9, 11–14, (16), 17, 20, 22–25, 29, (30), 32–37, (38), 39–54, (55), 56–60, 62–73, (74), 75, (76), 77–83, 85–112. H1–20, 22–31, (32), 33–37, (38), 39, 40. C.
 2. **bambergeri** (Schimp.) Broth. [51]
35–37, 40, 42–49, 57, 63, (64), 65, (70), 88, 89, 92, 94, 97, 98, 103, 104. H1, 6, 7, 9, 16, 29.
 3. **densa** (Lorentz & Molendo) Crundw. & Nyholm
33, 49, 60, 64–66, 69, (71), 72, 98, 104, 105, 108, 110, 111. H7, 9, 16, 17, 26–28, 33.
 4. **fragilis** (Hook. & Wilson) Limpr.
85, 88, (90), 94, 107–110. H33.
 5. **nitida** (Lindb.) Broth.
1–9, 13, (20), 34–36, 39, 41–46, 48–52, 57, 60, (64), 69, 71, (73, 75), 86–88, 98, (100), 101–103. H(1), 2, 3, (5), 7–10, 15–17, 22–24, 27, 28, 33, 35. C.
 6. **inflexa** (Bruch) Broth.
6–17, 20, 22–24, 29, (30), 32–34, 61.
 7. **inclinata** (R.Hedw.) Limpr.
17, (23, 28), 29, 33, (41), 44, 45, 48, 52, 53, (55), 59, 60, 65, (66), 69, 70, 82, 84, (85), 95, 100, 102, 106–109. H27, (38).
 8. **limosella** (Stirt.) P.W.Richards & E.C.Wallace
(97).
 9. **flavovirens** (Bruch) Broth. (incl. var. *glareicola* (T.A.Chr.) Crundw. & Nyholm)
1–6, 9–11, 13–15, 19, 25, (27), 28, 34, 35, 41, 44–46, 48, 49, (50), 52, 54, 59–61, 66–71, (73), 74–76, 81–85, 89–91, 93–95, (97), 98, 100–112. H1–6, 8, 9, 12, 16, (17), 20–22, 27, 28, 31, 34, 35, (37), 38–40. C.
62. **Trichostomum** Bruch
1. **brachydontium** Bruch
1–6, 8–16, (17), 20, (24), 26, 29, 32–37, 39–54, (55), 56, 57, (58), 59–76, 78, 79, (80), 81, 82, 84–112. H1–10, 12, (14), 16, 17, 21, 23–31, 33–36, 38–40. C.
 2. **crispulum** Bruch
1–17, 20, 22–24, 26, 28–30, 32–37, (38), 39–54, (55), 56, 57,

- 59–76, 79–83, 85–112. H1–4, (5), 6–11, (12, 14), 15–40. C.
3. **tenuirostre** (Hook. & Taylor) Lindb. (*Oxystegus tenuirostris* (Hook. & Taylor) A.J.E.Sm., *T. tenuirostre* var. *holtii* (Braithw.) Dixon) [52]
1–5, 13, (14), 34–37, 39–51, 57, (59), 60, (62), 63–73, (74), 75–79, 81, (85), 86–91, 93–108, 110. H1–3, 6–9, 16, 20–22, 26–28, 31, 33–35, (36), 38–40.
4. **hibernicum** (Mitt.) Dixon (*Oxystegus hibernicus* (Mitt.) Hilp.)
72, (86), 87, (88), 96–98, (99), 100, 101, 103–106, 108, 110. H1, 2, (5), 16, 27, 28, (35).
63. **Pottiopsis** Blockeel & A.J.E.Sm.
1. **caespitosa** (Brid.) Blockeel & A.J.E.Sm. (*Pottia caespitosa* (Brid.) Müll.Hal., *Trichostomum caespitosum* (Brid.) Jur.)
1, 6, 8–10, (11), 12–14, (15, 16), 17, 22–24, 29, 36, 40, 49.
64. **Pleurochaete** Lindb.
1. **squarrosa** (Brid.) Lindb.
1–6, (8), 9–11, 13–17, 22, (23), 26, 28, 33, 34, (36), 39–41, 45, 47, 49–52, 57, 60, (64), 69. H9, (20), 21, 22, 31. C.
65. **Hymenostylium** Brid.
1. **recurvirostrum** (Hedw.) Dixon
a var. **recurvirostrum** (*Gymnostomum recurvirostrum* Hedw.)
1, 6, 40, (41), 42–44, 48–50, (51, 57), 59, 60, 62, 64–71, (72, 76), 77, 78, 80–82, 84–90, (91), 94–112. H2–4, 9, 15, 16, 20, 26–29, 33–35, (36, 38, 39).
b var. **insigne** (Dixon) E.B.Bartram (*Gymnostomum insigne* (Dixon) A.J.E.Sm., *H. insigne* (Dixon) Podp.) [53]
87, 88, 97, 98, 103–105, 108. H28, 29.
66. **Anoetangium** Schwäger.
1. **aestivum** (Hedw.) Mitt.
(39), 41, 42, 44, 46–50, 57, 59, (62), 64–67, 69, 70, 72, 73, 75, 76, 79, 80, 83, (85), 86–92, 95–108, 110. H1, 2, (3), 6–9, 16, (20), 27–29, (31, 33), 34, 35, (38), 39.
67. **Gyroweisia** Schimp.
1. **tenuis** (Hedw.) Schimp.
1–6, (7), 8–37, (38), 39–47, 49–72, (73, 74), 75–78, 80–91, 93–102, (104), 106–108, 110, 112. H(1), 3, 5, 6, 8–11, 14–16, 19,

- 20, (21), 25–27, (28), 29–32, (33, 34), 35, (36), 37, 38, (39), 40.
2. **reflexa** (Brid.) Schimp.
(38).
68. **Gymnostomum** Nees & Hornsch.
1. **viridulum** Brid.
1–4, 6, 9–11, 21, 34–36, 41, 44, 45, 49, 63, 64. H1–5, (6), 7, 11, 14, 19, 25, 32, 35. C.
2. **calcareum** Nees & Hornsch.
3, 32, 34–36, (37), 39, 41, 42, 45, (50), 56, 57, (60), 63–65, (69), 73, 88–90, 92, 97, 98, 101, 102, 104, 105, 108. H(2), 9, 11, 15, (16), 26–29, 33–35, (36), 39.
3. **aeruginosum** Sm.
1–4, (5), 6, 35, 36, 39–50, 52, 57, (58), 59, 60, 62–72, (73), 74–112. H1–3, 6–9, 16, 17, 20, (21), 22, 23, 25–30, 33–35, (36, 37), 38–40.
69. **Molendoa** Lindb.
1. **warburgii** (Crundw. & M.O.Hill) R.H.Zander (*Anoectangium warburgii* Crundw. & M.O.Hill)
48, 49, 86–90, (91), 92, 96–99, (100), 101, 103–108, 110, 112. H27.
70. **Leptobarbula** Schimp.
1. **berica** (De Not.) Schimp.
1–3, 6, 8–19, 21, 24–26, 28, 29, 33–35, 40, 44, 45, 55, 61–64. H16.
71. **Micromitrium** Austin
1. **tenerum** (Bruch & Schimp.) Crosby
4, 13, (14, 16, 17), 52.
72. **Ephemerum** Hampe [54]
1. **recurvifolium** (Dicks.) Boulay
(3), 6, (7), 8, 9, (10), 11–13, (14), 15–17, 19, (20), 22–34, 36–38, 40, 45, 49, 53–55, 57, (66).
2. **sessile** (Bruch) Müll.Hal.
1–6, (7), 8, 12, (13), 14, 16, 17, (23), 35, 42–45, 52, 57, (58), 63, 64, 67. H12, 16, 24, 27, 29, 30, 35, 39.
3. **hibernicum** Holyoak & V.S.Bryan [55]
35, 44. H18, 25.
4. **cohaerens** (Hedw.) Hampe
13, 20, 32, 37, 55. H(15), 17, 19, 24, 29.

5. **spinulosum** Bruch & Schimp. ex Schimp.
H26, 39.
6. **serratum** (Hedw.) Hampe [56]
1–3, (4), 5, 6, 11, 12, 14, 17, 20, 22, (23), 24, 35–37, 40–49, 52,
55, 57, 58, 62–64, 67–70, 73, 75–78, 80–83, (84, 86), 90, 92,
96–98, (99), 100, 101, 103–105, 109, 110, 112. H(1), 3, 12, 13,
20, 22, 24, 26, 27, 29, 30, 34, 35, 38.
7. **minutissimum** Lindb. (*E. serratum* var. *minutissimum*
(Lindb.) Grout) [56]
1–20, 22–37, 39–60, (61), 62–68, 70, 72, 73, (74), 75, 76, 78,
80–83, 85–87, 89–94, 98, (99), 101, 106–112. H3–7, 10–14,
19, 21–23, 26, 27, 31–34, (36), 37, (40).
73. **Paraleptodontium** D.G.Long
 1. **recurvifolium** (Taylor) D.G.Long (*Leptodontium recurvifolium* (Taylor) Lindb.)
48, 49, (69), 70, (86), 87, 88, 92, 94, 96–98, (99), 104–108,
110. H1–3, 16, 27, 35.
74. **Dialytrichia** (Schimp.) Limpr.
 1. **mucronata** (Brid.) Broth. (*Cinclidotus mucronatus* (Brid.)
Guim.)
1–19, (20), 21–26, 29, 30, 32–37, (38), 39–45, (52, 54), 55, 57,
59, 64, 66.
 2. **saxicola** (Lamy) M.J.Cano (*D. fragilifolia* (Bizot & Cl.Roux)
F.Lara) [57]
22, (49).
75. **Pseudocrossidium** R.S.Williams
 1. **hornschuchianum** (Schultz) R.H.Zander (*Barbula hornschuchiana* Schultz)
1–68, (69), 70, 71, (72, 73), 74–86, (87), 88–91, 93–99, (100),
101–110, (111), 112. H1, (2), 3–9, 11–13, 15–29, (30), 32,
(33), 34, 35, (36, 37), 38–40. C.
 2. **revolutum** (Brid.) R.H.Zander (*Barbula revoluta* Brid.)
1–6, (7), 8–37, (38), 39–75, (76), 77, 78, (79), 80–85, (86),
87–98, (99), 100–104, 106, 108–111. H1–32, (33), 34, 35,
(36), 37–40. C.
76. **Bryoerythrophyllum** P.C.Chen
 1. **recurvirostrum** (Hedw.) P.C.Chen (*Barbula recurvirostra*
(Hedw.) Dixon)

- 1–20, (21), 22–112. H1–14, 16, 17, 19–40. C.
2. **ferruginascens** (Stirt.) Giacom. (*Barbula ferruginascens* Stirt.)
2, 3, 36, (39), 41–44, 47–50, 57, 60, 64–67, 69, 70, 72, 77, (78),
80, 81, 83, 87–92, 96–99, (100), 101–106, 108, 110, 111. H1,
7–10, (14), 16, 27–29, 31, 32, 34, 35, 39, 40.
 3. **caledonicum** D.G.Long
88, 97, 98, 104.
77. **Leptodontium** (Müll.Hal.) Lindb.
1. **flexifolium** (Dicks.) Hampe
1–6, 11, 12, (13), 14, 16, 17, 20–22, (24), 26–28, (30, 32, 34),
35, (36), 37, (38), 39–52, 55, 57–60, 62–84, 86–93, (96), 97–
106, 108, 110. H1, 3, 6, 10, 12, 13, 20, (21), 27–29, (30), 33,
37, (39).
 2. **gemmascens** (Mitt.) Braithw.
1, 3, (5), 7, 9, 10, (11), 13, 14, (16, 17), 20, 21, 23–26, (33,
36).
78. **Barbula** Hedw.
1. **convoluta** Hedw. [58]
1–112. H1–40. C.
a var. **convoluta** [58]
1–112. H1–13, 15–40. C.
b var. **sardoa** Schimp. (*B. commutata* Jur., *B. convoluta* var.
commutata (Jur.) Husn., *B. sardoa* (Schimp.) J.–P.Frahm,
nom. inval.) [58]
1–26, 28–37, 39–46, 49, 50, 52–55, 57–60, 62–69, 71, 72, 74,
83–85, 87, 88, 90, 91, 93, 98, 101–104, 106, 110. H1–13, 16,
17, 20, 21, 24, 25, 27–29, 31–40. C.
 2. **unguiculata** Hedw.
1–75, (76), 77–112. H1–40. C.
79. **Didymodon** Hedw.
1. **acutus** (Brid.) K.Saito (*Barbula acuta* (Brid.) Brid.)
1–3, (4), 6–10, 12–14, 16, 17, 20, 22–25, 29, 30, (33), 34, 36,
(37), 39–41, 45, 47, 49, (50), 52, 53, (54), 57, 59, 60, 63, 64,
69, 90, (93), 94. H6, (8), 9, (18, 27, 28), 31, (38). (C).
 2. **icmadophilus** (Schimp. ex Müll.Hal.) K.Saito (*Barbula
icmadophila* Schimp. ex Müll.Hal.)
(70), 88, 89, 94, 104, 108. H(28).

3. **rigidulus** Hedw. (*Barbula mamillosa* Crundw., *B. rigidula* (Hedw.) Milde, *D. mamillosus* (Crundw.) M.O.Hill) [59]
1–98, (99), 100–112. H1–13, (14), 15–29, (30), 31–40. C.
4. **nicholsonii** Culm. (*Barbula nicholsonii* Culm.)
1–5, 8–14, 16–25, 29, 30, 32, 33, (34), 35–37, (38), 39, 40,
42–47, 49, 56, 57, 59, 60, 62–69, (80), 81, 100, 111. H(2), 4,
(5), 6–11, (12), 13, 26, 29, 30, 33.
5. **glaucus** Ryan (*Barbula glauca* (Ryan) H.Möller)
7, (13, 65).
6. **umbrosus** (Müll.Hal.) R.H.Zander (*D. australasiae* var.
umbrosus (Müll.Hal.) R.H.Zander, *Trichostomopsis umbrosa*
(Müll.Hal.) H.Rob.) [60]
1, 6, 8–15, 17–30, 32, 35, 39–41, 53, 56, 57, 59, 64. H21.
7. **vinealis** (Brid.) R.H.Zander (*Barbula vinealis* Brid., *D. reedii*
auct. non H.Rob.)
1–6, (7), 8–37, (38, 39), 40, 43–69, 73, (78), 81–85, (86), 89,
92, 93, 96, (99), 100, (101), 106, (108), 110, 112. H2–4, (5, 6),
7, 9, (11), 12, (14), 16, 17, (18, 19), 20, 21, 23, 24, 26, 27, (28),
33, 35, (36), 37, (38, 39), 40. C.
8. **insulanus** (De Not.) M.O.Hill (*Barbula cylindrica* (Taylor)
Schimp.)
1–37, (38), 39–112. H1–16, (18), 19–37, (38), 39, 40. C.
9. **luridus** Hornsch. (*Barbula trifaria* auct. non (Hedw.) Mitt.)
1–37, (38), 39–50, 52–57, 59–72, (74), 77, 78, 80–83, (84),
85, 93, (94), 100, 112. H(1), 2–7, (8), 9, 11, (13), 14, 16, 17,
21–26, 29, 31, 33, (34, 35), 38, (39). (C).
10. **cordatus** Jur. (*Barbula cordata* (Jur.) Loeske)
4.
11. **sinuosus** (Mitt.) Delogne (*Barbula sinuosa* (Mitt.) Grav.,
Oxystegus sinuosus (Mitt.) Hilpert)
1–45, (46), 48–57, 59–67, (68), 69, (70), 71, 72, 75, 79–84,
88, 93, 97, 98, 103, 108, 112. H(1), 2–5, (6), 7–11, 13, (15,
16, 19), 21–25, 27, 28, (30), 31, (32, 33), 35, (36), 37, (38,
39). (C).
12. **tophaceus** (Brid.) Lisa (*Barbula tophacea* (Brid.) Mitt.)
1–37, (38), 39–72, (73), 74–85, (86), 87–91, 93–98, (99),
100–106, (107), 108–112. H1–6, 8–10, 12, (14), 15, 16, (19),
20–30, 33–40. C.

13. **spadiceus** (Mitt.) Limpr. (*Barbula spadicea* (Mitt.) Braithw.)
(3), 6, (14), 16, 34–37, 40–44, 47, 48, 50, (52), 54, 57, 59, 60,
62–70, (71), 72, (73), 75, (77), 78–83, 85, (86), 87–90, (91),
92), 93–95, (97), 98–109, (110), 111, 112. H(1), 4–6, (7, 9),
10, (11, 14), 15, (19), 20, 23, (25), 27–30, 33, (35, 36, 38–
40).
14. **fallax** (Hedw.) R.H.Zander (*Barbula fallax* Hedw.)
1–73, 75–112. H1–13, (14), 15, 16, (17), 18–40. C.
15. **tomaculosus** (Blockeel) M.F.V.Corley (*Barbula tomaculosa*
Blockeel)
1–4, 40, 45, 56, 57, 63, 64. H13, 18, 19, 21.
16. **ferrugineus** (Schimp. ex Besch.) M.O.Hill (*Barbula reflexa*
(Brid.) Brid.)
1, 2, (3), 4, 6, (12), 13, (14, 15), 16, 17, (20), 22, (23), 24, (27),
28, (30), 32–37, 39–46, 48, 50, (51), 52, 53, 57, 59, 60, 62,
(63), 64–70, (72), 82, 83, 87–89, 92, 94, 95, 97, 98, 101–108,
(109), 110, 111. H(2, 3), 5, 7, 9, (11), 12, 13, (15), 16–19, (21),
22, 23, 25–30, 33–35, (38–40).
17. **maximus** (Syed & Crundw.) M.O.Hill (*Barbula maxima*
Syed & Crundw.)
H28, 29.
80. **Stegonia** Venturi
 1. **latifolia** (Schwägr.) Venturi ex Broth.
(88), 89, (90), 92, 94.
81. **Pterygoneurum** Jur.
 1. **ovatum** (Hedw.) Dixon
(3), 5, (6), 9, 10, (13), 14–19, (20), 22, 23, (24), 25, 26, 28–30,
(31), 32, (33, 34, 36–38), 40, (50, 52), 53–55, (57–59, 61–64,
66), 67, 68, (72, 77), 79, 81, (82), 83, (85), 90, 94, (96), 106.
H(4, 21).
 2. **lamellatum** (Lindb.) Jur.
(3, 6, 13, 16, 23, 24), 28, 29, (32, 33, 37, 55, 57, 62–64, 86).
H(21, 38).
82. **Aloina** Kindb.
 1. **brevirostris** (Hook. & Grev.) Kindb.
9, (11), 17, 19, 20, (22), 29, 54, 55, (57), 58, 61–66, 84.
 2. **rigida** (Hedw.) Limpr.
8, (11, 13), 14, (16, 17), 20, 21, (22, 23), 24, 26, 28, 29, 32,

- 33, (34, 35, 37, 48, 50), 51, 53, (54), 55, (57–59), 61, (62), 63, (64), 65, 66, 69, (77, 82), 83, (85), 89, 95, (96), 99, 106. H19, (21, 38, 39).
3. **aloides** (Koch ex Schultz) Kindb.
1–20, (21), 22–29, (30), 31–71, (72), 76, 80–84, 86, 87, 90, 94, 98, 100, 101, 106. H1, 3, 4, (5), 6–13, (14, 15, 18, 19), 21–25, 28, 29, 31, (32, 33), 35, (36), 37–40. C.
4. **ambigua** (Bruch & Schimp.) Limpr. (*A. aloides* var. *ambigua* (Bruch & Schimp.) E.J.Craig)
1–3, 5, 6, (7), 9, (11), 12, (13), 14, 15, 17–20, (21), 22–26, (27), 28–32, (33, 34), 35, (36), 40, (41), 44, 45, 48–50, (52), 54, 55, 57, (58), 59, (60, 62), 63, 64, 66, (68, 69). H(2, 5, 6), 9, (21, 31, 38, 39). C.
83. **Tortula** Hedw.
1. **subulata** Hedw. (*T. subulata* var. *graeffii* Warnst., *T. subulata* var. *subinermis* (Bruch & Schimp.) Wilson) [61]
(1), 3–30, (32), 33–72, (73), 74, 75, 77–112. H(1), 4, (5), 8, (9, 11–14, 16, 20), 21, 22, (25), 26, (27), 28, 29, (30, 33), 35, (36–38), 39, 40.
2. **schimperi** M.J.Cano et al. (*T. subulata* var. *angustata* (Schimp.) Limpr.) [61]
(11, 22, 34, 57).
3. **cuneifolia** (Dicks.) Turner
1–6, (11, 13–15, 17, 19, 22, 25, 36, 37, 39, 45), 48, 49, (52). H(1), 3, (5), 8, (12, 14, 21, 38). C.
4. **freibergii** Dixon & Loeske
14, 58, 59, 62.
5. **solmsii** (Schimp.) Limpr.
1, 3.
6. **marginata** (Bruch & Schimp.) Spruce
1–30, 32–40, 45, 50, 53, 55–59, 61–64, (65, 66), 81, 98, 99. H5, 13, (15), 16, (17), 23, 26, 27, 29, (36, 38, 39). (C).
7. **vahlia** (Schultz) Mont.
3–5, 15, (16), 19, 25, 29, (33, 34, 36). H(21).
8. **canescens** Mont.
1, 2, (3), 4, (14, 43, 45), 47, 48, 101. (C).
9. **muralis** Hedw. (incl. var. *aestiva* Hedw.) [62]
1–112. H1–13, (14), 15–40. C.

10. **leucostoma** (R.Br.) Hook. & Grev. (*Desmatodon leucostoma* (R.Br.) Berggr.)
89, 92.
11. **cernua** (Huebener) Lindb. (*Desmatodon cernuus* (Huebener) Bruch & Schimp.)
(56), 57, 58, 63, (64).
12. **atrovirens** (Sm.) Lindb. (*Desmatodon convolutus* (Brid.) Grout)
1–5, 9, (10, 13), 14, 15, (36, 38), 41, (44), 45, 48, 49, 52, (68),
71, (73), 81, 82, (85), 90, 91, (94, 99), 106, 109. H(1), 4–6, 8,
12, (16, 20), 21, 35, (38, 39). C.
13. **amplexa** (Lesq.) Steere (*Syntrichia amplexa* (Lesq.) R.H.Zander) [63]
37, 40, 55.
14. **lanceola** R.H.Zander (*Pottia lanceolata* (Hedw.) Müll.Hal.)
1, (2), 3–6, (7, 8), 9–17, 19, 20, (21), 22–30, 32–37, (38), 39–
42, 44, 45, 47, 49–55, 57, (58), 60, (61), 62–64, (65), 66–68,
(69), 70, (75), 80–83, (84), 85, 88–90, 92, 94, 95, (99, 100),
106. H(4–6, 19), 21, 22.
15. **wilsonii** (Hook.) R.H.Zander (*Pottia wilsonii* (Hook.) Bruch & Schimp.)
1–3, (4, 5), 6, 9, 11, (13, 14, 19, 27, 40, 44), 45, 48, (49, 50, 52,
58, 59). H(5, 20), 21. (C).
16. **viridifolia** (Mitt.) Blockeel & A.J.E.Sm. (*Pottia crinita* Bruch & Schimp.)
1–4, (5), 6, 9–11, (13, 25), 41, 43–46, 48, 49, 52, 54, (68),
71, (73, 74), 75, (77), 81, 85, 90, (91, 92), 93, 94, 101, 106,
(108), 109, 111, 112. H1, (2), 3–6, 9, 12, 21, 35, (38–40).
C.
17. **modica** R.H.Zander (*Pottia intermedia* (Turner) Fürnr.)
(1), 2–13, (14), 15–23, (24), 25–47, 49–57, (58), 59, 60, (61),
62–64, (66), 67–69, (71, 73, 75, 76, 81), 82, 83, (85, 88), 89–
91, (92, 95, 99), 101, 104–106. H(1, 4), 7, 9, 10, 13, 15, 16, (18,
20), 21, (26), 27, 31, (33, 37–39). C.
18. **truncata** (Hedw.) Mitt. (*Pottia truncata* (Hedw.) Bruch & Schimp.)
1–98, (99), 101–109, 111, 112. H1, 3–16, 18–32, (33), 34–40.
C.

19. **protobryoides** R.H.Zander (*Pottia bryoides* (Dicks.) Mitt., *Protobryum bryoides* (Dicks.) J.Guerra & M.J.Cano) [64]
3, (4), 5–14, (16), 17, 19–34, 36, 37, 39–41, 45, 47, 49, (50),
52–54, (55), 57, 59, (60), 61–64, 66, (67–69), 82, (85, 90,
109), 111. H(21, 39).
84. **Phascum** Hedw.
1. **cuspidatum** Hedw. (*Tortula acaulon* (With.) R.H.Zander)
a var. **cuspidatum** (*Tortula acaulon* (With.) R.H.Zander)
1–72, 74, (75), 77, 78, 80–86, 88–95, (96, 99), 100, 101, 106,
109–111. H1–19, (20), 21–23, (24), 26–29, 31, (32, 33), 34,
35, 37, (38), 39, (40). C.
b var. **piliferum** (Hedw.) Hook. & Taylor (*Tortula acaulon*
var. *pilifera* (Hedw.) R.H.Zander)
1, 2, (3, 5), 9–11, 13, (14), 15, (16), 18, 19, 25, 27, 29, 33–35,
41, 45, 49, 60, 66, (67, 68), 81–83, (84, 89), 90, 91, 109. H12.
C.
c var. **schreberianum** (Dicks.) Brid. (*Tortula acaulon* var.
schreberiana (Dicks.) R.H.Zander)
6, 13, (17), 20, 22, 24–27, (29), 30, 32, 34, 37, 40, 53, 58, 62,
(66).
d var. **papillosum** (Lindb.) G.Roth (*P. cuspidatum* subsp.
papillosum (Lindb.) J.Guerra & Ros, *Tortula acaulon* var.
papillosa (Lindb.) R.H.Zander)
1, 25, 26, 39, (48), 56, 57. H38, (39). C.
85. **Microbryum** Schimp.
1. **starckeana** (Hedw.) R.H.Zander (*Pottia starckeana*
(Hedw.) Müll.Hal., *P. starckeana* var. *brachyodus* (Bruch &
Schimp.) Müll.Hal.)
1–4, 6, 8–10, 12, (13, 14, 17, 19), 23, 27, 34, 40, 41, 44, 45, 47,
49, 51, 52, (56), 57, (59), 68, (90), 101, 102. H(4, 5, 21, 33, 38,
39). C.
2. **davallianum** (Sm.) R.H.Zander (*Pottia davalliana* (Sm.)
C.E.O.Jensen) [65]
a var. **davallianum** (*M. davallianum* (Sm.) R.H.Zander, *Pottia*
starckeana subsp. *conica* (Schleich. ex Schwägr.) D.F.Chamb.,
P. starckeana subsp. *minutula* (Schwägr.) D.F.Chamb.)
1–15, (16), 17–20, (21), 22–38, 40, 41, 44, (45, 46), 49, (50),
51–53, (54), 55–57, (58, 59), 60–67, (75, 77), 80, 81, 83, 84,

- (85), 86, (90), 101, 111. H1, (2), 5, 9, 11, 13–15, 19, 21, 22, 24, (28), 31, (33), 34, 39, (40). C.
b var. **commutatum** (Limpr.) R.H.Zander (*Pottia commutata* Limpr.) [65]
1–4, 9, 10, 14, 15, (17), 45, 49, 66.
3. **rectum** (With.) R.H.Zander (*Pottia recta* (With.) Mitt.)
1–6, (7), 8–17, 19, 20, 22–30, 32–37, 40, 41, 44–47, 49–52, 54–57, (59, 60), 61–64, (65), 69, 71, (75, 81, 83), 101, 111. H1, 5, 7–9, 11–16, 19, (21), 22, (23), 26, (28), 31, (34). (C).
4. **curvicolium** (Hedw.) R.H.Zander (*Phascum curvicolium* Hedw.)
1, 3, (4, 5), 6, 8–17, 19, 20, 22–24, 26, (27), 28–30, 32–38, 40, 49, 50, 52–55, 57, (61), 63, 64, (65), 66, (68, 69), 81, (90), 92, (94), 106. H(16, 21).
5. **floerkeanum** (F.Weber & D.Mohr) Schimp. (*Phascum floerkeanum* F.Weber & D.Mohr)
1, (7), 8–17, 19, 20, 22, (23), 24–26, (27), 28–30, 33–35, (49), 53, 54, 56, 57, (58), 61–64, (66).
86. **Hennediella** Paris
1. **stanfordensis** (Steere) Blockeel (*Hyophila stanfordensis* (Steere) A.J.E.Sm. & H.Whitehouse, *Tortula stanfordensis* Steere)
1, 4, 14, 15, 25, 26, 29, 33–37, 39, 40, 42, 43, 47, 50, 58, 62–64, 66, 82, 83. H21.
2. **macrophylla** (R.Br.bis) Paris (*Tortula brevis* H.Whitehouse & M.E.Newton)
10, 13, 14, 16–22, 24, 26, 28, 29, 57, 68, 78–81, 93.
3. **heimii** (Hedw.) R.H.Zander (*Pottia heimii* (Hedw.) Hampe)
1–3, (4, 5), 6, 9–11, 13–21, 25, 27–29, (32, 34), 35, 37, (38), 41, 44, 45, (46), 47–49, (50), 51–54, 58, (59), 60–63, (64, 65), 66–71, (72, 73), 74, 75, 81, 82, (83), 84, 85, 90, 91, (92), 93–98, (99), 100–112. H2, 4, (5), 6, 8, 9, 12, 15–17, (20, 21), 27, (28), 29, 31, 34, 35, 38, (39, 40). C.
87. **Acaulon** Müll.Hal.
1. **muticum** (Hedw.) Müll.Hal.
1–4, 6–9, (10), 11–13, (14), 15, 16, (17), 18, 19, (20, 21), 22–26, (27), 29, (30), 31, (32), 33, 35–37, (38, 39), 40, 41, 43, 45, (48, 50), 52, 54–58, (59–66), 67, 68, (69, 71), 72, (73), 81, (83,

- 85), 87–90, (91), 92, (95), 106. H(1, 4, 21, 34, 39, 40). C.
2. **mediterraneum** Limpr. (*A. muticum* var. *mediterraneum* (Limpr.) Sérgio) [66]
1, 2, 17.
 3. **triquetrum** (Spruce) Müll.Hal.
(3), 9, 10, 14.
88. **Leptophascum** (Müll.Hal.) J.Guerra & M.J.Cano (*Chenia* R.H.Zander)
1. **leptophyllum** (Müll.Hal.) J.Guerra & M.J.Cano (*C. leptophylla* (Müll.Hal.) R.H.Zander, *Tortula rhizophylla* (Sakurai) Z.Iwats. & K.Saito)
1, 10, 36.
89. **Syntrichia** Brid.
1. **ruralis** (Hedw.) F.Weber & D.Mohr
a var. **ruralis** (*Tortula calcicolens* W.A.Kramer, *T. ruralis* (Hedw.) P.Gaertn. et al.)
1–72, 75, 77–83, 85, 86, 88–96, 98, (100), 101–104, 106, 108–111. H(1), 4, (5), 6–14, (15), 16–18, (19), 20–25, 27, (28), 29–31, (33), 34, 35, 37, (38), 39, 40. C.
b var. **ruraliformis** (Besch.) Delogne (*S. ruraliformis* (Besch.) Cardot, *S. ruralis* subsp. *ruraliformis* (Besch.) Dixon)
1–6, (8), 9–20, 22, (23), 25–29, 31, 32, (34), 35, 37, 40, 41, 44–56, (58), 59–62, 66–71, (73), 74, 75, 81, 82, (83), 84–86, 90–112. H1–3, (5), 6, 9, 12, 16, (19), 20–22, 27, 28, (33), 34, 35, (38), 39, 40. C.
 2. **norvegica** F.Weber (*Tortula norvegica* (F.Weber) Lindb.)
88, (92), 97.
 3. **montana** Nees (*S. intermedia* Brid., *Tortula intermedia* (Brid.) Berk., hom. illeg.) [67]
1–73, 75, 77, (78), 79–91, 93–95, 98, 100–104, 106–109, 111, 112. H1–4, (5), 6–9, 11, (12), 13–18, (19), 21–31, (32), 33, 34, (35), 38–40. C.
 4. **princeps** (De Not.) Mitt. (*Tortula princeps* De Not.)
40, 49, 57, (65, 75–77), 81, 83, 85, 86, (87), 88, (89, 90, 92), 96, 98, (99), 101, 106–108. H28, (39, 40).
 5. **virescens** (De Not.) Ochyra (*Tortula virescens* (De Not.) De Not.)
3, 8, 12, 13, 18–20, 22–33, 35–38, 40, 45, 53–57, 63–66, 81,

- 89–94, 106.
6. **laevipila** Brid. (*S. laevipila* var. *laevipilaeformis* (De Not.) J.J.Amann, *Tortula laevipila* (Brid.) Schwäger.)
1–38, (39), 40–72, (73), 74, 75, (76), 77–83, 85–91, 93, 95–99, (101), 102–107, (109, 110). H(1, 2), 3–9, (10), 11, 12, (14), 15, (18), 19–23, 25, 27–30, (31), 33–35, (36), 37, (38), 39, 40. C.
 7. **papillosa** (Wilson) Jur. (*Tortula papillosa* Wilson)
1–29, (30), 31–37, (38), 40, 41, 43–51, 53, 54, (55), 60, (61, 62), 64, (65), 66, 68–72, (73–75), 78–83, 85, (86), 88–91, (92), 93–98, (99), 100, 101, 103, 105–107. H(1), 4–11, (12), 13, 15, 18, 19, (20), 21–25, 27, 29, 31–34, (36, 38), 39, (40). C.
 8. **latifolia** (Bruch ex Hartm.) Huebener (*Tortula latifolia* Bruch ex Hartm.)
2–51, 53–73, 75, (77), 79–85, (86), 87, 88, (89), 90, 91, 93, 106. H2, 4–8, 11–13, (14), 18, (20), 21, 22, 29, 33, (36), 37–39, (40).
90. **Cinclidotus** P.Beauv.
1. **fontinaloides** (Hedw.) P.Beauv.
1–11, 13, (14), 15–17, 19, 20, (21), 22–25, 27, 29–52, 54, (55), 56–60, (61), 62–72, (73), 74, 75, (76), 77–84, (85), 86–93, (94, 95), 97–99, 101–105, 107–112. H1–13, (14), 15–20, 22–30, (31), 32–40.
 2. **riparius** (Host ex Brid.) Arn.
36, 37, 40. H(9).
91. **Tayloria** Hook.
1. **lingulata** (Dicks.) Lindb.
(86), 88, (89), 90, 92.
 2. **tenuis** (Dicks.) Schimp. (*T. longicollis* (Dicks.) Dixon)
(87, 88, 90–92, 96, 105), 109. H(40).
92. **Tetraplodon** Bruch & Schimp.
1. **angustatus** (Hedw.) Bruch & Schimp.
(49, 88), 89, 90, 92, 94–97, (104), 105, 106, (108). H18.
 2. **mnioides** (Hedw.) Bruch & Schimp.
(3, 4), 12, 17, 35, 40–42, 46–49, 52, (54), 57, 58, (59), 60, (61), 62–70, 72, 73, 75, 77, (78), 79–83, (85, 86), 88–100, (101), 103–108, (110), 111. H1, (2), 3, (7, 14), 16, 17, (19), 20, 23–25, 27–29, (30, 33), 35, (36, 38, 39), 40.

93. **Aplodon** R.Br.
1. **wormskioldii** (Hornem.) R.Br.
66, (69), 70, (88), 96.
94. **Splachnum** Hedw.
1. **sphaericum** Hedw.
3, 4, (35, 36), 42, 43, (44), 47–50, 57–60, 62–73, 75, (76),
77–81, 83, (84–86), 87–92, 94–98, (99), 100–110, (111), 112.
H1–3, 7, 9, 11, 16, 20, (21, 26), 27–30, (33), 34, 35, (36), 38–
40.
2. **ampullaceum** Hedw.
2, 3, (4, 5), 8, 9, 11, (14, 15, 17, 22, 23, 25–27), 28, (29–31), 35,
38, (39, 40), 41–44, 46–50, 52, (55), 57, 58, (59), 60, 62–70,
72, (73, 74), 75, 76, (77), 78–80, (81), 82, 83, 86–89, (90), 92,
95–99, 101–110. H1–3, 7–9, 12, 14–16, (19), 20, (21), 22–29,
(33, 34), 35, (36), 37, (38), 39, 40.
3. **vasculosum** Hedw.
(65), 68–70, 72, 78, 87, 88, (89), 90, 92, 93, (95), 96, 106,
(107).
95. **Paludella** Brid.
1. **squarrosa** (Hedw.) Brid.
(58, 61, 62). H27.
96. **Meesia** Hedw.
1. **uliginosa** Hedw.
52, 59, (60, 65), 66, 67, 69, 70, (75, 78), 80, (82, 85, 86), 87–
89, (90, 91), 92, (94), 95–98, 105, 106, 108–110. H35.
2. **triquetra** (L. ex Jolycl.) Ångstr.
H(27).
97. **Amblyodon** P.Beauv.
1. **dealbatus** (Hedw.) P.Beauv.
(4, 26, 27, 37, 38), 41, 42, 44, 48, 52, (57, 58), 59, (60, 62,
63), 64–70, (74, 75), 80–83, (85, 86), 87–90, 92, 94, 95, (96),
105, 106, 108–112. H1, 9, (16, 17, 21), 26–29, (31, 32), 33–35,
(38–40).
98. **Leptobryum** (Bruch & Schimp.) Wilson
1. **pyriforme** (Hedw.) Wilson
1–32, 34, 35, (36), 37–42, 44–70, (71), 73–78, (80), 81–86,
88–90, 92–95, (97), 98, (99), 101–111. H4, 6, (7), 8, (9, 14),
17–19, (21), 22, 23, 25–27, 29, (31), 33–36, 38, 39, (40). C.

99. **Zygodon** Hook. & Taylor

1. **viridissimus** (Dicks.) Brid.

a var. **viridissimus**

1–37, (38), 39–75, 77–112. H1–16, (17), 18–30, 32–40. C.

b var. **stirtonii** (Schimp. ex Stirt.) I.Hagen (*Z. stirtonii* Schimp. ex Stirt.) [68]

1–6, 9–14, (15, 17), 18–20, 25–28, 31, (32), 33–37, 39–45, 47–53, 56, 57, 60, 62–65, 68–72, 74, 75, 77, 80–86, (87), 88–91, 93, (94), 95, 97, 98, (99), 100–109, 111, 112. H2, (3), 4, (5), 6, 8–10, (11), 13, 16–18, (20), 22, 25, 27–31, 33–35, 38–40. C.

2. **rupestris** Schimp. ex Lorentz (*Z. baumgartneri* Malta)

2–14, 17, 19, 21–23, 25, 26, 29, 31, 33–36, 39–41, (42), 43–50, 54, 57, 60, 67, 69, 70, 72, 73, 77, 79–84, 86–90, 92–99, 101, 102, 104, 105, 107, 108, 110. H1–4, 6, 7, (14), 16, 20, 28, 38.

3. **conoideus** (Dicks.) Hook. & Taylor

a var. **conoideus**

1–37, 39–55, 57–60, 62–76, 79–83, 85–87, (88), 90, 91, 93, 95–108, 110. H1–6, 8–11, (12), 13, (14), 15, 16, 18, 20–39, (40). C.

b var. **lingulatus** S.R.Edwards

17.

4. **gracilis** Wilson

64.

5. **forsteri** (Dicks.) Mitt.

(5), 11, 18, 19, 24, (37).

100. **Orthotrichum** Hedw.

1. **lyellii** Hook. & Taylor

1–29, (30), 31–37, (38), 39–50, (51), 52–57, 59–73, (74, 75), 77–83, 85–91, (92), 93, 95–98, (99), 100, 101, 103, 105–107. H(2), 4, 6–13, (14), 18–24, 30–33, (36), 37–40. C.

2. **striatum** Hedw.

1–15, (16), 17–22, (23), 24, 25, (26), 27–29, 32–36, (37, 38), 40–50, 52, 54, (55), 56, 57, (60, 61), 62, 63, (64), 65–67, (68), 69, (70), 71, (72), 73, 75, (77, 78), 79–81, (82), 83, 84, (85–87), 88–101, 103–108. H1–4, (5), 6, 7, 9–12, (13, 14), 15–20, (21, 23), 25, 26, 28–30, (31), 32, 33, (36, 38), 39, 40. C.

3. **shawii** Wilson

(75).

4. **speciosum** Nees
(13, 14, 62), 88, (89, 90), 92, (94), 95, 96.
5. **affine** Schrad. ex Brid.
1–37, (38), 39–111. H1–40. C.
6. **rupestre** Schleich. ex Schwäger.
2, (3), 4, 6, (7), 21, 22, 28, (34), 36, (38, 40), 43, 47, 48, (49),
50, 52, (59, 60), 61, 65–68, (69–71, 73), 74, (75), 78–83, 85,
86, (87), 88–93, 95–98, (99), 100–112. H(1), 2, 8, 16, (20, 21),
24, 25, (26), 27–29, 34, 35, (37, 38), 39, 40.
7. **gymnostomum** Bruch ex Brid.
92, 96.
8. **obtusifolium** Brid.
(22–24), 28, 29, (32, 33, 36, 38, 65), 90, (91), 92, 93, 95, 96.
9. **anomalum** Hedw.
1–75, (76), 77–112. H1–13, (14), 15–31, (32), 33–40. C.
10. **cupulatum** Hoffm. ex Brid. (incl. var. *riparium* Huebener)
1–9, 11–13, (14), 15–20, 22–37, (38), 39–54, (55), 57–73, (74,
76), 77–85, (86), 87–98, 100–103, 105–108, 112. H1, (2), 4,
(5), 6–19, 21–30, (32), 33–35, (36), 37, (38), 39, 40.
11. **rivulare** Turner
2–5, (9, 13, 14), 16, (17, 33), 34–37, (38), 39, 40, 42–50, (55),
57, (59), 60, 62–70, 72, (73), 75, (76), 77–86, (87), 88–91,
(92), 93–96. H1, 2, 4–6, 8, 9, 13, (20, 21), 29–31, (36), 38, (39,
40).
12. **sprucei** Mont.
2–6, 8, 9, 11, 13, 14, 16, (17, 19), 24, (32, 33), 34–37, (38), 39,
40, 42–50, 54, (55), 57, (58), 59–65, 67, 68, (69), 70, 72, 73,
75, 79, 80, 88. H(2), 5, 6, 12, 29, 37, (38, 39).
13. **stramineum** Hornsch. ex Brid.
3, 5–8, 10–14, 16–20, 22–29, 32–37, (38), 39–50, 52, 57, 60,
(61), 62–73, (74), 75, (77), 78–85, (86), 87–98, (99), 100,
103–108. H(2, 10), 11, 12, 20, 31, (38, 39).
14. **tenellum** Bruch ex Brid.
1–6, (7), 8–15, (16), 17–20, 22–26, (27), 28–37, (38), 39–50,
52, 53, 55–57, (58), 59, 60, (61, 62), 63–71, 73, 74, (76), 80–
83, (86), 88–90, (91), 97, 98, (99), 100, 101, 103, 104, (110).
H(1), 2, (3), 4–9, 11, (12), 13, 15, (20, 21), 22, 24, 25, 29, 31,
32, (33), 34, (36), 38–40. C.

15. **pallens** Bruch ex Brid.
20, (60, 62), 64, (65), 66, 94, 97, (106). H(4), 13, (20), 26.
 16. **pumilum** Sw. ex anon. (*O. schimperi* Hammar)
(26, 27, 32, 62), 66, 90, 91.
 17. **diaphanum** Schrad. ex Brid.
1–75, (76), 77, 78, (79), 80–91, (92), 93, (94), 95–98, (99),
100, (101), 102–112. H1–5, (6), 7–15, (16), 17–40. C.
 18. **pulchellum** Brunt.
1–29, (30), 31–37, (38), 39–43, (44), 45–75, 77–98, (99),
100–109, (110), 111, 112. H1–9, (10), 11–13, (14), 15–18,
(19), 20–29, (30), 32–40. C.
 19. **consimile** Mitt.
(13), 57.
101. **Ulota** D.Mohr
1. **coarctata** (P.Beauv.) Hammar
(5, 11), 13, 15, (27), 37, (48), 79, (86), 87, 88, (90, 96), 97, 98,
105, 106. H(1), 2.
 2. **drummondii** (Hook. & Grev.) Brid.
43, 46–49, (60, 63, 65), 66–70, (72), 73, (75), 78, 79, 81–83,
(85, 86), 87–108, (109, 111). H1, (2, 6), 7, 10, 16, (20), 21, 33,
35, (36), 39.
 3. **crispa** (Hedw.) Brid.
1–29, (30), 32–37, (38), 39–50, 52, (54, 55), 56, 57, (58), 59–
77, 79–112. H1–16, 18–30, 32–40. C.
 4. **bruchii** Hornsch. ex Brid. (*U. crispa* var. *norvegica* (Gronvall)
A.J.E.Sm. & M.O.Hill)
1–11, (12), 13–19, (20), 21–50, 52–111. H1–13, (14), 15–30,
(31), 32–40. C.
 5. **calvescens** Wilson
1, 45, 48, (75, 86), 97, 98, 101–106, 108, 110, (112). H(1), 2,
3, 7–9, 15, 16, 18, 24, 26–29, (30), 32, 33, 35, (39), 40.
 6. **hutchinsiae** (Sm.) Hammar
(2, 3), 4, (7), 44, 48, 49, (62, 65, 69, 70, 73), 75, (86), 87, 88,
(89–92), 95–98, (99), 101–108, 110, 112. H1–3, (4), 6, (15),
16, (20), 27, 28, 30, (32, 34), 35, (37, 38, 40).
 7. **phyllantha** Brid.
1–30, 32–50, 52–76, 79–85, (86), 87–91, (92), 93–98, (99),
100–112. H1–13, (14), 15–40. C.

102. **Hedwigia** P.Beauv.

1. **ciliata** (Hedw.) P.Beauv.

a var. **ciliata**

7, 13, (14), 19, 29, 35–37, 40, 42, 43, (48, 49), 61, (69), 72, (73, 98), 104, 108. H6.

b var. **leucophaea** Bruch & Schimp.

35, 36, (73, 108).

2. **stellata** Hedenäs

1–9, 13, 15, 22, 28, (34), 35, 36, (37), 40, 42–45, (46), 47–50, (52, 55), 59, (64, 66, 68, 69), 70, 72, (73), 75, (76), 77–83, (84, 85), 86, (87), 88–90, (91), 92–109, (110), 112. H(1), 2–4, 6–9, 12, (15), 16, (19), 20–22, 24, (25), 26–32, (33, 35, 36), 37–39, (40). (C).

3. **integrifolia** P.Beauv.

45, 46, 48–50, 52, 69, 70, (71), 72–75, 82, (87), 88, 89, 96–98, (100), 101, 103–105. H1, 3, 6, 20, 39.

103. **Catoscopium** Brid.

1. **nigratum** (Hedw.) Brid.

52, 59, (60, 64, 65), 66, 68, (82), 85, 88, 89, (90, 92), 94, 95, 98, 105, 106, 108–110, 112. H16, 27, (34), 35, (39, 40).

104. **Plagiopus** Brid.

1. **oederianus** (Sw.) H.A.Crum & L.E.Anderson (*P. oederi* (Brid.) Limpr.)

(1, 34), 35, (36, 39, 41), 42–44, 46–50, 57, 60, (62), 64, 65, (66), 69, (70, 72, 76, 83, 85), 86–90, 92, (94), 96–98, (99), 103, 104, 108. H(1), 29, (39).

105. **Bartramia** Hedw.

1. **halleriana** Hedw.

35, 42–44, 46, 48, 49, (57, 62), 64, 65, (66), 69, 70, (72), 73, 75, 76, 80, 86–90, 92, 96–99, (100, 101), 103–106, 108. H1, (2, 4, 6, 7, 20, 36, 39).

2. **pomiformis** Hedw.

1–6, (7), 8–17, (18), 19, 20, (21), 22, (23), 24–28, (29, 30, 32), 34–37, (38), 39–52, (54, 55), 57–60, 62–84, (85), 86–110. H(1), 2–9, (11), 12, 13, 16, 20–22, 27–30, (31), 33–40. C.

3. **ithyphylla** Brid.

2, 3, 13, (14–17, 25), 35, 36, (37), 40, (41), 42–44, 46–50, (55), 57–60, 62–70, (71), 72, (73), 74–84, (85), 86–112. H6–8, (16,

- 20), 22, (27, 31), 34, (35, 36, 38), 39, 40.
4. **stricta** Brid.
(14), 43, 47, 88. C.
106. **Conostomum** Sw. ex F.Weber & D.Mohr
1. **tetragonum** (Hedw.) Lindb.
(49, 69, 86), 87–90, 92, 94, 96–100, 103–108, (112).
107. **Philonotis** Brid.
1. **rigida** Brid.
1, 2, 4, 43, 48, 49, (50), 71, 75, (87). H1, (2, 3), 16, (20), 27, 33, 35. C.
2. **marchica** (Hedw.) Brid.
10, (65).
3. **arnellii** Husn.
1, 2, (3, 9, 10), 13, (14–17, 22, 23), 35, (36, 37), 40, 42–50, 57, 58, 60, 64, 67–69, (70), 72, (73, 81), 82, 83, (86), 87, 90, 93, 95–98, 101, 103–105, 108, (109), 111. H16, 30, (36, 38, 39). C.
4. **caespitosa** Jur.
1, 2, 4, 6, 8, 9, (10), 11, (13, 14), 17, (22), 38, (40), 41, 43–47, (48), 49, (57, 58), 59, 60, (63), 64–69, (70), 73, 79, 81, 83, 84, (90), 93, 95–98, (99), 102, 103, 107, 112. H(1), 4, 8, 16, (20), 27, 29, 30, (31, 33), 37, 38, (39), 40. C.
5. **fontana** (Hedw.) Brid.
1–13, (14), 15–18, (19), 20, (21), 22, 23, (24, 25), 26–28, (29), 30, (32, 33), 34–52, (53), 54, (55), 57–112. H1–18, (19), 20, 21, 23–40. (C).
6. **tomentella** Molendo
49, (65, 68–70), 88–90, 94, 96–98, 104, 105, 107, 110, 112. H27, 34, 35.
7. **seriata** Mitt.
49, 87–90, 92, 94–98, 103, 105–108, (111).
8. **calcarea** (Bruch & Schimp.) Schimp.
2, (3, 4), 5, (7), 8, 9, 11, (12), 22, 23, (26), 27, 28, (32–34), 35, 36, (37), 38, (39), 40–52, (53), 54, 57–70, 72, (74), 75, 77–83, 85–96, 98–112. H(1), 2, 6, 7, 9, 11, 14–18, (19), 20, 22–29, (31, 32), 33–36, (37–39), 40.
9. **cernua** (Wilson) D.G.Griffin & W.R.Buck (*Bartramidula wilsonii* Bruch & Schimp.)
(48, 90), 97, (98, 105, 110). H1, (16), 27.

108. **Breutelia** (Bruch & Schimp.) Schimp.

1. **chrysocoma** (Hedw.) Lindb.
1–6, (9), 11, 35, 36, (39), 40–52, (54, 55), 57, (59), 60, (61),
62, (63), 64–80, (81), 83, (85), 86–112. H1–10, 12–18, 20,
(24), 25–40.

109. **Plagiobryum** Lindb.

1. **zieri** (Hedw.) Lindb.
35, 36, (39–41), 42–44, 47–50, 57, (59), 60, (62), 63–70,
72, (73, 75, 76), 77–80, 82, 83, 85–90, 92, 94, 96–99, (100),
101–108, (109), 110, 111. H(1), 7, 8, 16, 27–29, 34, 35, (39),
40.
2. **demissum** (Hook.) Lindb.
88, (89), 90, 98.

110. **Anomobryum** Schimp.

1. **julaceum** (Schrad. ex P.Gaertn. et al.) Schimp. (*A. filiforme*
(Dicks.) Husn., hom. illeg.)
1, (3), 35, 36, (39), 40–45, 47–50, 52, 57, (59), 60, 64–70, (71),
72–75, (76), 77–83, 86–92, (93), 94–112. H1–3, 6, 7, 9, (15),
16, 20, 26–29, (30, 31), 33–35, (36–38), 39, 40.
2. **concinatum** (Spruce) Lindb. (*A. filiforme* var. *concinatum*
(Spruce) Loeske, *A. julaceum* var. *concinatum* (Spruce)
J.E.Zetterst.) [69]
36, 40, 42–44, 47–49, 59, 60, 64, 65, (66), 68, 69, (70), 78, 79,
(80), 82, 83, 88–90, 92, 95, (96), 97, 98, 101–105, 107, 108,
110. H3, 6, 8, 9, 16, 26–29, 33–35, 40.

111. **Bryum** Hedw.

1. **marratii** Hook.f. & Wilson
46, (48), 49, 54, (59, 60, 62), 68, 70, (75), 82, (85), 90, 101–
103, 108, 109. H1, 21, 27, 34, 35, (40).
2. **warneum** (Röhl.) Brid. (*B. mamillatum* Lindb.) [70]
4, (6), 15, (28, 41, 44), 46, 48, (49), 52, 54, (58), 59, (60, 62,
66), 69, (75), 82, 85, 90, (95), 105. H21, 27, 34, 35.
3. **calophyllum** R.Br.
(4), 46, 48, (49), 52, (58), 59, (62, 66, 68), 69, 82, (85), 90,
(95), 105, 108, (109), 111. H16, 27.
4. **arcticum** (R.Br.) Bruch & Schimp. (*B. lawersianum* H.Philib.)
[70]
88–90, 92, 104.

5. **uliginosum** (Brid.) Bruch & Schimp.
(22, 23, 37, 39, 48, 57–64, 68, 70, 72, 77, 82, 85, 86, 90, 92, 108, 109). H(7, 18), 21, 25, 26, (33), 34, (35, 39).
6. **pallens** Sw. ex anon. (*B. subelegans* Kindb.) [70]
1–20, (21), 22–25, (26), 27–30, (32), 33–73, 75–112. H1–30, 32–37, (38), 39, 40.
7. **turbinatum** (Hedw.) Turner
(13, 23, 35, 39, 48, 59, 67, 104). H(27).
8. **schleicheri** DC. var. **latifolium** (Schwägr.) Schimp.
86, (88).
9. **weigelii** Spreng.
40, 49, (64), 65, 68–70, 72, (77), 78, 79, 87–94, (95), 96–98, (103), 104–108, (109, 111). H(6).
10. **cyclophyllum** (Schwägr.) Bruch & Schimp.
(69, 70), 83, 86, 98, 99, 101, (105).
11. **algovicum** Sendtn. ex Müll.Hal. var. **rutheanum** (Warnst.) Crundw.
1–4, (5), 6–9, (10), 11–16, (17), 18, 19, (20), 22, 23, 25–29, (30), 31–33, (34), 36, 37, (39), 40, 41, (42), 43–50, (51), 52–60, (61), 62–64, (65), 66–71, (72, 73), 74, (75, 77, 78), 80, 82–85, (86, 87), 88–91, 93–95, (96), 97, 100–112. H1–3, (4, 5), 6, (7), 9, 11–13, (14), 16–18, 20, (21–23), 25–29, (30, 33), 34, 35, 37, (38, 39), 40. C.
12. **salinum** I.Hagen ex Limpr.
(5), 70, (75), 91, 102, 105, 106, 108. H1, (17).
13. **knowltonii** Barnes
(4, 9), 19, 20, (22), 24, (25, 26), 28, 47–49, (52), 54, (58), 59, (60, 62, 65, 66), 68, 69, (82), 90, 105, 106. H26.
14. **archangelicum** Bruch & Schimp. (*B. imbricatum* auct. non (Schwägr.) Bruch & Schimp., *B. inclinatum* (Brid.) Turton, hom. illeg. non (Hedw.) Dicks.) [70]
1–6, (8), 9–13, (14), 15, (16–19, 21), 22, (23), 24, (25), 26, 28, 29, (30, 32–34), 35–37, (38), 39–41, (42), 43–57, (58), 59, 60, (61), 62–69, 71, (72–75, 78), 81–83, (85), 87–98, (99), 100, 101, 103–112. H1–3, (4, 5), 6, 9, 10, (11), 12, 15–18, (20, 21), 22, (23), 24, (25), 26–33, 35, 36, (37, 38), 39, 40. C.
15. **intermedium** (Brid.) Blandow
(1, 2), 3, (4), 6, (8), 9, (10), 11, 12, (14), 15, (16, 17), 18, (19),

- 21, 22, (23, 25, 26, 28), 29, 31, (32), 33, 34, 36, (37–39), 40, (44, 45), 46, (48, 49), 51, (52), 53–56, (57), 58–60, (61, 62), 63–65, 67–70, (73, 74, 81), 82, (83, 85, 86), 90, (91, 92), 97, (104), 109. H(4), 21, 26, (34, 38–40).
16. **donianum** Grev.
1–13, (14), 15, (16), 17–19, 25–29, (34), 35–37, 40, 41, 44–50, 52, 53, (59), 60, 71, 74. H1, 3–5, 7, 9, 12, (19), 20–23, 27, 28. C.
17. **capillare** Hedw. (*B. capillare* var. *rufifolium* (Dixon) Podp.) [70]
1–112. H1–40. C.
18. **elegans** Nees (*B. stirtonii* Schimp.) [70]
(1, 14, 36), 40, 50, 57, 59, 60, 64–66, (68), 69, (70, 81), 82, (87), 88–90, 92, (94), 95, 97, (98), 108. H28.
19. **moravicum** Podp. (*B. flaccidum* auct. non Brid., *B. laevifilum* Syed, *B. subelegans* auct. non Kindb.) [70]
2–9, 11–44, 47, 48, 50, 51, 53–70, 72, 74, 78–85, 88, 89, 92–96. H1.
20. **torquescens** Bruch & Schimp.
1–3, 5, 6, 8–12, (13, 14, 16), 19, (23), 26, (28), 29, 32, (33, 34, 36), 41, 45, 48–50, 52, (54), 60, 63, (64, 66, 71, 75, 86, 87), 106. H(2, 7, 16, 21, 25), 34, 40.
21. **canariense** Brid.
3, 6, 9, 10, (13, 14), 15, (16, 34, 36), 40, 41, 45, 47, 49, 50, 52, 57, 60. (C).
22. **creberrimum** Taylor
9, (11, 13, 14, 16), 17, 23, (29, 34, 42), 43, 49, 50, (57–61, 66, 69, 70, 77, 88), 89, 95, (96), 106. H21.
23. **pallescens** Schleich. ex Schwägr.
1–3, 6, 8, 9, 13, (14), 15, (16), 18, 19, 22, 25–27, 29, (34), 35, 37–52, 55, 57–60, (61, 62), 63–65, (66, 67), 68, (69), 70, (71), 72, 73, 80–83, (85, 87), 88, (90), 92, 93, 96, 97, (98), 102, 104, (105), 107, 108, 111. H1, 3, (7), 9, 12, 13, 15–18, 22, 25–30, 32, (33), 34–36, (38), 40. C.
24. **pseudotriquetrum** (Hedw.) P.Gaertn. et al. [71]
1–6, (7), 8–15, 17–23, 25–37, (38), 39–112. H1–13, (14), 15–40. C.
a var. **pseudotriquetrum** (*B. neodamense* Itzigs.) [71]
3, 28, 49, 59, 68, 70, 88, 102, 109. H1, 2, 9, 12, 15–17, 19,

- 25–30, 33–35, 38, 40.
b var. **bimum** (Schreb.) Lilj. (*B. bimum* (Schreb.) Turner)
[71]
(1), 2, (3), 5, (6), 9, (10, 11), 12, (16), 17, (18), 19, (20), 21–23,
26, (27), 28–32, (33, 34), 35, (36), 37, (38), 41, 44–46, 50, 51,
(52, 53), 54, (55), 58–61, 63, (64), 66, (68), 69, 70, 77, (81, 83,
86, 88), 90, 92, 96, 98, 99, 101, 106. H1, 9, 11, (12), 15–18,
(20, 23), 25–28, (32), 33, 35, (38, 40). C.
25. **caespitium** Hedw.
1–6, (7), 8–70, 72–78, (79), 80–85, (86–88), 89–92, (95, 97),
98, (99), 101–104, 106–109, 111. H1, 4, (7), 8, 11, 25–27, 31,
(36, 39). C.
26. **kunzei** Hornsch. (*B. caespitium* var. *imbricatum* Bruch &
Schimp., *B. funckii* auct. non Schwäger.) [72]
1, 3, 6, 9, (14), 35, (36), 40, (43), 47, 49, 52, (57, 63, 66).
27. **argenteum** Hedw.
1–112. H1–14, (15), 16–40. C.
28. **dixonii** Cardot ex W.E.Nicholson
87–90, 92, 96–98, 104, 106, 108, 110.
29. **gemmiferum** R.Wilczek & Demaret
1–4, 6, (7), 8–10, 12–38, 40, 41, 44–51, 53–66, 68, 71, 81, 82,
84–86, 88, 97, 101, 106, 108–111. H4, 8, 12, 14, 18, 19, 21, 22,
24, 25, 27, 29, 30, 36, 38, 39. C.
30. **gemmilucens** R.Wilczek & Demaret
6, 9, (13), 20, 22, 25, 27–29, 34, 38, 53, 54, 56, (62), 63.
31. **dichotomum** Hedw. (*B. barnesii* J.B.Wood ex Schimp.,
B. bicolor Dicks., *B. dunense* A.J.E.Sm. & H.Whitehouse)
1–75, (76), 77, 79–112. H1–40. C.
32. **dyffrynense** Holyoak
1, 15, 48, 52, 59, 69. H16, 27, 40.
33. **radiculosum** Brid.
1–6, (7), 8–43, 45–51, (52), 53–64, (65), 67, 68, (69), 71–74,
(75), 77, 78, 80–90, 93, 96–98, (101), 102–104, (105), 106–
108, (110), 111. H1, 2, (3), 5, 7, (8), 9, (10), 11–13, (14), 15,
16, 18, (20), 21–23, 25, 27, 29–33, 35, (36), 37–40. C.
34. **ruderales** Crundw. & Nyholm
1–45, 47–60, 62–69, 72, 75, 76, 78, 79, 81–87, 89, 92, 93,
95–97, 99–103, 105, 107–110, 112. H1, (2), 3, 6–27, 29–35,

- 37–40. C.
35. **violaceum** Crundw. & Nyholm
1–13, 15–51, 53–66, 68, 71–74, 76, 77, 80–85, 88, 89, 91–96,
98, (99), 101–103, 106–109, 111. H1, 4, 5, 7–9, 13, 14, 18, 19,
21–23, 26, 29, 31, 34, 35, (38). C.
36. **klinggraeffii** Schimp.
1–20, 22–70, 73, 74, 76, 77, 80–83, (84), 85, 87, 88, 90–96, 98,
(99), 101, 103, 106, 108–112. H1, 3, 5–30, 32, 34, 35, 39. C.
37. **sauteri** Bruch & Schimp.
1–5, 9, 11, 12, 14–16, 20, 22, 27, 28, 34–37, 42–52, 57, 60,
62, 63, 66, 71, 73–77, 81, (83), 86, 87, 89–91, 93, 96, 98, (99),
100–104, 106, 107, 109, 112. H1, 3, 4, 6, 8, 9, 13, 16, 20, 27,
30, 31, 34, 35. C.
38. **valparaisense** Thér. (*B. pyrifерum* Crundw. & H.Whitehouse)
[74]
1.
39. **tenuisetum** Limpr.
1, 2, (9), 11, 12, (17), 20, 21, (25), 29, 43, 47–50, 52, 57, 59,
(61), 63, 64, 78, 82, 83, (86, 90), 97–99, 101, 104, 108. H29,
35. C.
40. **subapiculatum** Hampe (*B. microerythrocarpum* Müll.Hal. &
Kindb. ex Macoun)
1–17, 20–50, 52–54, 56–69, 71–75, (76), 77–94, 96–98, (99),
101–105, 108–112. H1, 3–6, 12, 13, 15, 16, 20, 22, 23, 27, 29,
30, 34, 36–38, 40. C.
41. **bornholmense** Wink. & R.Ruthe
1–3, 5, 7–9, 11–15, 17, 20, 22–28, 30, 36, 37, 39, (40), 41,
43–45, 47, 48, 50, (55), 61, 62, 64, 67, 69, 72, 79, 83, 86, (88),
90, 95, 98, 102, 103, (105), 106, 110, 112. H(1), 10, 21, 22, 35,
40.
42. **rubens** Mitt.
1–112. H1–29, 31, 33–39, (40). C.
43. **riparium** I.Hagen
41, 43, 44, 46–49, 64, 65, (69), 70, 73, 80, 86–90, 92, 95–99,
101–106, 108–110. H(1), 6, (16), 27, (38).
44. **mildeanum** Jur.
(36), 42, 44, (49), 64, (65, 66, 69), 70, (87, 88), 89, 91, 92, 97,
98, 107, 108.

45. **muehlenbeckii** Bruch & Schimp.
49, 88, 92, 97, (103), 105–107, (108).
46. **gemmaiparum** De Not.
(3), 4, 35, 42. H26.
47. **alpinum** De Not.
1–5, 9, (10), 11, 12, (14, 18, 34), 35, 36, 40–50, (51), 52, (55),
57, 58, (59), 60, 63–80, (81), 82, 83, (84), 85–90, 92, 93,
95–112. H1–9, (13, 14), 16, 20, (21, 24, 25), 26–28, (30, 31),
33–40. C.
112. **Rhodobryum** De Not.
1. **roseum** De Not.
2–14, (15), 16, 17, 19, 20, (21), 22–24, (25), 26, (27), 28, (29),
30, 32, 33, (34), 35–37, (38), 39–52, 54, 55, 57, (58, 59), 60,
62, (63, 64), 65–70, (71–77), 78–85, (86), 87–90, (91), 92,
95–98, (99), 100–106, 108, 110, 112. H2, (4, 5), 6, 8, (9), 15,
16, (18, 20), 22, (26), 29, 31, 33, 35, (36, 38), 39, (40).
113. **Mielichhoferia** De Not.
1. **elongata** De Not.
62, 92, 108.
2. **mielichhoferiana** De Not. (*M. mielichhoferi* De Not.)
92, 98.
114. **Pohlia** Hedw.
1. **elongata** Hedw.
a var. **elongata** (incl. var. *acuminata* (Hoppe & Hornsch.)
Huebener)
2, 4, (11), 35, 40–50, 57, 59, 60, 63–70, 72, 73, 75, 86–90, 92,
94, 96–98, (99), 100, 101, 103–108, 110. H1, 3, 6–8, 16, (20),
27, 29, 34, 35, (38), 40.
b var. **greenii** (Brid.) A.J.Shaw (*P. elongata* var. *polymorpha*
(Hornsch.) Nyholm) [75]
49, 69, 70, 73, (86), 87–90, 92, 96–100, 103–106, (107), 108.
H(1), 7, 16.
2. **crudoides** (Sull. & Lesq.) Broth.
96.
3. **cruda** (Hedw.) Lindb.
3, (4), 35, 36, 42–44, 46–50, 57, 59, 60, (62), 63–70, 72, (73),
75, (76), 77–99, (100), 101, 103–110, 112. H1, 6–8, 10, 16,
(20, 21), 27–29, 33–35, (38), 39, 40.

4. **nutans** (Hedw.) Lindb.
1–112. H1–13, (14), 15–18, (19), 20–25, 27–30, 32–40. C.
5. **obtusifolia** (Vill. ex Brid.) L.F.Koch
(88), 94, 96, 97, 105.
6. **drummondii** (Müll.Hal.) A.L.Andrews
1, 2, (7, 11), 12, 13, (22), 40–42, 44–49, 57–60, (62), 63–69,
72, 73, 75, 78–80, (81), 82–85, (86), 87–90, 92, 95–99, 103–
106, 108, 110, 112. H1, 5, 12, 16, 27–29, 34–36.
7. **scotica** Crundw.
88, 96–99, 106, 108.
8. **filum** (Schimp.) Martensson
2, (17), 43, 44, (60), 67, 73, (74), 83, (85, 86), 87–90, 92–99,
101, 105–108, 112. H6, 27, 35, (36), 40.
9. **andalusica** (Höhn.) Broth. (*P. rothii* (Correns ex Limpr.)
Broth.)
1–3, 105. H3, 6.
10. **bulbifera** (Warnst.) Warnst.
2, 3, 5, 27, 36, 38, 40, 42–50, 57–60, 63, 64, 67, 69, 70, 73–75,
77–79, 81–84, 86–90, 92–108, 110, 111. H1, 3, 4, 6, 11, 16, 27,
28, 30, 33–35, (36), 38, 39.
11. **annotina** (Hedw.) Lindb.
1–25, 27–30, 32, 34–52, 54, 55, 57–75, (76), 77–110, 112.
H1–10, 12–14, 16, (19), 20, (21), 25–31, (33), 34–40. C.
12. **proliqera** (Kindb.) Lindb. ex Broth.
(37), 50, (69), 77, 80, 81, 86, 88–90, 92, 93, 95–97, 106. H40.
13. **campotrachela** (Renauld & Cardot) Broth.
1–6, 10, (11), 23, 39, 40, (41), 42–50, 52, 57–60, 62–65, 68,
69, 71, 73, 74, (75), 76–78, 81–84, 86–90, 93–109, 112. H1, 3,
4, 6, 9, 10, 12, 16, 20, 26, 27, 30, 32–36, 39, 40.
14. **flexuosa** Hook. (*P. flexuosa* var. *pseudomuyldermansii* (Arts
et al.) A.J.E.Sm., *P. muyldermansii* R.Wilczek & Demaret var.
pseudomuyldermansii Arts et al.) [76]
2, 3, 41, 42, 44, 46–49, 57, 59, 60, 63–65, 69, 70, 72–75, 77, 78,
80, 83, (86), 87, 88, 95–106, 108, 110. H1–3, 6, 7, 9, 16, 27, 29,
34, 36, 39, 40.
15. **ludwigii** (Spreng. ex Schwägr.) Broth.
(48), 49, (65), 68, 69, (70, 86), 87–90, 92, 94, 96–98, (99),
104–107, (108).

16. **lutescens** (Limpr.) H.Lindb.
1–20, 22–27, 29, 30, 32, 34–52, 55–60, 62–64, 66, 67, (69),
70–72, 74, 78, 79, 81–83, 86, 92, 93, 95, 96, 98–101, 104, 107,
109. H2, 6, 8–10, 12, 27, 33, 36, 37. C.
17. **lescuriana** (Sull.) Ochi
1–3, 6, 8, 10–13, 15–17, 20, 21, 24, 29, 33–35, 39–41, 44,
47–50, 57–60, 63, 64, 71, 76–78, 85, 86, 88, 90–92, 96, 98, 99,
107–109. H3, 4, 8.
18. **melanodon** (Brid.) A.J.Shaw (*P. carnea* (Schimp.) Lindb.)
1–85, 88–95, 97–112. H1, 2, 4–16, (17), 18–40. C.
19. **wahlenbergii** (F.Weber & D.Mohr) A.L.Andrews
a var. **wahlenbergii**
1–20, (21), 22–112. H1–40.
b var. **glacialis** (Brid.) E.F.Warb.
49, (57), 68, 69, 78, 88–90, 92, 94, 96–98, 103–106, (107).
H28.
c var. **calcarea** (Warnst.) E.F.Warb.
(1), 2, (10, 17), 25, (64). H16, 34, 35, (39).
115. **Epipterygium** Lindb.
 1. **tozeri** (Grev.) Lindb.
1–6, 8–19, 34, 35, (36), 40–42, (43), 44–50, 52, 71, 93, 98,
101, 102. H1, (2), 3, 4, 6, 9, 12, 20, 29, 34, (38), 39. C.
116. **Mnium** Hedw.
 1. **hornum** Hedw.
1–112. H1–18, 20–40. C.
 2. **spinosum** (Voit) Schwägr.
88–90, 92, 96–98.
 3. **thomsonii** Schimp.
39, 49, 57, 60, 64, 65, 69, 70, 72, 87–90, 94, 96–98, 104–106,
108. H(9, 16), 28, 29, 33, 35.
 4. **lycopodioides** Schwägr. (*M. ambiguum* H.Müll.) [77]
88, 90, 92.
 5. **marginatum** (Dicks.) P.Beauv.
a var. **marginatum**
(2, 3), 8, (13, 14), 22, (26), 33–37, (39, 40), 41, 42, 44, (46),
48–50, (52–54), 56, 57, 59, 60, (62), 63–70, 72, (73, 76), 77,
(78), 79–83, (84, 85), 86–92, 94, 96–98, (99), 101–109, 111.
H(1, 6), 7, (16, 20), 28, 29, (33), 34, 35, 39, (40).

- b var. **dioicum** (H.Müll.) Crundw.
(13), 50, 57, (61), 63, (65, 88).
6. **stellare** Hedw.
3–17, 19, 22–24, 27, 32–37, (38), 39–52, 54, (55), 56–70,
(71), 72, 73, 75–91, (92), 94–98, (99), 100–108, 110–112. H2,
6, 8–11, 16, (20, 21, 23), 28–30, (33), 34, (35, 36), 39, 40.
117. **Cinclidium** Sw.
1. **stygium** Sw.
(26), 27, 28, (48, 60), 64–66, 69, 70, 79, 80, (87), 88, 89,
(90), 92, 95, (97), 98, 102, 104, 105, 108, 112. H9, 23, 28, 29,
39.
118. **Rhizomnium** (Broth.) T.J.Kop.
1. **punctatum** (Hedw.) T.J.Kop.
1–51, (52), 53–112. H1–18, 20, 21, 23–40. C.
2. **magnifolium** (Horik.) T.J.Kop.
87, 88, 90, 92–94, 96–98, 105–107.
3. **pseudopunctatum** (Bruch & Schimp.) T.J.Kop.
3, (6), 11, 12, (14, 18), 22, 25–28, 35, 37, (38), 39, 40, 42–52,
57–60, 62–70, 72, (73–78), 79–81, 83, (84), 85, (86), 87–90,
(91), 92–98, 101–106, 108, 110–112. H(2), 6, (12), 13, 15, 16,
19, (21), 22, 27–30, (31, 32), 33, 35, (36, 38), 39, (40).
119. **Plagiomnium** T.J.Kop.
1. **cuspidatum** (Hedw.) T.J.Kop.
1–6, (7), 8, 9, (12), 13–17, 19, 20, 22, (23), 24, (25), 26–30,
(32), 33–45, (46), 47–52, (53), 55–70, (73), 75, (76), 79–85,
(86), 88–91, (92), 93, 95–99, 101–103, 105, 107–110, 112.
H(1), 2, (7), 12, (15), 16, (17, 20, 21), 24–27, (28), 29, 30,
(32), 34, 35, (36, 38–40).
2. **affine** (Blandow ex Funck) T.J.Kop.
1–37, (38), 39–65, 68–70, 73–75, 80–83, (84), 85, (86), 89,
90, 92–103, 105, 106, 110. H3, 12, (14), 15, 17, 20, 21, 25, 33,
35, (36).
3. **medium** (Bruch & Schimp.) T.J.Kop.
88, 90, 92, 97, 98, 106.
4. **elatum** (Bruch & Schimp.) T.J.Kop.
(5, 6), 7–13, (14), 15, (17, 18), 19, 22–29, (30), 32, 33, 35, 36,
(37), 38–45, 47–70, (71), 72–75, (76), 77–112. H2, (5), 7–11,
13–19, (21), 22–30, 32–36, 39, 40.

5. **ellipticum** (Brid.) T.J.Kop.
1, 3, 6, (14, 17, 21), 22, 23, (24), 25–29, (32), 34, 35, 38–42, (43), 44–46, 48–50, 52–60, 62, 64–70, (71), 72–77, 79–83, 85, 86, (87), 88–99, 101–106, 108–112. H6–10, (15), 16, 17, 19, 22, (23), 24, 25, 27–33, 35, 37, (38–40).
6. **undulatum** (Hedw.) T.J.Kop.
1–112. H1–40. C.
7. **rostratum** (Schrad.) T.J.Kop.
2–6, (7), 8–20, (21), 22–51, (52), 53–110, (111), 112. H1–11, 13, 14, 16, 17, (18, 19), 20–30, (31), 32–37, (38), 39, 40. (C).
120. **Pseudobryum** (Kindb.) T.J.Kop.
 1. **cinclidioides** (Huebener) T.J.Kop.
46, 48, 49, 68–70, 72, (73), 75, (76), 78–83, 88, (89), 90, (91), 92, 93, (94, 95), 96–99, 105, (106), 107–109, 112.
121. **Aulacomnium** Schwägr.
 1. **palustre** (Hedw.) Schwägr.
1–22, (23), 24–32, (33), 34–112. H1–18, 20–40. C.
 2. **turgidum** (Wahlenb.) Schwägr.
(65), 88, 96–98, 103–108.
 3. **androgynum** (Hedw.) Schwägr.
(2, 3), 4–45, (46), 47–51, 53–70, 72, (73), 75–77, 80, 81, 83–97, 99, 100, 105–109. H(18), 20, 30, 31, 33, (37–40).
122. **Orthodontium** Schwägr.
 1. **lineare** Schwägr.
1–93, 95–102, 106. H5–9, 18, 20, 21, 27, 29, 30, 32, 33, (36), 37–40. C.
 2. **gracile** (Wilson) Schwägr. ex Bruch & Schimp.
(3), 14, (39, 40, 50, 51, 55), 58, 64, (68), 70, (75, 77), 83, (86). H33.
123. **Leptotheca** Schwägr.
 1. **gaudichaudii** Schwägr.
H1.
124. **Calomnion** Hook.f. & Wilson
 1. **complanatum** (Hook.f. & Wilson) Lindb.
H1.
125. **Achrophyllum** Vitt & Crosby
 1. **dentatum** (Hook.f. & Wilson) Vitt & Crosby
1.

126. **Calypstrochaeta** Desv.
1. **apiculata** (Hook.f. & Wilson) Vitt (*Eriopus apiculatus* (Hook.f. & Wilson) Mitt.)
1, 14. H5.
127. **Daltonia** Hook. & Taylor
1. **splachnoides** (Sm.) Hook. & Taylor
97, 98, 104, 105. H1-4, 8-10, 14, (21), 27, 29, 30, 33.
128. **Hookeria** Sm.
1. **lucens** (Hedw.) Sm.
1-6, 8-17, (18), 22, 24-29, 34-52, (55), 57-60, 62-112.
H1-16, 20-22, 24-40. C.
129. **Cyclodictyon** Mitt.
1. **laetevirens** (Hook. & Taylor) Mitt.
1, 102. H1-3, (4, 6), 27, 29.
130. **Fontinalis** Hedw.
1. **antipyretica** Hedw.
a var. **antipyretica** (incl. var. *gigantea* (Sull.) Sull.) [78]
1-112. H1-30, 32-40. C.
b var. **gracilis** (Lindb.) Schimp.
1-3, 5, 19, 42-44, 46, (48), 49, (57, 59), 60, 63-65, 67-72, (74), 77-79, (80), 83, (88, 89), 90, 91, 93, 96, 98, 100, 104, (105), 106, 107, (108, 110), 112. H7, 9, 16, 39, 40.
c var. **cymbifolia** W.E.Nicholson
(5), 6, (7, 14), 24, (31), 40, 53, 57. H2, 9, 18, 23, 24.
2. **squamosa** Hedw.
a var. **squamosa** (incl. var. *dixonii* (Cardot) A.J.E.Sm.) [79]
1-5, (36, 37), 39-50, 57, 58, (59), 60, 62-76, 80, 86-88, (89), 90-98, (99), 100-102, 104-110. H1-8, 12, 13, 15, 16, 20, 21, 27, 30, (33), 34, 35, (36), 37, 38, 40.
b var. **curnowii** Cardot
1, 2, (3), 4.
131. **Climacium** F.Weber & D.Mohr
1. **dendroides** (Hedw.) F.Weber & D.Mohr
1-6, (7), 8, 9, 11-20, (21), 22-31, (32-34), 35-55, 57-75, (76), 77-112. H1-4, (5), 6-20, (21), 22-30, 32-40.
132. **Palustriella** Ochyra
1. **commutata** (Hedw.) Ochyra (*Cratoneuron commutatum*

- (Hedw.) G.Roth, *C. commutatum* var. *virescens* (Schimp.) P.W.Richards & E.C.Wallace) [80]
 1–7, 9, (10), 11–15, (16), 17, 19, (20), 22, 23, 25–29, (30), 32–37, (38), 39–45, (46), 47–112. H(1), 2–4, (5), 6–11, 13, (14), 16–18, (19), 20–22, (23), 24–31, (32), 33–40. (C).
2. **falcata** (Brid.) Hedenäs (*Cratoneuron commutatum* var. *falcatum* (Brid.) Mönk., *C. commutatum* var. *sulcatum* (Lindb.) Mönk., *P. commutata* var. *falcata* (Brid.) Ochyra) [80]
 1–6, (7), 9, 11, (12, 14, 18), 22, 23, (25), 26–28, 32, 33, (34), 35–37, (38, 39), 40–45, (46), 47–50, (51), 52–55, 57–60, (61), 62–70, (71), 72, (73), 74, 75, (76), 77, 78, (79), 80–85, (86), 87–112. H(1), 2, 3, 8, 9, 11, (12), 13, 14, 16–18, (19), 20, 22–31, 33–36, (37–39), 40.
3. **decipiens** (De Not.) Ochyra (*Cratoneuron decipiens* (De Not.) Loeske)
 (61, 62), 88–90, (91), 92, 96–98, 106.
133. **Cratoneuron** (Sull.) Spruce
1. **filicinum** (Hedw.) Spruce
 1–112. H1–40. C.
2. **curvicaule** (Jur.) G.Roth (*Callialaria curvicaulis* (Jur.) Ochyra, *C. filicinum* var. *curvicaule* (Jur.) Mönk.) (88).
134. **Campylium** (Sull.) Mitt.
1. **stellatum** (Hedw.) Lange & C.E.O.Jensen
 1–9, 11–15, (16), 17, (18), 19, 20, 22–28, (29–31), 32, 34–37, (38), 39–112. H1–13, (14), 15–40. C.
2. **protensum** (Brid.) Kindb. (*C. stellatum* var. *protensum* (Brid.) Bryhn)
 1–3, (4), 5, 6, 8–20, (21), 22–26, 28–37, (38), 40–42, 44–57, 59–70, 72, 73, (75), 76, 77, (78), 80–84, (86), 87–91, 94–98, 100–106, 108–111. H1, 2, 4, 8, 9, 11, 16, 17, (18), 19, 22, 23, 25–30, (33), 34, 35, (36, 37), 39, 40.
135. **Campyliadelphus** (Kindb.) R.S.Chopra
1. **chrysophyllus** (Brid.) R.S.Chopra (*Campylium chrysophyllum* (Brid.) Lange)
 1–6, (7), 8–20, (21), 22–24, 26, 28–30, 32–71, 75, (76), 80–83, 85, (86), 88–90, 92, 94, 96–98, 101–112. H1, 2, 5, 7–11,

- (12, 14), 15–19, (20, 21), 22–27, (28), 29, (30, 31, 33), 34, 35, (36–38), 39, 40. (C).
2. **elodes** (Lindb.) Kanda (*Campyllum elodes* (Lindb.) Kindb.)
1, (4), 7, 9, 11, 12, 15, (17), 18, 19, 22, 24, 26–30, 34, (38), 44,
48, 49, 51, 52, 54, (55), 59, 60, (61, 62), 64, (65), 67–70, (73),
79–82, (85, 87, 89, 90), 97, 98, 104, (105), 106–110, 112. H2,
7–10, 12, 15–17, (18), 19, (20, 21), 22, 23, 25, 26, 28, (30),
33–35, (36, 37, 39, 40).
136. **Amblystegium** Schimp.
1. **serpens** (Hedw.) Schimp.
a var. **serpens**
1–112. H1–40. C.
b var. **salinum** Carrington
1, 2, (3, 5), 6, 9, 14, (18), 41, (44), 45, (48), 49, 52, 59, (60), 62,
68, 69, (73, 75, 82, 85, 90, 91), 101, 102, 105, 107–110, 112.
H1–3, 6, 9, (12), 16, 21, 27, 28, 34, 35, 38, 40. C.
2. **radicale** (P.Beauv.) Schimp. (*A. saxatile* Schimp.)
2, 41, 44, 45, 48, 107, 109.
3. **confervoides** (Brid.) Schimp. (*Platydictya confervoides*
(Brid.) H.A.Crum)
(2), 3, 6, 7, 16, 22, 23, 33–35, (36), 39–42, 44, 50, 57, 60, (62),
64, (65), 66, (69, 70, 90), 94. H8, 9, 15, (21), 33.
137. **Hygroamblystegium** Loeske, nom. cons.
1. **fluviatile** (Hedw.) Loeske (*Amblystegium fluviatile* (Hedw.)
Schimp.)
1–5, 17, 22, 24, (33), 34–37, (38), 39–51, (52), 57–60, 62–69,
(70), 72–75, (76), 77, 78, (79), 80–84, (85), 86, (87, 88), 89–
91, 93–95, (99), 100, 103, 107, 109. H4–6, 8–10, 12, 13, (19),
20, 25, (35, 38), 39. C.
2. **tenax** (Hedw.) Jenn. (*Amblystegium tenax* (Hedw.)
C.E.O.Jensen)
1–24, 26, 31–55, 57–60, (61), 62–71, (72), 73–75, 77–85, 87–
90, 92, 93, (94), 98, 99, 101, 102, 106, 108, 109, (111). H(1, 2),
5, 6, (7), 8, 11, (15), 19, (20, 25), 27, 28, 32, (33), 38, (39), 40.
C.
3. **varium** (Hedw.) Mönk. (*Amblystegium varium* (Hedw.)
Lindb.) [81]
1, 3, 5, 6, (7), 8, 9, (10), 11–13, (14), 15–17, 19, 20, (21), 22–

- 32, (33), 34, (35), 36–38, (39), 40–42, 45, 48, (49), 50, 51, (52), 53–55, 57–60, (61), 62, (63), 64, (65), 66, 67, (69), 70, 71, 73, 74, (80), 81, 83, 88–90, (91, 97), 98, 99, 101, 103, 108, (110). H6, (8), 9, 15, 16, (17), 22, 24–28, 30, (33–36), 37, (38), 39, (40). (C).
4. **humile** (P.Beauv.) Vanderp. et al. (*Amblystegium humile* (P.Beauv.) Crundw.) [81]
(3), 4, 6–8, 11, 12, (13, 14), 15, (16), 17–29, 31, 32, 35, (36), 37, 38, (48, 50), 51, (54), 55, 57, 58, 61, (62), 63, (64, 85, 90), 92, 109. H25, (39, 40).
138. **Leptodictyum** (Schimp.) Warnst.
1. **riparium** (Hedw.) Warnst. (*Amblystegium riparium* (Hedw.) Schimp.)
1–75, (76), 77, 80–93, 95, 98–100, 102, 103, (104, 105), 106–108, (110), 111, 112. H(1), 2–4, (5, 6), 8, 9, 11–31, (32), 33, 35, (36), 37–39, (40). C.
139. **Conardia** H.Rob.
1. **compacta** (Drumm. ex Müll.Hal.) H.Rob. (*Amblystegium compactum* (Drumm. ex Müll.Hal.) Austin)
2, 3, 10, (34), 36, (37, 40), 56, 57, 63, 64, 66–68, 72, 81, 83, (85), 90, 91, 95, 98, 100, 101, 108. H(28).
140. **Drepanocladus** (Müll.Hal.) G.Roth
1. **polygamus** (Schimp.) Hedenäs (*Campylium polygamum* (Schimp.) Lange & C.E.O.Jensen)
1, 3, 4, (5), 9, 11, (13, 14), 15–17, (18), 22, (23), 24–29, (31), 35, (37), 38, (39), 40, 41, (43), 44–50, 52, 54, 55, 58–60, (61, 62, 64), 67–69, (70, 71, 74, 75), 76, (77), 80–84, (85, 86), 88–90, 92, 93, 95, 98, 100–105, 107–112. H1–3, 9, 12, 13, 16, 17, (19, 20), 21–25, 27, (28), 33–35, 37, (38–40).
2. **aduncus** (Hedw.) Warnst.
1–46, 48, 49, 51–93, (94), 95, 96, 98, (99), 100–105, 107, 109–112. H1–3, (5), 6–9, (12, 14, 16), 19–21, 23–25, 27, 28, (29), 31–35, (36), 37, (38), 39, 40. C.
3. **sendtneri** (Schimp. ex H.Müll.) Warnst.
1, 2, 4, 11, (15), 18, (23, 24, 26–28, 30, 32), 34, (35, 37–39), 41, 43, 45, 48, 51–54, (57), 58, 59, (60–64), 65, 68, 70, 82, (85, 87), 90, (96, 100), 103, (104), 105, (109), 110, 111. H1, (9), 15–17, 23–26, 28, (34–37, 39), 40.

141. **Tomentypnum** Loeske

1. **nitens** (Hedw.) Loeske (*Homalothecium nitens* (Hedw.) H.Rob.)
26, (27), 28, (37), 39, (40), 43, 47, 49, 50, 52, (58, 62), 64, (65),
66–70, 72, 75, 77–81, 83, (85), 87–96, 106. H8, 16, 19, 23,
27, (33), 35.

142. **Sanionia** Loeske

1. **uncinata** (Hedw.) Loeske (*Drepanocladus uncinatus* (Hedw.) Warnst.)
1–4, 6, 9, 11, 13, (14), 15, (16, 17), 18, (19), 22, (25, 26), 27–
29, 33, (34), 35–37, (38), 39–51, 56–60, 62–112. H1, 2, 6, 7,
(8), 9, 10, 12, 14, (15), 16, 17, 20, (21), 22, 24, 26, 28–30, (31),
32–35, (36–38), 39, 40.
2. **orthothecioides** (Lindb.) Loeske
91, 105, 108–112.

143. **Hygrohypnum** Lindb.

1. **ochraceum** (Turner ex Wilson) Loeske
1–5, 35, 36, 39, 41–51, 57–60, 62–109, 112. H1–3, 5–10, 12,
15, 16, (19), 20, 21, (31), 33–35, (36), 38, (39), 40.
2. **polare** (Lindb.) Loeske
105.
3. **luridum** (Hedw.) Jenn. (*H. luridum* var. *subsphaericarpon*
(Schleich. ex Brid) C.E.O. Jensen, *Pictus scoticus*
C.C.Towns.) [82]
1–6, (7), 8, 9, 11–15, 17–37, (38), 39–73, (74), 75–112. H1,
2, (3), 4–6, (7, 8), 9–11, (13, 14), 15–17, (19), 20, (21, 22),
23–25, (26), 27–30, (31, 32), 33, (34), 35, (36), 37, (38, 39),
40.
4. **styriacum** (Limpr.) Broth.
96.
5. **eugyrium** (Schimp.) Broth.
(4), 36, 42, 44, 45, 47–50, (62), 64–66, 68–70, 72–74, 78, 79,
(81), 83, 86–90, (91), 92, 95–106, 108, 110, 112. H1–3, 6–8,
16, 20, 27, (31), 33, 35, (36, 38), 39.
6. **smithii** (Sw.) Broth.
88, (89), 90, 92, 96–98, 105.
7. **molle** (Hedw.) Loeske
92, 94, 96, 97.

8. **duriusculum** (De Not.) D.W.Jamieson (*H. dilatatum* (Wilson) Loeske)
48, 49, (65), 68, (69), 70, (88), 90, (91), 94, 96, 97, (98), 105, 108, (112). H(1, 2), 27.
144. **Pseudocalliergon** (Limpr.) Loeske
1. **lycopodioides** (Brid.) Hedenäs (*Drepanocladus lycopodioides* (Brid.) Warnst.)
1, (3), 4, (11, 25, 27), 28, (38), 41, (45), 52, 54, 59, (60–63, 65–67), 68, (85, 90), 92, 95, (96), 106, 107, (109), 110, (111). H9, 15, (17, 20, 21), 23–27, 35, (37, 39), 40.
 2. **turgescens** (T.Jensen) Loeske (*Scorpidium turgescens* (T.Jensen) Loeske)
60, 88.
 3. **trifarium** (F.Weber & D.Mohr) Loeske (*Calliergon trifarium* (F.Weber & D.Mohr) Kindb.)
(86), 87–89, (90), 92, 94, 96–99, 103–108, 112. H9, 16.
145. **Warnstorfia** Loeske
1. **fluitans** (Hedw.) Loeske (*Drepanocladus fluitans* (Hedw.) Warnst., *D. fluitans* var. *falcatus* (Sanio ex C.E.O.Jensen) Roth)
1–9, 11–22, 24, 27, 28, 30, (34), 35–55, 57–76, 78, 80–90, 92–112. H1, (3), 6, 7, 12, 13, (15), 16, 18, 19, (21), 23, 25, 27, (30), 32–35, (39), 40.
146. **Sarmentypnum** Tuom. & T.J.Kop. [83]
1. **exannulatum** (Schimp.) Hedenäs (*Warnstorfia exannulata* (Schimp.) Loeske, *Drepanocladus exannulatus* (Schimp.) Warnst., *D. exannulatus* var. *rotae* (De Not.) Loeske) [83]
1–6, 8, 9, 11–13, 17–19, (20), 22, 23, 27, 30, 34–38, 40–55, 57–84, (85, 86), 87–93, 95–98, (99), 100–112. H1–9, 12, 15, 16, 18–20, (21), 22, (24), 25–30, (31), 32, (33), 34–38, (39).
 2. **sarmentosum** (Wahlenb.) Tuom. & T.J.Kop. (*Warnstorfia sarmentosa* (Wahlenb.) Hedenäs, *Calliergon sarmentosum* (Wahlenb.) Kindb.) [83]
1, 2, 42–51, (52), 60, 64–66, 69–76, (77), 78, 79, (85), 86–92, 94–112. H1–3, 16, (20), 26, 27, 34, 35, (38), 39.
147. **Straminergon** Hedenäs
1. **stramineum** (Dicks. ex Brid.) Hedenäs (*Calliergon stramineum* (Dicks. ex Brid.) Kindb.)

1–6, (7), 8, 9, (10), 11–15, (16), 17, (18–21), 22, 24, 25, 27, 28, (30), 34–52, 54–112. H1, 2, (5), 6, 7, 9, 10, 12, 13, (14), 15–18, 20, (21), 22–24, 27–30, (31), 32–35, (36), 37, 38, (39), 40.

148. **Hamatocaulis** Hedenäs

1. **vernicosus** (Mitt.) Hedenäs (*Drepanocladus vernicosus* (Mitt.) Warnst.)
(3), 4, (11, 15), 27, 38, 40, 42–50, 52, (57, 58, 60, 64), 65, 69, 70, 72, 75, 76, 79, 80, (83), 86, 88, 89, (90, 91), 96, 98, (100), 104. H6, 12, 16, 20, 22, 23, 27, 35, (38).

149. **Scorpidium** (Schimp.) Limpr.

1. **revolvens** (Sw. ex anon.) Rubers (*Drepanocladus revolvens* (Sw. ex anon.) Warnst.)
1–4, 9, 11, 12, 17, 27, 28, 35, 36, 40–50, (54), 57, (58, 59), 60, 62, (63), 64–66, 68–70, 72, (73), 75, 77–81, (83, 85, 87), 88–90, 92, (95), 96–98, 100–112. H(1, 2), 3–7, 9, 10, 12, (14), 15–17, 20, (21), 23, 27–29, 31, 33–37, (38), 39, 40.
2. **cossonii** (Schimp.) Hedenäs (*Drepanocladus cossonii* (Schimp.) Loeske, *D. revolvens* var. *intermedius* (Lindb.) P.W.Richards & E.C.Wallace)
1, (3), 5, 6, 9, 11, 12, 22, 23, (25), 26–28, (32–34), 35, 36, (37, 38), 40–44, 47–52, (53, 54), 57, (58), 59, (60), 61–67, (68), 69, 70, 72, 73, 75, (76), 77–83, 85–90, 92, 93, (94), 98, (99), 100–104, 106–111. H1, (2), 7–11, 14, (15), 16–20, 22–26, (27), 28, 29, (31), 32–35, (37), 39, 40.
3. **scorpioides** (Hedw.) Limpr.
1–5, (6), 7, 9, 11, (12, 13), 17, 25, (26), 27, 28, (29, 30), 35, (37), 40–50, (51), 52, 54, (57), 58, 59, (60, 61), 62–70, (71), 72–77, 79–82, (83), 85, (86), 87–112. H1–3, (4), 9, (10), 11, 13, (14), 15–19, (21), 22–28, (30, 31), 32–35, (36, 37), 38–40.

150. **Calliergon** (Sull.) Kindb.

1. **cordifolium** (Hedw.) Kindb.
1–7, (8), 9–28, 30–32, 34–76, 78–87, (88), 89–104, (105), 106–112. H2–4, 6, 7, (8), 9, 10, 12, 13, (15), 16, 18, 20, (21), 22, 23, (24), 25, 27–30, (31), 32–34, 36, 37, (38), 39, 40.
2. **giganteum** (Schimp.) Kindb.
1, (3, 7, 9), 11, 12, (13, 14), 17, (21), 22, (23), 26–28, (29, 31–34), 35, 36, (37), 38–40, (41), 42–52, 54, (55), 58–60,

(61), 62–76, 78–83, 85–90, (91), 92, 94–104, 106, 108–112.
H1, 6–9, (10), 11, 13–18, (19–21), 22–29, (31), 32–35, (36),
37–40.

151. **Leskea** Hedw.

1. **polycarpa** Hedw.

1–48, (49), 50, 51, (52), 53–72, (73, 74), 75, (76), 77–82, (83),
84–91, 93, 95, 96, 98, 99. H1–7, 9, 11–13, 15, 18, 20, 22, (24),
25–35, (36), 37, 38, (39, 40). (C).

152. **Pseudoleskeella** Kindb.

1. **catenulata** (Brid. ex Schrad.) Kindb.

(49), 64–66, 69, 70, 88–90, 92, 94, 96, 97, (98), 108.

2. **rupestris** (Berggr.) Hedenäs & L.Söderstr. (*P. catenulata* var.
acuminata (Culm.) Amann)

(69), 88–90, 92, 94, 96–98, 104, 105, 108.

3. **nervosa** (Brid.) Nyholm

92.

153. **Pseudoleskea** Schimp.

1. **patens** (Lindb.) Kindb. (*Lescuraea patens* Lindb.)

88, 90, 92, 96–98, 105, 106.

2. **incurvata** (Hedw.) Loeske (*Lescuraea incurvata* (Hedw.)
E.Lawton)

(80), 88–90, (92), 94, 97.

154. **Lescuraea** Schimp.

1. **saxicola** (Schimp.) Molendo

(88).

155. **Ptychodium** Schimp.

1. **plicatum** (Schleich. ex F.Weber & D.Mohr) Schimp.

(*Lescuraea plicata* (Schleich. ex F.Weber & D.Mohr) Broth.)
88–90, 97.

156. **Abietinella** Müll.Hal.

1. **abietina** (Hedw.) M.Fleisch. (*Thuidium abietinum* (Hedw.)
Schimp.)

a var. **abietina**

1, 8, 12, 13, (15, 19, 20), 23, (25), 26–29, (32), 33, 41, (44, 49),
52, 53, 55, 64, (66), 69, (71, 75), 82, (85), 87, 88, (89), 90, 106.
H(16, 21, 27), 28, (34), 35, 40.

b var. **hystricosa** (Mitt.) Sakurai (*Thuidium abietinum* subsp.
hystricosum (Mitt.) Kindb.)

- 6, 8, 9, 11–13, 15–17, 20, 22–24, (26), 30, (64, 65, 88). H27, 28, 34, (35), 40.
157. **Thuidium** Schimp.
1. **tamariscinum** (Hedw.) Schimp.
1–112. H1–40. C.
 2. **delicatulum** (Hedw.) Schimp.
1–5, (6), 9, 11, (12, 17), 25, 34, 40, 42–50, (52), 57, 60, 64–67, 69–75, (76), 77–84, 86–89, (91), 96–110, 112. H1–3, 6–8, (9), 10, 12, 15, 16, 18–20, 25–29, (30), 31–35, (36, 38), 39, 40.
 3. **assimile** (Mitt.) A.Jaeger (*T. philibertii* Limpr.)
(3, 4), 5, 6, (7), 8, (9), 10–15, (16), 17, (19), 20, (21), 22–24, (25), 26–30, (32), 33–35, (36), 37, (38, 39), 40–44, 46–52, 54, (55), 57, 60–70, 72, 73, (74), 75, 80–85, (86), 87–90, 92, 94, 97, 98, 100–110. H1, 7, 9–11, (14), 16–18, (19), 22–25, 28, (32), 34, 35, 37–40.
 4. **recognitum** (Hedw.) Lindb.
6, (34), 35, 50, 51, 57, 60, 64, (69, 86), 87, 88, 90, 92, 96–98, 105–108. H(9), 16, (26), 29, 33–35, 40.
158. **Helodium** Warnst.
1. **blandowii** (F.Weber & D.Mohr) Warnst.
(58, 62, 64, 65).
159. **Pseudoscleropodium** (Limpr.) M.Fleisch.
1. **purum** (Hedw.) M.Fleisch. (*Scleropodium purum* (Hedw.) Limpr.)
1–112. H1–40. C.
160. **Scorpiurium** Schimp.
1. **circinatum** (Bruch) M.Fleisch. & Loeske
1–3, (4), 5, 6, 8–11, 13–15, 17, 22, 24, 34, 35, (36), 41, 44, 45, 50, 52. H(1), 2, (5, 6), 8–11, 15, 23–25. C.
161. **Plasteurhynchium** M.Fleisch. ex Broth. [84]
1. **meridionale** (Schimp.) M.Fleisch. (*Eurhynchium meridionale* (Schimp.) De Not.) [84]
9.
 2. **striatulum** (Spruce) M.Fleisch. (*Eurhynchium striatulum* (Spruce) Schimp., *Isothecium striatulum* (Spruce) Kindb.) [84]
3, 5–7, 9–13, (14), 17, 33–36, 39–42, 44, 45, 49, 50, 52, 57, 60, 63, 64, 69, 98. H(1), 2, (5), 8, 9, 16, (17, 20), 25, 26, 28, 29.

162. **Eurhynchium** Schimp.
1. **striatum** (Hedw.) Schimp.
1–112. H1–40. C.
163. **Platyhypnidium** M.Fleisch.
1. **riparioides** (Hedw.) Dixon (*Rhynchostegium riparioides* (Hedw.) Cardot)
1–112. H1–16, 18–40. C.
 2. **lusitanicum** (Schimp.) Ochyra & Bednarek–Ochyra (*P. alopecuroides* (Brid.) A.J.E.Sm., *Rhynchostegium alopecuroides* (Brid.) A.J.E.Sm., *R. lusitanicum* (Schimp.) A.J.E.Sm., hom. illeg.) [85]
1–4, (5, 35, 36), 42–44, 46–50, 57, 58, 60, (69, 70), 71, (91, 92), 94, (105), 107, 108. H1, 2, 6, 16, (19), 20, 27, 33, 35.
164. **Rhynchostegium** Schimp.
1. **murale** (Hedw.) Schimp.
1–72, (73, 74, 76), 77, 78, 80–85, (86), 87–90, (91, 95), 98, (99), 100–104, 106, 108, (111), 112. H1, (2, 4, 7, 8), 9, (12, 14), 15, 17, 18, (19, 20), 21–29, (33, 34, 36), 37, (38), 39. C.
 2. **confertum** (Dicks.) Schimp.
1–75, (76), 77, 78, (79), 80–91, 93, (95), 96–105, (106), 110–112. H1–13, (14), 15–17, 20–23, (24), 25–31, 33–35, (36), 37, 38, (39), 40. C.
 3. **megapolitanum** (Blandow ex F.Weber & D.Mohr) Schimp.
1–6, (7), 8–30, 37, (38), 41, 44–46, 48, 49, 51, 52, 54, 57, (58), 59, 60, 67, 71, 73, 75, 81, 82, 90. H(1), 5, 6, 12, 20, 21, (33). C.
 4. **rotundifolium** (Scop. ex Brid.) Schimp.
(6), 14, 33.
165. **Rhynchostegiella** (Schimp.) Limpr.
1. **tenella** (Dicks.) Limpr.
1–37, (38), 39–72, (73, 74), 75, 77–79, 81–86, 88–91, 97–105, (106), 108. H1–40. C.
 2. **litorea** (De Not.) Limpr. (*R. tenella* var. *litorea* (De Not.) Mönk.)
(3), 5, 6, 10–12, (13–16), 17, 19, (21), 22, 23, 29.
 3. **curviseta** (Brid.) Limpr.
2–5, (6), 7–13, (14), 15, (16), 17, 19, 22, 23, 25, 29, (30), 32, 34, (35), 36, (37, 38), 40, (62). H(29), 33, (39). (C).

4. **teneriffae** (Mont.) Dirkse & Bouman (*R. teesdalei* (Schimp.) Limpr.)
1, (2), 3, 5–9, 11, (12), 13, 14, 22, 23, 29, 32–37, (38), 39–45, 47, 49, (50), 51–53, 57, (58), 59, 60, (61), 62–70, (72), 73, (75, 76), 77, 80–83, (85–88), 89–91, 98, (99), 100, 101, 104, 108, (111). H(1, 3), 4, 6, 8–11, 15, 16, 20, (21), 28, 29, 33, (34), 35, (38), 39, 40. C.
166. **Cirriphyllum** Grout
 1. **piliferum** (Hedw.) Grout
1–75, (76), 77–91, 93–111. H1–12, (13), 14–16, 18–29, (30), 31–35, (36, 37), 38–40. C.
 2. **crassinervium** (Taylor) Loeske & M.Fleisch. (*Eurhynchium crassinervium* (Taylor) Schimp.)
1–27, 29, 30, (31), 32–37, (38), 39–71, (72, 73, 75, 76), 77, 79–85, (86), 87–91, 93–95, 98–103, (105), 106, 108, (111), 112. H1–11, (12), 13, 15–17, (18), 20, (21), 22–30, (32), 33, 35, (36, 38, 39), 40. C.
167. **Oxyrrhynchium** (Schimp.) Warnst.
 1. **pumilum** (Wilson) Loeske (*Eurhynchium pumilum* (Wilson) Schimp., *Rhynchostegiella pumila* (Wilson) E.F.Warb.) [84]
1–45, 47–52, 54–71, (72), 74, (75, 76), 77, (80), 81–85, 87–91, 93–95, 97–106, 108–112. H1, 2, 4–10, (11), 12–15, (16), 20, (21), 22, 23, 25, 27–37, (38), 39, 40. C.
 2. **hians** (Hedw.) Loeske (*Eurhynchium hians* (Hedw.) Sande Lac., *E. swartzii* (Turner) Curn., *E. swartzii* var. *rigidum* (Boulay) Thér.)
1–112. H1–4, 6–35, 37–40. C.
 3. **schleicheri** (R.Hedw.) Röhl (*Eurhynchium schleicheri* (R.Hedw.) Milde)
3–17, 19, 20, 22–24, (27), 33–37, 40–43, 50, 60, (62), 64, 67, (68), 69, 80, 81. H10.
 4. **speciosum** (Brid.) Warnst. (*Eurhynchium speciosum* (Brid.) Jur.)
1–3, 5–17, 19–32, (33), 35, (36), 37, (38), 40, 41, (42), 44, 45, (48), 49, 52, 54, 55, 57, 58, (59), 60, (61–63), 64, (68), 69, 71, 73–75, 81, 90, 91, 98, 101–103, 111. H2, 4, (6, 9), 19, (20), 21, 22, 25, 28, 32, 35, (36), 37, (38), 39, (40). C.

168. **Kindbergia** Ochyra
1. **praelonga** (Hedw.) Ochyra (*Eurhynchium praelongum* (Hedw.) Schimp.)
1–112. H1–40. C.
169. **Sciuro-hypnum** Hampe [84]
1. **starkei** (Brid.) Ignatov & Huttunen (*Brachythecium starkei* (Brid.) Schimp.) [84]
88, 90, 92, 97, (105), 106.
 2. **glaciale** (Schimp.) Ignatov & Huttunen (*Brachythecium glaciale* Schimp.) [84]
88, 90, 92, 94, 96–98, 105, 106.
 3. **reflexum** (Starke) Ignatov & Huttunen (*Brachythecium reflexum* (Starke) Schimp.) [84]
88–90, 92, 96–98, 105–107.
 4. **populeum** (Hedw.) Ignatov & Huttunen (*Brachythecium populeum* (Hedw.) Schimp.) [84]
1–9, 11–60, (61), 62–75, (76), 77, 78, (79), 80–91, (92), 93, (94), 95–111, (112). H1–4, 6, 8–10, 12, 13, 16, (19), 20–27, 29, (30), 31–35, (36), 38–40. C.
 5. **plumosum** (Hedw.) Ignatov & Huttunen (*Brachythecium plumosum* (Hedw.) Schimp.) [84]
1–6, 8, 9, 11, 13–17, 32, 34–50, (51), 52, (53, 54), 55, 57–60, (61), 62–112. H1–10, 12–16, 18, 20, (21), 24–40. C.
170. **Brachythecium** Schimp.
1. **albicans** (Hedw.) Schimp.
1–37, (38), 39–75, (76), 78–85, (86, 87), 88–112. H1, 3–6, 9, 12, 16, (19), 20–22, 27, 28, 31, 34, 35, (37), 38, 39, (40). C.
 2. **erythrorrhizon** Schimp.
108.
 3. **glareosum** (Bruch ex Spruce) Schimp.
1–3, (4), 5, 6, (7), 8–24, (25), 26–47, (48), 49–55, 57–69, (70), 72, 75, (77, 79), 80–83, (85), 87–90, (91), 94–98, (100), 101–104, 106, 108, 110. H1, (2, 3, 6), 8, 9, 15, 16, (18), 19, 20, (21), 22, 25, 26, (28), 29, (31), 33–35, (38), 39, (40). (C).
 4. **salebrosum** (Hoffm. ex F.Weber & D.Mohr) Schimp.
3, (9), 12, 14, (15), 17, 20, 22–32, 36–38, 40, 44, (54), 57, (62, 63), 64, (66, 80, 90), 92.

5. **mildeanum** (Schimp.) Schimp.
1–4, 6, 8–14, (15, 16), 17–20, 22–35, (36), 37–39, (40), 41, 44–54, (55), 56–60, (61), 66, 68, (69, 70), 73, (75, 81–83, 85, 86, 88), 90, 94, 95, (96), 97, 102, (104), 105, 107–112. H(1), 2, (5), 13, (16, 17), 20, (21), 22, 23, 27, 28, 34, (35, 37, 39). C.
 6. **rutabulum** (Hedw.) Schimp.
1–112. H1–40. C.
 7. **rivulare** Schimp.
1–20, (21), 22–112. H1–13, 15–18, (19), 20–40. C.
 8. **cirrosum** (Schwägr.) Schimp. (*Cirriphyllum cirrosum* (Schwägr.) Grout) [84]
88, 98, 105, 106.
171. **Scleropodium** Bruch & Schimp.
1. **cespitans** (Wilson ex Müll.Hal.) L.F.Koch (*Brachythecium appleyardiae* McAdam & A.J.E.Sm.) [86]
1–6, (7), 8–30, 32–38, (39), 40, 42–50, 52, 54, 55, 57, 58, (59, 61–63), 64, (65), 67, 68, (70, 73), 79–81, 98, 99. H2, 4, (5–7), 9, 13, 28–30, (33), 35, (39). C.
 2. **touretii** (Brid.) L.F.Koch
1–6, (7), 8–16, (17, 18), 19, (20), 22, (23), 26, (27), 28, (29, 33), 34–37, (38), 40–43, 45–52, 71, 74, 75, 81, (88). H(2, 3), 4, (5–7, 12, 21, 37, 39). C.
172. **Eurhynchiastrum** Ignatov & Huttunen [84]
1. **pulchellum** (Hedw.) Ignatov & Huttunen var. **diversifolium** (Schimp.) Ochyra & Żarnowiec (*Eurhynchium pulchellum* (Hedw.) Jenn. var. *diversifolium* (Schimp.) C.E.O.Jensen) [84]
26, 89, 90, 104. H40.
173. **Brachytheciastrum** Ignatov & Huttunen [84]
1. **velutinum** (Hedw.) Ignatov & Huttunen (*Brachythecium velutinum* (Hedw.) Schimp.) [84]
1–72, (73), 75–93, 95–98, (99), 101–104, 106–109, 111, 112. H(1), 2,(5, 6), 9, (12, 13), 18, 20, 21, (22–24, 26), 27, 28, (32, 33, 35–39). C.
 2. **trachypodium** (Brid.) Ignatov & Huttunen (*Brachythecium trachypodium* (Brid.) Schimp.) [84]
(88), 97.

174. **Homalothecium** Schimp.
1. **sericeum** (Hedw.) Schimp.
1–112. H1–40. C.
 2. **lutescens** (Hedw.) H.Rob.
1–20, (21), 22–37, (38), 39–71, (73), 75, (77, 78), 79–88, (89),
90–99, 101–112. H1–14, 16–31, 33–35, 37, (38), 39, 40. C.
175. **Myrinia** Schimp.
1. **pulvinata** (Wahlenb.) Schimp.
9, (17, 30), 35, 36, 40, (42), 43, 47, 48, 50, (59), 60, (61), 62,
(63), 64, 65, 69, (73, 77), 87–89.
176. **Campylophyllum** (Schimp.) M.Fleisch.
1. **calcareum** (Crundw. & Nyholm) Hedenäs (*Campyllum calcareum* Crundw. & Nyholm)
3, 5–8, (10, 11), 12–20, (21), 22–26, 29, 30, 32–38, 40–42,
49–51, (53, 54), 55, 57, (61), 62, 63, (64), 65, 67, 69, 70, (73,
75, 86, 88), 89, (94), 95, 96. H(16, 26), 27, (39, 40).
 2. **halleri** (Hedw.) M.Fleisch. (*Campyllum halleri* (Hedw.)
Lindb.)
88, 90, 97.
177. **Calliargonella** Loeske
1. **cuspidata** (Hedw.) Loeske (*Calliargon cuspidatum* (Hedw.)
Kindb.)
1–112. H1–40. C.
 2. **lindbergii** (Mitt.) Hedenäs (*Hypnum lindbergii* Mitt.)
1–20, 22, 23, (24), 30, 31, 33–37, (38), 39–53, 55, 57–60,
62–72, (73, 74), 76–86, (87), 88–90, 93, (94), 95–98, (99),
100–106, 108. H1–14, (15), 16, 20, 22, 23, 25–29, (31), 32,
(33), 34, 35, (36), 37–40.
178. **Taxiphyllum** M.Fleisch.
1. **wissgrillii** (Garov.) Wijk & Margad.
3–17, 19, 20, (21), 22–24, 33–37, (38), 40–45, 47–52, 56, 57, (58,
59), 60–70, 72, (73, 75, 77), 80–86, (87), 88–90, 93, 97, 98, 101, 103,
104, (108). H2, 9, 11, (16, 21), 23, 28–30, 33, 34, (38), 39, (40).
179. **Pylaisia** Schimp.
1. **polyantha** (Hedw.) Schimp.
6, 7, (8, 13, 14), 15, (19), 22, 23, 27–29, 33–37, (38, 40), 43,
48, (52, 54, 55), 57, (61), 62, (63), 64–68, (69, 70, 73–75, 78),
80–83, (85), 88–91. H1, 2, (5). (C).

180. **Homomallium** (Schimp.) Loeske
1. **incurvatum** (Schr. ex Brid.) Loeske
64–66, 69, (70, 87), 88, (89), 90.
181. **Hypnum** Hedw.
1. **revolutum** (Mitt.) Lindb.
a var. **revolutum**
88.
b var. **dolomiticum** (Milde) Mönk.
(88).
 2. **vaucheri** Lesq.
88, 89.
 3. **cupressiforme** Hedw.
a var. **cupressiforme**
1–112. H1–40. C.
b var. **lacunosum** Brid. (*H. cupressiforme* var. *tectorum* Brid.,
H. lacunosum (Brid.) Hoffm. ex Brid., *Hypnum lacunosum*
var. *tectorum* (Brid.) J.–P.Frahm) [87]
1–6, (7), 8–75, (76), 77–112. H1–13, (14), 15–31, 33–40. C.
c var. **heseleri** (Ando & Higuchi) M.O.Hill [87]
28, 29.
d var. **resupinatum** (Taylor) Schimp. (*H. resupinatum*
Taylor) [87]
1–112. H1–40. C.
 4. **andoi** A.J.E.Sm. (*H. mammillatum* (Brid.) Loeske, nom.
inval.)
1–30, 32–37, 39–52, 54, 55, 57–60, 62–75, (76), 77–83, 85–93,
96–108. H(1), 2–9, 12, 13, 16–18, 20, 21, 23, 25–36, 38–40. (C).
 5. **uncinulatum** Jur.
H1–3,
 6. **jutlandicum** Holmen & E.Warneck
1–112. H1–40. C.
 7. **imponens** Hedw.
(3), 8, 11–13, (14, 15), 17, 22, 24, 28, 49, 50, 54, 59, 60, (61,
62, 64), 66–70, (72), 77–79, (80), 81–83, (88), 95, (105).
 8. **bambergeri** Schimp.
88–90, 92, 96–98, 108.
 9. **callichroum** Brid.
44, 46, 48, 49, (50, 51), 64, 68–70, (72), 73, (78), 80, (85),

- 86–90, 92, 94, 96–108, 110, 111. H1, 2, 16, 27–29, 34, 35.
10. **hamulosum** Schimp.
48, 49, (64), 69, 70, 87–92, 94, 96–98, 103–108.
182. **Ptilium** De Not.
1. **crista-castrensis** (Hedw.) De Not.
26, 28, 47–49, 60, (62, 64), 65, 69, 70, 72, (73), 78–81, 83, (85), 86–99, 101–108. H27.
183. **Ctenidium** (Schimp.) Mitt.
1. **molluscum** (Hedw.) Mitt.
a var. **molluscum** (incl. var. *fastigiatum* (Bosw.) Braithw.) [88]
1–20, (21), 22–112. H1–40. C.
b var. **condensatum** (Schimp.) E.Britton [89]
1, 36, 37, 42, 46, (47), 48, 49, (57, 59, 64), 66–70, 72, 73, (74), 77, 78, 80, 83, 87, 88, 90, (91), 92, 94, 96–98, (99), 100–108, 110, 112. H3, 6–8, 16, 20, 27, 29, 31, 34, 35, (36), 40.
c var. **robustum** Boulay
44, 48, (69), 72, (73, 86, 88), 90, 92, 98, 99, 103, (104), 105, 108. H(38).
2. **procerrimum** (Molendo) Lindb.
88, 96.
184. **Hyocomium** Bruch & Schimp.
1. **armoricum** (Brid.) Wijk & Margad.
1–5, (6), 11, (13), 14–16, 34–36, 39, 41–50, 57–60, 62–80, 86–92, 96–112. H1–10, (11), 12–14, 16, 18, 20, 21, 25–35, (36), 38–40.
185. **Habrodon** Schimp.
1. **perpusillus** (De Not.) Lindb.
(3, 4), 5, (6), 9, 41, 42, 44, 47, 60, (65, 69, 70, 75), 78, 88, 90, 97–99, (100).
186. **Heterocladium** Schimp.
1. **heteropterum** Schimp. [90]
a var. **heteropterum**
1–6, 13–16, 34–37, 39–52, 55, 57–60, 62–84, (85), 86–93, 95–112. H1, 3–8, (9), 10–13, (14), 16, 20, 25–31, 33–40. C.
b var. **flaccidum** Schimp. (*H. flaccidum* (Schimp.) A.J.E.Sm.) [90]
1–6, 9, 12–17, 34–37, 39–50, 52, 57, 60, 62, (63), 64–72, (73),

- 74, 77–82, (83), 84, 86–88, 90, 95–104, (105, 106), 108. H1–3, 5, 6, 8–11, 13, 16, 20, 25–29, 31–36, (38), 40. (C).
2. **wulfsbergii** I.Hagen
1–4, (42), 43, 44, 46, (47), 48–50, 68, 71, (73), 86, (87), 97, (102), 104, 108, 110. H1, 3, 6, 7, 20–22, (27), 35, 40.
3. **dimorphum** (Brid.) Schimp.
87–90, 96, 97, (99).
187. **Pterigynandrum** Hedw.
1. **filiforme** Hedw. (incl. var. *majus* (De Not.) De Not.) [91]
26, (42, 49, 57, 68–70), 72, 87–90, 92–98, 104–108, (112).
H(20, 21, 38, 40).
188. **Pleurozium** Mitt.
1. **schreberi** (Willd. ex Brid.) Mitt.
1–31, (32), 34–37, (38), 39–112. H1–13, (14), 15–40. (C).
189. **Rhytidiadelphus** (Limpr.) Warnst.
1. **triquetrus** (Hedw.) Warnst.
1–17, (18), 19, 20, (21), 22–37, (38), 39–55, 57–112. H1–40.
C.
2. **squarrosus** (Hedw.) Warnst.
1–112. H1–40. C.
3. **subpinnatus** (Lindb.) T.J.Kop.
(36), 42, 44, 48, (57, 58), 60, (64, 65, 69), 86. H6.
4. **loreus** (Hedw.) Warnst.
1–6, (7), 8, 9, 11–17, (18), 20, (21), 22, 23, 25, 26, (27), 28–30,
32–37, (38), 39–54, (55), 57–60, 62–112. H1–16, 18, (19),
20–22, 24–40. C.
190. **Loeskeobryum** Broth.
1. **brevirostre** (Brid.) M.Fleisch. (*Hylocomium brevirostre*
(Brid.) Schimp.)
1–6, 8, 9, 11–17, (20), 22, (23), 24, 29, (32, 33), 34–37, (38),
40–50, 54, (55), 57, (58, 59), 60, (62, 63), 64, 65, 67, 69, 70,
72–75, (76), 77, 79, 80, 87–89, (90), 92, 96–108, 110. H1–4,
(5), 6–10, 12–17, (18), 20, (21), 22–31, (32), 33–35, (36, 38),
39, 40. (C).
191. **Hylocomiastrum** Broth.
1. **pyrenaicum** (Spruce) M.Fleisch. (*Hylocomium pyrenaicum*
(Spruce) Lindb.)
88–90, 92, 96–98, 104–107.

2. **umbratum** (Hedw.) M.Fleisch. (*Hylocomium umbratum* (Hedw.) Schimp.)
46–50, 64, 69, 70, (72), 73, 75, 76, (78), 79, 80, 86–90, 92,
94–106, (107), 108, 110. H1, 2, 16, 27–29, 35, (39).
192. **Hylocomium** Schimp.
1. **splendens** (Hedw.) Schimp.
1–17, (18), 19, 20, (21), 22–37, (38), 39–52, (53), 54, 55, 57–
112. H1–40. C.
193. **Rhytidium** (Sull.) Kindb.
1. **rugosum** (Hedw.) Kindb.
6, (23), 26, 28, (29, 36, 39), 49, 57, (59), 60, 64–66, 69, 70, 82,
(85), 86–90, (92), 96–98, 103–106, 108. H40.
194. **Myurella** Schimp.
1. **julacea** (Schwägr.) Schimp. (incl. var. *scabrifolia* Lindb. ex
Limpr.)
(49), 64, 65, 87–90, 92, 94, 96–98, 101, 104, (105), 107, 108,
110. H(6, 16), 28, 29, 34, 40.
2. **tenerrima** (Brid.) Lindb.
88, (90).
195. **Platydictya** Berk.
1. **jungermannioides** (Brid.) H.A.Crum
6, 34–36, (40), 42, 43, 47–50, 57, (59), 63–65, (66, 69), 70,
72, 76, 80, 82, 86–89, (90), 92, 94, 96, (97), 98, (99), 101, 104,
106, 108, 110. H(2), 11, 28, 29, 33, 35.
196. **Orthothecium** Schimp.
1. **rufescens** (Dicks. ex Brid.) Schimp.
42, (48), 49, (62), 64, 65, 69, 86–90, 92, 96–99, 103–105, 107,
108, 111. H9, 28, 29, 33, 35.
2. **intricatum** (Hartm.) Schimp.
(4), 6, 34–36, 39, 41–44, 46–50, 52, 57, (59), 60, 62–67, 69,
70, (71), 72, (73), 75, 76, (77, 78), 79, 80, 83, 86–92, 94, 96–
108, 111, (112). H1, 2, 7–9, 16, 27–30, 33–35, 39, 40.
197. **Plagiothecium** Schimp.
1. **latebricola** Schimp.
2–23, (24), 25–27, 31, 32, (33, 34), 35, (36), 37, (38), 39, (40,
41), 43, 45, 47–51, 54–57, (58, 59), 62–65, (81, 86). H29.
2. **piliferum** (Sw.) Schimp.
(88, 90).

3. **denticulatum** (Hedw.) Schimp.
a var. **denticulatum** (*P. denticulatum* var. *undulatum* R.Ruthe ex Geh., *P. ruthei* Limpr.) [92]
1–75, (76), 77–112. H3, 4, 6, 8, 10, (12), 13, 15, 20, 22, 24–26, (33, 36), 37, (38), 39, 40. C.
b var. **obtusifolium** (Turner) Moore
2, 4, 42, 44, 46, 48, 49, 64, 65, 69, 70, 72, 78, 87–90, 92, 94–101, 104–108, 110. H1, 3, 7, 16, 35, (40).
4. **laetum** Schimp.
12, 18–20, 22, 26, 29, 32, 34–36, 39, 40, 43, 47–51, 54, 57, 58, 60, 62–70, 77, 78, (79), 81, 83, (86), 88–92, 94–96, 98, (99), 101, 105, 106, 109. H20, 21, 33.
5. **curvifolium** Schlieph. ex Limpr. (*P. laetum* var. *secundum* (Lindb.) Frisvoll et al.)
2, 4–40, 42–44, 47–51, 53–70, 72–75, 78, 80–85, (86), 88–96, 98, 99, 103, 106, 107. H20, 29. C.
6. **platyphyllum** Mönk.
49, 69, 70, 88–90, 92, (96), 97–99, 105–108. H6, 7, 20.
7. **cavifolium** (Brid.) Z.Iwats.
1, 2, 27, 46–48, (49, 60, 62, 70), 81–83, 88, 90, 92, 93, 95–98, 101, 103–106, 108. H(1), 27, 34.
8. **succulentum** (Wilson) Lindb.
1–28, 30–112. H1–10, 12, 14, 16–18, 20, 22, 24–29, (30), 32–35, 38–40. C.
9. **nemorale** (Mitt.) A.Jaeger
1–57, 60–77, 79, 80, 83, 84, 86, 87, (88), 90–93, 95–105, 108, 110–112. H1–11, 13, 16, 20, 25, 27–31, 33–35, (36), 37, (38), 39, 40. C.
10. **undulatum** (Hedw.) Schimp.
1–6, (7), 8–30, 32, 34–112. H1–10, 12–18, 20, 21, 23, 25–40. C.
198. **Isopterygiopsis** Z.Iwats.
 1. **muelleriana** (Schimp.) Z.Iwats.
(49), 87–90, 96–98, 103–107, (108). H(1).
 2. **pulchella** (Hedw.) Z.Iwats. (*Isopterygium pulchellum* (Hedw.) A.Jaeger)
(3), 5, 35, 36, 39, 41–44, 46–50, 57, (59), 60, (62), 63–70, 72, 73, 75–83, (85), 86–90, (91), 92–108, (110), 111. H1–3, 6–8,

- 10, 16, (20), 27–29, (33), 34, 35, (38), 39, (40).
199. **Pseudotaxiphyllum** Z.Iwats.
 1. **elegans** (Brid.) Z.Iwats. (*Isopterygium elegans* (Brid.) Lindb.)
 1–112. H1–14, 16, (19), 20–22, (23), 25–40. C.
200. **Herzogiella** Broth.
 1. **striatella** (Brid.) Z.Iwats.
 (71), 87–90, 92, 94, 96–98, (99), 105–108.
 2. **seligeri** (Brid.) Z.Iwats.
 6–8, 10–17, (19), 22–29, 31, 32, 35, 54, (61), 62.
201. **Entodon** Müll.Hal.
 1. **concinus** (De Not.) Paris
 6, (7), 8–17, 19, 20, 22–24, 29, 30, 32–34, (36), 37, 38, (39),
 40, 41, 49, 50, (52, 53), 54, (55), 57, (59), 60, (61), 62, 64–
 67, 69, 70, (71), 72, 79–83, 85–90, 92, 97, 98, 101–110. H1,
 (6, 8), 9, 10, 15, 16, 19, (20), 21–29, (30), 31, 33–35, 38, (39,
 40).
202. **Platygyrium** Schimp.
 1. **repens** (Brid.) Schimp.
 6–8, 10–13, 16, 17, 19, 22, 23, 25–37, 40, 42, 50, 53, 54, 81,
 82.
203. **Hageniella** Broth. [93]
 1. **micans** (Mitt.) B.C.Tan & Y.Jia (*Sematophyllum micans*
 (Mitt.) Braithw.) [93]
 48, 70, 86, 87, 97–99, 101, 103–105. H1, 2, (3), 16.
204. **Sematophyllum** Mitt.
 1. **demissum** (Wilson) Mitt.
 48, 49. H1–3, 16.
 2. **substrumulosum** (Hampe) E.Britton
 1, 2, 13, 45. H1, 2.
205. **Cryphaea** D.Mohr
 1. **heteromalla** (Hedw.) D.Mohr
 1–37, (38), 39–57, (58), 59–74, (75), 76, (77), 79–84, (85, 87),
 88, 89, (90), 97–104, 106, 110. H1–30, (31), 32–40. C.
206. **Dendrocryphaea** Paris & Schimp. ex Broth.
 1. **lamyana** (Mont.) P.Rao (*Cryphaea lamyana* (Mont.) Müll.
 Hal.)
 2–4, 44–46.

207. **Leucodon** Schwägr.

1. **sciuroides** (Hedw.) Schwägr.

a var. **sciuroides**

1–17, (18), 19, (20, 21), 22–37, (38, 39), 40–50, 52–55, 57, (59–61), 62–70, (71–73, 76), 78–83, (85), 87–94, (95), 96, (97), 98, 101, 102, (103), 104–108. H(3, 6, 7, 9, 11, 14, 16, 18, 19), 20, (21), 22, 23, 31, 33, (39). C.

b var. **morensis** (Schwägr.) De Not.

1, 2, 9, 13, (17), 45, (73), 96.

208. **Antitrichia** Brid.

1. **curtipendula** (Hedw.) Brid.

2–4, 6, 13, (14), 15, (18–23, 25, 27), 29, (32, 33, 35–40), 42, (45), 47–50, (52, 55, 57, 60, 62, 63), 64–67, (68), 69, 70, 72, 73, 75, 77–80, (81, 82), 83, (85), 86, (87), 88–99, (101), 103–112. H1, 3, 6, 7, (12, 20, 28, 32), 33, (34, 36, 39), 40.

209. **Pterogonium** Sw.

1. **gracile** (Hedw.) Sm.

1–4, (5), 6, 7, 9–13, (14, 17, 21, 26, 34), 35–37, 40–50, 52, 57, 60, 64–66, (68), 69, 70, (71), 72–75, 77–83, 85–91, (92), 96–105, 107, 108, 110. H1–4, 6–8, 13, 16, 20, (21), 27, 28, (31, 33), 35, (38, 39). C.

210. **Neckera** Hedw.

1. **pennata** Hedw.

(90).

2. **crispa** Hedw.

1, (2), 3–17, (22), 23, 24, 30, 33–37, 39–54, (55), 56, 57, 59–83, (85), 86–90, (91, 92, 94), 96–99, (100), 101–108, 110, (111). H1–3, (4, 5), 6–10, 14–18, 20, 23–31, 33–35, (36), 37, (38), 39, 40.

3. **pumila** Hedw.

1–17, (18–20), 22, 23, 25, (27, 32), 33–37, (40), 41–50, 52, (55, 57–60, 62), 64, (65), 69, 70, 72, 73, 75, 78, 80, (86, 87), 88–90, 96–99, 101–105, 111. H1–13, (14), 15, (16), 17–33, (36), 37, (38, 39), 40. C.

4. **complanata** (Hedw.) Huebener

1–20, (21), 22–37, (38), 39–110, (111), 112. H1–40. C.

211. **Homalia** Brid.

1. **trichomanoides** (Hedw.) Brid.

- 1–20, (21), 22–37, (38), 39–57, (58), 59–75, (76), 77–94, (96), 97–104, 106, 108, 111, 112. H1–6, 8, 9, (10), 11, 12, (13), 14–16, 18, (19), 20, (21), 22–29, (31), 32, 33, (34, 36), 37–40. (C).
212. **Thamnobryum** Nieuwl.
1. **alopecurum** (Hedw.) Gangulee
1–112. H1–40. C.
 2. **maderense** (Kindb.) Hedenäs [94]
39.
 3. **angustifolium** (Holt) Nieuwl.
57.
 4. **cataractarum** N.G.Hodgetts & Blockeel
64.
213. **Leptodon** D.Mohr
1. **smithii** (Hedw.) F.Weber & D.Mohr
1–15, 17, (18), 22, (23), 41, 45, (48), 49, 52, 69, (70). H(3, 6), 9. (C).
214. **Isothecium** Brid.
1. **myosuroides** Brid.
a var. **myosuroides**
1–37, (38), 39–55, 57–112. H1–18, (19), 20–40. C.
b var. **brachythecioides** (Dixon) Braithw.
44, 48, 49, 72, 73, 81, (85), 86, 88–90, 92, 93, (95), 96–108, 110–112. H1–4, 6–8, 10, 16, 20, 27–29, (30), 33–35, (36), 39, 40.
 2. **alopescuroides** (Lam. ex Dubois) Isov. (*I. myurum* Brid.)
1–37, (38), 39–112. H1–18, (19), 20, (21), 22–40. C.
 3. **holtii** Kindb.
2–5, 42–50, 57, 64, 69, 70, 72–74, 86, 87, (88), 94–99, 105–109. H1, 2, 6, 20, 35, (38, 40).
215. **Myurium** Schimp.
1. **hochstetteri** (Schimp.) Kindb.
97, 103, 104, 108, 110. H16.
216. **Anomodon** Hook. & Taylor
1. **longifolius** (Schleich. ex Brid.) Hartm.
(6), 34, 35, (36), 63, (64, 65), 66, 88, 90.
 2. **attenuatus** (Hedw.) Huebener
(88), 90.

3. **viticulosus** (Hedw.) Hook. & Taylor
1–17, (18), 19, 20, (21), 22–37, (38), 39–54, (55), 56, 57, (58),
59–72, (73), 77–83, 85–106, 108, 110. H1, 2, 4–11, 13–19,
(21), 22–30, (32), 33, (35, 36), 37, 39, 40. (C).

Annotations

- [1] For a description of *Athalamia hyalina* and its occurrence in Scotland, see Long, Rothero & Paton (2003).
- [2] For a description of *Conocephalum salebrosum*, see Szweykowski, Buczkowska & Odrzykoski (2005); an account of a recent BBS survey of *C. conicum* and *C. salebrosum* (on which the current distributions are based) is in preparation. The distribution of the aggregate is based on records dating from before the 2005 revision. The distribution of the segregates was supplied by C.D. Preston in advance of publication.
- [3] *Fossombronia caespitiformis* sensu lato has been extended to include *F. caespitiformis* subsp. *multispira* (Schiffn.) J.R. Bray & Cargill (Stotler *et al.*, 2003). *F. husnotii* (including var. *anglica* W.E. Nicholson) is treated as a synonym of subsp. *multispira* by R.E. Stotler and B.J. Crandall-Stotler (<http://bryophytes.plant.siu.edu/fossombronia.html>). At this stage, it is not clear whether all British plants of *F. caespitiformis* belong to subsp. *multispira* and further investigation is required.
- [4] Although R.E. Stotler & B.J. Crandall-Stotler (<http://bryophytes.plant.siu.edu/fossombronia.html>) treat *Fossombronia maritima* as a synonym of *F. pusilla*, we continue to follow Paton (1994, 1999) in maintaining it as a distinct species.
- [5] The treatment of *Fossombronia crozalsii* as a synonym of *F. mittenii* follows R.E. Stotler & B.J. Crandall-Stotler (<http://bryophytes.plant.siu.edu/fossombronia.html>). The type locality (between Parracombe and Braunton) of *F. mittenii* is in v.-c. 4.

- [6] The species *Fossombronia fleischeri* Osterwald was accepted by Schumacker & Vána (2005), and two British specimens of *F. incurva* in E have been referred to *F. fleischeri* by J.R. Bray, but a thorough assessment of its characters across a range of British and Irish material is required; see also Stotler *et al.* (2003).
- [7] In a revision of *Moerckia* by Crandall-Stotler & Stotler (2007), *M. hibernica* is recognized as distinct from *M. flotoviana* and this treatment is followed here; material of *M. hibernica* sensu stricto from both Scotland and Ireland was included in the study by Crandall-Stotler & Stotler (2007). *M. flotoviana* is much the commoner of the two species in Britain and Ireland. Unchecked records of *Moerckia hibernica* sensu lato other than the original *M. hibernica* (H20) have been assigned to *M. flotoviana*. It is possible that *M. flotoviana* may need to be deleted from a few additional vice-counties in future.
- [8] *Metzgeria fruticulosa* sensu Blockeel & Long (1998) and Paton (1999) is referred to *M. violacea*, following Grolle & So (2003).
- [9] The treatment of *Metzgeria temperata* as a synonym of *M. consanguinea* is guided by So (2003) who considered that the differences between the two taxa 'are exceedingly small'. Mrs J.A. Paton (*in litt.*, 2008) has examined an isotype and other material of *M. consanguinea* from Java, at the request of Dr R. Grolle, and found no differences between the latter and *M. temperata* from the British Isles.
- [10] Transfer of *Apometzgeria pubescens* to *Metzgeria* follows Schuster (1992), So (2003) and Forrest *et al.* (2006).
- [11] Placement of *Cryptothallus mirabilis* within *Aneura* follows Wickett & Goffinet (2008).
- [12] Although Schuster (1999) advocated that the familiar name *Harpalejeunea ovata* should be retained rather than be replaced by *H. molleri* as proposed by Grolle (1989), no formal procedure was instituted, and we have continued to use the latter name, as have Grolle & Reiner-Drehwald (1999) and Grolle & Long (2000).

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- [13] The treatment of *Lejeunea holtii* as a synonym of *L. eckloniana* follows Dirkse *et al.* (1993); since the description of *L. eckloniana* in Wigginton (2004), Mrs J.A. Paton (*in litt.*, 2008) now agrees with this position.
- [14] The treatment of *Herbertus borealis* as a synonym of *H. delavayi* follows Feldberg & Heinrichs (2005).
- [15] Recognition that *Telaranea europaea* is distinct in Europe from the neotropical *T. nematodes* was established by Engel & Merrill (2004).
- [16] The treatment of *Telaranea longii* as a synonym of *T. tetradactyla* follows Engel & Merrill (2004).
- [17] Although there have been several recent reports by Engel & Schuster (1984), Heinrichs *et al.* (2005), Hentschel *et al.* (2006) and He-Nygrén & Piippo (2003) supporting a merger of *Chiloscyphus* and *Lophocolea*, we consider it premature at this stage to disrupt the established practice in Britain and Ireland where the generic distinctions are clear-cut.
- [18] For a description of *Lophocolea brookwoodiana* and its occurrence in England, see Paton & Sheahan (2006).
- [19] For a description of *Heteroscyphus fissistipus* and its occurrence in Ireland, see Blackstock & Long (2002).
- [20] The treatment of *Plagiochila atlantica* as a synonym of *P. heterophylla* follows Heinrichs (2002).
- [21] The conspecificity of *Plagiochila killarniensis* and *P. bifaria* was proposed by Heinrichs, Grolle & Drehwald (1998) and confirmed by Heinrichs *et al.* (2004).
- [22] The treatment of *Cephalozia hibernica* as a synonym of *C. crassifolia* follows Vána (1988) and was accepted by Grolle & Long (2000).

- [23] The arrangement of liverwort genera 59–69 in the Scapaniaceae is based largely on de Roo *et al.* (2007).
- [24] *Gymnocolea acutiloba* is merged within *G. inflata* by Grolle & Long (2000) following Schuster (1988) who reduced the former to *Gymnocolea inflata* subsp. *acutiloba*. But, plants from Wales and Scotland referred to *G. acutiloba* appear to be distinct and it is retained as a separate species here, as in Paton (1999).
- [25] For a description of *Anastrophyllum alpinum* and its separation from *A. joergensenii*, see Long *et al.* (2006).
- [26] Changes in taxonomic concepts within and between *Lophozia ventricosa*, *L. longiflora* and *L. wenzelii* proposed by Bakalin (2001) have been variably adopted by bryologists in Europe; we consider that further studies are required to resolve taxonomic relationships in this complex within Britain and Ireland.
- [27] Several authors (including Potemkin, 1999, Schljakov, 1981) have reduced *Scapania parvifolia* to synonymy with *S. scandica* which was accepted by Grolle & Long (2000). On the other hand, Paton (1999) gives reasons why *S. parvifolia* should be retained, and this is the position adopted here.
- [28] Conspecificity of *Scapania degenii* and *S. brevicaulis* was proposed by Potemkin (1999) and accepted by Grolle & Long (2000), but we consider that further work on British material is required before a taxonomic change is made.
- [29] *Leiocolea alpestris* was treated as a synonym of *L. collaris* by Grolle & Long (2000) who are followed here.
- [30] Circumscription of *Leiochlaena*, *Jungermannia* and *Solenostoma* follows modern molecular phylogenetic studies, particularly Hentschel *et al.* (2007).
- [31] The systematic position of *Eremonotus* follows Hentschel *et al.* (2007).

- [32] Although *Jungermannia exsertifolia* subsp. *cordifolia* was not accepted by Schuster (1988), we consider that the subspecies should be maintained pending further study.
- [33] The taxonomy and nomenclature of *Polytrichum commune* Hedw. are still not clear. According to Hyvonen and Bell in Hill *et al.* (2006), the two smaller varieties, var. *humile* Sw. and var. *perigoniale* (Michx.) Hampe, should be synonymized under *P. commune*, while the familiar large plant of bogs and moorland should be segregated as *P. uliginosum* (Wallr.) Schriebl. This unpalatable treatment is not followed here, pending a more thorough revision of the taxonomy of *Polytrichum*. For a similar reason, we have retained the name var. *perigoniale*, which is in regular use by British and Irish botanists, even though var. *humile* would have priority if treated as a synonym.
- [34] The distribution given for *Polytrichum commune* var. *perigoniale* does not include records previously ascribed to var. *humile*, which need to be revised.
- [35] According to S.D.S. Bosanquet (pers. comm.), the subspecies of *Schistidium elegantulum* are not distinct in our area. He writes 'I remain thoroughly unconvinced by them. I have assigned the clear-cut examples to one or other taxon, but left intermediates at just the species level.' The subspecies are not listed here.
- [36] For the occurrence of *Schistidium flexipile* in Britain, see Hodgetts (2007).
- [37] *Grimmia montana*, *G. sessitana* and *G. alpestris* have been confused. Scottish plants formerly ascribed to *G. alpestris* (by Blockeel & Long, 1998) or *G. ungeri* (by Smith, 2004) are now thought to be *G. montana* (Long, 2008). *G. alpestris* was restored to the Scottish list by Long (2008) on the basis of specimens determined by Eva Maier. The single record of *G. sessitana* from v.-c. 75 is new for Britain (Long, 2008), all previous records being erroneous.
- [38] *Grimmia trichophylla*, *G. lisae* and *G. muehlenbeckii* have been much confused. Our synonymy and many records of *G. lisae* are

taken from Long (2008) on the basis of a revision by Eva Maier. The synonyms of *G. lisae* are, however, nomenclatural synonyms only. Unchecked records of *Grimmia britannica*, *G. trichophylla* var. *robusta* and *G. trichophylla* var. *subsquarrosa* require confirmation. *Grimmia muehlenbeckii* was listed as a species in British floras and checklists for about a century, starting with Hobkirk (1873) and ending with Warburg (1963). These early records proved to be erroneous. Porley & Maier (2007) reported *Grimmia muehlenbeckii* new to Britain and Ireland. Several additional records were listed by Long (2008).

- [39] Smith (2004) distinguishes *Seligeria patula* from *S. trifaria*. The distribution of these segregates in Britain and Ireland is still poorly known. We therefore present an aggregate distribution as well as very incomplete distributions for the segregates.
- [40] *Fissidens exiguus* Sull. is removed from the list, following the treatment of European *Fissidens* by Bruggeman-Nannenga in Hill *et al.* (2006).
- [41] *Fissidens crispus* Mont. 1838 replaces *F. limbatus* Sull. 1856, following the treatment of European *Fissidens* by Bruggeman-Nannenga in Hill *et al.* (2006).
- [42] *Fissidens bryoides* var. *caespitans* replaces *F. curnovii*, following the treatment of European *Fissidens* by Bruggeman-Nannenga in Hill *et al.* (2006).
- [43] The genus *Octodiceras* is not recognized here, following the treatment of European *Fissidens* by Bruggeman-Nannenga in Hill *et al.* (2006).
- [44] *Ditrichum zonatum* var. *scabrifolium* is a poorly-marked form and is not recognized here.
- [45] *Bruchia vogesiaca* was discovered in Cornwall in 2006 (Holyoak, 2007).
- [46] *Cynodontium bruntonii* is retained in *Cynodontium* as in Hill *et al.* (2006), not moved to the genus *Oreoweisia* as in Smith (2004).

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- [47] *Dicranella howei* Renauld & Cardot is distinguished from *D. varia* by its bistratose leaves. It is very common in southern Europe. Plants with bistratose leaves also occur in southern Britain. They deserve some recognition, possibly as a variety of *D. varia*, but are not listed here pending a more formal notice of their occurrence.
- [48] *Dicranum undulatum* Schrad. ex Brid. was for several decades treated as a *nomen confusum* by European authors, but this can no longer be justified and the name is accordingly reinstated (Hill *et al.*, 2006).
- [49] *Campylopus pyriformis* var. *azoricus* is a poorly-marked form and is treated here as a synonym of var. *pyriformis*.
- [50] *Campylopus atrovirens* var. *gracilis* is probably a habitat modification and is not recognized here.
- [51] *Tortella bambergeri* was reported, new to the British Isles, by Bosanquet (2006).
- [52] The status of *Trichostomum tenuirostre* var. *holtii* was questioned by Smith (2004). We do not think that var. *holtii* should be retained. It is treated here as a synonym of var. *tenuirostre*.
- [53] *Hymenostylium recurvirostrum* var. *insigne* is treated here as a variety rather than a distinct species, following the opinion of Guerra *et al.* (Guerra, Cano & Ros, 2006; Hill *et al.*, 2006).
- [54] *Ephemerum stellatum* H.Philib. is omitted from the list on the recommendation of D.T. Holyoak, who writes (pers. comm., Feb. 2008) that he is 'certain that most recent British records are referable to untoothed/weakly toothed forms of *E. serratum* or sometimes *E. minutissimum*'. He had already expressed doubts about the distinctness of *E. stellatum* (Holyoak, 2001), which were reinforced the observations of Pressel, Matcham & Duckett (2005), based on examination of the filament system.
- [55] *Ephemerum hibernicum* was described as a new species from Ireland by Holyoak & Bryan (2005).

- [56] *Ephemerum serratum* var. *praecox* A.W.H.Walther & Molendo could be a form of either *E. serratum* or *E. minutissimum*. Smith (2004) doubted whether it was worth maintaining. Holyoak in Hill *et al.* (2006) observed that a weak nerve can be seen in leaves of occasional plants of both species. Var. *praecox* is not recognized here.
- [57] *Dialytrichia saxicola* was signified as a British species by Bates, Matcham & Lara (2007) under the name *D. fragilifolia*. Matcham (pers. comm.) points out that, contrary to Hill *et al.* (2006), it was Claude Roux (born 1945) not Jean Roux (1876-1939) who was the second author of *D. mucronata* var. *fragilifolia* (1968). Cano (2007) found that *Barbula saxicola* Lamy is a synonym with priority at the rank of species, and made the new combination *Dialytrichia saxicola*.
- [58] Opinion on the correct treatment of *Barbula convoluta* var. *sardoa* differs widely. Blockeel & Long (1998) treated it as a synonym of var. *convoluta*. Smith (2004) treated it as a species. Further genetic and experimental work is needed to resolve the matter. Here we follow Hill *et al.* (2006) in treating the taxon as a variety. The distributions of the varieties are taken from the BBS database held at the Biological Records Centre.
- [59] *Didymodon mamillosus* is treated as a synonym of *D. rigidulus* following Jiménez (2004) and Hill *et al.* (2006).
- [60] *Didymodon umbrosus* is treated as a species distinct from *D. australasiae* (Hook. & Grev.) R.H.Zander following Jiménez *et al.* (2005).
- [61] Cano, Werner & Guerra (2005) raised *T. subulata* var. *angustata* to the rank of species as *T. schimperi*. Smith (2008) examined specimens labelled *Tortula subulata* var. *angustata* in three British herbaria, BBSUK, E and NMW. The great majority of these were *T. subulata*. We follow the opinion of Cano in Hill *et al.* (2006) in treating var. *graeffii* and var. *subinermis* as synonyms of var. *subulata*.

- [62] Smith (2004) expressed the view that *Tortula muralis* var. *aestiva* may be a habitat modification of var. *muralis*. It is treated here as a synonym.
- [63] *Tortula amplexa*, placed in *Syntrichia* by Smith (2004), is here listed in *Tortula* following Hill *et al.* (2006).
- [64] *Tortula protobryoides*, placed in *Protobryum* by Smith (2004), is here listed in *Tortula*, as in Blockeel & Long (1998). Earlier British lists placed it in *Pottia* and we prefer not to separate it from its former congeners such as *T. truncata*.
- [65] *Microbryum davallianum* as understood by Blockeel & Long (1998) and Smith (2004) includes forms with a long peristome that were formerly called *Pottia commutata*. In our opinion these forms are too distinctive to be subordinated completely to *M. davallianum*. Accordingly, they are listed here as *M. davallianum* var. *commutatum*. The distribution is taken from records in the BBS database. It is that which pertained at the time when *Pottia commutata* was sunk, plus v.-c. 45, from which there are several recent records by S.D.S. Bosanquet.
- [66] *Acaulon mediterraneum* is treated here as a species following Hill *et al.* (2006).
- [67] *Syntrichia montana* Nees is treated as an earlier synonym of *S. intermedia* Brid. following Gallego (2005), although she had neither located an original type specimen nor designated a neotype.
- [68] Although *Zygodon viridissimus* var. *stirtonii* was treated by Smith (2004) as a distinct species, we prefer to retain it at the rank of variety.
- [69] *Anomobryum concinnatum* is treated here as a species rather than a variety, on the grounds that the few plants that have ever been found with capsules (not in Britain) have erect not inclined to cernuous capsules and a greatly reduced peristome (Holyoak, annotation 265 in Hill *et al.* 2006).

- [70] Following Holyoak (2004), *Bryum mamillatum* is treated as a synonym of *B. warneum*, *B. lawersianum* as a synonym of *B. arcticum*, *B. subelegans* Kindb. as a synonym of *B. pallens*, *B. imbricatum* auct. as a synonym of *B. archangelicum*, *B. capillare* var. *ruffolium* as a synonym of var. *capillare*, *B. stirtonii* as a synonym of *B. elegans* and *B. laevifilum* as a synonym of *B. moravicum*.
- [71] According to Holyoak & Hedenäs (2006), *Bryum pseudotriquetrum* var. *pseudotriquetrum* and var. *bimum* are, in effect, cryptic species that cannot ordinarily be distinguished except that one is dioecious and the other synoecious. For this reason they are treated as infraspecific taxa here. An interesting exception is the morphotype formerly called *Bryum neodamense*, which is a wet-habitat modification of *B. pseudotriquetrum* var. *pseudotriquetrum*. Records of *B. neodamense* have been transferred to var. *pseudotriquetrum*. The distribution of *B. pseudotriquetrum* sensu lato is based on records held in the BBS database at the Biological Records Centre in 2008. The distribution of var. *pseudotriquetrum* is based on specimens confirmed by D.T. Holyoak; that of var. *bimum* was prepared in the usual way, based on both the BBS database and the distribution kept by the Recorder of Mosses.
- [72] Nomenclature of *Bryum kunzei* follows the treatment of *Bryum* by Holyoak in Hill *et al.* (2006).
- [74] *Bryum valparaisense* has been found in the Isles of Scilly (Preston & Finch, 2006).
- [75] *Pohlia elongata* var. *greenii* has priority over var. *polymorpha* and is treated as a synonym by Hill *et al.* (2006).
- [76] Arts, Nordhorn-Richter & Smith (1987) and Smith (2004) recognize two varieties of *Pohlia flexuosa* in Europe, of which only var. *pseudomuyldermansii* occurs in Ireland (the type locality) and Britain. This view is challenged by Townsend (2007) on the grounds that the varieties are not distinct in Asia. Var. *pseudomuyldermansii* is not recognized here.
- [77] *Mnium lycopodioides* is treated as a synonym of *M. ambiguum* following Koponen (1994), and has priority.

- [78] *Fontinalis antipyretica* var. *gigantea* is poorly marked and likely to be a growth form of var. *antipyretica*. It is not recognized here.
- [79] *Fontinalis squamosa* var. *dixonii* is probably a growth form and is not recognized here.
- [80] Smith (2004) retains *Palustriella commutata* var. *sulcata* as a distinct variety of *P. commutata*, while subordinating var. *virescens* to *P. falcata*. Hedenäs in Hill *et al.* (2006) subordinates these varieties to *P. falcata* and *P. commutata* respectively (i.e. the other way round) but does not recognize either variety as a distinct entity. We follow Hedenäs's taxonomy here, but agree with Smith that the slender plant known as var. *sulcata* by British bryologists may be closer to *P. commutata*.
- [81] *Amblystegium varium* and *A. humile* are transferred to *Hygroamblystegium* following the generic concepts of Vanderpoorten *et al.* (2002). We have not, however, adopted the rather radical synonymy suggested by these authors.
- [82] *Pictus scoticus* is treated as a synonym of *Hygrohypnum luridum* following the opinion of Ignatov in Hill *et al.* (2006). Smith (2004) queries whether *H. luridum* var. *subsphaericarpon* is worth maintaining. It is treated here as a synonym of var. *luridum*.
- [83] *Warnstorfia exannulata* and *W. sarmentosa* are transferred to *Sarmentypnum* following the revision by Hedenäs (2006).
- [84] In Brachytheciaceae, we have followed the proposals of Ignatov & Hutunnen (2002) as set out in Hill *et al.* (2006). *Eurhynchium meridionale* and *E. striatulum* are transferred to *Plasteurhynchium*. *Rhynchostegiella pumila* is transferred to *Oxyrrhynchium*. *Brachytheceum starkei*, *B. glaciale*, *B. reflexum*, *B. populeum* and *B. plumosum* are transferred to *Sciuro-hypnum*. *Cirriphyllum cirrosus* is transferred to *Brachytheceum*. *Eurhynchium pulchellum* is transferred to *Eurhynchiastrum*. *Brachytheceum velutinum* and *B. trachypodium* are transferred to *Brachythechiastrum*.
- [85] The epithet *lusitanicum* has priority over *alopecuroides* at species rank in *Platyhypnidium*, but is not available in *Rhynchostegium* (Ochyra & Bednarek-Ochyra, 2006).

- [86] *Brachythecium appleyardiae* is a synonym of *Scleropodium cespitans* (Blockeel *et al.*, 2005).
- [87] The treatment of *Hypnum cupressiforme* varieties follows that in Hill *et al.* (2006). Var. *heseleri* was reported new to Britain by Blockeel & Stevenson (2006).
- [88] *Ctenidium molluscum* var. *fastigiatum* is a poorly-marked form. It is treated here as a synonym of var. *molluscum*.
- [89] *Ctenidium molluscum* var. *sylvaticum* F.Rose & A.J.E.Sm. nom. inval. is not listed here. According to D.T. Holyoak (pers. comm.) it seems to be a rather weak and shaded form of var. *condensatum*. In the absence of a type specimen, its real identity remains obscure.
- [90] Hedenäs (2008) pointed out that *Heterocladium heteropterum* was described as a new species by Schimper in *Bryologia Europaea*. Schimper is accordingly cited here as the only authority. Smith (2004) raised *H. heteropterum* var. *flaccidum*, which was described by Schimper along with var. *heteropterum*, to species rank. According to D.T. Holyoak (pers. comm.) intermediates sometimes occur, and we have retained var. *flaccidum* as a variety.
- [91] Smith (2004) retains *Pterigynandrum filiforme* var. *majus* but expresses severe doubts as to whether it is distinct. It is treated here as a synonym of var. *filiforme*.
- [92] *Plagiothecium denticulatum* var. *undulatum* appears to be a poorly-marked habitat form of var. *denticulatum*. It is not worthy of recognition even as a variety.
- [93] Following Tan & Jia (1999), *Sematophyllum micans* is transferred to *Hageniella*.
- [94] *Thamnobryum maderense* was reported new to Britain from Staffordshire by Godfrey & Hodgetts (2006).

Acknowledgements

For financial support, we thank the British Bryological Society. Ian Atherton designed the book and took it through to production.

We are especially grateful to our two fellow members of the BBS Nomenclature Committee, Tom Blockeel and David Holyoak. They have contributed nomenclatural and taxonomic advice over a period of several years leading up to this Census Catalogue.

For liverwort taxonomy, we wish to thank particularly Drs Ray Stotler and Barbara Crandall-Stotler (Carbondale, Illinois) for permission to use unpublished data on liverwort classification, and for taxonomic and nomenclatural advice Mrs Jean A. Paton MBE (Truro, Cornwall), Dr Jiří Váňa (Charles University, Prag) and Dr Elena Reiner-Drehwald (University of Göttingen).

Sam Bosanquet and Ron Porley have helped us with several difficult Grimmiaceae, as have Hans Blom (Norway; *Schistidium*) and Eva Maier (Switzerland; *Grimmia*).

In trying to reconcile the main BBS database with other sources of information, we have been ably helped by Chris Preston and three database managers at the Biological Records Centre, Henry Arnold, Cassie Hoyland and Steph Ames. Likewise we have received much help and many data from Nick Hodgetts, who manages the Threatened Bryophyte Database. At the National Museum of Wales, Sally Whyman sent us details of numerous specimens in BBSUK and NMW, thereby supplying records to substantiate the vice-county distributions. We are grateful to Katie Yeates of the Research Councils' Joint Reprographic Service for efficiently converting printed vice-county records to electronic text by optical character recognition.

Many other people have helped with particular counties. Where a person has provided information relating (though not necessarily only)

to a particular vice-county, this is indicated: Ken Adams (18, 19, 21), Jeff Bates (22), John Blackburn (62), Tom Blockeel (57, 65, H38), Sam Bosanquet (35, 41, 45), Des Callaghan (59), Rachel Carter (32), David Chamberlain (82, 83, 84 and many other Scottish counties), Hannah Cook (Kent & Medway Biological Records Centre; 15, 16), Rod Corner (66, 72, 74, 75, 78-80, especially 80), Richard Fisk (25, 26), Martin Godfrey (39), Paul Hanson (58), Jan Hendey (15, 16), Ann Hill (37), David Holyoak (1, 2), Daniel Kelly (H21), Mark Lawley (40), Andrew Lawson (Sussex Biodiversity Record Centre; 13, 14), John Lowell (59), Peter Martin (6, 34), Rosemary McCance (111), Howard Matcham (13, 14), Sharon Pilkington (7), Mark Pool (3, 4), Chris Preston (12, 29), Sean O'Leary (24), John O'Reilly (66, 67, 68), Fred Rumsey (12), Mark Seaward (53, 54), Andy Slater (EcoRecord; 38), Jonathan Sleath (36), Rod Stern (8, 11, 13, 14), Robin Stevenson (27), Christopher Tipper (20), Colin Wall (61), Howard Wallis (17), Jacqueline Wright (22, 23) and Ray Woods (42).

Finally, we are indebted to all members of the British Bryological Society who have sent in vice-county records over the years. Their work provides the firm foundation on which this and previous Census Catalogues are based.

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