

A CHECK-LIST AND
CENSUS CATALOGUE OF
BRITISH AND IRISH
BRYOPHYTES



T.L. Blockeel and D.G. Long

British Bryological Society

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by

T. L. Blockeel and

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A Check-list and Census Catalogue of British
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female plant. Drawn by Mary Bates from *D. G. Long* 13518
Scotland, Wester Ross v.c. 105, shore of Loch Maree SE of Furnace,
on mossy boulder in shady oak woodland, June 1995 (E).
Magnification × 6.

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INTRODUCTION

THIS PUBLICATION IS the successor to the *Distribution of Bryophytes in the British Isles* by Corley & Hill (1981). In the intervening years many bryophyte taxa have been added to the British and Irish lists, and ongoing recording by members of the British Bryological Society has resulted in numerous amendments to the known distributions of the taxa. At the same time taxonomic research, both nationally and internationally, has resulted in many changes to the accepted taxonomy and nomenclature of mosses and liverworts. The need for a new edition of Corley & Hill (1981) is therefore apparent. This new edition not only provides an updated account of vice-county distributions, but it also serves as a complete check-list 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; Ireland is divided into 40 vice-counties. The Channel Islands, though geographically part of Normandy, are conventionally considered also 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. A small minority of specimens are checked by other competent bryologists, whose authority is then cited along with the record. 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 the *Bulletin of the British Bryological Society* once a year. The records are also entered or cross-referenced in books kept by the Recorders, and are used for the preparation of new volumes such as the present one.

Vice-county recording is often criticised 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, and therefore have to be specially described and illustrated by those who wish to use them. On the other hand, the system has many advantages. It ensures that, at a broad scale of resolution, distributional data are checked by a competent expert. It

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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 an automatic 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 useful complement to data accumulated and mapped on a grid-square basis, as in the Society's *Atlas of the Bryophytes of Britain and Ireland* (Hill, Preston & Smith, 1991, 1992, 1994). The existence of vice-county data of high quality allows distribution maps to be checked both for errors and omissions.

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 (Macvicar, 1905; Ingham, 1907). 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 organiser, 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 B. B. S. 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. From 1962 to 1980, new records have been entered (by means of a cross-reference to the published lists) in an interleaved copy of Warburg (1963), and since 1981 in a copy of Corley & Hill (1981). An official B. B. S. record book for hepatics was opened in 1923 likewise by A. Wilson. This was superseded by a new hepatic record book dating from 1963.
- 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 B. B. S. 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 B. B. S. was re-formed and revitalised 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.

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- 1952 Following publication of a new check-list 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 check-list by Jones (1958).
- 1975 New vice-county records were published in the *Bulletin of the British Bryological Society* 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, 1978b). Publication of *The Moss Flora of Britain and Ireland* (Smith, 1978a) 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 B. B. S. Mapping Scheme, initiated in 1960. All the British and Irish species were mapped on a 10-km grid. 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 Diplolepideae) (Hill, Preston & Smith, 1992).
- 1994 *Atlas of the Bryophytes of Britain and Ireland* Volume 3 Mosses (Diplolepideae) (Hill, Preston & Smith, 1994).

RECORDER OF HEPATICS

1905	S. M. Macvicar
1906–23	W. Ingham
1923–46	A. Wilson
1947	Miss G. Wigglesworth
1948–59	C. P. Castell
1960–76	Mrs J. A. Paton
1977–86	M. F. V. Corley
1987–97	D. G. Long
1998–	T. H. Blackstock

RECORDER OF MOSSES

1906–07	T. Barker
1907–23	W. Ingham
1923–46	J. B. Duncan
1946–65	E. F. Warburg
1966	A. R. Perry
1967–75	A. C. Crundwell
1976–85	M. O. Hill
1986–96	T. L. Blockeel
1997–	G. P. Rothero

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 Catalogues* 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 Catalogues*, 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 (for the period 1954–78 these are documented by Pearman (1979)). Many such floras have involved critical revision of the list of species for particular vice-counties, and the necessary amendments have generally been included along with the year's new records in the Society's *Bulletin*.

The Society's Mapping Scheme has led to the creation of an Atlas database of bryophyte records, from which the published maps were plotted. This database is held at the Biological Records Centre (B. R. C.) at Monks Wood. The availability of this large mass of data in electronic form has enabled further validation to take place in the preparation of the present volume. Specifically, we have excluded from the distributions those vice-county entries which are not supported by a localised record on the Atlas database and which we have not otherwise substantiated. In many instances these entries have their origin in the early editions of the *Census Catalogues* and some of them were based on manuscript lists. Although removal of these entries may seem to be an extreme measure, it places the resulting distributions on a sounder footing. If evidence is subsequently found to substantiate a deleted entry, it can be reinstated in the normal way in the annual list of amendments in the *Bulletin*. This will serve to document records which might otherwise remain obscure.

The Atlas database has also allowed a consistent approach to be taken in the bracketing of entries in the distribution lists. Bracketing has conventionally been used to indicate vice-county records which

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have not been confirmed for a specified period (usually 50 years or more). However in previous editions of the *Census Catalogues* the practice was applied, in general, only to well-worked vice-counties, because the absence of a recent record in underworked areas might not be evidence of the disappearance of a species. In the present edition, we have adopted a more rigorous and consistent approach, and have bracketed vice-county entries where the most recent Atlas record for the taxon was made before 1950.

We are fully aware that the Atlas database is incomplete, and that some of the records held are imprecisely or inaccurately dated. During our preparation of the present edition we have had no means of detecting or quantifying these errors and inconsistencies. Consequently it must be expected that brackets have been added unnecessarily in some instances, and it is also possible that they have been omitted incorrectly in others. For a given vice-county, therefore, it must not be assumed that the application of brackets has been fully correct. However in applying the 1950 rule we have taken account of records accumulated since the publication of the Atlas, where these are known to us, and we have used information published in the following county floras and lists:

Crundwell & Rose, 1996	Hampshire, v.-c. 11 & 12
Rose <i>et al.</i> , 1991	Sussex, v.-c. 13 & 14
Gardiner, 1982	Surrey, v.-c. 17
Wiltshire & Ellis, 1995	Middlesex, v.-c. 21
Bates, 1995	Berkshire, v.-c. 22
Perry & Jones, 1998	Oxfordshire, v.-c. 23
Woods, 1993	Radnorshire, v.-c. 43
Hill, 1989	North Wales, v.-c. 43, 47-52
Perry, 1994	Glamorgan, v.-c. 41
Wigginton, 1995	North Lancashire, v.-c. 60
Graham, 1988	Durham, v.-c. 66
Long, 1990	Berwickshire, v.-c. 81
Richter, 1984	Moray, v.-c. 95
Synnott, 1990	Co. Dublin, v.-c. H21
Kelly & Synnott, 1993	Co. Dublin, v.-c. H21

Tracing distributional records

The chief sources of records listed here are the first editions of the *Census Catalogues* and the lists of additions and amendments published over the years by the B. B. S.

If a species is listed as occurring in a vice-county, then a reliable localised record ought to be traceable. Records accruing since 1935

have almost all been published and most are represented by specimens in the B. B. S.'s herbarium (BBSUK). Details of the remainder can generally be had from the notebooks kept by the Recorders. For revisions of critical taxa which have been undertaken from time to time, lists of verified specimens and their locations are generally available with the appropriate Recorder.

Records added since the first edition of the *Census Catalogue* and before 1935 can be more difficult to trace. Many were published in the Reports of the Moss Exchange Club and the British Bryological Society. For those that were published in the Reports, the Recorders' books can be helpful but are often cryptic. For example, when Ingham was Recorder of Mosses, he annotated a copy of the first edition of the *Census Catalogue of British Mosses*. A typical annotation is '258 (*Weissia sterilis*), v.-c. 37, Duncan (*leg. Knight*)'. The specimen is probably in J. B. Duncan's herbarium, now at the Royal Botanic Garden, Edinburgh (E), or in H. H. Knight's herbarium, now at the National Museum of Wales (NMW); but it could be in the B. B. S.'s herbarium (BBSUK), or elsewhere, or absent. There is no way of knowing, and unless the record was published it may now be untraceable. Fortunately this is unlikely, as records of rarities such as *W. sterilis* were normally published in local naturalists' journals or the *London Journal of Botany*.

The greatest difficulties arise in tracing records in the first editions of the *Census Catalogues*. Most of these records were based on published sources, which were cited in the *Census Catalogues* themselves. But many of the records were based on manuscript lists, and these have now been lost. However, vice-county entries without a corresponding record on the B. R. C. database have been eliminated from the present volume. For all of the remaining entries there should be at least one record available on the database, although this may not be the original vice-county record.

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 been changed. Vice-counties often differ widely from counties that bear the same name. In the past this has caused confusion, but should not do so in the future. We are fortunate now to have definitive modern accounts of the vice-counties, by Dandy (1969) for Great Britain and by Webb (1980) for 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 booklet of descriptions of British vice-counties by Dandy (1969). Dandy's descriptions are accompanied by two maps at a scale of 1:625,000, the three items together being issued as a boxed set. A copy of the set is available for consultation by B. B. S. members from the Society's Librarian. Other copies are widely available in botanical libraries in Britain, but bryologists working in Britain are strongly advised to obtain a copy of their own. It is still in print, and is very useful.

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. A copy is available for consultation by B. B. S. members from the Society's Librarian.

Names of vice-counties

The names given here are the full, unabbreviated names of the vice-counties, though it should be understood that with Durham and most of the undivided Irish counties, the form County Durham, County Dublin, etc. is used, to avoid confusion with the town of the same name. For British (but not for Irish) counties, several of the names used here differ from those recommended by the Botanical Society of the British Isles (Halliday & Perring, 1976) and by Dandy

VICE-COUNTIES OF GREAT BRITAIN AND IRELAND

(1969). These authorities were inconsistent with their use of the suffix -shire, and gave many names in abbreviated form. Dandy maintained that Watson's abbreviations were the names of the vice-counties, but we demur.

Alternative names, some of them still in common use, are indicated in brackets.

Great Britain

1	West Cornwall with Scilly	35	Monmouthshire
2	East Cornwall	36	Herefordshire
3	South Devon	37	Worcestershire
4	North Devon	38	Warwickshire
5	South Somerset	39	Staffordshire
6	North Somerset	40	Shropshire (Salop)
7	North Wiltshire	41	Glamorgan
8	South Wiltshire	42	Breconshire (Brecknockshire)
9	Dorset	43	Radnorshire
10	Isle of Wight	44	Carmarthenshire
11	South Hampshire	45	Pembrokeshire
12	North Hampshire	46	Cardiganshire
13	West Sussex	47	Montgomeryshire
14	East Sussex	48	Merioneth
15	East Kent	49	Caernarvonshire
16	West Kent	50	Denbighshire
17	Surrey	51	Flintshire
18	South Essex	52	Anglesey
19	North Essex	53	South Lincolnshire
20	Hertfordshire	54	North Lincolnshire
21	Middlesex	55	Leicestershire with Rutland
22	Berkshire	56	Nottinghamshire
23	Oxfordshire	57	Derbyshire
24	Buckinghamshire	58	Cheshire
25	East Suffolk	59	South Lancashire
26	West Suffolk	60	West Lancashire
27	East Norfolk	61	South-east Yorkshire
28	West Norfolk	62	North-east Yorkshire
29	Cambridgeshire	63	South-west Yorkshire
30	Bedfordshire	64	Mid-west Yorkshire
31	Huntingdonshire	65	North-west Yorkshire
32	Northamptonshire	66	Durham
33	East Gloucestershire	67	South Northumberland
34	West Gloucestershire		

VICE-COUNTIES OF GREAT BRITAIN AND IRELAND

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

Ireland

H1	South Kerry	H12	Wexford
H2	North Kerry	H13	Carlow
H3	West Cork	H14	Laois (Leix, Queen's County)
H4	Mid-Cork	H15	South-east Galway
H5	East Cork	H16	West Galway
H6	Waterford	H17	North-east Galway
H7	South Tipperary	H18	Offaly (King's County)
H8	Limerick	H19	Kildare
H9	Clare (including Aran Islands)	H20	Wicklow
H10	North Tipperary	H21	Dublin
H11	Kilkenny		

VICE-COUNTIES OF GREAT BRITAIN AND IRELAND

H22	Meath	H32	Monaghan
H23	Westmeath	H33	Fermanagh
H24	Longford	H34	East Donegal
H25	Roscommon	H35	West Donegal
H26	East Mayo	H36	Tyrone
H27	West Mayo	H37	Armagh
H28	Sligo	H38	Down
H29	Leitrim	H39	Antrim
H30	Cavan	H40	Londonderry
H31	Louth		

C Channel Islands

Maps of vice-counties

The detailed maps are at a scale of approximately 1:3,700,000. The scale can be inferred from the grid squares, which are of side 100km.

Note that the Irish grid is that of the Ordnance Survey of Ireland, and not the extended British grid that has sometimes been used for botanical recording in Ireland.

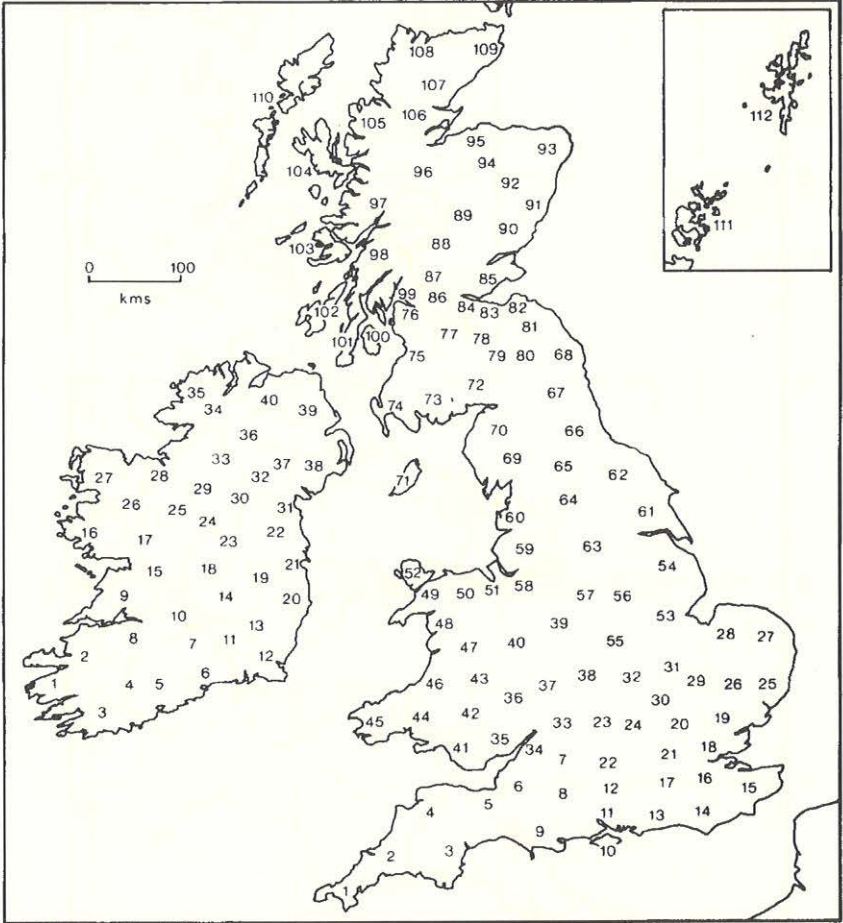


FIG. 1. General disposition of British and Irish vice-counties; vice-county boundaries have been omitted, but are indicated in the more detailed maps that follow (FIGS. 2-6).

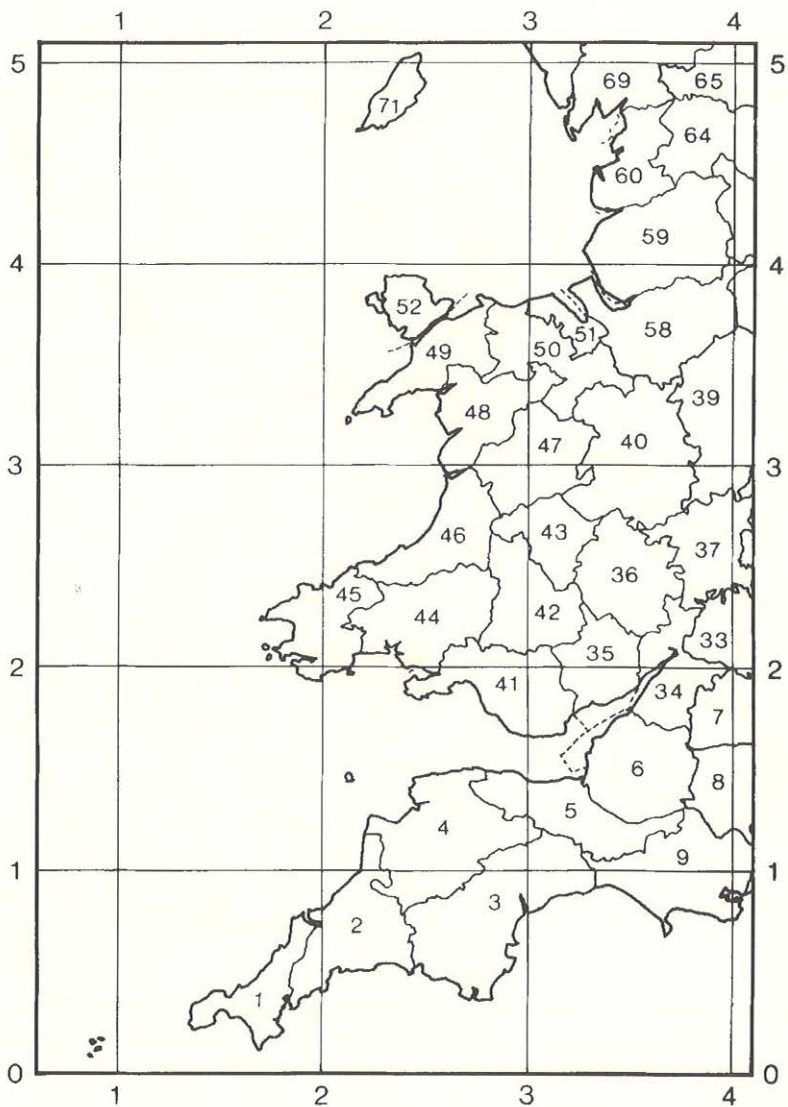


FIG. 2. Vice-counties of south-west Britain; the lines of the National Grid are spaced at intervals of 100km.

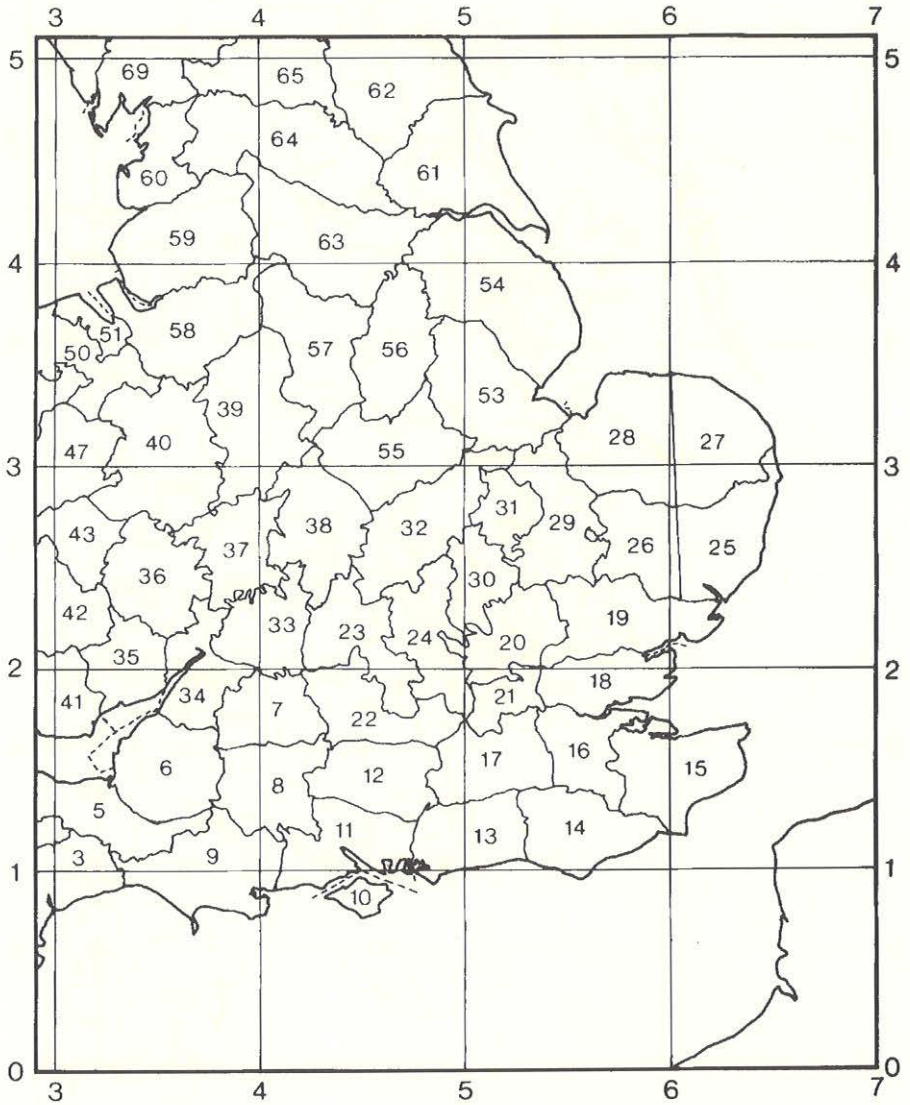


FIG. 3. Vice-counties of south-east Britain; the lines of the National Grid are spaced at intervals of 100km.

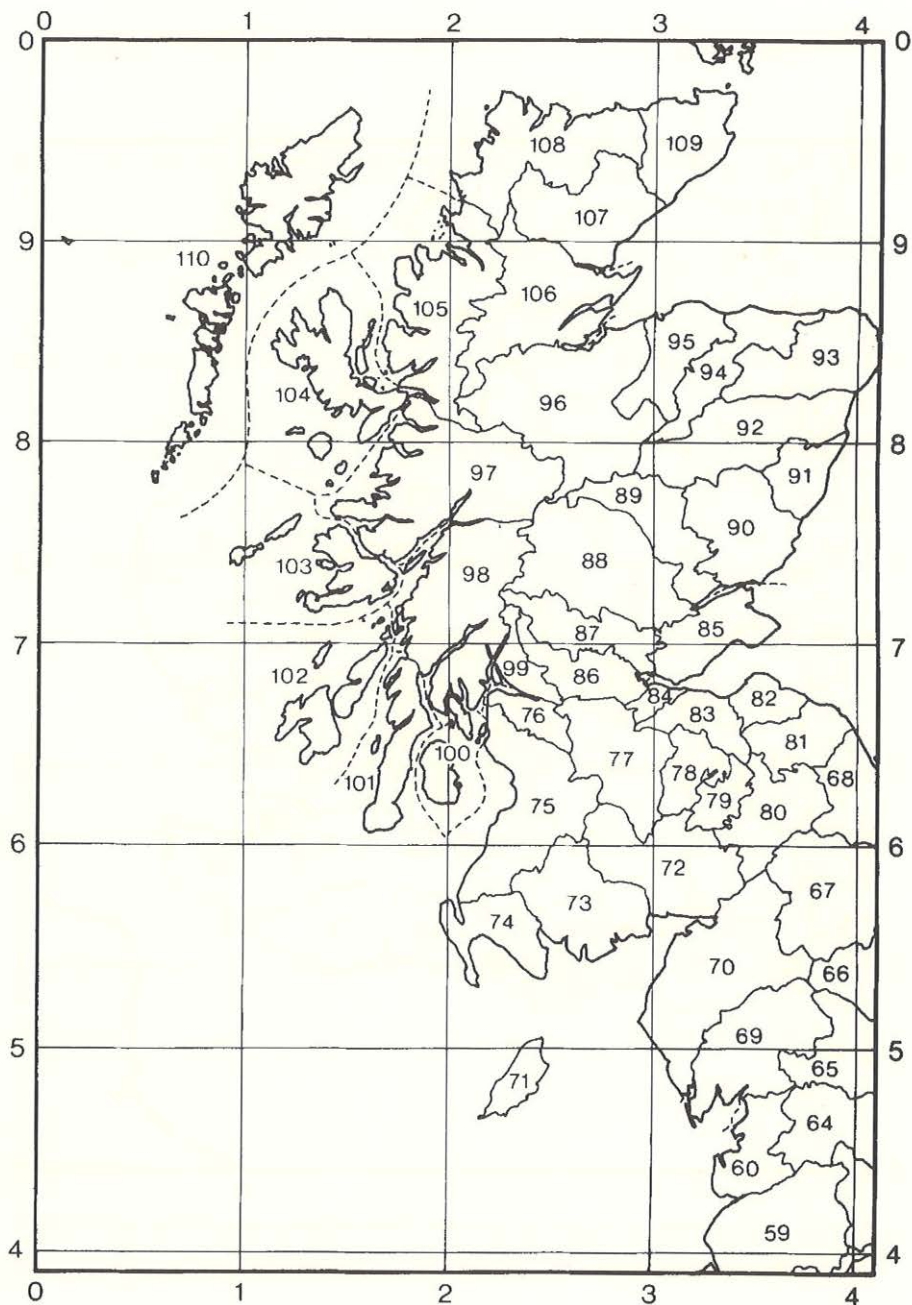


FIG. 4. Vice-counties of north-west Britain; the lines of the National Grid are spaced at intervals of 100km.

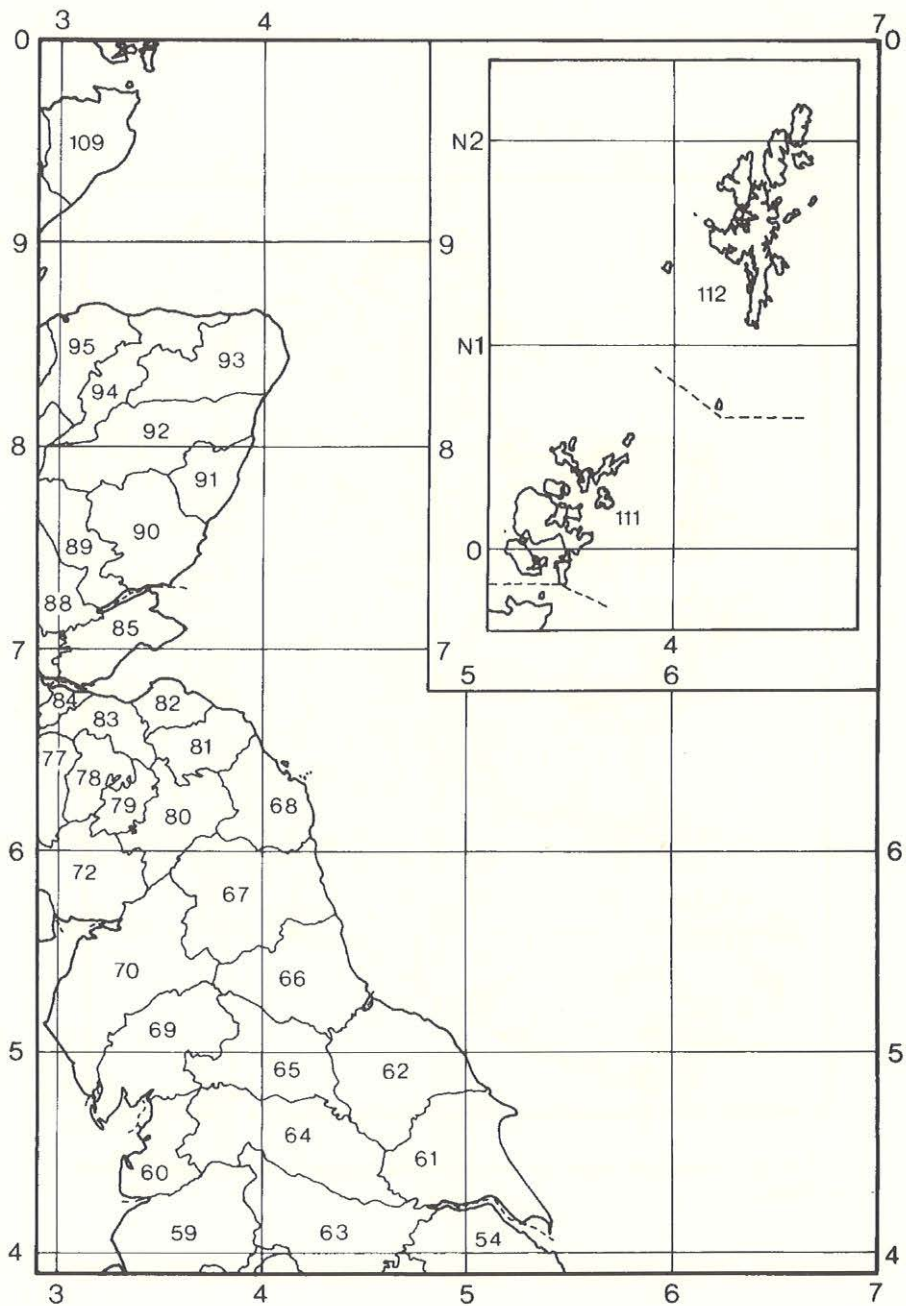


FIG. 5. Vice-counties of north-east Britain; the lines of the National Grid are spaced at intervals of 100km.

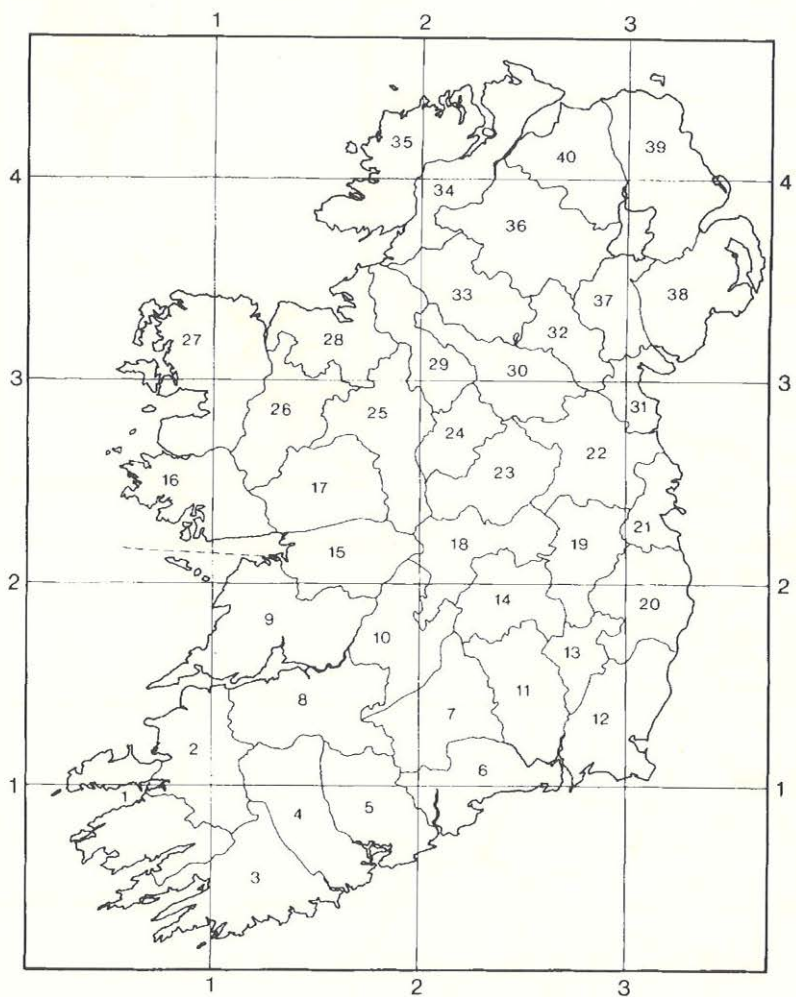


FIG. 6. Vice-counties of Ireland; the lines of the Irish National Grid are spaced at intervals of 100km.

THE CHECK-LIST AND CENSUS CATALOGUE

THE TAXA WHOSE distributions are listed below are those whose occurrence in Britain or Ireland is well authenticated. Taxa which have been added or reinstated since the publication of Corley & Hill (1981) are accompanied by an explanatory annotation.

Excluded Taxa

As noted by Smith (1978a), the British records of the following species are doubtful and they were discarded by Corley & Hill (1981):

Andreaea obovata Thed. (*A. hartmannii* Thed.)

Bryum purpurascens (R.Br.) Bruch, Schimp. & W. Gümbel

Cynodontium gracilescens (F.Weber & D.Mohr) Schimp.

Didymodon asperifolius (Mitt.) H.A.Crum, Steere & L.E.Anderson
(*Barbula asperifolia* Mitt.)

Sphagnum subfulvum Sjörs.

The following taxa were accepted by Corley & Hill (1981) but have since been rejected as doubtful or erroneous:

Andreaea crassinervia Bruch (Murray, 1988)

Eurhynchium pulchellum (Hedw.) Jenn. var. *pulchellum* (Hill, 1993).

Grimmia trichophylla Grev. var. *tenuis* (Wahlenb.) Wijk & Margad.
(*G. muehlenbeckii* Schimp.) (Smith 1992)

Orthotrichum urnigerum Myr. (Blockeel, 1987)

Racomitrium microcarpon (Hedw.) Brid. (Frisvoll, 1988; Blockeel, 1991)

Schistidium boreale Poelt (Blom, 1996)

We have also discarded a number of infra-specific taxa in the present edition. These include the following liverwort taxa, which are not recognised by Paton (in prep.):

Cephalozia bicuspidata (L.) Dumort. subsp. *lammersiana* (Huebener) R.M.Schust.

Gymnocola inflata (Huds.) Dumort. var. *heterostipa* (Carrington & Spruce) Müll.Frib.

Lophocolea bidentata (L.) Dumort. var. *rivularis* (Raddi) Warnst.

Lophozia excisa (Dicks.) Dumort. var. *cylindracea* (Dumort.) Müll.Frib.

Lophozia ventricosa (Dicks.) Dumort. var. *confertifolia* (Schiffn.) Husn.

Lophozia ventricosa (Dicks.) Dumort. var. *longiflora* auct. non (Nees) Macoun

Lophozia ventricosa (Dicks.) Dumort. var. *silvicola* (H.Buch) E.W.Jones ex R.M.Schust.

- Porella arboris-vitae* (With.) Grolle var. *killamiensis* (Pearson) M.F.V. Corley
Porella arboris-vitae (With.) Grolle var. *obscura* (Nees) M.F.V. Corley
Porella cordaeana (Huebener) Moore var. *faeroensis* (C.E.O. Jensen)
E.W. Jones
Porella cordaeana (Huebener) Moore var. *simplicior* (J.E. Zetterst.)
S.W. Arnell

The infra-specific moss taxa which we no longer recognise are:

- Atrichum undulatum* (Hedw.) P. Beauv. var. *minus* (Hedw.) Paris
Aulacomnium palustre (Hedw.) Schwaegr. var. *imbricatum* Bruch,
Schimp. & W. Gümbel
Barbula convoluta Hedw. var. *commutata* (Jur.) Husn.
Bryum argenteum Hedw. var. *lanatum* (P. Beauv.) Hampe (Longton, 1981)
Bryum pallens Sw. var. *fallax* Jur. (Demaret, 1986)
Campylopus pyriformis (Schultz) Brid. var. *fallaciosus* (Thér.)
M.F.V. Corley (see annotation 55)
Dicranodontium denudatum (Brid.) Broth. var. *alpinum* (Schimp.)
I. Hagen (Frahm, 1997)
Drepanocladus exannulatus (Bruch, Schimp. & W. Gümbel) Warnst.
var. *rotae* (De Not.) Loeske
Drepanocladus fluitans (Hedw.) Warnst. var. *falcatus* (Sanio ex
C.E.O. Jensen) Roth
Eurhynchium praelongum (Hedw.) Bruch, Schimp. & W. Gümbel var.
stokesii (Turner) Dixon
Eurhynchium pulchellum (Hedw.) Jenn. var. *praecox* (Hedw.) Dixon
(Hill, 1993).
Eurhynchium swartzii (Turner) Curnow var. *rigidum* (Boulay) Thér.
Grimmia trichophylla Grev. var. *stirtonii* (Schimp.) Moell. (Smith,
1992)
Grimmia trichophylla Grev. var. *subsquarrosa* (Wilson) A.J.E. Sm.
(Smith, 1992)
Pogonatum aloides (Hedw.) P. Beauv. var. *minimum* (Crome) Mol.
Polytrichum alpinum Hedw. var. *septentrionale* (Sw.) Lindb. (Long, 1985)

Arrangement and nomenclature

In accordance with long-standing tradition, the Marchantiopsida (liverworts) and Anthocerotopsida (hornworts) are numbered in one series, ignoring the fact that the Marchantiopsida are perhaps less closely related to the Anthocerotopsida than they are to the Bryopsida (mosses). The Sphagnopsida, Andreaeopsida and Bryopsida are numbered in a separate series. If the numbering of the present volume is to be used to cite a taxon, then it should be employed thus: 3/1, 24/1b, etc. But it is not our intention to provide a definitive

numbering of British and Irish bryophytes; the same number can refer either to a moss or a hepatic.

For Marchantiopsida and Anthocerotopsida the arrangement and nomenclature follow Mrs J. A. Paton's new *Liverwort Flora of the British Isles* (Paton, in prep.).

For Sphagnopsida, Andreaeopsida and Bryopsida, the arrangement and nomenclature follow the new edition of Dr A. J. E. Smith's *The Moss Flora of Britain and Ireland* (Smith, in prep.), insofar as this has been established. The adoption in large part of Zander's (1993) arrangement of the Pottiaceae has displaced many familiar names, and there are also a number of novelties in the Hypnales. Although these changes will dismay those who desire nomenclatural stability, they are inevitable if taxonomic classification is to keep pace with our increased understanding of bryophyte interrelationships.

Synonyms are added in round brackets after the accepted name for each species. This synonymy includes names used by Smith (1978a) and Corley & Hill (1981), and a small number of other names which have appeared in the literature in recent years.

The abbreviations of authors' names have been standardised according to Brummitt & Powell (1992). Author citations which differ from those in Corley *et al.* (1982), Corley & Crundwell (1991) and Grolle (1983) are explained in the annotations.

References to the annotations are indicated by numbers in square brackets after the name of a taxon. The annotations (page 159) have been used to provide references to published taxonomic revisions and recent additions to the flora, to explain taxonomic and nomenclatural usage, and to provide other relevant information.

Symbols and conventions

Records in round brackets signify vice-counties from which a species has not been seen since the beginning of 1950. For example, *Bryum mamillatum* has the distribution (28), 54, (59), indicating that there is a recent record (1950 or later) for v.-c. 54 and old records for v.-c.s 28 and 59. In a few instances, brackets have also been added where a post-1950 record exists but the locality in question is known to have been destroyed. However such brackets have not been used for any record made since 1980.

As noted on page 10, the application of brackets has been based largely on the records accumulated during the British Bryological Society's Mapping Scheme, and it is certain that subsequent records exist for some of these species.

Irish vice-counties are signified by the prefix 'H', from Hibernia, the Latin name for Ireland. Thus the distribution of *Lejeunea hibernica*

is H 1-3, 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.

In editions of the *Census Catalogue* before Corley & Hill (1981), doubtful records were listed as well as old ones. A record was considered doubtful if the determination was in doubt, if the provenance was in doubt, or if the record was not adequately localised. Such records are of little value and are no longer listed.

New names and combinations

The following new names and combinations are discussed and validated in Blockeel & Smith (1998):

Pottiopsis Blockeel & A.J.E.Sm.

Pottiopsis caespitosa (Bruch ex Brid.) Blockeel & A.J.E.Sm.

Tortula viridifolia (Mitt.) Blockeel & A.J.E.Sm.

Weissia controversa Hedw. var. **wimmeriana** (Sendtn.) Blockeel & A.J.E.Sm.

The following new combinations in *Sphagnum*, together with the accompanying notes, have been supplied by Dr M. O. Hill.

Sphagnum capillifolium (Ehrh.) Hedw. subsp. **rubellum** (Wilson) M.O.Hill, **comb. nov.**

Basionym: *Sphagnum rubellum* Wilson, *Bryologia Britannica* 19, 1855.

Studies by Cronberg (1989, 1996, 1997) have shown that *Sphagnum capillifolium* and *S. rubellum* are normally distinct, although intermediates occur. In view of the existence of intermediates, the relatively slight difference in morphology, and the complexity of the pattern of variation in *S. capillifolium sensu lato*, subspecific rank is appropriate for *S. rubellum*.

Sphagnum subnitens Russow & Warnst. var. **ferrugineum** (Flatberg) M.O.Hill, **comb. nov.**

Basionym: *Sphagnum subnitens* Russow & Warnst. subsp. *ferrugineum* Flatberg, *Lindbergia* 11: 50, 1985.

Sphagnum subnitens subsp. *ferrugineum* appears to be little more than a brownish morph of *S. subnitens*. It lacks other reliable distinguishing features, the stem-leaf character indicated by Flatberg (1985) being poorly marked and not decisive. If the taxon is to be recognised at all, it should not rank higher than variety.

Sphagnum fallax (H.Klinggr.) H.Klinggr. subsp. **isoviitae** (Flatberg)
M.O.Hill, **comb. nov.**

Basionym: *Sphagnum isoviitae* Flatberg, *Journal of Bryology* **17**: 2, 1992.

Flatberg (1992, 1993) recognised two taxa, *S. brevifolium* (Lindb. ex Braithw.) Röhl and *S. isoviitae* Flatberg, which are close to *S. fallax* in the *Sphagnum recurvum* complex. After careful examination of British material, it has not proved possible to distinguish between *S. brevifolium* and *S. isoviitae*, and some specimens are intermediate between these and *S. fallax*. It is proposed therefore to recognize them as a single taxon at the rank of subspecies. *S. brevifolium* has priority but is a *nomen confusum*. Warnstorf, on the basis of authentic material that has apparently now been destroyed (Flatberg, 1993), synonymized it with *S. balticum* (Russow) C.E.O.Jensen. Flatberg (1993) selected a different lectotype, from Loch Kandor. It seems confusing and unnecessary to follow Flatberg in this choice. Fortunately, *Sphagnum isoviitae* is unequivocal and available as a basionym.

LIVERWORTS (MARCHANTIOPSIDA) AND
HORNWORTS (ANTHOCEROTOPSIDA)

1. **Haplomitrium** Nees
 1. **hookeri** (Sm.) Nees
1, (3, 11, 13), 42, 49, 59, (61), 66, 68-71, 74,
77-79, 83, 87-90, 92-98, 101, 104-110, 112. H
1-3, 16, 20, (21), 27, 28, 30, 34, 35.
2. **Mastigophora** Nees
 1. **woodsii** (Hook.) Nees
88, 96-98, (99), 103-108, 110, 112. H 1, 2, 16, 27.
3. **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, 111.
H 1-3, 6, 7, 16, 27-29, 33-35, 39.
 3. **borealis** Crundw.
105.
4. **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), 86-92, 94-112. H 1-3, 6,
(16, 20), 27-29, (31, 33), 34, 35, (38), 39, 40.
5. **Trichocolea** Dumort.
 1. **tomentella** (Ehrh.) Dumort.
1-6, 8, 9, 11-18, (20), 22, 24, (26, 34), 35, 36,
(37), 38, (39), 40-50, 52, 57, (58), 59, 60, 62-
67, (68), 69-83, (85, 86), 87-91, (92), 94-105,
(106), 108, 109, 111. H 1-6, 8-10, (13, 14), 16,
(18, 20), 26-30, 33, (34), 35, 36, (38), 39, 40.

TELARANEA

6. **Telaranea** Spruce ex Schiffn.
 1. **nematodes** (Gottsche ex Austin) M.Howe
1. H 1-3, 16, 27.
 2. **murphyae** Paton
1, 9.
 3. **longii** Paton [1]
17, 98.

7. **Kurzia** G.Martens
 1. **pauciflora** (Dicks.) Grolle
1-5, (6), 8-15, (16), 17, 22, (23), 24, 25, (26),
27, 28, (34), 35, (39), 40-50, 52, 54, (55), 57-
60, (61), 62-75, (76), 77, 78, (79), 80, 81, (82),
83, (85), 86-92, 95-112. H 1-3, (5), 6, 7, 9-20,
(21), 22-30, (31), 33-36, (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, 104, 105, 108, 112. H 1,
2, 4, 8, 15, 16, 20, 26-28, 33-35. C.
 3. **trichocladus** (Müll.Frib.) Grolle
2, 5, 39, 45, 46, 48-50, 57, 60, (62), 63-65, 67,
68, (69), 70, 74, 78, 81, 83, 88-92, 95-106, 108,
(109), 110, 112. H 1-4, 6, 7, 10, 12, 13, 16, 20,
25-27, 29, 30, 33-36, 39, 40.

8. **Lepidozia** (Dumort.) Dumort.
 1. **reptans** (L.) Dumort.
1-55, (56), 57-110, (111), 112. H 1-3, 5-10, 12-
18, 20-31, 33-40. C.
 2. **pearsonii** Spruce
44, 46-49, (50, 57, 59), 60, (63), 64, 65, 67-73,
(74, 75), 76, (78), 83, 86-88, 90, 92, 94, 96-106,
108, (109), 110, (111), 112. H 1-3, 7, 16, 20,
27-30, 33-35, 39.
 3. **cupressina** (Sw.) Lindenb.
1-5, 34, 42, 43, (44), 45-50, 52, (58), 60, 63, 64,
67, 68, 70, (71, 75), 86, 96-105, 108, 110-112. H
1-3, 5, 6, (8), 12, 16, 20, 21, 26-30, 33-36, 39, 40.

9. **Bazzania** Gray

1. **trilobata** (L.) Gray
1-5, 11, 13, 14, 34, (35, 36), 37, 39-50, 52, 57, 58, (59), 60, 62-75, 78-80, (81, 85), 86-88, (89), 90-92, 94-106, 108, 111, 112. H 1-3, (5), 12, (13), 16, (20, 21), 27-30, 33-35, 37-39, (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. H 1-4, 6, 7, 16, 20, 27, (28), 29, 30, 33-36, 39, 40.
3. **pearsonii** Steph.
92, 96-98, 104-108, 110. H 1, 2, 16, 27, 35.

10. **Calypogeia** Raddi

1. **fissa** (L.) Raddi
1-54, (55), 56-112. H 1-40. C.
2. **muelleriana** (Schiffn.) Müll.Frib.
1-6, 8-30, 34-52, 54, 55, 57-112. H 1-14, 16, (17), 18, (19), 20-31, (32), 33-40. C.
3. **azurea** Stotler & Crotz (*C. trichomanis* auct. non (L.) Corda) [2]
40, 42, 48-50, 52, 57-60, 63-70, 72, 73, 78, 80-83, 87-90, 92, 93, 96-99, 101-103, 105, 106, 108, 110-112. H 2, 3, 6, 7, 16, 20, 27, 33-36, 40.
4. **neesiana** (C.Massal. & Carestia) Müll.Frib.
3, 11, 13, 17, 40, 45-50, 58, (59), 60, 62, 63, 67-70, 72, 73, 75, 77-81, 83, 85, 88-93, 95-98, 101, 102, 104-110, 112. H 2, 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.Pers.) Warnst. & Loeske
2, 3, 8, 9, 11-15, 17, 22, 26, 28, 39, 40, 42, 45-50, 58, (60), 64-67, 70, 73, 74, 79, 81, 83, 84, 87-90, 92, 95-98, 101, 103-106, 108, (109), 110-112. H 3, 6, 7, 9, 11, 14, 16, 17, 19, 22-24, 27-29, 32-37.

CALYPOGEIA

7. **suecica** (Arnell & J.Perss.) Müll.Frib.
96-98, 101, 105, 106, 108. H 1, 33, 36.
8. **arguta** Mont. & Nees
1-26, (27, 28), 29, 32, (33), 34-54, (55), 56-77,
(78), 79-88, 90, 91, 93, 94, 96-106, 108-112.
H 1-16, (18), 19-21, 23-40. C.
11. **Adelanthus** Mitt.
 1. **decipiens** (Hook.) Mitt.
3, 46, 48, 49, 69, 70, 73, 86, 97-105. H 1-3, 6,
(7), 16, 27-29, 33-35, (39), 40.
 2. **lindenbergianus** (Lehm.) Mitt.
102. H 16, 27, 35.
12. **Cephalozia** (Dumort.) Dumort.
 1. **bicuspidata** (L.) Dumort. (incl. subsp.
lammersiana (Huebener) R.M.Schust.)
1-30, 32-112. H 1-16, (17, 18), 19-21, 23-40. C.
 2. **ambigua** C.Massal. (*C. bicuspidata* (L.) Dumort.
subsp. *ambigua* (C.Massal.) R.M.Schust.) [3]
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), 70-75, 80, 83, (88), 92,
95-99, 102-105, 110, 112. H 1-3, 7, (9), 13, 16,
(17, 18), 20, (21), 27-31, 33-36, (38), 39.
 4. **macrostachya** Kaal. [4]
 - a var. **macrostachya**
2, 3, 8, 10-13, (14, 15), 17, (24), 28, 39, 40, 45,
46, (48), 50, 58, 62, 70, 99, 104, 105, 110. H 1,
25, 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. H 7, 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. H 1, 3, 9, (12), 16, 20, 25-30, 33-36, 40.

6. **lunulifolia** (Dumort.) Dumort.
1-9, 11-17, 20, 22, 23, 31, (34), 35, (36), 37, 39, 40, (43), 44-51, (55, 56), 57-60, (61), 62-75, (77), 78, (79), 80-83, (84, 85), 86-92, (93), 94-112. H 1-3, 5-11, 13, 15, 16, (18), 20, (21), 26-30, 33, 34, (35), 36-40.
7. **pleniceps** (Austin) Lindb.
2, 4, 6, 11, (14), 27, 43, 44, 46, 48, 49, 52, (70), 79, 81, 83, 88, 89, (90), 92, (94), 95-98, 104-106, (108), 112. H 1, 20, 23, 26, 27, 35, 39.
8. **loitlesbergeri** Schiffn.
46-48, 50, 60, (64), 66, 70, 73, 74, (77), 79, 83, 88-90, 92, 94-98, 102, 104-106, (108, 109), 112. H 9, 16, 22, 24, 35.
9. **connivens** (Dicks.) Lindb.
1-6, 8-20, 22, (23), 24, 25, (26), 27-30, 32, 34, 35, 38-52, 54, 55, 57-75, (76), 77, 78, (79), 80-84, (85), 86-92, (93), 94-106, (107), 108-112. H 1-3, 6-20, (21), 22-25, 27-29, 31, 33-37, (38), 39, 40. C.
10. **hibernica** Spruce ex Pearson [5]
H 1, 2, 16, 27.
13. **Nowellia** Mitt.
1. **curvifolia** (Dicks.) Mitt.
1-9, 11-14, 17, 22-25, 29, 33, 34, 36, 38-52, 57-60, 62-112. H 1-3, 5, 7, 9, 11, 15-18, 20, (21), 23, 25-31, 33-36, 38, (39), 40.
14. **Cladopodiella** H.Buch
1. **fluitans** (Nees) H.Buch
1-3, 8-15, 17, 22, (27), 28, 39, 40, (42), 43-50, 57-60, 62-64, (65), 66-70, 73, 76, 80, (83, 88, 92), 95, 97-99, 101-108, (109), 110, 112. H 1, 2, 16, 18, (20, 21, 23), 24-27, 35, (37-39).
2. **francisci** (Hook.) H.Buch ex Jörg.
1-3, 8, 9, 11-13, (14), 16, 17, 22, (24-26), 27, (28, 34, 35), 41, (45, 48), 52, (58), 61, 62, (64, 71), 88, 90, (91), 92, 95-99, (100), 101, 103-105, 110. H 1, (3, 21, 27), 29, (38, 39).

PLEUROCLADULA

15. **Pleurocladula** Grolle

1. **albescens** (Hook.) Grolle
88, (89), 90, 92, 94, 96-98, (100), 105, 106.

16. **Hygrobiella** Spruce

1. **laxifolia** (Hook.) Spruce
(14, 42), 46, 48-50, 57, 62, 64, (65), 66-70, (72),
73, (75, 77), 79, 83, (86), 87-92, 94-106, 108-
110, 112. H 1-4, 6, 7, 16, 20, (21), 27, 28, (33),
34-36, (39), 40.

17. **Odontoschisma** (Dumort.) Dumort.

1. **sphagni** (Dicks.) Dumort.
1-5, 8, 9, 11-17, (21), 22, (23), 24, (25), 27, 28,
(29, 34), 35, (37), 39-43, (44), 45-52, 54, (55,
57), 58-84, (85), 86-92, (93), 94-112. H 1-5, 7-
20, 22-30, (32), 33-40.
2. **denudatum** (Mart.) Dumort.
2-5, 8, 9, 11-14, 16, 17, 22, 25, 26, 39-52, (57),
58, (59), 60-62, 64, 66-70, (71), 72-75, 78-81,
83, (84, 85), 87-89, 91, 94-108, (109), 110,
(111), 112. H 1-3, 7, 9-11, 13, 14, 16-19, (21),
22-31, 33-37, 40.
3. **elongatum** (Lindb.) A.Evans
87, 88, 92, 96-98, (99), 102, 104-106, 108, 110,
(111), 112. H 3, 16, 27.
4. **macounii** (Austin) Underw.
88, 97, 98, 105, 106.

18. **Cephaloziella** (Spruce) Schiffn.

1. **spinigera** (Lindb.) Warnst. (*C. subdentata*
Warnst.) [6]
1, 2, 4, 8, 12, (13, 14), 17, 22, (34), 46, (52), 67,
69, 70, 81-83, (88, 92), 96-98, 105, 112. H 1,
9, 20, 23, (27), 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.
1, 2, 4-7, 9, 11-14, 17, 20, 22-26, 28, (29),
30, (33), 34, 35, (37), 38, 40-42, 46, 48, 50,
(51, 56), 57-63, (64), 67-69, 71, 72, (74, 76),
78, (80), 81-83, (85), 86-99, 103, 105, 106,
(107), 110, (111). H 9, 20, 23, 34, 37, 39.
C.
4. **hampeana** (Nees) Schiffn.
1-7, 9-20, 22, (23), 24, 26-29, 34, 35, 39-52,
(56), 57-60, (61), 62-75, (76), 77-80, 82, 83,
85-92, 94-99, 101-109, 112. H 1-13, 16, (18),
20, 22-25, 27-30, 33-40.
5. **baumgartneri** Schiffn.
9, 10, 13, (14), 15, (17).
6. **divaricata** (Sm.) Schiffn.
1-6, (7), 8, 9, (10), 11-32, (33), 34-55, 57-75,
77-92, 94-108, 110-112. H (1), 2-4, 6-10, 12,
13, 16, 20-23, 27-30, 33-40. C.
7. **stellulifera** (Spruce) Schiffn. [7]
1-6, 10, (13, 14, 16, 33, 34), 35, 36, (37), 41,
(44), 45-49, (50), 52, (56, 57), 61, 64, 66, 71,
(77), 87. H 1-3, 6, 9, 20, (27), 34, 35. C.
8. **massalongi** (Spruce) Müll.Frib. [8]
1-3, 48, (49), 52. H 3, 6.
9. **nicholsonii** Douin & Schiffn. [8]
1-4, (48), 58.
10. **dentata** (Raddi) Mig.
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). C.
12. **integerrima** (Lindb.) Warnst.
1, 2, (7, 13, 14, 22). H 6.
13. **calyculata** (Durieu & Mont.) Müll.Frib.
1, 2, 6, 41.

19. **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.
H 1-3, 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. H 16, 27, 34, 35.
20. **Tetralophozia** (R.M.Schust.) Schljakov
1. **setiformis** (Ehrh.) Schljakov (*Chandonanthus
setiformis* (Ehrh.) Lindb.)
68, (88), 89-98, 105, 106, (108), 109.
21. **Barbilophozia** Loeske
1. **quadriloba** (Lindb.) Loeske
88, 89, 92, 98.
 2. **kunzeana** (Huebener) Müll.Frib.
42, 51, 64, 67, 68, (71), 88, 90, (92), 95, 96,
(97), 108, (110). H (28).
 3. **floerkei** (F.Weber & D.Mohr) Loeske
2-5, (6), 28, 35-37, 39-52, 55, 57-60, 62-92,
(93), 94-110, (111), 112. H (1), 2, 3, (6), 7, 8,
10, 13, 16, 20, 21, 27, 28, 30, 33-36, 38-40.
 4. **atlantica** (Kaal.) Müll.Frib.
39, 46-52, 57-60, 62-73, 79, 80, (83), 86, 89-92,
94-99, (100), 101, 105, 108, 109, 111, 112. H (34).
 5. **attenuata** (Mart.) Loeske
1-6, (9), 11-14, 16-18, (20), 22, (23), 24, 27,
28, 30, 34-37, 39-52, 54, 55, 57-60, (61), 62-
92, 94-106, 108, (109). H 1, 3, 6, (7), 12, 13,
16, 20, 21, 25, 27-29, 31, 33-37, (38), 39, 40. C.
 6. **hatcheri** (A.Evans) Loeske
(26), 28, 40, (48), 49, 50, 55, 64-70, 72, 77-99,
105-110.
 7. **lycopodioides** (Wallr.) Loeske
(64), 65, 68-70, 88-90, 92, 94, 96-98, 104-106,
(107), 108.

8. **barbata** (Schmidel ex Schreb.) Loeske
2, (14), 26, 28, 36, (37), 40-43, (44), 46-51, 54,
(55), 57, (59), 60, 62, (63), 64-70, 72-74, 76,
(77), 78-99, 101, 103-108, (109). H (1, 12), 20,
(21, 27, 30, 35), 40.
22. **Anastrepta** (Lindb.) Schiffn.
1. **orcadensis** (Hook.) Schiffn.
4, 46-50, 60, 64, 65, 68-70, 72, 73, 75, 77, (78),
83, (85), 86-90, 92-110, (111), 112. H 1-3, 16,
20, 27, 29, 33, 35.
23. **Lophozia** (Dumort.) Dumort.
1. **longidens** (Lindb.) Macoun
48, 65, 66, (70), 88, 90-92, 94-99, 105, 106,
108.
2. **ventricosa** (Dicks.) Dumort. (incl. var. *silvicola*
(H.Buch) E.W.Jones ex R.M.Schust., var.
longiflora auct. non (Nees) Macoun, var. *confer-
tifolia* (Schiffn.) Husn.)
1-6, (7), 8-18, 20-22, 24, 25, (26), 27, 28, (29),
30, 32, 34-52, 54, 55, (56), 57-112. H 1-10, 12-
16, 18, 20-30, 33-40. C.
3. **longiflora** (Nees) Schiffn. (*L. guttulata*
(Lindb.) A.Evans) [9]
96.
4. **wenzelii** (Nees) Steph.
70, 90, 105.
5. **sudetica** (Nees ex Huebener) Grolle
2, 3, 35, 40, 42-50, 57, 58, 60, 63-66, 68-73,
75, 77-83, 86-92, 94-99, 101, 103-106, (107),
108, (109), 110, 112. H (1), 2, 3, 12, (13), 16,
20, (21), 27, (28), 30, 36, 37, (38), 39, 40.
6. **excisa** (Dicks.) Dumort. (incl. var. *cylindracea*
(Dumort.) Müll.Frib.)
1-6, (7, 10), 11-20, 22, 23, 25-30, 32, (33), 34-
50, 52, 54, (55, 56), 57-60, (61-63), 64-74, (76,
77), 78-85, 87-99, 101-107, (108), 109, 110. H
(1), 2-4, 6, (7, 16), 20, 22, 27-29, 33, 35-40. C.

LOPHOZIA

7. **perssonii** H.Buch & S.W.Arnell
15, 18, 21, 29, 57, 63, 64, 66.
 8. **herzogiana** E.A.Hodgs. & Grolle [10]
12.
 9. **obtusa** (Lindb.) A.Evans
(48), 49, 65, 67, (71), 80, 88, 89, 92, 95-98, (99),
104-106, 108.
 10. **capitata** (Hook.) Macoun
(11), 12, 14, 17, 19, 22, 28, 58.
 11. **incisa** (Schrad.) Dumort.
1-6, (9), 11, 13-17, (25, 26), 27, 28, (35), 36,
37, (39), 41-50, 52, (55), 57-60, (61), 62-75,
(76), 77-83, (85), 86-112. H 1-3, 6-11, 13, (14),
16-30, 32-37, (38), 39, 40.
 12. **opacifolia** (Culm.) Meyl. [11]
69, 87-90, 92, 94, 96-98, 105, 106, 108, 110.
H 16, 27, 35.
 13. **bicrenata** (Schmidel ex Hoffm.) Dumort.
1-25, 27, 28, 30, 32, (33), 34-54, (55), 56-60,
(61), 62-75, 77-84, (85), 86, 88-92, 94-98, (99),
100, 101, 103-106, 108, (109). H (1, 2, 4), 6,
(7), 8, 10, 12, 13, (16, 20, 21), 22, 28, 35-39. C.
24. **Leiocolea** (Müll.Frib.) H.Buch
1. **rutheana** (Limpr.) Müll.Frib. [12]
a var. **rutheana**
27, 69. H27.
b var. **laxa** (Schiffn. ex Burrell) Paton
22, 27, 28.
 2. **gillmanii** (Austin) A.Evans
64, 88, 89, 92, 97, 98, 105, 106, (109), 112. H
27.
 3. **bantriensis** (Hook.) Jörg.
35, 36, 38, 40-42, 44, 47-50, 52, 59, 60, (62),
64-67, (68), 69, 70, 72, 73, 75, 78-83, (85), 86-
92, 94-98, (99), 100-102, 104-111. H 1, 2, (3),
7, 14-16, (20, 27), 28, 29, 31, 33, 35, 36, (38),
39, 40.

4. **fitzgeraldiae** Paton & A.R.Perry [13]
49, 88, 96-98, 103-105, 108, (111). H 27-29, 33.
 5. **alpestris** (Schleich. ex F.Weber) Isov.
(34), 35, 36, 39-42, 44, 47-50, 56, 57, 60, 62-67, 69, 70, (71), 72, 73, 75, 76, 78-80, 82, 83, (85), 86, (87), 88-92, 94-98, (99, 100), 101-108, (109), 110-112. H 1, 2, 16, 26-29, 33, 35, 36, 39.
 6. **heterocolpos** (Thed. ex Hartm.) H.Buch
42, 44, 46, 48-50, 65, 66, 68, 69, 72, 83, 86-89, 92, 94-98, 101, 103-106, 108. H 39.
 7. **badensis** (Gottsche) Jörg.
1, 2, 4-6, 9, 12, (13), 14, 16-18, 20, 22-24, (25), 28-30, 32, (33, 34), 35, 36, 39-42, 44, 48-52, 57-60, 62-70, 72, 75-77, (78), 79-92, 94, 97, 98, 101, 102, 104-106, 108-111. H 9, 15-18, 20, 22, 23, 25-28, 33, (34), 35, 36, (39), 40.
 8. **turbinata** (Raddi) H.Buch
1-25, 27-30, 32-42, 44-52, 54, 56, 57, (58), 59-78, 80-85, (87), 89-91, 93-104, 106, (107), 108, 109, 111. H (1), 2, 4, 5, 7-16, (17, 18), 19, (20), 21, 22, 24-29, 31-37, (38), 39, 40.
25. **Gymnocolea** (Dumort.) Dumort.
1. **inflata** (Huds.) Dumort. (incl. var. *heterostipa* (Carrington & Spruce) Müll.Frib.
1-6, (7), 8, 9, (10), 11-22, (23), 24, (25, 26), 27, 28, 30, 32, (33), 34-112. H (1), 2, 3, 5-7, 9, 10, 12-16, (18), 20, (21), 23-30, 33-40. C.
 2. **acutiloba** (Schiffn.) Müll.Frib.
48.
26. **Eremonotus** Lindb. & Kaal. ex Pearson
1. **myriocarpus** (Carrington) Lindb. & Kaal. ex Pearson
42, 48, 49, (69), 70, (87), 88-91, 96-99, 101, 103-106, 108, (111). H 1, 2, 16, 27, 34, 40.

27. **Sphenolobopsis** R.M.Schust. & N.Kitag.
1. **pearsonii** (Spruce) R.M.Schust.
46-49, 64, 69, 70, 73, 75, 87, 97, 98, 101-106,
108, 110. H 1-3, 6, 7, 16, 27, (31), 35, 40.
28. **Anastrophyllum** (Spruce) Steph. [14]
1. **minutum** (Schreb.) R.M.Schust. (*Sphenolobus minutus* (Schreb.) Berggr.)
4, 11, (14), 36, 42, (44), 46, 48, 49, 52, 57, (58,
60, 62, 63), 64-70, 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,
27-29, (33), 34-36, 38.
 2. **hellerianum** (Nees ex Lindenb.) R.M.Schust.
(*Sphenolobus hellerianus* (Nees ex Lindenb.) Steph.)
42, 44, 47, 48, 69, 70, 88, 92, 96-98, 101, 105.
H 33, 40.
 3. **saxicola** (Schrad.) R.M.Schust.
92, (95), 96, 108.
 4. **donnianum** (Hook.) Steph.
88, 92, 94, 96-98, 105-108.
 5. **joergensenii** Schiffn.
92, (96), 97, 105-108.
29. **Tritomaria** Schiffn. ex Loeske
1. **exsectiformis** (Breidl.) Loeske
1-5, (7), 8, 9, (10), 11, 12, (13), 14-17, 22, (23),
24, (25-27), 30, (34, 36, 37), 39, (40), 42-49,
51, 52, 54, 57, (58, 59), 60, 62-70, 72, 73, (74),
76, 77, (78), 80, 81, 85-92, (93), 94-108, (109),
110, 112. H 2, 3, 6-10, 13, 17, 20, 22-30, 33-
37, 39, 40.
 2. **exsecta** (Schrad.) Loeske
35, (40), 42, 48, 49, 70, 72, 80, (86), 87, 88, 97-
101, 103-105, 108. H 1-3, 16, 27, 35.
 3. **quinquedentata** (Huds.) H.Buch
(3), 4-6, 35-37, 39, 40, 42-52, 57, 59, 60, 62-
70, 72-83, (84), 85-92, 94-112. H 1-3, 6-9, 16,
20, 27-31, (33), 34-36, (37), 38-40.

4. **polita** (Nees) Jörg.
87-90, 92, 96-98, (99), 104-106, 108.
30. **Jamesoniella** (Spruce) F. Lees
1. **autumnalis** (DC.) Steph.
2, 3, 5, (14, 34), 37, 40, 42, 43, 46, 48, 49, 60,
(64), 69, 70, 73, 86-88, (90, 91), 96-99, 101,
105.
 2. **undulifolia** (Nees) Müll.Frib.
(1), 2, (34, 69), 98.
31. **Mylia** Gray
1. **taylorii** (Hook.) Gray
2-4, 36, 39, (42), 43, 44, 46-50, 57-60, (61), 62-
70, (71), 72-74, (76), 77-81, (82), 83, (84, 85),
86-88, 90-112. H 1-4, 6-10, 14, 16, 17, (18),
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, 58, (59), 60, (61), 62-78, (79),
80-84, (85), 86-92, (93), 94-112. H (1), 2, 3, 7-
11, 13, 14, 17-20, 22-37, (38), 39, 40.
32. **Jungermannia** L.
1. **leiantha** Grolle
(14, 62), 64, (69), 105.
 2. **atrovirens** Dumort.
(1), 2-9, 12-14, 23, 32-37, 39-52, 55-60, (61),
62-73, (74), 75-92, 94-112. H 1-3, (4), 5-10,
16, 20, 22, 23, 25-31, 33-37, (38), 39, 40.
 3. **pumila** With.
1-6, 12-16, 34-37, (39), 40-44, (45), 46-52, 57,
58, (59), 60, 62-74, (75), 76-85, (86), 87-90,
(91), 92, 94-106, 108, 109, (110, 111), 112. H
1-8, 10, 11, 13, 16, 20, 26-30, (31), 33-40.
 4. **polaris** Lindb.
88, 89, 90, 92, 97.
 5. **borealis** Damsh. & Váňa
42, 49, 88-90, 92, 96-98, 101, 104-106.

6. **exsertifolia** Steph. subsp. **cordifolia** (Dumort.) Váňa
42, 44, 45, 47-51, 57, 59, 60, (62), 63-70, (71),
72, 73, (76), 77-79, (80), 81-83, (85, 86), 87-
92, 95-98, (99), 101-106, 108-112. H 1-3, 6,
16, 27, 35, (38, 39), 40.
7. **sphaerocarpa** Hook.
3, 4, (36), 39, 42, 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, (37-39), 40.
C.
8. **confertissima** Nees
44, 65, 66, 79, 88, 89, 91, 92, 96-98, 105.
9. **gracillima** Sm.
1-24, (25, 26), 27, 28, (32, 33), 34-60, (61), 62-
83, (84, 85), 86-112. H 1-3, 5-10, 12, 13, (14),
15, 16, 20, 21, 25-30, (31), 32-40. C.
10. **caespiticia** Lindenb.
2, (10, 17, 33), 43, 57, 63, 64.
11. **hyalina** Lyell
1-8, (9, 10), 11-16, (17), 20-22, (23), 27, (33,
34), 36-40, 42-44, 46-49, 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,
27, 28, 30, (31), 33-37, 39, 40.
12. **paroica** (Schiffn.) Grolle
5, 12, 35, 39, (41), 42, 43, (44), 46-50, 57, 60,
62-65, 67-73, (75), 78-83, 86-91, 95-99, (100),
101-110, 112. H 1, 6, 8, 16, 27, 35, 36, 38-40.
13. **obovata** Nees
41-44, (45), 46-50, 57, (58, 59), 60, 62-71, (72),
73, (74), 75-78, (79), 80-83, 86-92, (94), 95-99,
(100), 101-108, (109, 110), 112. H 1-4, 6, 7,
(9), 16, 20, 21, 27, 29, 30, 34-36, 38-40.
14. **subelliptica** (Lindb. ex Kaal.) Levier
2, 5, 42, 48, 49, 62, 64, 65, 67, 70, 72, 79, 80,
82, 83, 87-92, 94-98, 101-104, 106, 108, 110-
112. H 16, 27, 28, 34, 35, 39.

33. *Nardia* Gray

1. **compressa** (Hook.) Gray
2-4, 14, 41-50, 57-60, 62-67, 69-71, 73, 75, 80,
83, 86-92, 94, 96-106, 108, 110-112. H 1-3, 6,
(7), 8, 10, 12, 13, 16, 20, (21), 26-30, 33-36,
38, 39.
2. **scalaris** Gray
1-6, (7), 8-18, 20, (21), 22, 23, (24), 25, 27, 28,
30, 32, (33), 34-52, (54), 55-112. H 1-10, 12-
14, 16, (18), 20-22, 25-31, 33-40. C.
3. **geoscyphus** (De Not.) Lindb.
3, (4, 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, 104-108, (109), 112. H 2, 13,
16, 27, 34, 35.
4. **insecta** Lindb. [15]
67.
5. **breidlereri** (Limpr.) Lindb.
87-89, (90), 92, 94, (96), 97, 98, 105, 106.

34. *Marsupella* Dumort.

1. **emarginata** (Ehrh.) Dumort.
a var. **emarginata**
1-6, 13-16, 34-37, 39-50, 52, (55), 57-60, (61),
62-112. H 1-3, 5-10, 12, 13, (14), 16, 20-22,
26-30, (31, 33), 34-40. C.
b var. **aquatica** (Lindenb.) Dumort.
(3), 4, (36), 41, (42), 43, 44, (45), 46-49, (59,
60, 62, 65, 66, 68), 69-71, 73, (74, 76, 78, 80,
83, 86-92), 94, 95, (96-100), 101, (102-105),
107, (108-111). H 1, (2), 3, 4, 6, (13), 16, (20,
21), 26, (27), 28, 30, 34-36, (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, 38), 39.
2. **arctica** (Berggr.) Bryhn & Kaal. [16]
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). H 6, 20, 27, 33, (35).
 4. **funckii** (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,
95-99, (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), 45, 48, 49, (62), 64-70, 72,
73, 76, 78, 79, (87), 88-90, 92, 94, 96-99, 101-
106, 108. H 1, (2), 16, 20, 27, 36, 39, 40.
 6. **profunda** Lindb. [17]
1.
 7. **sparsifolia** (Lindb.) Dumort.
92, 94, 97.
 8. **boeckii** (Austin) Lindb. ex Kaal.
92, 96-98.
 9. **stableri** Spruce (*M. boeckii* (Austin) Lindb. ex
Kaal. var. *stableri* (Spruce) R.M.Schust. [18]
48, 49, 69, 70, 88, 90, 92, 94, 96-98, 104-106.
 10. **condensata** (Ångstr. ex C.Hartm.) Lindb. ex
Kaal.
88, 92, 94, 96, 97.
 11. **adusta** (Nees) Spruce
48, 49, 69, 70, 72, (77), 87-90, 92, 94, 96-98,
(99), 103-106, 108, 110. H 1, 27.
 12. **brevissima** (Dumort.) Grolle
87-90, 92, 94, 96-98, 104-108.
 13. **alpina** (Gottsche ex Limpr.) Bernet
48, 49, 69, (70), 73, 88, (89), 90, (91), 92, 94,
96-98, 103-106, (108).
35. **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, 46-50, 65, 66, (67), 68-70, 72, 73, 75, 77,
78, 80, (85, 86), 87-100, 103-108, (109), 110.
H 1, 6, 13, 16, 20, 27, 35, 38, 40.
 3. **corallioides** Nees
(49), 88, (89), 92, (97), 104-106, 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,
(111), 112. H 1-3, 6, 7, 12, 13, 16, (20, 21), 27-
30, (31), 33-36, 38, 39, 40.
 5. **apiculatum** (Schiffn.) Müll.Frib.
(92), 94, 96, 97.
36. **Douinia** (C.E.O.Jensen) H.Buch
1. **ovata** (Dicks.) H.Buch
1-4, (42), 43, (44), 46, 48, 49, (57, 65), 68-70, (71),
73, 78, 80, 86-92, 94, 96-108, (109), 110, 112.
H 1, 2, 6, 12, 16, 20, (21), 27, (31, 34), 35, (38), 40.
37. **Diplophyllum** (Dumort.) Dumort.
1. **albicans** (L.) Dumort.
1-25, 27-30, 32-52, (53), 54, 55, (56), 57-112.
H 1-16, 18, 20-30, (31), 32-40. 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, 41, 43, 44, 46-50, (61), 69, 72-74, 77-
82, (85), 86-88, (89), 90-92, (93), 95-99, 106,
(108, 112). H (1, 3, 4), 6, 20, 21, 32, 34, (37).
38. **Scapania** (Dumort.) Dumort.
1. **compacta** (Roth) Dumort.
1-6, 8-11, 13-17, 20, 22, 24, (25-27), 28, 32, 34-
37, 39-50, 52, 54, (55, 57, 59), 60, (62), 63-85,
(86), 87-93, (94), 95-106, (107), 108-112. H 1-4,
6, 8, 12, 13, 16, 20, 21, 27, 28, (31), 35, 37-40. C.

SCAPANIA

2. **gymnostomophila** Kaal.
44, 89, 90, 92, 97, 98, 104. H 26, 34.
3. **calcicola** (Arnell & J.Perss.) Ingham
42, 87-90, 96-98, 104, 106.
4. **cuspiduligera** (Nees) Müll.Frib.
(35), 40-42, 44, 47, 49, 57, 64-67, 69, 83, 88-
92, 94, 97, 105, 108-110. H 28.
5. **scandica** (Arnell & H.Buch) Macvicar
1, 2, 5, 39, 41-43, 46-51, 57, 59, 60, 62-70, 72,
73, 75, 77-83, 85, 87-92, 94-99, 102-106, 108,
110, 112. H 1, 2, 6, 7, 20, 27, 28, 34, 36.
6. **curta** (Mart.) Dumort.
2, 12-14, (15), 16, 60, 63, 64, 95, 96. H 27.
7. **lingulata** H.Buch
42, 49, 52, 57, 81, 89, 90, 92, 95-98, 104, 106,
108. H 10, 27.
8. **praetervisa** Meyl.
64, 88, 91, 95.
9. **parvifolia** Warnst.
87, 88, (97), 98.
10. **umbrosa** (Schrad.) Dumort.
1-5, 13, 14, 16, (34, 37), 39, (42), 43, (44), 45-
50, 57, (58), 59, 60, 62-70, 72, 73, (74), 75-83,
(84, 85), 86-92, (93), 94-110, (111), 112. H 1-
3, 6-8, 10, 12, 13, 16, 20, 21, 26-30, 33-37,
(38), 39, 40.
11. **nemorea** (L.) Grolle (*S. nemorosa* (L.)
Dumort.) [19]
1-7, (8), 9-24, (25, 26), 27, 30, 31, (32), 33-
38, (39), 40-52, 54, (55, 56), 57, 59, 60, 62-
76, (77, 78), 79-81, 83-90, (91), 92, 93, (94),
95-112. H 1-10, 12, 13, 16, 20, (21), 25-31,
33-40. C.
12. **irrigua** (Nees) Nees
1-9, (10), 11-24, (25, 26), 27, 28, (30, 33), 34-
52, 54, (55), 56-60, (61), 62-75, 77-81, (82),
83-112. H 1-12, 15, 16, (17), 20-23, 25-31, 33-
37, (38), 39, 40.

13. **degenii** Schiffn. ex Müll.Frib.
65, 66, 70, 87-89, 92, 95-98, 104, 105, 107,
108, 112.
14. **paludicola** Loeske & Müll.Frib.
2, 41, 42, 46, 48-50, 64.
15. **undulata** (L.) Dumort.
1-6, (7), 8-18, (19), 20-23, (24), 27, (32), 34-
52, 54, 55, 57-60, 62-112. H 1-16, 20, 21, 24-
31, 33-40. C.
16. **subalpina** (Nees ex Lindenb.) Dumort.
2-5, 42-44, 46-49, (50, 51), 60, (64), 65-70, 72-
79, (80), 81, 83, (85), 86-99, 101-112. H (1), 6,
7, 16, (20, 27), 34-36, 38-40.
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.
19. **aequiloba** (Schwäger.) Dumort.
44, 49, 64, 65, (66), 68-70, 72, 78-80, 83, (85),
86-92, 94, 96-99, 101, 104-108, 110. H 7, 28,
29, 34, 35, 39.
20. **aspera** M. & H.Bernet
3, 6, 8-14, 17, 20, 23, 24, (32), 33-36, 39, 41-
45, 47-53, (55), 57, 59, 60, 62-70, (71), 72, (76),
78-83, 86-90, 92, 94, (95), 96-111. H 1, 2, 8-
10, (13), 14-16, 18, 22-29, 33-36, 39, 40.
21. **gracilis** Lindb.
1-5, 9, 11, 14, 16, 34, 35, (36, 39, 40), 41-52,
57, 59, 60, 62-76, (77), 78, (79), 80, 81, (82),
83-92, (93), 94-112. H 1-4, 6-16, 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. H 1, 16, 27, 35.
23. **nimbosa** Taylor ex Lehm.
(49), 87, 88, (92), 94, 96-98, 102, 104-108, 110.
H 1, 27, 35.

LEPTOSCYPHUS

39. **Leptoscyphus** Mitt.

1. **cuneifolius** (Hook.) Mitt.
48, 87, (88), 97-105, 108, 110. H 1-4, 16, 27,
29, 33, 35.

40. **Lophocolea** (Dumort.) Dumort. [20]

1. **bidentata** (L.) Dumort. (incl. var. *rivularis* (Raddi) Warnst., *L. cuspidata* (Nees) Limpr.) [21]
1-112. H 1-40. C.
2. **bispinosa** (Hook.f. & Taylor) Gottsche,
Lindenb. & Nees
1, 9, 13, 17, 102.
3. **heterophylla** (Schrad.) Dumort.
1-75, (76), 77, 78, (79), 80-91, 93, 95-106. H
1-3, 5-8, 11-14, 16, (19), 20-25, (27), 29, (30),
31, (34, 35), 36, 37, (38), 39. C.
4. **semiteres** (Lehm.) Mitt.
1, 78, 98.
5. **fragrans** (Moris & De Not.) Gottsche,
Lindenb. & Nees
1-6, 9, 10, 14, 35, 40, 41, (43), 44-50, 52, 57,
60, 70, 72-76, 81, 97-105, 108, 110. H 1-3, 5,
6, 8, 10, 11, (12, 13), 15, 16, 20, 24, 26-29, 33-
35, 39, 40. C.

41. **Chiloscyphus** Corda [20]

1. **polyanthos** (L.) Corda
1-26, 30, 31, (32), 33-52, 54, 55, (56), 57-60,
(61), 62-112. H 1-16, 18-20, (21), 23, 25-30,
(31), 32-40. C.
2. **pallescens** (Ehrh. ex Hoffm.) Dumort. (*C. polyanthos* (L.) Dumort. 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, (84-86), 87-
92, 94, 96-98, (99), 100-112. H 1, 2, 4, (5),
6-9, 12, 13, 16, 20, 21, 23, 24, 26-30, 32-38,
40.

42. **Geocalyx** Nees
1. **graveolens** (Schrad.) Nees
97, 104, 105, 110. H 1, 27, 35.
43. **Harpanthus** Nees
1. **flotovianus** (Nees) Nees
69, (73), 88-90, 92, 94, 96-98, 104-108, (109),
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), 97-105, 108. H 1-3, 6, 16, (20),
27-29, 33, 35, 36, 39, 40.
44. **Saccogyna** Dumort.
1. **viticulosa** (L.) Dumort.
1-6, 11, 14, 34-37, 39, 41-50, 52, (59), 60, 62-
65, (66), 67, 69-76, (77), 78, 86-88, (90, 91),
96-108, 110-112. H 1-11, (12, 13), 14, 16, (18),
20, (21), 25-31, (32), 33-36, 38-40. C.
45. **Pedinophyllum** (Lindb.) Lindb.
1. **interruptum** (Nees) Kaal.
57, 60, 64, 65, 69, 98. H (1), 9, 28, 29, 33.
46. **Plagiochila** (Dumort.) Dumort.
1. **carringtonii** (Balf.) Grolle
88, 90, 92, 94, 96-100, 102-108, 110-112. H
16, 27.
 2. **porelloides** (Torr. ex Nees) Lindenb.
1-17, 19, 20, (21), 22-24, 30-92, 94-112. H 1-
18, 20, 22-40. C.
 3. **asplenioides** (L.) Dumort.
1-20, 22-54, (55), 56-111. H 1-6, 8-16, 18, 20-
23, (24), 25-31, 33-40. C.
 4. **britannica** Paton
3, 34-36, 41-44, 49-52, 57, 60, 62-69, 75-78,
81, 82, 86, 88-91, 94-98, 101-106, 110. H 2, 8,
9, 16, 24-28, 33, 35, 37, 40.

PLAGIOCHILA

5. **norvegica** H.H.Blom & Holten [22]
9.
 6. **atlantica** E.W.Jones & F.Rose [23]
46, 48, 69, 70, 97, 98, 101, 103-105, 108. H 1,
2, (3).
 7. **spinulosa** (Dicks.) Dumort.
2-4, (5, 6, 11, 34), 35, (37, 40), 41-43, (44), 45-
50, 52, (57, 59), 60, (63), 64, 65, (67), 69, 70,
(71), 72, (73), 75, 76, 78-80, 82, 83, (85), 86-
88, 96-108, 110-112. H 1-4, (5), 6, 8, 10, 11,
(13), 16, 20, 25-29, 33-36, (38), 39, 40.
 8. **killarniensis** Pearson
1-4, 6, 11, (14), 45-50, 52, 64, 69, 70, (71, 73),
74, 75, 86, 97, 98, 100-105, 108. H 1-3, 9, 10,
16, 20, 23, 27, 29, 31, 33, 35, 39. C.
 9. **punctata** Taylor
1-5, 42-49, 64, 65, 69-73, (75), 86-88, (96), 97-
106, 108, 110, 112. H 1-3, (5), 6-10, 13, 16, 20,
26, 27, 29, 30, 33-35, 39, 40.
 10. **exigua** (Taylor) Taylor (*P. corniculata* auct. non
(Dumort.) Dumort.) [24]
44, 47-49, (64), 65, 69, 70, 73, (75), 87, 97, 98,
(99), 100-105, 108. H 1-3, (6), 16, 27, (28), 35,
(39), 40.
-
47. **Southbya** Spruce
 1. **tophacea** (Spruce) Spruce
1, 41, 51, 52. H 20, 28.
 2. **nigrella** (De Not.) Henriq.
9, 10.
 48. **Gongylanthus** Nees
 1. **ericetorum** (Raddi) Nees
1. C.
 49. **Acrobolbus** Nees
 1. **wilsonii** Nees
97, 98, 101, 103, 104. H 1-3, 16, 27, 35.

50. **Pleurozia** Dumort.
1. **purpurea** Lindb.
73-75, 86-89, 92, 96-98, (99), 100-112. H
1-3, 9, 16-18, (20, 21), 23-30, 33-36, (38),
39.
51. **Radula** Dumort.
1. **complanata** (L.) Dumort.
1-17, 19-38, (39), 40-55, 57, (58, 59), 60, (61),
62, (63), 64-75, (76), 77-83, (84), 85-112. H
1-17, (18), 19-37, (38), 39, 40. C.
 2. **lindenbergiana** Gottsche ex C.Hartm.
1-3, 49, 52, 64, 65, 68-70, 72, 73, 75, (76, 77),
78, 85, (86), 87-90, 92, 95-99, (100), 101-106,
108-111. H 1-3, 6, 8, 16, 27-29. C.
 3. **voluta** Taylor ex Gottsche, Lindenb. & Nees
48, 49, 70, 73, (75), 97, 98, 101, 102, 104, 105.
H 1-3, 6, 7, 16, (27), 28, (30), 35.
 4. **holtii** Spruce
H 1-3, 27.
 5. **aquilegia** (Hook.f. & Taylor) Gottsche,
Lindenb. & Nees
46, 48, 49, 69, 70, 73, 86, 87, 96-98, (99),
100-108, 110, 112. H 1-3, 6, 7, 16, 27-29,
(34), 35.
 6. **carringtonii** J.B.Jack
97, 101, 103, 104. H 1-3, 27.
52. **Ptilidium** Nees
1. **ciliare** (L.) Hampe
2-5, 8, 11-13, 15, 17, (19, 21), 22, 24-28, 30,
34-55, (56), 57-75, (76), 77-108, (109), 110-
112. H (1, 2), 8, (20), 21, 22, 27, 35, 36, (39).
 2. **pulcherrimum** (Weber) Vainio
5-7, (8), 9-20, 22-44, 47, 48, (50, 51, 54-56),
57-70, 72, (75), 77, 78, 80-83, (84), 85, 86,
88-92, 94-96, 99-101, 106, (108). H 31.

53. **Porella** L.

1. **platyphylla** (L.) Pfeiff.
1-20, (21), 22-55, (56), 57-60, 62-70, (71), 72, 73, 75, (76), 77-81, 83, 85-91, (92), 93-95, 97-102, 104, 106, 108, 112. H 1, 2, 4-9, 11, (12), 13, 14, 16-18, (19), 20-24, 26, 28-33, 36, 37, (38), 39, 40. C.
2. **cordaeana** (Huebener) Moore (incl. var. *simplicior* (J.E.Zetterst.) S.W.Arnell var. *faeroensis* (C.E.O.Jensen) E.W.Jones)
2-5, 11, (13), 17, 36, 39, 40, 42, 43, (44), 45, 47-52, 55, 57, 60, 64-70, (71), 72, 73, 75, (76), 77-92, (93), 94-99, 104-108, (109), 112. H (5), 6, 9, 13, 15, 20, 22, 23, 28, 29, 31, (32, 33), 36, 37, (38), 39, 40.
3. **arboris-vitae** (With.) Grolle (incl. var. *killamiensis* (Pearson) M.F.V.Corley, var. *obscura* (Nees) M.F.V.Corley)
1-6, 9-14, 16, 17, 22-24, (33), 34-37, 39, (40), 42-45, (46), 47-50, 52, 57, 60, 62, 64-67, 69, 70, 72-74, (75), 77-80, 82, 83, 85-90, 96-105, 108, 112. H 1, 2, (3, 5), 6, 7, 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, 72-75, 81, 82, 85, 86, (87-89), 90, 91, (96), 97-104, 108, 110, (111), 112. H 1-3, 5, 6, 8, 16, 18, 20, 27, (38, 39). C.
5. **pinnata** L.
2-5, 36, 42-46, 48-50, 69. H 1, 2, 4, (5), 6, 9, 10, 12, 15, 20, 28, 30, 37.

54. **Frullania** Raddi

1. **tamarisci** (L.) Dumort.
1-17, 19, 20, 22, 23, (26), 28, 31, (32), 33-37, (38, 39), 40-52, (54-56), 57-60, 62-83, (84), 85-112. H 1-18, 20-37, (38), 39, 40. C.
2. **teneriffae** (F.Weber) Nees
1-3, 45, 48, 49, 52, 64, 69-75, 85, 88, 97, 98, (99), 100-105, 108, 110-112. H 1-4, 6, 8, 9, 16-20, 22, 26-31, 33-36, 39, 40. C.

3. **microphylla** (Gottsche) Pearson
 a var. **microphylla**
 1-5, (42), 45, 48, 49, 64, 69-71, 73-75, (86), 97-105, 108, 110, 111. H 1-3, 7, 16, 27-29, 33-35, 40.
 b var. **deciduifolia** Grolle [25]
 49.
4. **fragilifolia** (Taylor) Gottsche, Lindenb. & Nees
 1-4, 7, 8, 11, 14, (34), 36, (40), 42, 43, 45-50, 52, 60, 64-75, 78, 79, 81-83, (85), 86-90, (91), 92, 94-108, (109), 110, 112. H 1-3, 6, 16, 20, 27, 29, 33-35, (36, 38), 39, 40. C.
5. **dilatata** (L.) Dumort.
 1-38, (39), 40-53, (54, 55), 57, 58, (59), 60, (61), 62-75, (76), 77-112. H 1-17, (18), 19-30, (31), 32-40. C.
55. **Jubula** Dumort.
1. **hutchinsiae** (Hook.) Dumort.
 1-5, (34), 35, 42, 44-50, 63, 64, 69-75, (76, 86), 97, 98, 100-105, 110. H 1-3, (4), 6, 8, 16, 20, 27-29, 34-36, 38, 39.
56. **Marchesinia** Gray
1. **mackaii** (Hook.) Gray
 1-6, 9, 10, 34-36, 39-41, 43, (44), 45, 46, 48-50, 52, 56, 57, 60, 63, 64, 69-75, 86, 97-104, 110. H 1-4, (5), 6-11, 14-17, 20, (21), 22, 23, 26-29, 31, 33, (34), 35, (38), 39, 40.
57. **Drepanolejeunea** (Spruce) Schiffn.
1. **hamatifolia** (Hook.) Schiffn.
 2, 48, 49, 64, (65, 69), 70, 73, 86, 87, 97-105, 108, 110. H 1-4, 6, 8, 9, (14), 15, 16, (17, 20, 21), 25-29, (31), 33, (34), 35, (38), 39, 40.
58. **Harpalejeunea** (Spruce) Schiffn.
1. **molleri** (Steph.) Grolle (*H. ovata* auct. non (Hook.) Schiffn.) [26]
 1-3, 11, 46, 48-50, 64, 65, 69, 70, 72, 73, 75, (86), 87, 97, 98, (99), 100-105, 108, 110. H 1-3, 6, 7, (9), 15, 16, 27-29, 33, (34), 35, (38, 39), 40.

MICROLEJEUNEA

59. **Microlejeunea** Steph. [27]

1. **ulicina** (Taylor) A.Evans (*Lejeunea ulicina* (Taylor) Gottsche, Lindenb. & Nees)
1-17, 20, 22-24, 31, 33-36, (40), 41-50, 52, 60, (62), 64, 65, 69-76, 80, 86-88, 97-105, 108, (110). H 1-7, 9-12, 14-16, (18), 20, (21), 22-37, (38), 39, 40. C.

60. **Lejeunea** Lib.

1. **cavifolia** (Ehrh.) Lindb.
1-9, 11-20, (21), 22-26, 29-36, 38-50, 57-60, 62-70, 72-75, 77-109, 112. H 1-4, (5), 6-8, 10, 13-16, (17), 20, 21, 23, 25-29, 33-40.
2. **lamacerina** (Steph.) Schiffn.
1-6, 8-11, 13, 17, 34-36, 39, 41-52, 57, 59, 60, 62-65, 67, 69-75, 78-82, 85, 86, 88, 90, 96-105, 108, 110. H 1-13, 15, 16, 20, 21, 25, 27-29, 33-40. C.
3. **patens** Lindb.
1-3, 35, 41, 42, 44, 46-50, 60, 63-65, 67-76, 78-80, (83, 85), 86-89, 94, 96-112. H 1-12, 15-17, 20, 21, 25-31, 33-37, 39, 40.
4. **flava** (Sw.) Nees subsp. **moorei** (Lindb.) R.M.Schust. [28]
H 1-3, 6, 16, 27.
5. **hibernica** Bischl., H.A.Mill. & Bonner ex Grolle
H 1-3, 16, 27.
6. **holtii** Spruce
102. H 1-4, 6, 10, 16.
7. **mandonii** (Steph.) Müll.Frib.
1, 97, 104. H 1, 2, 29.

61. **Colura** (Dumort.) Dumort.

1. **calyptrifolia** (Hook.) Dumort.
1, 3, 6, (14), 41, 48, 49, 64, 70, 73, (86), 87, 97-99, (100), 101-105, 108, 110. H 1-4, 6-10, 15, 16, (21), 24-29, 33, 35, (38, 39).

62. *Cololejeunea* (Spruce) Schiffn.

1. **calcarea** (Lib.) Schiffn.
34, 35, (36), 41, 42, 46-50, 57, (59), 60, 63-65, (66), 67-70, 72, 73, 75, 76, 78, 80, 82, 83, 86-92, 94, 96-109. H 1, 2, 7, 9, 10, 15, 16, (21), 27-29, (31), 33-35, (38), 39, 40.
2. **rossettiana** (C.Massal.) Schiffn.
3, 5, 6, 8, 9, 10, 34-36, 39, (40), 50, 52, 56, 57, 59, 60, 63-67, 69, 70, 72, 75, 80, 81, 91, (98), 99. H 2, 6, 8, 9, 14, 16, (21), 22, 28, 29, 33, 36.
3. **minutissima** (Sm.) Schiffn.
1-3, (4), 6, 8-11, 13-15, (16, 17), 22, 23, 25, 41, 43, 45, 46, 48-50, 52, 97, 98, 100, 101, 103, 104, 110. H 1-6, 8-11, 15-18, (21), 23-30, 33, 35. C.

63. *Aphanolejeunea* A.Evans

1. **microscopica** (Taylor) A.Evans
46, 48-50, 64, 65, (69), 70, 72-75, (86), 87, (88), 96-106, 108, 110. H 1-3, 6-10, 15, 16, 26-29, 33, 35, 36, 39, 40.

64. *Fossombronia* Raddi

1. **foveolata** Lindb.
1, 2, (3), 8, (9), 11, 12, (13, 14), 17, (22, 27), 28, 46, 48, 52, 54, (58, 59, 61, 62), 69, (74, 86, 87), 88, 92, 95-98, (99), 101-106, 108-110, 112. H 1-3, 9, 16, 20, 26, 27, 35, 37, 39.
2. **angulosa** (Dicks.) Raddi
1, 2, 45, (48), 49, 110. H 1, 3, 16, 27, (34), 35. C.
3. **caespitiformis** De Not. ex Rabenh.
1, 2, 4, (6), 7, 8, (13), 14, 17, (23), 34, 37, (39, 58, 59, 69).
4. **husnotii** Corb.
1-3, (7), 13, (35), 41, (44), 45, 49, (60). H 1, 3, 9, 16, 27. C.

5. **pusilla** (L.) Nees
1-24, (25), 26-32, (33), 34-55, (56), 57-60, (61), 62-67, (68, 69), 70-77, 80-83, (84), 88-91, 93, 94, 96-98, (99), 100-104, 106, 109. H 1, (2), 3-6, 8-12, 16, 19, 20, (21), 23-25, 27-29, 31, (33), 34, (35), 36-40. (C).
6. **maritima** (Paton) Paton (*F. pusilla* (L.) Nees var. *maritima* Paton) [29]
1, 11, 49. H 3, 27. C.
7. **wondraczekii** (Corda) Dumort. ex Lindb.
1, 2, (3), 4-9, (10), 11-20, 22, (23), 24, 28-32, 34-52, 55, (56), 57-60, (61), 62-74, 78, (79), 80-90, 92, 96-99, 101, 103-107, (109), 112. H 1, 3-6, 9, 10, 12, 13, 15, 16, 20, 21, 24-27, 29, 31, (33), 34, 35, 37, (38). C.
8. **crozalsii** Corb.
7, (22).
9. **incurva** Lindb.
1-3, 9, 12-14, 44, 49, 57, 58, 62, 69, 74, 77, 78, 80, 83, 88-90, 94-98, 101, 104-107, 112. H 1, 3, 6, 16, 27, 28, 30. C.
10. **fimbriata** Paton
57, 68, 78, 79, 88, 96-98, 101, 106. H 27, 28.
65. **Petalophyllum** Nees & Gottsche ex Lehm.
1. **ralfsii** (Wils.) Nees & Gottsche
1, 3, 4, (6), 28, 41, (44), 45, 46, 48, (49), 51, 52, 59, (62), 68, 105. H 1, 2, 9, 16, 21, 27, 28, 35, (39), 40.
66. **Pellia** Raddi
1. **epiphylla** (L.) Corda (*P. borealis* Lorb.) [30]
1-30, 32-112. H 1-16, (17, 18), 20-40. C.
2. **neesiana** (Gottsche) Limpr.
1-9, 11-13, (14), 17, 18, 21, 22, 26, 27, 31, 33-36, (37), 38-53, 57-60, 62-75, 77-83, 87-92, 94-99, 101-112. H 1-3, 6-10, 12, 13, 15, 16, 20, 21, 23-30, 33-37, (38), 39. C.

3. **endiviifolia** (Dicks.) Dumort.
 1-75, (76), 77-112. H 1-23, 25-37, (38), 39, 40. C.
67. **Pallavicinia** Gray
1. **lyellii** (Hook.) Carruth.
 6, 10, 11, (13), 14, 17, 18, 22, 25, 46, 48, (59),
 62, 64, 65, 69). H 1, (2, 3), 8, 11, (19), 20, 27.
68. **Moerckia** Gottsche
1. **hibernica** (Hook.) Gottsche
 (1), 4, 17, 26-28, 41, 44, 46, 48, 49, (50), 52,
 (57), 58, 59, 62-70, 78, 80, (82), 85, 88-92, 94-
 97, 105, 106, 108, 110, 112. H 1, 9, 14, 16-18,
 (20, 21), 23, 27, 33-35, 38, (39), 40.
2. **blyttii** (Moerch) Brockm.
 87-90, 92, 94, 96-98, 105-108.
69. **Blasia** L.
1. **pusilla** L.
 1-6, (7, 8), 9-15, (16), 17-20, (21), 22, (23), 25,
 27, 28, (32-35), 36-38, (39), 40-53, (54, 55), 56,
 57, (58), 59, 60, (61), 62-65, 67-70, (71), 72-
 112. H (1, 2), 3, 5-7, (12), 16, 18, (19), 20, 21,
 26-29, (30, 31), 32-40.
70. **Aneura** Dumort.
1. **pinguis** (L.) Dumort.
 1-112. H 1-18, (19), 20, (21), 22-37, (38), 39, 40. C.
71. **Cryptothallus** Malmb.
1. **mirabilis** Malmb.
 2, 3, 4, 6, 8, 9, 11-17, 22, 24, 28, 30, 40, 41,
 43, 47-49, 69, 75, 86, 89, 92, 94-101, 105, 106,
 108. H 2, 16, 20, 35.
72. **Riccardia** Gray
1. **multifida** (L.) Gray
 1-6, (8), 9-20, 22-30, 34, 35, (36), 37, 38, (39),
 40-52, 54-60, (61), 62-83, 85, (86), 87-90, (91),
 92-112. H 1-13, 15-18, (19), 20, (21), 23-30,
 (31), 32-40. C.

RICCARDIA

2. **chamedryfolia** (With.) Grolle
1-32, (33), 34-74, 76-86, 88-101, 103-112. H
1-16, 19, 20, (21), 22-29, (30), 33-37, (38), 39,
40. C.
 3. **incurvata** Lindb.
1, 2, 9, 11, 13, (14), 17, 28, 32, 44, 48, 49, 52,
53, 58-60, 63, 65, 66, 69-71, 73-75, 78-80,
(81), 82-84, 88-90, 92, 94-98, 101, 102, 104-
108, 110, 112. H 1, 9, 16, 20, 27, 35.
 4. **palmata** (Hedw.) Carruth.
3, 9, 11, 13, 17, 24, 41-43, (44), 45, 48-51, (58),
62, 64, 66, 67, (68), 69, 70, 72, 73, (75), 77-80,
82-84, (85), 86-92, 94-112. H 1-3, 7, 9, 11, 15,
16, 20, 23-30, 33-36, 39, 40.
 5. **latifrons** (Lindb.) Lindb.
1-6, 8-13, 17, 22, 26-28, (35), 40, 42-52, 67,
70, 73, 74, 77-81, 83, 88, 90-92, 94-98, 101-
106, 108-110, 112. H 1-3, 6-13, (14), 15, 16,
18-20, (21), 22-25, 27-29, 33-37, 39, 40. C.
73. **Metzgeria** Raddi
1. **fruticulosa** (Dicks.) A.Evans
1-15, (16), 17, 19-23, (24), 25-29, 31-37, 39-
41, (42), 43-49, 51-54, 57, 58, 60-62, 64-68,
70-74, (75), 76-91, 93-104, 106, (107), 108-
112. H 1-6, 8-11, (13), 15-17, (18, 19), 20, 21,
23-33, 35-40. C.
 2. **temperata** Kuwah.
1-14, (16), 17, 18, 20-24, 32-38, 41-50, 52, 57,
58, 60, 64, 65, 69-74, 81, 83, 86, 88, 97-102,
104. H 3-7, 9, 12, 15, 16, 22, 24, 25, 27, 29,
31, 33, 35, 36, 39. C.
 3. **furcata** (L.) Dumort.
1-112. H 1-16, (17, 18), 19-37, (38), 39, 40. C.
 4. **conjugata** Lindb.
1-6, (13), 14, (33), 34-37, 39, (40, 41), 42-44,
(45), 46-50, 52, 57, 60, (62), 63-65, 67-76, (77),
78-83, (85), 86-90, (91), 92, 95-106, 108, (109),
110, (111). H 1-3, 6-8, (9), 10, 11, (12, 13), 16,
(17, 18), 20, (21), 22, 27-29, (30), 33-40.

5. **leptoneura** Spruce
46, 48, 49, 69, 70, 72, (73), 75, (76), 86-88, 97-106, 108, 110, (111). H 1-3, (7), 16, 27-29, 35, 39.
74. **Apometzgeria** Kuwah.
1. **pubescens** (Schrank) Kuwah.
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, 104-106, 108, (109). H 39.
75. **Sphaerocarpos** Boehm.
1. **michelii** Bellardi
1, 5, 16, 18-20, 22, (23), 24-28, (29), 30, 32, (34, 36), 37, (55), 61, (62). C.
2. **texanus** Austin
1, (9), 12, 13, (16), 17, 24-27, 34, 36, 37. C.
76. **Targionia** L.
1. **hypophylla** L.
2, 3, (4), 5, (6), 12, 13, 17, (26), 36, (37), 39, (40), 42, 43, (44), 45, 47-49, 52, 57, 70, 80, (85), 87, 88, (90), 98, 99, 101, (104). H (1, 2, 4, 39). C.
77. **Lunularia** Adans.
1. **cruciata** (L.) Dumort. ex Lindb.
1-98, (99), 100-108, (109, 110), 111, 112. H 1-14, 16, 17, (18), 19-22, 24-29, (30), 31, (32), 33-40. C.
78. **Dumortiera** Nees
1. **hirsuta** (Sw.) Nees
1, 2, (3), 4, 14, 71, 98, 102. H 1-4, 6-11, 20, 29, 39.
79. **Conocephalum** Hill [31]
1. **conicum** (L.) Dumort. [31]
1-20, (21), 22-112. H 1-14, 16-40. C.

80. **Reboulia** Raddi

1. **hemisphaerica** (L.) Raddi
 1-3, (4), 5-17, 20, (22), 26, 27, 30, (33), 34-37,
 (38), 39-45, 47-52, (55), 57, (58, 59), 60, (61,
 62), 64-69, 72, (73), 74, (75-77), 80-84, (85),
 86-90, 96-106, 108, (109), 110. H 1, (2), 4, (5),
 7, 8, (9), 11, (16, 17, 21), 23, 25-29, 33, (35),
 38, (39, 40). C.

81. **Preissia** Corda

1. **quadrata** (Scop.) Nees
 (3), 4, 6, 11, 22, 26-28, 32, 35, 36, 39, 41, 42,
 (43), 44-50, 52, (54, 55), 57-70, 72-75, (76),
 77-112. H 1-3, (6), 8, 9, 14, (15), 16-18, (19,
 21), 22, 23, 25-29, 31, 33-36, (38), 39, 40.

82. **Marchantia** L.

1. **polymorpha** L. [32]
 a subsp. **polymorpha** (*M. polymorpha* var.
aquatica (Nees) Gottsche, Lindenb. & Nees
 2-4, (5), 6, 11, (12), 13, 14, 17, 19, 20, (22), 23,
 24, 26-29, 31, 32, 34, 35, (36, 38, 39), 40-44,
 49, 51, 52, 57, (58), 59-61, (62), 63-67, (68),
 69, 70, 72-74, (75), 76-78, 80-83, 85, 86, (87,
 88), 89, 90, 92, 94, 95, (96), 98, (99), 101, 104,
 106, 108, (109), 110, (111), 112. H1, (2), 6, 7,
 10, 11, 13, 15, 16, (18), 20-22, 25, 27-29, (30),
 32-37, (38), 39, 40.
 b subsp. **ruderalis** Bischl. & Boisselier
 1, 2, (3), 5, 6, 8-13, (14, 15), 16-21, (22), 23,
 (24), 25, (27), 29-37, 39-42, 44, 46, (48), 49,
 52, 55, (56), 57-61, (62), 63-66, (68), 69, (70,
 73), 77, 78, 80-83, 85, (86), 88, 89, (90-92), 94,
 95, (96, 97, 103), 107, 108, 111. H(1), 7, 9, 16,
 (17), 21-23, 25, 29, (30), 33, 37-39. C.
 c subsp. **montivagans** Bischl. & Boisselier (*M.*
alpestris (Nees) Burgeff)
 42, 52, 62, 64, 68, 70, (72), 77, 80-83, (85),
 88-90, (91), 92, 93, 95-98, 105, 106, 108, 112.
 H28.

83. **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), 38-40, 50, 53-55, (58), 61-63, (64), 65, 66. H 7-9, (15), 19, (20), 21-23, (25, 31).

84. **Riccia** L.

1. **cavernosa** Hoffm.
1, (4), 5, 6, 8, 9, 11, 14, 17, 18, 20-24, 26, 28-30, 32, (33, 36), 38, 41, (44), 45, 46, 48, (49), 52, 53, 55, (56), 57-59, 61, 63-65, 67, 83, 85, 89, 90, 93, 95, 101, 110, 111. H 1, 3, 15, 25, 38.
2. **crystallina** L.
1, 76.
3. **huebeneriana** Lindenb.
2, (9), 13, 14, (17), 42, (44), 46, 47, 52, (58), 64, 67, 100. H 20.
4. **fluitans** L.
3-6, (7), 9-31, 33-36, (37), 38, 40, 41, 44, 47, 50, 51, 53-55, (56), 57-60, (61, 62), 63, 64, 66, (69). H 7, 10, 13, 19, 20, (21), 23, 25, (29), 31, 32, 36, 37, (38), 39.
5. **rhenana** Lorb.
1, 7, 15, 17, 18, 20, 24, 28, 29, 37, 58.
6. **canaliculata** Hoffm.
13, 40, (48), 52, (58), 83, 86-88, 99.
7. **sorocarpa** Bisch.
1-20, 22-52, 54-76, (77), 78-83, (84), 85-98, (99), 100-108, 110. H (1), 2-6, 8-10, 12, 13, 15, 16, 20, (21), 22, 25-28, 31-40. C.
8. **nigrella** DC.
1, (37), 43, 48. C.
9. **glauca** L.
1-20, 22-24, 26-65, 67, (69), 71-73, 75, 82, (83), 84, 85, (86), 87, 88, 90, 96-98, (99), 100, 101, 106. H 1-7, 9-11, 14-16, 20, 25, 26, 28, 33, 34, 37-40. C.

10. **subbifurca** Croz. (*R. warnstorffii* auct. non Limpr. ex Warnst.) [33]
 1, 2, (4), 5-8, 11, 12, (13, 14), 17, 20, 22, 24, 28, 29, (34), 35-37, 40, 42, 43, (45, 46), 47, (48), 49, 52, 56, 57, 63, 64, 74, 81, 88, 96-103, 106. H 1-6, 9, 14, 16, 27, 28, 33, 35-39.
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, (59), 60, 64, 65, (69), 73, 74, (75, 76, 82), 83, 84, (85), 86, 88, 90, 98-104, 110. H 1, 3, 9, 15, 16, (20), 26, 27, 35, 37, 39. C.
85. **Anthoceros** L.
1. **punctatus** L.
 1-5, (6), 8, 9, 11, (13, 14), 16, 17, 22, (34), 38, 43, (44), 45, 47-49, 52, (61, 67), 70, 71, (72, 73), 74, 75, 85-87, 90, 95-103, 105-107, 109. H 1, 2, (3), 5, 6, 8, 9, 12, 16, 27, 34, (35), 38. C.
2. **agrestis** Paton
 1, 2, 4, 5, 9, 10, (11), 12-14, 16-19, 22-24, 27, 30, 32, 34-36, (37), 38-41, 44, (46), 47, (48), 50-52, 54, (55), 56, 58, (59), 63, 65, (68, 69), 72-75, 81, 83, 86, 89, 90, 98. H 35, 36.
86. **Phaeoceros** Prosk.
1. **laevis** (L.) Prosk. (*P. laevis* subsp. *laevis*)
 1-6, 8-11, 13-15, (16), 17, 18, (22, 24), 34-36, 38, (40), 41, 43, 44, (45), 46-49, 51, 52, 58, (59), 60, (62, 63), 64, (69), 70-74, (75, 76), 80, (81, 83, 84), 86-88, 90, 97, 98, (99), 100, (102), 103-105, 107, (109). H 1, 3-9, 12, 14, 16, 20, (21), 22, 24, 26, 27, 29, 31, 32, 34-37, (38), 39, 40. C.
2. **carolinianus** (Michx.) Prosk. (*P. laevis* subsp. *carolinianus* (Michx.) Prosk.) [34]
 2, (13), 17, (18), 35.

MOSSES (SPHAGNOPSISIDA, ANDREAEOPSISIDA,
BRYOPSISIDA)

1. **Sphagnum** L.

1. **austinii** Sull. ex Aust. (*S. imbricatum* Hornsch. ex Russow subsp. *austinii* (Sull. ex Aust.) Flatberg) [35]
3, 4, 46, 48, 49, 66, 67, (69), 70, 73-75, 78-81, 83, 88-90, 92, 94-98, 102, 104, 105, (107), 108, 109, (110), 111, 112. H 1, 2, 9, (10), 14-18, 20, 22-27, 29, 30, 33, 35, 36, 39, 40.
2. **affine** Renauld & Cardot (*S. imbricatum* Hornsch. ex Russow subsp. *affine* (Renauld & Cardot) Flatberg) [35]
48, 49, 70, 72-75, (86, 87), 88, 92, 96-100, 102, 104-106. H 1, 2, (37).
3. **papillosum** Lindb.
1-6, 8-17, 20, 22, 24, (26), 27, 28, 34, 35, 37-52, (53), 54, 57-112. H 1-20, (21), 22-30, 33-40.
4. **palustre** L.
a var. **palustre**
1-32, 34-112. H 1-4, 6-16, 18, 20-30, 33-40. C.
b var. **centrale** (C.E.O.Jensen) A. Eddy [36]
49, (60, 62, 71).
5. **magellanicum** Brid.
2, 3, 8, 9, 11-17, 22, 27, 28, 39, 40, 44-51, (58), 60, 62, 64-70, 72-84, 86-93, 95-112. H 1-3, 7, 9, (10), 11, 14-20, 22-29, (30), 31, 33-40.
6. **squarrosum** Crome
1-3, 5, 6, 8-31, 34, 35, 37, 38, (39), 40-76, (77), 78-83, (84), 85-110, 112. H (1), 2, 3, (4), 5-7, 9, 12-14, 16-18, (19), 20, (21), 22-25, 27-40.

7. **teres** (Schimp.) Ångstr.
(3, 4), 9, 11, (13, 14), 17, 25, 27, 35, 38, 41,
(42), 43-50, 55, 57-59, 62-70, (71), 72-74, (75),
76-83, 87-92, 94-98, (99), 100-109, 112. H 1,
(20), 22, 23, 25, 27, (34), 37-40.
8. **fimbriatum** Wilson
1-6, 8-31, 34-104, 106, 108-112. H 1, 4, 6-10,
13, 18, (19), 20, (21), 22-25, 27-29, (30), 32,
(33), 35, 36, (37), 38, 39, (40).
9. **girgensohnii** Russow
(5), 30, (38), 39, 43, 46-50, 53, 56-58, 60-70,
72-83, (84, 85), 86-112. H 1, 3, 20, 29, (34),
35-37, (38, 39).
10. **russowii** Warnst.
(5), 13, (17), 22, 26, 30, 39, 40, 42, (43), 44-50,
57, 58, 60, 62-75, 77-93, (95), 96, 98-101, 104-
110, (111), 112. H (3), 7, 10, 13, 20, (21), 28,
29, (30), 33, (34), 36-40.
11. **quinquefarium** (Lindb. ex Braithw.) Warnst.
2-5, (35, 37), 39, 40, (42), 43, 44, 46-50, 57, (59),
60, 62-70, 72-74, 77, 78, (79), 80-82, 87, 88, 90-
92, (93), 94-108, (109), 110, 111. H 1-3, 6, 7,
(14), 16, 20, (21), 27-30, 33, (34), 35, 36, (37), 39.
12. **warnstorffii** Russow
42, 43, 46-50, 60, (62), 64-66, (67), 69, 70, 72-
74, 77-81, 83, 87-90, 92-98, (99), 100-102,
104-108. H 14, 27, 32, (40).
13. **capillifolium** (Ehrh.) Hedw. [37]
a subsp. **capillifolium**
50, 64, 67, 70
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, 36, (37), 38-84, (85), 86-112. H 1-20,
22-30, (32), 33-40.
14. **fuscum** (Schimp.) H.Klinggr.
13, 46, 48, (60, 65), 66-70, 72-74, 78-80, 83,
86, 88-98, 102, 104-109. H 2, 9, 10, 15-19, 22-
25, 27, 29, 30, (32), 33, (34), 36, 39, 40.

15. **subnitens** Russow & Warnst.
 a var. **subnitens**
 1-6, 8-20, (21), 22-24, 26-32, 34-38, (39), 40-112. H 1-3, 5-30, (31), 33-40. C.
 b var. **ferrugineum** (Flatberg) M.O.Hill (*S. subnitens* subsp. *ferrugineum* Flatberg) [38]
 H 16, 25, 27, 39.
16. **skyense** Flatberg [39]
 104.
17. **molle** Sull.
 1, 3, (5), 8, 9, 11, 12, 14, 17, 22, (26), 28, (34), 47-50, 55, (57, 59, 62, 66), 67-70, 72, 73, 75, 77, 80, 83-85, (86), 87, 88, 91, 92, 96-98, (99), 100-108, 110. H 1-3, 15, 16, 20, 27-30, 33-36, (37, 38), 39, (40).
18. **strictum** Sull.
 48, (69), 73, 75, 86, (88), 89, 92, 96-98, 100, 101, 103-108, 110. H 1-3, 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), 43-45, 47-50, 52-54, 58, (59), 60, (61), 62, (63), 64-75, 77, 78, (79), 80-84, (85), 86-112. H 1-10, 12, (14), 15, 16, (20, 21), 24, 26-30, (31), 33-37, (38), 39, 40.
20. **subsecundum** Nees
 3, 5, 11, (12, 17), 27, 28, 42, 43, 45-50, 69, 70, 73-75, 79, 81, 86-90, 96-98, 106, 108. H 16, 18, 25, 27, 35.
21. **inundatum** Russow (*S. auriculatum* Schimp. var. *inundatum* (Russow) M.O.Hill; *S. denticulatum* var. *inundatum* (Russow) Karttunen) [40]
 1-6, 8, 9, 11, (12), 13, 14, 16-18, (19), 20, (21), 22-25, (26), 27, 28, (29), 30, 34, 35, (37), 38, 40-55, 57-83, 85-92, 94-108, (109), 110, 112.
 H 1-4, 6, 7, 9, 10, 12, 15-17, (19), 20, (21), 22, 24, 25, 27-30, (31), 33-40.

22. **denticulatum** Brid. (*S. auriculatum* Schimp.) [41]
1-22, (23), 24, 25, 27, 28, (29), 34-36, (37), 38-
76, 78-83, (84), 85-108, (109), 110-112. H 1-
30, (31), 33-40. C.
23. **contortum** Schultz
3, 9, 11, (13, 14, 16), 27, 28, 40, 42-52, (58,
59), 60, (61), 62, 64, 65, 67, 69-74, 76, 79-81,
83, 88-90, 92, 93, 95, (96), 97-110, 112. H 1,
(3), 6, 9, 12, 15, (16), 17, (20, 21), 22, 23, 25-
27, (29-31, 34), 35-40.
24. **platyphyllum** (Lindb. ex Braithw.) Sull. ex
Warnst.
42, 45, 46, 48-50, 52, (60, 65, 69), 73, 74, (87), 88,
89, (96), 97, 98, 104, 108, 110. H 1, 16, 27, (33).
25. **tenellum** (Brid.) Bory
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), 62-78, (79), 80, 81, 83,
84, (85), 86-112. H 1-4, 6-20, 22-31, 33-40.
26. **cuspidatum** Ehrh. ex Hoffm. (*S. viride*
Flatberg) [42]
1-6, 8-19, (20, 21), 22, 24, 25, 27, 28, (29), 30,
35, 36, (37), 38-78, (79), 80-112. H 1-20, (21),
22-31, (32), 33-40.
27. **majus** (Russow) C.E.O.Jensen
67, (90), 96, 108.
28. **balticum** (Russow) Russow ex C.E.O.Jensen
46, (58), 63, 67, 72, 92.
29. **pulchrum** (Lindb. ex Braithw.) Warnst.
9, 40, 46, 47, 49, 50, (58, 60), 67, 70, (71), 73, 74,
77, 97, 98, 104, 107. H 1, 2, 16, 17, 23, 25, 35, 38, 39.
30. **fallax** (H.Klinggr.) H.Klinggr. (*S. recurvum* P.
Beauv. var. *mucronatum* (Russow) Warnst.) [43]
a subsp. **fallax**
1-6, 8-22, 24-31, (32), 34-112. H 1-4, 6-14,
16, 17, (18), 20, 22-31, 33-40.
b subsp. **isoviitae** (Flatberg) M.O.Hill (*S.*
isoviitae Flatberg) [44]
28, 49, 104, 108.

31. **flexuosum** Dozy & Molk. (*S. recurvum* P. Beauv. var. *amblyphyllum* (Russow) Warnst.) [43]
2, 3, 5, 6, 8, 9, 11-14, 17, 20-22, 24, 25, 27, 30, 34, 40-49, (50), 51, 57, 58, 60, (61), 62-64, (65), 69, 70, 71, 76, 79, 81, 86, 88, 89, 95, 97, 103-105. H (3), 16.
32. **angustifolium** (C.E.O.Jensen ex Russow) C.E.O.Jensen (*S. recurvum* P. Beauv. var. *tenue* H. Klinggr.) [43]
(4), 5, 9, 11, 14, 22, 39-41, 43, 44, 46-50, 55, 57, 60, 64, 65, 67, (69), 72, 79-81, 87-89, (90), 94-98, 101, (105, 107-109), 110. H 2, 3, 10, 16, 23, 25-27.
33. **obtusum** Warnst.
(59, 60).
34. **riparium** Ångstr.
22, (58, 60, 61), 64, 67, (69), 77, 80, 88, 90, (92), 94-96, 106, 112.
35. **lindbergii** Schimp. ex Lindb.
88, 90, 92, 94, 96, 97, 105, 106, 108, (112).
2. **Andreaea** Hedw. [45]
1. **alpina** Hedw.
(42, 44), 46, 48, 49, (64), 65, 66, 68-70, 72-75, 77, (78), 86-90, 92, 94, 96-98, (99), 100, 101, 103-108, 110, 112. H 1, 2, 7, 16, 20, (21), 27, 31, 35, 38, (39).
2. **rupestris** Hedw.
a var. **rupestris**
(1), 3, 4, 40-50, 57, (59), 60, 62, 64-70, 72, 73, 75, 76, 78-100, 104-106, 108-112. H 3, (4), 6, 8, 13, 16, 20, (21), 27, (29), 30, (31, 34), 35-40.
b var. **papillosa** (Lindb.) Podp. (*A. obovata* Thed. 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.

ANDREAEA

4. **mutabilis** Hook.f. & Wilson
48, 49, (60, 65, 68, 69), 70, (72), 73, (77, 85, 87, 88), 90, 92, 94, 96-98, 103, 105, 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, 79, 82, 87, 88, 90), 93, 94, (105, 106).
H 1, (2), 8, (12, 13), 20, (21), 27, (30, 36, 38).
b subsp. **falcata** (Schimp.) Lindb. (*A. crassinervia* Bruch subsp. *huntii* (Limpr.) Amann)
1-5, (34, 35), 36, (37), 41-50, 52, 57, 58, 60, (62), 63-73, 75, 76, 78, 80, 81, (82), 83, 86-92, 94-100, 102-108, 110-112. H 1-3, (5), 6, 10, 16, 20, (21, 25, 26), 27, 28, (29), 30, 31, 33, 35, 38, 39.
 7. **frigida** Huebener (*A. rothii* subsp. *frigida* (Huebener) Schultze-Motel)
(65), 70, 92, 94.
 8. **megistospora** B.M.Murray
45, 48, (66, 70), 73, 74, 78, (87, 88, 96), 97, 98, (99), 100, 104, 105, 108, (110). H 3, (4), 27, (38).
 9. **blyttii** Schimp.
92, 94, 96, 97, 105, 106.
 10. **nivalis** Hook.
(88, 90), 92, 94, 96-98, 105-107.
3. **Pogonatum** P. Beauv.
1. **nanum** (Hedw.) P. Beauv.
1-6, (7), 8-11, (12), 13-18, (19), 20, (21), 22, 23, (24, 25), 26, 27, (29), 30, (32, 33), 34-38, (39), 40, 41, (42, 43), 44-49, (50, 51), 52, (55, 57-63), 64, (66), 67, 68, (69), 70-73, (75, 76, 78), 79, (81, 83-87), 88-92, 94-98, (101), 103, 104, 106, 108-110, 112. H (2, 4, 5, 10, 12, 13, 20, 21), 25, (27, 28, 32), 33, (35), 36, 37, (38), 39, 40. C.

2. **aloides** (Hedw.) P.Beauv. (incl. var. *minimum* (Crome) Mol.)
1-6, (7), 8-28, (29), 30, (32, 33), 34-52, (53), 54, 55, 57-60, (61), 62-112. H 1-16, 19-22, 24-30, 32-40. C.
 3. **urnigerum** (Hedw.) P.Beauv.
1-6, (7), 8, 9, (10), 11-17, 20, (21), 22, 24, (26), 27, 28, (30, 32, 33), 34-53, (54), 55, 57-60, (61), 62-75, (76), 77-112. H 1-10, 12-17, 20-22, 25, 27-30, 32-36, (38), 39, 40. C.
4. **Polytrichum** Hedw.
1. **alpinum** Hedw. (incl. var. *septentrionale* (Sw.) Lindb.)
2, (3, 4, 34, 36, 37, 40), 41, (42), 43-50, 57, (59), 60, 62, (63), 64-75, (76), 77-83, (84, 85), 86-90, 92, 94-110, (111), 112. H 1, 2, 6, 7, (8), 12, (13), 16, 20, (21), 27, 28, (29), 30, 33-37, (38), 39, 40.
 2. **longisetum** Sw. ex Brid.
(1), 3, 5-9, (10), 11-31, (32, 33), 34-39, (40), 41, (42-44, 46), 50, 51, 53, 54, (55, 56), 57-64, (65), 66-70, 72, 73, (74), 75, (76, 77), 78, (79), 81-84, 86, 87, (88, 89), 90-92, 94-98, 103, 105, 106, (110, 111), 112. H (1, 2), 3, (7, 8, 12, 13), 14-18, (19, 20), 22-28, (29, 30, 32), 33, 36, 37, (38-40).
 3. **formosum** Hedw.
1-112. H 1-31, 33-40. C.
 4. **sexangulare** Brid.
88-90, 92, 94, 96, 97, 105, 106.
 5. **commune** Hedw.
a var. **commune**
1-6, (7), 8-112. H 1-16, (18), 19, 20, 22-40. C.
b var. **perigoniale** (Michx.) Hampe
(3), 12, 18, 22, (32), 35, (36-39), 51, 54, (59, 62, 63, 85, 88), 89, 90, 95, 98, (104), 105, 106, (111).
c var. **humile** Sw.
1, (3, 9, 13), 14, (17, 38, 43, 58, 61, 62, 71, 73, 76, 83, 85, 88), 90, 95, (96). H (38).

POLYTRICHUM

6. **piliferum** Hedw.
1-6, (7), 8-112. H 1-10, 12-14, 16, 17, 19, 20, 22, 24-31, 33-40. C.
 7. **juniperinum** Hedw.
1-112. H 1-6, 8-16, 18-40. C.
 8. **strictum** Brid. (*P. alpestre* Hoppe) [46]
2-6, 11, 12, 14, (17), 22, 25, 28, 39, 40 (41, 42), 43-52, (57), 58, (59), 60, (61, 62, 63), 64-84, 86-92, 94-106, 108-112. H (1), 6-8, 10, 14, 16-18, 20, (21), 22-25, 27-30, 32-40.
5. **Oligotrichum** Lam. & DC.
1. **hercynicum** (Hedw.) Lam. & DC.
1-4, 39-44, 46-50, 57-60, 62-75, (76), 77-83, (85), 86-108, (109), 110-112. H 2, 4, (5), 6, 7, 13, 16, 20, 27, (29, 31), 33-36, 38-40.
6. **Atrichum** P.Beauv.
1. **crispum** (James) Sull. & Lesq.
1, 3-5, 17, 39-50, 57-60, 63, 64, (65), 69-71. H 20, 29.
 2. **tenellum** (Röhl.) Bruch & Schimp.
1, 2, (7), 11, 15-17, 46, 58, 73, 75, 78, 81, 83, (85), 88, (89), 90, 95-98, 106. H 1, 3, 16, 35.
 3. **undulatum** (Hedw.) P.Beauv. (incl. var. *minus* (Hedw.) Paris)
a var. **undulatum**
1-112. H 1-18, 20-30, 32-40. 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).
7. **Tetraphis** Hedw.
1. **pellucida** Hedw.
1-78, (79), 80-92, 94-108. H 1-8, 10-13, 16, (18), 20, 21, 23, 26-30, (32), 33-37, (38), 39, 40.

8. **Tetrodontium** Schwägr.
1. **brownianum** (Dicks.) Schwägr.
3, 4, (13), 14, 16, 34, (36), 39, 41, 42, (46), 47-49, 57-60, 62-70, 72, 73, 75-77, 80, 81, 83-88, 90, 91, 96-101, 103-108, 110. H 1, 8, 20, (21), 33, 36, (39), 40.
 2. **repandum** (Funck) Schwägr.
14, 62.
9. **Diphyscium** D.Mohr
1. **foliosum** (Hedw.) D.Mohr
1-5, 14, (23), 35, 36, (39, 40), 41-50, (57), 58, (59), 60, (62, 63), 64-73, 75, 76, 78-80, 83, 86-93, 95-108, 110, 112. H 1-3, 7, 8, 13, 16, 20, 27, 28, (29, 31), 33-36, (37), 38-40.
10. **Buxbaumia** Hedw.
1. **aphylla** Hedw.
17, 22, (23, 27, 37), 40, 47, (48, 57-59), 63, (64), 66, 67, (68), 72, (73), 77, (78), 80, (81), 82-86, (87), 88-92, 96, (98, 99). H (1).
 2. **viridis** (Moug. ex Lam. & DC.) Brid. ex Moug. & Nestl.
(90, 92), 96, (106).
11. **Archidium** Brid.
1. **alternifolium** (Hedw.) Schimp.
1-17, (18), 20, (21), 22, 23, (24, 29, 30, 33), 34-43, (44), 45-49, 51, 52, (54), 55, 57, (58, 59), 60, (61), 62-74, (75), 76, (77), 78, 79, 81-83, (85), 86-88, 90, (91, 92), 95-112. H 1-3, 5, 8, 9, 12, 13, 16, (21), 26-30, 34, 35, (38-40). C.
12. **Pleuroidium** Rabenh.
1. **acuminatum** Lindb.
1-31, (32, 33), 34-52, 54, 55, 57-60, (61), 62-72, (73), 76-83, (84, 85), 86-91, (92), 94-98, (99), 100-107, 111, 112. H (1, 4), 5, 8, 9, (14), 16, 22, 25, 27-30, 32, (34), 35-37, (38-40). C.

PLEURIDIUM

2. **subulatum** (Hedw.) Rabenh.
1-7, 9-20, (21), 22-31, (32), 34-47, (48), 49-52, (53-55), 57, (58, 59), 60-71, (73), 74, 76, 80-85, (88, 89), 90, (91), 94-96, 98-101, 103-105. H (1), 2, (3), 6, 9, 12, 21, (31, 38, 39). C.

13. **Pseudephemerum** (Lindb.) I.Hagen
 1. **nitidum** (Hedw.) Loeske [47]
1-26, (27), 28-52, 54-74, (76), 77-87, 89, 90, (91), 92-104, 106-109, (111), 112. H 1-6, 8-10, 12, 15, 16, 20, 26, 27, 29, (30), 31, 33-37, (38, 39), 40. C.

14. **Ditrichum** Hampe
 1. **cylindricum** (Hedw.) Grout
1-52, 54-101, 103-112. H 1-4, 6-8, 10-13, 15, 16, 20, 27, 33-37, (38, 39), 40. C.
 2. **pusillum** (Hedw.) Hampe
3, 13, (14, 16), 17, 22, (46), 48, 49, 54, 58, (60, 62, 64), 76, 90, 95, 97-99, 101, 104, 108, 109.
H (5, 12, 32, 35, 38, 39).
 3. **cornubicum** Paton
1, 2.
 4. **lineare** (Sw.) Lindb.
43, 46-49, 69, 73, 88-90, 92, 94, 96-98, 103, 104, 110. H (28), 39.
 5. **plumbicola** Crundw.
6, 46, 47, 49, 50, 67, 71, 88.
 6. **heteromallum** (Hedw.) E.Britton
1-6, 9-17, (19), 24, (27, 32), 34-38, (39), 40-52, 55, 57-60, (61), 62-83, (84), 85-108, (109), 110-112. H 1-8, 10, 12, 13, 16, 20, 21, 25, 27-30, (31-33), 34-40.
 7. **zonatum** (Brid.) Braithw.
a var. **zonatum**
46-49, 68-70, 73, 75, 78, 88-90, 92, 94, 96-98, 100-106, 108, (110). H (39).

- b var. **scabrifolium** Dixon
46-48, (49), 50, 69, 73, 87, 88, 92, 94, 96-98,
103-106, 110. H 16, 35.
8. **subulatum** Hampe
1, 2, (3, 15).
9. **flexicaule** (Schwägr.) Hampe [48]
(10, 11), 12, (14), 17, 26, (29), 32, (35, 36), 39,
41, (42, 44, 48, 49), 50, 52, (55), 56, 57, (59),
60, 62, (63-66), 69, (82), 88, (89, 98, 108). H
10, (27, 35, 38, 39).
10. **gracile** (Mitt.) Kuntze (*D. crispatissimum*
(Müll.Hal.) Paris) [48]
1-3, 5-17, (19), 20, 22-24, (25), 26, (27), 28-
30, 33-36, (37), 38, (39), 40-54, (55), 56, 57,
(58), 59-62, 64-70, 72, 73, 75, 77-83, 85-92,
94-98, (99), 100-112. H 1, 7-11, 14-19, (20,
21), 22-29, 33-36, (38), 39, 40. C.
15. **Saelania** Lindb.
1. **glaucescens** (Hedw.) Broth.
90, 96.
16. **Distichium** Bruch, Schimp. & W.Gümbel
1. **capillaceum** (Hedw.) Bruch, Schimp. &
W.Gümbel
1, 2, 35, 42, 44, 48, 49, (50), 57, (59, 60), 62-
70, 72, (73, 77, 79), 80, 82, 83, (85), 86-92, 94-
98, (99), 100-112. H 1, (9), 12, 16, (20), 27-29,
(33), 34, 35, (39), 40.
2. **inclinatum** (Hedw.) Bruch, Schimp. &
W.Gümbel
1, 6, 41, 42, 44, 50, 52, 56-60, 62, 64, (65), 66,
68-70, 72, (75), 82, 85, 87, 88, 90, 93, (94), 97,
98, 101-103, 105, 108-112. H 16, 26-29, (34),
35, (39, 40).
17. **Ceratodon** Brid.
1. **purpureus** (Hedw.) Brid.
1-112. H 1-40. C.

CERATODON

2. **conicus** (Hampe ex Müll.Hal.) Lindb. (*C. purpureus* subsp. *conicus* (Hampe ex Müll.Hal.) Dixon) [49]
22, 23, (32, 33), 38, (53).
18. **Cheilothela** Lindb.
 1. **chloropus** (Brid.) Lindb.
3, 6.
19. **Trematodon** Michx.
 1. **ambiguus** (Hedw.) Hornsch.
(88).
20. **Rhabdoweisia** Bruch, Schimp. & W.Gümbel
 1. **fugax** (Hedw.) Bruch, Schimp. & W.Gümbel
1-5, (35, 39, 40), 41-50, (63, 64), 65, 66, 68-73, (76), 82, (85), 87, 88, (89), 90-92, 96-99, 101, 103-106, 112. H (1), 6, (7), 16, (20, 21, 31, 35), 38, (39), 40.
 2. **crispata** (Dicks.) Lindb.
2-4, 41, (42), 43, (44), 46-50, 57, (59), 60, 64-66, 68-70, (71), 72-75, (76, 77), 78, 83-91, (92), 96-101, 103-108, (109), 110, 112. H 1, (2), 3, 6-8, 10, 12, 13, (20), 27, (31, 33), 34-36, 38-40.
 3. **crenulata** (Mitt.) H.Jameson
41-43, (44), 46-50, 58, 64, 66, 68-70, 72-74, (75, 76), 79, 80, 86-88, 97-101, 103-105, 108, 110. H 1-4, 6, 7, 16, 20, 26-28, (33), 35, 36, 40.
21. **Cynodontium** Schimp.
 1. **bruntonii** (Sm.) Bruch, Schimp. & W.Gümbel
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), 86-92, 95-100, 105, 106, 108, 109. H (1), 4, (5), 6, 7, 12, 13, 20, 30, 36, (39). C.
 2. **strumiferum** (Hedw.) Lindb.
89, 90, 92, (93), 96, 104, 106.

3. **jeneri** (Schimp.) Stirt.
48, 49, 68-70, 72, (73, 75), 78, 80, (81, 82), 87-91, (92), 93, 96-98, 101, 105, 107, 108.
 4. **polycarpon** (Hedw.) Schimp.
48, 68, 70, 90, (96).
 5. **fallax** Limpr.
(90).
 6. **tenellum** (Bruch, Schimp. & W.Gümbel)
Limpr.
81, (87, 88), 89-92, 95, 96.
22. **Oncophorus** (Brid.) Brid.
1. **virens** (Hedw.) Brid.
69, 70, 87-90, 92, 96-98, 104, 107, 108.
 2. **wahlenbergii** Brid.
88, (89, 90), 92, 97, 98, (99), 104, (105), 106.
23. **Dichodontium** Schimp.
1. **pellucidum** (Hedw.) Schimp.
1-6, 8-17, 21, 22, (27), 30, (33), 34-52, 54, (55), 57-60, 62-112. H 1-10, 12-14, 16, (18), 20, (21), 24-30, 32-37, (38), 39, 40.
 2. **flavescens** (Dicks.) Lindb.
37, (40), 41, 44, 47, 49, 50, (52), 57, (58, 59), 60, 62, 64, 65, (68), 69, 70, 72, 73, 75, (77), 86, (88, 90), 96, 98. H (20, 21, 29), 40.
24. **Aongstroemia** Bruch, Schimp. & W.Gümbel
1. **longipes** (Sommerf.) Bruch, Schimp. & W.Gümbel
88, 89, 95, 96, 98, 99, 106.
25. **Dicranella** (Müll.Hal.) Schimp.
1. **palustris** (Dicks.) Crundw. ex E.F.Warb.
1-6, (14), 34-37, 39-52, 57-60, 62-112. H 1-10, 12-16, (18), 20, 21, 25, 27-30, (31), 32-37, (38), 39, 40.

2. **schreberiana** (Hedw.) Dixon
1-72, 74-91, 93-95, 97-99, 101, 102, 104-106,
108-112. H 2-16, 18, 20-29, 32-37, (38), 39, 40. C.
3. **grevilleana** (Brid.) Schimp.
88, 89, 98, 106, 108. H (20), 28, 29.
4. **crispa** (Hedw.) Schimp.
1, 2, (3, 13), 14, 15, (16, 17), 21, (25, 38, 39,
48), 54, 55, (57, 58), 59, (62-64), 65, 66, (67),
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).
5. **subulata** (Hedw.) Schimp.
(1), 2, 3, (4, 10, 17), 34, (35), 39, 41, (42), 43,
44, 46-50, 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. H 1, (3, 5), 6, (12, 13), 16, 35,
36, (38, 39).
6. **varia** (Hedw.) Schimp.
1-75, (76), 77-92, 94-112. H 1-3, (4), 5-30, (31,
32), 33-40. C.
7. **staphylina** H. Whitehouse
1-67, 69-99, 101, 103-109, 112. H 3, 5, 6, 8-
10, 12, 14, 16, 18-22, 25-27, 29, 35, 37, (38). C.
8. **rufescens** (Dicks.) Schimp.
1-9, 11-20, 22, (23, 25, 27), 32, (33), 34-53,
(55), 57-60, (61), 62-74, (76), 77-84, (85), 86-
106, 108-112. H 1, (2), 3-10, 12, (14), 15, 16,
20, (21), 26-30, (31), 34-36, (38), 39, 40. C.
9. **cerviculata** (Hedw.) Schimp.
(1-4), 5, 6, 8-22, (23, 24), 25, (26), 27-31, (32,
33, 35), 37-40, (42-44), 46, 48-50, (52), 54,
(55), 57-65, (66), 67-70, 72-74, (76), 77, 78,
81-85, (86, 88, 89), 90, (92), 95, (96), 97-99,
102, 104, (105), 108, 111, 112. H (1-6), 13, 14,
(16), 17, 18, (20, 21), 22, 23, (24, 25), 26, 27,
(28, 29), 30, (31-33), 34-37, (38-40).
10. **heteromalla** (Hedw.) Schimp.
1-112. H 1-16, 19-30, (31), 32-40. C.

26. **Dicranoweisia** Lindb. ex Milde
1. **cirrata** (Hedw.) Lindb. ex Milde
1-107, 109, 112. H 1, 3, (4, 5), 6, 8, 12, 13, 20-22, 25, (31), 34, 36-40. C.
 2. **crispula** (Hedw.) Milde
49, (65), 69, (72, 73), 75, (86), 87-90, (91), 92, 96-98, (99), 103-108.
27. **Arctoa** Bruch, Schimp. & W.Gümbel
1. **fulvella** (Dicks.) Bruch, Schimp. & W.Gümbel
(48), 49, (65), 69, 70, 72, 73, (86), 87, 88, (89), 90, 92, (94), 96-98, 100, 103-106, 108, (110).
H 1, 35.
28. **Kiaeria** I.Hagen
1. **falcata** (Hedw.) I.Hagen
49, (65, 66, 69), 70, 72, 78, (86), 87-90, 92, 94, 96-99, (104), 105-108, 110.
 2. **blyttii** (Bruch, Schimp. & W.Gümbel) Broth.
47-49, (65), 68-70, 72, 73, 75, 77, 78, 80, (86), 87-100, 104-108, (110). H 27, 35, 40.
 3. **starkei** (F.Weber & D.Mohr) I.Hagen
(65), 69, 86-90, 92, 94, 96-98, (103), 104-108.
 4. **glacialis** (Berggr.) I.Hagen (*Dicranum glaciale* Berggr.) [50]
88, (89), 90, 92, 94, 96-98, 105, (106), 108.
29. **Dicranum** Hedw.
1. **polysetum** Sw.
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, (88), 89, 90, 92, 95, 96.
 2. **bonjeanii** De Not.
1-28, 30, (32), 33-52, 54, 55, 57-112. H 2, 3, 7, 8, (10), 11, 12, 15, 16, 18, 20, 22, 23, 25-29, 32-37, (38), 39, 40. C.
 3. **leioneuron** Kindb.
42, 46, 47, 67, 70, 88, 92.

4. **scoparium** Hedw.
1-112. H 1-40. C.
5. **majus** Sm.
1-25, 27, 28, (29), 30, (32), 33-52, (53, 54), 55, 57-60, (61), 62-112. H 1-9, (10-13), 14, 16, 20-22, 25-30, (31), 33-36, (38), 39, 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. **bergeri** Bland. ex Hoppe (*D. undulatum* Brid.) [51]
40, 46, 50, 58, (59, 68), 70, (80), 81, 88, 89, (92), 95, 96, 109. H 18.
8. **fuscescens** Sm.
1-3, (5), 11, 13, 14, 17, 25, 26, 28, 31, 34, 36, (37, 38), 39, (40), 41-51, 53, 57, (58), 59, 60, (61), 62-70, 72-76, 78-83, (85), 86-112. H 1-4, 6, 7, 12, 13, 16, 20, (21, 26), 27, 29, 30, 33-36, (38), 39, 40.
9. **flexicaule** Brid. (*D. fuscescens* var. *congestum* (Brid.) Husn.) [52]
(66), 68, (88), 92, (94, 97), 98, 105, 106, (109, 110).
10. **elongatum** Schleich. ex Schwägr.
(68, 90), 92, (96, 97, 105, 109, 112).
11. **scottianum** Turner
1-5, 14, 16, (34-36, 39), 41, (44), 45-50, 52, (58, 62), 67, 68, 70, 73, 75, 80, 86, (87), 88-90, (92), 97-105, 108, 110, (111). H 1-4, (5), 6-8, 16, 20, 25, (26), 27-30, 33-36, (38). C.
12. **tauricum** Sapjegin
6-9, 11-34, 36-41, 47, 50, 51, 53, 55-58, 60-69, 76, 78, 81-86, 95, 96, 99, 106.
13. **montanum** Hedw.
6-8, 11-31, (32), 34, 36-39, (40), 41-43, 47, 48, 50, 53, (54), 55, 57, 58, 60, 62-64, 66, 67, (68), 69, 70, 77, 80, (81), 83, 88-90, 95, 96, 99, 112.

14. **flagellare** Hedw.
3, 12-17, 19-23, 30, 38, (39), 42, 47, 64, 73.
15. **subporodictyon** (Broth.) C.H.Gao (*Dicranodontium subporodictyon* Broth.) [53]
97, 105.
30. **Dicranodontium** Bruch, Schimp. & W.Gümbel
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. H 29, 30, 33.
3. **denudatum** (Brid.) E.Britton (incl. var. *alpinum* (Schimp.) I.Hagen
2, (3), 11, 13, 14, (39), 41-50, 57-60, (62), 63-
67, 69, 70, 72, 73, 75, 78, 80, 81, 83, 86-90,
(91), 92, 96-108, 110, 112. H 1-3, 6, 14, 16,
(20, 21), 27, 28, 30, 33-36, (39), 40.
31. **Campylopus** Brid.
1. **subulatus** Schimp.
2, 4, 11, 14, 17, (36), 41, (42), 43, 44, 46-49,
64, 66, 69, 70, 72, 73, (88, 89), 90, 91, 95, (96),
97, 98, (99), 101, 103-105, 110, (111). H (2, 3),
27, (29, 34), 35, (36), 39. C.
2. **schimperi** Milde
(86, 87), 88, (89), 90, 96-98, (99), 100, 103-105,
(106), 108, 110, (111), 112. H 1, (2, 20), 35.
3. **gracilis** (Mitt.) A.Jaeger (*C. schwarzii* Schimp.)
[54]
46-49, (69), 70, (73, 86), 87, 88, 90, 96-98, (99),
100, 101, 103-108, 110. H 1, (2), 4, 7, 8, 16,
(20), 27, 28, 30, (34), 35, 36.
4. **fragilis** (Brid.) Bruch, Schimp. & W.Gümbel
1-6, 9-11, 13, 14, (15), 16, (23), 25, 26, (27), 28, 29,
31, (33), 34, (35), 36, 37, 40-52, (54), 57-60, 62-75,
78, 79, 81-83, (84, 85), 86-88, 90, 92, 95-112. H 1-
10, 15, 16, 18, 20, 27-30, 33-35, 37-40. C.

5. **pyriformis** (Schultz) Brid.
 a var. **pyriformis**
 1-112. H 1-16, (17), 18-23, 25-30, (31, 32), 33-40. C.
 b var. **azoricus** (Mitt.) M.F.V. Corley
 2, 3, 6, 8, 10-12, 16-18, 22, 25, 27, 28, (30), 38, 40, 43, 46-49, (54), 58, 60, (61, 62), 63, 65, (67), 68, 70, (83, 86), 93, 97-99, 101, 102, 104, 105, 108, (109). H (20), 24, (27, 35).
6. **flexuosus** (Hedw.) Brid. (*C. paradoxus* Wilson; *C. pyriformis* var. *fallaciosus* (Thér.) M.F.V. Corley [55])
 1-55, 57-92, (93), 94-112. H 1-14, 16-30, 33-40. C.
7. **setifolius** Wilson
 48, 49, (69), 70, 73, 97, 98, 100, 103-105, 108, 110. H 1-3, 15, 16, (20), 27, 28, 34, 35, (38).
8. **shawii** Wilson ex Hunt
 (97), 103-105, (108), 110. H 1-3, (27).
9. **atrovirens** De Not.
 a var. **atrovirens**
 1-4, 41-50, 52, (57), 60, 62, 64-67, 69-76, 78, 79, (85), 86-90, 92, 93, 95-112. H 1-4, 6-9, 12, 14-17, 20, (21), 24, 26-31, 33-40.
 b var. **falcatus** Braithw.
 (69), 75, 102-105, 108, 110, 112. H 1, (3), 16, 27, (35).
 c var. **gracilis** Dixon
 (48, 49, 64, 65, 69), 72, (88), 90, 97, (104), 110. H (3).
10. **pilifer** Brid. (*C. polytrichoides* De Not.) [56]
 1-3, 45, 48, 49, 102, 104. H 1, (2), 3, 16, 27. C.
11. **introflexus** (Hedw.) Brid.
 1-75, 77-108, 110-112. H 1-31, 33-40. C.
12. **brevipilus** Bruch, Schimp. & W. Gumbel
 1-5, (6, 7), 8-15, 17, 22, (24), 25, 27-29, (34), 41, 45, 46, 48, 49, 52, (58, 60, 61), 62, (67), 69-72, (73, 81, 87-89), 90, (91), 92, 93, 96-98, 100-105, (106), 107-112. H 1-3, 5, (7, 8), 9, (10), 12, 15-17, 20, (21), 26-29, (31, 33), 34, 35, 38, (39). C.

32. **Paraleucobryum** (Limpr.) Loeske
1. **longifolium** (Hedw.) Loeske
(72), 88, 90, 92, 94, 96.
33. **Leucobryum** Hampe
1. **glaucum** (Hedw.) Ångstr.
1-30, (32), 34-40, 42-55, 57-84, 86-92, 94-112.
H 1-20, 22-31, 33-39. C.
 2. **juniperoideum** (Brid.) Müll.Hal.
1-5, 8, 9, 11-14, 16-25, 30, 34, 35, 40-49, 55,
58, 60, 64, 70, 86, 97-99, 101. H 1-3, 16.
34. **Fissidens** Hedw.
1. **exiguus** Sull.
3, 6, 14-16, 38, 42, 70. H 10.
 2. **viridulus** (Sw.) Wahlenb. [57]
1-25, 27, 29-38, 40-53, (54), 55, 57, (58, 59),
60, 62, (63), 64-66, (68), 69, 70, 80-82, (85),
86, 90, 94, 100, 101, 105. H 1, 7, 9, 11, 12, 19,
22, 23, 26-28, 32, 33, 36, (37, 39).
 3. **limbatus** Sull. [57]
1-4, 6, 8, 9, 11, 12, (14), 20, 22, (35, 36), 39-
42, 44, (45), 47-50, (57, 59), 60, 61, 69, (71),
73, (83, 84), 98, 101-104. H 1-3, 15, 21, 27.
C.
 4. **pusillus** (Wilson) Milde [57]
1, 2, 4-12, 14, 15, (16, 17), 19, 20, 22, 23, 27,
30, 32, 33, (34), 35, (36), 38-43, (44), 45, 46,
48, (49), 50-52, 54, 57, (59), 60-67, (68), 69,
70, 72-82, (83, 84), 87, 88, (90), 91, 97-104,
106-109. H 1-9, 15, 16, 20, 23, 26, 27, (28), 29,
30, 33, 35, 38, 39.
 5. **gracilifolius** Brugg.-Nan. & Nyholm (*F.*
pusillus var. *tenuifolius* (Boulay) Podp.; *F.*
viridulus var. *tenuifolius* (Boulay) A.J.E.Sm.)
[58]
3, 6-18, 20-24, 26, 28-38, 40, 41, 49-51, 53,
55-57, 60, 62-64, (65, 68), 69, 70, 83, 86, 88,
89, 101. H 2, 7-9, 23, 24, 28, 29, 33.

6. **incurvus** Starke ex Röhl.
1-45, 47, 49-58, (59), 60, 61, (62), 63, 64, (65),
66, 68, (69), 70, 71, (75, 77), 81, 82, (83), 84,
(85), 90, 91, 100. H 5, 9, 11, (18), 21, 24, 26,
29, 31, 33, (37-39). (C).
7. **bryoides** Hedw.
1-112. H 1-12, 14-16, (19), 20-25, 27-30, 32-
37, (38), 39, 40. C.
8. **curnovii** Mitt.
1-6, 35, 41-50, 59, (64), 68-71, 86, 88, 97-104, (105,
110), 112. H 1-3, 5-7, (12), 16, 20, 27, (34), 38. (C).
9. **rivularis** (Spruce) Bruch, Schimp. & W.Gümbel
1-6, 9, 14, 34, 35, 42-44, 46, 57, 73, 101. H 2. (C).
10. **monguillonii** Thér.
3-5, 44, 45, 49, 52. H 33.
11. **crassipes** Wilson ex Bruch, Schimp. &
W.Gümbel
1-13, (14), 15-17, 19-30, 32-43, 50-55, 57-72,
77, 78, 81-84, (86), 91. H 5, 8-11, 13, 14, 16,
17, 19, 22, 25, 28, 29, 31, 33, 36, 37, (38), 40.
12. **rufulus** Bruch, Schimp. & W.Gümbel
35, 37, 41-44, 60, 62, 64-66, 68-70, 72, 79-81,
89, 90. H 6, 19, 20, 33, 34, (38).
13. **exilis** Hedw.
1-6, (7), 8-45, 47-50, (51), 52-67, (68, 69), 71,
(72, 77), 78, 81-84, 86, (88), 89, 90, 99, 101,
103. H (1), 8, (19, 20), 21, 22, 32, (38-40). (C).
14. **celticus** Paton
1-6, 10, 13-17, 34, 39, 41-50, 52, 57, 60, 64,
65, 69-71, 73, 74, 97-99, 101-104. H 1-5, 7, 8,
10, 16, 25, 27, 40.
15. **curvatus** Hornsch. (*F. algarvicus* Solms) [59]
1-3, (33), 43, 45, 48, 49. H 1.
16. **osmundoides** Hedw.
1-3, 5, 11, 35, 40-52, 57, (58), 59, 60, 62-75,
(76), 77, 78, 80, (81), 82, 83, (85), 86-90, 92,
94-112. H 1-4, 6, 7, 9, (10, 12), 14, 16, (18),
19), 20, (21, 24, 25), 27-30, (31, 32), 33-40.

17. **taxifolius** Hedw.
 a var. **taxifolius**
 1-112. H 1-40. C.
 b var. **pallidicaulis** (Mitt.) Corb. [60]
 3, 9, 11, 39, (44), 48, 49, 57, 60, 63, 76, 88, 97-
 104, 112. H 1, 7, 16, 27, 40.
18. **dubius** P.Beauv. (*F. cristatus* Wilson ex Mitt.) [61]
 1-24, 26, (27), 28-30, 32-74, 76-84, 86-112. H
 1-19, (20), 21-23, 25-29, (30, 31), 32-40. C.
19. **adianthoides** Hedw.
 1-20, (21), 22-83, (84), 85-112. H 1-20, 22-30,
 33-40. C.
20. **serrulatus** Brid.
 1, 3, 48. H 1, 27.
21. **polyphyllus** Wilson ex Bruch, Schimp. &
 W.Gümbel
 1-3, 47-49, 98, 101, 102. H (1), 2, 3, (4), 6, 20, (28).
35. **Octodiceras** Brid.
 1. **fontanum** (Bach.Pyl.) Lindb.
 4, 8, 17, 19-23, (24), 32, (33, 34), 35, 36, (37),
 38-40, 45, 55, 58, (59), 62-64. H 29.
36. **Encalypta** Hedw.
 1. **streptocarpa** Hedw.
 1-17, 20, 22-24, 26, 28-31, (32), 33-98, (99),
 100-111. H 1-17, 19-29, 31, 33-40.
 2. **alpina** Sm.
 (49), 64, 88-90, 96-98, 104, 108. H 28.
 3. **rhaptocarpa** Schwägr.
 (49), 64-66, 69, 82, (85), 87-90, 92, 94, 96-98,
 104, 105, 107-110, 112. H (9, 27), 28, (29).
 4. **vulgaris** Hedw.
 1-10, 12, (13, 14), 15-17, 19, 20, (21), 22-24, (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. H (1), 2, (4, 5), 6, 7, 9, 11, 13-15, (18, 19,
 21), 22, (23), 24, 25, (27), 32, (33, 35), 37, (39), 40.

5. **brevicollis** (Bruch & Schimp.) Ångstr. [62]
(90).
6. **ciliata** Hedw.
36, 42-44, 48, 49, 64-66, 68-70, (72, 75), 78,
80, 82, (83, 85), 86-90, (91), 92, 96-99, (100),
101, 104-107, (108). H 8, (27, 39), 40.
37. **Eucladium** Bruch, Schimp. & W.Gümbel
1. **verticillatum** (Brid.) Bruch, Schimp. &
W. Gümbel
1-17, (19), 20, 22-24, (27), 28-30, 32-47, (48), 49-
54, (55), 56-72, (73), 74-91, 93-95, 97-106, 108-
112. H 1, (2), 4, (5), 6-14, 16-18, (19), 20, (21),
22-25, (26), 27-29, 31, 33-37, (38), 39, 40. C.
38. **Weissia** Hedw.
1. **controversa** Hedw.
a var. **controversa**
1-75, (76), 77-112. H 1-9, 11-17, 19-40. C.
b var. **crispata** (Nees & Hornsch.) Nyholm
1, (3), 6, 8-10, 17, 28, (33), 40, 49, 50, 52, (60,
64), 69, 80, (81).
c var. **densifolia** (Bruch, Schimp. & W.Güm-
bel) Wilson
1-6, (36), 46, 47, (48), 49-51, (60), 64, 65, 67,
70, 71, (81, 84, 87). H (1), 10.
d var. **wimmeriana** (Sendtn.) Blockeel &
A.J.E.Sm. (*W. wimmeriana* (Sendtn.) Bruch,
Schimp. & W.Gümbel) [63]
96.
2. **perssonii** Kindb.
1-4, (36), 41, 44-46, 48, 49, 52, 71, (73), 74,
75, 98, 100-105, 108, 112. H 3, 6, 27, (34), 35,
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), 39-43, 47-50, 52, (57), 58,
(59), 60, (61, 62), 63, (64), 67, (68, 69), 71-73,
(77), 79, 82, (83-85, 88), 92, 97, 98, 101, 104,
105, 107, 108, (109). H 8, (35, 38), 39, 40. (C).

4. **condensa** (Voit) Lindb. (*W. tortilis* (Schwäger.) Müll.Hal.) [64]
3, 6, 9-11, 13, (14), 15-17, (33, 81).
5. **brachycarpa** (Nees & Hornsch.) Jur. (*W. microstoma* (Hedw.) Müll.Hal.) [65]
a var. **brachycarpa** (*W. microstoma* var. *brachycarpa* (Nees & Hornsch.) Müll.Hal.)
1-3, 6, 8-11, (14, 15), 20, 22, 23, (32), 37, 38, 44, 50, 57, (61), 62-64, 66, 81-83, 98, 109.
b var. **obliqua** (Nees & Hornsch.) M.O.Hill (*W. microstoma* var. *microstoma*) [65]
1-20, (21), 22-25, (26, 27), 28-30, (32), 33-41, 43-45, (48), 49, 51, 52, 54-61, (62), 63-75, (76), 77, 79-83, 85, 86, 88-92, 97-99, 102-105, 108-112. H (1, 4), 15, 16, (21), 22-24, 26, 28, (31, 34), 35, 37, (38), 39, 40. C.
6. **squarrosa** (Nees & Hornsch.) Müll.Hal.
(3), 10, (13-16), 17, 22, 24, 31, (32, 35, 37), 38, (55, 57-60, 62, 64, 69, 85).
7. **rostellata** (Brid.) Lindb.
9, (13-15, 17), 22, (23), 29, (36, 38), 46, 52, (55), 57, 58, 63, 64, 67, 83. H 26, (39).
8. **mittenii** (Bruch, Schimp. & W.Gümbel) Mitt. [66]
(13, 14, 17).
9. **multicapsularis** (Sm.) Mitt.
1-3, (13, 14, 16), 23, 35, (58).
10. **sterilis** W.E.Nicholson
(3), 8, 9, (10), 11-17, 20, 22, 24, 29, 30, 33, (37), 47.
11. **levieri** (Limpr.) Kindb.
6, 41.
12. **longifolia** Mitt.
a var. **longifolia**
1-3, 6, 8, (13), 14, (15-17), 18-20, 22-25, 29-32, (33, 34, 37), 38, 41, 49, 50, 55, 56, 62, (65), 66, 81, 82, 99.

b var. **angustifolia** (Baumgartner) Crundw. & Nyholm

1, (3), 5-15, (16), 17, 19-24, (25, 26), 28-32, (34), 38, (39), 41, (43), 49, 50, 53, 54, (55, 57, 58), 61, (62), 63, 64, (65), 66, (67). H 11, (19, 21), 23, (35, 38, 39).

39. **Tortella** (Lindb.) Limpr.

1. **tortuosa** (Hedw.) Limpr.

2-9, 11-14, (16), 17, 20, 22-25, 29, 30, 33-36, (37, 38), 39-54, (55), 56-60, 62-75, (76), 77-83, 85-112. H 1-4, 6-20, 22-29, 32-40. C.

2. **densa** (Lor. & Molendo) Crundw. & Nyholm

33, 60, 64-66, 69, (71), 98, 104, 105, 108. H 9, 26-28, 33.

3. **fragilis** (Drumm.) Limpr.

85, 88, (90), 94, 107, 109. H 33.

4. **nitida** (Lindb.) Broth.

1-9, 13, 20, 34-36, 39, 41-46, 48-52, 57, 60, (64), 69, 71, 73, (75), 86, 87, 98, (100), 101-103. H 1-3, 5, 7-10, 15-17, 22-24, 26, 28. C.

5. **inflexa** (Bruch) Broth.

6-17, 20, 22-24, 29, 30, 32, 33, 34, 61.

6. **inclinata** (R.Hedw.) Limpr.

17, (23, 28), 29, (33), 41, 44, 45, 48, 52, 53, (55), 60, 65, 66, 69, 70, 82, (85), 95, 100, 102, 106, 107, 109. H 27, 38.

7. **limosella** (Stirt.) P.W.Richards & E.C.Wallace (97).

8. **flavovirens** (Bruch.) Broth.

a var. **flavovirens**

1-6, 9, (10), 11, 13-15, 19, 25, (27), 28, 34, 41, 45, 46, 48, 49, (50), 52, 54, 59-61, 66-68, 70, 71, (73), 74-76, 81, 82, (84), 85, 90, 91, 93-95, (97), 98, 100-106, 108-112. H 1-3, 6, 8, 9, 12, 16, 17, 20, 21, 27, 34, 35, 37, (38), 39. C.

b var. **glareicola** (T.A.Chr.) Crundw. & Nyholm
 1, 2, 6, 9, (13, 14, 27), 41, (44), 46, 54, (68, 91),
 101-103. H 9, 20, 31, 35. C.

40. **Trichostomum** Bruch

1. **brachydontium** Bruch
 1-6, 8-16, (17), 20, (24), 26, 29, 33-37, 39-54,
 (55), 56, 57, (58), 59-76, 78-82, 84-112. H 1-
 3, 5, 6, 8-10, 12, (14), 16, (21), 23, (25), 26-29,
 (30, 31), 33-35, (38), 39, 40. C.
2. **crispulum** Bruch
 1-17, 20, 22-24, 26, 28-30, 32-36, (37), 38-54,
 (55), 56, 57, 59-76, 79-83, 85-112. H 1-11,
 (12), 14-18, (19), 20, (21), 22-29, (30), 31-40.
 C.
3. **tenuirostre** (Hook. & Taylor) Lindb. (*Oxystegus tenuirostris* (Hook. & Taylor) A.J.E.Sm.) [67]
 a var. **tenuirostre**
 1-5, 13, 14, 34-36, (39), 40-51, 57, (59), 60,
 (62), 63-77, 79, 81, (85), 86-91, 94-106, 108,
 110. H 1-3, 6, 7, 16, 20-22, 26-28, (31), 33-36,
 (38), 39, 40.
 b var. **holtii** (Braithw.) Dixon (*O. tenuirostris*
 var. *holtii* (Braithw.) A.J.E.Sm.)
 48, 49, (59, 69-71), 87, 90, 97, (98, 100), 101,
 104. H (1, 2).
4. **hibernicum** (Mitt.) Dixon (*Oxystegus hibernicus* (Mitt.) Hilpert) [66]
 72, (86), 87, (88), 96-101, 103-106, 110. H 1,
 2, (5), 16, 27, (35).

41. **Pottiopsis** Blockeel & A.J.E.Sm. [68]

1. **caespitosa** (Bruch ex Brid.) Blockeel & A.J.E.Sm. (*Trichostomum caespitosum* (Bruch ex Brid.) Jur.; *Pottia caespitosa* (Bruch ex Brid.) Müll.Hal.)
 1, 6, 8, 9, 11-15, (16, 17), 22-24, 29, 36, 40.

42. **Pleurochaete** Lindb.
 1. **squarrosa** (Brid.) Lindb.
 1-6, 8-11, 13-17, 22, (23), 26, 28, (33), 34, (36),
 39-41, 45, 47, 50-52, 57, 60, (64, 69). H 9, (20),
 21, 22. C.
43. **Paraleptodontium** D.G.Long [69]
 1. **recurvifolium** (Taylor) D.G.Long (*Leptodon-
 tium recurvifolium* (Taylor) Lindb.)
 48, 49, (69), 70, 86-88, 96-98, (99), 104-108,
 110. H 1-3, 16, 27, 35.
44. **Dialytrichia** (Schimp.) Limpr. [70]
 1. **mucronata** (Brid.) Broth. (*Cinclidotus
 mucronatus* (Brid.) Machado)
 2-25, 29, 30, (32), 33-38, (39), 40-43, (44, 45,
 49, 52, 54), 55, 59, 64, 66.
45. **Pseudocrossidium** R.S.Williams [71]
 1. **hornschuchianum** (Schultz) R.H.Zander
 (*Barbula hornschuchiana* Schultz)
 1-70, 72, (73), 74-91, 93-95, 97-110, (111),
 112. H 1-3, (5), 7-9, 12, 15, 16, 19, 20, 22, 23,
 25-28, 30, 33, 35, 36, (37, 38, 40). C.
2. **revolutum** (Brid.) R.H.Zander (*Barbula revo-
 luta* Brid.)
 1-32, 34-42, (43), 44-75, (76), 77, 78, (79), 80-
 83, (84), 85, (86), 87-92, 94-98, (99), 100-104,
 106, 108-111. H 1-17, 20-29, 31-37, (38), 39,
 40. C.
46. **Bryoerythrophyllum** P.C.Chen [72]
 1. **recurvirostrum** (Hedw.) P.C.Chen (*Barbula
 recurvirostra* (Hedw.) Dixon)
 1-112. H 1-14, 16, 17, 20-30, 32-40. C.
2. **ferruginascens** (Stirt.) Giacom. (*Barbula ferru-
 ginascens* Stirt.)
 36, (39), 41, 42, (43), 44, 47-50, 57, 60, 64-67,
 69, 70, 72, 78, 81, 87-92, 96-106, 108, 110, 111.
 H 1, 7, 9, 10, (14), 16, 27-29, 34, 35, (39), 40.

3. **caledonicum** D.G.Long [73]
88, 97, 98, 104.
47. **Leptodontium** (Müll.Hal.) Hampe ex Lindb.
1. **flexifolium** (Dicks.) Hampe
1-6, 11-14, 16, 17, 20-22, (24), 28, 30, (32, 34),
35-43, 45, 47-52, 55, 57-60, 62-84, 86-93, 96-
106, 108, 110. H 1, 3, 6, 10, 12, 13, 20, (21),
27, 28, (29), 30, 33, 37, (39).
 2. **gemmascens** (Mitt. ex Hunt) Braithw.
(3, 5), 7, 9, 10, (11), 13, (14, 16, 17), 20, 21,
23-26, (33, 36).
48. **Hymenostylium** Brid. [74]
1. **recurvirostrum** (Hedw.) Dixon (*Gymnostomum recurvirostrum* Hedw.)
1, 6, 40-42, 44, 48-50, (51, 57), 59, 60, 62, 64-
71, (72, 76, 77), 80-82, 84-91, 94-112. H 2, 4,
9, 15, 16, 20, 26-29, (34), 36, (38, 39).
 2. **insigne** (Dixon) Podp. (*Gymnostomum insigne*
(Dixon) A.J.E.Sm.)
87, 88, 97, 98, 103-105, 108. H 28, 29.
49. **Anoectangium** Schwägr.
1. **aestivum** (Hedw.) Mitt.
(39), 41, 42, 44, (46), 47-50, 57, 59, (62), 64-
67, 69, 70, 72, 73, 75, 76, 79, 80, 83, (85), 86-
92, 95-108, 110. H 1, 2, (3, 6), 7, (8), 9, 16,
(20), 27, 28, (31), 33-35, (38), 39.
50. **Gyroweisia** Schimp.
1. **tenuis** (Hedw.) Schimp.
1-20, (21), 22-26, 28-31, (32), 33-42, 45-47,
49-77, 80-86, 88-91, 94-102, 104, 106, 108,
112. H (1), 3, 5, 6, 8, 10, 11, 14-16, 19, 20,
(21), 26, 27, (28), 29, 31, 33, (34), 35, 36, (38,
39), 40.
 2. **reflexa** (Brid.) Schimp.
(38).

GYMNOSTOMUM

51. **Gymnostomum** Nees & Hornsch.
1. **viridulum** Brid. [75]
1-4, 6, 9, 34-36, 41, 44, 45, 49, 63, 64. H1-7, 11, 14, 35. C.
 2. **calcareum** Nees & Hornsch. [76]
2, 3, 34-36, (37), 39, 41, 42, 45, (50), 56, 57, (60), 63-65, (69), 73, 88, 90, 97, 98, 101, 102, 104, 105, 108. H 2, 9, 15, 16, 26-29, 33, (34), 35, 36.
 3. **aeruginosum** Sm.
1-4, (5), 6, 35, 36, 39-50, 52, 57, (58), 59, 60, 62-72, (73), 74-92, 94-112. H 1-3, 6-9, 16, (20, 21), 22, 23, 25-29, (33), 34-36, (37, 38), 39, 40.
52. **Molendoa** Lindb. [77]
1. **warburgii** (Crundw. & M.O.Hill) R.H.Zander (*Anoectangium warburgii* Crundw. & M.O.Hill)
48, 49, 86-90, (91), 92, 96-101, 103-108, 110, 112. H 27.
53. **Barbula** Hedw.
1. **convoluta** Hedw. (incl. var. *commutata* (Jur.) Husn.)
1-112. H 1-40. C.
 2. **unguiculata** Hedw.
1-75, (76), 77-112. H 1-17, 19-29, 31-37, (38), 39, 40. C.
54. **Didymodon** Hedw. [78]
1. **acutus** (Brid.) K.Saito (*Barbula acuta* (Brid.) Brid.)
1, 3, (4), 6-9, 12-14, 16, 17, 20, 22-25, 29, 30, 34, 36, (37, 40), 41, 45, 47, 49, (50), 52, 53, (54), 57, 60, 63, 64, 69, 90, 93, 94. H 6, (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. H (28).

3. **rigidulus** Hedw. (*Barbula rigidula* (Hedw.) Mitt.)
1-53, (54), 55-75, (76), 77-112. H 1, (2), 3, (4, 5), 6, 8-18, 20-30, (32, 33), 34-37, (38), 39, 40. C.
4. **nicholsonii** Culm. (*Barbula nicholsonii* Culm.)
1-5, 8, 9, 11-13, 17, 19-25, 29, 30, 32, (34), 35-38, 40, 42, 45, 56, 57, 59, 60, (62), 63-69, (80), 81, 100. H 2, 5, 8, 12.
5. **mamillosus** (Crundw.) M.O.Hill (*Barbula mamillosa* Crundw.)
87.
6. **glaucus** Ryan (*Barbula glauca* (Ryan) H. Möller)
7, (13, 65).
7. **umbrosus** (Müll.Hal.) R.H.Zander (*Trichostomopsis umbrosa* (Müll.Hal.) H.Rob.)
6, 8-15, 17-26, 28-30, 32, 39-41, 53, 56, 59, 64. H 21.
8. **vinealis** (Brid.) R.H.Zander (*Barbula vinealis* Brid.; *Didymodon reedii* auct. non H.Rob.) [79]
1-38, (39), 40, 45-69, 73, (78), 81-85, (86), 92, 96, (99), 100, (101), 106, (108), 110, 112. H 4, (5), 6, (11), 12, 14, (18-20), 21, 23, 24, 27, (28, 33), 36, 37, (38, 39). C.
9. **insulanus** (De Not.) M.O.Hill (*Barbula cylindrica* (Taylor) Schimp.)
1-112. H 1-16, 18-30, 33-40. C.
10. **luridus** Hornsch. ex Spreng. (*Barbula trifaria* auct. non (Hedw.) Mitt.)
1-42, 44, 45, 47-50, 52-57, 59-72, 74, 77, 78, 80-83, (84, 85, 94), 100, 112. H (1), 2, (4, 5), 8, 13, 16, (17), 21-23, 26, 29, 31, (33-35, 38, 39). C.
11. **cordatus** Jur. (*Barbula cordata* (Jur.) Braithw.)
4.
12. **sinuosus** (Mitt.) Delogne (*Barbula sinuosa* (Mitt.) Garov.; *Oxystegus sinuosus* (Mitt.) Hilpert) [80]
1-42, 44-46, 48-57, 59-67, (68), 69-71, 75, (79), 80-82, 97, 98, 103, 112. H 1-3, 6-11, 15, (16, 19), 21-23, 25, 27, 28, 30-32, (33), 35-37, (38, 39). C.

DIDYMODON

13. **tophaceus** (Brid.) Lisa (*Barbula tophacea* (Brid.) Mitt.)
1-72, (73), 74-85, (86), 87-91, 93-98, (99),
100-106, (107), 108-112. H 1-3, (4), 5, 6, 8-
10, 12, 14, 16, (19), 20-23, 25-29, 34-36, (38),
39, 40. C.
14. **spadiceus** (Mitt.) Limpr. (*Barbula spadicea*
(Mitt.) Braithw.)
(3), 6, 14, 16, 34, (35), 36, (40), 41-44, 47, 48,
50, (52), 57, 59, 60, 62-70, (71), 72, (73), 75,
(77), 78, (79), 80-83, (84), 85, (86), 88-91, (92),
93, 94, 95, (97), 98-106, 108, 109, (110), 111,
112. H (1, 4, 5), 6, (7), 9, 10, (11), 14, (19), 23,
(25), 27-29, 33, (35), 36, (38-40).
15. **fallax** (Hedw.) R.H.Zander (*Barbula fallax*
Hedw.)
1-73, 75-112. H 1-30, 32-40. C.
16. **tomaculosus** (Blockeel) M.F.V.Corley (*Bar-
bula tomaculosa* Blockeel) [81]
57, 63, 64. H 18, 19.
17. **ferrugineus** (Schimp. ex Besch.) M.O.Hill
(*Barbula reflexa* (Brid.) Brid.)
1, (3), 4, 6, (12), 13, (14), 15, 17, 20, 22-24,
(27), 28, 30, 32-35, (36, 39), 40-43, 45, 46, 48,
50, (51), 52, 53, 57, 59, 60, (62, 63), 64-69, (70,
72), 82, 87-89, 92, 94, 95, 97, 98, 101, 103-110,
(111). H (2, 3), 9, (11), 12, 15, 16, 19, (21), 22,
23, 25-29, (32), 33-35, (38), 39, 40.
18. **maximus** (Syed & Crundw.) M.O.Hill (*Bar-
bula maxima* Syed & Crundw.)
H 28, 29.
55. **Scopelophila** (Mitt.) Lindb.
 1. **cataractae** (Mitt.) Broth. [82]
1, 3, 41, 46, 49.
56. **Stegonia** Venturi
 1. **latifolia** (Schwägr.) Venturi ex Broth.
(88), 89, (90), 92, 94.

57. **Pterygoneurum** Jur.
1. **ovatum** (Hedw.) Dixon
(3), 5, 6, 9, (10, 13), 14-20, 22, 23, (24), 25, 26, 28-30, (31), 32, (33, 34, 36, 37), 38, (40, 50, 52), 53-55, (57-59, 61-64, 66), 67, 68, (72, 77), 79, 81, (82), 83, (85), 90, (92), 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).
58. **Aloina** Kindb.
1. **brevirostris** (Hook. & Grev.) Kindb.
9, 11, 17, 19, 20, 22, 29, 54, 55, (57), 58, 61, 63-66, 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), 53, (54), 55, (57-59), 61, (62), 63, (64), 65, (66, 69, 77, 82), 83, (85), 89, (96), 99, 106. H 19, (21, 38, 39).
 3. **aloides** (Schultz) Kindb.
1-41, (42), 43-72, 76, 80-84, 86, 87, 90, 94, 98, 100, 101, 106. H 1, 3, 5-9, 11, 13-15, 18, 19, 22-24, 28, 29, 31, (32), 33, 36, 37, (38), 39, 40. C.
 4. **ambigua** (Bruch & Schimp.) Limpr. (*A. aloides* var. *ambigua* (Bruch & Schimp.) E.J.Craig) [83]
1-3, 5, 6, (7), 9, 11, 12, (13), 14, (15), 17-23, 25, 26, (27), 28-30, (32-34), 35, (36, 40, 41), 45, 48-50, (52), 54, 55, (57-60, 62), 63, 64, 66, (68, 69). H (2), 5, 6, 9, (21, 31, 39). C.
59. **Leptobarbula** Schimp.
1. **berica** (De Not.) Schimp. [84]
1, 6, 8-10, 12-15, 17-19, 21, 25, 26, 28, 29, 33, 35, 40, 55, 61-64. H 16.

60. *Tortula* Hedw. [85]1. *subulata* Hedw.a var. *subulata*

(1), 3-30, (32), 33-72, (73), 74, 75, 77-112. H
1, 4, (5), 8, (9, 11-14, 16), 20-22, (25, 27), 28,
29, 30, 33, 35, 36, (37, 38), 39, 40.

b var. *angustata* (Schimp.) Limpr.

(3), 7, 11, 19, (20), 22, (24), 25, (32, 34), 35,
(36, 37), 54, (55, 58, 61, 62, 64, 65), 66, 67,
(68), 81, (82, 83, 111), 112. H (38).

c var. *subinermis* (Bruch & Schimp.)
Wilson

6-9, 13, 22, 34-36, 42, 43, 47, 50, 57-68, (75,
85), 88, 93. H 29.

d var. *graeffii* Warnst.

6, 35, 40-42, 44, 50, (57), 60, 64-66, 69, 70, 72,
78, 80, 81, 86, 89-92, 94, 96-98, (99), 101, 105,
106, 108, 112. H 23, 30.

2. *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.

3. *freibergii* Dixon & Loeske

14, 58, 59, 62.

4. *solmsii* (Schimp.) Limpr. [86]

1, 3.

5. *marginata* (Bruch & Schimp.) Spruce

1-3, 5-30, (32), 33-39, (40), 50, 53, 55-58, (59),
61-64, (65), 66, 81, 98, 99. H 15, 16, (17), 23,
26, 27, 29, 36, (38, 39). C.

6. *vahliana* (Schultz) Mont.

3-5, 15, (16), 19, 25, 29, (33, 34, 36). H (21).

7. *canescens* Mont.

1, 2, (3), 4, (14, 43, 45), 47, 48, 101. (C).

8. *muralis* Hedw.a var. *muralis*

1-112. H 1-40. C.

- b var. **aestiva** Brid. ex Hedw.
 5-7, 9, 12, (13, 14), 17, 19-22, (23), 24, 25, (27),
 28, 30, (32-34), 37, 39, 41, (53), 55, 58-60, 63,
 64, (65, 68), 74, (81).
9. **leucostoma** (R.Br.) Hook. & Grev. (*Desmatodon leucostoma* (R.Br.) Berggr.)
 89, 92.
10. **cernua** (Huebener) Lindb. (*Desmatodon cernuus*
 (Huebener) Bruch & Schimp.)
 (56), 58, 63, (64).
11. **atrovirens** (Sm.) Lindb. (*Desmatodon convolutus*
 (Brid.) Grout)
 1-5, 9, (10, 13), 14, 15, (36, 38), 41, (44), 45, 48,
 49, 52, (57, 68), 71, 73, 81, 82, (85), 90, 91, (94,
 99), 106. H (1, 4, 5), 8, 12, (16, 20), 21, (38, 39). C.
12. **lanceola** R.H.Zander (*Pottia lanceolata*
 (Hedw.) Müll.Hal.)
 1, (2), 3-7, (8), 9-17, 19, 20, (21), 22-30, 32-
 42, 44, 47, 49-55, 57, (58), 60, (61), 62-64, (65,
 66), 67, 68, (69, 75), 80-83, (84), 85, (89), 90,
 92, 94, 95, (99, 100), 106. H (4, 5), 6, 19, 21, 22.
13. **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.
14. **viridifolia** (Mitt.) Blockeel & A.J.E.Sm.
 (*Pottia crinita* Wilson ex Bruch, Schimp. &
 W.Gümbel) [87]
 1-4, (5), 6, 9-11, (13, 25), 41, 43, (44), 45, 46,
 48, 49, 52, 54, 68, 71, 73, (74), 75, (77), 81, (85),
 90, (91, 92), 93, 94, 101, 106, 108, 109, 112. H
 (1, 2), 3, (4, 5), 6, 12, (21), 35, (38), 39, (40). C.
15. **modica** R.H.Zander (*Pottia intermedia*
 (Turner) Fürnr.)
 (1), 2-23, (24), 25-31, (32), 33-41, (42, 44), 45,
 (46), 49-58, (59), 60, (61), 62-64, (66), 67-69,
 (71), 73, (75, 76, 79, 81), 82, 83, (85, 88, 89),
 90, 91, (92, 95, 99), 101, 104-106. H 1, (4), 10,
 (13), 15, 16, 18, 20, 21, (26, 27), 31, (33, 37-
 39). C.

16. **truncata** (Hedw.) Mitt. (*Pottia truncata* (Hedw.) Bruch & Schimp.)
1-98, (99), 101-109, 111, 112. H 1, 3-10, 12-16, (19), 20-29, (30, 31), 33-38, (39), 40. C.
17. **protobryoides** R.H.Zander (*Pottia bryoides* (Dicks.) Mitt.)
3, (4), 5-14, 16, 17, 19-23, 25-34, (36), 37, (39, 40), 41, 45, 47, 49, (50), 52-54, (55), 57, 59, (60), 61-64, (66), 67, (68, 69), 82, (85), 90, (109), 111. H (21, 39).
18. **acaulon** (With.) R.H.Zander (*Phascum cuspidatum* Hedw.)
a var. **acaulon** (*Phascum cuspidatum* var. *cuspidatum*)
1-72, 74, (75), 77, 78, 80-85, (86), 88-91, (92), 93, 95, (96), 99-101, 106, 109-111. H 1, 4-12, 14-17, (18), 19, (20), 21-24, 26, 28, 29, 31-35, 37, (38-40). C.
b var. **pilifera** (Hedw.) R.H.Zander (*Phascum cuspidatum* var. *piliferum* (Hedw.) Hook. & Taylor)
1-3, (5), 9, 10, 11, 13, (14), 15, 16, 18, 19, 25, 27, 29, 41, 49, 60, 66, 67, (68), 81, 82, (83, 84, 89), 90, 91, 109. C.
c var. **schreberiana** (Dicks.) R.H.Zander (*Phascum cuspidatum* var. *schreberianum* (Dicks.) Brid.)
6, 13, (17), 20, 22, 24-27, (29), 30, 37, 40, 58, 62, (66).
d var. **papillosa** (Lindb.) R.H.Zander (*Phascum cuspidatum* subsp. *papillosum* (Lindb.) J. Guerra & Ros) [88]
1, 39, (48), 56. H (39).
61. **Microbryum** Schimp. [89]
1. **starckeanum** (Hedw.) R.H.Zander (*Pottia starckeanum* (Hedw.) Müll.Hal. var. *starckeanum*; *P. starckeanum* var. *brachyodus* (Bruch, Schimp. & W.Gümbel) Müll.Hal.) [90]
1-4, 6, 8-10, 12, (13-16), 17, (19), 23, (27, 33), 34, 37, 40, 41, 45, 47, 49, 51, 52, (56), 57, 59, 68, (69, 90), 101, 102. H (4, 5), 21, (33, 38, 39). C.

2. **davallianum** (Sm.) R.H.Zander (*Pottia starckeana* subsp. *conica* (Schleich. ex Schwägr.) D.F.Chamb.; *P. starckeana* subsp. *minutula* (Schleich. ex Schwägr.) Bouvet; *P. commutata* Limpr.) [89]
1-15, (16), 17-20, (21), 22-35, (36, 37), 38, 40, 41, (44-46), 49-53, (54), 55-57, (58, 59), 60-67, 75, (77), 80, (81), 83, 84, (85), 86, (90), 101, 111. H 1, 2, 5, 11, 15, 19, 21, 22, (28), 31, 33, (39, 40). C.
3. **rectum** (With.) R.H.Zander (*Pottia recta* (With.) Mitt.)
1-17, 19, 20, 22-25, (26), 27-30, 32-36, 40, 41, 45-47, 49-52, (53), 54-57, (59, 60), 61, 63, 64, (65, 69), 71, 75, (81, 83), 101, 111. H 1, (5), 7, 8, 11, 15, 16, (21), 22, 23, (28), 31, (34). (C).
4. **curvicolle** (Hedw.) R.H.Zander (*Phascum curvicolle* Hedw.)
1, 3, (4), 5, 6, 8-17, 19, 20, 22-24, 26, (27), 28-30, 32, 33, (34), 36, (37), 38, 40, 49, 50, 52-55, 57, (61), 63, 64, (65, 66, 68, 69), 81, (90), 94, 106. H (16), 21.
5. **floerkeanum** (F.Weber & D.Mohr) Schimp. (*Phascum floerkeanum* F.Weber & D.Mohr)
(7), 8-17, 19, 20, 22, (23), 24, (27), 28, 29, 30, (33), 34, (49), 53, 54, 56, (58), 61, 62, (63), 64, (66).

62. **Hennediella** Paris [91]

1. **stanfordensis** (Steere) Blockeel (*Tortula stanfordensis* Steere; *Hyophila stanfordensis* (Steere) A.J.E.Sm. & H. Whitehouse)
1, 4, 14, 15, 29, 33-37, 40, 42, 43, 47, 50, 58, 62-64, 66, 82, 83. H 21.
2. **macrophylla** (R.Br.ter.) Paris (*Tortula brevis* H.Whitehouse & M.E.Newton) [92]
13, 14, 17-22, 24, 57, 68, 78-81.

3. **heimii** (Hedw.) R.H.Zander (*Pottia heimii* (Hedw.) Fűrnr.)
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, 61, (62-65), 66-69, 71, (72, 73), 74, 75, 81, 82, (83), 84, 85, 90, 91, (92), 93-98, (99), 100-112. H 2, 4, (5), 6, 8, 9, 12, 16, (20, 21, 27, 28), 29, 34, 35, (38), 39, (40). C.

63. **Acaulon** Müll.Hal.
 1. **muticum** (Hedw.) Müll.Hal. (incl. *A. minus* (Hook. & Taylor) A.Jaeger) [93]
1-4, (5), 6-9, (10), 11-20, (21), 22-26, (27), 29-31, (32, 33), 35-38, (39), 40, 41, 43, (48, 50), 52, 54-56, (57), 58, (59-66), 67, 68, (69, 71), 72, (73), 81, (83, 85), 87, (88), 89, 90, (91, 92, 95), 106. H 1, (4, 21, 34, 35, 39, 40). C.
 2. **triquetrum** (Spruce) Müll.Hal.
(3), 9, 10, 14.

64. **Chenia** R.H.Zander [94]
 1. **leptophylla** (Müll.Hal.) R.H.Zander (*Tortula rhizophylla* (Sak.) Z.Iwats. & K.Saito)
1, 10.

65. **Syntrichia** Brid. [95]
 1. **ruralis** (Hedw.) F.Weber & D.Mohr (*Tortula ruralis* (Hedw.) P.Gaertn., B.Mey. & Scherb.; *T. calcicolens* W.Kramer)
1-55, 57-72, 75, 77, 78, (79), 80-83, 85, 86, 88-96, 98, (100), 101, 103, 104, 106, 108, 109, 111. H 1, 4-10, (11), 13-15, 17, (18, 19), 20-25, 27, (28), 29, (30, 31), 33-35, 37, (38), 39, 40. C.
 2. **ruraliformis** (Besch.) Cardot (*T. ruralis* subsp. *ruraliformis* (Besch.) Dixon) [96]
1-6, (8), 9-20, 22, 23, 25-29, 32, (34), 35, 37, 40, 41, 44-56, (58), 59-62, 66-71, (73), 74, 75, 81, 82, (83), 84-86, 90-112. H 1, (2), 3, 5, 6, 9, 12, 16, 19-22, 27, 28, 33-35, 38-40. C.

3. **norvegica** F. Weber (*Tortula norvegica* (F. Weber) Wahlenb. ex Lindb.)
88, 92, 97.
4. **intermedia** Brid. (*Tortula intermedia* (Brid.) Berk.)
1-55, 57-73, 75, (77, 78), 79-81, (82), 83, (84),
85-91, 93-95, 98, 100, 101, 103, 104, 107-109,
112. H 3-5, (6), 7-9, (12), 13-17, (18), 19, 21-
23, (24), 25-29, (31), 32, 33, (34, 35, 38), 39. C.
5. **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. H
28, (39, 40).
6. **virescens** (De Not.) Ochyra (*Tortula virescens* (De Not.) De Not.)
8, 12, 13, 18-20, 22-33, 36, 38, 45, 57, 63-65,
81, 88, (89), 90-92, 94, 106.
7. **laevipila** Brid. (*Tortula laevipila* (Brid.) Schwägr.)
a var. **laevipila**
1-38, (39), 40-62, (63), 64-72, (73), 74, (75, 76),
77-83, 85-91, 95-99, (101), 102-104, 106, 107,
(109, 110). H 1, (2), 3, 4, 6-8, (9), 10, (11), 12,
(14), 15, 18, (19), 20-23, 25, 27-29, (30, 31),
33-37, (38), 39, (40). C.
b var. **laevipilaeformis** (De Not.) Amann
(*Tortula laevipila* var. *laevipilaeformis* (De Not.)
Limpr.)
1-3, (4), 5-9, (10), 11-14, 16, 17, 19, 22-25, 27,
28, 30, 31, 36, 38, 41, (43, 45), 47, 48, 50, 51,
54, 60, 71, (75), 80, 86, 98. H 12, 14, 22, 25,
30, (33), 35.
8. **papillosa** (Wilson) Jur. (*Tortula papillosa* Wilson)
1-16, (17), 19, (20, 21), 22-25, (26), 27-29, (30),
31, 32, (33), 36, (37), 38, 40, 43-51, 53, 54, (55),
60, (61, 62, 64, 65), 66, 68-70, (71), 72, (73-
75), 78-83, 85, (86, 87), 88-91, (92), 93-96,
(97), 98, (99), 100, 101, 103, 105, 106. H 1, 8,
(9), 10-12, 15, 18, (20), 21, 22, 29, (31), 34, 36,
(38-40). C.

SYNTRICHIA

9. **latifolia** (Bruch ex Hartm.) Huebener (*Tortula latifolia* Bruch ex Hartm.)
2-9, (10), 11-51, 53-70, 75, (76, 77), 79-82, (83), 84, 85, (86), 87, 88, (89), 90, 91, 93. H (4, 6), 7, 8, 12, 14, (20), 21, 22, 36, (38-40).
10. **amplexa** (Lesq.) R.H.Zander (*Tortula amplexa* (Lesq.) Steere)
55.
66. **Cinclidotus** P.Beauv.
1. **fontinaloides** (Hedw.) P.Beauv.
1-11, 13-17, 19-25, 29-52, 54, (55), 56-72, (73), 74, 75, (76), 77-84, (85), 86-92, 94, 95, 97-99, 101-105, 107-110, (111), 112. H 1-6, 8-17, 20, 22-31, 33-37, 40.
2. **riparius** (Brid.) Arnott [97]
36, 37, 40. H (9).
67. **Coscinodon** Spreng.
1. **cribrosus** (Hedw.) Spruce
2, 4, (44), 45-50, 62, 64, 69, 70, 72, (73), 83, 88, 94.
68. **Schistidium** Brid.
1. **maritimum** (Turner) Bruch & Schimp.
1-5, 44-46, 48, 49, 52, (58, 59), 60, (62, 66), 68-71, 73-75, (76), 81-84, (85), 90, 91, 93-95, (96), 97-112. H 1, 3-6, (8, 9), 12, 13, 16, 17, 21, 27-29, (31), 34, 35, (38), 39, (40). C.
2. **rivulare** (Brid.) Podp. (*S. alpicola* (Hedw.) Limpr. var. *rivulare* (Brid.) Limpr.) [98]
2-5, (34), 35, 36, (37-39), 40, 42-52, (55), 57, 58, (59), 60, (62), 64-70, (71), 72-75, (76), 77-84, (85), 86-101, 103-106, 108, 109, 111, 112. H 1, 4, (5, 6), 7, 16, 20, (21), 29, 30, 33-35, (38), 39, 40.
3. **platyphyllum** (Mitt.) H.Pers. (*S. rivulare* subsp. *latifolium* (J.E.Zetterst.) B.Bremer; *S. alpicola* auct. non (Hedw.) Limpr.) [98]
(36), 41, (42), 43, 54, 56, (59), 60, (62), 63-67, (68, 69), 70, 72, 80, (81, 83), 84, (86), 89, 90, (96), 104, 112, H 1, 8, 19, 28, 33, (39, 40).

4. **agassizii** Sull. & Lesq. [98]
48, 49, 65, 66, 69, (70, 73), 88, 90, 98, (105),
107, 108.
5. **apocarpum** (Hedw.) Bruch & Schimp. [99]
1-112. H 1-40. C.
6. **trichodon** (Brid.) Poelt [99]
(49), 64, 66, 69, 70, 87-90, 92, 96-98, 108.
7. **papillosum** Culm. [100]
97.
8. **pruinoseum** (Wilson ex Schimp.) Roth [100]
57, (83), 90, 97, 103. H (39).
9. **strictum** (Turner) Loeske ex Martensson [99]
(3, 37), 44, (46), 48, 49, (57), 64, (65), 68, 69,
(70), 72, 73, 75, 78, 86-90, 92, 94, 96-99, 101,
103-108, (109, 110), 111. H 1, (2), 3, (4), 6, (8),
13, (18), 25, 27-29, (30), 35, (39).
10. **dupretii** (Thér.) W.A.Weber [100]
(88), 90.
11. **robustum** (Nees & Hornsch.) H.H.Blom (S.
apocarpum var. *homodictyon* (Dixon) Crundw. &
Nyholm) [99]
64, 69, (88), 89, 90, 92, 94, 97, 98, 101, 104,
105, 108.
12. **confertum** (Funck) Bruch & Schimp. (S.
apocarpum var. *confertum* (Funck) H.Möller) [99]
(3), 43, 47, 48, (49, 65, 69, 70, 76), 77, 79, (83,
85, 87-89), 90, 96-98, (99). H (26, 31, 32, 38-
40).
13. **flaccidum** (De Not.) Ochyra [101]
49.
14. **frigidum** H.H.Blom [100]
a var. **frigidum**
97.
b var. **havaasii** H.H.Blom
(49, 65).
15. **atrofusum** (Schimp.) Limpr. [99]
89, 92, 96.

SCHISTIDIUM

16. **crassipilum** H.H.Blom [100]
(33), 70, (92), 105.
17. **elegantulum** H.H.Blom [100]
a subsp. **elegantulum**
52. H (5).
b subsp. **wilsonii** H.H.Blom
(37, 41), 104. H (16, 26).
69. **Grimmia** Hedw.
 1. **anodon** Bruch & Schimp.
69, (83).
 2. **crinita** Brid.
(38).
 3. **laevigata** (Brid.) Brid.
1, (2), 3, 4, (7), 13, (14), 15, (16), 22, 34, 36,
(43, 45), 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. &
W.Gümbel [102]
98, 103.
 5. **montana** Bruch & Schimp.
3, (35), 40, (43, 48, 49, 65), 70, 72, (73), 81, 82,
86, 90, 92, 98. (C).
 6. **sessitana** De Not. (*G. alpestris* auct. non
(F.Weber & D.Mohr) Schleich.) [103]
(90), 92, 93.
 7. **donniana** Sm.
3, 4, (5), 6, (35-37), 40, 41, (42), 43, 44, (45),
46-52, 57-59, (60), 63-74, (76), 77-83, (85, 86),
87-101, 103-105, (108, 110), 112. H (1, 2), 6,
7, 16, 19-21, 27, 31, (34, 37), 38, 39.
 8. **arenaria** Hampe (*G. donniana* var. *curvula*
Spruce) [104]
48, 49, (50), 70.
 9. **elongata** Kaulf.
49, (68), 69, 70, (90), 92.

10. **longirostris** Hook. (*G. affinis* Hornsch.) [104b]
 (3), 4, 35, (39, 55), 68, (69), 83, (85), 87-89, (90-93), 97, 98, 102, 104, 105, 108. H 1, (4, 38, 39).
11. **ovalis** (Hedw.) Lindb.
 13, (16, 19, 34, 35), 36, (42), 43, 50, 66, (69), 70, (73), 81, 82, (85), 88, (89), 90, 98, 107, 108.
12. **unicolor** Hook.
 90.
13. **atrata** Miel. ex Hoppe & Hornsch.
 46-49, 69, 70, 72, (88), 89, 90, 92, 96, 98, 101, 103, 106. H 35.
14. **incurva** Schwägr.
 40, 49, 68-70, (73), 89-91, (92, 94), 98.
15. **pulvinata** (Hedw.) Sm.
 a var. **pulvinata**
 1-112. H 1-40. C.
 b var. **africana** (Hedw.) Hook.f.
 (5, 13, 16, 34, 37, 39, 40, 48, 49, 57).
16. **orbicularis** Bruch ex Wilson
 1, (3), 4, 6, 9, 13, (14), 16, 22, 23, (33), 34, 36, (37, 40), 41, (48), 49-52, 57, 60, (64, 65), 67, 69, (82, 83, 85, 88, 89), 97, 101, 102, 104, (108). H (4, 5, 21).
17. **torquata** Hornsch. ex Grev.
 42, 44, 48-50, 64-66, 68-70, 72, 73, 75, 78, 86-90, 92, 95-101, 103-108. H 1, (2), 6, 7, (20), 27.
18. **funalis** (Schwägr.) Bruch & Schimp.
 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). H 1, (4, 7), 16, (20), 27, 34, (35, 38, 39), 40.
19. **trichophylla** Grev. (incl. var. *stirtonii* (Schimp.) Moell.; var. *subsquarrosa* (Wilson) A.J.E.Sm.)
 1-9, 11-14, 16-18, 22, 25, 26, 28, 29, 34-50, 52, 54, 55, 57-75, (76), 77-108, 110, (111), 112. H 1, (2), 3, 4, 6, 8, 9, 13, 14, 16, 18-20, (21), 22, (26), 27-29, (30, 31), 34-36, (37, 38), 39, 40. C.

20. **retracta** Stirt. [105]
36, (42, 43), 46-50, (64), 69, 70, 73, 81, 86, 88, 96, 99, 101, 102, 105, (110). H 1, (2), 3, 16, (33), 35.
21. **hartmanii** Schimp.
3, (34), 36, 42, 43, 45, 47-50, 52, 64, 66-70, 72-74, (75), 81, 86, (87), 88-93, 95-99, 101-108, 110. H (2), 3, (7), 16, (20, 26), 29, (31, 34), 35, (38), 39, (40).
22. **austrofunalis** Müll.Hal. (*G. britannica* A.J.E.Sm.; *G. trichophylla* var. *robusta* (Ferg.) A.J.E.Sm.) [106]
1, 3, (48), 49, (69, 70), 73, (88), 89, 90, (92), 96-98, (99), 101-105, 108. H 1, (2), 3, 16, (21), 35, (38, 39), 40.
23. **decipiens** (Schultz) Lindb.
1, (2-4), 7, 13, 14, 16, 22, 26, 35, (36, 43, 44, 47), 48, 49, (52, 55, 62), 66, 68, (69, 70), 73, (79), 81-83, (85-89), 90, (92), 94, (96), 97, 98, 100-105, 107, (108, 110). H (6), 16, (20, 21), 27, (31, 38, 39). C.
24. **elatior** Bruch ex Bals.-Criv. & De Not.
(90).
25. **curvata** (Brid.) De Sloover (*Dryptodon patens* (Hedw.) Brid.) [107]
2, 3, (44), 48, 49, (57, 65), 68-70, (71), 72, 73, (75), 78, 80, (82), 86-90, 92, (94), 95-99, (101), 102-108, (109), 110, 112. H 1, 2, (3), 6, (7), 16, 20, (21), 27, 34, 35, (38, 39), 40.
70. **Racomitrium** Brid.
1. **ellipticum** (Turner) Bruch & Schimp.
48, 49, (65), 69, 70, 72, (73), 75, 76, (86), 88, 90, 92, (94), 96-99, 101, 103-108, 110, 112. H 1-3, (4), 16, (20), 27, 31, (34), 35, 38-40.
2. **aciculare** (Hedw.) Brid.
1-6, 13-15, (16), 17, 19, 20, 25, 34-52, 55, 57-60, 62-112. H 1-4, 6-10, 12-14, 16, 20-22, 25-30, 33-40.

3. **aquaticum** (Schrad.) Brid.
1-6, (37, 40), 41-50, 52, (55), 57, 58, (59), 60,
63-78, 82, (85), 86-92, 94-112. H 1-8, (11),
12, 13, 16, (18), 20, 21, 24, (25), 26-31, (32),
33-40.
4. **fasciculare** (Hedw.) Brid.
1-6, 8, 11-14, 16, 17, 20, 22, 24, 30, 32, (33),
34-52, 55, 57-60, 62-92, (93), 94-112. H 1-4,
6-8, 10-14, 16, 19-22, 24-30, 33-40.
5. **macounii** Kindb. subsp. **alpinum** (E.Lawton)
Frisvoll [108]
44, (48), 49, 88, 90, 92, (94), 96, 97, (98), 105,
106.
6. **sudeticum** (Funck) Bruch & Schimp. (*R.*
affine sensu A.J.E.Sm.) [108]
4, (40), 41, 42, (44, 46), 47-50, (52), 57, 59, (60),
63-65, (68), 69, 70, (72), 73, 79, 80, (81, 86, 87),
88, (89), 90, 92, 93, (94), 96-107, (108-110). H
1, 3, 12, 16, 20, 27, 28, (30), 33, 35, 38, (39).
7. **affine** (Schleich. ex F.Weber & D.Mohr)
Lindb. [108]
3, 4, 13-17, 35, (40), 41-43, (44), 46, 47, (48-
50), 55, 57, 59, (60), 63-66, 69, 70, (72), 73, 75,
(79, 80), 86, (87), 89, (90), 94, (96), 97, 98, 103,
106. H 16, (27), 34, 38, 39.
8. **heterostichum** (Hedw.) Brid. (*R. obtusum*
(Brid.) Brid.) [108]
1-8, 11-14, (16), 17, 19, 22-24, 29, 32, (34), 35,
(36, 37), 40-43, (44), 45-50, 52, 54, 55, 57, 60,
62-64, (65, 66), 67-70, 72, 73, 78, 81, (87), 88-
90, (91), 92, (93), 95-99, (100), 102-104, (105),
106, (108-110), 112. H 1, 2, 4, 6, 7, 11, 14-16,
19, 20, 22, 24, 25, 27, 28, 31, 35, 37-39.
9. **himalayanum** (Mitt.) A.Jaeger [108]
88, 98.
10. **lanuginosum** (Hedw.) Brid.
1-6, 8, 9, 11-14, (16), 17, 19, 20, 22-24, 27, 29,
30, 32, (33), 34-52, 55, 57-60, (61), 62-81, (82),
83-112. H 1-18, 20-40.

RACOMITRIUM

11. **ericoides** (Brid.) Brid. (*R. canescens* var. *ericoides* (Brid.) Hampe) [109]
1, 2, (3), 4-6, (9), 12, 13, (19, 23, 27), 29, 30, (33-35), 36, (37), 38, (40), 41-43, (44, 45), 46-51, (52, 54), 55, 57, (59), 60, 64-67, 69-73, 77, (79, 80), 81-84, (85), 86, 87, (88), 89, (90), 92, 94-99, (100), 101-108, 110-112. H 1-3, 5, 12, 13, 15, 16, 18, (19), 20, (21), 25, 27, (28), 29, (30-33, 35, 38, 39).
 12. **elongatum** Frisvoll [109]
3, 4, (9), 11, 12, 17, (20), 26, 28, 40, (42), 43-50, 52, 57, 60, 66, 67, (68), 69, 70, 72, 74, 80-82, (85), 86, (88), 89, 90, 92, 94, 96-99, 104-106, 108. H 20, (39).
 13. **canescens** (Hedw.) Brid. [109]
(5), 6, (14), 17, 23, 26, (27), 28, 30, (36, 37), 41, 47, 52, 54, 66, 69, 70, 82, 85, 88, 89, (90), 92, 94, 95, 97, 104. H 21, 22, 38. C.
71. **Ptychomitrium** Fürnr.
1. **polyphyllum** (Sw.) Bruch & Schimp.
1-6, 9, (13), 23, (32, 33), 34-38, (39), 40-50, 52, 55, 57-60, (62), 63-75, (76), 77-88, (89), 90-106, 108-112. H 1-16, 19, 20, 22, 25-37, (38), 39, 40. C.
72. **Glyphomitrium** Brid.
1. **daviesii** (Dicks.) Brid.
(2, 3, 48, 49, 52, 69), 70, (86), 97, 98, (99), 100, 102-105, 108, 110. H 1, 2, (3), 16, 27, (35), 38-40.
73. **Campylostelium** Bruch, Schimp. & W.Gümbel
1. **saxicola** (F.Weber & D.Mohr) Bruch, Schimp. & W.Gümbel
3, 12-16, (36), 42, 46, (48), 49, (57-59), 60, 62, 64, (67), 68, (69), 70, (77), 80, (86), 98, 99, 103, 104. H 1, (2, 20, 21, 28), 29, 40.

74. **Blindia** Bruch, Schimp. & W.Gümbel
1. **acuta** (Hedw.) Bruch, Schimp. & W.Gümbel
1, 2, (3), 4, 35, 36, 40-50, 52, 57-60, 62-76, 78-80, (81), 82, 83, 85-92, 94-112. H 1-4, 6-8, 13, 16, 20, (21), 26-28, (31, 33), 34-40.
 2. **caespiticia** (F.Weber & D.Mohr) Müll.Hal.
(86), 88, 97.
75. **Seligeria** Bruch, Schimp. & W.Gümbel
1. **pusilla** (Hedw.) Bruch, Schimp. & W.Gümbel
3, 6-9, 23, 33-39, 41-43, 48, 50, 52, (54), 57, (59), 60, (62), 64-67, 69, (72, 74), 80, 83, 88, 89, (90, 92, 94), 97, 98, 101, 102, 104, (108).
H 28, 29, 33, 39.
 2. **acutifolia** Lindb.
6, 7, 9, 23, 33, 34, (35, 36, 39), 42, 47, 57, 60, 64-66, 69, (70), 89, 97, 104. H 9, 28, 33, (39).
 3. **brevifolia** (Lindb.) Lindb. [110]
49, 57, 87.
 4. **diversifolia** Lindb.
62, 97.
 5. **campylopoda** Kindb. [111]
24, (34), 35.
 6. **recurvata** (Hedw.) Bruch, Schimp. & W.Gümbel
(3), 11-14, (24), 34-36, (37), 39, 42-44, 47-51, 57-60, 62-70, 72, (73), 74-78, 80, 81, 83, 84, (85), 86-92, 94, 97-109, 111. H 1, 3, 16, 27-29, 31, 33, (34), 35, 36.
 7. **calycina** Mitt. ex Lindb. (*S. paucifolia* auct., non (Dicks.) Carruth.) [112]
3, 6-17, 20-24, 28-30, 32, 33, 54, 61. H (39), 40.
 8. **calcareo** (Hedw.) Bruch, Schimp. & W.Gümbel
3, 6-18, (19), 20-25, (26), 28-30, 32-34, 53-55, (57), 61. H (39), 40.

SELIGERIA

9. **donniana** (Sm.) Müll.Hal.
6, 7, 16, 22, 23, 32, 33, 35, (36), 39, (40), 48, 57,
60, 62-67, (68-70), 72, 75, (76), 77, 80, 83, 86-
92, 94, 96-99, 101, 103-108. H 9, 29, 33, (39).
 10. **trifaria** (Brid.) Lindb.
42, 57, 64, 65, (69), 89, 108. H 28, 29, 33.
 11. **oelandica** C.E.O.Jensen & Medelius
H 28, 29.
 12. **carniolica** (Breidl. & Beck) Nyholm
67, (80).
76. **Brachydontium** Fűrnr.
1. **trichodes** (F.Weber) Milde
1-3, 12, 13, 16, 17, 30, 34-36, 39, 42-44, (48),
49, 57, 58, (59), 60, 62-66, (67), 68-70, 72, 73,
76-78, 80, (81, 83), 86, 87, (88), 89, 90, (92),
95-99, 103, (105). H (20, 21, 28), 38, (40).
77. **Discelium** Brid.
1. **nudum** (Dicks.) Brid.
2, 3, 14, 15, (32), 34, (37), 39, 40, 43, 47, 49, 50, 57-
60, 62-67, 69, (70, 75), 77, (82, 88), 99, 106. H 30.
78. **Funaria** Hedw.
1. **hygrometrica** Hedw.
1-112. H 1-18, 20-40. C.
 2. **muhlenbergii** Turner
3, 6, 9, (34, 36), 39-42, 47, (48), 49, 50, 55, 57,
60, (62), 64, 69, (88). H (4, 5).
 3. **pulchella** H.Philib.
2, (3), 6, 9, (13, 34), 41, 47, 49, 51, 52, (60), 94.
79. **Entosthodon** Schwägr. [113]
1. **attenuatus** (Dicks.) Bryhn (*Funaria attenuata*
(Dicks.) Lindb.)
1-3, (4), 5, 42, 43, (44), 45-50, 52, (58-60, 62-
65), 66-71, (72, 73), 74, (76), 79, (83, 86-88,
91), 96-112. H 1-3, (4, 5), 6-8, (9), 12, 16, (20,
21), 25, 27-29, (31, 33), 34-36, (38), 39, 40. C.

2. **fascicularis** (Hedw.) Müll.Hal. (*Funaria fascicularis* (Hedw.) Lindb.)
1-20, 22-25, (26, 27), 31, (32), 34-36, (37), 38-41, (42), 43-47, (48), 49-52, (55), 56, 57, (58, 59), 60, (61, 62, 64, 66), 67, 69, 71, (72, 73), 74, (75, 76, 81, 85, 90-92). H (1, 2), 3, (5, 8), 19, 20, (21, 27, 36, 38-40). C.
 3. **obtusus** (Hedw.) Lindb. (*Funaria obtusa* (Hedw.) Lindb.)
1-5, (7), 9-17, (20), 22, (24, 27, 34), 36, (37), 40-52, 57, 58, (59-61), 62-74, (75), 78-80, (81), 83, (85, 86), 88-93, 95-98, (99), 100-112. H 1-4, 6, 7, 9, 10, 12, 13, (14), 15, 16, 20, (21), 25-30, (31), 33-40. C.
80. **Physcomitrium** (Brid.) Brid.
1. **pyriforme** (Hedw.) Brid.
1-68, (69), 70-72, (73), 74, (75, 76, 79), 81-83, (84), 85, 88, (89), 90, 91, (92), 94, 98, (99), 100-103, 108, (109), 110, 112. H 1, 2, 4, (5), 8-10, (11), 13, (18), 19, (20), 21-24, (28, 30, 33), 34, 36, (37), 38, 39, (40). C.
 2. **eurystomum** Sendtn.
20, 28.
 3. **sphaericum** (Ludw.) Brid.
(14, 17, 39), 57, 58, 63, 64, 76, 83, (85), 86, 99.
81. **Aphanorhegma** Sull.
1. **patens** (Hedw.) Lindb. (*Physcomitrella patens* (Hedw.) Bruch, Schimp. & W.Gümbel) [114]
1, 2, (3), 4-9, 11-24, (25), 26, (27), 28-32, 34, 36, (37), 38, (39), 40, 41, 48, 50-55, 57, 58, (59), 60-65, (66), 67, 68, 76, (79), 82, 83, (84), 85, 99, 101. H (4), 8, 9, 14, 15, 17, (21), 22, 24, 26, (39).
82. **Micromitrium** Aust.
1. **tenerum** (Bruch & Schimp.) Crosby
13, (14, 16, 17), 52.

83. *Ephemerum* Hampe

1. **recurvifolium** (Dicks.) Boulay
3, 6-9, (10), 11-13, (14), 15-17, 19, 20, 22-27,
29-34, 37, 38, 49, 54, 55, (66).
2. **sessile** (Bruch) Müll.Hal.
1-3, 5, 6, (7), 12, (13), 14, (16), 17, (23), 42, 52,
57, (58), 63, 64, 67. H 16, 35.
3. **cohaerens** (Hedw.) Hampe
13, 20, 55. H (15).
4. **stellatum** H.Philib.
11, 12, 13, (14, 16). H 1.
5. **serratum** (Hedw.) Hampe
 - a var. **serratum**
1, 2, 4-6, 11, 12, 14, 17, 20, 22, (23), 24, 37,
41-43, 46-49, 52, 57, 58, 62-64, 67-70, 73, 75,
76, 78, 80-83, (86), 90, 92, 96-101, 104, 105,
109, 112. H 1, 3, 12, 13, 20, 26, 27, 34, 35.
 - b var. **minutissimum** (Lindb.) Grout
1-20, 22-37, 39-53, 55-60, (61), 63-67, 70, 72-
76, 78, 80, 81, 83, 87, 89-91, 98, 99, 101, 106-
110, 112. H 4-7, 10, 11, 14, 22, 27, 31, 33, 34,
36, 37, 40.
 - c var. **praecox** A.W.H. Walther & Molendo
(13).

84. *Oedipodium* Schwägr.

1. **griffithianum** (Dicks.) Schwägr.
(42), 44, 47-50, (64), 65, 68-70, 72, 73, 78, (80,
86), 87, 88, (89), 90, 91, (92), 96-100, 103, 104,
(105). H (1, 35).

85. *Tayloria* Hook.

1. **lingulata** (Dicks.) Lindb.
(86), 88, (89, 90), 92.
2. **tenuis** (Dicks.) Schimp. (*T. longicollis* (Dicks.)
Dixon) [115]
(87, 88, 90-92, 96, 105), 109. H (40).

86. **Tetraplodon** Bruch, Schimp. & W.Gümbel
1. **angustatus** (Hedw.) Bruch & Schimp.
(49, 88), 89, 90, 92, (94), 95-97, 104-106, (108).
H 18.
 2. **mnioides** (Hedw.) Bruch & Schimp.
(3, 4), 12, 17, (40), 41, 46-49, 52, (54), 57, 58,
(59), 60-70, 72, 73, 75, (78), 79, 81-83, (85, 86),
88-92, 94-100, (101), 103-108, (110), 111. H
1, (2), 3, 7, (14), 16, 17, 19, 20, 23-25, 27-29,
(30), 33, 35, 36, (38, 39), 40.
87. **Aplodon** (R.Br.) Rchb.
1. **wormskioldii** (Hornem.) Kindb.
66, (69), 70, (88), 96.
88. **Splachnum** Hedw.
1. **sphaericum** Hedw.
3, 4, (35, 36), 42, 43, (44), 47-50, 57, 58, (59),
60, 62-73, 75, (76), 77-81, 83, (84-86), 87-92,
94-98, (99), 100, 101, 103-110, (111), 112. H
1, 3, 7, 9, 11, 16, 20, (21, 26), 27, 28, (29), 30,
33-36, 38-40.
 2. **ampullaceum** Hedw.
2, 3, (4, 5), 8, 9, 11, (14, 15, 17, 22, 23, 25), 26,
(27), 28, (29-31, 35), 38, (39, 40), 41, (42), 43,
44, 48-50, 52, (55), 58-60, 62-70, 72, (73), 74,
75, (77), 78, 80, (81), 82, 83, 86-89, (90, 92),
95-99, 101-106, 108-110. H 1-3, 7-9, 12, 14,
(15), 16, (19), 20, (21), 22-29, 33, (34), 35-37,
(38), 39, 40.
 3. **vasculosum** Hedw.
(65), 68, 69, 72, 78, 87, 88, (89), 90, 92, 93, 95,
96, 106, 107.
89. **Schistostega** D.Mohr
1. **pennata** (Hedw.) F.Weber & D.Mohr
1-5, 9, 12, (13), 17, 28, (32), 34, (36), 38-40,
42-50, 55-59, (62), 63-65, 68, (69), 70, (76), 85,
86, 88, (97). C.

90. **Mielichhoferia** Hornsch.
1. **elongata** (Hoppe & Hornsch. ex Hook.)
Hornsch.
62, 92.
 2. **mielichhoferiana** (Funck) Loeske (*M. mielichhoferi* (Hook.) Wijk & Margad.) [116]
92, 98.
91. **Orthodontium** Schwägr.
1. **lineare** Schwägr.
1-93, 95-102, 106. H 5, 20, 21, 27, 36, 37, 39. C.
 2. **gracile** Schwägr. ex Bruch, Schimp. &
W.Gümbel
3, 14, (39, 50, 51, 55, 57, 58), 64, (68), 70, (75,
77), 83, (86). H33.
92. **Leptobryum** Wilson
1. **pyriforme** (Hedw.) Wilson
1-32, 34, (35, 36), 37-42, 45-70, (71), 73-76,
(77), 78, (79), 80, 81, (82), 83-85, 88-90, 92,
93, 95, (97), 98, (99), 101-110. H (4, 7), 8, 9,
14, 17, 18, (21), 22, 23, 25-27, 29, (31, 33, 34,
38-40). C.
93. **Pohlia** Hedw.
1. **elongata** Hedw.
 - a subsp. **elongata** var. **elongata**
2, 4, 5, (11), 35, 40-43, (44), 46-50, 57, (59),
60, 63-70, 72, 73, 75, 86-90, 92, 96-98, (99),
100, 101, 103-108, 110. H (1), 3, 6-8, 16, (20),
27, 35, (38), 40.
 - b subsp. **elongata** var. **acuminata** (Hoppe &
Hornsch.) Huebener
(46), 49, 68, (69, 86), 88-90, 92, 97, 98, 101,
105, 106, (108). H (1), 7.
 - c subsp. **polymorpha** (Hoppe & Hornsch.)
Nyholm
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), 77-101, 103-110,
112. H 1, 7, (8), 10, 16, (20, 21), 27, 29, 34,
(38), 39, 40.
4. **nutans** (Hedw.) Lindb.
1-112. H 1-18, (19), 20-25, 27-30, 32-40.
5. **obtusifolia** (Brid.) L.F.Koch
(88), 96, 97, 105.
6. **drummondii** (Müll.Hal.) A.L.Andrews
1, 2, (7), 11-13, (22), 42, 46, 48, 49, 57-60, 62-
64, 66-69, 72, 73, 75, 78, 79, (81), 82, 83, (84),
85-90, 92, 95-99, 103-106, 108, 112. H 1, 2,
16, 27, 28, 34, 35.
7. **scotica** Crundw. [117]
88, 98, 99, 106.
8. **filum** (Schimp.) Martensson
17, 44, (60), 67, 73, 74, 83, (85, 86), 87-90, 92-
99, 105, 106, 108, 112. H 6, 27, 35, 36.
9. **andalusica** (Höhn.) Broth. (*P. rothii* (Correns
ex Limpr.) Broth.) [118]
1-3, 105. H 3, 6.
10. **bulbifera** (Warnst.) Warnst.
2, 3, 27, 38, 42-44, 46-50, 57-60, 63, 64, 67,
69, 70, 73-75, 77-79, 81-84, 86-90, 92, 94-
108, 110, 111. H 1, 3, 4, 16, 27, 28, 33-36,
39.
11. **annotina** (Hedw.) Lindb. [119]
1-25, 27-30, (32), 34-52, 54, 55, 57-75, (76),
77-110, 112. H 1-10, 12-14, 16, 19, 20, (21),
25, 27-29, 31, 33-40. C.
12. **proligera** (Lindb. ex Breidl.) Lindb. ex Arnell
[119]
(37), 50, 69, 77, 80, 81, 86, 88-90, 92, 93, 97,
106. H 40.

13. **camptotrachela** (Renauld & Cardot) Broth.
1-6, 10, 11, 23, 41-43, (44), 45-50, 52, 57-60,
62-65, 68, 69, 71, 73, 74, (75), 76, (78), 81-84,
86-90, 93-109, 112. H 1, 3, 9, 10, 12, 16, 20,
27, 35, 39.
14. **flexuosa** Harv. (*P. muyldermansii* R.Wilczek
& Demaret var. *pseudomuyldermansii* Arts,
Nordhorn-Richter & A.J.E.Sm.) [120]
2, 3, 41, 42, 46-49, 57, 59, 60, 63-65, 69, 70,
72-74, 78, 80, 83, (86), 87, 88, 95-106, 108,
110. H 1-3, 6, 7, 9, 16, 27.
15. **ludwigii** (Spreng. ex Schwäger.) Broth.
(48), 49, (65), 68-70, (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, 69-72, 74, 78, 79, 81-83, 86, 92, 95,
96, 98-101, 104, 107, 109. H 2, 8, 10, 12, 27.
C.
17. **lescuriana** (Sull.) Grout
1, 3, 6, 8, 10, 12, 15-17, 20, 21, 24, 29, 35,
39-41, 47-50, 57, 58, 60, 63, 64, 71, 77,
78, 85, 86, 88, 90, 96, 98, 99, 108, 109. H 3,
4, 8.
18. **melanodon** (Brid.) A.J.Shaw (*P. carnea*
(Schimp.) Lindb.) [121]
1-85, 88-95, 97-112. H 1, 2, 4, (5), 6-9, 11-17,
(18, 19), 20-23, 26-35, 38-40. C.
19. **wahlenbergii** (F.Weber & D.Mohr)
A.L.Andrews
a var. **wahlenbergii**
1-20, (21), 22-25, 28-112. H 1-17, (18), 19-30,
(31), 32-37, (38), 39, 40.
b var. **glacialis** (Schleich. ex Brid.) E.F.Warb.
49, (57), 68, 69, 78, 88-90, 92, 94, 96-98, 103-
107. H 28.
c var. **calcareo** (Warnst.) E.F.Warb.
1, (2, 9, 10), 17, (64). H (16), 35.

94. **Epipterygium** Lindb.
1. **tozeri** (Grev.) Lindb.
1-6, 8-19, 34, 35, (36), 40-42, (43), 44-50, 52, 71, 98, 101, 102. H (2), 3, 4, 9, 12, 20, 34, 38, 39. C.
95. **Plagiobryum** Lindb.
1. **zieri** (Hedw.) Lindb.
35, 36, (39-41), 42-44, 47-50, 57, (59), 60, (62), 63-70, 72, (73, 75, 76), 78, 79, (80), 82, 83, 85-90, 92, 94, 96-99, (100), 101-108, (109), 110, 111. H (1), 16, 27-29, 34, 35, (39), 40.
 2. **demissum** (Hook.) Lindb.
88, (89), 90, 98.
96. **Anomobryum** Schimp.
1. **julaceum** (P.Gaertn., B.Mey. & Scherb.) Schimp. (*A. filiforme* (Dicks.) Husn.) [122]
a var. **julaceum**
1, (3), 35, 36, (39, 40), 41-44, 47-50, 52, 57, (59), 60, 64-70, (71), 72-75, (76), 77-79, (80), 81-83, 86-112. H 1-3, 6, 7, 15, 16, (20), 27-29, (30, 31), 33-36, (37, 38), 39, 40.
b var. **concinatum** (Spruce) J.E.Zetterst. (*A. filiforme* var. *concinatum* (Spruce) Loeske)
42, 43, 47-49, 59, 60, 64-66, 68, (69, 70), 78-80, 82, 83, 88-90, 92, 96-98, 101-105, 108, 110. H 8, 9, 16, 26, 28, 29, 35, 40.
97. **Bryum** Hedw.
1. **marratii** Hook.f. & Wilson
46, (48), 49, 54, (59, 60, 62, 70, 75, 85), 90, 101, 108, 109. H 1, (21), 27, 35, (40).
 2. **warneum** (Röhl.) Blandow ex Brid.
4, (6), 15, (41, 44), 46, 48, (49), 52, 54, (58), 59, (60, 62, 66), 69, (75), 82, 85, 90, 95, 105. H (21).
 3. **mamillatum** Lindb.
(28), 54, (59).

4. **calophyllum** R.Br.
(4), 46, 48, (52, 58), 59, (62, 66, 68), 69, 82,
(85), 90, 95, 105, (109). H 27.
5. **arcticum** (R.Br.) Bruch, Schimp. & W.Gümbel
88-90, 92.
6. **lawersianum** H.Philib.
(88).
7. **uliginosum** (Brid.) Bruch & Schimp.
(22, 23, 37, 39, 48, 57-64), 65, (68, 70), 72, (77,
82, 85, 86, 90, 92, 108, 109). H (7, 18, 19, 21),
25, (33, 35, 39, 40).
8. **pallens** Sw. (incl. var. *fallax* Jur.)
1-20, (21), 22-25, (26), 27-30, (32), 33-73, 75-
112. H 1, 4-13, 15-18, 20-30, 32-37, (38), 39,
40.
9. **turbinatum** (Hedw.) Turner
(13, 23, 35, 39, 48, 59, 67, 104). H (27).
10. **schleicheri** Lam. & DC. var. **latifolium**
(Schwägr.) Schimp.
86, (88).
11. **weigelii** Spreng.
40, 49, (64), 65, 68-70, 72, 77-79, 87-98, (103),
104-108, (109, 111). H (6).
12. **cyclophyllum** (Schwägr.) Bruch & Schimp.
(69, 70), 86, 98, 99, 101, (105).
13. **algovicum** Sendtn. ex Müll.Hal. var. **rutheanum**
(Warnst.) Crundw.
1-4, (5), 6, 7, 9, (10), 11-16, (17), 18-20, 22,
23, 25, 26, 28, (30), 31-33, (34, 36), 37, (39,
40), 41, (42), 43, (44), 45-50, (51), 52-60,
(61), 62-71, (72, 73), 74, 75, (77, 78), 80, 82-
85, (86, 87), 88-91, 93-95, (96), 97, 100-112.
H 1, (2, 4, 5), 6, (7), 9, 11, (12), 13, 14, 16,
(18), 20-23, (25), 27, 28, (29), 30, (33), 34,
35, (38-40). C.
14. **salinum** I.Hagen ex Limpr.
(5), 75, 91, 102, 105, 106, 108. H 17.

15. **knowltonii** Barnes
(4, 9), 19, 20, 24, (25, 26), 28, 47-49, (52), 54, (58), 59, (60, 62, 65, 66, 68), 69, (82), 90, 105, 106.
16. **archangelicum** Bruch, Schimp. & W.Gümbel [123]
90.
17. **imbricatum** (Schwäger.) Bruch & Schimp. (*B. inclinatum* (Brid.) Blandow) [124]
1-6, (8), 9-15, (16, 17), 18, 19, (21), 22-24, (25), 28, 29, (30, 32, 33), 34-39, (40), 41-43, (44), 45-50, 52, 54-57, (58), 59, 60, (61), 62-69, 71, 72, (73), 74, 75, (78), 81-83, (85), 87-100, 101, 103-107, 109-112. H (4, 5), 6, 9, (11), 16, (19), 20, (21), 23, 24, (25, 26), 27-30, (33, 35, 37, 38), 39, 40. C.
18. **intermedium** (Brid.) Blandow
(1), 2-4, 6, (8), 9, (10), 11, 12, (13, 14, 16, 17), 18, 19, 21, 22, (23, 25, 26), 28, 29, 31, (32), 33, 34, (36, 37), 38, (39), 40, (44, 45), 46, (48, 49), 51, (52), 53-56, (57), 58-60, (61, 62), 63-65, 67-69, (73), 74, (81-83, 85, 86), 90, (91, 92), 97, 104, 109. H (4, 12, 21, 34, 37-40).
19. **donianum** Grev.
1-9, (10), 12-15, (16), 17-19, (25, 34), 35, 36, (37, 40), 41, 44, 45, 47-50, 52, 53, (59), 60, 71, 74. H 1, (4), 5, 7, 19, 20, (21), 22, 28. C.
20. **capillare** Hedw.
a var. **capillare**
1-112. H 1-37, (38), 39, 40. C.
b var. **ruffolium** (Dixon) Podp.
6, 9, 34, 42, 43, 49, (50), 57, 60, 63, 67, 82, 83, 97, 98, (99), 104, (105), 108. H 9.
21. **elegans** Nees ex Brid.
(1, 14, 36), 50, 57, 59, 60, 64-66, 69, 70, (81), 89, 92, 94, 95, 97, (98), 108. H 28.
22. **stirtonii** Schimp.
68, (87), 88-90, 92.

23. **subelegans** Kindb. (*B. flaccidum* Brid.) [125]
2-9, 11-44, 47, 48, 50, 51, 53-70, 72, 74, 78-
85, 88, 89, 92-96. H 1.
24. **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, 75, 86, 87), 106. H (2, 34).
25. **canariense** Brid.
3, 6, 9, 10, (13, 14), 15, (16), 34, (36), 40, 41,
45, 47, 49, 50, 52, 60. (C).
26. **creberrimum** Taylor
6, 9, 11, (13, 14, 16), 17, 23, 29, (34, 42), 43,
49, 50, (57-61), 63, (66, 69, 70), 77, (88), 89,
(96), 106. H 21.
27. **pallescens** Schleich. ex Schwägr.
1-3, 6, 8, 9, 13, (14, 16), 18, 19, 22, 25, 26, (32,
34), 38-43, 45-52, 57, (58), 59, 60, (61, 62), 63-
65, (66), 67, (69), 70, (71), 72, 80, 81, (82, 85,
87), 88, (90), 92, 96, 97, (98), 102, (105). H 1,
(7), 9, (16), 22, 33, (38). C.
28. **pseudotriquetrum** (Hedw.) P.Gaertn.,
B.Mey. & Scherb.
a var. **pseudotriquetrum**
1-11, 13-23, 25-28, (30), 31-112. H 1-12, 14-
30, 32-37, (38), 39, 40. C.
b var. **bimum** (Schreb.) Lilj.
(1), 2, (3, 4), 5, 6, (10), 11, 12, (16), 17, (18),
19-23, 26, (27), 28-32, (33, 34, 36), 37, 38, 41,
44, 46, 50, (52), 53, 54, (55), 58-61, (62), 63,
(64, 65), 66, (68-70), 77, (81, 83, 86-88), 90,
(91), 92, 95, 96, 98, 99, 101, 106, (110). H 9,
11, 12, (20), 23, 25, 28, (32, 38, 40). C.
29. **neodamense** Itzigs. ex Müll.Hal.
49, 59, (65, 90), 109. H 9, 17, 22, 23, 25, 26,
34, (37, 40).
30. **caespiticium** Hedw.
(1), 2-42, (43), 44-70, 72-78, (79), 80-85, (86-
88), 89-92, 95, (97), 98, (99), 101-104, 106-
109, 111. H 1, 4, (7), 8, (25), 27, (33), 36. C.

31. **funckii** Schwägr. (*B. caespiticium* var. *imbricatum* Bruch & Schimp.) [126]
6, (14, 36), 40, (43), 47, 49, 52, (57, 63, 66).
32. **argenteum** Hedw. (incl. var. *lanatum* (P.Beauv.) Hampe)
1-112. H 1-30, (31), 32-40. C.
33. **dixonii** Cardot ex W.E.Nicholson
87, 88, 90, 97, 98, 104, 106, 108, 110.
34. **gemmiferum** R.Wilczek & Demaret
1, 3, 6-10, 12-36, 38, 40, 45-51, 53, 55-66, 68,
71, 81, 82, 84, 85, 88, 97, 101, 106, 108, 111.
H 4, 8, 12, 21, 22. C.
35. **gemmilucens** R.Wilczek & Demaret
6, 9, 13, 20, 25, 27-29, 34, 38, (62), 63.
36. **bicolor** Dicks.
1-75, (76), 77, 79-112. H 1-16, 18-23, 25, 27-
30, (31), 32-40. C.
37. **dunense** A.J.E.Sm. & H.Whitehouse
1-4, 6, 8, 9, 10, 12-14, 16, 17, 20-23, 25, 28-
30, 32, 34, 36, 37, 40, 41, 45-53, 55, 58-60, 63,
64, 71, 73, 75, 77, 81, 82, 84, 88, 93, 98, 101,
104, 106, 110-112. H 28, 34, 35. C.
38. **radiculosum** Brid.
1-43, 45-55, 57-60, (61), 62-64, (65), 67, 68,
(69), 71-74, (75), 77, 78, 80-90, 93, 96-98, 101-
104, (105), 106, 108, 110, 111. H 1, (2, 3), 7,
(8), 9, (10), 11, 12, 14-16, 18, 20, (21), 23, 27,
(29, 30), 31, (32, 33, 35), 36, (38, 39). C.
39. **ruderales** Crundw. & Nyholm
1-39, 41-45, 47-60, 62-67, 69, 72, 75, 76, 78,
79, 82-87, 89, 93, 95-97, 99-103, 105, 108-110,
112. H 1-3, 6-11, 13-16, 18, 20, 22-25, 27, 34,
35, 39, 40. C.
40. **violaceum** Crundw. & Nyholm
1-6, 8, 9, 12, 13, 15-23, 25-31, 33, 36-40, 42,
43, 46-51, 53, 55-58, 60-64, 66, 71-74, 76, 77,
80, 81, 83, 84, 93-96, 98, 99, 101, 103, 106-
109. H 1, 8, 9, 18, 19, 34, 35, (38), 40. C.

41. **klingsgraeffii** Schimp.
1-20, 22-55, 57-67, 69, 70, 73, 74, 76, 77, 80-83, (84), 85, 87, 88, 90, 91, 93, 95, 96, 98, 99, 101, 103, 106, 108-112. H 1, 3, 5, 7-10, 13-16, 18-20, 22-25, 27, 28, 34, 35. C.
42. **sauteri** Bruch, Schimp. & W.Gümbel
1-5, 9, 11, 12, 14-16, 20, 22, 27, 28, 34-37, 42, 43, 45-52, 57, 60, 62, 63, 66, 71, 73-77, 81, 83, 86, 87, 90, 96, 98-101, 103, 104, 106, 107, 109, 112. H 3, 4, 6, 8, 13, 16, 20, 27, 34, 35. C.
43. **tenuisetum** Limpr.
1, 2, (9), 11, 12, (17), 20, 21, (25), 43, 47-50, 52, 57, 59, (61), 63, 64, 78, 83, 86, (90), 97-99, 101, 104, 108. H 3. C.
44. **subapiculatum** Hampe (*B. microerythrocarpum* Müll.Hal. & Kindb.) [127]
1-17, 20, 22-34, 36-50, 52-54, 56-67, 69, 71-92, 94, 96-99, 101-105, 109-112. H 1, 3, 5, 15, 16, 20, 22, 23, 27, 29, 37. C.
45. **bornholmense** Wink. & R.Ruthe
1-14, 16-18, 20, 22-25, 27, 28, 30, 31, 33, 34, 36, 39-41, 43, 44, 47-50, 52, 55, 60, (61), 62, 64, 67, 69, 71, 72, 74, 79, 83, 86, (88), 90, 93, 95, 98, 99, 103, 106, 108, 112. H 1, 10, 11, 15, 21-23, 28, 29, 35. C.
46. **rubens** Mitt.
1-84, 86-101, 103-106, 108-110, 112. H 1-23, 25, 27-29, 31, 34-36, 40. C.
47. **riparium** I.Hagen
41, 43, 46-49, 64, 65, 69, 70, 73, 80, 86-90, 92, 95-99, 101-106, (108), 109, 110. H 1, 6, 16, 27, (38).
48. **mildeanum** Jur.
(36), 42, 44, (49), 64, (65, 66, 69), 70, (87, 88), 89, 91, 92, 97, 98, 107, 108.
49. **muehlenbeckii** Bruch, Schimp. & W.Gümbel
49, 88, 92, 96, 97, (103), 105, 106, (108).
50. **gemmiparum** De Not.
(3), 4, 35, 42.

51. **alpinum** With.
1-5, 9, (10), 11, 12, (14, 18, 34), 35, 36, 40-50,
(51), 52, (55), 57-60, 63-80, (81), 82, 83, (84),
85-90, 92, (93), 95-112. H 1-9, (13, 14), 16, 20,
(21), 24, (25), 26-28, (30, 31), 33-40. C.
98. **Rhodobryum** (Schimp.) Limpr.
1. **roseum** (Hedw.) Limpr.
2-6, 8-17, 19, 20, (21), 22-24, (25), 26, (27),
28-30, 32-34, (35), 36-38, (39), 40, 41, 43-52,
54, 55, 57, (58, 59), 60, 62, (63, 64), 65-70, (71),
72, (73-77), 78-83, (84), 85, (86), 87-91, (92),
95-98, (99), 100-106, 108, 110, 112. H 2, (4,
5), 6, 8, (9), 15, 16, (18, 20), 22, 26, 29, 31, 33,
(34), 35, 36, (38), 39, 40.
99. **Mnium** Hedw.
1. **hornum** Hedw.
1-112. H 1-18, 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, 96-98,
104-106, 108. H 9, 16, 28, 29.
4. **ambiguum** H.Müll.
88, 90, 92.
5. **marginatum** (Dicks.) P.Beauv.
a var. **marginatum**
(2, 3) 8, (13, 14), 22, (26, 34), 35-37, (39, 40), 41,
42, 44, (46), 48-50, (52-54), 56, 57, 59, 60, (62),
63-70, 72, (73, 75, 76), 77, (78), 80, 81, (82), 83,
(84, 85), 86-92, 94, 96-98, (99), 101, 102, 104-
109, 111. H (1), 6, 16, (20), 28, 29, 33, 34, 39, (40).
b var. **dioicum** (H.Müll.) Crundw.
(13), 50, 57, (61), 63, (65, 88).
6. **stellare** Hedw.
3-17, 19, 22-24, 32-52, 54, (55), 56-70, (71),
72, 73, 75-78, 80-91, (92), 94-98, (99), 100-
106, 108, 110-112. H 2, 6, 9, 11, 16, (20, 21),
23, 28, 29, 33, (35), 36, 39, 40.

CINCLIDIUM

100. **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. H 23, 28, 29.

101. **Rhizomnium** T.J.Kop.

1. **punctatum** (Hedw.) T.J.Kop.
1-112. H 1-18, 20, 21, 23-30, 32-40. C.
2. **magnifolium** (Horik.) T.J.Kop.
88, 90, 92-94, 96-98, 105-107.
3. **pseudopunctatum** (Bruch & Schimp.)
T.J.Kop.
3, (6), 11, 12, (14, 18), 22, 25-28, 37-40, 42,
43, (44), 45-52, 57-60, (62), 63-70, 72, (73-78),
79, 81, 83, (84-86), 87-90, (91), 92, 94-98, 101-
106, 108, 110-112. H (2), 6, (12), 13, 16, (21),
22, 27, 28, 30, (31, 32), 33, 36, (37-40).

102. **Plagiomnium** T.J.Kop.

1. **cuspidatum** (Hedw.) T.J.Kop.
1-6, (7), 8, 9, (12), 13, 14, (15), 16, 17, 19, 20,
22-24, (25, 26), 28-30, (32), 33-38, (39), 40-45,
(46), 47-52, (53), 55-70, (73), 75, (76), 79-85,
(86), 88-91, (92), 95-99, 101-103, 105, 108-
110, 112. H 1, 2, (7, 12, 15), 16, 17, (20), 21,
24, (26), 27, (28), 29, (30, 32), 35, 36, (38, 39),
40.
2. **affine** (Blandow) T.J.Kop.
1-34, 36-45, 47-65, 68, 70, 73, 74, 81, 82, (83,
85), 86, 89, 90, 92-103, 105, 106, 110. H 3, 12,
14, 15, 17, 20, 25, 36, (38).
3. **medium** (Bruch & Schimp.) T.J.Kop.
88, 90, 92, 97, 98, 106.
4. **elatum** (Bruch & Schimp.) T.J.Kop.
(5), 6-15, (17, 18), 19, 22-30, 32, 33, 36,
(37), 38-45, 47-56, (57), 58-84, 86-112. H
2, 5, 8-11, 13-19, (21), 22, 24-30, 32, 33, 35,
36, 39.

5. **ellipticum** (Brid.) T.J.Kop.
1, 3, 6, (13, 14, 17, 21), 22, 23, (24), 25-29, (32), 38-42, (43), 44-46, 48-50, 52, 53, 55-60, 62, 64-70, (71), 72-77, 79-83, (85), 86, (87), 88-91, 93-99, 101-106, 108-112. H 6-10, 15-17, 19, 22, 23, 27-30, 33, 35, 37-40.
 6. **undulatum** (Hedw.) T.J.Kop.
1-112. H 1-40. C.
 7. **rostratum** (Schrad.) T.J.Kop.
2-92, 94-106, 108-110, (111), 112. H 1-11, 13, 14, 16-18, (19), 20-37, (38), 39, 40. C.
103. **Pseudobryum** (Kindb.) T.J.Kop.
1. **cinclidioides** (Huebener) T.J.Kop.
(46), 48, 49, 68-70, 72, 73, 75, (76), 78, 79, 81-83, 88-90, (91), 92-99, 105, (106, 109), 112.
104. **Aulacomnium** Schwägr.
1. **palustre** (Hedw.) Schwägr. (incl. var. *imbricatum* Bruch & Schimp.)
1-22, (23), 24-32, (33), 34-112. H 1-9, 11-18, 20, 22-40. C.
 2. **turgidum** (Wahlenb.) Schwägr.
(65), 88, 96-98, 104-108.
 3. **androgynum** (Hedw.) Schwägr.
(2), 3-43, (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).
105. **Paludella** Brid.
1. **squarrosa** (Hedw.) Brid.
(58, 61, 62).
106. **Meesia** Hedw.
1. **uliginosa** Hedw.
52, 59, (60, 65), 66, 67, 69, 70, (75), 78, 80, (82, 85, 86), 87-90, (91), 92, 94-98, 105, 106, 108-110.
 2. **triquetra** (Richter) Ångstr.
H 27.

107. **Amblyodon** Bruch & Schimp.

1. **dealbatus** (Hedw.) Bruch & Schimp.
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), 95, 96, 105, 106, 108-112. H 1, 9,
16, 17, (21), 26-29, (31, 32), 33, (34, 35, 38,
39), 40.

108. **Catoscopium** Brid.

1. **nigritum** (Hedw.) Brid.
52, 59, (60, 64, 65), 66, 68, (82), 85, 88, 89, (90,
92), 94, 95, 98, 105, 106, 108-110, 112. H 27,
(34), 35, (39), 40.

109. **Plagiopus** Brid.

1. **oederianus** (Sw.) H.A.Crum & L.E.Anderson
(*P. oederi* (Brid.) Limpr.) [128]
(1, 34), 35, (36, 39, 41), 42, 43, (44, 46), 47-50,
57, 60, (62), 64-66, 69, 70, 72, (76, 83, 85), 86-
90, (92, 94), 96-98, (99), 103, 104, 108. H (1),
29, (39).

110. **Bartramia** Hedw.

1. **halleriana** Hedw.
35, 42-44, 46, 48, 49, (57, 62), 64, 65, (66),
69, 70, (72), 73, 75, 76, 80, 86-88, (89), 90,
92, 96-99, (100, 101), 103-106, 108. H 1, (2,
4, 6, 7, 20, 27, 36, 39).
2. **pomiformis** Hedw.
1-6, (7), 8-17, (18), 19, 20, (21), 22-25, (26),
27, 28, (29), 30, (32), 34-52, (54, 55), 57, 58,
(59), 60, 62-84, (85), 86-110. H (1), 2-4, (5),
6-9, (11), 12, (13), 16, 20, 22, (26), 27-30,
(31, 33), 34, 36-40. C.
3. **ithyphylla** Brid.
2, 3, 13, (14-17), 25, 35, 36, (37), 40, (41),
42-44, 46-50, (55), 57, 58, (59), 60, 62-70,
(71), 72, (73), 74-84, (85), 86-112. H (6), 7,
8, 16, (20), 22, (27, 31), 34, (35), 36, (38), 39,
40.

4. **stricta** Brid.
(14), 43, 47, 88. C.
111. **Conostomum** Sw.
1. **tetragonum** (Hedw.) Lindb.
(49), 69, (86), 87-90, 92, 94, 96-100, 103-108,
(112).
112. **Philonotis** Brid.
1. **rigida** Brid.
1, 2, 4, 43, 48, 49, (50), 71, 75, (87). H 1, (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, 36, 37), 40,
42, 43, (44), 45-50, 57, 58, 60, 64, 67-69, (70),
72, (73, 81), 82, 83, (86), 87, 90, 95-98, 103-
105, 108, (109). H 16, (36). C.
4. **caespitosa** Jur.
1, 2, 4, 6, 8, 9, (10), 11, 13, (14), 17, (22), 38,
(40), 41, 43, 45-49, (57, 58), 59, 60, 63-65, 67-
69, (70), 81, 83, 84, (90), 93, 95, 97-99, 103,
112. H 1, 4, 8, 16, (20, 31, 33). C.
5. **fontana** (Hedw.) Brid.
1-9, (10), 11-20, (21, 22), 23, (24, 25), 26-28,
(29), 30, (32, 33), 34-54, (55), 57-112. H 1-13,
16, 17, 19-21, 23-30, (31), 32-40. C.
6. **tomentella** Molendo
49, 65, (68-70), 88-90, 96-98, 105, 107, 110, 112.
7. **seriata** Mitt.
49, 87, (88), 89, 90, 92, 94-98, 103, 105-108,
(111).
8. **calcarea** (Bruch & Schimp.) Schimp.
2, (3, 4), 5, (7), 8, 9, 11, (12), 22, 23, 26-28,
(32-34), 35, 36, (37), 38, (39), 40-44, (45, 46),
47-52, (53), 54, 57-70, 72, (74), 75, 77-83, (84),
85-96, 98-112. H (1, 2), 6, 7, 9, 11, 15-20, 22-
29, (31, 32), 33-36, (37-39), 40.

9. **cernua** (Wilson) D.G.Griffin & W.R.Buck
(*Bartramidula wilsonii* Bruch, Schimp. &
W.Gümbel) [129]
(48, 90), 97, 98, (105, 110). H 1, (16), 27.
113. **Breutelia** Schimp.
1. **chrysocoma** (Hedw.) Lindb.
1-6, (9), 11, 35, 36, (39), 40-52, (54, 55), 57,
(59), 60, (61), 62, (63), 64-76, 78-80, (81), 83,
(85), 86-92, 94-112. H 1-10, 12-17, 20, 24-30,
33-40.
114. **Timmia** Hedw.
1. **austriaca** Hedw.
88-90. H 28.
2. **norvegica** J.E.Zetterst.
87, 88, 96-98, 104. H 28.
115. **Amphidium** Schimp.
1. **lapponicum** (Hedw.) Schimp.
(42), 43, 44, 48, 49, (64), 65, 66, 68-70, 72, (73),
75, (86), 87-90, 92, 94, 96-99, 104-108.
2. **mougeotii** (Bruch & Schimp.) Schimp.
1-5, 35-37, 40-50, 52, 57-60, 62-92, 94-112.
H 1-4, 6-8, 10, 11, 13, 14, 16, 20, 21, 26-30,
33-37, (38), 39, 40.
116. **Zygodon** Hook. & Taylor
1. **viridissimus** (Dicks.) Brid.
a var. **viridissimus**
1-75, 77-106, 108-112. H 1-17, 19-30, 32-37,
(38), 39, 40. C.
- b var. **stirtonii** (Schimp. ex Stirt.) I.Hagen
1-4, 6, 9-14, (15, 17), 18-20, 25, 27, 28, 31,
(32), 34-36, (37), 39-45, 47-53, 56, 57, 60, 62-
65, 68-72, 74, 75, 80-86, (87), 88-91, 93, (94),
95, 97, 98, (99), 100-109, 111, 112. H (2, 3),
4-6, 8-10, (11), 13, 16, (20), 21, 22, 27-29, 31,
33-35, (38), 39, 40. C.

2. **rupestris** Schimp. ex Lor. (*Z. baumgartneri* Malta) [130]
2-14, 22, 23, 31, 33-36, 40, (42), 43-50, 54, 57, 60, 67, 69, 70, 72, 73, 77, 79-82, 86-90, 92, 95, 97-99, 101, 104, 105, 107, 108. H 1-3, 14, 16, 20, 28.
3. **conoideus** (Dicks.) Hook. & Taylor
1-15, 17, 19, 20, 22-37, 40-55, 57, 58, (59), 60, 62-64, (65), 66, 68-76, 79-82, 86, 87, (88), 90, 91, 97-106, 108, 110. H 1-4, (5), 8, 10, 12, 14-16, (18, 20), 22, 24-29, 33, 35, (38), 39, 40. C.
4. **gracilis** Wilson
64.
5. **forsteri** (Dicks.) Mitt.
(5), 11, 18, 24, (37).

117. **Orthotrichum** Hedw.

1. **lyellii** Hook. & Taylor
1-29, (30), 31-38, (39), 40-50, (51), 52-56, (57), 60, (61, 62), 64-74, (75), 77-83, 85-91, (92), 93, 95-98, (99), 100, 101, 103, 105, 106, (107). H (2), 4, 6-8, 10-14, (18), 19-24, (30-32), 33, 36-38, (39, 40). C.
2. **striatum** Hedw.
1-15, (16), 17, (18), 19, (20), 21, (22-26), 27, 29, (32), 34, (35), 36, (37, 38, 40), 41, (42), 43-50, 52, (55), 57, (60-64), 65-71, (72), 73, 75, (77, 78), 79-81, (82, 83, 85-87), 88-98, (99), 100, 101, 103-108. H 1, (2), 3-6, 9, 10, 12, (13), 14, 15, 17, 20, (21), 23, 25, 28, (31), 33, 36, (38-40). C.
3. **speciosum** Nees
(13, 14, 62), 88, (89, 90), 92, 94-96.
4. **affine** Brid.
1-74, (75, 76), 77-111. H 1-6, 8-15, 19-26, 28-30, 33-37, (38, 39), 40. C.

ORTHOTRICHUM

5. **rupestre** Schleich. ex Schwägr.
2, (3), 6, (7), 22, (34, 38, 40), 43, 47, 48,
(49), 50, 52, (59, 60), 61, 65-68, (69), 70,
(71, 73), 74, (75), 78-83, (85), 86, (87), 88-
93, 95-98, (99), 100-112. H (1), 2, 16, (20),
21, 25, (26), 27-29, (34), 35, (37, 38), 39,
(40).
6. **gymnostomum** Bruch ex Brid.
96.
7. **obtusifolium** Brid.
(22-24), 28, (32, 33, 36, 38, 65), 90, (91), 93, 95.
8. **anomalum** Hedw.
1-75, (76), 77-112. H 1-37, (38), 39, 40. C.
9. **cupulatum** Brid.
a var. **cupulatum**
1-3, (4), 5-8, 11-13, (14), 15-20, 22, 23, 25-
31, (32), 34, 35, (36), 37-43, 45-52, 54, (55),
57-71, (72), 73, (76), 78-83, 85, 87-98, 100-
103, 105-108, 112. H 1, 2, 4-10, 15-17, 19,
21, 23, 25, 26, (28), 29, 30, 32, 34, 35, (38,
39).
b var. **riparium** Huebener
4, 6, 9, 19, 22, 23, (24), 31, (33, 36), 37, 44,
53, (55, 57, 59), 60, 63-68, (69), 70-72, 74,
77, 78, 81, 83, (84, 86), 87, (88), 90, 91, 93,
94, 101, 106, 108. H 6, 21, 22, 24, (34), 36,
(39), 40.
10. **rivulare** Turner
2-5, (9, 13, 14), 16, (17, 33), 34-37, (38), 39,
40, 42-50, (55), 57, (59), 60, (62), 63-70, 72,
(73, 75, 76), 77-83, (84, 85), 86, (87), 88-91,
(92), 93-95. H 1, (2), 4, 6, 8, 9, 13, (20, 21), 29,
31, 36, (38-40).
11. **sprucei** Mont.
2-6, 8, 9, 11, 13, (14), 16, (17, 19, 32, 33), 34-
38, (39), 40, 42-50, (55), 57, (58), 59-65, 67,
68, (69), 70, 72, 73, (75), 80, 88. H (2, 6), 12,
(38, 39).

12. **stramineum** Hornsch. ex Brid.
3, 5-8, 10-14, (16), 17, 19, 22, (23), 24, 25, 29,
32, 33, 35, 36, (37), 38, (39), 40-50, 52, 57, 60,
(61), 62-75, (77), 78-83, 85, (86), 87-92, (93),
94-98, (99), 100, 103, 105-107. H (2, 10, 11),
12, 20, (38, 39).
13. **tenellum** Bruch ex Brid.
1-11, 13-15, (16, 17), 18, 19, 22-25, (26-28,
30), 31, 32, 35-37, (38), 41, 43, 45-50, 52, 53,
(55, 57-59), 60, (61, 62, 64), 65, 67, 69-71, 73,
74, (75, 76), 80-83, (86, 88, 89), 90, (91), 97,
98, (99), 100, 101, 103, 104, (110). H 1, 2, (3,
5), 6-9, (11), 12, 15, (20, 21), 29, 31, 33, (34),
36, (38, 39), 40. C.
14. **pallens** Bruch ex Brid.
(62, 64, 65), 94, 97, (106). H (4, 20, 21), 26.
15. **pumilum** Sw. (*O. schimperi* Hammar) [131]
(26, 27, 32), 90, 91.
16. **diaphanum** Brid.
1-75, (76), 77, 78, (79), 80-91, (92), 93, (94),
95-98, (99), 100-110, 112. H 2-8, (9), 10-14,
(15), 16, (17, 18), 19-25, (26, 27), 28-30, (31,
32), 33, (34), 35-37, (38), 39, 40. C.
17. **pulchellum** Brunt.
1-9, 11-29, (30), 31-43, (44), 45-55, 57-65,
(66), 67, 68, (69), 70-75, 77-85, (86), 87-91,
(92), 93-98, (99, 100), 101-109, (110), 111,
112. H (2), 3, 4, (5), 6, 8-10, 12, 14-16, (19),
20, (21), 22-30, (32), 33, (34), 35, 36, (37-39),
40. C.
118. **Ulotia** D.Mohr
1. **coarctata** (P.Beauv.) Hammar
(5), 11, (13, 27), 37, (48), 79, (86), 87, 88, 90,
(96), 97, 98, 105, 106. H (1), 2.
2. **drummondii** (Hook. & Grev.) Brid.
46-49, (60, 63), 65-69, (72), 73, (75), 78, 79,
81, 82, (83, 85, 86), 87-108, (109, 111). H 1,
(2, 6), 7, 10, 16, (20), 21, 33, 35, 36, 39.

3. **crispa** (Hedw.) Brid. [131]
1-24, (25, 26), 27-30, 32-50, 52, (54, 55), 57, (58), 59, 60, (61), 62, (63), 64-77, 79-109, (110), 111, 112. H 1-16, (18), 20-30, 32-40. C.
4. **bruchii** Hornsch. ex Brid. (*U. crispa* var. *norvegica* (Grönvall) A.J.E.Sm. & M.O.Hill) [132]
1-11, (12), 13-19, (20), 21-23, 25-29, 31-37, 39-50, 52, 53, 55, 57, 58, 60-75, (76), 77-83, (85), 86-110. H 1-18, 20-22, 24, 27-30, (31), 34-36, (38), 39, 40. C.
5. **calvescens** Wilson
48, (75, 86), 97, 98, 101-106, 108, (110, 112). H 1, 2, 9, 15, 16, (18, 26), 27-30, 33, 35, (39), 40.
6. **hutchinsiae** (Sm.) Hammar
(2, 3), 4, (7), 44, 48, 49, (62, 65, 69), 70, (73), 75, (86), 87, (88-92), 95-98, (99), 101-108, 110, 112. H 1-3, (4), 6, (7), 15, 16, (20, 21), 27, 28, 30, (32, 34), 35, (37, 38, 40).
7. **phyllantha** Brid.
1-15, 17-25, (26), 27-29, 32, (33), 34, 37, 40-50, 52-55, 57-75, (76), 79-84, (85), 86-91, (92), 93-98, (99), 100-112. H 1-17, 20-30, 32-37, (38), 39, 40. C.

119. **Hedwigia** P.Beauv.

1. **ciliata** (Hedw.) P.Beauv. [133]
a var. **ciliata**
7, 13, (14), 19, 35, (36, 48, 49, 69), 72, (73, 98, 108). H 6.
b var. **leucophaea** Bruch, Schimp. & W.Gümbel
(73, 108).
2. **stellata** Hedenäs [133]
1-9, 15, 22, 28, (34, 35), 36, (37, 40), 42, 43, (44), 45, (46), 47, (48), 49, (52, 55, 64, 66, 68), 69, (70), 72, 73, 75, (76), 78, 80-83, (84, 85), 86, (87), 88, 89, (90), 91-97, (98), 99-101, 103, (104-110), 112. H 1-4, 6, (8), 12, 15, 19-22, 24, (25), 26-33, 35-37, (38, 39), 40. C.

3. **integrifolia** P.Beauv.
48-50, 52, 69, 70, (71), 72-75, 82, (87), 88,
89, 96-98, 100, 101, 103-105. H 1, 3, 6, 20,
39.

120. **Fontinalis** Hedw.

1. **antipyretica** Hedw.

a var. **antipyretica**

1-112. H 1-30, 32-40. C.

b var. **gracilis** (Hedw.) Schimp.

1-3, 5, 19, 42, 43, 46, (48), 49, (57, 59), 60, 63-
65, 67-72, 74, 77, 78, (80, 83, 88, 89), 90, 91,
93, 96, 98, 100, 104, (105), 106, 107, (108), 110,
112. H 7, 16.

c var. **gigantea** (Sull.) Sull.

1, 2, 11, 17, (22, 23), 28, 30, 31, 34, 38, 42, 44,
49, 52, 57, 60, 62, 64-66, 71, 72, 78, 81, 83, 88,
(92), 95-98, 100, 104, 112. H 1, 9, 12, 15, 16,
22, 26, 28, 29, 36, (38, 40).

d var. **cymbifolia** W.E.Nicholson

(5), 6, (7, 14), 24, (31), 53, 57. H 9.

2. **squamosa** Hedw.

a var. **squamosa**

1-5, (36, 37), 39, 41-50, 57, 58, (59), 60, 62-
76, 80, 86-88, (89), 90-92, 94-98, (99), 100-
102, 104-110. H 1-4, (5), 6-8, 12, 13, 15, 16,
20, 21, 27, 33-37, (38), 40.

b var. **curnowii** Cardot

1, 2, (3), 4.

c var. **dixonii** (Cardot) A.J.E.Sm.

48, 49, (57), 70, (97, 110). H 33.

121. **Climacium** F.Weber & D.Mohr

1. **dendroides** (Hedw.) F.Weber & D.Mohr

1-9, 11-15, 17-20, (21), 22-31, (32, 33), 34-36,
(37), 38-55, 57-75, (76), 77-112. H 1-20, (21),
22-30, 32-40.

122. **Cryphaea** D.Mohr

1. **heteromalla** (Hedw.) D.Mohr
1-24, 26-38, (39, 40), 41-52, 54, (55), 57, (58),
59, 60, (61), 62, (63), 64, 66-74, (75, 77), 79,
81, 82, (83), 84, (85, 87), 88, (90), 97-104, 106,
110. H 2-15, (16, 18), 19-30, (31), 32, 33, 36,
37, (38, 39), 40. C.
2. **lamyana** (Mont.) Müll.Hal.
2-4, 44-46.

123. **Leucodon** Schwägr.

1. **sciuroides** (Hedw.) Schwägr.
a var. **sciuroides**
1-17, (18), 19, (20, 21), 22-25, (26), 27-34,
(35), 36-38, (39, 40), 41-50, 52-55, 57, (59),
60, 61), 62, (63), 64-70, (71, 72), 73, (76),
78, (79), 80-82, (83, 85), 87-96, (97), 98,
101, 102, (103), 105-108. H (3), 6, 7, (9, 11),
14, (16, 18, 19), 20, (21), 22, 23, 31, (39).
C.
b var. **morensis** (Limpr.) De Not.
1, 9, 13, (17), 45, (73), 96.

124. **Antitrichia** Brid.

1. **curtipendula** (Hedw.) Brid.
2-4, 6, 13, (14), 15, (18-20, 22, 23, 25, 27,
32, 33), 35, (36, 37), 38, (39, 40), 42, (45),
47-50, (52, 55, 57, 60, 62, 63), 64-66, 68-
70, 72, 73, 75, 77-82, (83, 85), 86, (87), 88-
99, (101, 103), 104-109, (110), 111, 112. H
1, 3, 6, (12, 20, 28, 32), 33, (34), 36, (39), 40.

125. **Pterogonium** Sw.

1. **gracile** (Hedw.) Sm.
1-4, (5), 6, 7, 9-13, (14, 17, 26, 34), 35, 36, (37),
40-50, 52, 60, 64-66, 68-70, (71), 72-75, 77,
78, 80-82, (83), 85-91, (92), 96-105, 108, 110.
H 1-3, (4), 6-8, 13, 16, 20, 21, 27, 28, (31, 33),
35, (38, 39). C.

126. **Myurium** Schimp.
1. **hochstetteri** (Schimp.) Kindb.
97, 103, 104, 108, 110. H 16.
127. **Leptodon** D.Mohr
1. **smithii** (Hedw.) F.Weber & D.Mohr
(1), 2-15, 17, (18), 22, (23, 41), 45, (48), 49, 52,
(70). H 3, 6. (C).
128. **Neckera** Hedw.
1. **pennata** Hedw.
(90).
 2. **crispa** Hedw.
1, (2), 3-17, 22-24, 30, 33-37, 39-52, (53), 54,
(55), 56, 57, 59-76, (77), 78-83, (85), 86-90,
(91, 92, 94), 96-99, (100), 101-108, 110, (111).
H 1-3, (4, 5), 6-10, 16-18, 20, 23-29, (30, 31),
33-37, (38), 39, 40.
 3. **pumila** Hedw.
1-17, (18-20), 22, 23, 25, (27, 32), 33-36, (40),
41-50, 52, (55, 57-60, 62), 64, 65, 69, 70, 72,
73, 75, 78, 80, (86, 87), 88, 90, 96-99, 101, 103-
105, 111. H (1), 2-12, 14-17, (18, 19), 20-30,
(31), 33, 36, 37, (38, 39). C.
 4. **complanata** (Hedw.) Huebener
1-110, (111), 112. H 1-17, 19-30, 32-37, (38),
39, 40. C.
129. **Homalia** (Brid.) Bruch, Schimp. & W.Gümbel
1. **trichomanoides** (Hedw.) Bruch, Schimp. &
W.Gümbel
1-20, (21), 22-57, (58), 59-75, (76), 77-84, (85),
86-91, (92), 93, 94, (96), 97-104, 106, 108, (111),
112. H 1, 2, (4), 5, 6, (8), 9-12, (13), 14-16, (18,
19), 20, (21), 22-31, 33, (34), 36-40. (C).
130. **Thamnobryum** Nieuwl.
1. **alopecurum** (Hedw.) Gangulee
1-92, 94-112. H 1-31, 33-37, (38), 39, 40. C.

THAMNOBRYUM

2. **angustifolium** (Holt) Nieuwl.
57.
 3. **cataractarum** N.G.Hodgetts & Blockeel
[134]
64.
131. **Pterigynandrum** Hedw.
1. **filiforme** Hedw.
a var. **filiforme**
(42, 49, 57), 68, (69), 70, 72, 87-90, 92-98, 104-108, (112). H (20, 21, 38, 40).
b var. **majus** (De Not.) De Not.
(49), 88, (90), 92, (96), 106. H (38).
132. **Calyptrochaeta** Desv.
1. **apiculata** (Hook.f. & Wilson) Vitt (*Eriopus apiculatus* (Hook.f. & Wilson) Mitt.)
1, 14.
133. **Hookeria** Sm.
1. **lucens** (Hedw.) Sm.
1-6, 8-17, (18), 22, 24, 27, 29, 34-38, (39), 40-52, (55), 57-60, 62-92, 94-112. H 1-16, 20-22, 24-30, (31, 32), 33-40. C.
134. **Cyclodictyon** Mitt.
1. **laetevirens** (Hook. & Taylor) Mitt.
1, 102. H 1-3, (4, 6), 27, 29.
135. **Daltonia** Hook. & Taylor
1. **splachnoides** (Sm.) Hook. & Taylor
97, 98, 105. H 1-3, 8, (21), 27, 29, 30.
136. **Myrinia** Schimp.
1. **pulvinata** (Wahlenb.) Schimp.
9, (17, 30), 36, 40, (42), 43, 47, 50, (59), 60, (61), 62, (63), 64, 65, 69, (73, 75, 77), 87-89.

137. **Habrodon** Schimp.
1. **perpusillus** (De Not.) Lindb.
(3, 4), 5, (6), 9, 41, 42, 47, 60, (65, 69, 70, 75),
78, 88, 90, 97-99, (100).
138. **Leskea** Hedw.
1. **polycarpa** Hedw.
1-72, (73-76), 77-82, (83), 84, (85), 86-91, 95,
98, 99. H 1, 2, 4, 6, 7, 12, 13, 15, (20), 22, 24-
26, 28, 29, (30), 31, (32), 33, (34, 35), 36, 37,
(38-40). (C).
139. **Pseudoleskeella** Kindb.
1. **catenulata** (Schrad.) Kindb.
49, 64-66, 69, 70, 88-90, 92, 94, 96-98, 108.
 2. **rupestris** (Berggr.) Hedenäs & Söderström (*P.
catenulata* var. *acuminata* (Culm.) Amann) [135]
(69), 88-90, 94, 96-98, 104, 105, 108.
 3. **nervosa** (Brid.) Nyholm [136]
92.
140. **Pseudoleskea** Bruch, Schimp. & W.Gümbel
1. **patens** (Lindb.) Kindb. (*Lescuraea patens*
(Lindb.) Arnell & C.E.O.Jensen) [137]
88, 90, 92, 96-98, 105, 106.
 2. **incurvata** (Hedw.) Loeske (*Lescuraea incurvata*
(Hedw.) E.Lawton) [137]
(80), 88-90, (92), 94, (96), 97.
141. **Lescuraea** Bruch, Schimp. & W.Gümbel
1. **saxicola** (Bruch, Schimp. & W.Gümbel)
Milde
(88).
142. **Ptychodium** Schimp.
1. **plicatum** (F.Weber & D.Mohr) Schimp.
(*Lescuraea plicata* (F.Weber & D.Mohr) Broth.)
[138]
88-90, 97.

143. **Anomodon** Hook. & Taylor

1. **longifolius** (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), 22-31, (32), 33-53, (54,
55), 56, 57, (58), 59-72, (73), 77-83, 85-106,
108. H 1, 2, 4, (5), 6-9, 11, 14, 16-18, (21), 22-
30, 32, (33, 35), 36, 37, 39, 40. C.

144. **Heterocladium** Bruch, Schimp. & W.Gümbel

1. **heteropterum** Bruch, Schimp. & W.Gümbel
a var. **heteropterum**
1-6, 13-16, 34-37, 39-52, (55), 57-60, 62-84,
(85), 86-92, 95-110, (111), 112. H 1-12, (13),
14, (15), 16, 20, (21), 22, 25-30, (31), 33-40.
C.
b var. **flaccidum** Bruch, Schimp. & W.Gümbel
1-6, 9, 12-17, 34-37, 40-50, 52, 57, 60, 62, (63),
64-72, (73), 74, 77-82, (83), 84, 86-88, 90, 97-
104, (105), 106, 108. H 1-3, 5, 6, 8, 10, 11, 16,
20, 26-29, 33, 35, (38), 40. C.
2. **wulfsbergii** I.Hagen [139]
1-3, (42, 46, 47), 48, 49, 68, 73, 86, (87), 102,
110. H 1, 2, 6, 7, (20), 21, 22, (27).
3. **dimorphum** (Brid.) Bruch, Schimp. &
W.Gümbel
87, 88, (90, 99).

145. **Thuidium** Bruch, Schimp. & W.Gümbel

1. **abietinum** (Hedw.) Bruch, Schimp. &
W.Gümbel
a subsp. **abietinum**
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. (C).

- b subsp. **hystricosum** (Mitt.) Kindb.
6, 8, 9, 11-13, 15-17, 20, 22-24, (26), 30, (64, 65, 88). H 28, (34), 35, 40.
2. **tamariscinum** (Hedw.) Bruch, Schimp. & W.Gümbel
1-112. H 1-40. C.
 3. **delicatulum** (Hedw.) Mitt.
1-6, 9, 11, 12, (17), 25, 34, 42-50, 52, 57, 60, 64-67, 69-74, (75, 76), 77-84, (85), 86-89, 91, 96-110, 112.
H 1-3, 6-10, 12, 15, 16, 18-20, 25-31, 33-36, (38-40).
 4. **philibertii** Limpr.
(3, 4), 5-17, (19), 20-23, (25), 26-30, (32), 33, 34, (35, 36), 38, (39), 41, (42), 43, 44, 46-52, 54, (55), 57, 60-70, 72-75, 80-84, (85), 86-90, 92, 94, 97, 98, 100-103, 105-110. H 1, 7, 9-11, 14, 16, 17, (19), 22, 23, 25, 28, 32, (34), 35, 37, (39, 40).
 5. **recognitum** (Hedw.) Lindb.
6, (34), 35, 50, 51, 57, 60, 64, (69, 86), 87, 88, 90, 92, 96-98, 105-108. H 9, 26, 29, 40.
146. **Helodium** Warnst.
1. **blandowii** (F.Weber & D.Mohr) Warnst.
(58, 62, 64, 65).
147. **Palustriella** Ochyra
1. **commutata** (Hedw.) Ochyra (*Cratoneuron commutatum* (Hedw.) Roth) [140]
a var. **commutata**
1-7, 9, (10), 11-15, (16), 17, (19, 20), 22, 23, 25-29, (30), 32-45, (46), 47-83, (84), 85-112.
H 1-4, (5, 6), 7-10, 13, 14, 16-20, (21), 22-29, (31, 32), 33-37, (38), 39, 40. (C).
b var. **falcata** (Brid.) Ochyra (*Cratoneuron commutatum* var. *falcatum* (Brid.) Mönk.)
1-6, (7), 9, 11, 12, 14, (18), 22, 23, (25), 26-28, 32, 33, (34), 35-38, (39), 40-45, (46), 47-50, (51), 52-55, 57-60, (61), 62-70, (71), 72, (73), 74, 75, (76), 77, 78, (79), 80-83, 85, (86), 87-112. H (1), 2, 3, 8, 9, 11, (12), 13, 14, 16-18, (19, 21), 22-29, (30, 31), 33-36, (37-39), 40.

c var. **virescens** (Schimp.) Ochyra (*Cratoneuron commutatum* var. *virescens* (Schimp.) P.W.Richards & E.C.Wallace) (32), 37, (39), 50, 53, 57, (59), 62, 64, (65, 67), 69, 92, 103, 108. H 29.

d var. **sulcata** (Lindb.) Ochyra (*Cratoneuron commutatum* var. *sulcatum* (Lindb.) Mönk.) 88, 97, 98, (103).

2. **decipiens** (De Not.) Ochyra (*Cratoneuron decipiens* (De Not.) Loeske) [140] (61, 62), 88-90, (91), 92, 96-98, 106.

148. **Cratoneuron** (Sull.) Spruce

1. **filicinum** (Hedw.) Spruce
1-112. H 1-40. C.

149. **Callialaria** Ochyra

1. **curvicaulis** (Jur.) Ochyra (*Cratoneuron curvicaule* (Jur.) G.Roth; *C. filicinum* var. *curvicaule* (Jur.) Mönk) [141] (88, 104).

150. **Campyllum** (Sull.) Mitt.

1. **stellatum** (Hedw.) J.Lange & C.E.O.Jensen
a var. **stellatum**
1-9, 11-15, (16), 17-20, 22-29, (30), 31, 32, 34-112. H 1-20, 22-30, 33-37, 39, 40. C.
b var. **protensum** (Brid.) Bryhn
1-3, (4), 5, 6, 8-20, (21), 22-26, 28-32, (33), 34-38, 40-42, 44-55, 57, 59-70, 72, 73, 75-77, (78), 80-84, (86), 87-91, 94-98, 100-106, 108-111. H (1), 2, 4, (7), 8, 11, 16, 18, 19, 22, 23, 25-29, (30), 33, (34), 35, 36, (37, 39, 40).

151. **Campyliadelphus** (Kindb.) R.S.Chopra

1. **chrysophyllus** (Brid.) Kanda (*Campyllum chrysophyllum* (Brid.) J.Lange) [142]
1-24, 26, 28-30, 32-45, 47-71, 75, (76), 80, (81), 82, 83, 85, (86), 88-90, 92, 94, 96-98, 101, 102, 104-112. H 1, 2, (5), 8-11, (12), 14-18, (19-21), 22-27, (28), 29, (30, 31), 33, (34, 35), 36, (37, 38), 39, 40. (C).

2. **elodes** (Lindb.) Kanda (*Campylium elodes* (Lindb.) Kindb.) [142]
 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, 107, (108), 109, 110, 112. H 2, 7-10, 12, 15, (16), 17-19, (20, 21), 22, 23, 25, 26, 28, (30, 33, 35), 36, (37, 39, 40).
152. **Campylophyllum** (Schimp.) M.Fleisch.
1. **calcareum** (Crundw. & Nyholm) Hedenäs (*Campylium calcareum* Crundw. & Nyholm) [143]
 3, 5-8, (10), 11-20, (21), 22-25, 29, 30, 32-36, (37), 38, (40), 41, 42, 49-51, (53), 54, 55, 57, (58, 61), 62, 63, (64), 65, 67, 69, 70, (73, 75, 86, 88), 89, 94-96. H (16, 26), 27, (39, 40).
2. **halleri** (Hedw.) M.Fleisch. (*Campylium halleri* (Hedw.) Lindb.) [143]
 88, 90, 97.
153. **Amblystegium** Bruch, Schimp. & W.Gümbel
1. **serpens** (Hedw.) Bruch, Schimp. & W.Gümbel
 a var. **serpens**
 1-106, 108-112. H 1-18, 20-30, 33-37, (38), 39, 40. C.
 b var. **salinum** Carrington
 1, 3, (5), 6, 18, 41, (44), 45, (48), 49, 52, (59, 60, 62), 68, 69, 73, 75, (82, 85), 90, (91), 101, 102, 105, 108-110, 112. H 1, 2, 6, 9, 12, 21, 27, 28, 34, 35, (38, 40). C.
2. **fluviatile** (Hedw.) Bruch, Schimp. & W.Gümbel
 1-5, 22, 24, (33), 34-51, (52), 57-60, 62-69, (70), 72-74, (75, 76), 77, 78, (79), 80-84, (85-88), 89-91, 93-95, (99), 100, 103, 109. H 4, (5), 6, 8, 10, 12, 13, (19), 20, (35, 38, 39). C.
3. **tenax** (Hedw.) C.E.O.Jensen
 1-24, 31, 33-55, 57-60, (61), 62-70, (72, 73), 74, 75, 77-85, 87-90, 92, 94, 98, 99, 101, 102, 106, 108, 109, (111). H (1, 2), 5-8, 11, 15, 19, (20, 21, 25), 27, 33, (38-40). C.

AMBLYSTEGIUM

4. **varium** (Hedw.) Lindb.
1, 3, 5-9, (10), 11-17, 19, 20, (21), 22-30,
(32), 33, 34, (35), 36-38, (39), 40-42, 45, 48-
51, (52), 53-55, 57-60, (61), 62, (63), 64,
(65), 66, 67, (69), 70, 71, 73, 74, 80, 81, 83,
88-91, (97), 98, 99, 101, 108, (110). H 6, (8),
9, 15-17, 22, 25-28, 30, 33, (34, 35), 36, 37,
(38-40). C.
5. **humile** (P.Beauv.) Crundw.
3, 4, 6-8, 11, 12, (13, 14, 16), 17-29, 31,
32, (36), 37, 38, (48, 50), 51, (54), 55, 58,
(61, 62), 63, (64, 85, 90), 109. H 25, 39,
(40).
6. **radicale** (P.Beauv.) Schimp. (*A. saxatile*
Schimp.) [144]
2, 48.
7. **confervoides** (Brid.) Bruch, Schimp. &
W.Gümbel (*Platydictya confervoides* (Brid.)
H.A.Crum) [145]
(2), 3, 6, 7, 16, 22, 23, 33, (34), 35, (36, 39), 41,
42, 50, 57, 60, (62), 64, (65), 66, (69, 70, 90),
94. H 8, 9, 15, (16, 20, 21, 28).

154. **Leptodictyum** (Schimp.) Warnst.

1. **riparium** (Hedw.) Warnst. (*Amblystegium*
riparium (Hedw.) Bruch, Schimp. &
W.Gümbel) [146]
1-75, (76), 77, 81-92, 95, 98-100, 102-104,
(105), 106-108, 110-112. H (1), 2, (5, 6), 8, 9,
11, 12, 14-16, 18-28, (29-31), 32, 33, 35-37,
(38, 39), 40. C.

155. **Conardia** H.Rob.

1. **compacta** (Müll.Hal.) H.Rob. (*Amblystegium*
compactum (Müll.Hal.) Austin) [147]
3, 10, (34, 36, 37, 40), 56, 57, 63, 64, 66-68,
72, 81, (83, 85), 90, 91, 95, 100, 101, 108. H
(28).

156. **Warnstorfia** Loeske [148]

1. **fluitans** (Hedw.) Loeske (*Drepanocladus fluitans* (Hedw.) Warnst.; *D. fluitans* var. *falcatus* (Sanio ex C.E.O.Jensen) Roth)
1-6, 8, 9, 11-22, 24, 27, 28, 30, 34-55, 57-76, 78, 80-90, 92-102, 104-112. H 1, 3, 7, 12, 13, 15, 16, 19, (21), 23, 27, 30, 32-35, (39), 40.
2. **exannulata** (Bruch, Schimp. & W.Gümbel) Loeske (*Drepanocladus exannulatus* (Bruch, Schimp. & W.Gümbel) Warnst.; *D. exannulata* var. *rotae* (De Not.) Loeske)
1-6, 8, 9, 11-13, 17-20, 22, 27, 30, 34-38, 40-50, 52, 53, (54), 55, 57-81, 83, 84, (86), 87-93, 95-98, (99), 100-108, (109), 110-112. H 2-8, 12, 16, 19, 20, (21), 22, 24-30, (31), 32-35, 37, (38), 39.

157. **Drepanocladus** (Müll.Hal.) Roth [148]

1. **polygamus** (Bruch, Schimp. & W.Gümbel) Hedenäs (*Campylium polygamum* (Bruch, Schimp. & W.Gümbel) J. Lange & C.E.O.Jensen) [149]
1, 3, 4, (5), 9, 11, (13, 14), 15, 17, (18), 22, (23), 25-27, 29, 31, (37), 38, (39), 40, 41, (43), 44-49, 52, 54, 55, 58-60, (61, 62, 64), 67-70, (71, 74, 75), 76, (77), 80-82, (83, 85, 86), 88-90, (91), 92, 93, 95, 98, 100, 101, 103-105, 108-112. H 3, 9, (12), 13, 19, (20, 21), 22-25, 27, (28, 33, 34), 37, (38-40).
2. **aduncus** (Hedw.) Warnst.
1-32, (33), 34-38, (39), 40-45, 48, 49, 51-64, (65), 66-72, (73), 74-93, (94), 95, 96, 98, (99), 100-105, 107, 109-112. H 1-3, 5, 7-9, (12), 14, 16, 20, (21, 23), 24, 25, 27, 28, (29), 31, (33), 34-37, (38), 39, 40. C.
3. **sendtneri** (Schimp. ex H.Müll.) Warnst.
1, 2, (3), 4, 11, 15, 18, (23, 24, 26, 27), 28, (30, 32), 34, (35, 37-39), 41, 43, (45), 48, 52-54, (57), 58, 59, (60-64), 65, 68, 70, (82, 85, 87), 90, (96, 100), 103-105, (109), 110. H 9, 15, 23-26, (34-37, 39).

DREPANOCLADUS

4. **lycopodioides** (Brid.) Warnst.
1, (3), 4, 11, (25, 27), 28, (38), 41, 45, 52, 54,
59, (60), 61, (62, 63, 65-67), 68, (85, 90), 92,
95, 96, 106, 107, (109), 110, (111). H 9, 15, 17,
(20, 21), 23, 26, 35, (37-40).
 5. **revolvens** (Sw.) Warnst. [150]
2, (43), 48, 57, 62, (63), 64, (65, 66), 69, 72, 88,
(90), 92, (97), 102, 105, 111, H 1, 2, 3, (5), 6,
7, 10, 12, 15, 20, (21), 23, 27, 31, 35, (38, 39).
 6. **cossonii** (Schimp.) Loeske (*D. revolvens* var.
intermedius (Lindb.) P.W.Richards & E.C.Wal-
lace) [150]
1, 12, 22, (26), 27, 28, (37, 38), 41, 42, (43), 48-
50, 52, 57, (58, 59, 60, 61), 62-65, 69, 72, 82,
85, 87, (88), 89, (92), 102, 104, 106, 109. H 1,
2, 7, 9, 10, 15, (16), 17, 19, 20, (21), 22-27,
(28), 29, 31, (32), 33, 35, (37), 39, (40).
158. **Hamatocaulis** Hedenäs [148, 151]
1. **vernicosus** (Mitt.) Hedenäs (*Drepanocladus ver-
nicosus* (Mitt.) Warnst.)
(3), 4, 11, (15), 27, 38, 40, 42-50, 52, (57, 58,
60, 64, 65), 69, 70, 72, (75, 76), 79, 80, 88, (90,
91), 98, 104. H 6, 16, 12, 22, 23, 27, (38).
159. **Tomentypnum** Loeske
1. **nitens** (Hedw.) Loeske (*Homalothecium nitens*
(Hedw.) H.Rob.) [152]
26-28, (37), 39, (40), 47, 49, 50, 52, (58, 62),
64, (65), 66-70, 72, 75, 77-81, 83, (85), 87-92,
94-96. H 8, 16, 19, 23, 27, 33.
160. **Sanionia** Loeske [148]
1. **uncinata** (Hedw.) Loeske (*Drepanocladus un-
cinatus* (Hedw.) Warnst.)
1-4, 6, 9, 11, 13-16, (17), 18, (19, 25-27), 33,
(34), 35-37, (38), 39-44, 46-51, 57-60, 62-
112. H 1, (4), 6, (7, 8), 9, 10, 12, 14-17, 20,
(21), 22, 24, 26, 28, 29, (31), 32-36, (37, 38),
39, 40.

2. **orthothecioides** (Lindb.) Loeske [153]
105, 110, 112.
161. **Hygrohypnum** Lindb.
1. **ochraceum** (Turner ex Wilson) Loeske
1-5, 35, 36, 39, 41-51, 57-60, 62-102, 104-109,
112. H 1, 2, (3), 5-10, 12, 15, 16, 19-21, (31),
33-36, 38, (39), 40.
 2. **polare** (Lindb.) Loeske
105.
 3. **luridum** (Hedw.) Jenn.
a var. **luridum**
2-9, (11), 12-15, 17-24, (25, 26), 28-43, (44),
45-53, 55-60, (61), 62-70, 72-92, 94-112. H 1,
2, (3), 4, 6, (7, 8), 9-11, (13), 14-16, 18-20, (21),
22-25, (26), 27-29, (30-32), 33, (34, 35), 36,
(38), 39, 40.
b var. **subsphaericarpon** (Schleich. ex Brid.)
C.E.O.Jensen
(48, 58), 60, (64), 65, (67, 85), 89.
 4. **styriacum** (Limpr.) Broth. [154]
96.
 5. **eugyrium** (Schimp.) Broth.
(4), 36, 42, 44, 47-50, (62), 64-66, 68-70, 72-
74, 78, (81), 83, (85, 86), 87-92, 96-106, 108,
110, 112. H 1-3, 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.) Jamieson (*H. dila-
tatum* (Wilson ex Schimp.) Loeske) [155]
48, 49, (65), 68, (69), 70, (88), 90, 91, 94, (96),
97, (98), 105, 108, (112). H (1, 2).
162. **Pictus** C.C.Towns.
1. **scoticus** C.C.Towns. [156]
89.

SCORPIDIUM

163. **Scorpidium** (Schimp.) Limpr.

1. **scorpioides** (Hedw.) Limpr.
1-7, 9, 11, (12, 13), 17, 25-29, (30), 35, (37),
40-43, (44), 45-50, (51), 52, 54, (57), 58, 59,
(60, 61), 62-70, (71), 72-74, (75), 76, 79-82,
(83), 85, (86), 87-92, 94-112. H 1-3, (4), 9-11,
13-18, (19, 21), 22-28, (30, 31, 33), 34-36, (37),
38-40.
2. **turgescens** (T.Jensen) Loeske
88.

164. **Calliergon** (Sull.) Kindb.

1. **stramineum** (Brid.) Kindb.
1-6, (7), 8, 9, (10), 11-15, (16), 17, (18-21), 22,
24, 25, 27, 28, 30, 34-52, 54-112. H 1, (5), 6,
7, 9, 10, 12, 13, (14), 16-18, 20, (21), 22-24,
27-30, (31, 33), 34, 36, 37, (38), 39, 40.
2. **trifarium** (F.Weber & D.Mohr) Kindb.
(86), 87-89, (90), 92, 94, 96-99, 103-108. H 9, 16.
3. **cordifolium** (Hedw.) Kindb.
1-7, (8), 9, (10), 11-28, 30-32, 34-38, (39), 40-
76, 78-87, (88), 89-102, 104, (105), 106-112.
H 2-4, 6, 7, (8), 10, 12, 13, 15, 16, 18, 20, (21),
22, 23, (24), 25, 27-29, (30, 31), 32-34, 36, 37,
(38), 39, 40.
4. **giganteum** (Schimp.) Kindb.
1, (3, 7), 9, 11-14, 17, (21), 22, (23), 26-28, (29),
31, (32, 33), 34, (35), 36, (37), 38-40, (41), 42-
45, 47-52, 54, (55), 58-74, 76, 78-83, 85-90,
(91), 92, 94-104, 106, 108-112. H 1, 7-11, 13,
15-19, (20, 21), 22-29, (31, 32), 33, (34), 35-40.
5. **sarmentosum** (Wahlenb.) Kindb.
1, 2, 42-52, 60, 64-66, 69-76, (77), 78, 79, (85),
86-92, 94-112. H 1-3, 16, (20), 27, 34, 35, (38), 39.

165. **Calliergonella** Loeske

1. **cuspidata** (Hedw.) Loeske (*Calliergon cuspidatum* (Hedw.) Kindb.) [157]
1-112. H 1-40. C.

166. **Isothecium** Brid.1. **myosuroides** Brid.a var. **myosuroides**

1-55, 57-112. H 1-18, (19), 20-30, 32-40. C.

b var. **brachythecioides** (Dixon) Braithw.48, 49, 72, 81, 85, 86, 88-90, 93, (95), 96-108,
110-112. H (1, 2), 7, 8, 16, 27-29, (30, 33), 34-
36.2. **alopescuroides** (Dubois) Isov. (*I. myurum*
Brid.) [158]1-20, (21), 22-112. H 1-18, (19), 20-29, 32-37,
(38), 39, 40. C.3. **holtii** Kindb.2-5, 42-44, 46-50, 57, 64, 69, 70, 72-74, 86,
87, (88), 95-99, 105-109. H 1, 2, 6, 20, 35, 38,
40.167. **Scorpiurium** Schimp.1. **circinatum** (Brid.) M.Fleisch. & Loeske1-3, (4), 5, 6, 8-11, 13-15, 17, 22, 24, 34, (35,
36), 41, (44), 45, 50, 52. H (1), 2, 5, 6, 8, 9, 15,
23-25. C.168. **Homalothecium** Bruch, Schimp. & W.Gümbel1. **sericeum** (Hedw.) Bruch, Schimp. &
W.Gümbel

1-112. H 1-17, 19-30, 32-40. C.

2. **lutescens** (Hedw.) H.Rob.1-71, (73), 75, (77, 78), 79-88, (89), 90, 91,
93-95, 97-99, 101-112. H 1-3, (4), 5-14, 16-
20, (21), 22-29, (33), 34, 35, 37, (38), 39, 40.
C.169. **Brachythecium** Bruch, Schimp. & W.Gümbel1. **albicans** (Hedw.) Bruch, Schimp. &
W.Gümbel1-71, (72), 73-75, (76), 78-85, (86, 87), 88-112.
H 1, 3, 4, (5), 6, 9, 12, 16, 19-22, 27, 28, 34,
35, (37-39), 40. C.

2. **erythrorrhizon** Bruch, Schimp. & W.Gümbel
108.
3. **glareosum** (Spruce) Bruch, Schimp. &
W.Gümbel
1-3, (4), 5-24, (25), 26, (27), 28-43, 47, (48),
49-55, 57-70, 72, 75, (77, 79), 80-83, (85), 87-
91, 94, 95, 97, 98, (100), 101, 104, 106, 108. H
1, 2, (3), 6, 8, 9, 16, 18, (19), 20, (21), 22, 25,
26, (28, 29, 31, 33), 35, (38), 39, 40. (C).
4. **salebrosum** (F.Weber & D.Mohr) Bruch,
Schimp. & W.Gümbel
3, (9), 12, 14, (15), 17, 20, 22-26, 28-32, 36,
37, 40, (54), 57, (62), 63, 64, (66, 80, 90).
5. **mildeanum** (Schimp.) Schimp. ex Milde
1-4, 6, 8-14, (15, 16), 17, 18, 20, 22-34, (36),
37, (38, 40), 41, (44), 45-53, (54, 55), 56-61,
66, 68, (69, 70, 75, 81-83, 85, 86, 88), 90, 95-
97, 102, (104), 105, 107, 110-112. H 1, 2, (5),
13, 16, 17, 20, (21), 22, 23, 27, 28, (35, 37, 39).
C.
6. **rutabulum** (Hedw.) Bruch, Schimp. &
W.Gümbel
1-112. H 1-40. C.
7. **rivulare** Bruch, Schimp. & W.Gümbel
1-112. H 1-3, 5-13, 15-30, 32-37, (38), 39, 40.
C.
8. **starkei** (Brid.) Bruch, Schimp. & W.Gümbel
88, 90, 105, 106.
9. **glaciale** Bruch, Schimp. & W.Gümbel
88, 90, 92, 94, 96-98, 105, 106.
10. **reflexum** (Starke) Bruch, Schimp. &
W.Gümbel
88, 89, 90, (92), 96-98, 105-107.
11. **velutinum** (Hedw.) Bruch, Schimp. &
W.Gümbel
1-72, (73), 75-91, (92, 93), 95-98, (99), 101-
104, 106-109, 111, 112. H (1), 2, (5, 6, 9, 12,
13, 16), 20, 21, (22-24, 26), 27, 28, (30, 32), 33,
35, 36, (37), 38, (39). C.

12. **appleyardiae** McAdam & A.J.E.Sm. [159]
6, 8, 57.
13. **trachypodium** (Brid.) Bruch, Schimp. & W.Gümbel [160]
(88), 97.
14. **populeum** (Hedw.) Bruch, Schimp. & W.Gümbel
1-9, 11-26, (27), 28-52, (53), 54-75, (76), 77, 78, (79), 80-91, (92, 94), 95-106, (107), 108-112. H 1-4, 6, 8-10, 12-14, 16, (19), 20-27, 29, (30), 31-36, (38), 39, 40. C.
15. **plumosum** (Hedw.) Bruch, Schimp. & W.Gümbel
1-6, 8, 9, 11, 13-17, 34-52, (53, 54), 55, 57-60, (61), 62-84, (85), 86-112. H 1-10, 12-16, 18, 20, (21), 24, 25, 27-30, (31), 33-40. C.
170. **Scleropodium** Bruch, Schimp. & W.Gümbel
1. **purum** (Hedw.) Limpr. (*Pseudoscleropodium purum* (Hedw.) M.Fleisch. ex Broth.) [161]
1-112. H 1-40. C.
2. **cespitans** (Müll.Hal.) L.F.Koch
1-6, (7), 8-26, 29, 30, 32-38, (39), 40, 42, 43, 45-47, 49, 50, 52, 55, 57, 58, (59, 61-63), 64, (65), 67, 68, (70, 73), 80, 81, 98, 99. H 5-7, 9, 13, 28, (30), 33, (39). C.
3. **tourettii** (Brid.) L.F.Koch
1-6, (7), 8-16, (17, 18), 19, (20), 22, 23, 26, (27), 28, 29, (33), 34-36, (37), 38, 40-43, 45-52, 71, 74, 75, 81, (88). H (2-4), 5, 6, (7, 12, 21, 37, 39). C.
171. **Cirriphyllum** Grout
1. **piliferum** (Hedw.) Grout
1-75, (76), 77-91, 94-111. H 1-9, 11, 12, (13), 14, 16, 18-31, 33, 35, 36, (37, 38), 39, 40. C.
2. **cirrosum** (Schwägr.) Grout
88, 98, 105, 106.

172. **Rhynchostegium** Bruch, Schimp. & W.Gümbel

1. **riparioides** (Hedw.) Cardot
1-112. H 1-16, 18-31, 33-40. C.
2. **alopescuroides** (Brid.) A.J.E.Sm. (*R. lusitanicum* (Schimp.) A.J.E.Sm.) [162]
1-4, (5), 35, (36), 42-44, 46-50, 57, 58, 60, (69, 70), 71, 91, (92), 94, (105), 108. H 1, 2, 6, 16, (19), 20, 27, 35.
3. **murale** (Hedw.) Bruch, Schimp. & W.Gümbel
1-72, (73), 74, (76), 77, 78, 80-85, (86, 87), 88-91, (95), 98, (99), 100-104, 106, 108, (111), 112. H 1, 2, (4, 5, 7, 8), 9, (12), 14, 15, 17, (18-20), 21-25, 27-29, 33, (34), 36, 37, (38, 39). C.
4. **confertum** (Dicks.) Bruch, Schimp. & W.Gümbel
1-75, (76), 77, 78, (79), 80-91, 93, 95-105, (106), 110-112. H 1-12, 14, 16, 17, 20-31, 34-37, (38), 39. C.
5. **megapolitanum** (F.Weber & D.Mohr)
Bruch, Schimp. & W.Gümbel
1-20, (21), 22-30, 37, 38, 41, 44-46, 48, 49, 51, 52, 54, (56-58), 59, 60, 67, 71, 73, 75, 81, 82, (85), 90. H (1), 6, 20, (21), 33. C.
6. **rotundifolium** (Brid.) Bruch, Schimp. & W.Gümbel
(6), 14, 33.

173. **Eurhynchium** Bruch, Schimp. & W.Gümbel

1. **striatum** (Hedw.) Schimp.
1-112. H 1-30, 32-40. C.
2. **meridionale** (Bruch, Schimp. & W.Gümbel)
De Not.
9.
3. **striatulum** (Spruce) Bruch, Schimp. & W.Gümbel (*Isothecium striatulum* (Spruce) Kindb.) [163]
3, 5-7, 9-14, 17, 34-36, 39, 41, 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.

4. **pulchellum** (Hedw.) Jenn. var. **diversifolium** (Bruch, Schimp. & W.Gümbel) C.E.O.Jensen (incl. *E. pulchellum* var. *praecox* (Hedw.) Dixon) [164] 26, (90), 104. H 40.
5. **pumilum** (Wilson) Schimp. 1-45, 47-52, 54-71, (72, 73), 74, (75, 76), 77, 80-84, (85), 87-91, 94, 95, 97-106, 108, 109, (111). H 2, 4, (5), 6, 8, 9, 11, 12, (13), 14, 15, (16), 20, (21), 22, 23, 25, 27-29, 32, 33, (34), 35, (37, 38), 39, 40. C.
6. **praelongum** (Hedw.) Bruch, Schimp. & W.Gümbel (incl. var. *stokesii* (Turner) Dixon) 1-112. H 1-40. C.
7. **hians** (Hedw.) Sande Lac. (*E. swartzii* (Turner) Curn.; *E. swartzii* var. *rigidum* (Boulay) Thér.) [165] 1-106, 108-112. H 1-4, 6-12, (13), 14-18, (19), 20-29, 31-35, 37, (38), 39, (40). C.
8. **schleicheri** (R.Hedw.) Jur. 3-17, 19, 20, 22-24, (27), 33-36, (37), 40-42, (43), 50, 60, (62), 64, 67, (68), 69, 80, 81. H 10.
9. **speciosum** (Brid.) Jur. 1-3, 5-17, 19, 20, (21), 22-29, 31, 32, (33), 35, (36-38), 40, 41, (42, 44), 45, (46, 48), 49, 52, 54, 55, 57, 58, (59), 60, 61, (62, 63), 64, (68), 69, 71, 73-75, 81, 90, 91, 98, 101, 102. H 2, (4-6), 9, (20), 21, 22, 25, 28, 32, 35-37, (38), 39, (40). C.
10. **crassinervium** (Wilson) Schimp. (*Cirriphyllum crassinervium* (Wilson) Loeske & M.Fleisch.) [166] 1-24, 26, 29, 30, (31), 32-71, (72, 73, 75, 76), 77, 79-85, (86), 87-91, 94, 95, 98-102, 105, 106, 108, (111), 112. H 1, 2, 4, (5), 6-11, (12), 15-17, (18), 20, (21), 22-29, 32, (33), 36, (38), 39, 40. C.

174. **Rhynchostegiella** (Bruch, Schimp. & W.Gümbel) Limpr.

1. **tenella** (Dicks.) Limpr.
1-53, (54), 55-72, (73), 74, 75, 77-79, 81-86,
88, (89), 90, 91, 97-105, (106), 108. H 1-17,
(18), 19-23, 25-29, (30), 31, 33-40. C.
2. **litorea** (De Not.) Limpr. (*R. tenella* var. *litorea*
(De Not.) P.W.Richards & E.C.Wallace) [167]
(3), 5, 6, 11-13, (14-16), 17, 19, (21), 22, 23, 29.
3. **curviseta** (Brid.) Limpr.
2-15, (16, 17), 19, 22, 23, 25, 29, 30, 32, (33),
35, 36, (37), 38, (40, 62). H (1, 29), 33, (39). (C).
4. **teneriffae** (Mont.) Dirkse & Bouman (*R. teesdalei*
(Bruch, Schimp. & W.Gümbel) Limpr.) [168]
1, (2), 3, 5-9, 11, (12), 14, 22, 23, 29, 33-37,
(38), 39-44, 47, 49-53, 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 (3),
6, 8-11, 15, 16, 20, (21), 28, 29, 33, (34), 35,
(38), 39, 40. C.

175. **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, 80, 82, 83, 85-90, 97, 98, 101-106, 108-
110. H 1, (6), 8, 9, 15, 16, (19, 20), 21, 22, 25-
30, 34, 35, (38, 39), 40.

176. **Pleurozium** Mitt.

1. **schreberi** (Brid.) Mitt.
1-31, (32), 34-112. H 1-40. C.

177. **Myurella** Bruch, Schimp. & W.Gümbel [169]

1. **julacea** (Schwägr.) Bruch, Schimp. &
W.Gümbel
a var. **julacea**
(49), 64, 65, 87-90, 92, 94, 96-98, 101, 104,
105, 107, 108, 110. H (6, 16), 40.

b var. **scabrifolia** Lindb. ex Limpr.
88, 89, 94, 98. H 29.

2. **tenerrima** (Brid.) Lindb.
88, (90).

178. **Platydictya** Berk. [169]

1. **jungermannioides** (Brid.) H.A.Crum
6, (34), 35, (36, 40, 42), 47-50, 57, (59), 63-65,
(66), 69, 70, 72, 76, 80, 86-89, (90), 92, 94, 96,
(97), 98, 99, 101, 104, 106, 108, 110. H 11, 28,
29, (33).

179. **Orthothecium** Bruch, Schimp. & W.Gümbel

1. **rufescens** (Brid.) Bruch, Schimp. &
W.Gümbel
(48), 49, (62), 64, 65, 69, 86-90, 92, 96-99, 103-
105, 107, 108, 111. H 9, 28, 29, 35.
2. **intricatum** (Hartm.) Bruch, Schimp. &
W.Gümbel
(4), 6, 34-36, 39, 42, 43, 47-50, 52, 57, (59),
60, 62-67, 69, 70, (71), 72, (73), 75, 76, (77),
78-80, 83, 86-92, 94, 96-108, 111, (112). H 1,
2, 7, 9, 16, 27-29, 33-35, 39, 40.

180. **Plagiothecium** Bruch, Schimp. & W.Gümbel

1. **latebricola** Bruch, Schimp. & W.Gümbel
2-23, (24), 25-27, 31, (33, 34), 35, (36), 37, 38,
(39, 40), 41, 43, 45, 47-51, 54-57, (58, 59, 62),
63-65, (81, 86). H 29.
2. **piliferum** (Sw. ex Hartm.) Bruch, Schimp. &
W.Gümbel
(88, 90).
3. **denticulatum** (Hedw.) Bruch, Schimp. &
W.Gümbel

a var. **denticulatum**
1-75, (76), 77-92, 94-110, 112. H 3, 4, 8,
10, (12), 13, 20, 22, 24-26, 33, 36, 37, (38),
39. C.

PLAGIOTHECIUM

- b var. **obtusifolium** (Turner) Moore
2, 4, 46, 48, 49, 64, 65, 69, 70, 78, 87-90,
92, 94-101, 104-108, 110. H 1, 3, 7, 16, 35,
40.
4. **ruthei** Limpr.
1-3, 5, 6, 9-11, (12), 13, 16-19, 22-24, 27-31,
(37), 38, 39, 41-43, 46-50, 54, 55, 59-65, 68,
70, 71, 98, 102, 105.
5. **curvifolium** Schlieph. ex Limpr.
2, 5-40, 42-44, 47, 49-51, 53-70, 72-75, 78,
80-85, (86), 88-96, 98, 99, 106, 107. H 20.
C.
6. **laetum** Bruch, Schimp. & W.Gümbel
12, 18, 19, 20, 22, 26, 29, 32, 34-36, 39, 40, 43,
47-51, 57, 58, 60, 62-70, 77, 78, (79), 81, 83,
86, 88-92, 94-96, 98, 99, 101, 105, 106, 109.
H 21, 33.
8. **platyphyllum** Mönk.
49, 69, 70, (88), 89, 90, 92, 96-99, 104-107,
108. H 20.
9. **cavifolium** (Brid.) Z.Iwats.
46-49, 60, 62, 70, 81-83, 88, 90, 92, 96-98, 101,
103-106, 108. H (1), 27, (34).
10. **succulentum** (Wilson) Lindb.
1-28, 30, 31, 34-112. H 1-10, 12, 16-18, 20,
22, 24-30, 32-35, 39, 40. C.
11. **nemorale** (Mitt.) A.Jaeger
1-57, 60-77, 79, 80, 83, 84, 86, 87, (88), 90-92,
95, 97-105, 108, 110-112. H 1-11, 16, 20, 21,
25, 27-30, 34-37, (38), 39, 40. C.
12. **undulatum** (Hedw.) Bruch, Schimp. &
W.Gümbel
1-30, 32, 34-112. H 1-10, 12-14, 16, 17, 20,
21, 23, 25-30, 33-40. C.
181. **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) [170]
 (3), 5, 35, 36, 39, 42-44, (46), 47-50, 57, (59),
 60, (62), 63-70, 72, 73, 75, (76), 77-83, (85),
 86-92, 94-101, 103-108, (110), 111. H 1-3, 6,
 (7), 8, 10, 16, (20), 27-29, (33), 34, 35, (38), 39,
 (40).
182. **Pseudotaxiphyllum** Z.Iwats.
1. **elegans** (Brid.) Z.Iwats. (*Isopterygium elegans* (Brid.) Lindb.) [171]
 1-112. H 1-14, 16, 19-23, 25-30, (31, 32), 33-
 40. C.
183. **Herzogiella** Broth.
1. **striatella** (Brid.) Z.Iwats.
 (71), 87-90, 92, 94, 96-99, 105-108.
2. **seligeri** (Brid.) Z.Iwats.
 6-8, 10-17, 19, 22-29, (61), 62.
184. **Taxiphyllum** M.Fleisch.
1. **wissgrillii** (Garov.) Wijk & Margad.
 3-17, 19-24, 33-38, 40-44, 47-52, 56, 57, (58,
 59), 60-70, 72, (73, 75, 77), 80-86, (87), 88,
 (89), 90, 97, 98, 101, 103, 104, 108. H 2, 9, 11,
 16, (21), 23, 28, 29, 33, (34, 38), 39, 40.
185. **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. H 40.
186. **Sematophyllum** Mitt.
1. **micans** (Mitt.) Braithw.
 (48), 70, 86, 87, 97-99, 101, 103-105. H 1, 2,
 (3), 16.
2. **demissum** (Wilson) Mitt.
 48, 49. H 1-3, 16.

3. **substrumulosum** (Hampe) E.Britton [172]
1.
187. **Pylaisia** Schimp.
1. **polyantha** (Hedw.) Schimp.
6, 7, (8, 13, 14), 15, (19), 22, 23, (33), 34, 36,
37, (38, 40), 43, 48, (52, 54, 55), 57, (61, 62,
63), 64, (65, 66), 67, 68, (69), 70, (73-75, 78),
80-83, (85), 88-91. H 1, 2, (5). (C).
188. **Platygyrium** Bruch, Schimp. & W.Gümbel
1. **repens** (Brid.) Bruch, Schimp. & W.Gümbel
6-8, 12, 13, 16, 17, 19, 22, 23, 26, 28-31, 33-
36, 40, 42, 50, 53, 81, 82.
189. **Homomallium** (Schimp.) Loeske
1. **incurvatum** (Brid.) Loeske
(57), 64, (65), 66, (69), 70, (87), 88, (89).
190. **Hypnum** Hedw.
1. **revolutum** (Mitt.) Lindb.
88.
2. **vaucheri** Lesq.
88, 89.
3. **cupressiforme** Hedw.
1-112. H 1-40. C.
4. **lacunosum** (Brid.) Hoffm. ex Brid. (*H.*
cupressiforme var. *lacunosum* Brid.) [173]
a var. **lacunosum**
1-30, 32-75, (76), 77-98, (99), 100-112. H 1-
3, 5-9, 11-17, 19-31, 33-40. C.
b var. **tectorum** (Brid.) J.-P.Frahm (*H.* *cupres-
siforme* var. *tectorum* Brid.) [173]
1, 6, 9, (13), 23, 25, (28, 40, 43), 47, (48), 49,
(50), 52, (57-60), 64, (72), 73, (80, 82, 83, 85),
86, 88, 90, (93), 97-99, (105-107, 109, 112). H
5, (9), 12, 16, (28, 29), 31, (38).

5. **resupinatum** Taylor (*H. cupressiforme* var. *resupinatum* (Taylor) Schimp.) [173]
1-112. H 1-17, (18), 19-40. C.
 6. **andoi** A.J.E.Sm. (*H. mammillatum* (Brid.) Loeske) [174]
1-27, 29, 30, 33-37, 39-52, 55, 57-60, 62-70, 72-78, 80-83, 86-93, 96-108. H (1), 2-4, 6-8, 12, 16, 20, 23, 25-29, (30), 33, 35, (38). C.
 7. **uncinulatum** Jur.
H (2).
 8. **jutlandicum** Holmen & E.Warncke
1-112. H 1-30, (31), 32-40. C.
 9. **imponens** Hedw.
(3), 8, 11-13, (14), 15, 17, 22, 28, 49, 50, 54, 59, 60, (61, 62, 64), 67-70, 72, (77), 78-83, (88), 95, 105.
 10. **bambergeri** Schimp.
88-90, 92, 96-98.
 11. **lindbergii** Mitt.
1-20, 22, 23, (24), 30, 31, 33-44, 46-53, 55, 57-60, 62-72, (73), 74, (76), 77-81, (82), 83, 84, (85-87), 88-90, 93-98, (99), 100-106, 108. H 1-16, (19), 20, 22, 23, 26-29, (31), 32-37, (38-40).
 12. **callichroum** Brid.
46, 48, 49, (50, 51), 64, (67), 68-70, 72, 73, 78, 80, (85), 86-90, 92, 94, 96-108, 110, 111. H 1, 2, 16, 27-29, 34, 35.
 13. **hamulosum** Bruch, Schimp. & W.Gümbel
48, 49, (64), 69, 70, 87-92, 94, 96-98, 103-108.
191. **Ptilium** De Not.
1. **crista-castrensis** (Hedw.) De Not.
26, 28, 47, 48, 49, 60, (62, 64), 65, 69, 70, 72, (73), 78, (79), 80, (81, 83, 85), 86-99, 101-108.
H 27.

192. **Ctenidium** (Schimp.) Mitt.

1. **molluscum** (Hedw.) Mitt.

a var. **molluscum**

1-112. H 1-40. C.

b var. **fastigiatum** (Bosw. ex Hobk.) Braithw.
(4), 5, 6, 41, 49, (57, 62, 64), 65, 69, (88),
96, (97), 98, 103, (104), 105, (108). H 1, 29,
33.

c var. **condensatum** (Schimp.) E.Britton
1, 36, 37, 42, 46-49, (57, 59, 64, 65), 66-70,
72-74, (78), 80, 83, 87, 88, 90-92, 94, 96-108,
110, 112. H 3, (7), 16, 20, 27, 31, 35, 36.

d var. **robustum** Boulay
48, (64, 69), 72, 73, (86, 88), 90, 92, 98, 99,
103, (104), 108. H (38).

2. **procerrimum** (Molendo) Lindb.

88, 96.

193. **Hyocomium** Bruch, Schimp. & W.Gümbel

1. **armoricum** (Brid.) Wijk & Margad.

1-6, 11, 13-16, 34-36, 39, 41-50, 57-60, 62-80,
86-88, 90-92, 96-112. H 1-10, (11), 12-14, 16,
18, 20, 21, 25, (26), 27-30, (31), 33-36, (37),
38, (39), 40.

194. **Rhytidiadelphus** (Limpr.) Warnst.

1. **triquetrus** (Hedw.) Warnst.

1-17, (18), 19, 20, (21), 22-55, 57-62, (63), 64-
112. H 1-30, 32-40. C.

2. **squarrosus** (Hedw.) Warnst.

1-112. H 1-16, (17), 18-40. C.

3. **subpinnatus** (Lindb.) T.J.Kop.

(36, 44), 48, (57, 58), 60, (64, 65, 69). H 6.

4. **loreus** (Hedw.) Warnst.

1-9, 11-17, (18), 20, (21), 22, 23, 25, 26, (27),
29, 30, 32-54, (55), 57-60, 62-112. H 1-16, 18-
22, 24-30, 32-40. C.

195. **Hylocomium** Bruch, Schimp. & W.Gümbel

1. **brevirostre** (Brid.) Bruch, Schimp. & W.Gümbel
1-6, 8, 9, 11-17, (20), 22, (23), 24, 29, (32, 33), 34-37, (38), 41-50, (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. H 1-4, (5), 6-10, 12-17, (18), 20, (21), 22-29, (30), 31, (32), 33, (34), 35, 36, (38), 39, 40. (C).
2. **pyrenaicum** (Spruce) Lindb.
88-90, 92, 96-98, 104-107.
3. **umbratum** (Hedw.) Bruch, Schimp. & W.Gümbel
46-50, 64, 69, 70, (72), 73, 75, 76, 78-80, 86-90, 92, 94, 96-106, (107), 108, 110. H 1, 2, 16, 27-29, 35, 39.
4. **splendens** (Hedw.) Bruch, Schimp. & W.Gümbel
1-17, (18), 19, 20, (21), 22-52, (53), 54, 55, 57-112. H 1-40. C.

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- 1 Paton (1992b) described *Telaranea longii* as a new species from Scotland and England.
- 2 Stotler & Crotz (1983) proposed the new name *Calypogeia azurea* for the species previously known as *C. trichomanis* auct.
- 3 The treatment of *Cephalozia ambigua* as a species follows Paton (in prep.).
- 4 For the differences between *Cephalozia macrostachya* var. *macrostachya* and var. *spiniflora* see Paton *et al.* (1996).
- 5 Váňa (1988) placed *Cephalozia hibernica* into synonymy with the neotropical *C. crassifolia* (Lindenb. & Gottsche) Fulford, but without detailed discussion; this synonymy is not yet generally accepted (Paton, in prep.).
- 6 Schuster (1980) showed that *Cephaloziella spinigera* (Lindb.) Warnst. is the correct name for *C. subdentata* Warnst.
- 7 The author citation for *Cephaloziella stellulifera* follows Damsholt & Long (1983).
- 8 For the differences between *Cephaloziella nicholsonii* and *C. massalongi* see Paton (1984).
- 9 The use of the name *Lophozia longiflora* for *L. guttulata* (Lindb.) A.Evans follows Grolle (1983).
- 10 For a description of *Lophozia herzogiana* and its occurrence in England see Crundwell & Smith (1989).
- 11 The author citation for *Lophozia opacifolia* follows Bisang (1988).
- 12 For the combination *Leiocolea rutheana* var. *laxa*, and its distinction from var. *rutheana*, see Paton (1995).
- 13 Paton & Perry (1995) described *Leiocolea fitzgeraldiae* as a new species from Britain and Ireland.

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- 14 The broad concept of the genus *Anastrophyllum* adopted here follows Schuster (1969).
- 15 For a description of *Nardia insecta* and its occurrence in England see Blackstock (1995).
- 16 For a description of *Marsupella arctica* and its occurrence in Scotland see Long *et al.* (1990).
- 17 For a description of *Marsupella profunda* and its occurrence in England see Paton (1990a).
- 18 The treatment of *Marsupella stableri* as a species follows Paton (in prep.).
- 19 The use of the name *Scapania nemorea* in preference to *S. nemorosa* follows Grolle & Isoviita (1981).
- 20 The retention of *Lophocolea* and *Chiloscyphus* as separate genera follows Grolle (1995); Engel & Schuster (1985) advocate uniting them in *Chiloscyphus sensu lato*.
- 21 *Lophocolea bidentata* is treated in a broad sense to include *L. cuspidata* (Nees) Limpr.; the evidence for this is summarised by Vogelpoel (1982) and Grolle (1983).
- 22 For a description of *Plagiochila norvegica* and its occurrence in England see Hill *et al.* (1998).
- 23 The published authority for *Plagiochila atlantica* (Jones & Rose, 1975) has been amended to include E.W. Jones as a joint author. From the protologue and discussion it is clear that he was at least in part an author of the description: following the description, the 'Critical Remarks' section begins 'The plant which we describe as *Plagiochila atlantica*...'
- 24 The use of the name *Plagiochila exigua* in preference to *P. corniculata* (Dumort.) Dumort. and *P. tridenticulata* (Hook.) Dumort. follows Grolle (1983). Grolle showed that the last two names are based on types referable to *Bazzania trilobata*.
- 25 For a description of *Frullania microphylla* var. *deciduiifolia* and its occurrence in Britain see Paton (1992a).

- 26 The use of the name *Harpalejeunea mollerii* in preference to *H. ovata* (Hook.) Schiffn. follows Grolle (1989).
- 27 The separation of *Microlejeunea* from *Lejeunea* follows Grolle (1995).
- 28 Schuster (1980) referred the Irish populations of *Lejeunea flava* to subsp. *moorei*.
- 29 The use of the name *Fossombronina maritima* follows Paton (1994). This name is antedated by *Fossombronina maritima* G.A.M.Scott & D.C.Pike (Scott & Pike, 1987), but the latter name is invalidly published (ICBN Art. 37.4).
- 30 The treatment of *Pellia borealis* as a synonym of *P. epiphylla* follows Grolle (1983).
- 31 The author citations for *Conocephalum* and *C. conicum* follow Zijlstra (1993).
- 32 For the distinction between the three accepted subspecies of *Marchantia polymorpha* and their distributions see Bischler-Causse & Boisselier-Dubayle (1991) and Long (1995).
- 33 Paton (1990b) showed that *Riccia subbifurca* is the correct name for the British and Irish plants previously referred to *R. warnstorffii* Limpr. ex Warnst.
- 34 The treatment of *Phaeoceros carolinianus* as an independent species follows Grolle (1983).
- 35 For the taxonomy of *Sphagnum affine* and *S. austinii* see Flatberg (1984). They are accepted here as distinct species in accordance with Corley & Crundwell (1991). For a discussion of their occurrence and distribution in Britain and Ireland see Hill (1988).
- 36 [by M.O.Hill] *Sphagnum palustre* var. *centrale* has long been treated equivocally in British and Irish floras. It was enumerated as a British species, *Sphagnum centrale* C.E.O.Jensen, by Richards & Wallace (1950). However, it was not subsequently included in lists of new vice-county records, the last such mention being two years earlier (Anon., 1948). It was excluded without

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comment by Warburg (1963). Hill (1978) did not think that British material was sufficiently well marked to warrant taxonomic recognition. Daniels & Eddy (1985) stated that it occurs in England and Scotland but did not give localities. Although British material is sometimes intermediate between var. *centrale* and var. *palustre*, with the transverse section of the chlorocysts variable within a single leaf, var. *centrale* is frequently accorded species rank, both in Europe and North America. Following Daniels & Eddy (1985), it is recognised here as a variety. Its present distribution in Britain and Ireland remains to be established. For a full account of the differences between var. *palustre* and var. *centrale* refer to Daniels & Eddy (1985, 1990).

- 37 [by M.O.Hill] For the combination *Sphagnum capillifolium* subsp. *rubellum* see p. 26. Subsp. *rubellum* is much the commoner taxon in Britain and Ireland. Subsp. *capillifolium* has been confirmed from localities in North Wales and Northern England. It is presumably frequent in upland Britain but may be scarce in Ireland. The distribution of *S. capillifolium sensu lato* has been transferred here to subsp. *rubellum*. The detailed distribution of subsp. *capillifolium* remains to be established. For a full account of the differences between the subspecies refer to Daniels & Eddy (1985, 1990).
- 38 For the combination *Sphagnum subnitens* var. *ferrugineum* see p. 26.
- 39 Flatberg (1988a) described *Sphagnum skyense* as a new species from Scotland.
- 40 *Sphagnum inundatum* has been subordinated by different authors both to *S. denticulatum* and to *S. subsecundum* (Hill, 1975, 1978; Eddy, 1977; Daniels & Eddy, 1985). It is treated here as a species. Apparent intermediates between it and *S. denticulatum* may be *S. denticulatum* affected by an unstable water table (M.O.Hill, *pers. comm.*).
- 41 Dirkse & Isoviita (1986) showed that *Sphagnum denticulatum* is an earlier name for *S. auriculatum*.
- 42 *Sphagnum viride* is reported from Britain by Flatberg (1988b). It has proved difficult to distinguish clearly from *S. cuspidatum*

- in Britain and Ireland (M.O.Hill, *pers. comm.*) and is therefore not accepted here.
- 43 *Sphagnum fallax*, *S. flexuosum* and *S. angustifolium* are treated here as distinct species in accordance with Corley *et al.* (1982) and Daniels & Eddy (1985).
- 44 For the combination *Sphagnum fallax* subsp. *isoviitae* and its status see p. 27. It is likely to be widely distributed in Britain and Ireland.
- 45 The treatment and distribution of *Andreaea* spp. is based on the account by Murray (1988).
- 46 The use of the name *Polytrichum strictum* in preference to *P. alpestre* follows Corley *et al.* (1982).
- 47 The author citation for *Pseudephemerum nitidum* follows Ochyra (1995).
- 48 Allen (1994) placed *Ditrichum crispissimum* into synonymy with *D. gracile*. For the differences between this species and *D. flexicaule* see Smith (1993).
- 49 The treatment of *Ceratodon conicus* as a species follows Burley (1986) and Burley & Pritchard (1990).
- 50 The generic placement of *Kiaeria glacialis* follows Corley *et al.* (1982).
- 51 For the nomenclature of *Dicranum bergeri* see Isoviita (1985).
- 52 The treatment of *Dicranum flexicaule* as a species follows Corley & Crundwell (1991). The British records are in need of revision.
- 53 The generic placement of *Dicranum subporodictyon* follows Frahm (1997).
- 54 Frahm (1994) placed *Campylopus schwarzii* into synonymy with *C. gracilis*.
- 55 The use of the name *Campylopus flexuosus* in preference to *C. paradoxus* follows Corley *et al.* (1982). The following note

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on synonymy has been supplied by M.F.V. Corley.

Campylopus flexuosus (Hedw.) Brid., Mant. musc. 4: 71. 1819.

Campylopus torfaceus (Bruch, Schimp. & W.Gümbel) var. *fallaciosus* Thér., Bull. Acad. Int. Géogr. Bot. 10: 62. pl 4: f. 5-9. 1901. *syn. nov.*

C. pyriformis (Schultz) Brid. var. *fallaciosus* (Thér.) M.F.V. Corley, J. Bryol. 9: 201. 1976.

Campylopus pyriformis var. *fallaciosus* was added to the British flora in Corley (1977). At the time Corley commented that the status of the variety must remain uncertain in the absence of additional material. Some years later C.C. Townsend submitted a possible candidate for the variety: on rotting stumps in carr on the S. side of the Fen Beck, Austwick Moss, ca. 6.5km N.W. of Settle, v.-c. 64, 17 June 1984, Townsend 84/25. Leaves from the lower part of the tall (6cm) stems agreed well with other specimens of var. *fallaciosus*, but those from the upper part of the stems were typical of *C. flexuosus*. Evidently var. *fallaciosus* is an immature form of *C. flexuosus* and must be treated as a synonym of that species.

- 56 Gradstein & Sipman (1978) placed *Campylopus polytrichoides* into synonymy with *C. pilifer*.
- 57 For descriptions of *Fissidens viridulus*, *F. limbatus* and *F. pusillus* as understood here see Corley (1981).
- 58 The treatment of *Fissidens gracilifolius* as a species follows Corley & Crundwell (1991). For the nomenclature of this species see Nyholm (1987).
- 59 Bruggeman-Nannenga & Pursell (1996) placed *Fissidens algarvicus* into synonymy with *F. curvatus*.
- 60 *Fissidens taxifolius* var. *pallidicaulis* intergrades with var. *taxifolius* in Britain and Ireland. It is here treated as a variety of *F. taxifolius* on the advice of A.J.E. Smith (*pers. comm.*).

- 61 Karttunen (1987) showed that *Fissidens dubius* is the correct name for *F. cristatus*.
- 62 For a note on the identification of *Encalypta brevicollis* see Smith (1991). The species was reported for Britain by Horton (1981).
- 63 For the combination *Weissia controversa* var. *wimmeriana* see Blockeel & Smith (1998).
- 64 The use of the name *Weissia condensa* in preference to *W. tortilis* follows Corley *et al.* (1982).
- 65 For the nomenclature of *Weissia brachycarpa* and the combination *W. brachycarpa* var. *obliqua* see Hill (1981).
- 66 *Weissia mittenii* is probably of hybrid origin (A. J. E. Smith, *pers. comm.*) but is retained here pending further study.
- 67 The inclusion of the genus *Oxystegus* in *Trichostomum* follows Zander (1993).
- 68 Blockeel & Smith (1998) described *Pottiopsis* as a new genus to accommodate *Pottia caespitosa*.
- 69 Long (1983b) described *Paraleptodontium* as a new genus to accommodate *Leptodontium recurvifolium*.
- 70 The separation of the genus *Dialytrichia* from *Cinclidotus* follows Zander (1993).
- 71 The concept of the genus *Pseudocrossidium* adopted here follows Corley *et al.* (1982) and Zander (1993).
- 72 The concept of the genus *Bryoerythrophyllum* adopted here follows Corley *et al.* (1982) and Zander (1993).
- 73 Long (1983a) described *Bryoerythrophyllum caledonicum* as a new species from Scotland.
- 74 The separation of the genus *Hymenostylium* from *Gymnostomum* follows Corley *et al.* (1982) and Zander (1993).

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- 75 For a description of *Gymnostomum viridulum* and its distribution in Britain and Ireland see Whitehouse & Crundwell (1991, 1992).
- 76 The distribution of *Gymnostomum calcareum* has been revised by Whitehouse & Crundwell (1992).
- 77 The separation of the genus *Molendoa* from *Anoetangium* follows Zander (1993).
- 78 For the concept of the genus *Didymodon* adopted here and the relevant nomenclature see Zander (1993).
- 79 *Didymodon reedii* was reported in Britain by Appleyard (1985). The record has since been rejected by Blockeel & Smith (1998).
- 80 Hill (1979) showed that *Oxystegus sinuosus* should be placed near *Didymodon insulanus* (*Barbula cylindrica*).
- 81 Blockeel (1982) described *Didymodon tomaculosus* as a new species from the north of England.
- 82 For a description of *Scopelophila cataractae* and its occurrence in Britain see Corley & Perry (1985).
- 83 The treatment of *Aloina ambigua* as a species follows Corley *et al.* (1982).
- 84 For a description of *Leptobarbula berica* and its occurrence in Britain see Appleyard *et al.* (1986).
- 85 For the concept of the genus *Tortula* adopted here and the relevant nomenclature see Zander (1993).
- 86 For a description of *Tortula solmsii* and its occurrence in Britain see Long & Hill (1983).
- 87 For the combination *Tortula viridifolia* see Blockeel & Smith (1998).
- 88 For the occurrence of *Tortula acaulon* var. *papillosa* in Britain see Blockeel (1995).

- 89 For the concept of the genus *Microbryum* adopted here and the relevant nomenclature see Zander (1993).
- 90 The treatment of *Microbryum starckeanum* agg. adopted here follows Ros *et al.* (1996).
- 91 For the concept of the genus *Hennediella* adopted here and the relevant nomenclature see Blockeel (1990) and Zander (1993).
- 92 *Tortula brevis* was described as a new species by Whitehouse & Newton (1988). Blockeel (1990) subsequently placed it into synonymy with *Hennediella macrophylla*.
- 93 Hill (1982) showed that *Acaulon minus* cannot be separated satisfactorily from *A. muticum*.
- 94 For a description of the genus *Chenia* and the status of *C. leptophylla* see Zander (1989, 1993) and Arts & Sollman (1992).
- 95 For the concept of the genus *Syntrichia* adopted here and the relevant nomenclature see Zander (1993).
- 96 The treatment of *Syntrichia ruraliformis* as a species follows Corley *et al.* (1982).
- 97 For the status of *Cinclidotus riparius* in the British Isles see Blockeel (1998).
- 98 For a discussion of the distinctions between the riparian species of *Schistidium* and their distribution in Britain and Ireland see Orange (1995). The status and nomenclature of *S. platyphyllum* follow Blom (1998).
- 99 The distributions of *Schistidium apocarpum sensu stricto*, *S. trichodon*, *S. strictum*, *S. robustum*, *S. confertum* and *S. atrofusum* require revision in the light of Blom's (1996) account of Scandinavian species.
- 100 For descriptions of *Schistidium papillosum*, *S. pruinatum*, *S. dupretii*, *S. frigidum*, *S. crassipilum* and *S. elegantulum* see Blom (1996). The records given here are taken from Blom's account, pending a full revision of British and Irish material.

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- 101 For a description of *Schistidium flaccidum* and its occurrence in Britain see Townsend (1997)
- 102 For the occurrence of *Grimmia tergestina* in Britain see Greven (1994b) and Blockeel (1996). For a description see Greven (1995b).
- 103 British collections formerly referred to *Grimmia alpestris* were revised as *G. sessitana* by Greven (1995a).
- 104 The treatment of *Grimmia arenaria* as a species follows Greven (1994a, 1995b).
- 104b Muñoz (1998) showed that *Grimmia longirostris* is an earlier name for the species previously referred to *G. affinis* Hornsch.
- 105 *Grimmia retracta* is regarded as a synonym of *G. lisae* De Not. by Greven (1995b). It is retained here as a distinct species on the advice of A.J.E. Smith (*pers. comm.*).
- 106 *Grimmia britannica* was treated as an independent species by Smith (1992). It has subsequently been placed into synonymy with *Grimmia austrofunalis* by Greven (1997).
- 107 The generic placement of *Grimmia curvata* follows Greven (1995b).
- 108 The treatment of the *Racomitrium heterostichum* group follows Frisvoll (1988), except that *R. obtusum* has proved difficult to separate satisfactorily from *R. heterostichum* in Britain and Ireland and it is not recognised here. The distribution of the British and Irish taxa was revised by Blockeel (1991).
- 109 The treatment of the *Racomitrium canescens* group follows Frisvoll (1983). The distribution of *R. elongatum* and *R. ericoides* in Britain and Ireland was revised by Hill (1984).
- 110 For a description of *Seligeria brevifolia* and its occurrence in Britain see Hill (1980).
- 111 *Seligeria campylopada* was reported from Britain by Gos & Ochyra (1994). A more detailed account of its occurrence is in preparation.

- 112 The type specimen of *Bryum paucifolium* Dicks. belongs to *Gyroweisia tenuis*. The earliest name for the species called *Seligeria paucifolia* in the British literature is *S. calycina* Mitt. ex Lindb. (R. Ochyra, *pers. comm.*).
- 113 The separation of *Entosthodon* from *Funaria* follows Corley *et al.* (1982)
- 114 The generic placement of *Aphanorhegma patens* follows Corley *et al.* (1982)
- 115 The use of the name *Tayloria tenuis* in preference to *T. longicollis* follows Corley *et al.* (1982).
- 116 Isoviita (1985) showed that *Mielichhoferia mielichhoferiana* is an earlier name for *M. mielichhoferi*.
- 117 Crundwell (1982) described *Pohlia scotica* as a new species from Scotland.
- 118 Shaw (1981a) showed that *Pohlia andalusica* is the correct name for the British plants previously referred to *P. rothii*.
- 119 *Pohlia annotina* and *P. proligera* were treated as synonyms in Smith (1978a). Shaw (1981a) regarded them as distinct species and confirmed that both occur in Britain. The distribution of *P. annotina* given here has been transferred from *P. proligera sensu* Smith. *P. proligera* appears to be much the rarer species in Britain and Ireland.
- 120 British and Irish plants of *Pohlia muyldermansii* were referred to var. *pseudomuyldermansii* by Arts *et al.* (1987). However Townsend (1995) has placed both var. *muyldermansii* and var. *pseudomuyldermansii* into synonymy with *P. flexuosa*.
- 121 Shaw (1981b) showed that *Pohlia melanodon* is the correct name for *P. carnea*.
- 122 The use of the name *Anomobryum julaceum* in preference to *A. filiforme* follows Corley *et al.* (1982).
- 123 For a description of *Bryum archangelicum* and its occurrence in Britain see Townsend (1994)

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- 124 Geissler (1984) showed that *Bryum imbricatum* is the correct name for the illegitimate *B. inclinatum*.
- 125 *Bryum subelegans* is an earlier name for *B. flaccidum* (Corley & Crundwell, 1991).
- 126 *Bryum caespiticium* var. *imbricatum* is clearly distinct from var. *caespiticium* and merits recognition as a species. British plants appear to be identical with the Continental *B. funckii* (A.J.E. Smith, *pers. comm.*)
- 127 *Bryum microerythrocarpum* was placed into synonymy with *B. subapiculatum* by Ochi (1980).
- 128 For the nomenclature of *Plagiopus oederianus* see Crum & Anderson (1981). The specific epithet is masculine in gender.
- 129 The generic placement of *Philonotis cernua* follows Griffin & Buck (1989).
- 130 Karttunen (1984) showed that *Zygodon rupestris* is the correct name for *Z. baumgartneri*.
- 131 The treatment of *O. schimperi* as a synonym of *O. pumilum* follows Lewinsky (1993).
- 132 The treatment of *Ulota bruchii* as a species follows Rosman-Hartog & Touw (1988) and Smith & Proctor (1993).
- 133 For descriptions of *Hedwigia ciliata* var. *leucophaea* and *H. stellata* and their separation from *H. ciliata* var. *ciliata* see Hedenäs (1994). Their occurrence and distribution in Britain and Ireland were investigated by Crundwell (1995).
- 134 Hodgetts & Blockeel (1992) described *Thamnobryum cataractarum* as a new species from Yorkshire.
- 135 *Pseudoleskeella catenulata* var. *acuminata* was treated as a species, *P. sibirica* (Arnell) P. Wilson & D.H. Norris, by Wilson & Norris (1989). Hedenäs & Söderström (1992) showed that the name *P. rupestris* has priority.
- 136 The distribution of *Pseudoleskeella nervosa* in Britain has been revised by Rothero (1998).

- 137 The generic placement of *Pseudoleskea patens* and *P. incurvata* follows Corley & Crundwell (1991).
- 138 The generic placement of *Ptychodium plicatum* follows Corley & Crundwell (1991).
- 139 For a description of *Heterocladium wulfsbergii* and its occurrence in Britain and Ireland see Crundwell (in prep.).
- 140 Ochyra (1989) showed that *Cratoneuron commutatum* and *C. decipiens* are not closely related to *C. filicinum*. He transferred them to the new genus *Palustriella*.
- 141 Ochyra (1989) showed that *Cratoneuron filicinum* var. *curvicaule* differs in some significant characters from *C. filicinum*. He transferred it to the new genus *Callialaria*.
- 142 The generic placement of *Campyliadelphus chrysophyllus* and *C. elodes* follows Hedenäs (1997).
- 143 The generic placement of *Campylophyllum calcareum* and *C. halleri* follows Hedenäs (1997).
- 144 Hedenäs (1997) showed that *Amblystegium radicale* is the correct name for *A. saxatile*.
- 145 The generic placement of *Amblystegium confervoides* follows Corley *et al.* (1982). Hedenäs (1987a) showed that it is not related to *Platydictya jungermannioides*.
- 146 The generic placement of *Leptodictyum riparium* follows Smith (in prep.).
- 147 The generic placement of *Conardia compacta* follows Corley & Crundwell (1991). For a discussion of the genus *Conardia* see Hedenäs (1989b).
- 148 The segregation of *Warnstorfia*, *Hamatocaulis* and *Sanionia* from *Drepanocladus* follows Corley & Crundwell (1991).
- 149 The generic placement of *Drepanocladus polygamus* follows Hedenäs (1997).

ANNOTATIONS

- 150 The treatment of *Drepanocladus cossonii* as a species follows Hedenäs (1989a). The distribution of *Drepanocladus revolvens sensu stricto* and *D. cossonii* is being revised by T. L. Blockeel; the records shown here are incomplete.
- 151 Hedenäs (1989a) described the genus *Hamatocaulis* to accommodate *Drepanocladus vernicosus*. The distribution given here is based on specimens checked by T. L. Blockeel.
- 152 The generic placement of *Tomentypnum nitens* follows Corley & Crundwell (1991). For a discussion of the genus *Tomentypnum* see Hedenäs (1987b).
- 153 For a description of *Sanionia orthothecioides* and its occurrence in Britain see Long (1992).
- 154 For a description of *Hygrohypnum styriacum* and its occurrence in Britain see Corley & Rothero (1992).
- 155 Jamieson (1980) placed *Hygrohypnum dilatatum* into synonymy with *H. duriusculum*.
- 156 Townsend (1982) described *Pictus scoticus* as a new species from Scotland.
- 157 The generic placement of *Calliergonella cuspidata* follows Corley *et al.* (1982).
- 158 For the combination *Isothecium alopecuroides* see Isoviita (1981).
- 159 McAdam & Smith (1982) described *Brachythecium appleyardiae* as a new species from England.
- 160 For a description of *Brachythecium trachypodium* and its occurrence in Britain see Corley (1990).
- 161 The generic placement of *Scleropodium purum* follows Corley *et al.* (1982).
- 162 For the combination *Rhynchostegium alopecuroides* see Smith (1982).
- 163 The generic placement of *Eurhynchium striatulum* follows Corley *et al.* (1982).

- 164 The distribution of *Eurhynchium pulchellum* in Britain and Ireland was revised by Hill (1993).
- 165 Touw & Knol (1978) showed that *Eurhynchium hians* is the correct name for *E. swartzii*.
- 166 The generic placement of *Eurhynchium crassinervium* follows Karttunen (1990).
- 167 The treatment of *Rhynchostegiella litorea* as a species follows Dirkse & Bouman (1996).
- 168 Dirkse & Bouman (1996) placed *Rhynchostegiella teesdalei* into synonymy with *R. teneriffae*.
- 169 The position of *Platydictya* and *Myurella* close to *Plagiothecium* follows Hedenäs (1987a). Ignatov & Ochyra (1995) provided further evidence for the close relationship of the first two genera.
- 170 The generic placement of *Isopterygiopsis pulchella* follows Iwatsuki (1987).
- 171 Iwatsuki (1987) showed that *Isopterygium elegans* does not belong to that genus. He transferred it to the new genus *Pseudotaxiphyllum*.
- 172 For a description of *Sematophyllum substrumulosum* and its occurrence in Britain see Holyoak (1996).
- 173 The taxonomic treatment of *Hypnum lacunosum*, *H. lacunosum* var. *tectorum* and *H. resupinatum* follows Smith (1997). *H. lacunosum* var. *tectorum* has been neglected in recent years in the British Isles; the distribution given here is taken from Smith (1997) and is likely to be very incomplete.
- 174 Smith (1982) proposed the name *Hypnum andoi* to replace the invalid *H. mammillatum*. For further remarks on the nomenclature see Smith (1997).

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