035 **FAGRAPPORT**

Check-list and distribution maps of Norwegian Hoverflies, with description of *Platycheirus laskai* nov. sp. (Diptera, Syrphidae)

Tore R. Nielsen

NINA·NIKU

NINA Norsk institutt for naturforskning

Check-list and distribution maps of Norwegian Hoverflies, with description of *Platycheirus laskai* nov. sp. (Diptera, Syrphidae)

Tore R. Nielsen

NINA Norsk institutt for naturforskning

NINA•NIKU publications

NINA•NIKU Project Report
presents the results of both institutes' projects when the results are to be made available in English. The series may include reports on short term consultancies, literature reviews, etc., and in some cases also original research.

NINA Fagrapport (Scientific Report)
NIKU Fagrapport (Scientific Report)
presents scientific results from the research activities of the two institutes, as well as scientific reviews and analyses. Reports may supplement or be alternatives to peer-reviewed publication, if deemed necessary. May be in Norwegian or English.

NINA Oppdragsmelding (Assignment Report)
NIKU Oppdragsmelding (Assignment Report)
represents the minimum level of reporting from smaller projects and consultancies as well as progress reports from long term projects. Mainly published in Norwegian.

Temahefter (Topic Report)
presents particular themes in a popular format for the general public or specified target groups, e.g., tourist industry, hunters and anglers, farmers, foresters, etc.

Fakta-ark (Fact Sheet)
makes NINA•NIKU's research activities, that have been published elsewhere, available to a larger audience, e.g., media, NGOs, management and policy makers, as well as the interested public. Mainly published in Norwegian.

In addition, NINA's and NIKU's staff publish their research results in international scientific journals, symposia proceedings, popular science journals, books, newspapers, and other relevant publications.
NINA•NIKU's homepage: http://www.ninaniku.no

Nielsen, Tore R. 1999. Check-list and distribution maps of Norwegian Hoverflies, with description of *Platycheirus laskai* nov. sp. (Diptera, Syrphidae). - NINA Fagrapport 035: 1-99.

Trondheim, January 1999

ISSN 0805-469X
ISBN 82-426-1004-5

Management field:
Conservation of biodiversity

Editor:
Bjørn Åge Tømmerås
Norwegian Institute for Nature Research
Trondheim

Layout and design
Synnøve Vanvik

Stock: 200

Contact address:
NINA
Tungasletta 2
7485 Trondheim
Tlf: 73 80 14 00
Fax: 73 80 14 01

Availability: Open

Signature of personal responsible:

Bjørn Åge Tømmerås

Assignment for:

Norwegian Institute for Nature Research

Abstract

Nielsen, Tore R. 1999. Check-list and distribution maps of Norwegian Hoverflies, with description of *Platycheirus laskai* nov. sp. (Diptera, Syrphidae). - NINA Fagrapport 035: 1-99.

Hoverfly material from Norway, in the museum collections of the universities in Bergen, Oslo, Trondheim and Tromsø, from private collections including the author's collection, has been revised, and a check-list of 314 species and 71 genera is presented. 51 species are new to the Norwegian fauna. *Platycheirus laskai* n.sp. is described. Six new synonyms are proposed and lectotypes for *Eristalis similis* (Fallén), *Platycheirus angustitarsis* (Kanervo), *Pl. argentatus* (Ringdahl) and *Syrphus ribesii* L. var. *interruptus* Ringdahl are selected. A distribution map is presented for each of the species.

Key words: Hoverflies - Syrphidae - check-list - distribution maps.

Tore R. Nielsen, Sandvedhagen 8, N-4300 Sandnes, Norway

Referat

Nielsen, Tore R. 1999. Sjekkliste og utbredelseskart for norske blomsterfluer med beskrivelse av *Platycheirus laskai* nov. sp. (Diptera, Syrphidae). - NINA Fagrapport 035: 1-99.

Materiale av blomsterfluer i norske universitetsmuseer (Bergen, Oslo, Trondheim og Tromsø) og i private samlinger, herunder forfatterens samling, har blitt bestemt og delvis revidert. Den norske faunaen er forholdsvis artsrik med 314 registrerte arter, fordelt på 71 slekter. Listen inneholder 51 arter nye for norsk fauna. En ny art, *Platycheirus laskai* n.sp. beskrives. Det foreslås seks nye synonymer og det er valgt lektotyper for *Eristalis similis* (Fallén), *Platycheirus angustitarsis* (Kanervo), *Pl. argentatus* (Ringdahl) og *Syrphus ribesii* L. var. *interruptus* Ringdahl. Kart over kjent utbredelse følger for hver art.

Emneord: Blomsterfluer - Syrphidae - sjekkliste - utbredelseskart.

Tore R. Nielsen, Sandvedhagen 8, 4300 Sandnes

Preface

The Norwegian Institute for Nature Research (NINA) has published this report as a NINA Fagrapport. I am very grateful to NINA for offering me this way to publish my check-list and distribution maps of Norwegian hoverflies. Assistant Research Director Bjørn Åge Tømmerås is acknowledged for the editing work.

I am greatly indebted to my many colleagues and friends, and to my family, who enthusiastically contributed with material during the last decades, and who thus participated in surveying the hoverfly fauna of Norway:

Morten A. Falck, Oslo
Arne Fjellberg, Tjøme
Lita Greve Jensen, Bergen
✞ Elina and Arne Nielsen, Sandnes
Inger, Ingunn, Kristin and Thorvald Nielsen, Sandnes
Øistein Berg, Gjettum
Bjørnar Borgersen, Østre Halsen
Trond Grønnestad, Stavanger
Lars Ove Hansen, Oslo
Jon Arve Husby, Trondheim
Eline Benestad Hågvar, Oslo
John Inge Johnsen, Rennesøy
Terje Jonassen, Sjernarøy
Geir Kyllingstad, Figgjo
Tor B. Lund, Oslo
Stig Lundmo, Utskarpen
Astrid Løken, Oslo
Reidar Mehl, Oslo
Fred Midtgaard, Ås
Alf Jacob Nilsen, Hidrasund
Arne C. Nilssen, Tromsø
Thor Jan Olsen, Sarpsborg
Magne Pettersen, Gml. Fredrikstad
Knut Rognes, Hafrsfjord
Bjørn Sagvolden, Rollag
John Skartveit, Bergen
John O. Solem, Trondheim
Geir E. Søli, Oslo
Eva Songe Paulsen, Sand
✞ Tron Soot-Ryen, Oslo
Ivar Stokkeland, Tromsø
Svein Svendsen, Kristiansand
Eldar Wrånes, Kristiansand
Bjørn Økland, Ås
Kaare Aagaard, Trondheim
Johannes E. Aanonby, Leikanger
Leif Aarvik, Ås

My sincere thanks are also due to the following institutions and persons from whom I had the opportunity to examine specimens or types, or had valuable help:

Biosystematics Research Centre, Ottawa, Canada (J.R. Vockeroth, J.M. Cumming)
British Museum (Natural History) (A.C. Pont, K.G.V. Smith, N. P. Wyatt)
Institute of Biology, Novosibirsk, Russia (A.V. Barkalov, N. A. Violovitsh)
Museum of Natural History, Gotenburg, Sweden (T. v. Proschwitz)
Musée Zoologie, Lausanne, Switzerland (P. Goeldlin)
National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA (F.C. Thompson)
Statens Plantevern, Norges landbrukshøgskole, Ås, Norway (T. Edland, J. Fjelddalen)
Swedish Museum of Natural History, Stockholm, Sweden (H. Hippa, P.I.Persson, B. Viklund)
Tromsø Museum, Zoologisk avd., Tromsø, Norway (J. Andersen, R. Bergersen, A. Fjellberg, A.C. Nilssen)
Zoological Institute, Academy of Sciences, St. Petersburg, Russia (S. Yu. Kuznetzov, E. Nartshuk, A.A. Stackelberg)
Zoological Museum, Bergen, Norway (L. Greve Jensen)
Zoological Museum, Berlin, Germany (H. Schumann and M. Kotrba)
Zoological Museum, Copenhagen, Denmark (L. Lyneborg)
Zoological Museum, Helsinki, Finland (W. Hackman, B. Lindeberg, G. Ståhls-Mäkelä, P. Vilkamaa)
Zoological Museum, Lund, Sweden (H. Andersson, R. Danielsson)
Zoological Museum, Turku, Finland (S. Koponen, V. Rinne)
Zoological Museum, University of Oslo, Norway (A. Lillehammer, J.E. Raastad)
Zoölogisch Museum, University of Amsterdam, Netherlands

Hans Bartsch, Järfälla, Sweden
Vitezslav Bičík, Olomouc, Czech Republic
Claus Claussen, Flensburg, Germany
Dieter Doczkal, Malsch, Germany
Volkert S. van der Goot, Amsterdam, Netherlands
Christian Kassebeer, Kiel, Germany
Pavel Láska, Olomouc, Czech Republic
Jan A.W. Lucas, Rotterdam, Netherlands
Alain Maibach, Oron-la-Ville, Switzerland
Libor Mazánek, Olomouc, Czech Republic
Valeri A. Mutin, Komsomolsk-na-Amur, Russia
Martin C.D. Speight, Dublin, Ireland
Ulrich Schmid, Stuttgart, Germany
Axel Ssymank, Bonn, Germany
Steenis, Jeroen van, Uppsala, Sweden
Jens-Hermann Stuke, Aurich, Germany
Ernst Torp, Jelling, Denmark
Lena V. Zimina, Moscow, Russia

Yngvar Berg, Drammen, programmed and printed the Norwegian distribution maps. Last but not least I am grateful to Norwegian Research Council, to L. Meltzers foundation, University of Bergen, to Rogaland fylkeskommune and to Sandnes videregående skole for financial support during my studies.

Sandnes, January 1999

Tore R. Nielsen

Content

Abstract 3
Referat 3
Preface 4

1 Introduction.....5

2 The check-list 6

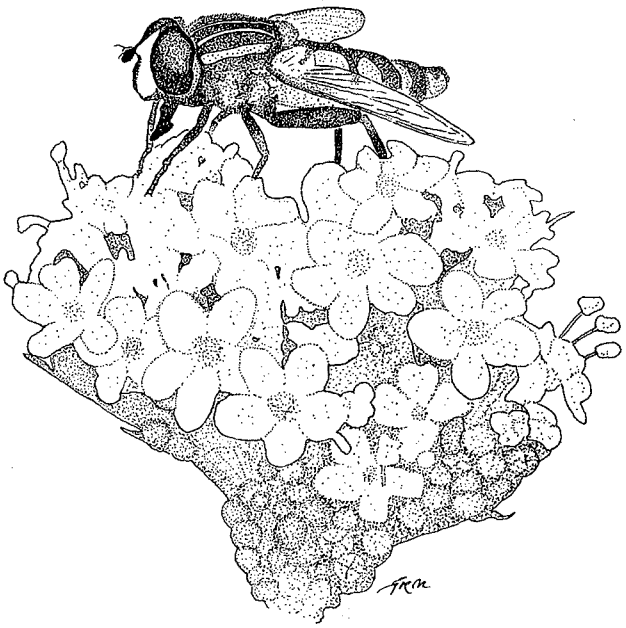
3 Hoverflies in Spitsbergen.....11

4 Description.....11

5 Remarks 13

6 References 16

Appendix 1 The EIS grid system 18
Appendix 2 The number of hoverflies in EIS squares 19
Appendix 3 Distribution maps.....20



1 Introduction

The present check-list is based upon Norwegian material in the museum collections of the universities of Bergen, Oslo, Trondheim and Tromsø, and in different private collections. Siebke (1877) was the first to make a check-list of Norwegian Syrphids, comprising 196 names. Bidenkap (1892, 1896, 1900), Schøyen (1879, 1889), Storm (1891, 1896, 1907) and Strand (1900, 1903, 1906, 1914) published additional material, mainly from south Norway. Ringdahl (1955), Bičík & Láska (1983) and the present author (1966-1997) added several records and species new to the fauna during the last decades.

Thompson & Torp (1986) reported *Sphegina elegans* Schummel and Goeldlin (1989) *Sphaerophoria boreoalpina* and *S. laurae* (leg. J.A.W. Lucas) from South Norway. Vockeroth (1990) described a new *Platycheirus (nielseni)* and Goeldlin et al. (1990) *P. ramsarensis* with occurrence in Norway. Speight (1991) revised European *Callicera* and added *aurata* to the fauna, Maibach, Goeldlin & Speight (1994) revalidated genus *Melanogaster* and found *aerosa* and *parumplicata* to be present in Norway, while Torp (1994) reports *Sphaerophoria batava* and *fatarum*. Kassebeer (1995) revised genus *Chrysosyrphus* with two Norwegian species. Falck (1995) published *Chrysotoxum cautum* and *Mallota megilliformis* and is also publishing *Lejota tarsata* (Meigen) as new to the fauna (Falck, in press). Finally the Norwegian *Eupeodes* species has been revised by Mazánek et al. (1998, 1999).

The present check-list contains 314 species, but still a number of species (maybe 20-30) are expected to be found. Bartsch (1995) published 342 species from Sweden.

A new species, *Platycheirus laskai* n.sp. is described. The following 51 species are here reported new to Norway:

- *Chalcosyrphus jacobsoni* (Stackelberg, 1921), *C. nemorum* (Fabricius, 1805), *C. piger* (Fabricius, 1794), *Cheilosia carbonaria* Egger, 1860, *C. frontalis* Loew, 1857, *C. impressa* Loew, 1840, *C. morio* (Zetterstedt, 1838), *C. nebulosa* Verrall, 1871, *C. pallipes* (Loew, 1863), *C. proxima* (Zetterstedt, 1843), *C. psilophthalma* (Becker, 1894), *C. rufimana* (Becker, 1894), *C. uviformis* (Becker, 1894), *C. velutina* Loew, 1840, C. *vulpina* (Meigen, 1822), *Dasysyrphus nigricornis* (Verrall, 1873), *Epistrophe cryptica* Doczkal & Schmid, 1994, *E. flava* Doczkal & Schmid, 1994, *E. similis* Doczkal & Schmid, 1994, *Eristalis picea* (Fallén, 1817), *E. pseudorupium* Kanervo, 1938, *E. tundrarum* Frey, 1932, *Eumerus flavitarsis* Zetterstedt, 1843, *E. ornatus* Meigen, 1822, *Eupeodes abiskoensis* (Dušek & Láska, 1973), *E. curtus* (Hine, 1922), *E. tirolensis* (Dušek & Láska, 1973), *Heringia (Neocnemodon) verrucula* (Collin, 1931), *Leucozona nigripila* Mik, 1888, *Melangyna barbifrons* (Fallén, 1817), *M. ericarum* (Collin, 1946), *Microdon latifrons* Loew, 1856, *Parasyrphus groenlandicus* (Nielsen, 1910), *P. proximus* Mutin, 1990, *Platycheirus aeratus* Coquillet, 1900, *P. amplus* Curran, 1927, *P. carinatus* (Curran,

1927), *P. europaeus* Goeldlin, Maibach & Speight, 1990, *P. holarcticus* Vockeroth, 1990, *P. hyperboreus* (Stæger, 1845), *P. kittilaensis* Dušek & Láska, 1982, *P. nigrofemoratus* Kanervo, 1934, *P. occultus* Goeldlin, Maibach & Speight, 1990, *P. varipes* Curran, 1923, *Sphaerophoria bankowskae* Goeldlin, 1989, *S. chongjini* Bankowska, 1964, *S. potentillae* Claussen, 1984, *Syrphus admirandus* Goeldlin, 1996, *Xylota meigeniana* Stackelberg, 1964, *X. suecica* (Ringdahl, 1943) and *X. triangularis* Zetterstedt, 1838.

2 The check-list

(Genera and species arranged alphabetically)

Anasimyia Schiner, 1864
Anasimyia contracta Claussen & Torp, 1980
A. interpuncta (Harris, 1776)
A. lineata (Fabricius, 1787)
A. lunulata (Meigen, 1822)
A. transfuga (Linnaeus, 1758)

Arctophila Schiner, 1860
Arctophila bombiformis (Fallén, 1810)

Baccha Fabricius, 1805
Baccha elongata (Fabricius, 1775)
B. obscuripennis Meigen, 1822

Blera Billberg, 1820
Blera fallax (Linnaeus, 1758)

Brachyopa Meigen, 1822
Brachyopa bicolor (Fallén, 1817)
B. cinerea Wahlberg, 1844
B. dorsata Zetterstedt, 1838
B. obscura Thompson & Torp, 1982
B. pilosa Collin, 1939
B. testacea (Fallén, 1817)
B. vittata Zetterstedt, 1843

Brachypalpoides Hippa, 1978
Brachypalpoides lentus (Meigen, 1822)

Brachypalpus Macquart, 1834
Brachypalpus laphriformis (Fallén, 1816)

Callicera Panzer, 1809
Callicera aenea (Fabricius, 1781)
C. aurata (Rossi, 1790)

Chalcosyrphus Curran, 1925
Chalcosyrphus jacobsoni (Stackelberg, 1921)
C. nemorum (Fabricius, 1805)
C. piger (Fabricius, 1794)
C. valgus (Gmelin, 1790)

Chamaesyrphus Mik, 1895
Chamaesyrphus caledonicus Collin, 1940
C. scaevoides (Fallén, 1817)

Cheilosia Meigen, 1822
subg. *Cheilosia* s.str.
Cheilosia albipila Meigen, 1838
C. albitarsis (Meigen, 1822)
C. alpina (Zetterstedt, 1838)
C. angustigenis (Becker, 1894)
C. bergenstammi (Becker, 1894)
C. carbonaria Egger, 1860
C. chrysocoma (Meigen, 1822)

C. fasciata Schiner & Egger, 1853
C.flavipes (Panzer, 1798)
C. fraterna (Meigen, 1830)
C. frontalis Loew, 1857
C. gigantea (Zetterstedt, 1838)
C. grossa (Fallén, 1817)
C. illustrata (Harris, 1780)
C. impressa Loew, 1840
C. latifrons (Zetterstedt, 1843)
intonsa Loew, 1857
C. longula (Zetterstedt, 1838)
C. melanopa (Zetterstedt, 1843)
C. morio (Zetterstedt, 1838)
C. mutabilis (Fallén, 1817)
C. nebulosa Verrall, 1871
C. pagana (Meigen, 1822)
C. pallipes (Loew, 1863)
C. praecox (Zetterstedt, 1843)
C. proxima (Zetterstedt, 1843)
C. psilophthalma (Becker, 1894)
C. rufimana (Becker, 1894)
C. scutellata (Fallén, 1817)
C. semifasciata (Becker, 1894)
C. sootryeni Nielsen, 1970
C. uviformis (Becker, 1894)
C. variabilis (Panzer, 1798)
C. velutina Loew, 1840
C. vernalis (Fallén, 1817)
C. vulpina (Meigen, 1822)
C. species (group D)
subg. *Nigrocheilosia* Shatalkin, 1975
C. nigripes (Meigen, 1822)
C. pubera (Zetterstedt, 1838)
C. sahlbergi (Becker, 1894)
C. vicina (Zetterstedt, 1849)
nasutula Becker, 1894

Chrysogaster Meigen, 1803
Chrysogaster cemiteriorum (Linnaeus, 1758)
C. solstitialis (Fallén, 1817)

Chrysosyrphus Sedman, 1965 (= *Helleniola* Stackelberg, 1965)
Chrysosyrphus nasuta (Zetterstedt, 1838)
C. niger (Zetterstedt, 1843)

Chrysotoxum Meigen, 1803
Chrysotoxum arcuatum (Linnaeus, 1758)
C. bicinctum (Linnaeus, 1758)
C. cautum (Harris, 1776)
C. fasciatum (Müller, 1764)
C. fasciolatum (De Geer, 1776)
C. vernale Loew, 1841

Criorhina Meigen, 1822
Criorhina asilica (Fallén, 1816)
C. ranunculi (Panzer, 1804)

Dasysyrphus Enderlein, 1838
Dasysyrphus albostriatus (Fallén, 1817)
D. hilaris (Zetterstedt, 1843)
D. friuliensis (v.d. Goot, 1960)
D. nigricornis (Verrall, 1873)
obscura Zetterstedt, 1838, as *Scaeva*
D. pauxillus Williston, 1887
nigricornis auct.
D. pinastri (De Geer, 1776)
lunulatus auct., nec. Meigen, 1822
D. tricinctus (Fallén, 1817)
D. venustus (Meigen, 1822)

Didea Macquart, 1834
Didea alneti (Fallén, 1817)
D. fasciata Macquart, 1834
D. intermedia Loew, 1854

Doros Meigen, 1803
Doros profuges (Harris, 1780)

Epistrophe Walker, 1852
Epistrophe cryptica Doczkal & Schmid, 1994
E. eligans (Harris, 1780)
E. flava Doczkal & Schmid, 1994
E. grossulariae (Meigen, 1822)
E. melanostoma (Zetterstedt, 1843)
E. nitidicollis (Meigen, 1822)
E. ochrostoma (Zetterstedt, 1849)
E. similis Doczkal & Schmid, 1994

Epistrophella Dušek & Láska, 1967
Epistrophella euchroma (Kowarz, 1885)

Episyrphus Matsumura & Adachi, 1917
Episyrphus balteatus (De Geer, 1776)

Eriozona Schiner, 1860
subg. *Eriozona* s.str.
Eriozona syrphoides (Fallén, 1817)
subg. *Megasyrphus* Dušek & Láska, 1967
E. erratica (Linnaeus, 1758)
annulipes (Zetterstedt, 1838)

Eristalinus Rondani, 1845
Eristalinus aeneus (Scopoli, 1763)
E. sepulchralis (Linnaeus, 1758)

Eristalis Latreille, 1804
Eristalis abusiva Collin, 1931
E. anthophorina (Fallén, 1817)
E. anthophorina var. *lapponica* Schirmer, 1913
E. arbustorum (Linnaeus, 1758)
E. cryptarum (Fabricius, 1794)
E. fratercula (Zetterstedt, 1838)
pilosus Loew, 1865
vallei Kanervo, 1934 as *Eristalomyia*
tammensis Bagatshanova, 1980
E. gomojunovae Violovitsh, 1977
E. horticola (De Geer, 1776)
E. interrupta (Poda, 1761)
E. intricaria (Linnaeus, 1758)

E. oestracea (Linnaeus, 1758)
E. pertinax (Scopoli, 1763)
flavitarsis Malm, 1863 as *Syrphus*
E. picea (Fallén, 1817)
E. pseudorupium Kanervo, 1938
E. rupium Fabricius, 1805
E. similis (Fallén, 1817)
pratorum Meigen, 1822, **nov. syn.**
E. tenax (Linnaeus, 1758)
E. tundrarum Frey, 1932

Eumerus Meigen, 1822
Eumerus flavitarsis Zetterstedt, 1843
E. ornatus Meigen, 1822
E. strigatus (Fallén, 1817)
E. tuberculatus Rondani, 1857

Eupeodes Osten Sacken, 1877
subg. *Eupeodes* s.str.
*Eupeodes abiskoensis (*Dušek & Láska, 1973)
E. bucculatus (Rondani, 1857)
latilunulatus (Collin, 1931)
E. curtus (Hine, 1922)
E. corollae (Fabricius, 1794)
E. latifasciatus (Macquart, 1829)
E. lundbecki (Soot-Ryen, 1946)
E. luniger (Meigen, 1822)
E. nielseni (Dušek & Láska, 1976)
E. nitens (Zetterstedt, 1843)
E. punctifer (Frey, 1934)
E. tirolensis (Dušek & Láska, 1973)
E. nov.sp. Mazánek, Láska & Bičík, in press
subg. *Lapposyrphus* Dušek & Láska, 1967
E. lapponicus (Zetterstedt, 1838)

Fagisyrphus Dušek & Láska, 1967
Fagisyrphus cinctus (Fallén, 1817)

Ferdinandea Rondani, 1844
Ferdinandea cuprea (Scopoli, 1763)

Hammerschmidtia Schummel, 1834
Hammerschmidtia ferruginea (Fallén, 1817)

Helophilus Meigen, 1822
Helophilus affinis Wahlberg, 1844
H. groenlandicus (Fabricius, 1780)
H. hybridus Loew, 1846
H. lapponicus Wahlberg, 1844
borealis Staeger, 1845
H. pendulus (Linnaeus, 1758)
H. trivittatus (Fabricius, 1805)

Heringia Rondani, 1856
subg. *Heringia* s.str.
Heringia heringi (Zetterstedt, 1843)
subg. *Neocnemodon* Goffe, 1844
H. pubescens (Delucchi & Pschorn-Walcher, 1955)
H. verrucula (Collin, 1931)
H. vitripennis (Meigen, 1822)

Lejogaster Rondani, 1857
Lejogaster metallina (Fabricius, 1777)
L. tarsata (Meigen, 1822)

Lejota Rondani, 1857
Lejota ruficornis (Zetterstedt, 1843)

Leucozona Schiner, 1860
subg. *Ischyrosyrphus* Bigot, 1882
Leucozona glaucia (Linnaeus, 1758)
L. laternaria (Müller, 1776)
subg. *Leucozona* s.str.
L. lucorum (Linnaeus, 1758)
L. nigripila Mik, 1888

Mallota Meigen, 1822
Mallota megilliformis (Fallén, 1817)

Melangyna Verrall, 1901
Melangyna arctica (Zetterstedt, 1838)
M. barbifrons (Fallén, 1817)
M. coei Nielsen, 1971
M. compositarum (Verrall, 1873)
M. ericarum (Collin, 1946)
M. lasiophthalma (Zetterstedt, 1843)
M. lucifera Nielsen, 1980
M. quadrimaculata (Verrall, 1873)
M. umbellatarum (Fabricius, 1794)

Melanogaster Rondani, 1857
Melanogaster aerosa (Loew, 1843)
M. parumplicata (Loew, 1840)

Melanostoma Schiner, 1860
Melanostoma dubium (Zetterstedt, 1838)
M. mellinum (Linnaeus, 1758)
M. scalare (Fabricius, 1794)

Meligramma Frey, 1946
Meligramma guttata (Fallén, 1817)
M. triangulifera (Zetterstedt, 1843)

Meliscaeva Frey, 1946
Meliscaeva auricollis (Meigen, 1822)
M. cinctella (Zetterstedt, 1843)

Merodon Meigen, 1803
Merodon equestris (Fabricius, 1794)

Microdon Meigen, 1803
Microdon eggeri Mik, 1897
M. latifrons Loew, 1856
M. mutabilis (Linnaeus, 1758)

Myathropa Rondani, 1845
Myathropa florea (Linnaeus, 1758)

Neoascia Williston, 1886
Neoascia geniculata (Meigen, 1822)
N. interrupta (Meigen, 1822)

N. meticulosa (Scopoli, 1763)
N. podagrica (Fabricius, 1775)
N. subchalybea Curran, 1925
petsamoensis Kanervo, 1934, **nov. syn**
N. tenur (Harris, 1780)

Orthonevra Macquart, 1829
Orthonevra erythrogona (Malm, 1863)
O. geniculata (Meigen, 1830)
O. intermedia Lundbeck, 1916
O. nobilis (Fallén, 1817)
O. stackelbergi Thompson & Torp, 1982

Paragus Latreille, 1804
subg. *Pandasyophthalmus* Stuckenberg, 1954
Paragus haemorrhous Meigen, 1822
P. tibialis (Fallén, 1817)
subg. *Paragus* s.str.
P. finitimus Goeldlin, 1971
P. majoranae Rondani, 1857
P. punctulatus Zetterstedt, 1838

Parasyrphus Matsumura, 1917
Parasyrphus annulatus (Zetterstedt, 1838)
P. groenlandicus (Nielsen, 1910)
P. lineolus (Zetterstedt, 1843)
P. macularis (Zetterstedt, 1843)
P. malinellus (Collin, 1952)
P. nigritarsis (Zetterstedt, 1843)
P. proximus Mutin, 1990
P. punctulatus (Verrall, 1873)
P. tarsatus (Zetterstedt, 1838)
P. vittiger (Zetterstedt, 1843)

Parhelophilus Girschner, 1897
Parhelophilus consimilis (Malm, 1863)
P. versicolor (Fabricius, 1794)

Pelecocera Meigen, 1822
Pelecocera tricincta (Meigen, 1822)

Pipiza Fallén, 1810
Pipiza austriaca Meigen, 1822
P. bimaculata Meigen, 1822
P. lugubris (Fabricius, 1775)
P. luteitarsis Zetterstedt, 1843
P. noctiluca (Linnaeus, 1758)
P. quadrimaculata (Panzer, 1804)

Pipizella Rondani, 1856
Pipizella viduata (Linnaeus, 1758)

Platycheirus Lepeletier & Serville, 1828
Platycheirus aeratus Coquillet, 1900
angustitarsis Kanervo, 1934, **nov. syn.**
P. albimanus (Fabricius, 1781)
P. ambiguus (Fallén, 1817)
P. amplus Curran, 1927
P. angustatus (Zetterstedt, 1843)
P. carinatus (Curran, 1927)
?hirtipes Kanervo, 1938
P. clypeatus (Meigen, 1822)
P. discimanus (Loew, 1871)
P. europaeus Goeldlin, Maibach & Speight, 1990
P. fulviventris (Macquart, 1829)
P. granditarsis (Forster, 1771)
P. groenlandicus Curran, 1927
monticolus Nielsen, 1972:91 (preoccupied by Jones, 1917)
boreomontanus Nielsen, 1981:101 (new name for *monticolus* Nielsen, 1972)
P. holarcticus Vockeroth, 1990
P. hyperboreus (Stæger, 1845)
P. immarginatus (Zetterstedt, 1849)
P. jaerensis Nielsen, 1971
P. kittilaensis Dušek & Láska, 1982
P. laskai nov.sp.
P. latimanus (Wahlberg, 1845)
P. lundbecki (Collin, 1931)
fjellbergi Nielsen, 1974
P. manicatus (Meigen, 1822)
P. nielseni Vockeroth, 1990
P. nigrofemoratus Kanervo, 1934
albimanus var. *nigrofemoratus* Kanervo, 1934: 122
P. occultus Goeldlin, Maibach & Speight, 1990
P. parmatus Rondani, 1857
P. peltatus (Meigen, 1822)
P. perpallidus (Verrall, 1901)
P. podagratus (Zetterstedt, 1838)
nudipes Becker, 1900, **nov. syn.**
P. ramsarensis Goeldlin, Maibach & Speight, 1990
P. rosarum (Fabricius, 1787)
P. scambus (Stæger, 1843)
P. scutatus (Meigen, 1822)
P. subordinatus (Becker, 1915)
P. tarsalis (Schummel, 1836)
P. transfugus (Zetterstedt, 1838)
celsus Violovitsh, 1975, **nov. syn.**
P. varipes Curran, 1923
argentatus Ringdahl, 1936, **nov. syn.**

Portevinia Goffe, 1944
Portevinia maculata (Fallén, 1817)

Psilota Meigen, 1822
Psilota anthracina Meigen, 1822

Rhingia Scopoli, 1763
Rhingia borealis Ringdahl, 1928
R. campestris Meigen, 1822

Scaeva Fabricius, 1805
Scaeva pyrastri (Linnaeus, 1758)
S. selenitica (Meigen, 1822)

Sericomyia Meigen, 1803
Sericomyia arctica Schirmer, 1913
S. jakutica (Stackelberg, 1927)
S. lappona (Linnaeus, 1758)
S. nigra Portschinsky, 1873
S. silentis (Harris, 1776)

Sphaerophoria Lepeletier & Serville, 1828
Sphaerophoria abbreviata Zetterstedt, 1859
S. bankowskae Goeldlin, 1989
S. batava Goeldlin, 1974
S. boreoalpina Goeldlin, 1989
S. chongjini Bankowska, 1964
S. fatarum Goeldlin, 1989
S. laurae Goeldlin, 1989
S. loewi Zetterstedt, 1843
S. menthastri (Linnaeus, 1758)
S. philantha (Meigen, 1822)
S. potentillae Claussen, 1984
S. rueppelli (Wiedemann, 1830)
S. scripta (Linnaeus, 1758)
S. taeniata (Meigen, 1822)
S. virgata Goeldlin, 1974

Sphecomyia Latreille, 1829
Sphecomyia vespiformis (Gorski, 1852)

Sphegina Meigen, 1822
subg. *Asiosphegina* Stackelberg, 1975
Sphegina sibirica Stackelberg, 1953
subg. *Sphegina* s.str.
S. clunipes (Fallén, 1816)
S. elegans Schummel, 1843
S. spheginea (Zetterstedt, 1838)

Spilomyia Meigen, 1803
Spilomyia diophthalma (Linnaeus, 1758)
S. manicata (Rondani, 1865)

Syritta Lepeletier & Serville, 1828
Syritta pipiens (Linnaeus, 1758)

Syrphus Fabricius, 1775
Syrphus admirandus Goeldlin, 1996
S. attenuatus Hine, 1922
pilisquamus Ringdahl, 1928
S. ribesii (Linnaeus, 1758)
S. sexmaculatus (Zetterstedt, 1838)
S. torvus Osten Sacken, 1875
S. vitripennis Meigen, 1822

Temnostoma Lepeletier & Serville, 1828
Temnostoma apiforme (Fabricius, 1794)
T. bombylans (Fabricius, 1805)
T. vespiforme (Linnaeus, 1758)

Trichopsomyia Williston, 1888
Trichopsomyia flavitarsis (Meigen, 1822)

TRIGLYPHUS Loew, 1840
Triglyphus primus Loew, 1840

Tropidia Meigen, 1822
Tropidia scita (Harris, 1780)

Volucella Geoffroy, 1762
Volucella bombylans (Linnaeus, 1758)
V. inanis (Linnaeus, 1758)
V. pellucens (Linnaeus, 1758)

Xanthandrus Verrall, 1901
Xanthandrus comtus (Harris, 1780)

XANTHOGRAMMA Schiner, 1860
Xanthogramma festivum (Linnaeus, 1758)
citrofasciatum (De Geer, 1776)
X. pedissequum (Harris, 1776)

Xylota Meigen, 1822
Xylota coeruleiventris Zetterstedt, 1838
X. florum (Fabricius, 1805)
X. meigeniana Stackelberg, 1964
X. segnis (Linnaeus, 1758)
X. suecica (Ringdahl, 1943)
X. sylvarum (Linnaeus, 1758)
X. tarda Meigen, 1822
X. triangularis Zetterstedt, 1838

3 Hoverflies in Spitsbergen

Three hoverfly species have been found in Spitsbergen:

Parasyrphus tarsatus (Zetterstedt, 1838)
?syn. *dryadis* Holmgren, 1869: 98 as *Scaeva*
Collected at Adventfjorden (Advent Bay), Sassendalen (in numbers), Kongsfjorden (Könings-Bai), Gipsdalen (Gyps Valley) and Gordøyane (Deer Bay Islands). The specimens were of a smaller size and darker than "normal" *tarsatus*. Holmgren (1869) therefore described it as a new species. Kanervo (1934) gave it status as a variety: *Syrphus tarsatus* var. *distinctus* (the males) and *S. tarsatus* var. *immaculatus* (the females).

Syrphus ribesii (Linnaeus, 1758)
At Liefdefjord (Liefde Bay), northern West-Spitsbergen: specimens on the snow together with the spruce aphids *Dilachnus picae* Pz. Drift from eastern Fennoscandia? (Elton, 1925).

Syrphus torvus Osten Sacken, 1875
A few specimens collected in 1975 at Stuphallet (near Ny Ålesund), Gazertfjellet and Karl Schmidts fjell (Sendstad, 1976).

4 Description

Platycheirus laskai nov.sp.
Diagnosis: male much resembling and about the size of *albimanus* (Fabricius), but with narrower front legs. It is close to the smaller *sticticus* (Meigen). See **Table 1**.

Description of male. **Figure 1a-d.**
Head: angle of eyes 90°. Frons aeneous, black-haired. Face slightly more shining, not so dusted as in *albimanus*. Third antennal joint all black, or reddish-brown below.

Thorax: mesonotum duller than in *albimanus*, brownish black-haired, and broadly so along the sides. Pleurae shining aeneous with light whitish dusting, mainly white-haired but sometimes also with black hairs on meso- and pteropleuron. Fore legs: femora on apical 1/3 with a long and strong, black bristle which is more or less curved at tip. On basal two-thirds the femorae behind with a mixture of another two strong bristles, several shorter bristly hairs and with tufts of long hairs with flattened and broadened tips, followed by a tuft of long, white hairs near base. Fore tibia narrower than in *albimanus*, widening more abruptly on apical ¼ (on about apical 1/3 in *albimanus*). Fore tibia also with only a few long hairs laterally. Metatarsus slender, twice as long as broad, the underside yellow with an apical darkened area followed by a more basal, bare area. Second tarsal joint about as long as broad, rounded at base (slightly broader than long, and more angular in *albimanus*). The underside of this joint with a dark spot at its base. Wings covered by microtrichia except for a narrow area at base of 2nd basal cell. Squamulae dirty white to greyish brown. Knob of halters dark greyish-brown.

Abdomen: the tergites dull black. Tergite 2 with a small greyish dust-spot on each side, and the tergite only narrowly metallic shining along the sides. Tergite 3 and 4 each with a couple of small greyish-white triangular spots, which are distinctly removed from base of the tergites. Sternites shining aeneous black, very light dusted, mainly with white hairs. Sternite 1 with shorter and longer hairs, the longest hairs are three times as long as thickness of hind femur.

Female: unknown.
Material examined: **Norway**: Holotype labelled BV, Hol: Geilo 18.7.1973, leg. T. Nielsen. Paratypes: ON, Vågå: Vågåmo 7.7.1981 (1 male), leg. Thv. A. Nielsen; TRY, Harstad: Harstad 29.6.1984 (1 male), leg. T.R. Nielsen; TEI, Kviteseid: v/Leirvann, 615 m 29.6.1975 (1 male), leg. L. Greve; HOY, Bergen: Stend 12.6.1966 (1 male), leg. A. Løken; BV, Hol: v/kirken 3.7.1965 (1 male), leg. A. Løken; AK, Oslo, "T. Juli 45" = Tøien July 1845 (1 male), leg. H. Siebke; AK, Eidsvoll: Dal 27 May 1973 (1 male), leg. M. Falck; ON, Nord-Fron: Hesteskobakken 13.6.1987 (3 males). **Germany**: Feldberg/Schwarzw., Zastler Loch 1370 m, Aceri-Fagetum, Geranium sylv., 5.7.1988 (1 male), leg. U. Buchholz; Bacher-Alm, Einödsbach 1140-1200 m NN NT 94, 9.7.1989 (1 male), leg. F. Malec; Thüringen 1.7.10

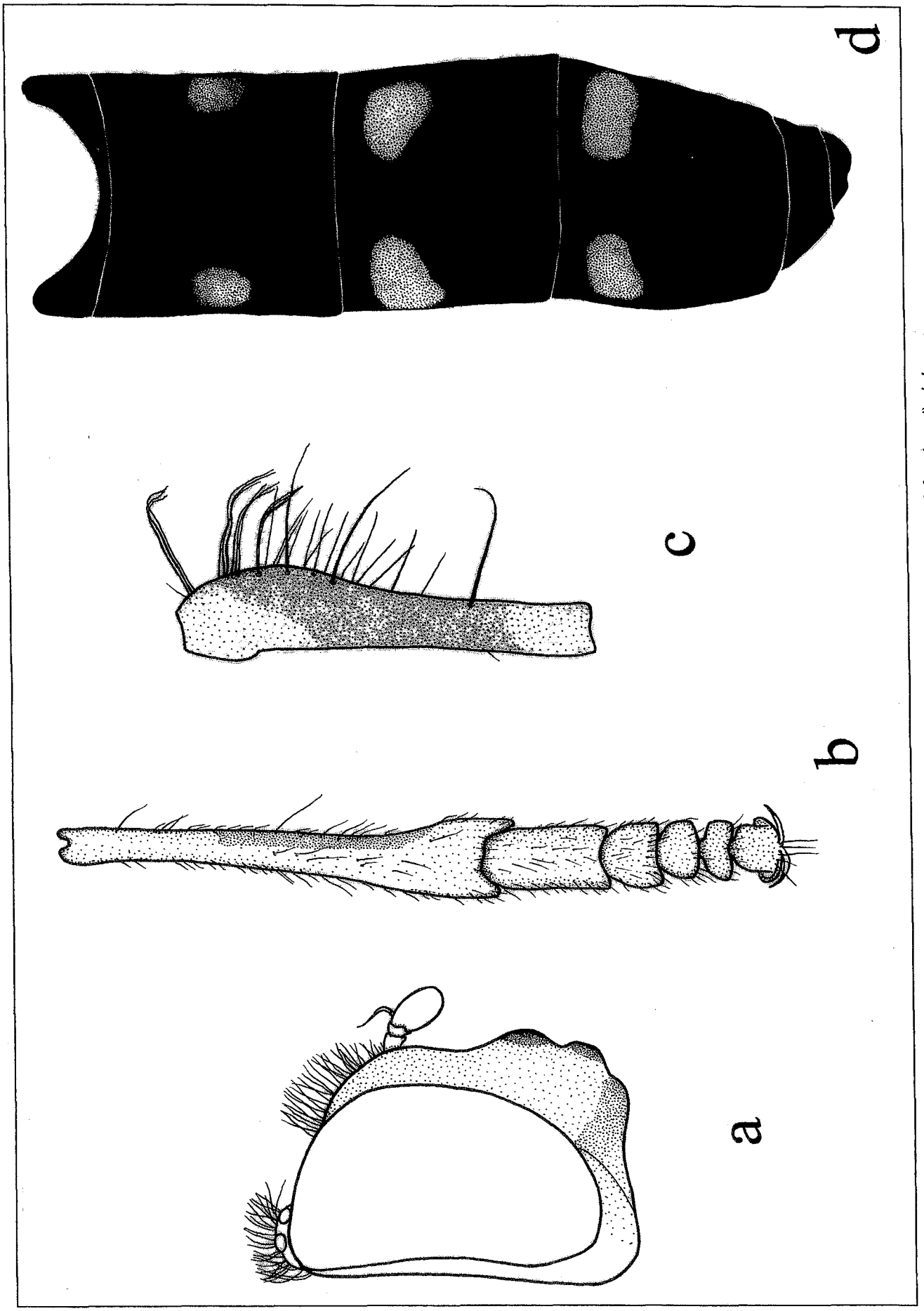


Figure 1. Platycheirus laskai *nov. sp., male holotype. a) Head in lateral view, b) left fore leg, c) femur of left fore leg, d) abdomen.*

(= 1910?) (1 male), leg. ?, loan from J.-H. Stuke. **Czech republic**: CS:MS Beskydy, Murinkový, peat-bog 49.31N/18.39E, 950 m, Barták, 21. VII.1988 (1 male). **Italy**: N. Vento: Val Padola, Bosca di Rinfredda ca. 2,5 km E Kreuzberg Pass, 1700-1900 m, 7.7.1990 (1 male), leg. C. Claussen.

Holotype and one paratype in the author's collection, other paratypes in coll. Claus Claussen, Dieter Doczkal, Morten Falck, Pierre Goeldlin, F. Malec, Jens-Hermann Stuke, Zool. Museum Bergen and Zool. Museum Oslo.

Flight period: 27 May-21July.

Ecology: in Norway *P. laskai* has been collected at wood-edges and on dry slopes in flowering vegetation. The holotype and one paratype (Germany) were collected in flowers of *Geranium sylvaticum*.

Ethymology: I have the great pleasure to dedicate this species to our colleague Pavel Láska, Olomouc, in recognition of his valuable contributions on the knowledge of *Platycheirus*, *Eupeodes* and other Syrphidae.

Table 1. A comparison between *Platycheirus laskai* nov. sp. and *P. sticticus* (Meigen).

Front femur on basal half with tufts of several black, flattened spearlike hairs which are bowed at their tips. Front metatarsus slightly broader, the ratio breadth : length = 1 : 2,2. Underside of metatarsus with a dark spot on apical ¼. Tarsal segment 2 darkened at base. - Tibia of middle legs laterally at middle with one or more strong, dark bristles. - Sternite 1 medially with many long hairs, of which the longest are several times longer than the thickness of hind femur. - A medium-sized, rather robust species with about the size of *albimanus*. *laskai* nov.sp.

Front femur on basal half with single, erect hairs, or with one or two flattened hairs which are bowed at their tips. Front metatarsus a little narrower, the ratio breadth: length = 1 : 2,0. Both metatarsus and the following segment all yellow. - Tibia of middle legs with only short hairs, or exceptionally with one britsle. - Sternite 1 medially with only a few and short hairs. The hairs are only slightly longer than thickness of hind femur. A small, slender species. *sticticus* (Meigen)

5 Remarks

Cheilosia species
A medium sized species of group D found in subalpine birch forests in Central Norway and in NE Finnmark. In examination by Claussen.

Eristalis pseudorupium Kanervo
Eristalis vitripennis var. *pseudorupium* Kanervo, 1938a: 33

The characters of this species will be given in a paper by Hippa, Nielsen and van Steenis (in press).

Eristalis similis (Fallén) * / **
Syrphus similis Fallén, 1817: 25

Type locality: Skåne and eastern Gøtaland, Sweden.
There are *similis* types as well in NRM, Stockholm as in ZM, Lund. In Stockholm the material consists of four specimens: three females and one male. Only two of them, both females, carry handwritten labels of Fallén. The other two, a female *similis* and a male *pertinax*, are unlabelled and it is uncertain whether they can be regarded as type specimens.

The Lund collections contain six *"similis"* specimens. The one is a *similis* female labelled "*S. similis* ♀, Lund" with Zetterstedts handwriting.** The series otherwise consists of three *similis* specimens (male, two females) and male and female *pertinax*, all of which have only a small red or yellow label and no written informations. Their origin and status as type specimens are uncertain.

I have selected as lectotype the female from NRM, Stockholm marked "*Syrphus similis* ♀ Fallén", as paralectotypes the other NRM female labelled "var β ♀" and the ZML female with Zetterstedts handwriting, hereby designated. All three specimens fit well with Fallén's description.

Different authors (Verrall 1901, Lundbeck 1916, Sack 1932) refer *similis* as a synonym of *pertinax*. However, as well lectotype as paralectotypes (all with original labels) are conspecific with the female holotype in Paris (checked by Martin C.D. Speight), and agrees with the concepts of the species. **New synoym.**

* This synonymy was insufficiently published in a previous publication (Nielsen 1995), due to a part of the text that was not printed.

** According to Roy Danielsson (pers.comm.), ZML, Fallén and Zetterstedt used to exchange types and other material, that is why Fallén's type series are often shared between the two museums.

Neoascia petsamoensis Kanervo, 1934
Neoascia petsamoensis Kanervo, 1934: 256-260.

Kanervo described *petsamoensis* from two females. Hippa (1967) published additional material and described and figured a male allotype.

I have previously published it from Norway (Nielsen, 1996) as *N. sphaerophoria* Curran. Later I compared the lectotype and allotype *petsamoensis* with a male homotype and a female of the North American *subchalybea* Curran, 1925 (both determined by J. R. Vockeroth) and found them conspecific. Both types of *petsamoensis* have the characteristics of *subchalybea*, e.g. large antennae, a rostrum like protruding lower part of face, and wholly black tergites in both sexes. The male genitalia were of the same typical shape. **New synonym.**

Neoascia subchalybea is a northern, early species with flight period May-June.

Neoascia subchalybea Curran, 1925
Neoascia subchalybea Curran, 1925: 53

See *petsamoensis* Kanervo

Platycheirus aeratus Coquillett
Platycheirus aeratus Coquillett, 1900:430

See *P. angustitarsis* (Kanervo).

Platycheirus angustitarsis (Kanervo)
Platychirus angustitarsis Kanervo, 1934: 120-122
Platycheirus angustitarsis (Nielsen, 1974: 171)

In Kanervos type material from Petsamo there are two males and five females. The two males, one of them without head and most legs, carry labels with the author's handwriting. I have selected the other male dated "24. 80", "Fennia, Petsamo, Pitkajärvi, Erkki Kanervo" and "Platychirus angustitarsis n.sp.", as lectotype, hereby designated. It is in accordance with the authors description. The other male and the females are designated as paralectotypes.

I have compared the types with North American specimens of *aeratus* Coquillett determined by Vockeroth, and found them conspecific. I therefore suggest *angustitarsis* as a junior synonym of *aeratus*, **new synonym**.

Platycheirus argentatus (Ringdahl)
Platychirus argentatus Ringdahl, 1936: 3

Ringdahl described this species from alpine areas in northern Sweden. The type series consists of six males. I have compared them with a homotype and other specimens of the North American *varipes* (Curran), determined by Vockeroth, and found them identical. I have selected a specimen labelled "Anaris 17.7.-25", "salp" and "*Platychirus argentatus* Ringd." as lectotype. Three males labelled "Vallbo 4.7.-35", one male "U.åker 22.7.22" and one male labelled "Anaris 17.7.-35" are chosen paralectotypes, hereby designated. **New synonym.**

Platycheirus carinatus (Curran)
Melanostoma carinata Curran, 1927: 11

This may be the species Kanervo described as *hirtipes* (see below). In the ZM Helsinki collections is a male *carinatus* from Kilpisjärvi (NW Finland), and there are several records from alpine and boreal parts of Norway.

Platycheirus celsus Violovitsh
Platycheirus celsus Violovitsh, 1975: 74

Described on basis of male holotype from Kazahkstan, Tarbagatai mountain ridge, Urdzhar. I have studied the type, labelled as follows: "Bepx. P. Yp ap 2000m, Tap arata, 30.VI. 975" (white label), "Holotypus *Platychirus celsus* Violovitsh" (red label) and "*celsus* Viol., 75" (white label). It is without genitalia. I have found it identical with *transfugus* (Zetterstedt, 1838). **New synonym.**

Platycheirus complicatus (Becker)
Platychirus complicatus Becker, 1889: 172

See *kittilaensis* Dušek & Láska

Platycheirus hirtipes (Kanervo)
Platychirus hirtipes Kanervo, 1938: 150
Described from two specimens, male and female, from Dudinka, North Siberia. None of the types have been found and may have been destroyed during the 2nd World War (Hippa pers. comm.).

Kanervo's description and drawings of the male type may indicate that it is conspecific with *carinatus* (Curran). It lacks, however, details about the front metatarsus: *carinatus* has some long and curved bristly hairs posteriorly, Kanervo's figure of front tarsus gives no such indications. Untill the types or more informations show up, the status of *hirtipes* therefore will be uncertain.

Platycheirus kittilaensis Dušek & Láska
Platycheirus kittilaensis Dušek & Láska, 1982: 384

Previously reported from Norway by me (Nielsen, 1981) as *complicatus* (Becker). Both species have slender fore tibia, triangular dilated front metatarsus and brown abdominal spots (tergite 2-4) with light whitish dusting. Dušek and Láska found that the two species differ in the shape of front metatarsus. I have compared the types and other material of *complicatus* (n = 7) and *kittilaensis* (n = 31) and agree in their conclusion:

complicatus has a narrower (less triangular) metatarsus. 2 tarsal joint squarish, about as broad as long. Ratio maximum width : length = 1,08.

kittilaensis has a more triangular metatarsus. 2. tarsal joint slightly variable, broader than long. Ratio maximum width : length = 1,44.

In Norway *kittilaensis* has been found mainly in open subalpine forests, often in flowers of *Geranium sylvaticum* and *Ranunculus acris.*

Platycheirus nudipes (Becker)
Platychirus nudipes n.sp., 1900: 6-7.
Becker gave this name to a male specimen collected at Kuschevat in NW-Siberia. In his description Becker does not mention the obvious very broad front tibia of the

specimen, a character typical for *podagratus* (Zett.) and the North American *tenebrosus* Coquillett. I have compared the *nudipes* holotype with both species and found it conspecific with *podagratus*, **new synonym**.

Spilomyia manicata (Rondani, 1865)

The Norwegian *Spilomyia* material has been studied by Jeroen van Steenis, Uppsala, who concludes that our "*saltuum*" belongs to *manicata*. Further informations will be given in Barendregt, A., van Steenis, J. & van Steenis, J. (in press).

Syrphus ribesii (Linnaeus, 1758): aberrant form.

In the material investigated there are three males with the yellow markings as well separated spots on tergite 2-4 (**figure 2a,b**). The spots are of same width as the bands of normal *ribesii*.

All specimens are from northern latitudes: **Norway**: male labelled "Lakselv (EIS 174), FN: Porsanger 26-27 June 1979, I. & T. Nielsen leg." (locality at 70°04'N, 25°E), in author's collection, and male labelled "Frihetsli 26/7-22, S.R" (locality 68° 47'N, 19°42'E, inner part of county Tromsø, leg. Soot-Ryen), in coll. Tromsø Museum. **Sweden**: one male "Gällivara 30.6-26", leg. O. Ringdahl (locality about 67°12'N, 21°E), in coll. ZM, Lund.

It differs only slightly from *ribesii* var. *interruptus* which was reported from Iceland by Ringdahl (1930). There are three female syntypes in coll. Gøteborg Museum. I have designated the one, labelled "97" and "*Syrphus ribesii* L. var. *interruptus*" as lectotype, and the other two, labelled "97" and "170" respectively, as paralectotypes. The lunulate spots on tergite 3-4 are narrower than in the Norwegian males (**figure 2c**).

An other series of this form in ZM Lund consists of eight females and one male. The male have the abdominal yellow markings as narrow bands on tergites 3-4.

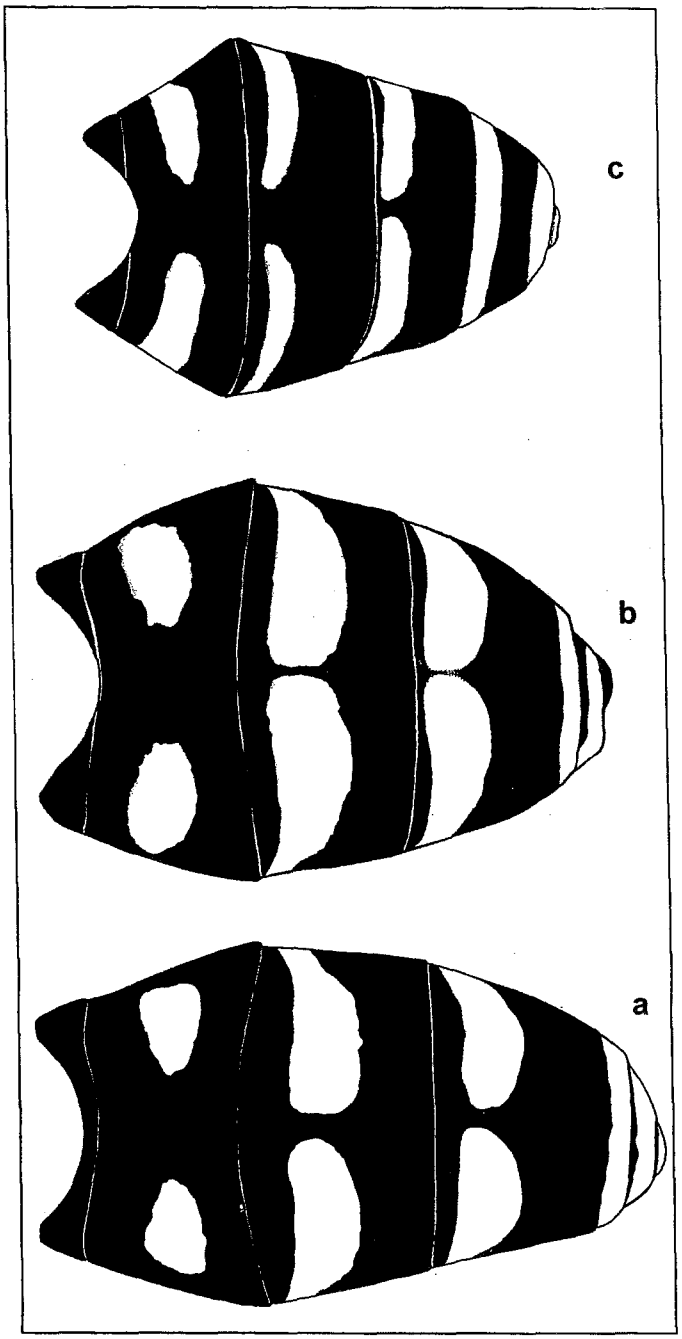


Figure 2. *Abdomens,* Syrphus ribesii *aberrant form. a) male from FN, Porsanger: Lakselv; b) male from TRI, Frihetsli. c)* Syrphus ribesii *var. interruptus, female lectotype.*

6 References

Barendregt, A., van Steenis, J. & van Steenis, J. The European species of the genus *Spilomyia* in Dutch collections. - Ent. Ber. Amst. (in press).

Bartsch, H. 1995. Check list for Swedish Hoverflies, also with records for Finland, Norway, Denmark, Britain and northern Germany, Report.

Becker, Th. 1900. Beiträge zur Dipteren-Fauna Sibiriens. Nordwest-Sibirische Dipteren. - Acta Soc. Sci. Fenn. 26,9: 1-66.

Bičík, V. & Láska, P. 1983. On the subfamily Syrphinae in Sweden and Norway. - Acta Univ. Palack. Olomucensis 78: 49-56.

Bičík, V. & Láska, P. 1995. Revision of type material of *Scaeva obscura* Zetterstedt, 1838 *(Diptera, Syrphidae).* - Acta Univ. Palacki. Olomuc., Biologica 33: 7-14.

Bičík, V., Nielsen, T.R. & Holinka, J. 1996. On seasonal variation in *Eristalis pertinax* (Scopoli) and the status of *E. flavitarsis* (Malm) (Dipt., Syrphidae). - Acta Univ. Palacki. Olomuc., Biologica 34: 7-12.

Bidenkap, O. 1892. Undersøgelser over Diptera Brachycera i Jarlsberg og Laurvigs Amt Sommeren 1891. - Ent. Tidskr. 13 (4): 225-246.

Bidenkap, O. 1896. Diptera Brachycera fra Jarlsberg. - Tromsø Mus. Aarsh. 19: 147-150.

Bidenkap, O. 1900. Foreløbig oversigt over de i det arktiske Norge hidtil bemærkede Diptera Brachycera. - Tromsø Mus. Aarsh. 23: 13-112.

Coquillett, D.W. 1900. Papers from the Harriman Alaska expedition. IX. Entomological results (3): Diptera. - Proc. Wash. Acad. Sci. 2: 389-464.

Curran, C.H. 1925. Revision of the genus *Neoascia* Williston (Diptera: Syrphidea). - Proc. Ent. Soc. Washington 27: 51-62.

Curran, C.H. 1927. Synopsis of the males of the genus *Platycheirus* St. Fargeau and Serville with descriptions of new Syrphinae (Diptera). - Am. Mus. Novit. 247: 1-13.

Dušek, J. & Láska, P. 1982. European species related to *Platycheirus manicatus*, with description of two new species (Diptera, Syrphidae). - Acta ent. bohemoslov, 79: 377-392.

Elton, C.S. 1925. The dispersal of Insects to Spitsbergen. - Transact. Ent. Soc. London: 289-290.

Falck, M. 1996. *Mallota megilliformis* (Fallén, 1817) and *Chrysotoxum cautum* (Harris, 1776) (Dipt., Syrphidae) new to Norway. - Fauna norv. Ser. B 43: 58-60.

Fallén, C. F. 1817. Syrphici Sveciae: 25. Lundae (= Lund).

Goeldlin de Tiefenau, P. 1989. Sur plusieur espèces de *Sphaerophoria* (Dipt., Syrphidae) nouvelles ou méconnues des régions paléarctique et néarctique. - Mitt. Schweitz. Ent. Ges. 62: 41-66.

Goeldlin de Tiefenau, P. 1996. Sur plusieurs nouvelles espèces européennes de *Syrphus* (Diptera, Syrphidae) et clé des espèces paléarctiques du genre. - Mitt. Schweitz. Ent. Ges. 69: 157-171.

Goeldlin de Tiefenau, P., Maibach, A. & Speight, M.C.D. 1990. Sur quelques espèces de *Platycheirus* (Diptera, Syrphidae) nouvelles ou méconnues. - Dipterist Digest, 5:19-44.

Hippa, H. 1967. The male of *Neoascia petsamoensis* Kanervo (Dipt., Syrphidae) with remarks on the females and the distribution of the species. - Ann. Ent. Fenn. 33, 4: 256-260.

Holmgren, A.E. 1869. Bidrag til kännedomen om Beeren Eilands och Spitsbergens insekt-fauna. - K. Svenska Vetensk.-Akad. Handl. 8,5: 1-56.

Kanervo, E. 1934. Einige neue Syrphiden aus Petsamo. - Annls. Soc. zool.-bot. fenn. "Vanamo", 14,5: 115-135.

Kanervo, E. 1938a. Zur Systematik und Phylogenie der Westpaläarktischen Eristalis - Arten (Dipt.) mit einer Revision derjenigen Finnlands. - Annls Univ. Turku., (A) 6: 5-54.

Kanervo, E. 1938b. Die Syrphidenfauna (Dipt.) Sibiriens in Vorläufiger Zusammenstellung. - Annls. ent. fenn., 4,3: 145-170.

Kanervo, E. 1968. Hoverflies (Dipt. Syrphidae) from Spitsbergen. - Ann. Ent. Fenn.. 34: 98-99.

Kassebeer, C. 1995. Revision der paläarktischen Arten der Gattung *Chrysosyrphus* Sedman, 1965 (Diptera, Syrphidae). - Studia dipterologica 2: 283-295.

Lucas, J.A.W., Nielsen, T.R. & Ståhls, G. 1995. The identity of the *Cheilosia* complex *vicina* (Zetterstedt, 1849) - *nigripes* (Meigen, 1822) (Diptera, Syrphidae). - Int. J. Dipt. Research 6: 3-7.

Lundbeck, W. 1916. *Diptera Danica*. Genera and species of flies hitherto found in Denmark. Lonchopteridae-Syrphidae. - Copenhagen 5: 1-603.

Maibach, A., Goeldlin de Tiefenau, P. & Speight, M.C.D. 1994. Limites génériques et caractéristiques de plusieurs genres de la tribu des *Chrysogasterini* (Diptera: Syrphidae). II. Status taxonomique de plusieurs des espèces étudiées et analyse du complexe *Melanogaster macquarti* (Loew). - Ann. Soc. Entomol. Fr. (N.S.), 30,3: 253-271.

Mazánek, L., Bičík, V. & Láska, P. 1998. Redescription and reinstatement of *Eupeodes bucculatus* (Rondani, 1857) and its synonymy (Dipt., Syrphidae). - Acta Univ. Palacki. Olomuc., Fac. rer. nat.(1998), Biologica 36, 27-38.

Mazánek, L., Láska, P. & Bičík, V. 1999. Two new Palaearctic species of *Eupeodes* similar to *E. bucculatus* (Dipt., Syrphidae). - Volucella (in press).

Nielsen, J. C. 1910. A catalogue of the insects of north-east Greenland with descriptions of some larvae. - P. 55-68, 2 pls. in Johansen, F. & Nielsen, J.C., eds. The insects of the "Danmark2" expedition. Meddr. Grønland (1911) 43.

Nielsen, P., Ringdahl, O. & Tuxen, S.L. 1954. *The Zoology of Iceland.* - Diptera I, 3: 68-69.

Nielsen, T.R. 1966. Species of the genus *Helophilus* (Dipt., Syrphidae), found on Jæren, Rogaland. - Norsk ent. Tidsskr. 13: 427-439.

Nielsen, T.R. 1970. *Cheilosia sootryeni* nov. sp. (Dipt., Syrphidae), a Norwegian species resembling *Ch. vernalis* Fallén. - Norsk ent. Tidsskr. 17: 115-118.

Nielsen, T.R. 1971a. Description of the female *Syrphus pilisquamis* Ringd., and a comparison with female *S. ribesii* L. (Dipt., Syrphidae). - Norsk ent. Tidsskr. 18: 41-44.

Nielsen, T.R. 1971b. Syrphidae (Dipt.) from Jæren, Norway, I. With description of two new species. - Norsk ent. Tidsskr. 18: 53-73.

Nielsen, T.R. 1972a. Syrphidae (Dipt.) from Jæren, Norway, II. - Norsk ent. Tidsskr. 19: 63-71.

Nielsen, T.R. 1972b. *Platycheirus monticolus* nov. sp., a northern species confused with *P. discimanus* Loew (Dipt., Syrphidae).- Norsk ent. Tidsskr. 19: 91-98.

Nielsen, T.R. 1972c. Syrphidae (Dipt.) from Ormtjernkampen National Park. - Norsk ent. Tidsskr. 19: 111-112.

Nielsen, T.R. 1972d. New records of Norwegian Syrphid flies (Dipt., Syrphidae). - Norsk ent. Tidsskr. 19: 149-151.

Nielsen, T.R. 1974. Notes on two northern species of the genus *Platycheirus* St.-Farg. et Serv. (Dipt., Syrphidae). - Norsk ent. Tidsskr. 21: 167-172.

Nielsen, T.R. 1979. Hoverflies (Dipt., Syrphidae) associated with Ramson (*Allium ursinum*). - Fauna norv. Ser. B 26: 21-23.

Nielsen, T.R. 1980a. *Cheilosia angustigena* Becker, 1894 (Dipt., Syrphidae) found in Norway. - Fauna norv. Ser. B 27: 79-80.

Nielsen, T.R. 1980b. *Melangyna lucifera* n.sp. from southern Norway (Diptera: Syrphidae). - Ent. scand. 11: 310-312.

Nielsen, T.R. 1981. Studies on Platycheirus Lepeletier & Serville: *P. complicatus* Becker, *P. latitarsis* (Wahlberg) and *P. boreomontanus* nom. nov. (Diptera: Syrphidae). - Ent. scand. 12: 99-102.

Nielsen, T.R. 1990. A survey of some Norwegian Hoverfly genera (Diptera: Syrphidae). - Stavanger Mus. Årbok 1989: 81-100.

Nielsen, T.R. 1992. On the Syrphid genera *Brachyopa* Meigen and *Hammerschmidtia* Schummel in Norway. - Fauna norv. Ser. B, 39: 39-43.

Nielsen, T.R. 1995. Studies on some northern *Eristalis* species (Diptera, Syrphidae). - Int. J. Dipt. Research 6: 129-133.

Nielsen, T.R. 1996. Syrphidae. Blomsterfluer. - pp. 267-270 in Aagaard, K. & Dolmen, D., eds. - Limnofauna Norvegica. Katalog over norsk ferskvannsfauna. Tapir Forlag, Trondheim.

Nielsen, T.R. 1997. The Hoverfly genera *Anasimyia* Schiner, *Helophilus* Meigen, *Parhelophilus* Girschner and *Sericomyia* Meigen in Norway (Diptera, Syrphidae). - Fauna norv. Ser. B 44: 107-122.

Ringdahl, O. 1930. Fünf neue Fliegenformen aus Island. - Ent. Tidskr. 51: 173.

Ringdahl, O. 1936. Anteckningar till svenska arter av släktet *Platychirus* St. Farg. et Serv. - Opusc. ent., 1: 1-3.

Ringdahl, O. 1955. Nya fynd för norska Diptera. - Norsk ent. Tidsskr. IX: 46-54.

Sack, P. 1932. Syrphidae. - pp. 1-451 in Lindner, E., ed. Die Fliegen der paläarktischen Region, 44.

Schøyen, W. 1879. Bidrag til Gudbrandsdalens og Dovrefjelds Insektfauna. Beretningen om en i Sommeren 1877 foretagen entomologisk Reise. - Nyt Mag. Naturv. XXIV, II: 153-220.

Schøyen, W. 1889. Supplement til H. Siebke's Enumeratio Insectorum Norvegicorum, Fasc. IV (Diptera). - Christiania Vidensk. Selsk. Forh. 12: 1-15.

Sendstad, E. 1976. *Syrphus torvus* Osten Sacken (Dipt., Syrphidae). Records from Spitsbergen, Svalbard. - Norw. J. Ent. 23,1: 90-91.

Siebke, J.H.S. 1877. *Enumeratio Insectorum Norvegicorum.* - Fasc. IV, Catalogum Dipterorum Continentem. Pp. 50-74. Christiania (= Oslo).

Speight, M.C.D. & Goeldlin de Tiefenau, P. 1990. Keys to distinguish *Platycheirus angustipes*, *P. europaeus, P. occultus* and *P. ramsarensis* (Dipt., Syrphidae) from other *clypeatus* group species known in Europe. - Dipterists Digest, 5: 5-18.

Speight, M.C.D. 1991. *Callicera aenea, C. aurata, C. fagesii* and *C. maquartii* redefined, with a key to and notes on European *Callicera* species (Diptera: Syrphidae). - Dipterists Digest, 10: 1-25.

Storm, V. 1891. Diptera Brachycera quæ observavit determinavitque (Supplementum ad enumerationem insectorum norvegicorum, auctore H. Siebke). - Kgl. Norske Vidensk. Selsk. Skrifter 1891: 283-313.

Storm, V. 1896. Dipterologiske Undersøgelser. Kgl. Norske Vidensk. - Selsk. Skrifter 1895: 225-241.

Storm, V. 1907. Supplerende Iakttagelser over Insecta Diptera ved Trondhjem. - Kgl. Norske Vidensk. Selsk. Skrifter 1907,5: 1-11.

Strand, E. 1900. Bidrag til Hallingdals og Lyngørs insektfauna. - Nyt Mag. Naturv. 37: 46-72.

Strand, E. 1903. Norske lokaliteter for Diptera. - Christiania Vidensk. Selsk. Forh. 3: 3-11.

Strand, E. 1906. Nye bidrag til Norges hymenopter- og dipterafauna. - Nyt Mag. Naturv. 44: 102-104.

Strand, E. 1914. Weiteres über von mir gesammelte Diptera. In neue Beiträge zur Arthropodenfauna Norwegens. - Nyt Mag. Naturv. 51: 323-329.

Thompson, F.C. & Torp, E. 1986. Synopsis of the European species of *Sphegina* Meigen (Diptera: Syrphidae). - Ent. Scand. 17: 235-269.

Torp, E. 1994. Danmarks Svirrefluer (Diptera: Syrphidae). Danmarks dyreliv (6): 490 pp. Apollo Books.

Verrall, G.H. 1901. Platypezidae, Pipunculidae, and Syrphidae of Great Britain. - British Flies, 8: 1-691.

Violovitsh, N.A. 1975. Some new species of hover-flies (Diptera, Syrphidae) from the fauna of the USSR. - Taksonomyia i ekologiya zhivotnykh Sibiri. Novye i maloizvestnye vidy fauny -Sibiri, 9. Novosibirsk: 73-89.

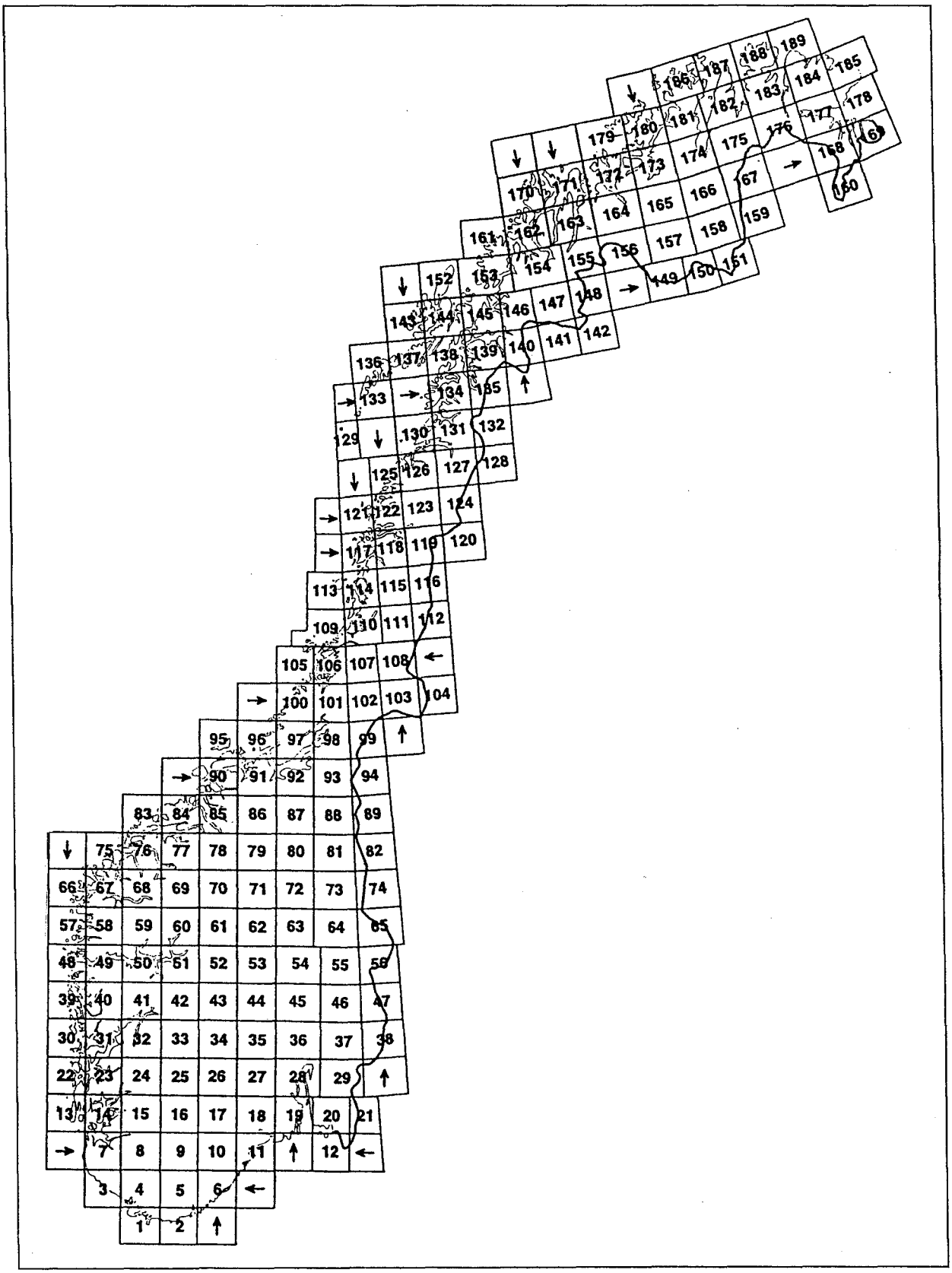
Vockeroth, J.R. 1990. The Flower Flies of the Subfamily Syrphinae of Canada, Alaska, and Greenland. - The Insects and Arachnids of Canada, part 18. 456 pp. Ottawa.

Økland, J. 1977. Litt om biogeografiske metoder, og noen nye data om utbredelse av stavtege, *Ranatra linearis*, og vannskorpionen, *Nepa cinerea*, i Norge. - Fauna Oslo 30: 145-167.

Økland, K. A. 1981. Inndeling av Norge til bruk ved biogeografiske oppgaver – et revidert Strand-system. - Fauna Oslo 34: 167-178.

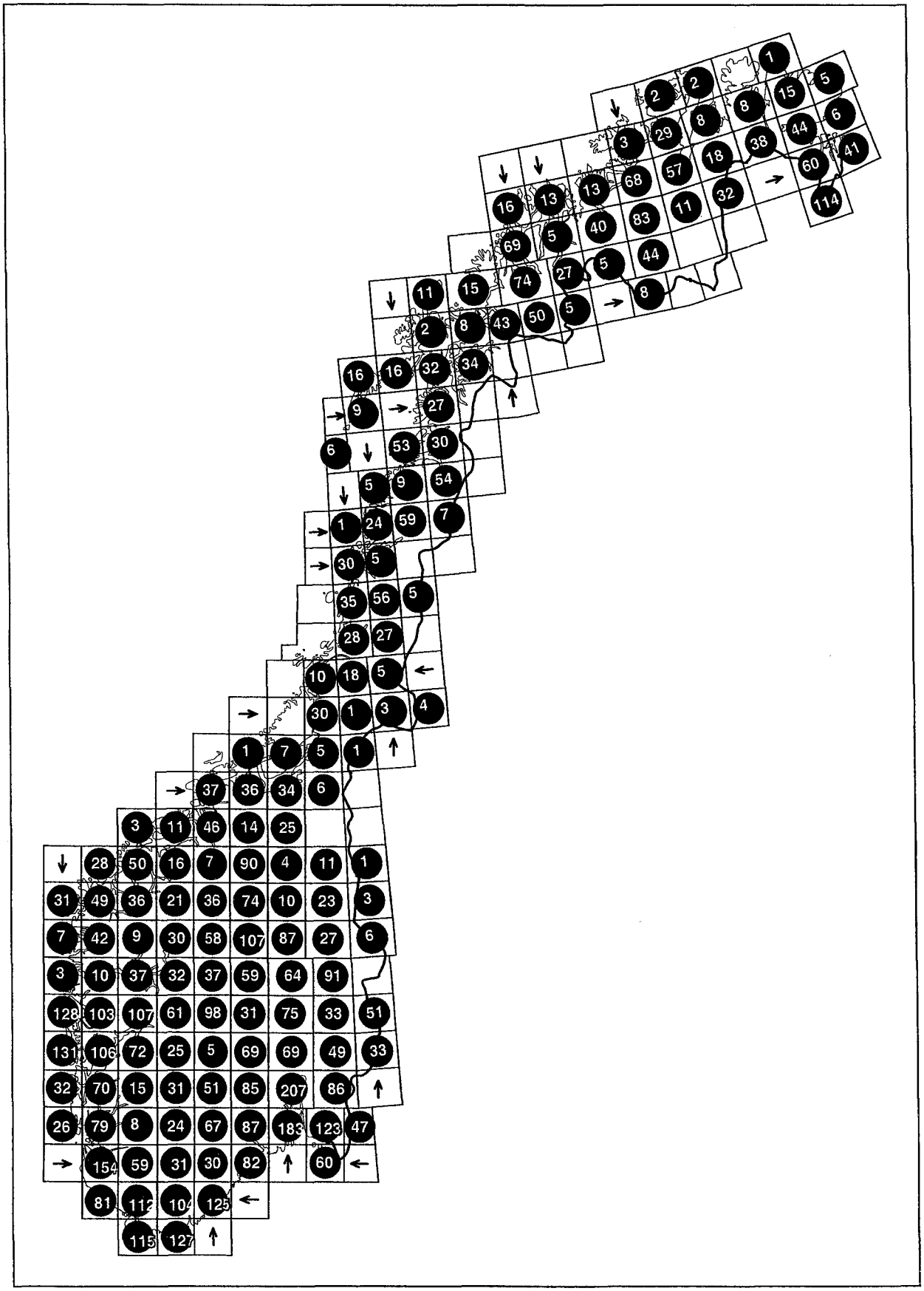
Appendix 1

The faunistical EIS grid system of Norway used in the maps consists of 189 modified 50 x 50 km squares (Økland 1977 and Økland 1981). A black dot with white numbers on the distribution maps indicates at least one reliable record from the actual grid square.



Appendix 2

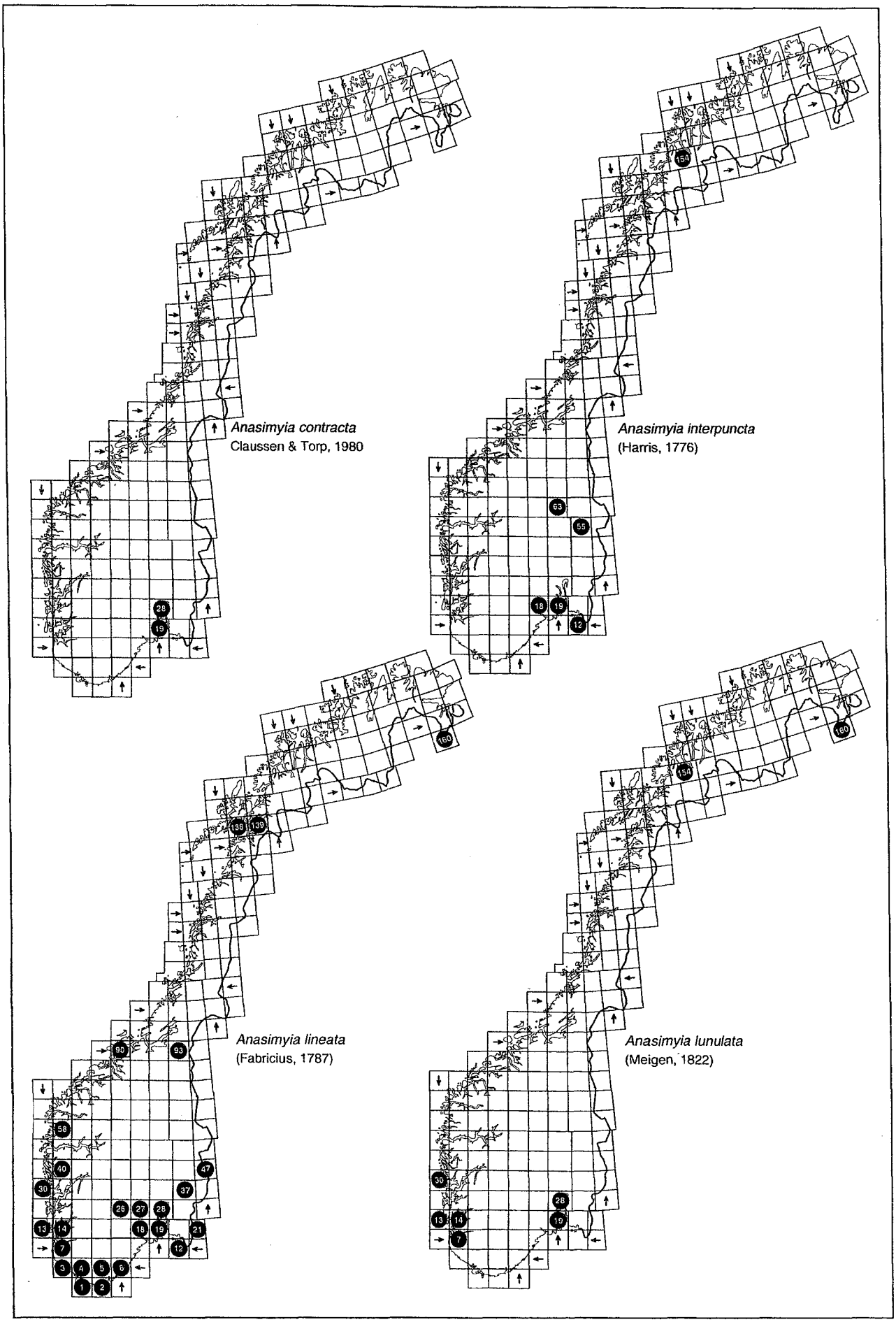
The number of hoverfly species found in the different EIS squares.

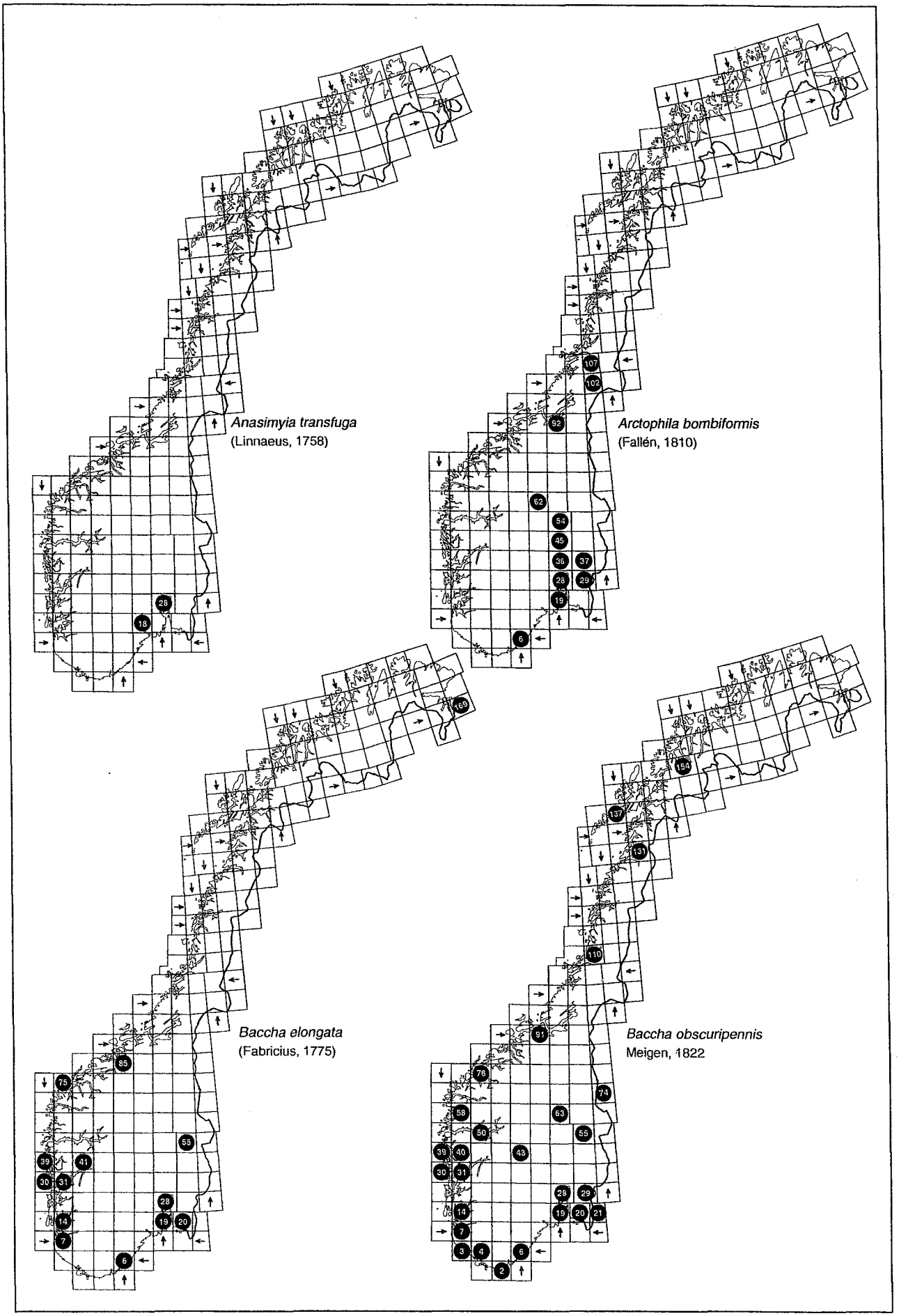


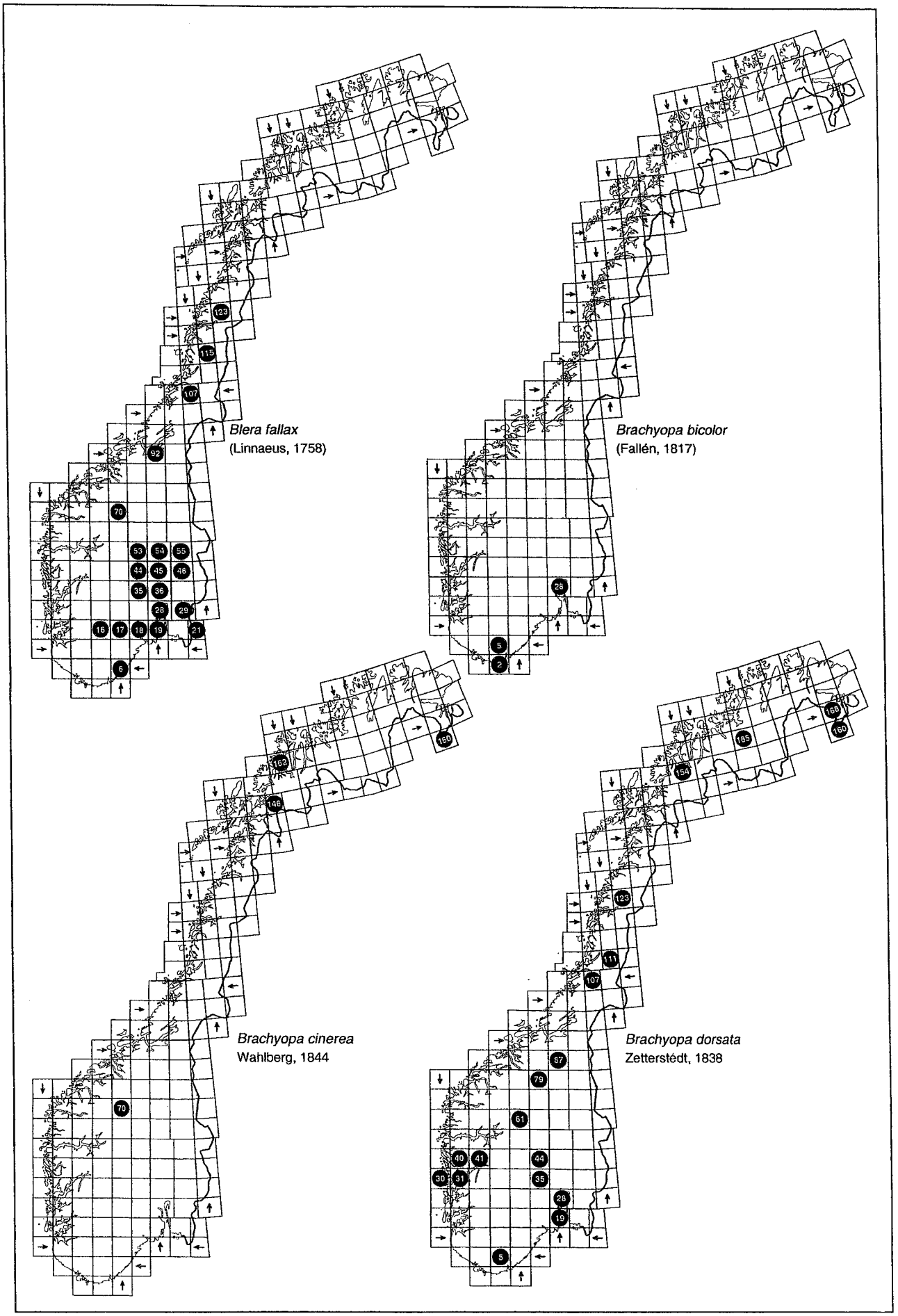
Appendix 3

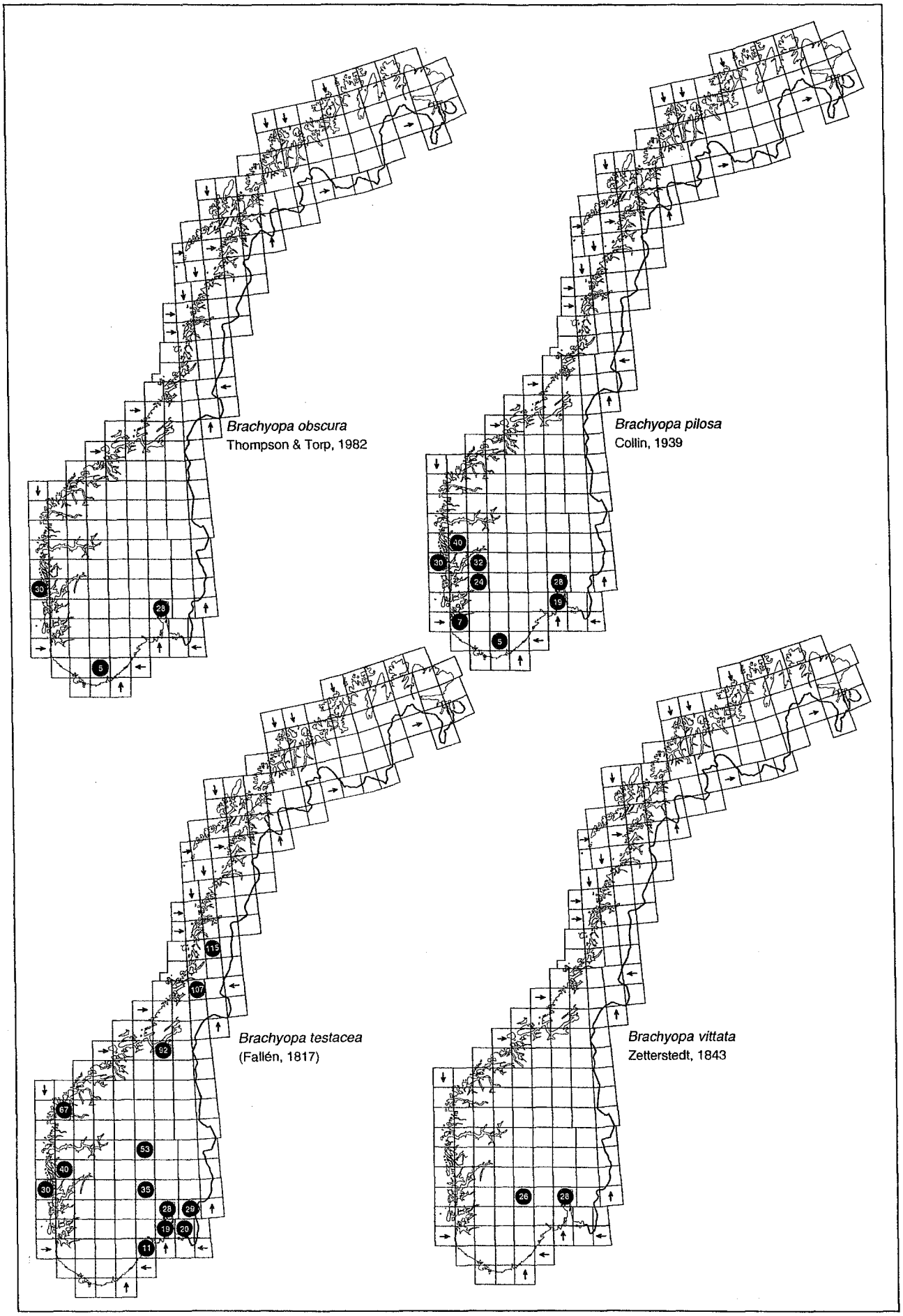
Distribution maps covering all hoverfly species recorded in Norway

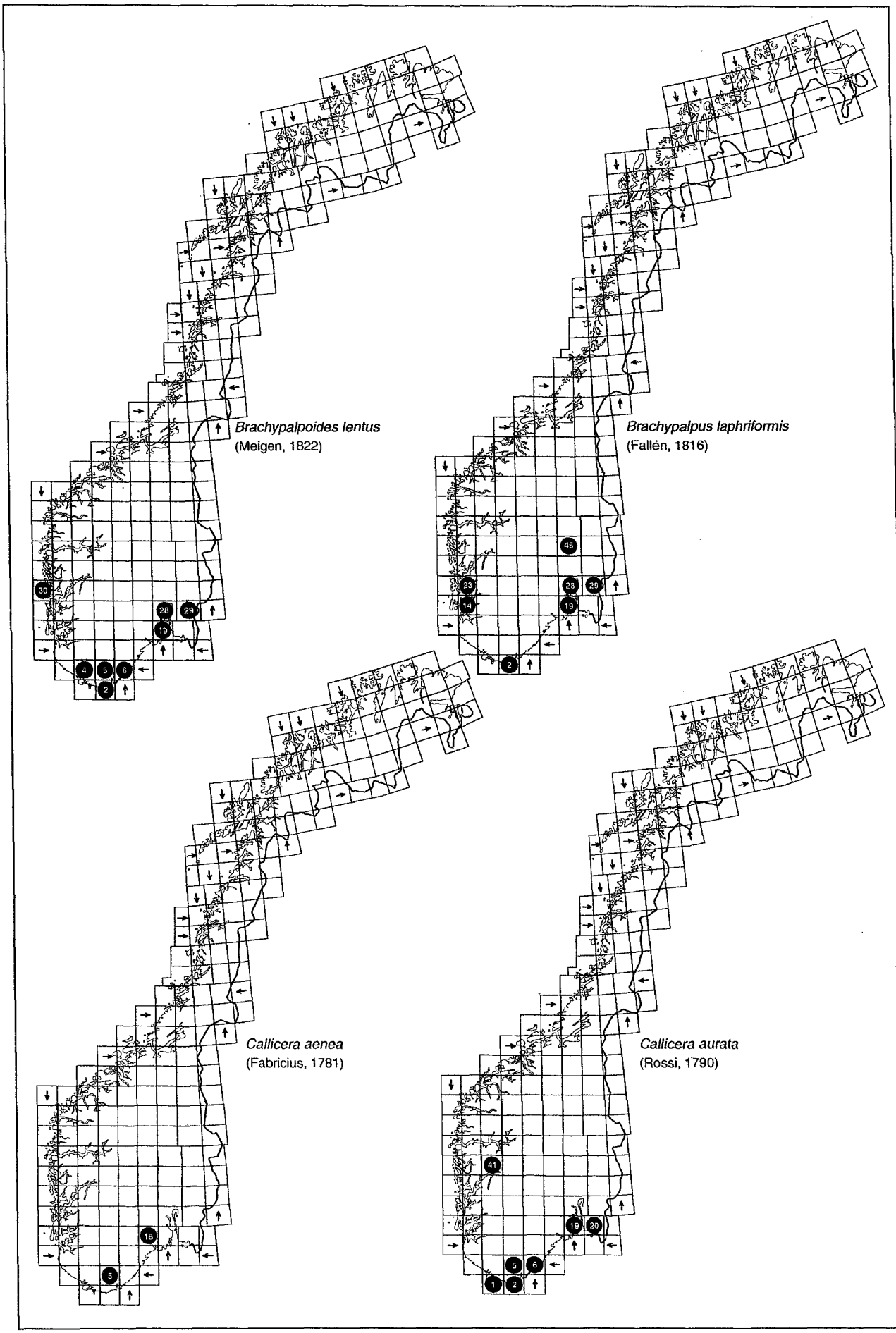
A black dot indicates at least one reliable record from the actual EIS-grid square

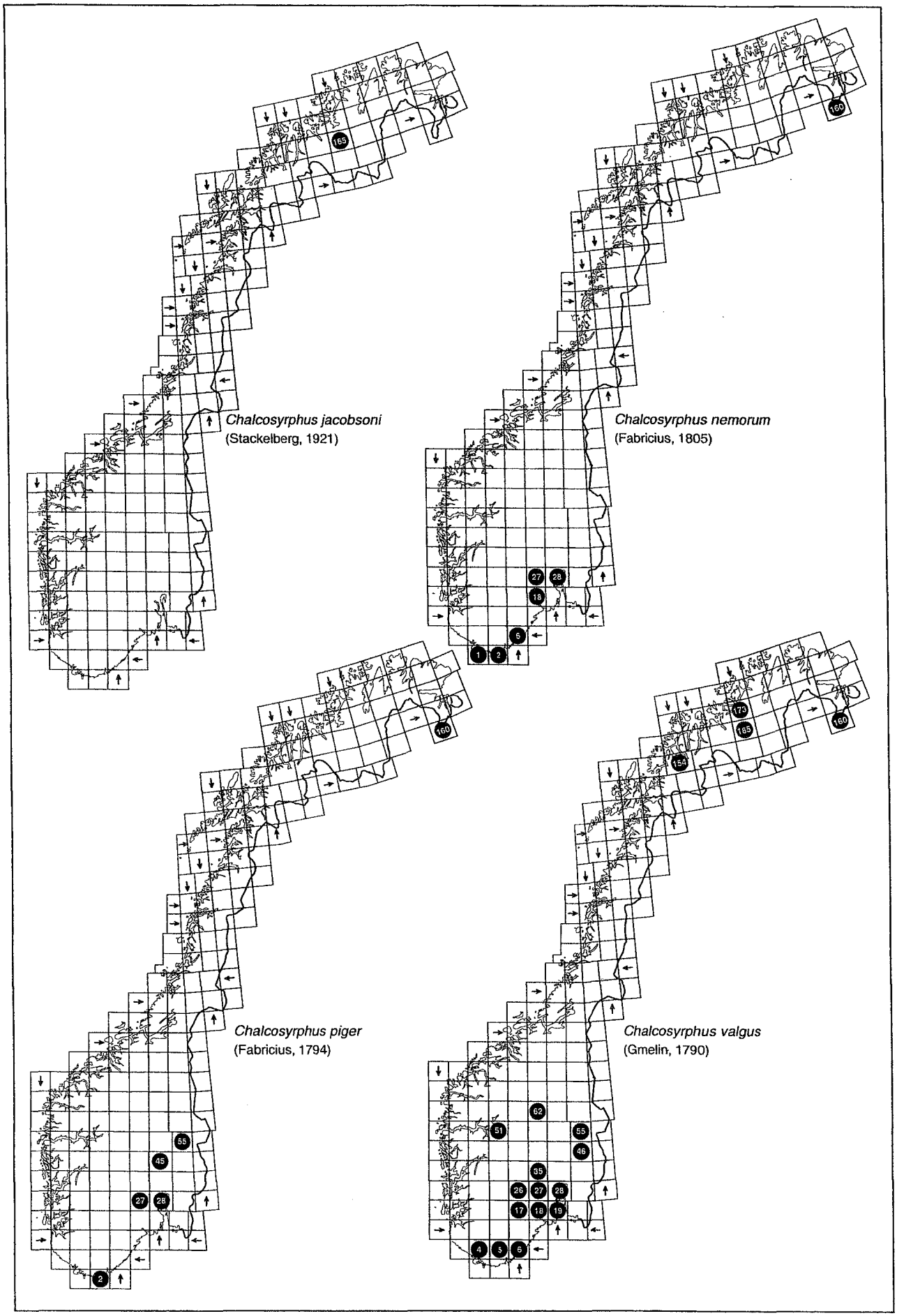


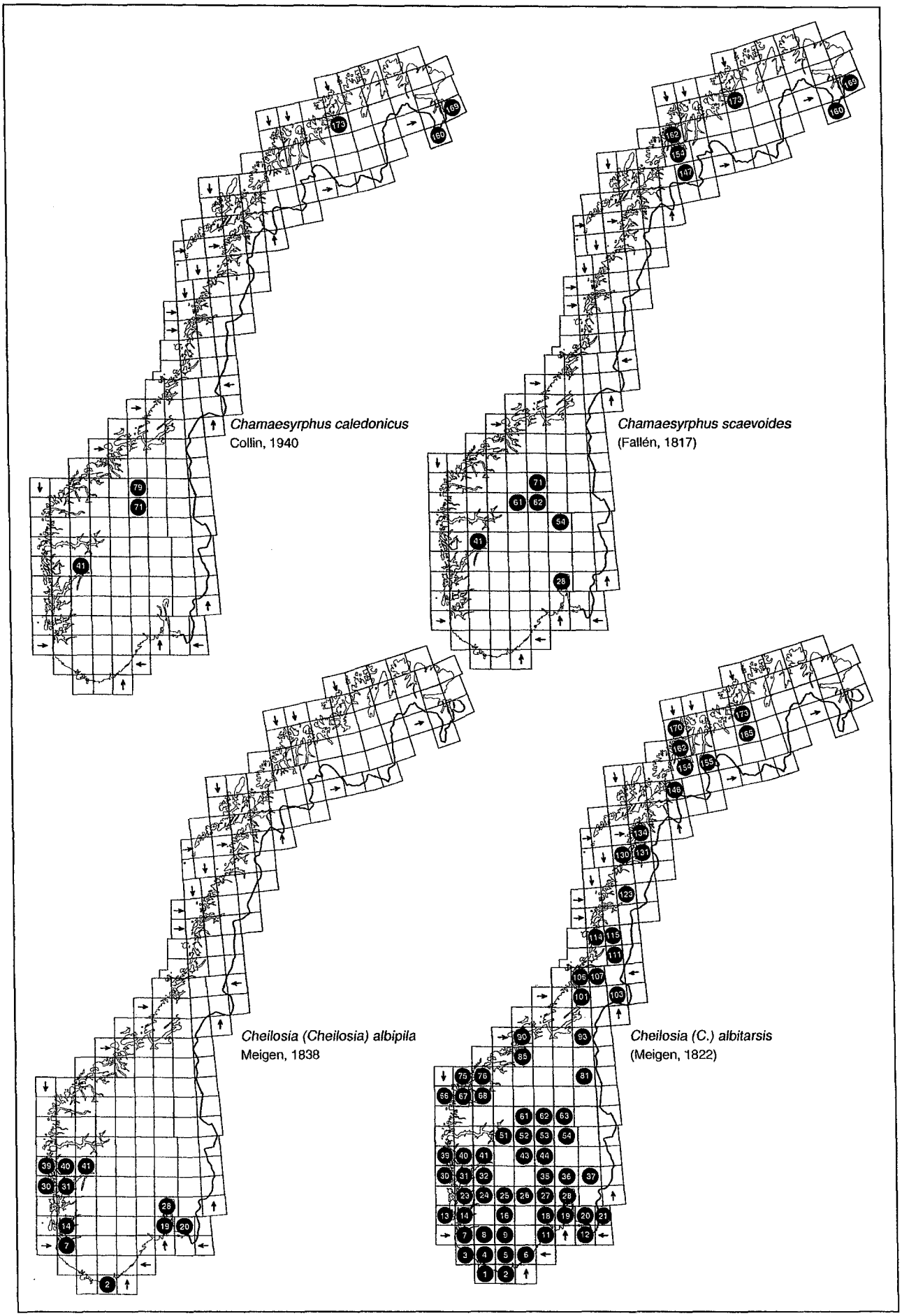


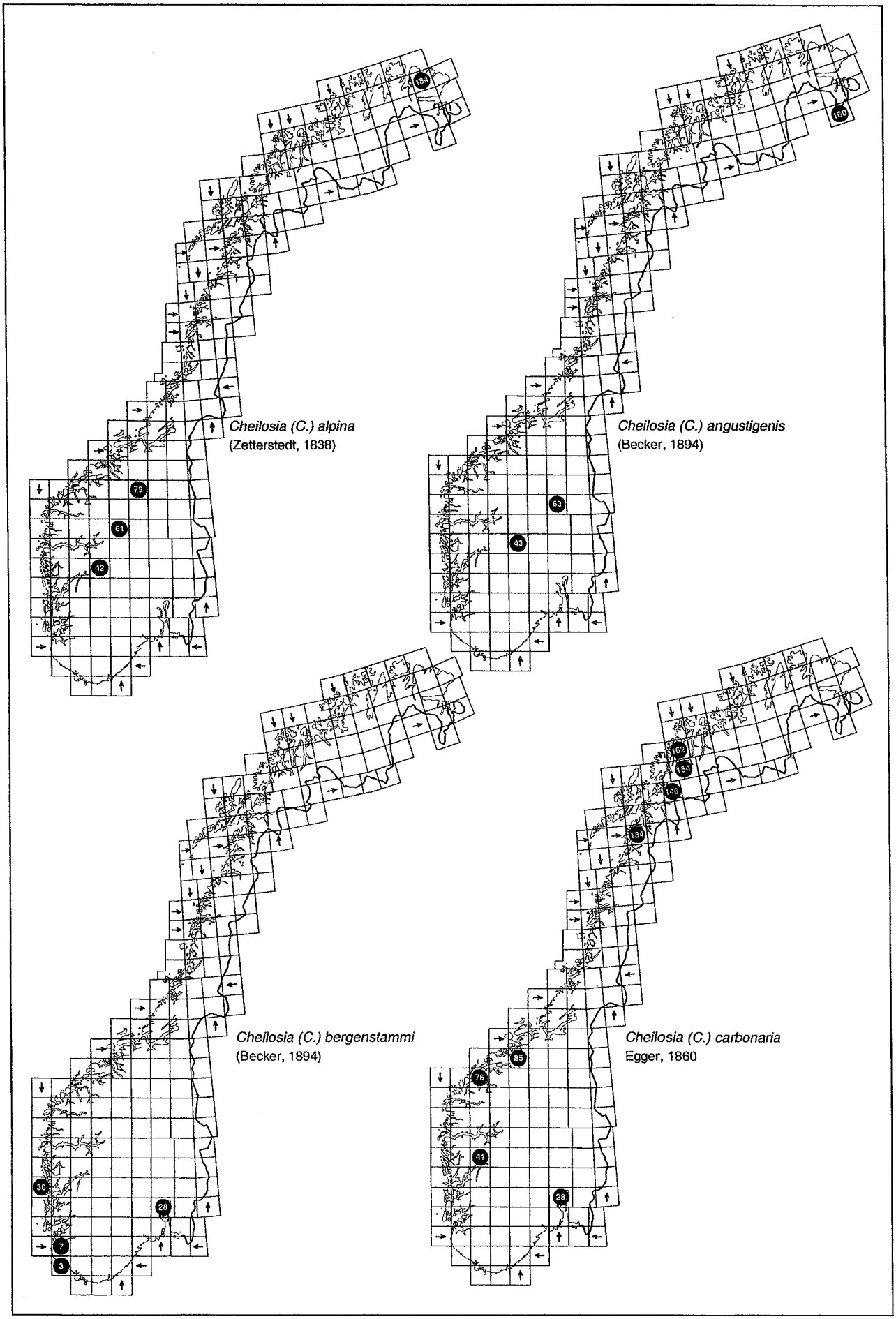


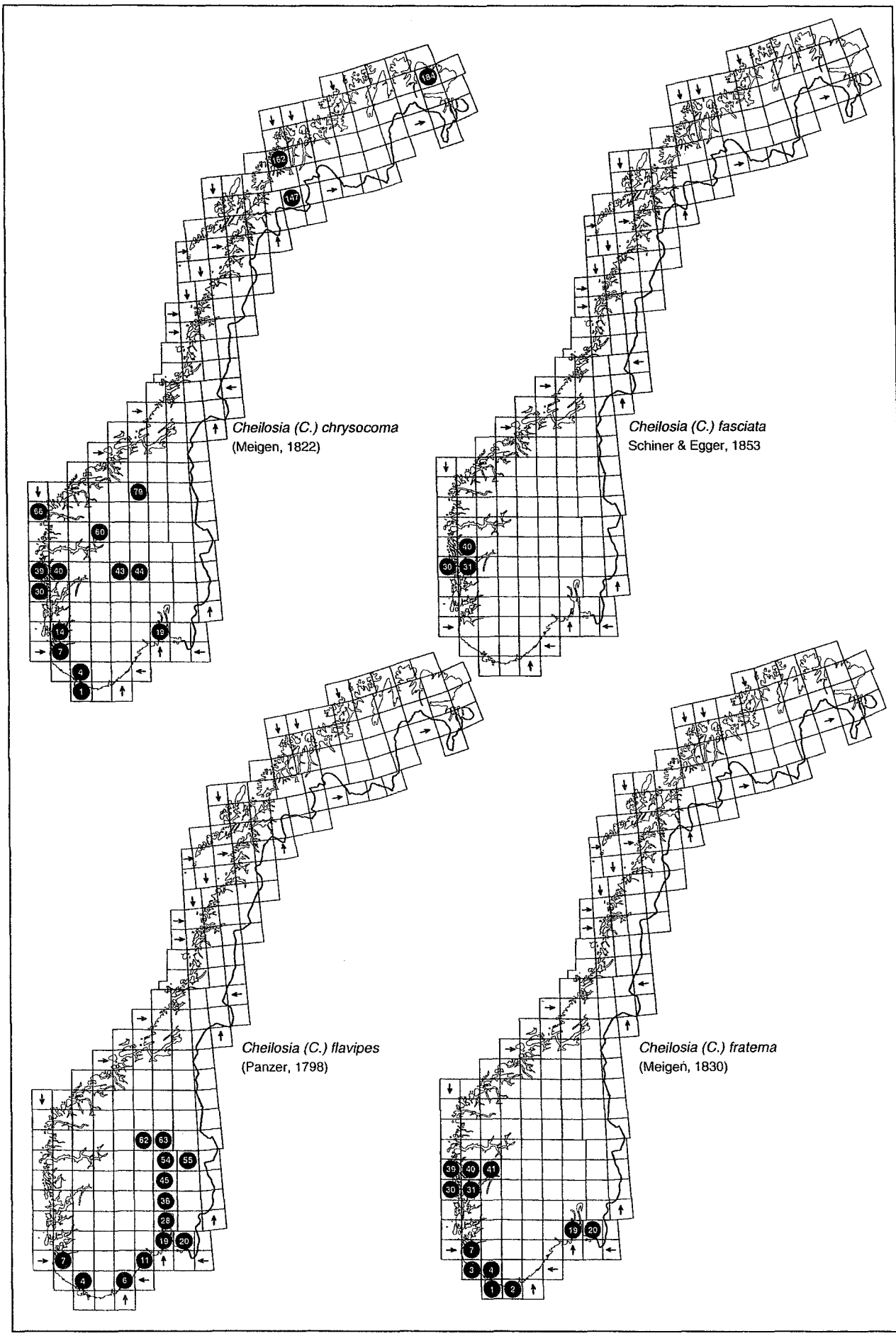


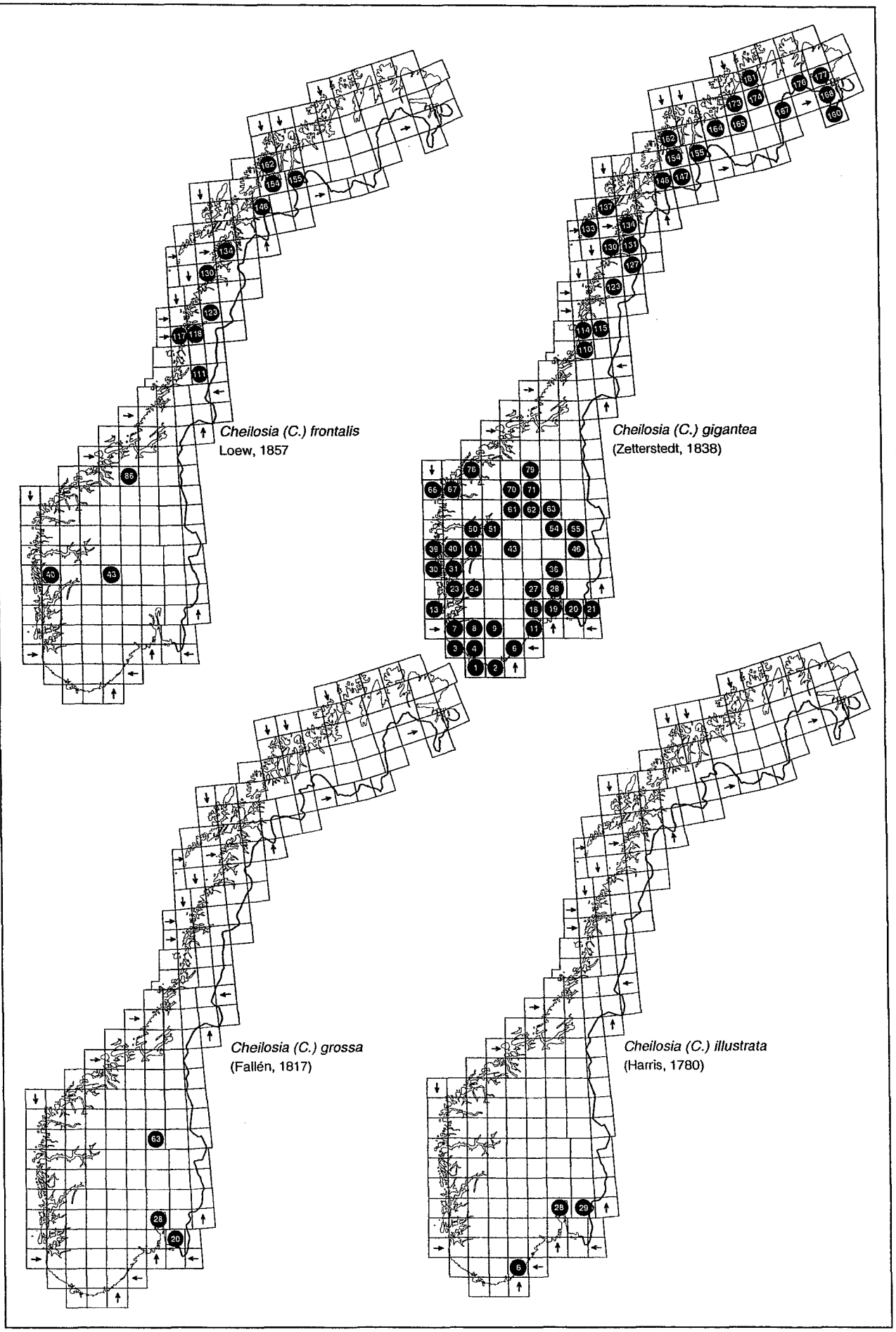


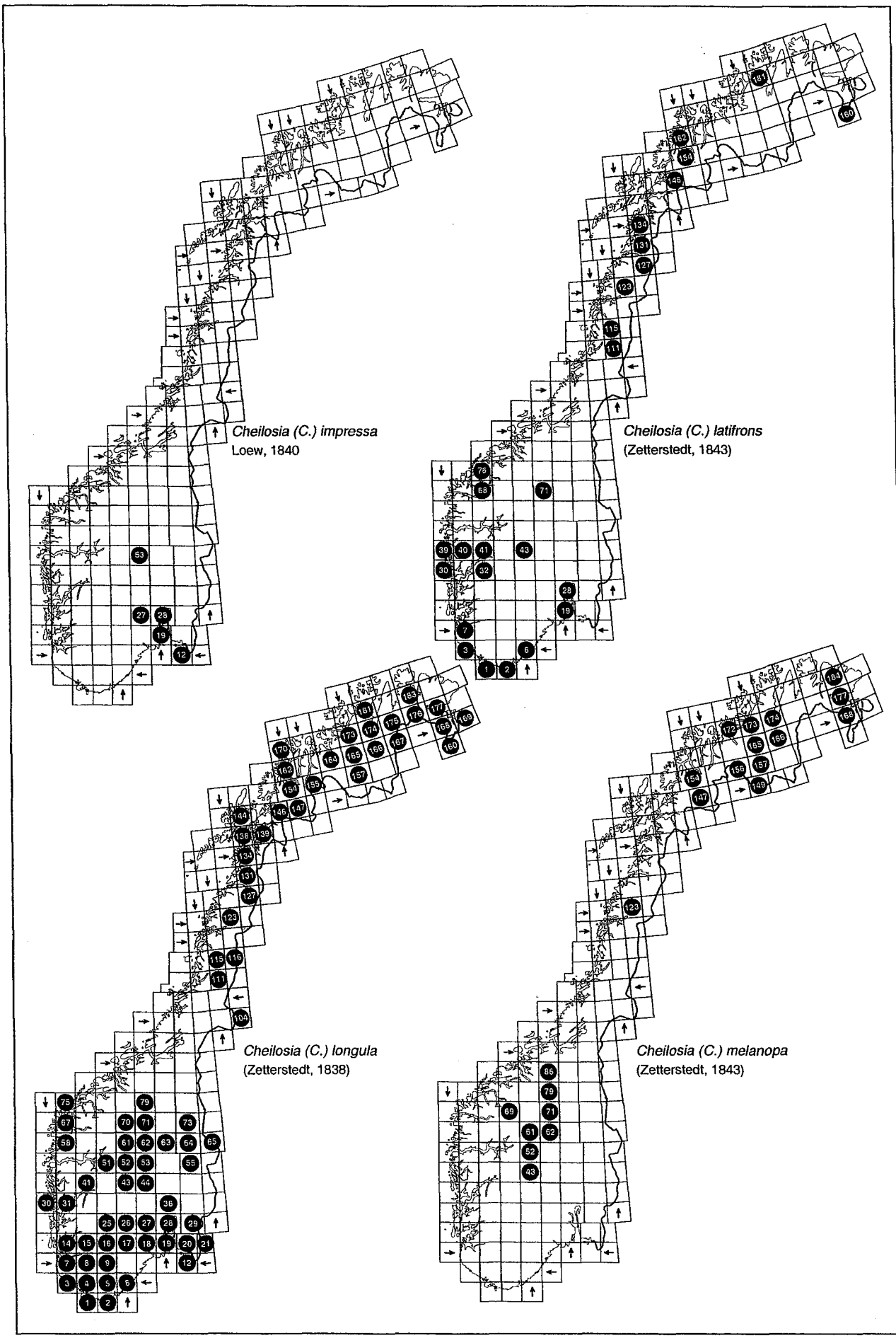


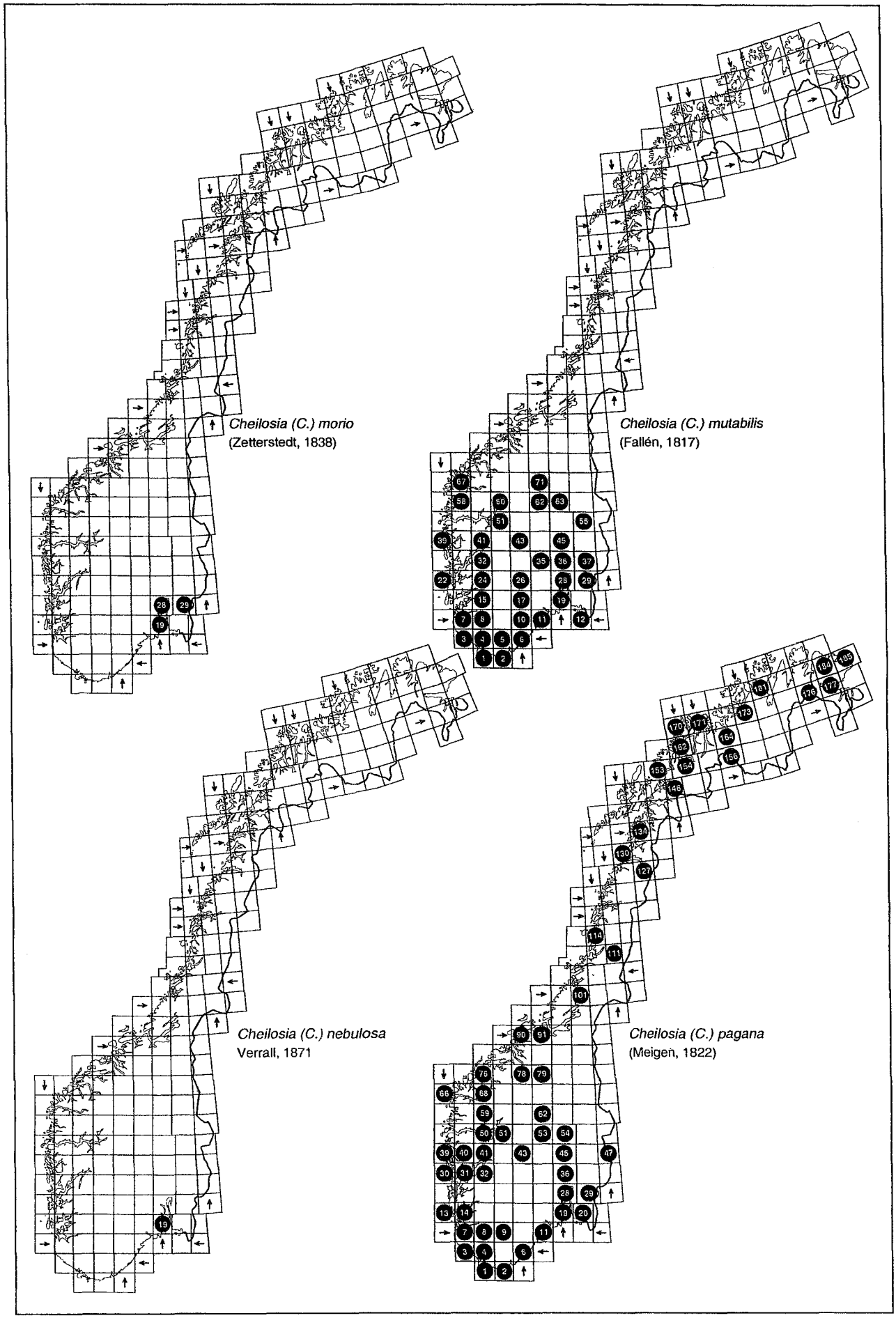


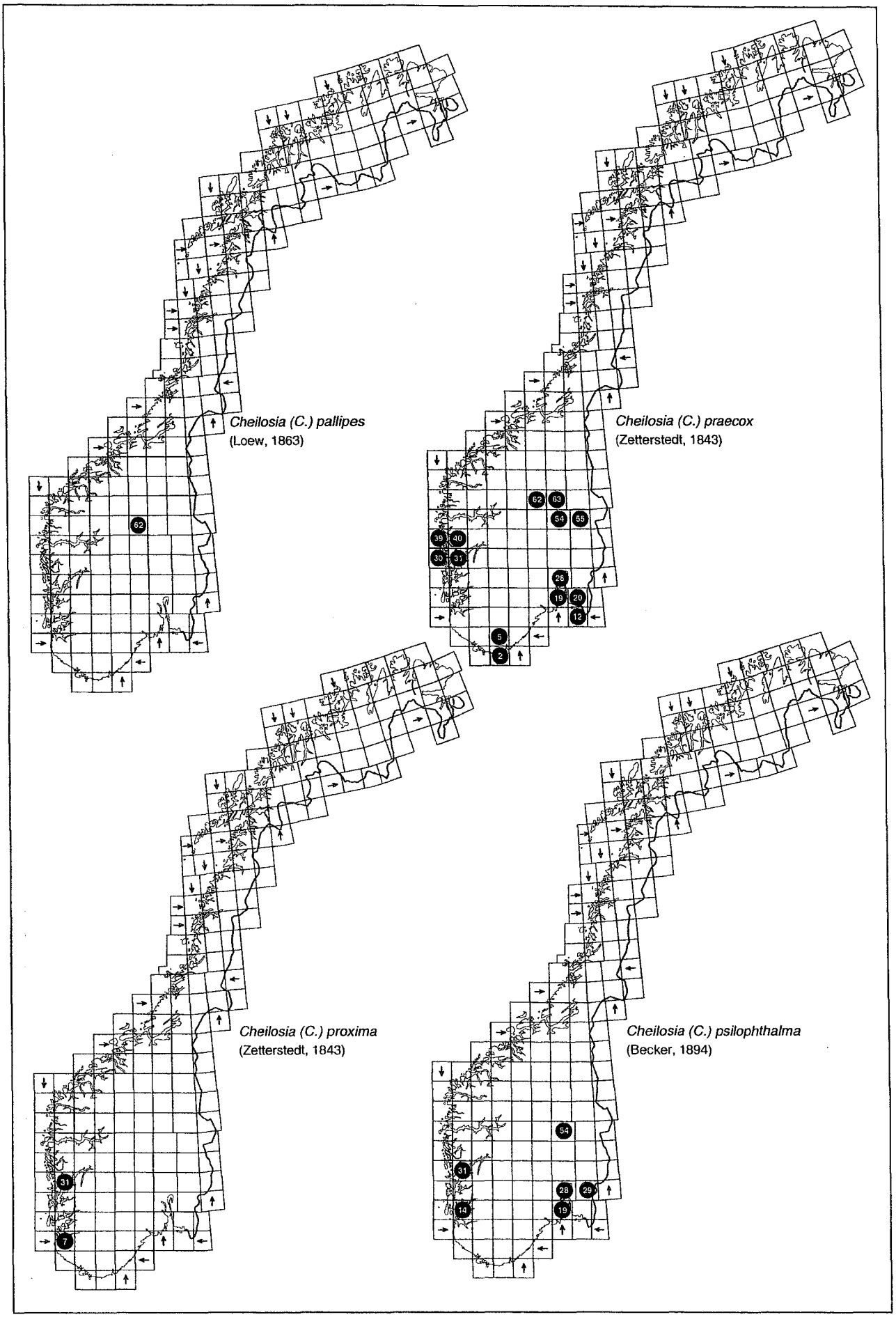


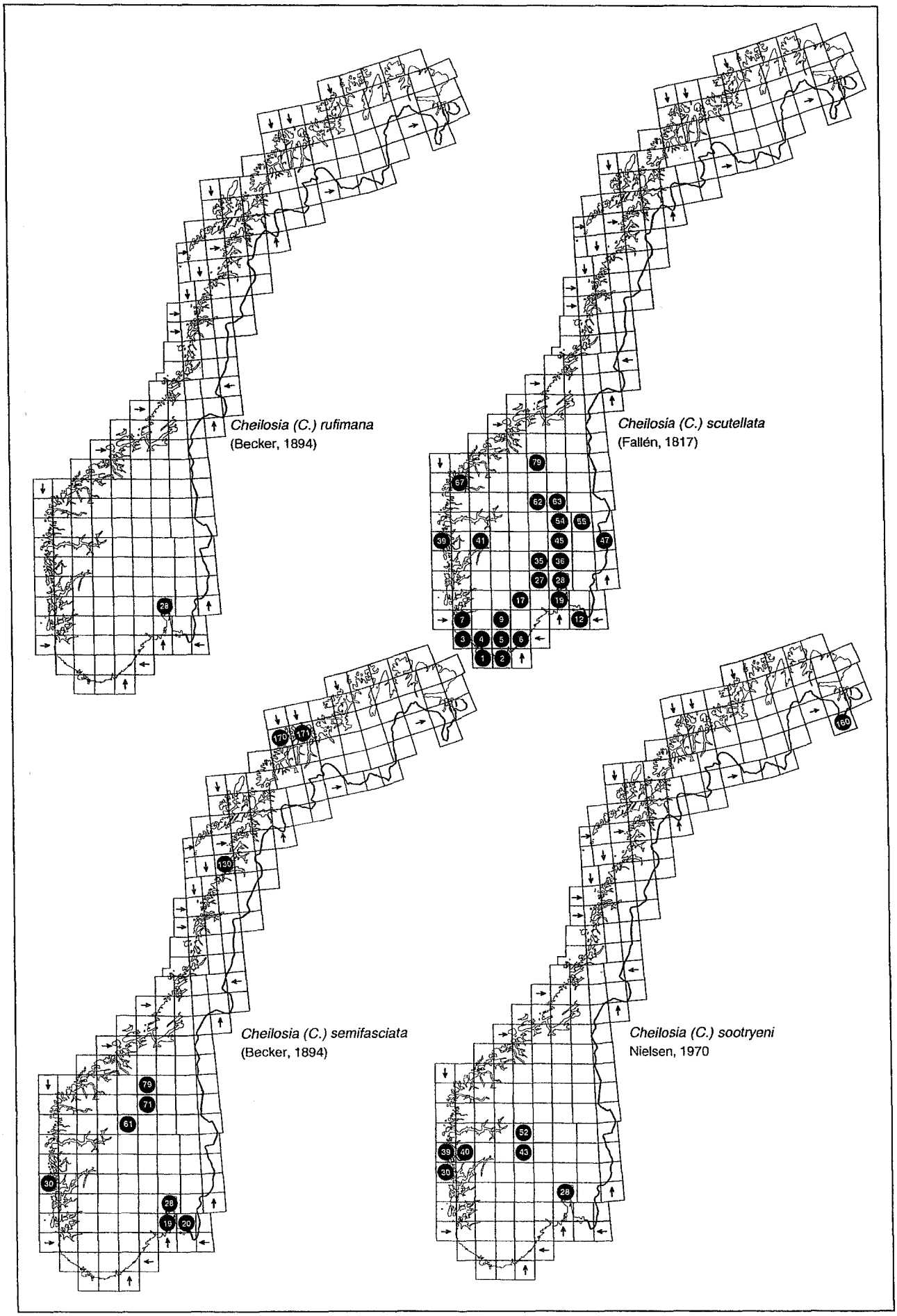


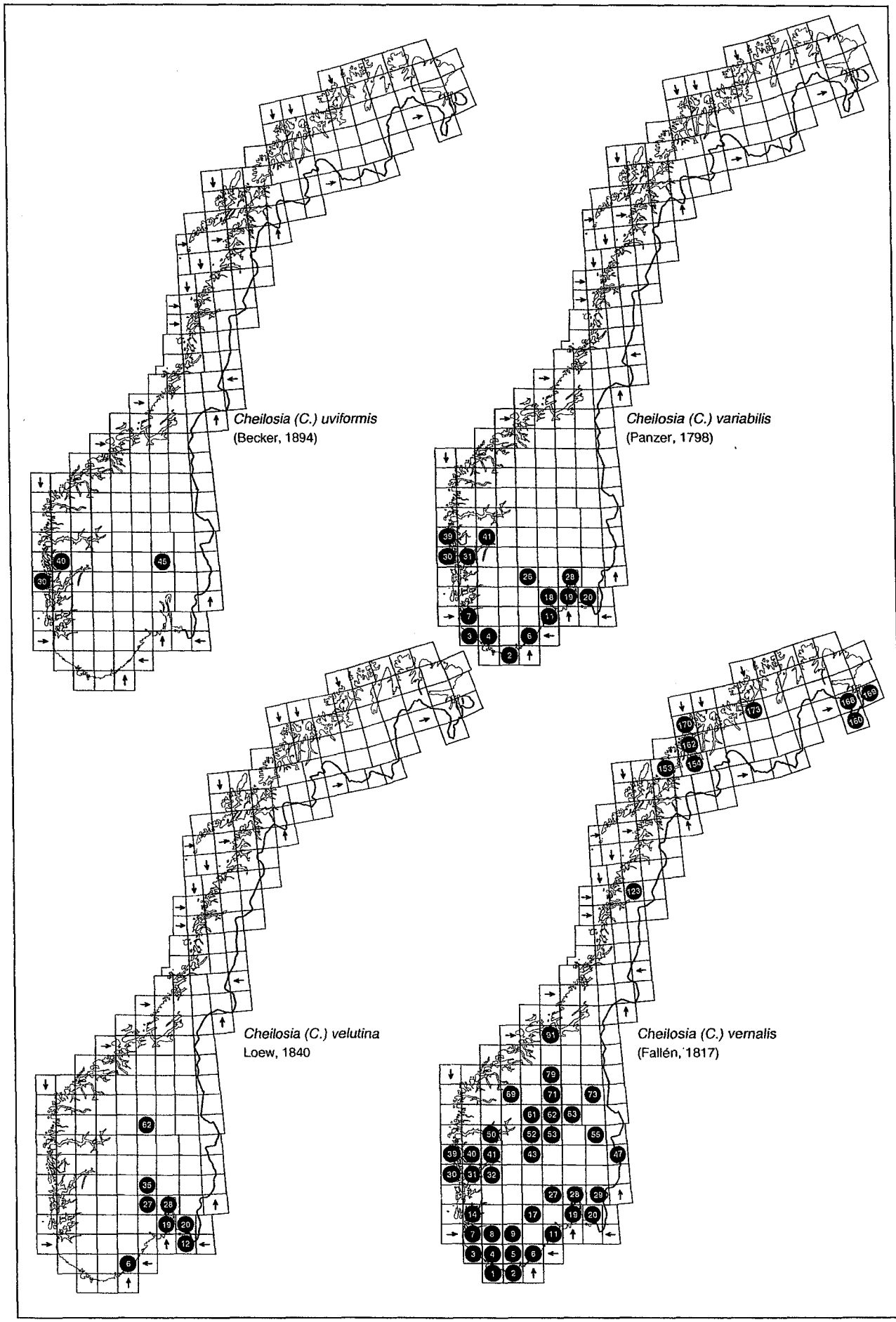


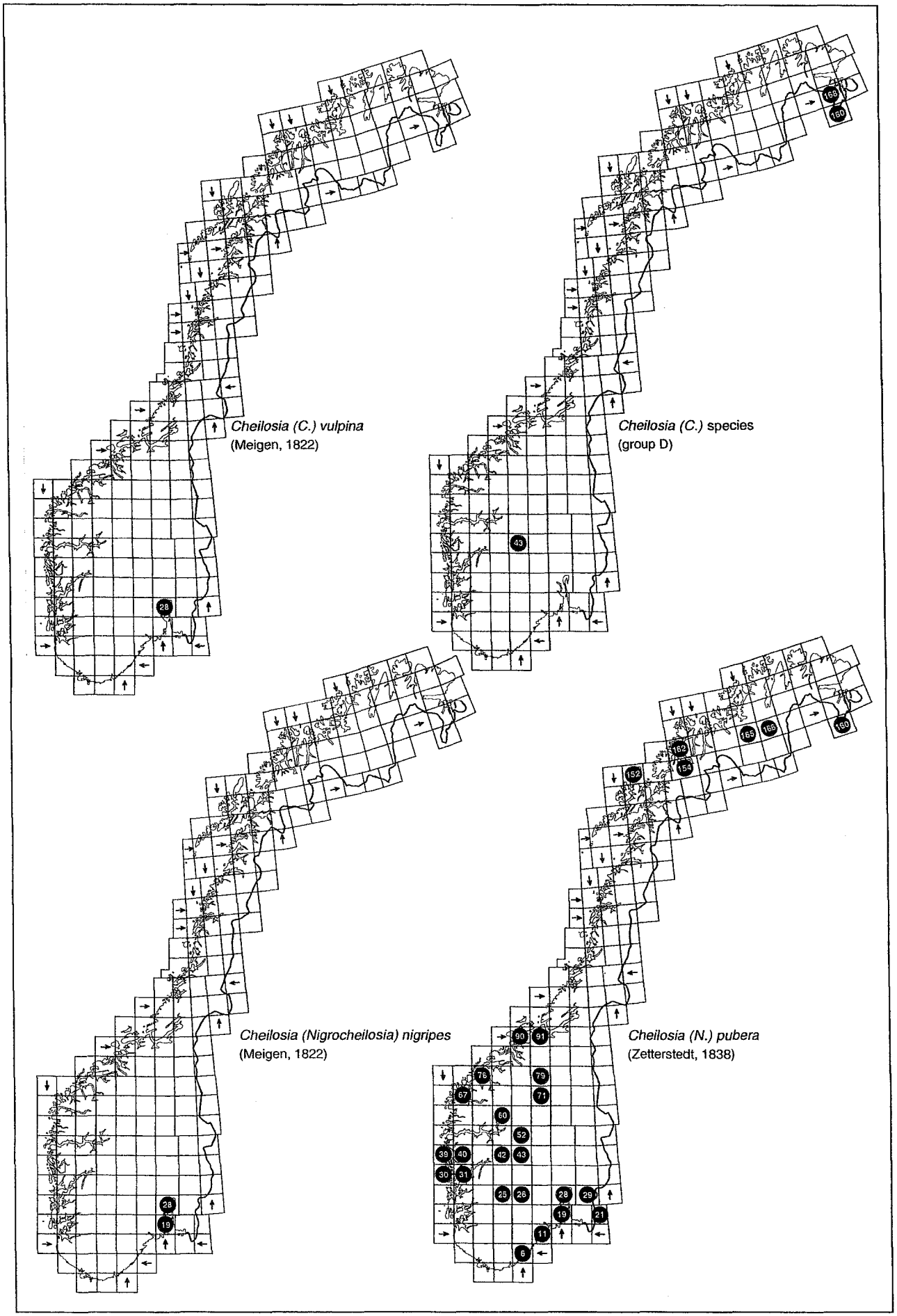


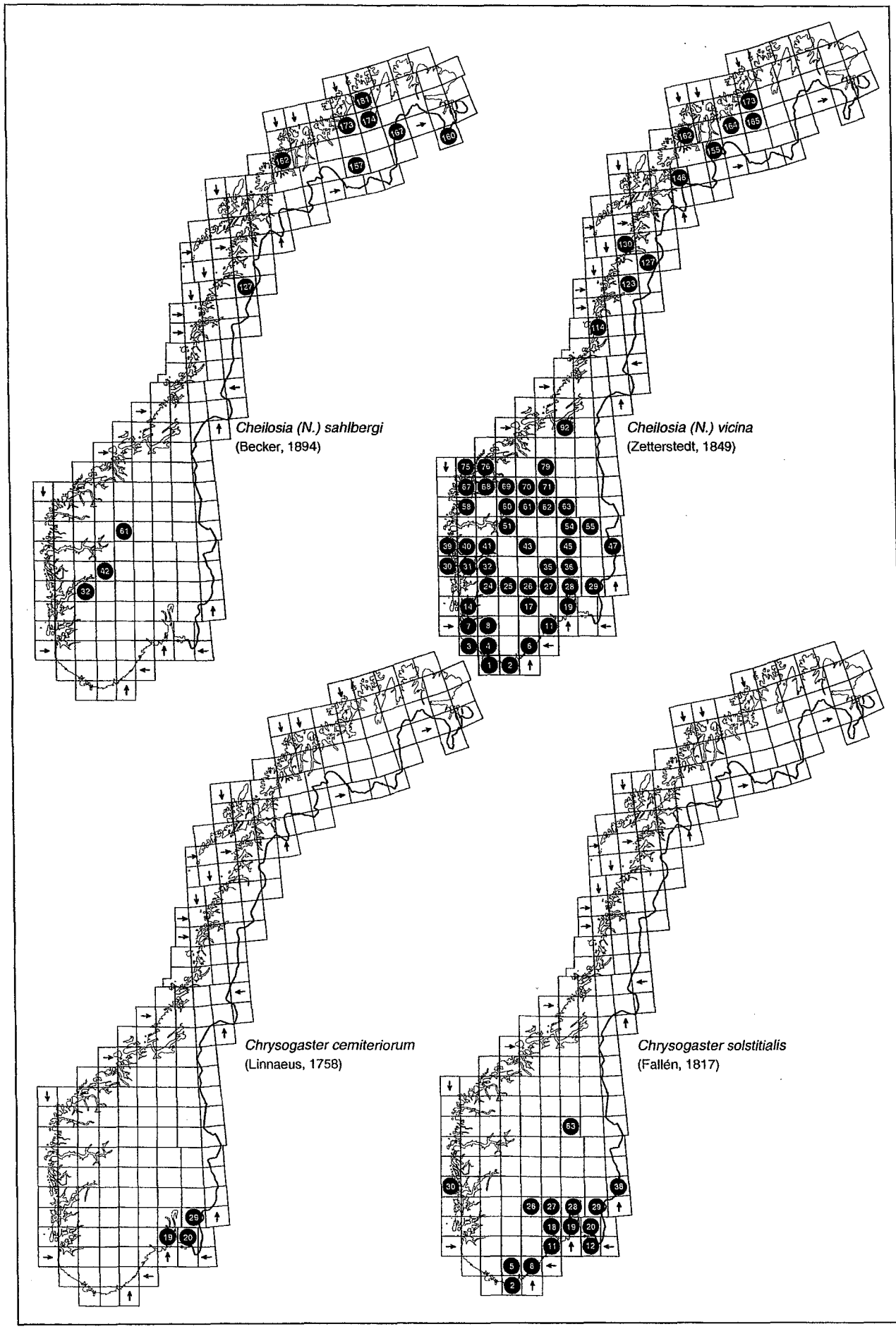


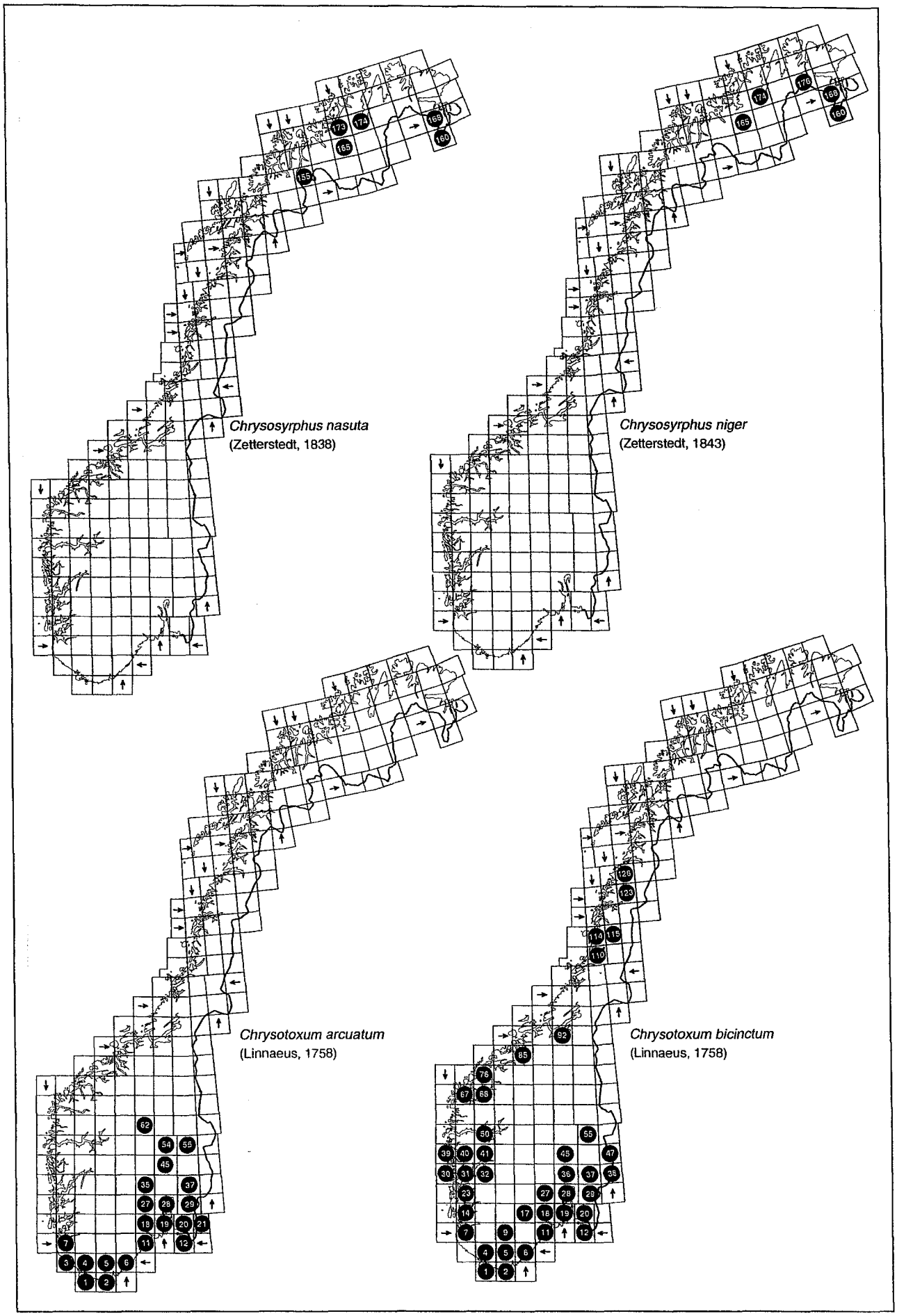


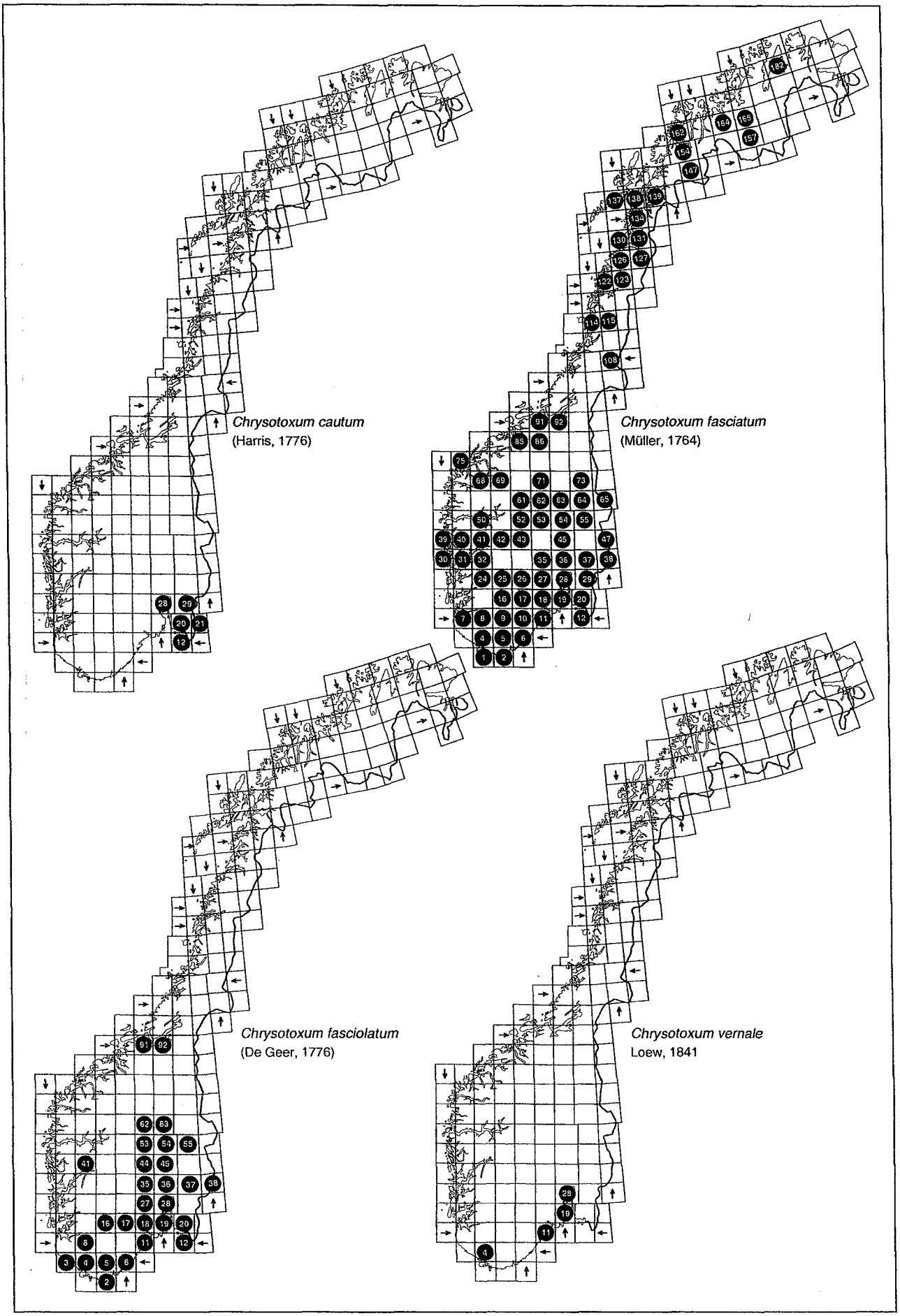


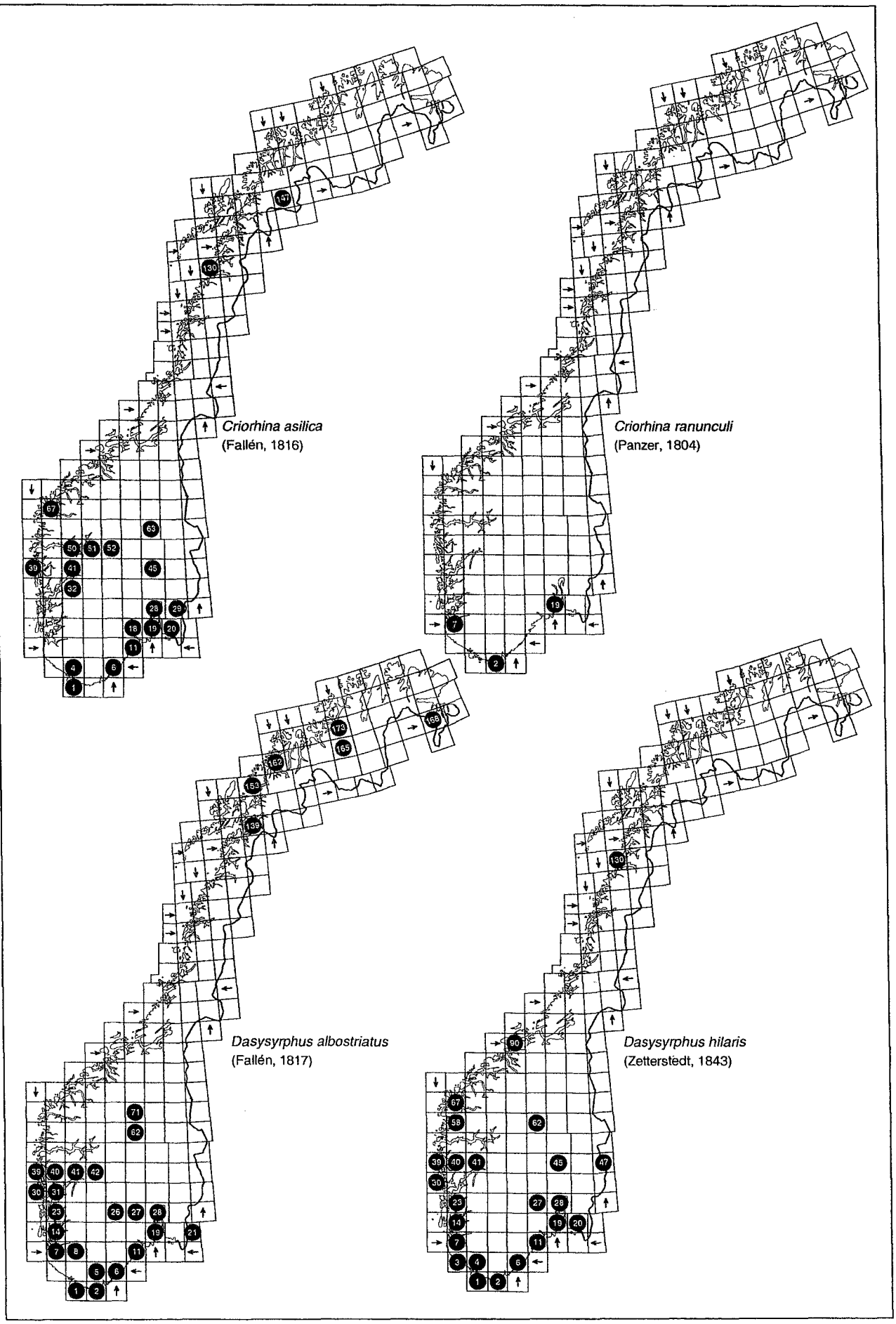


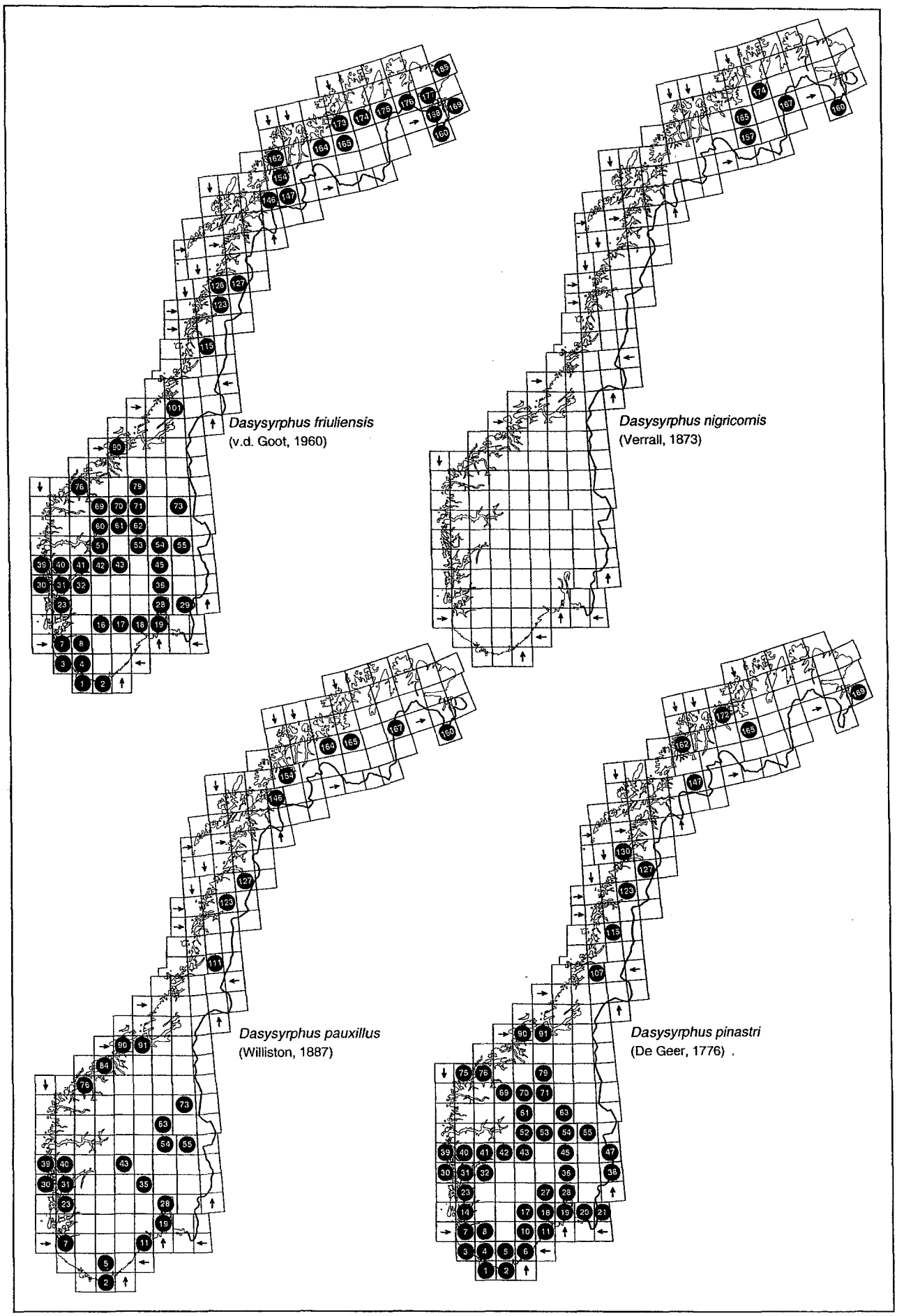


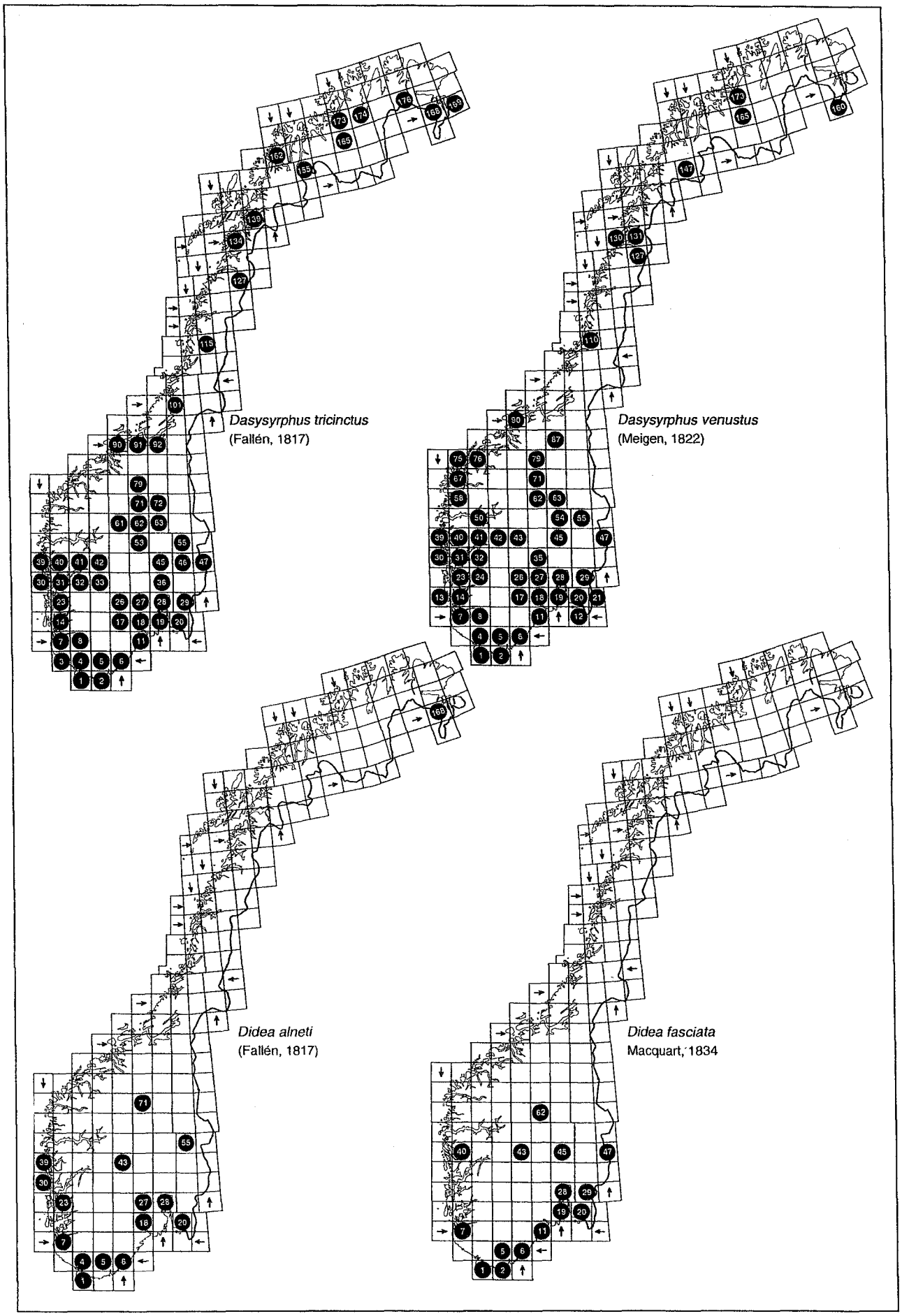


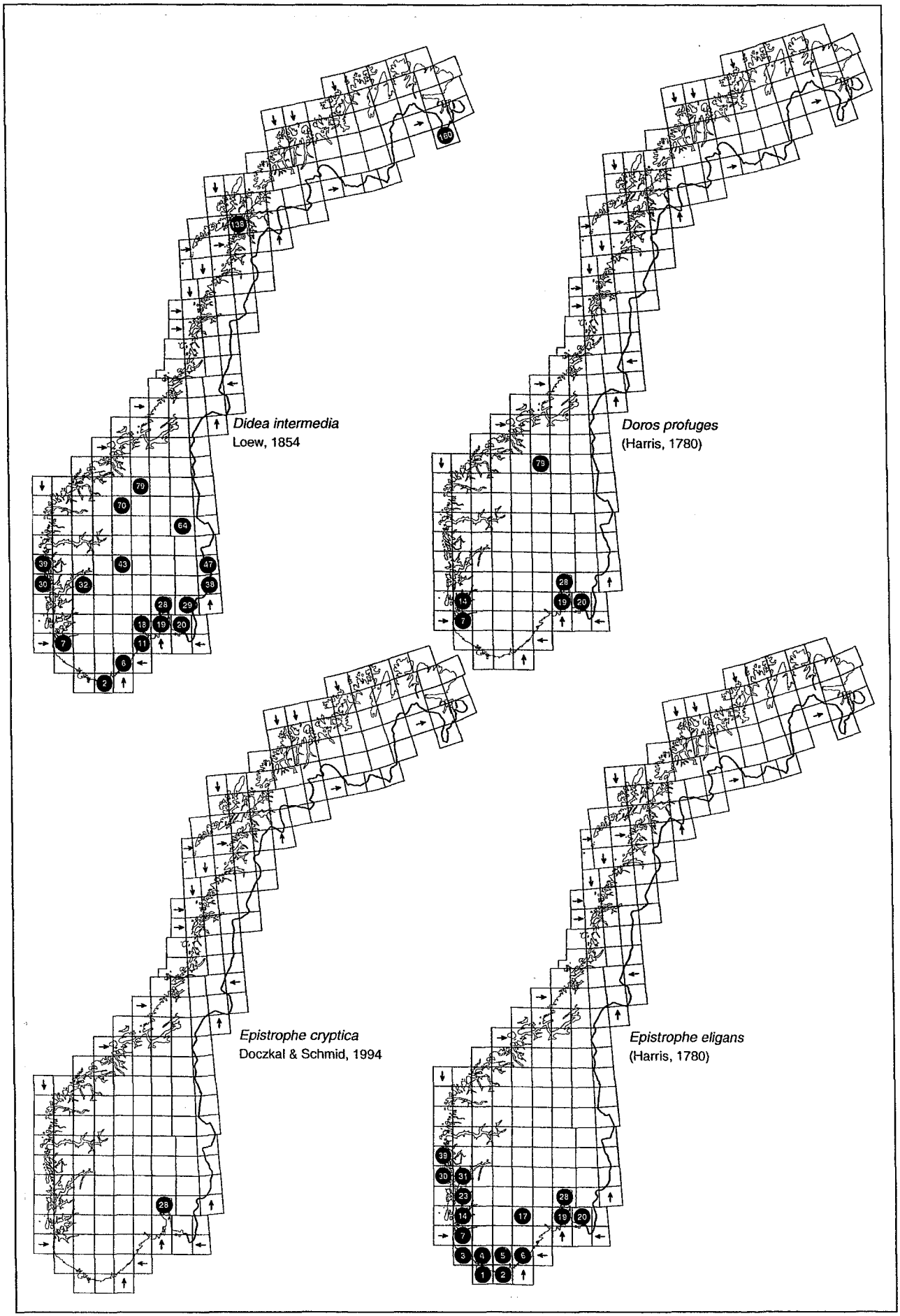


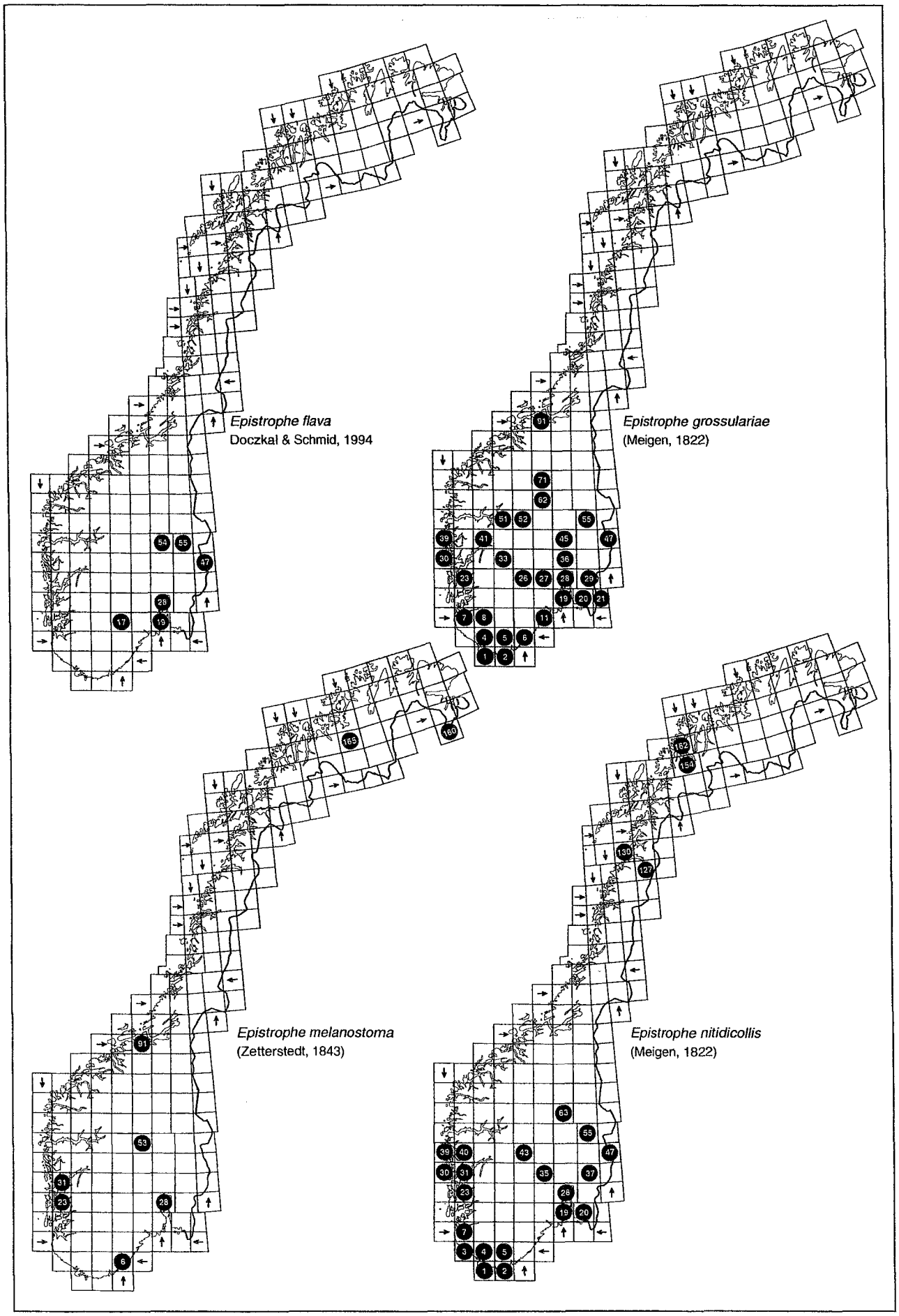


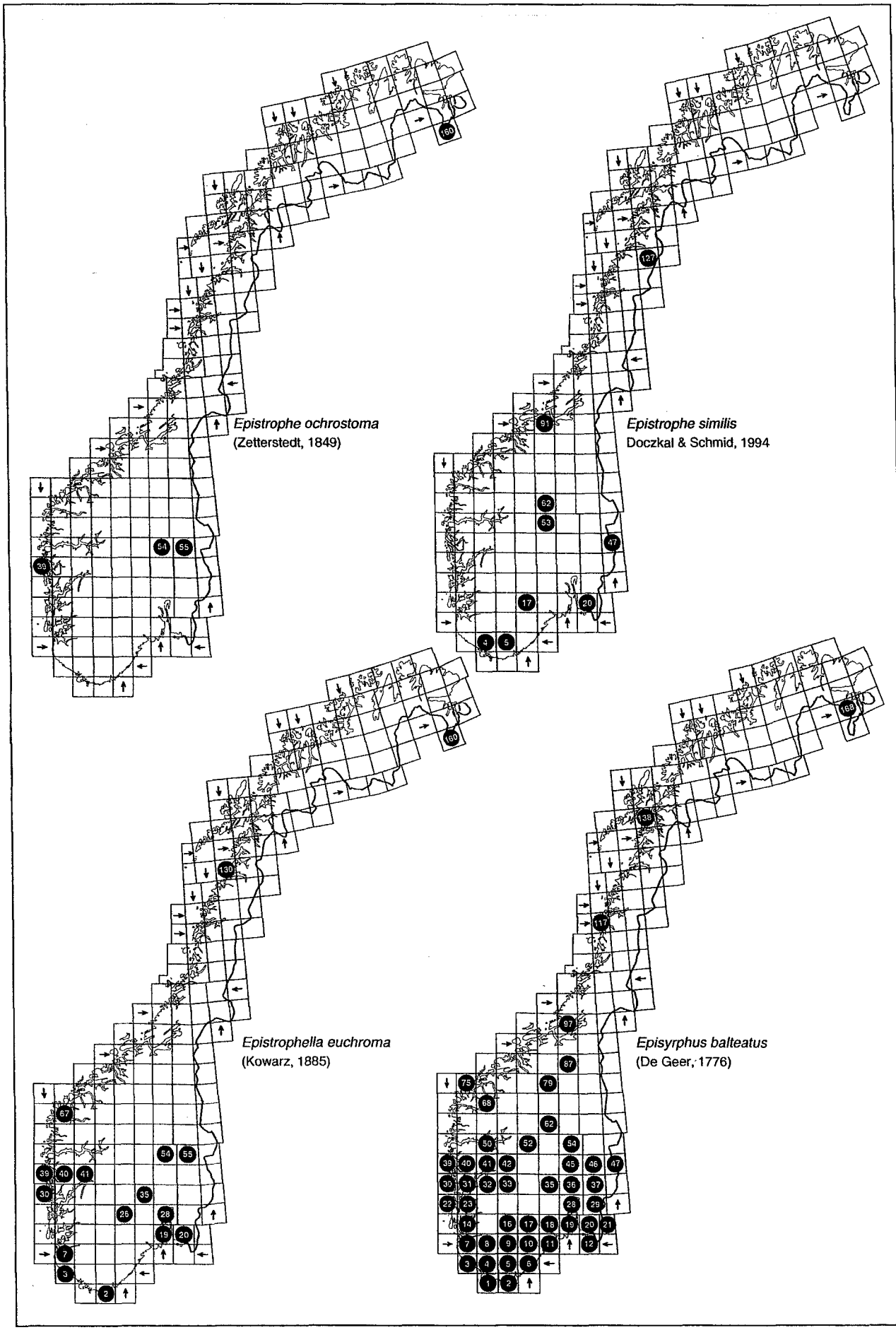


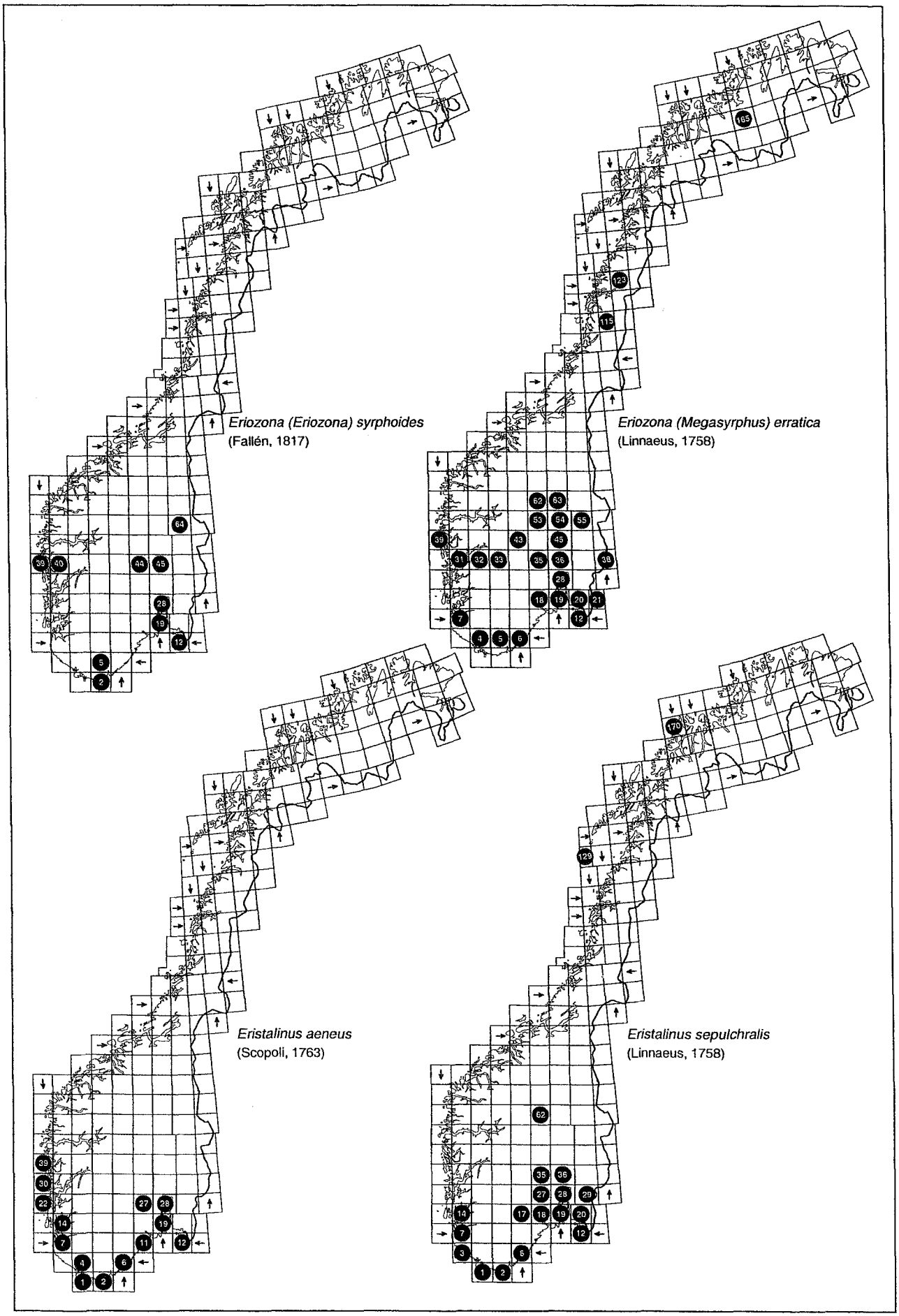


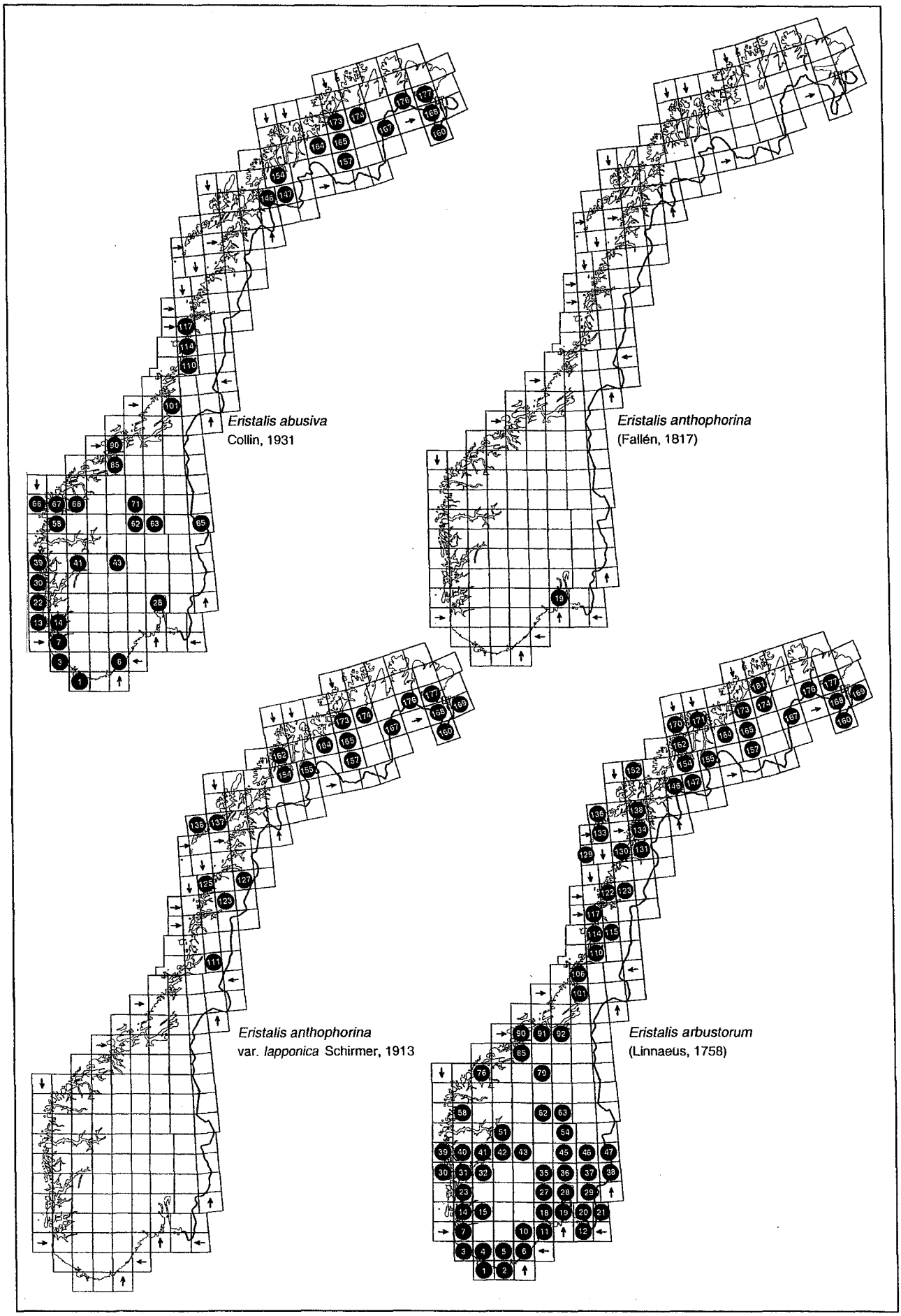


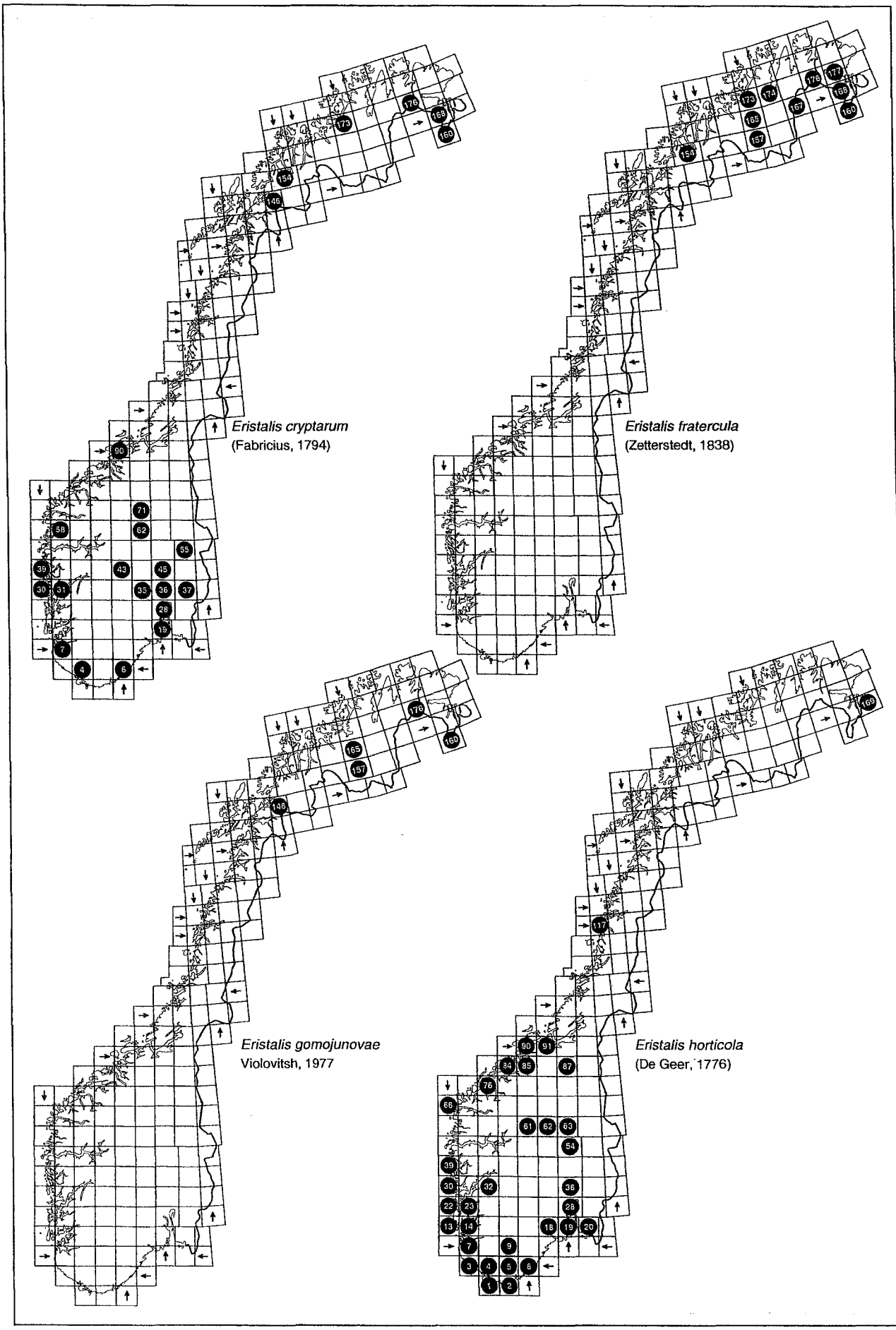


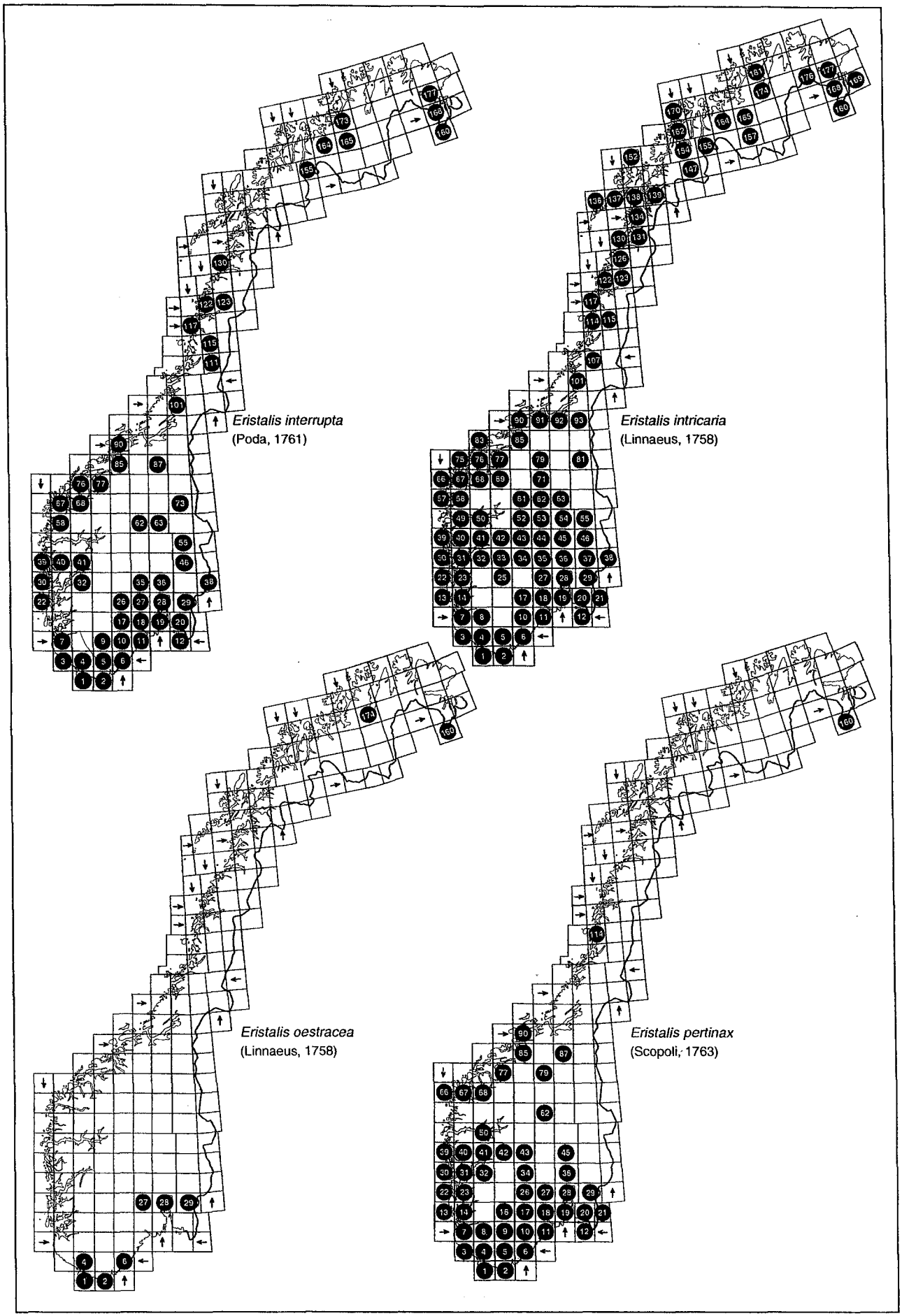


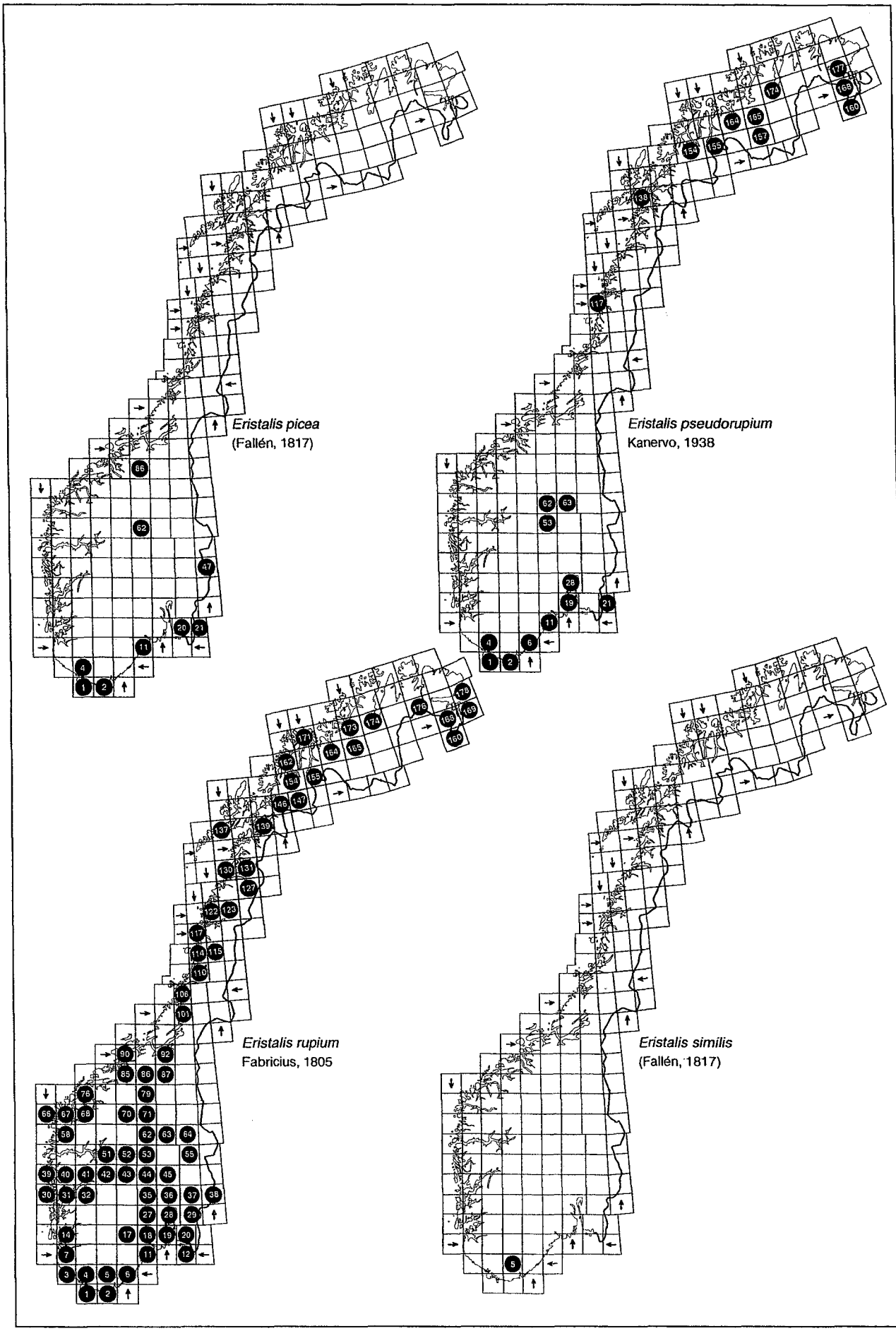


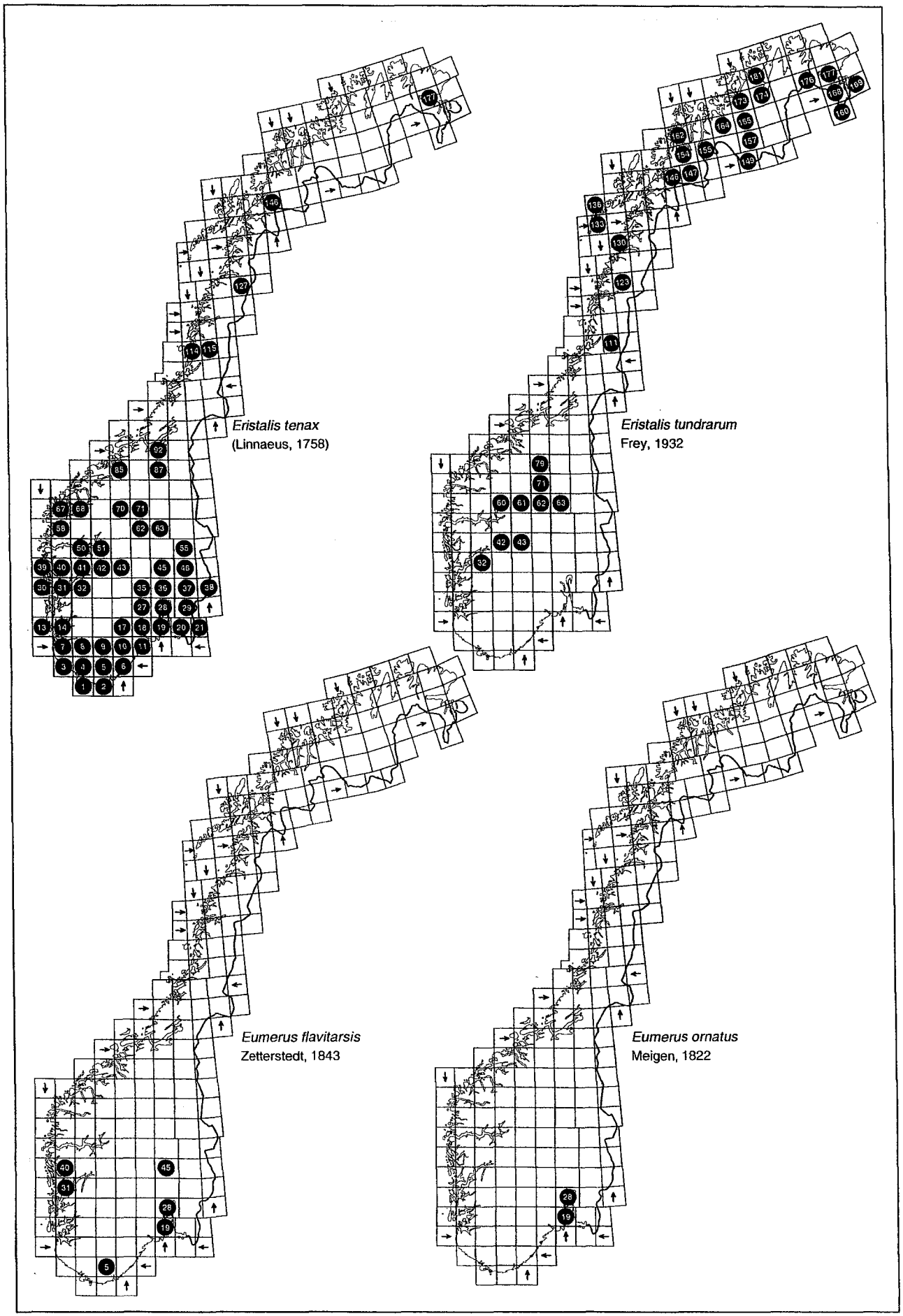


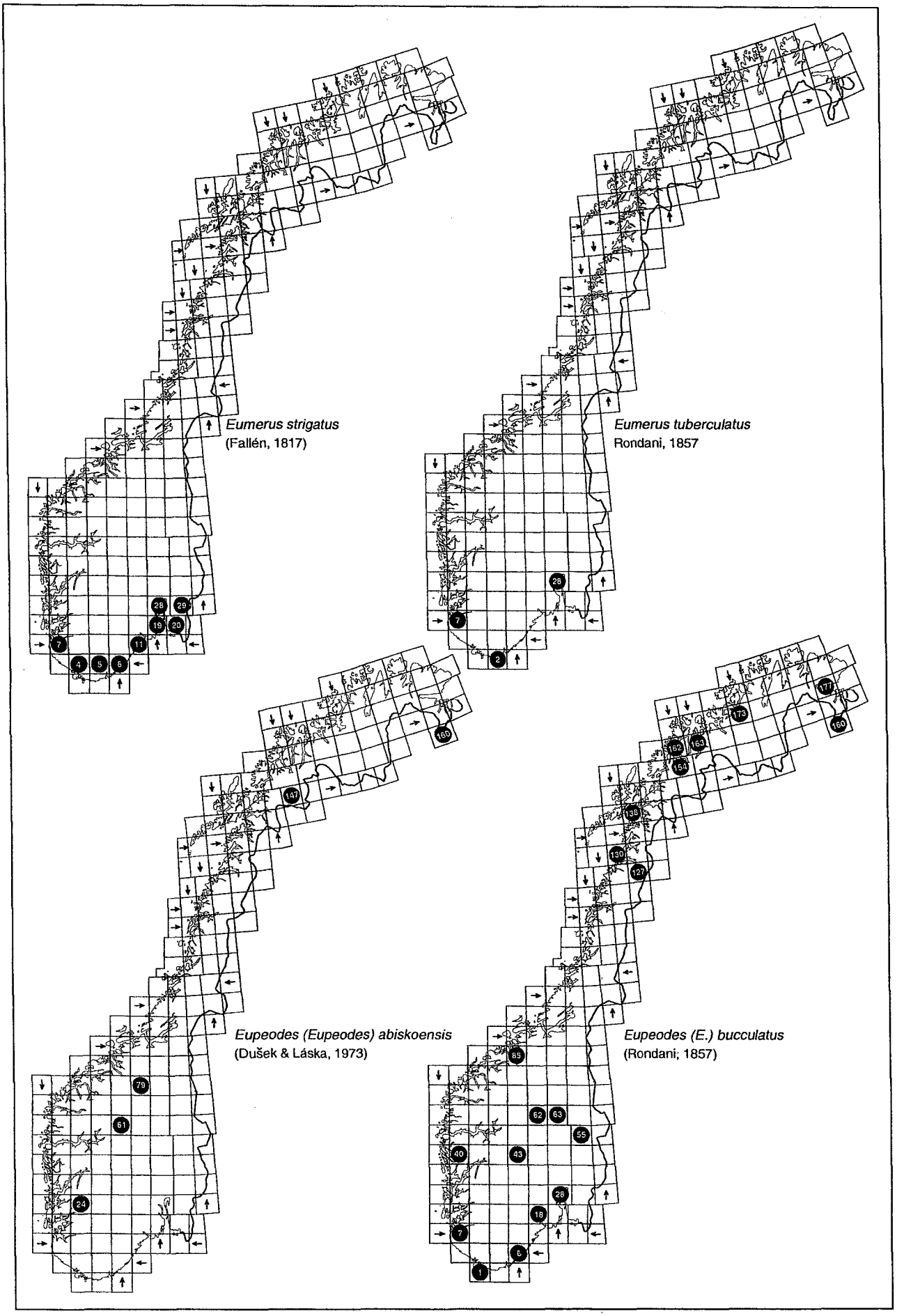


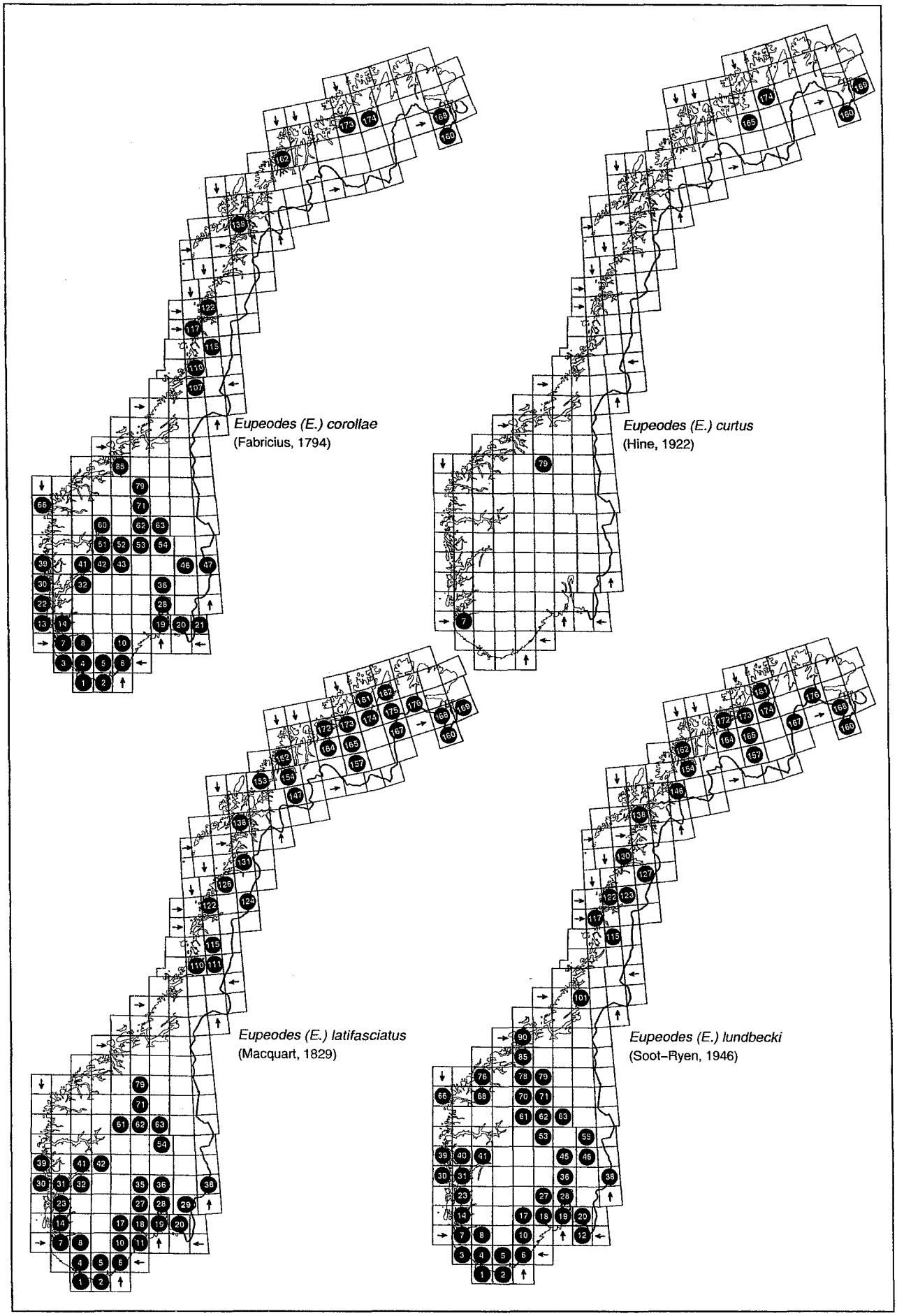


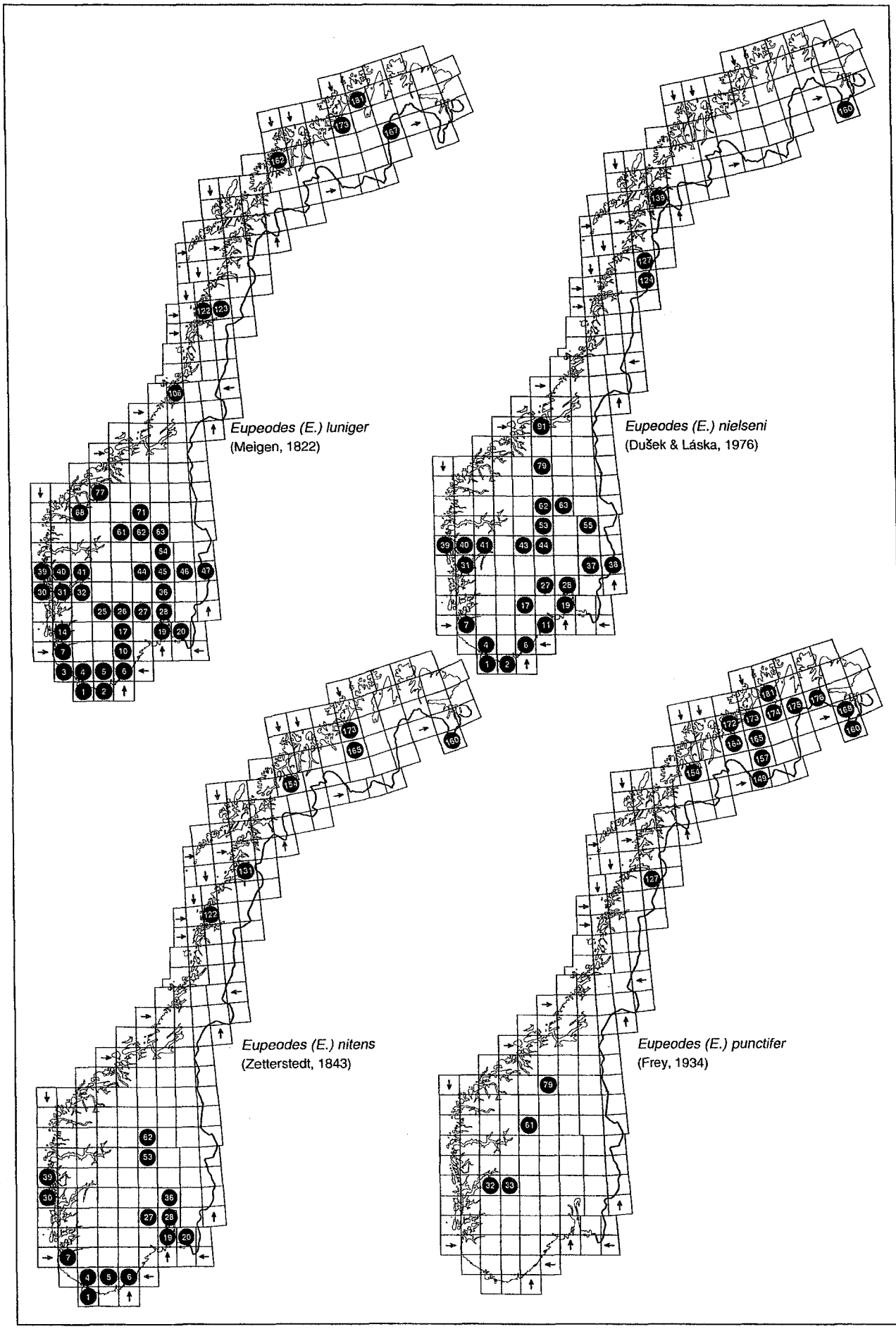


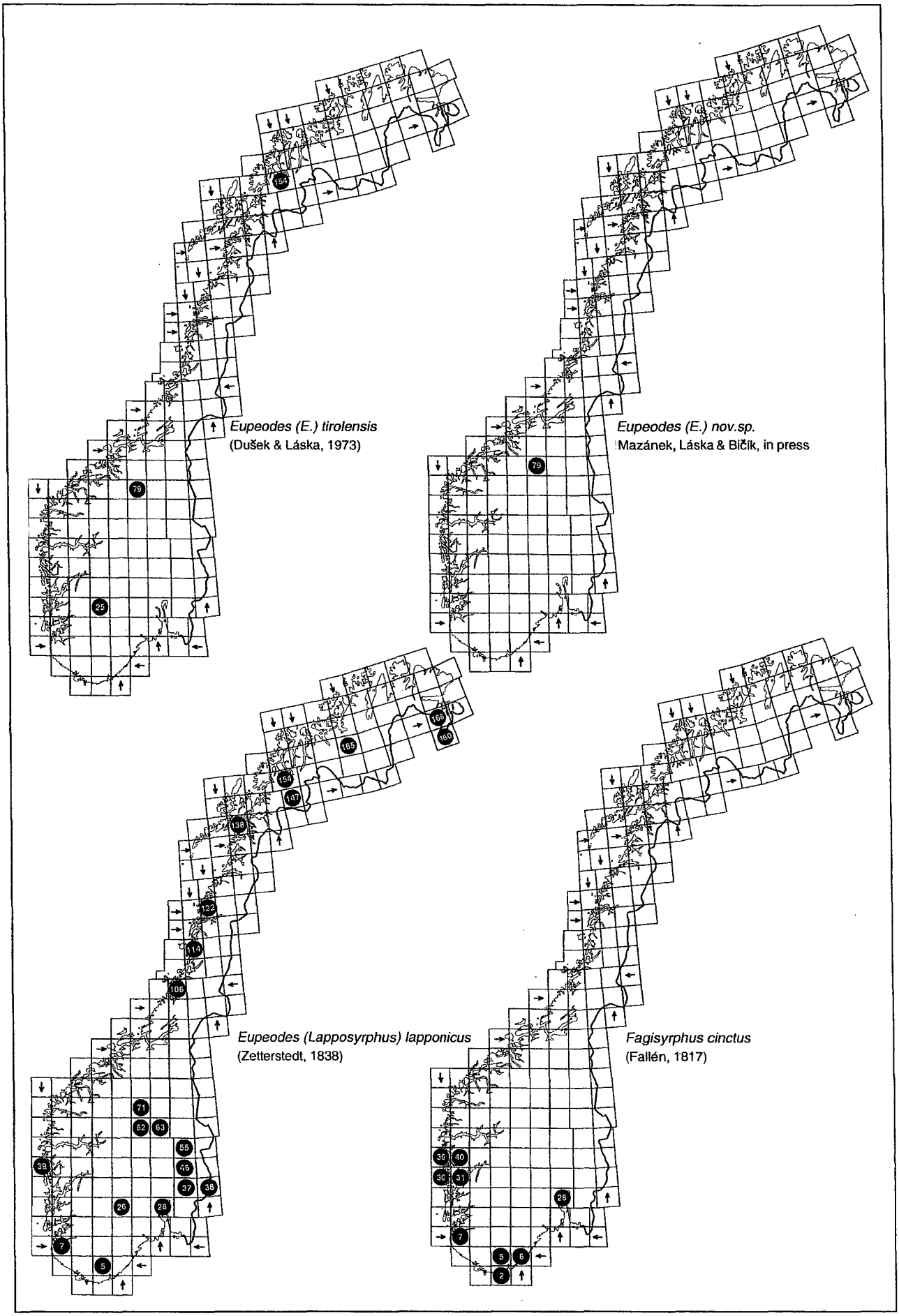


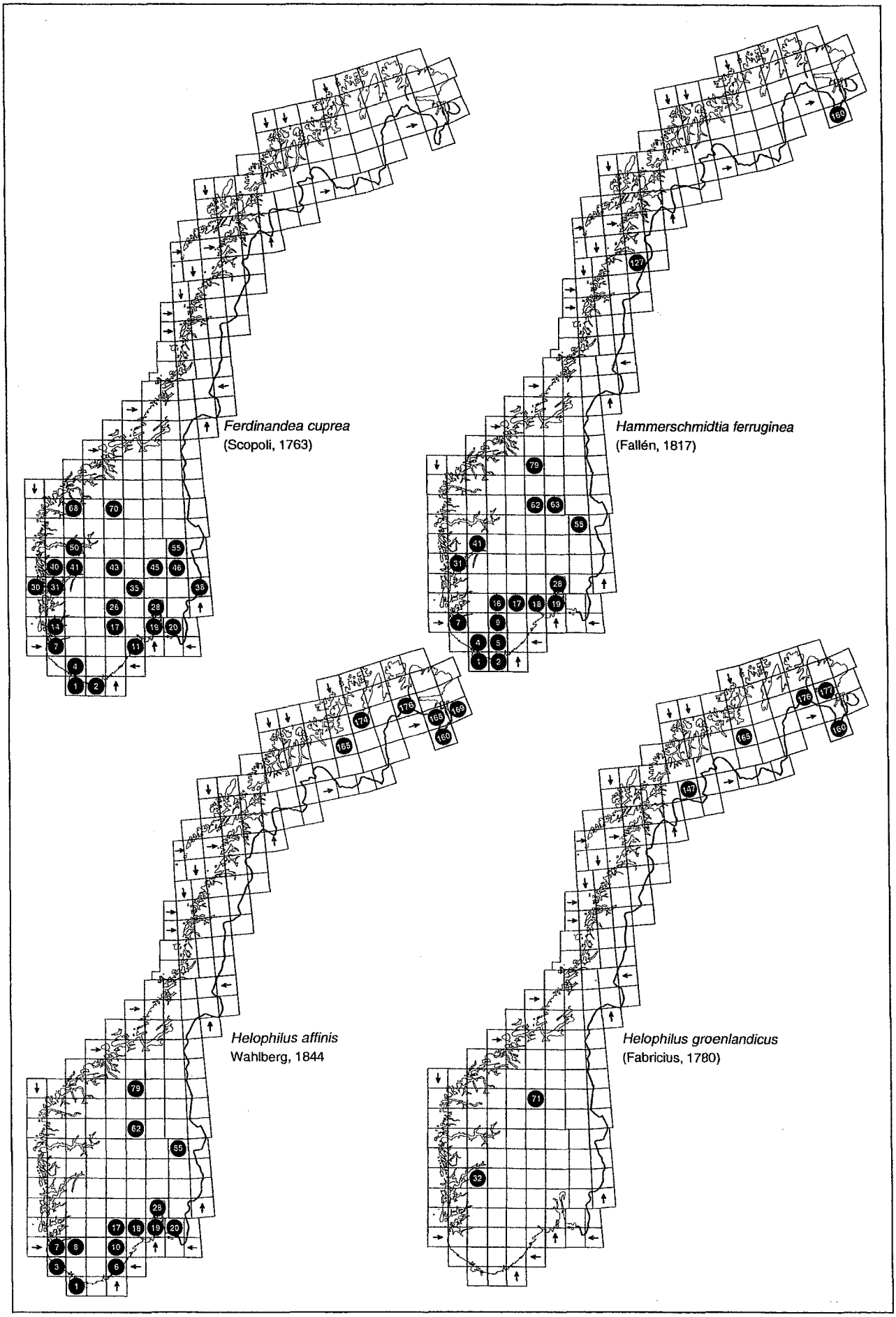


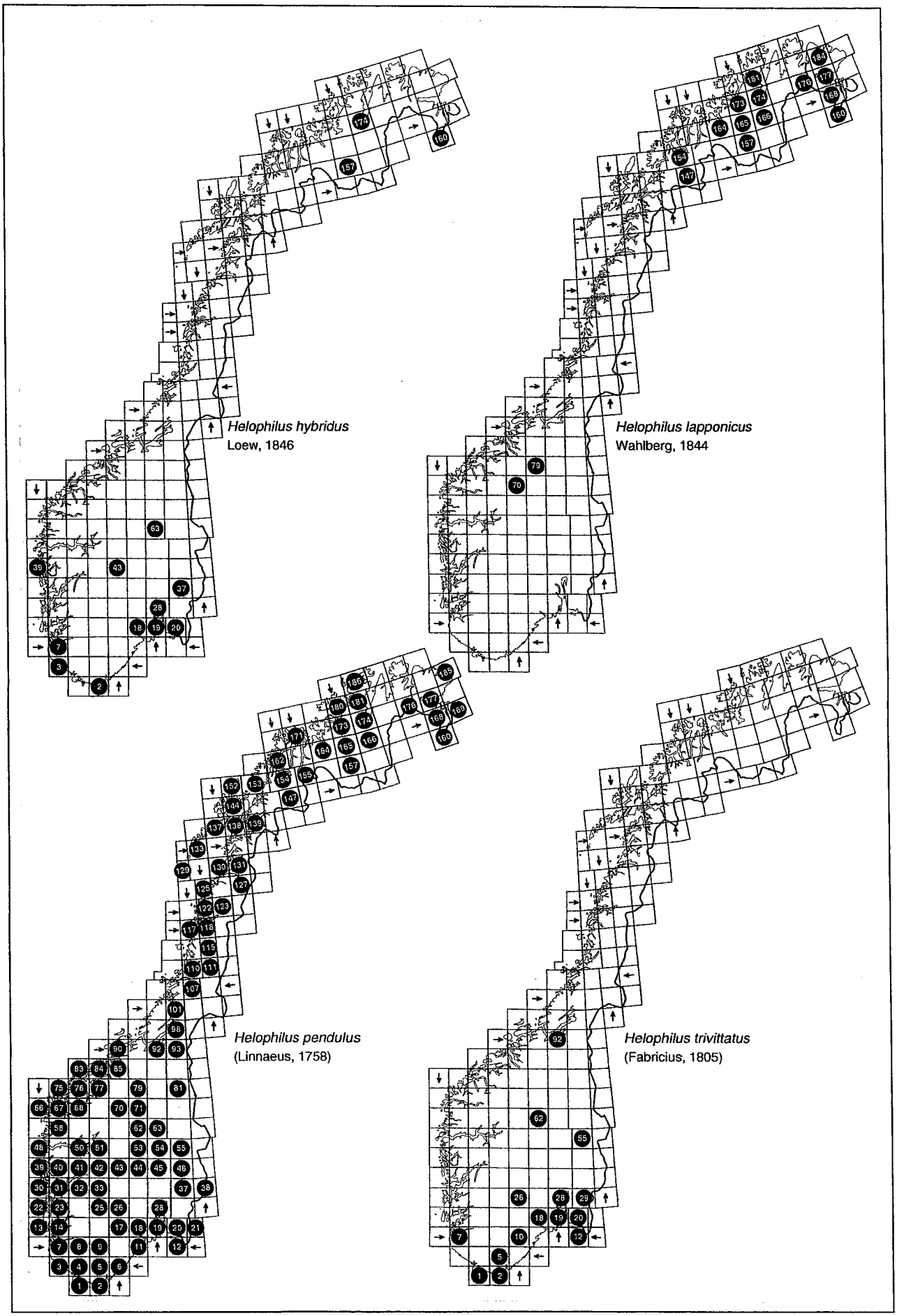


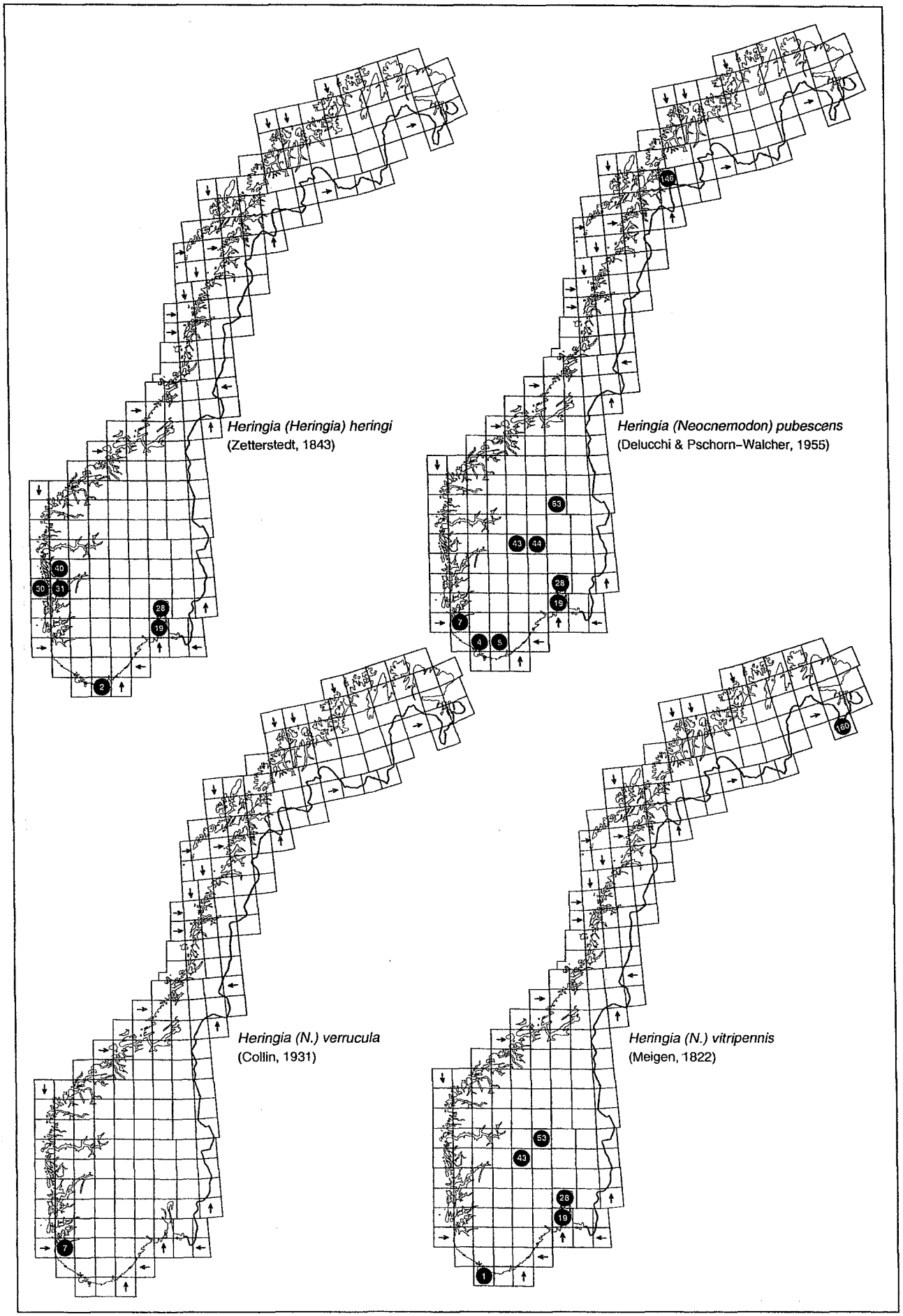


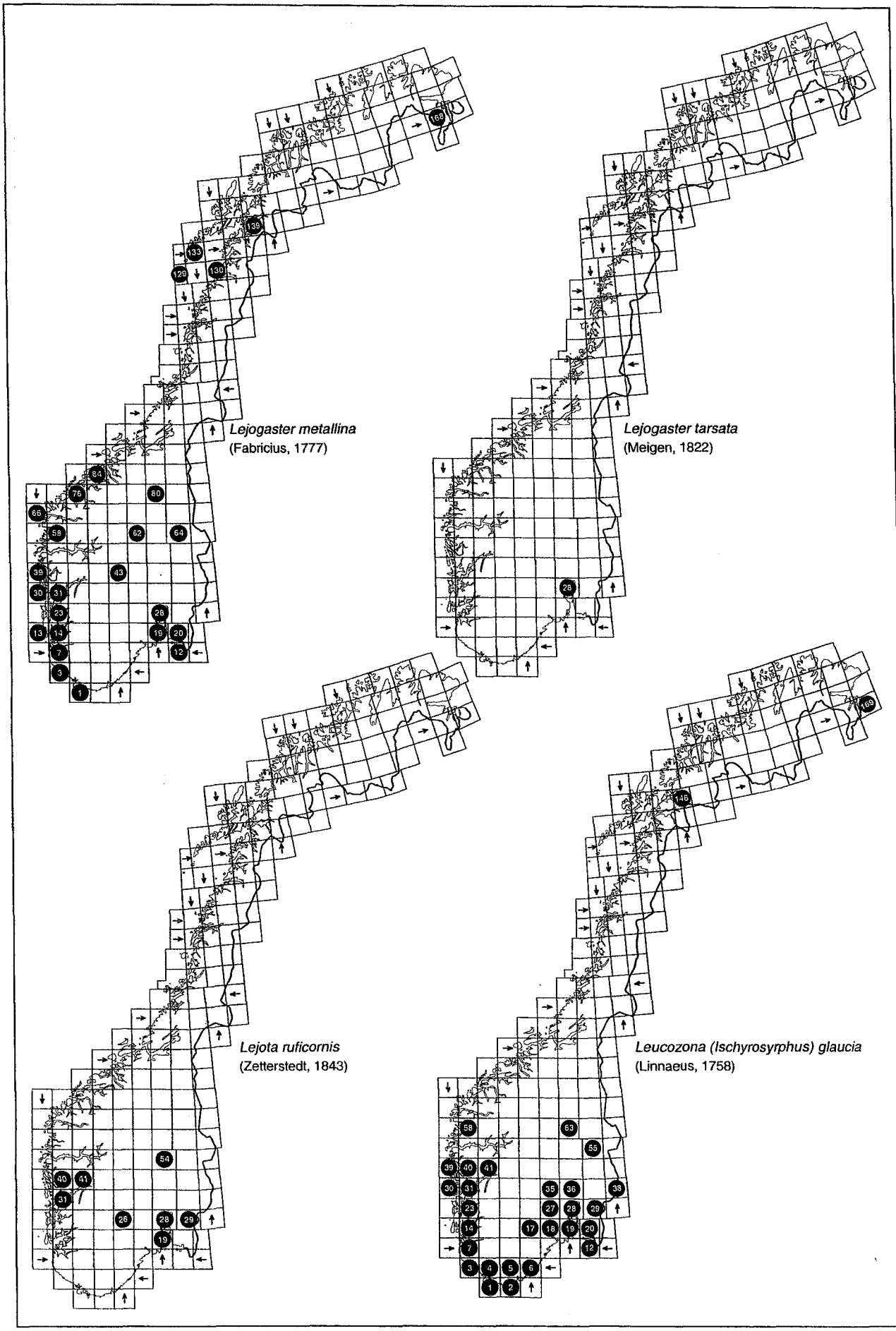


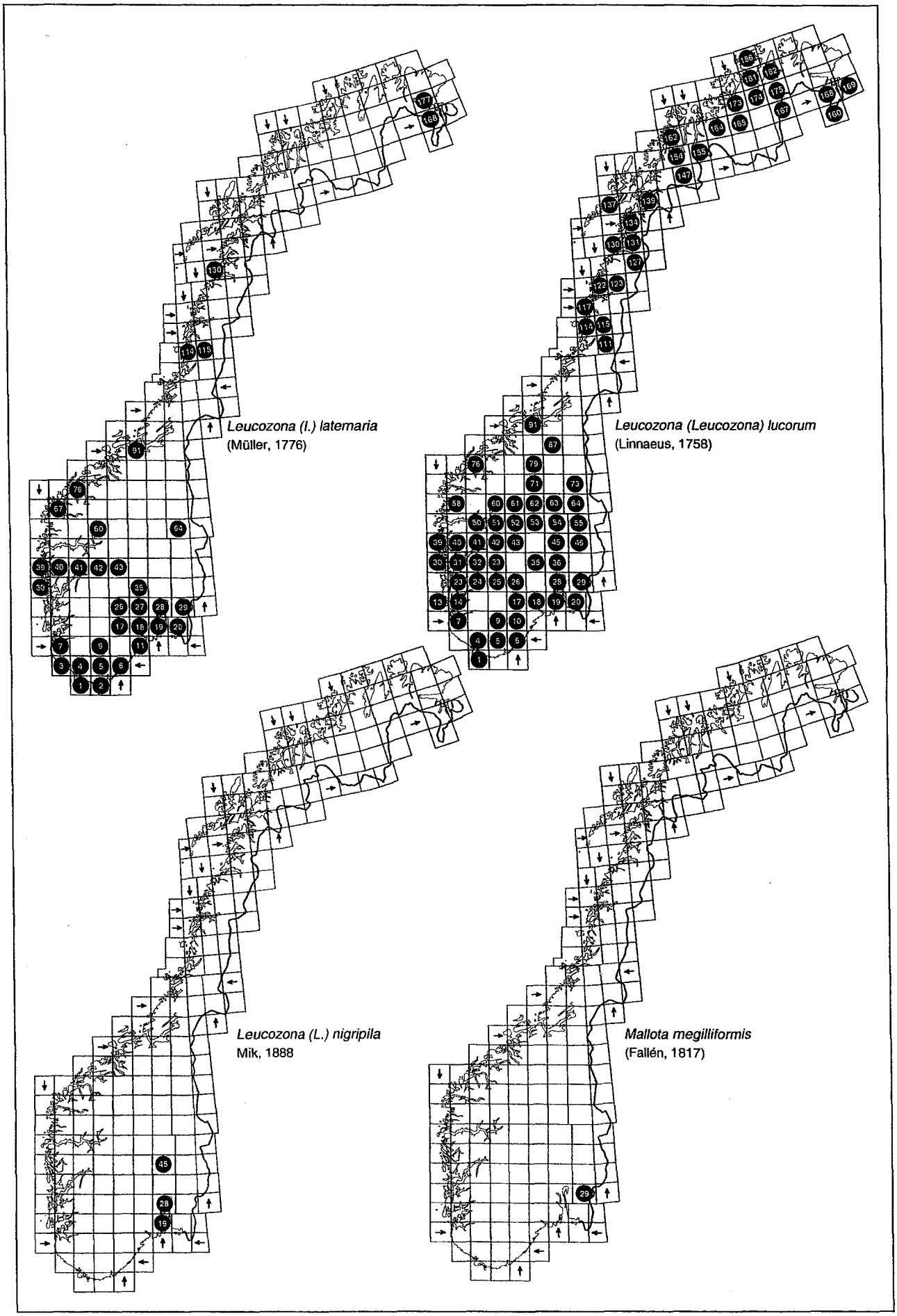


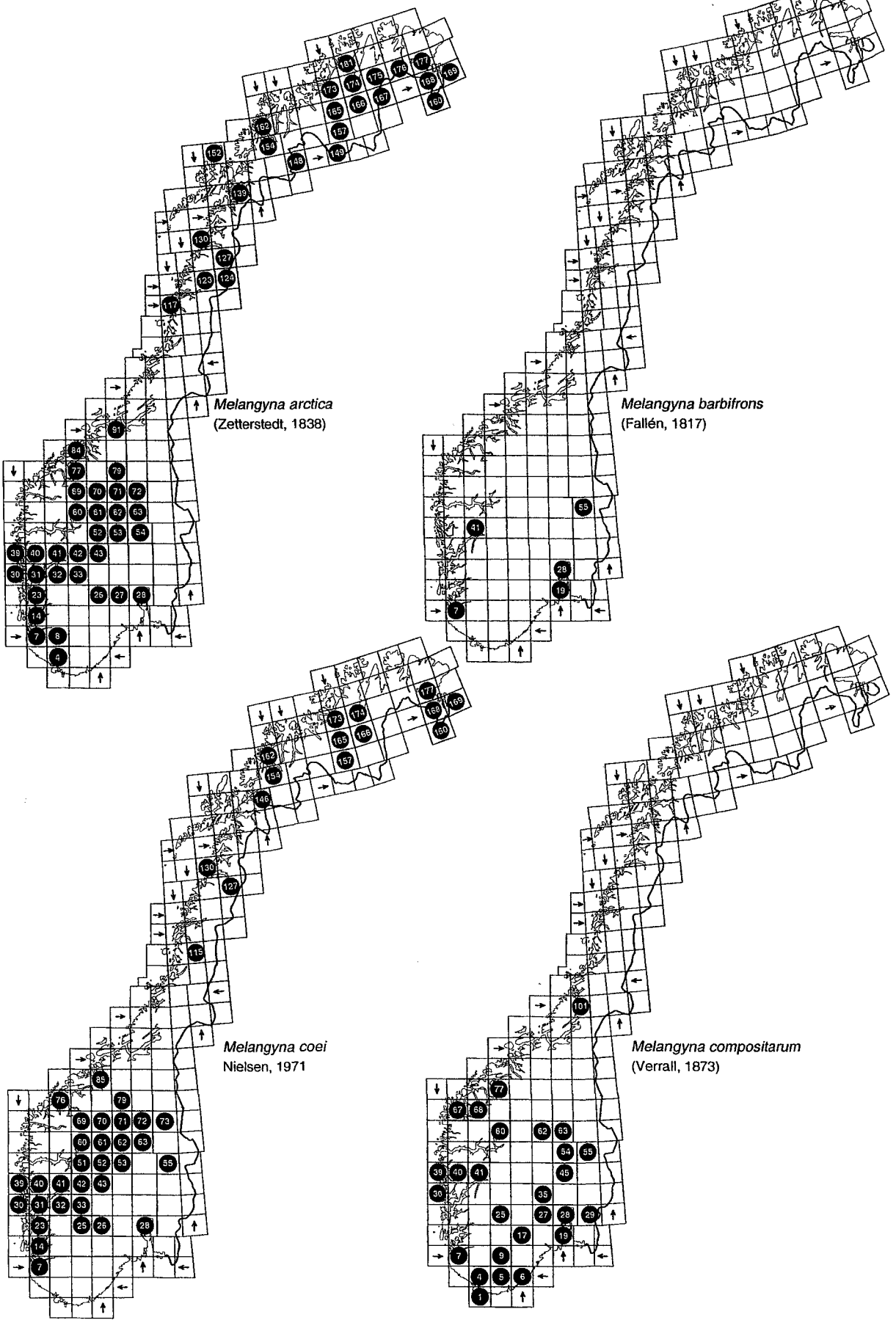


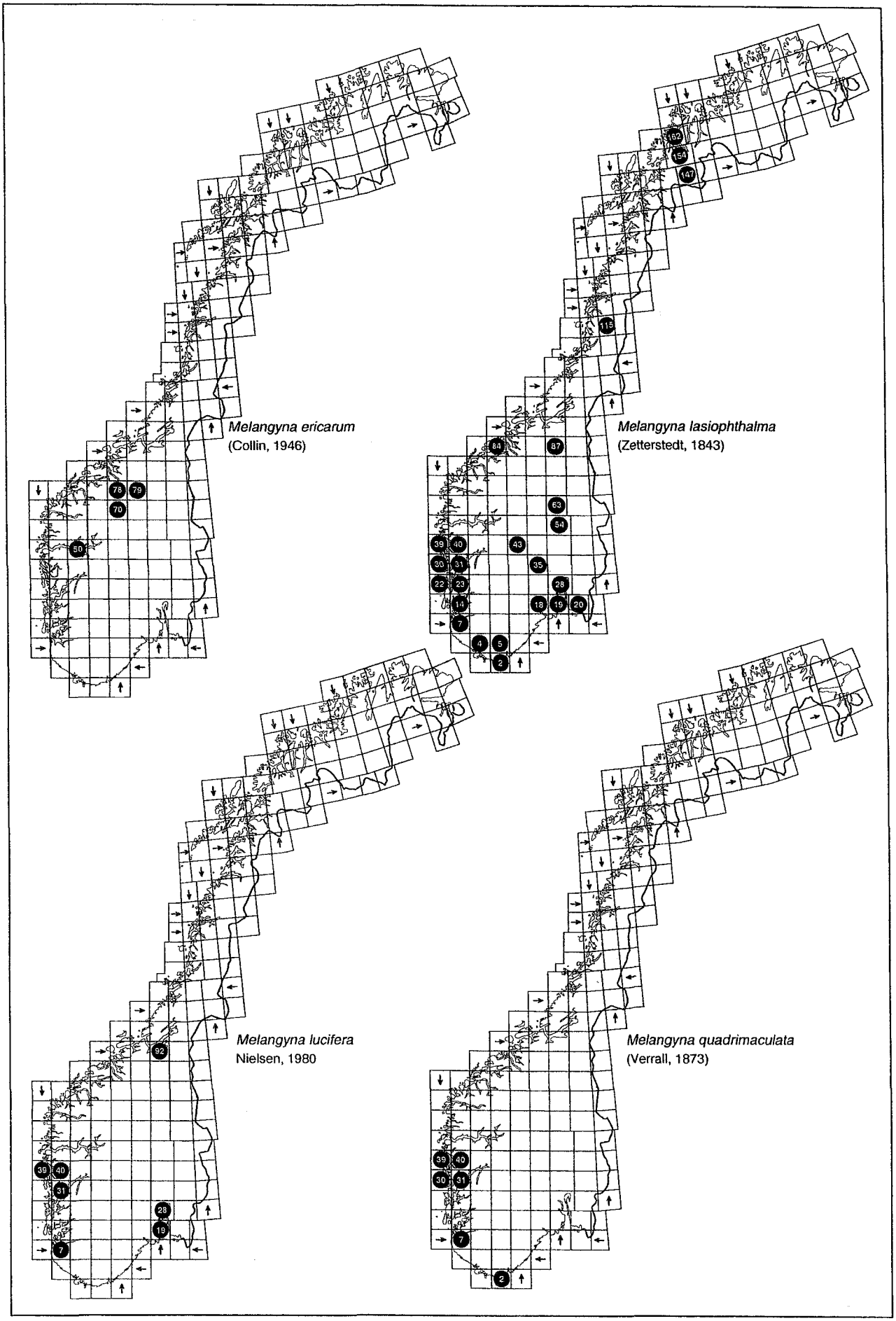


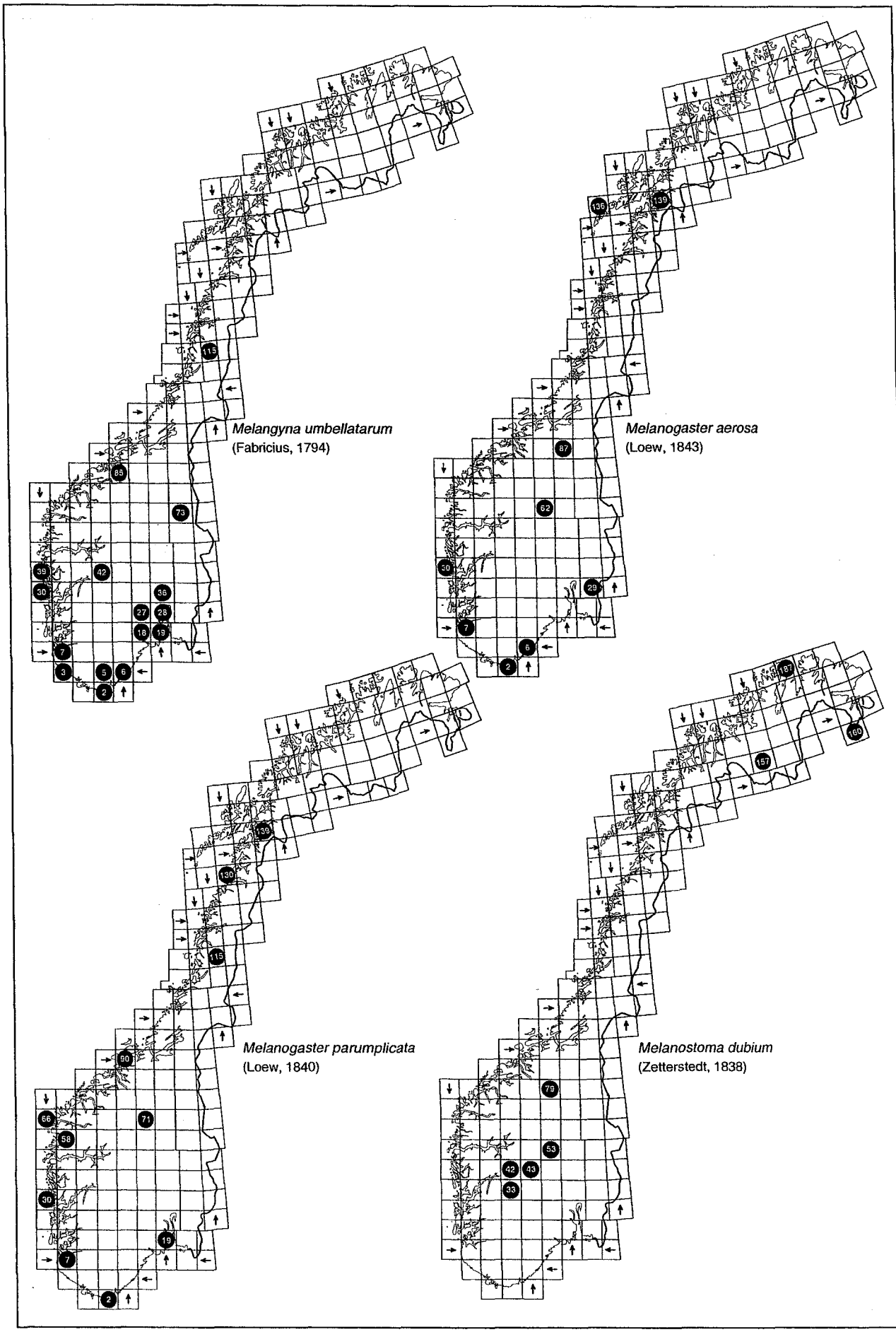


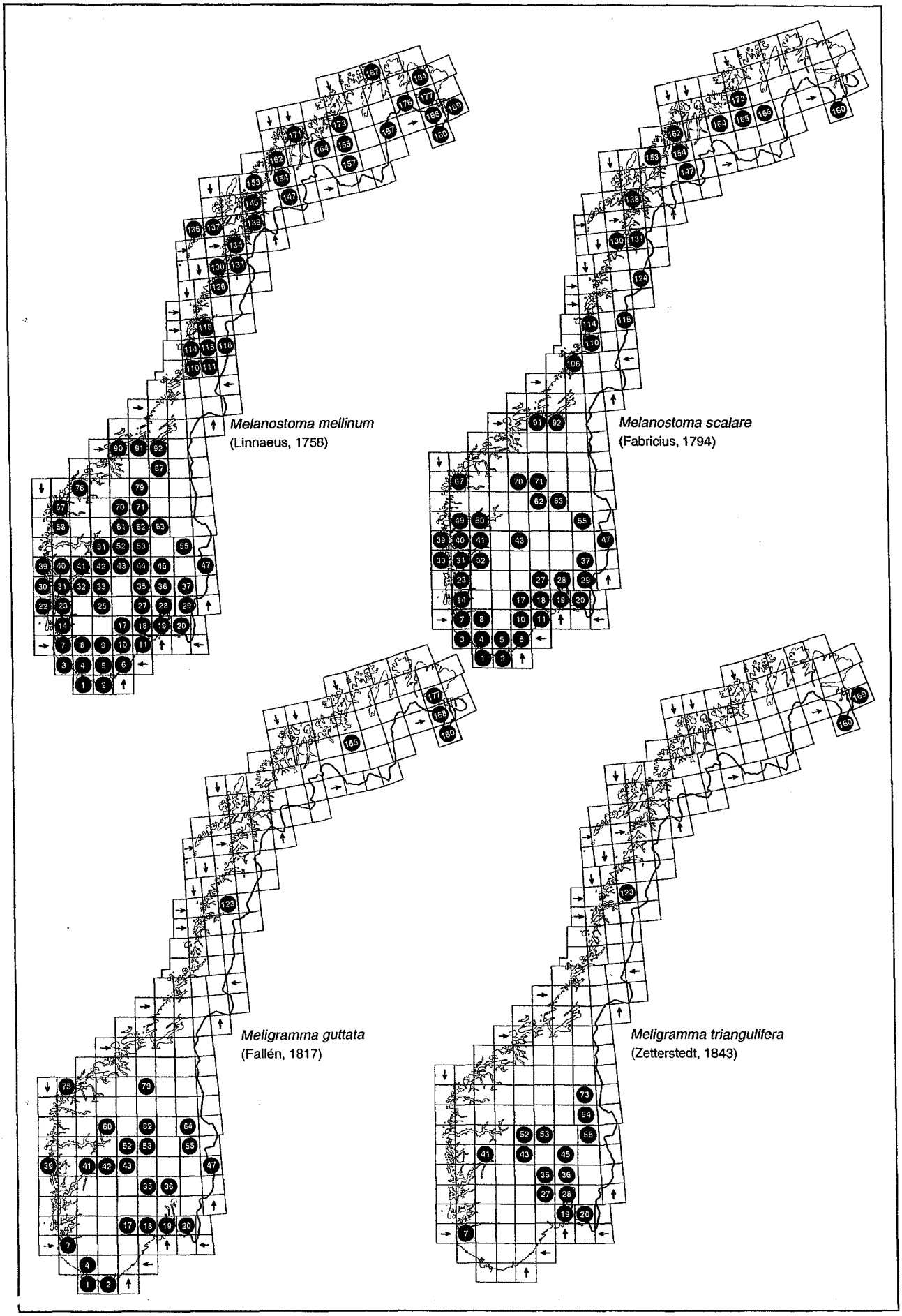


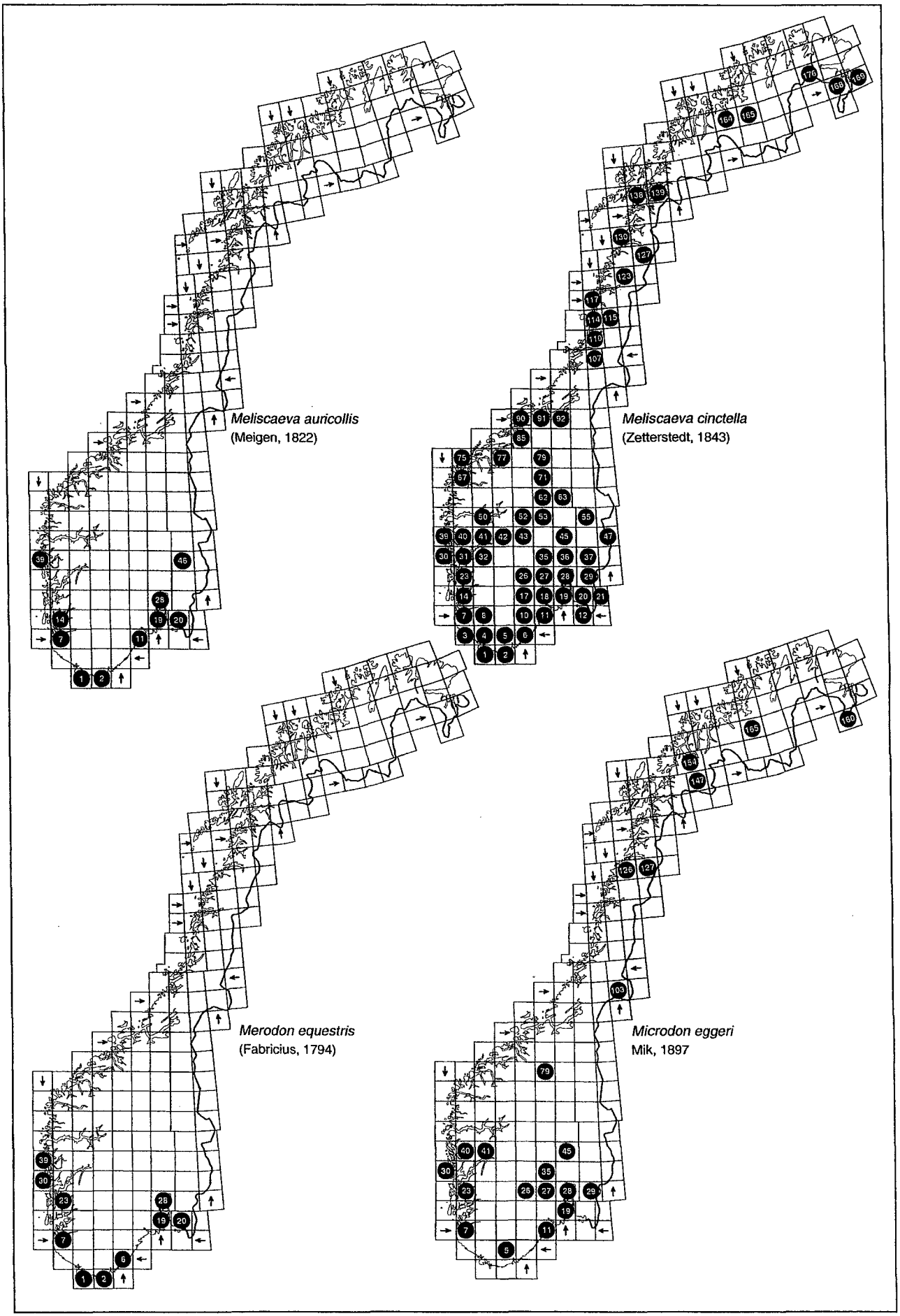


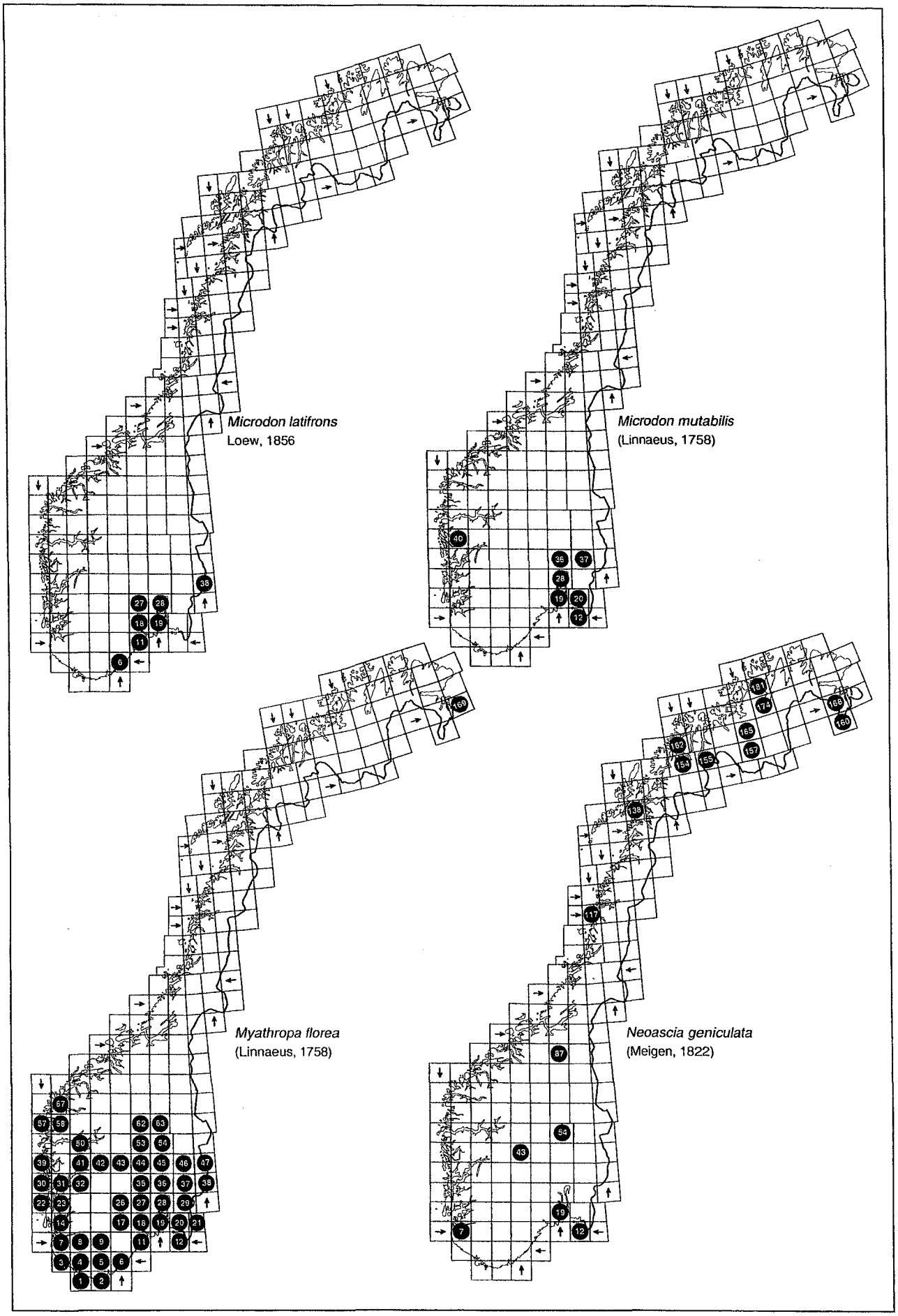


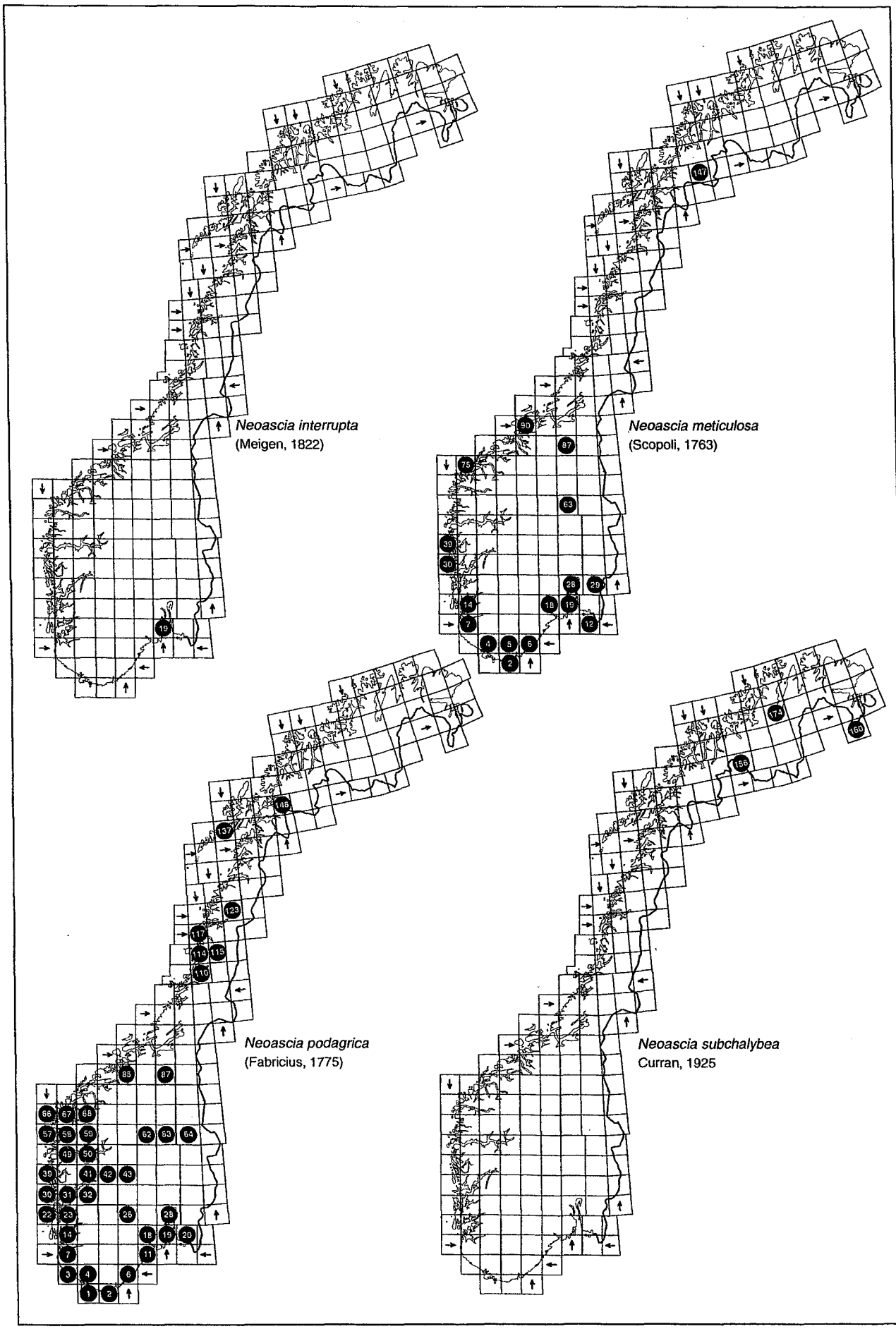


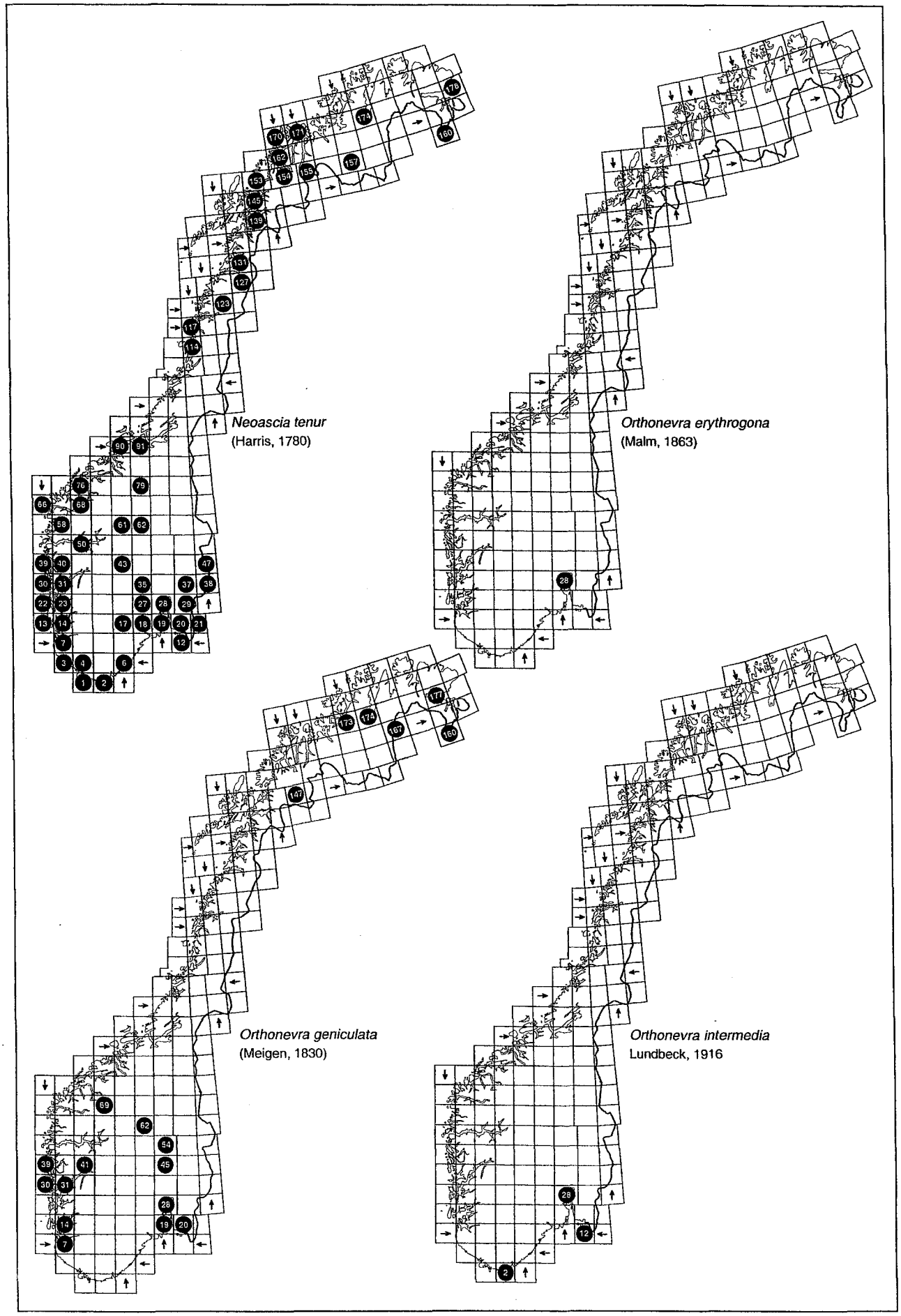


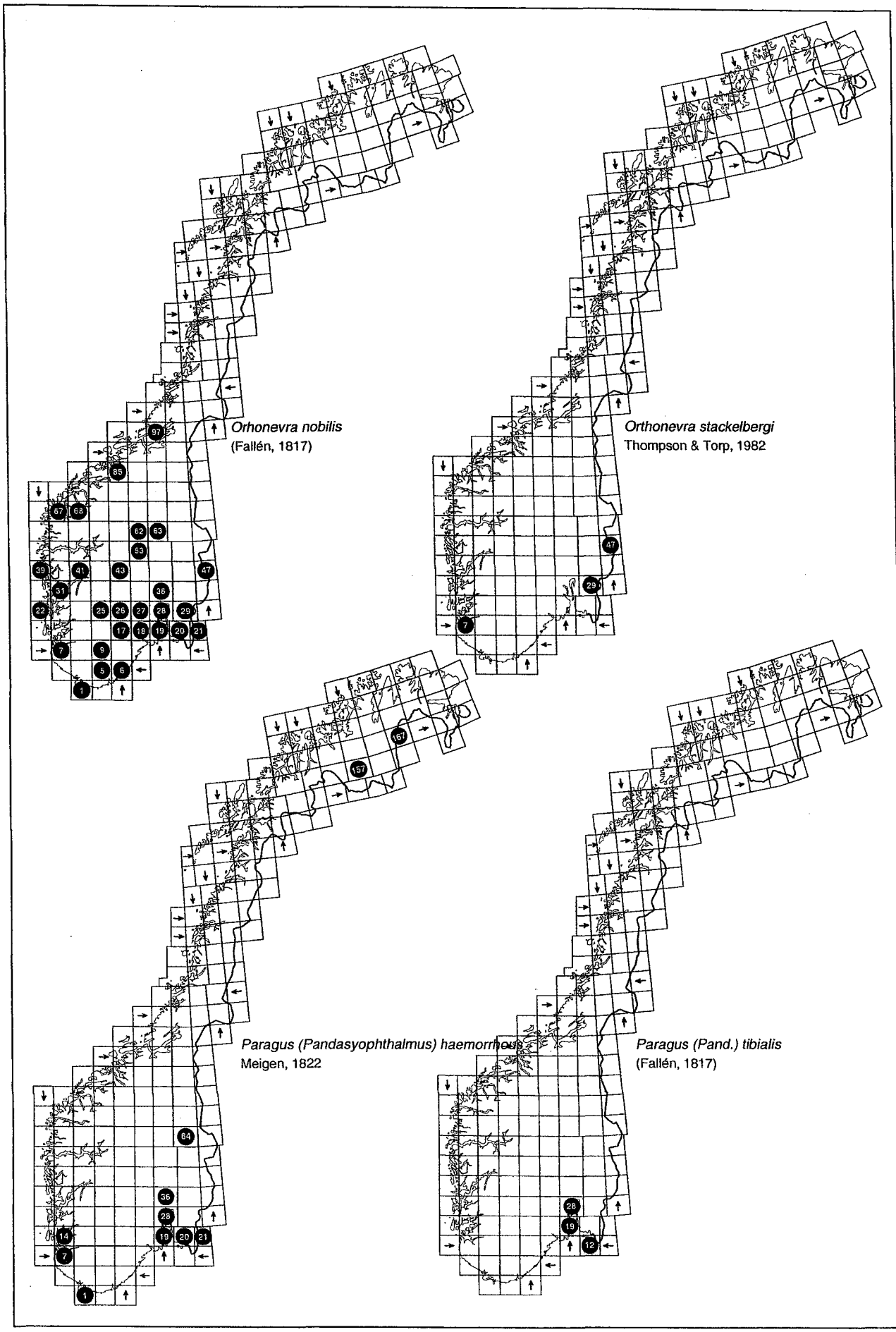


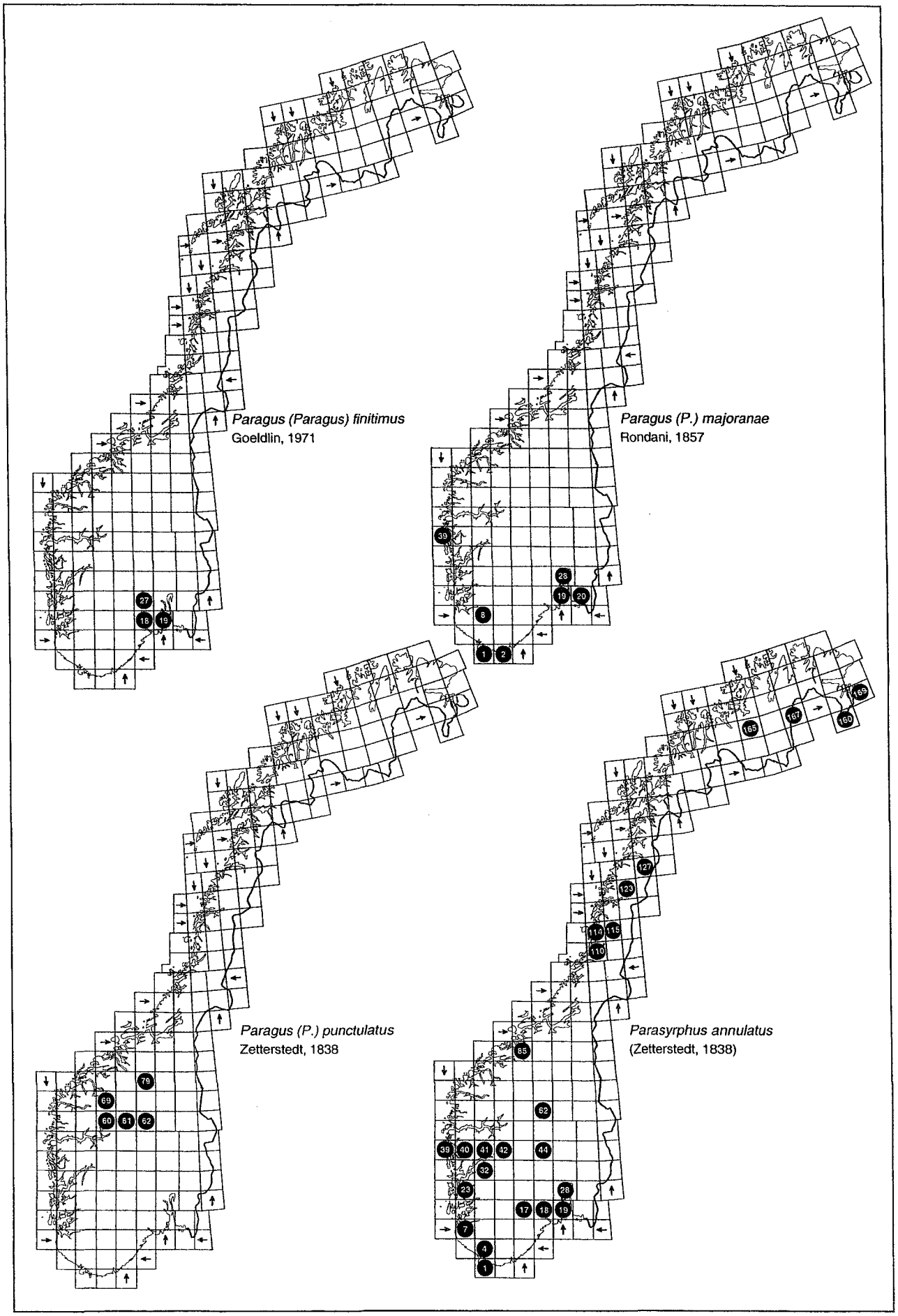


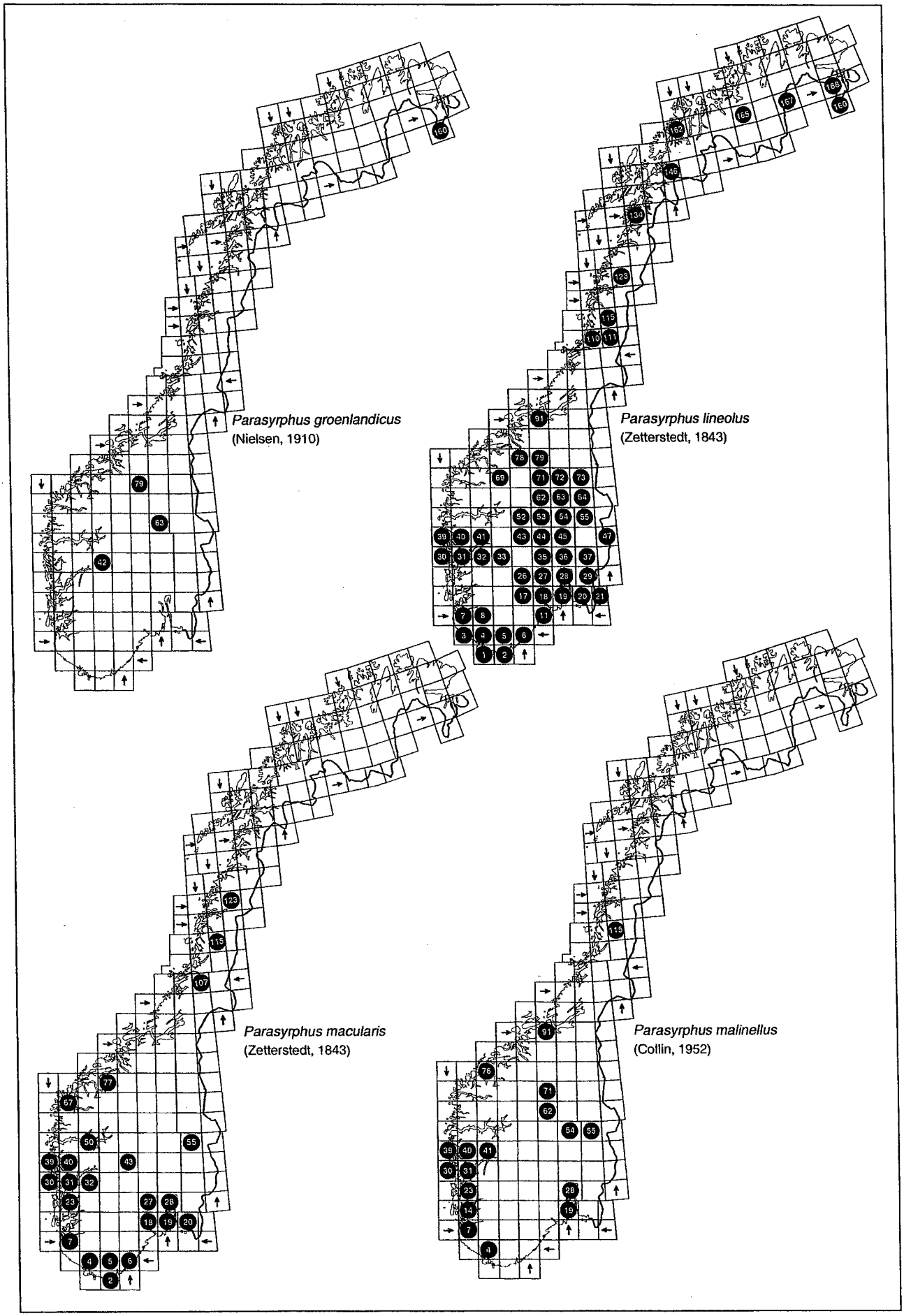


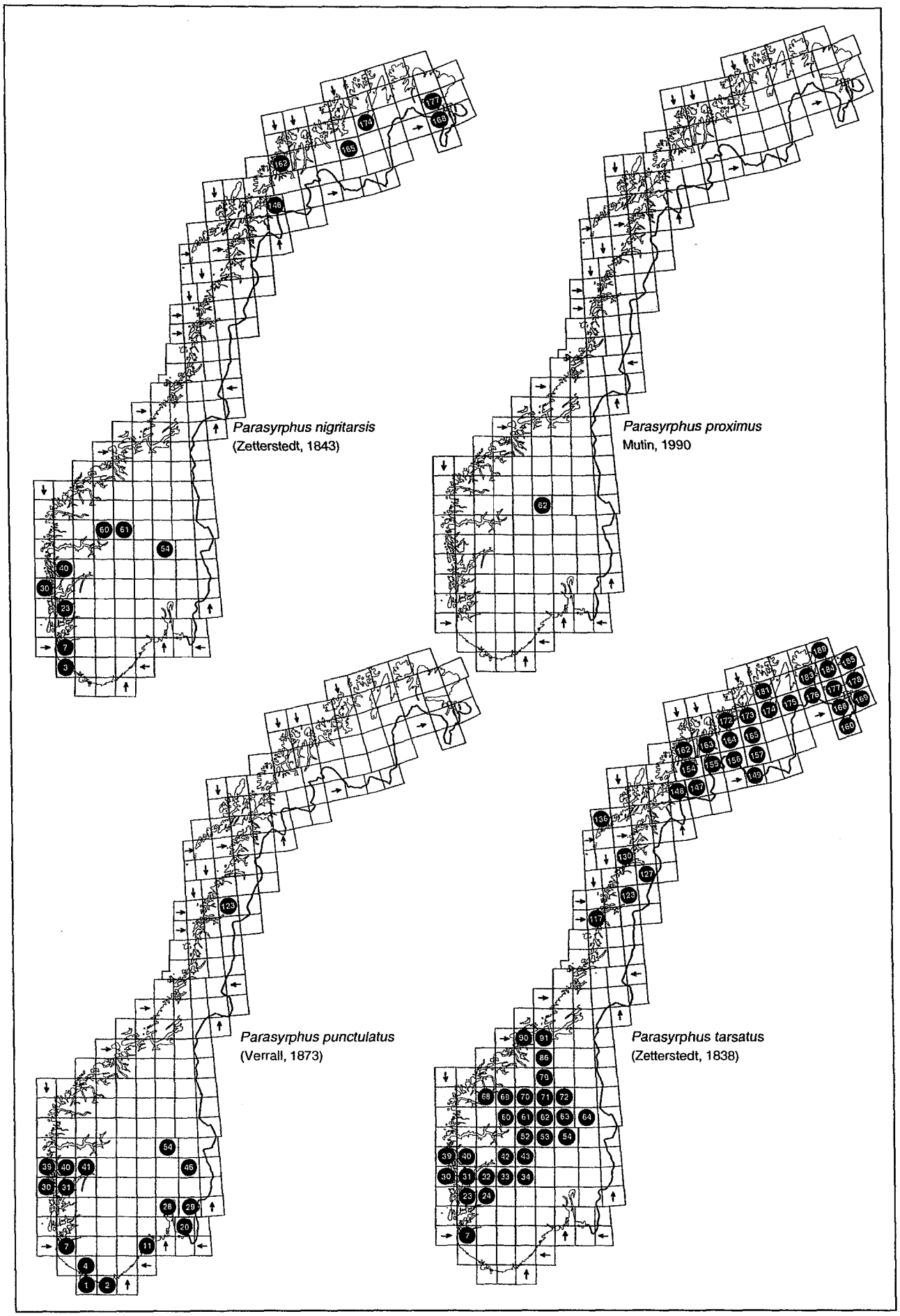


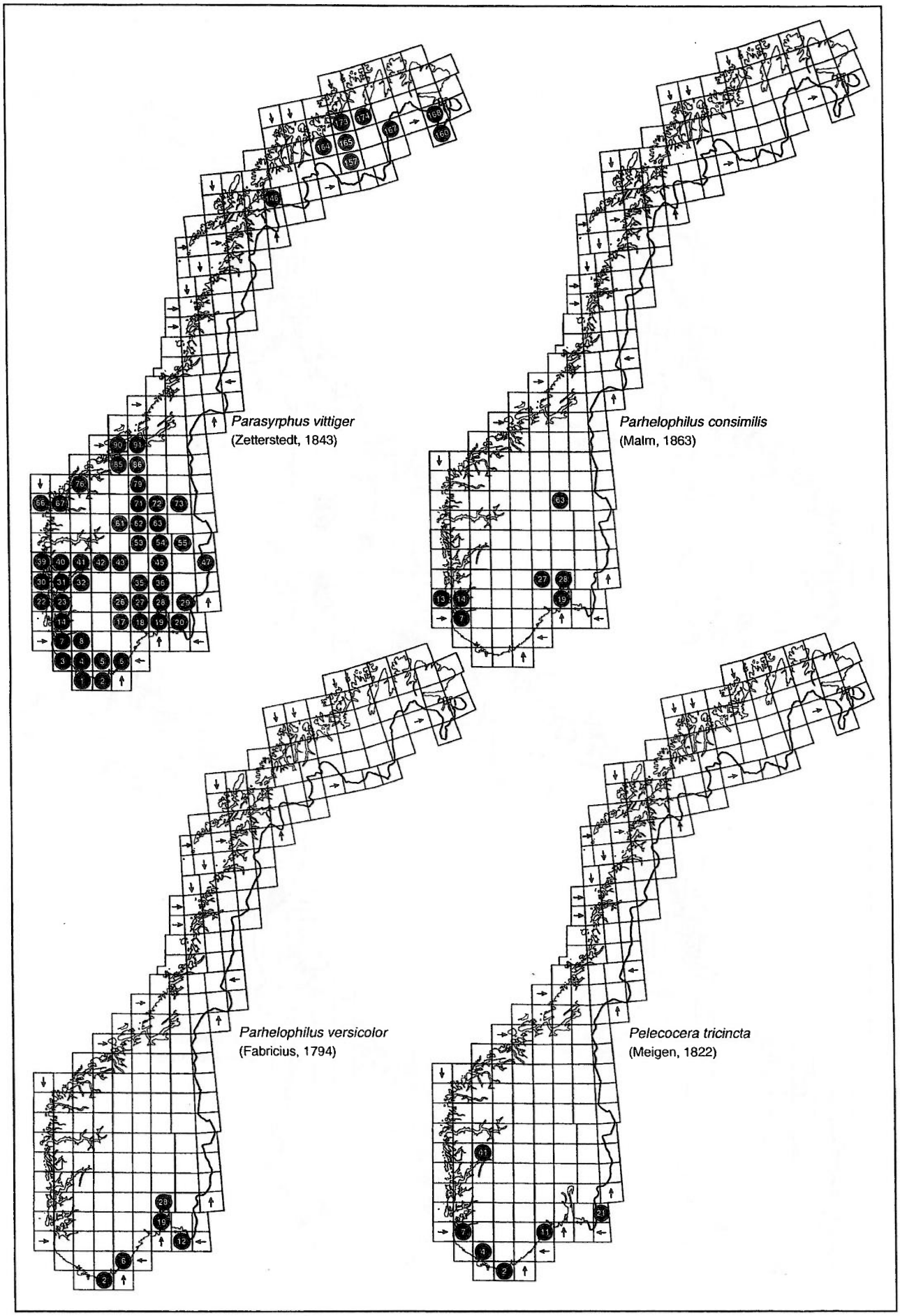


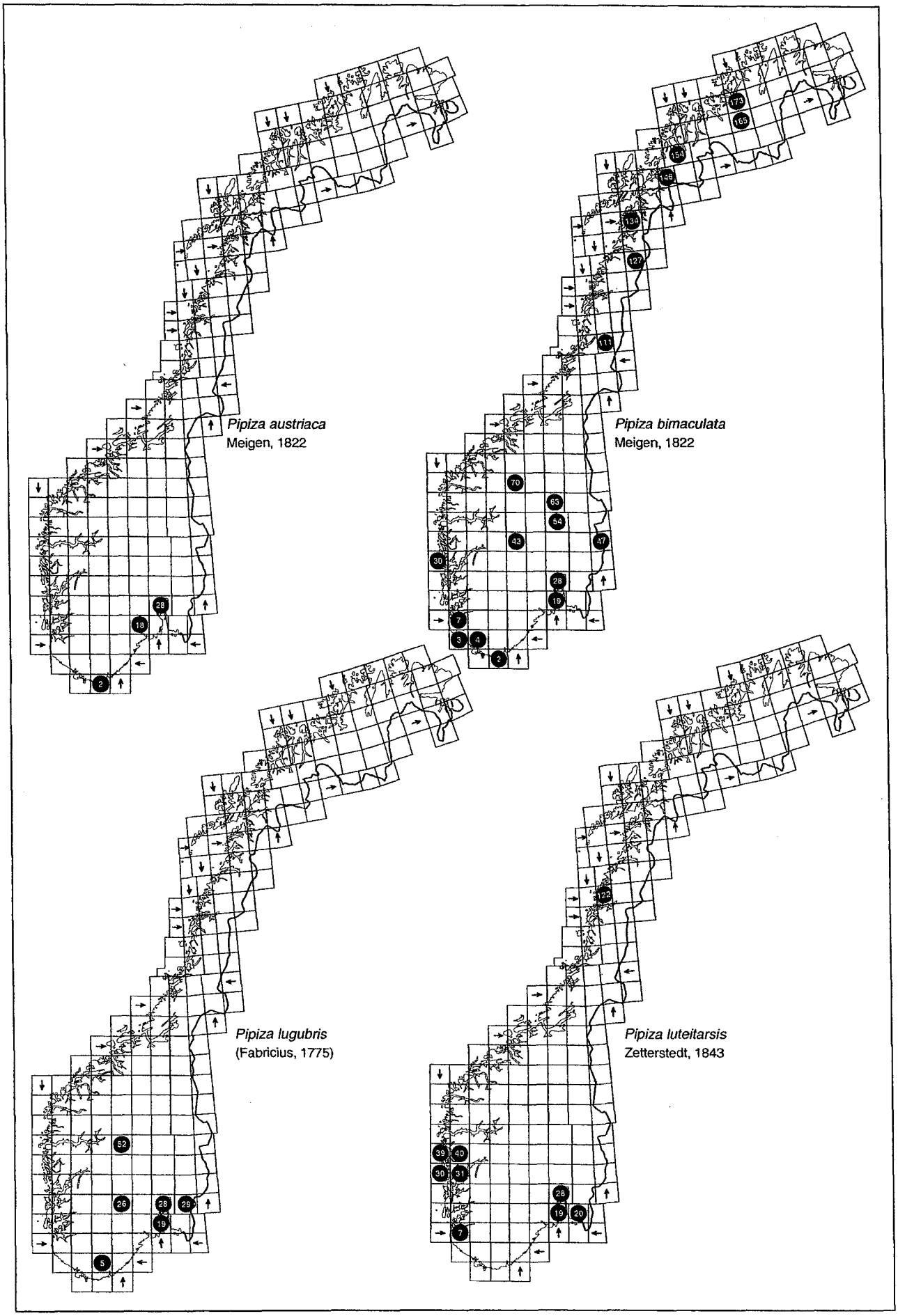


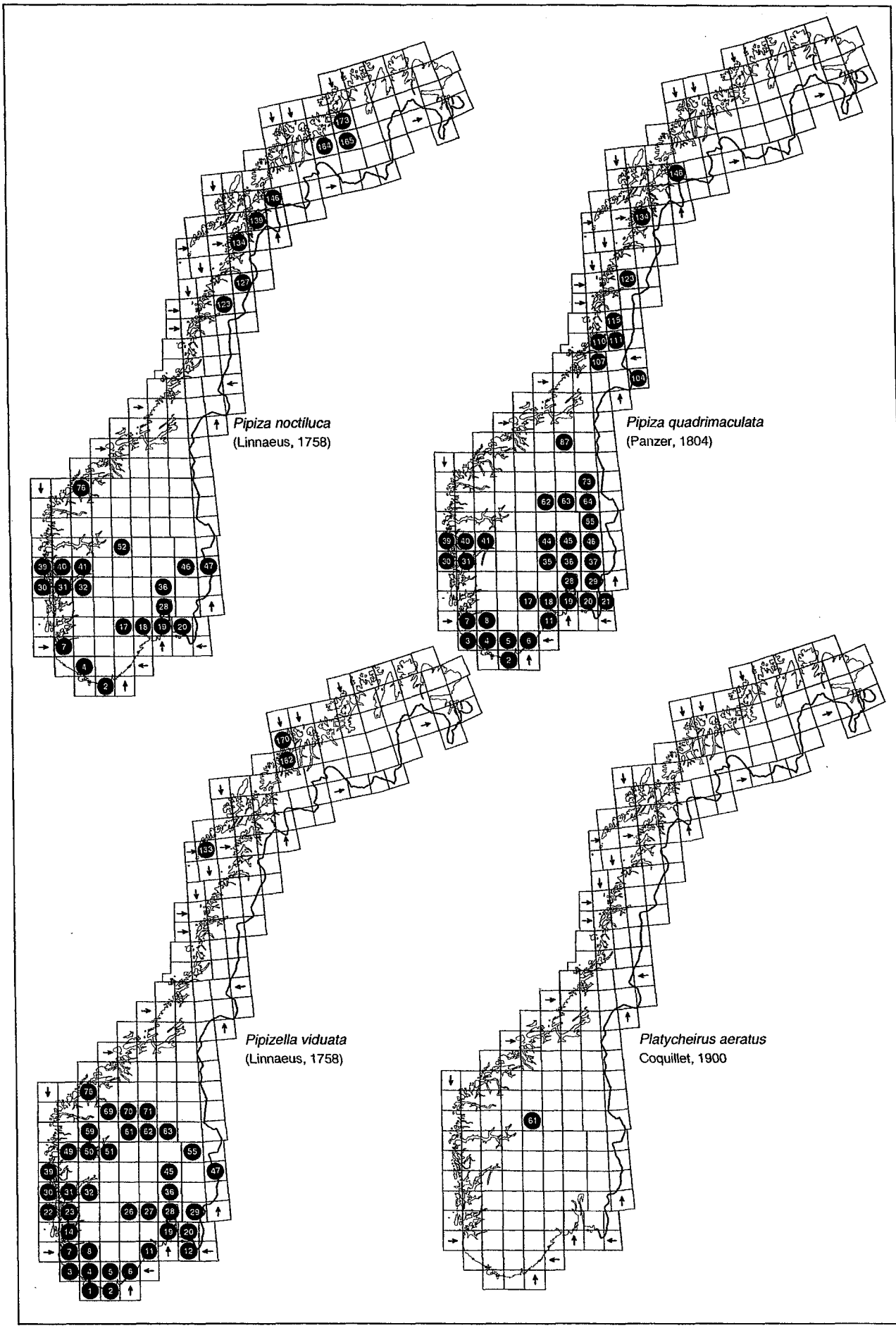


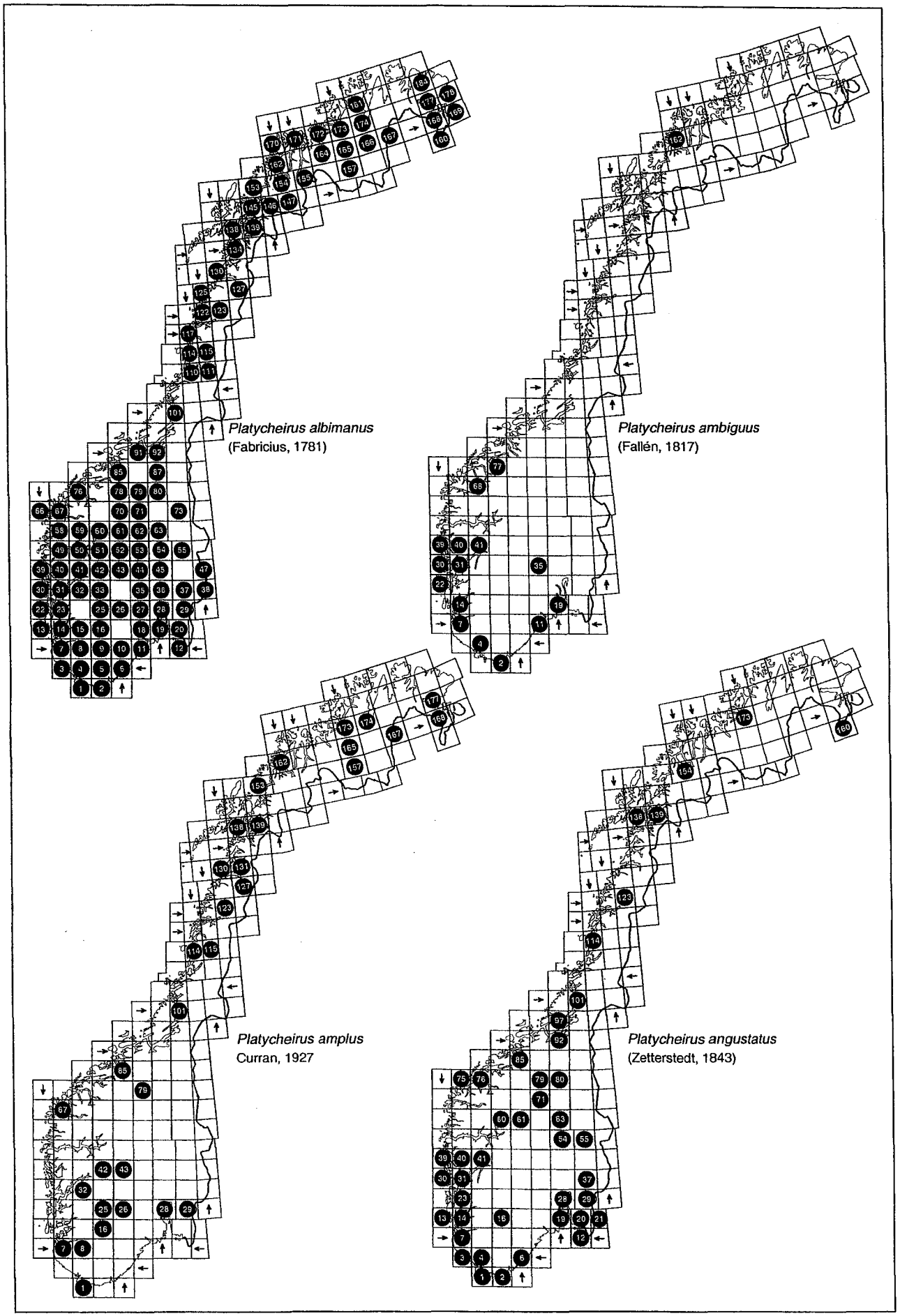


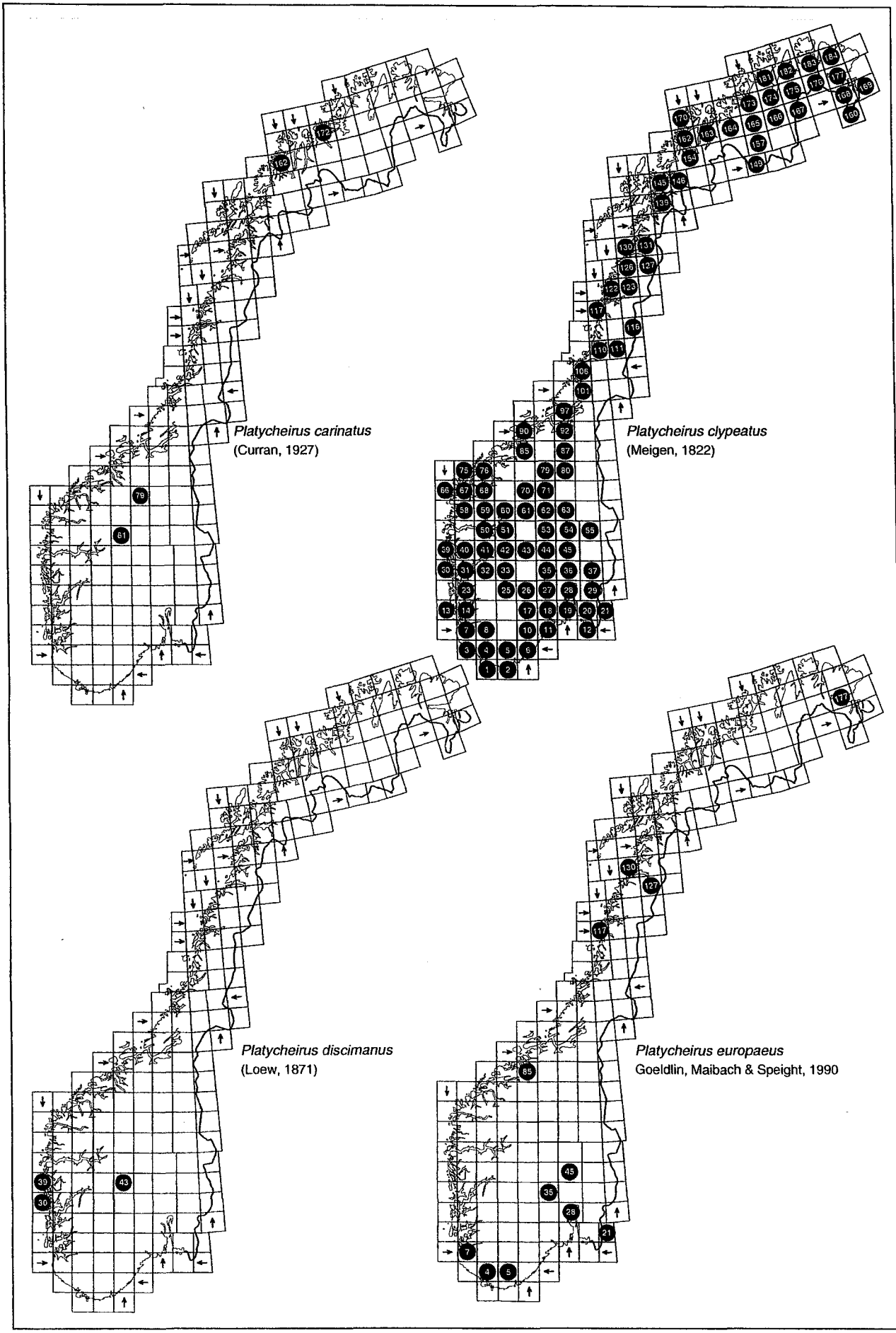


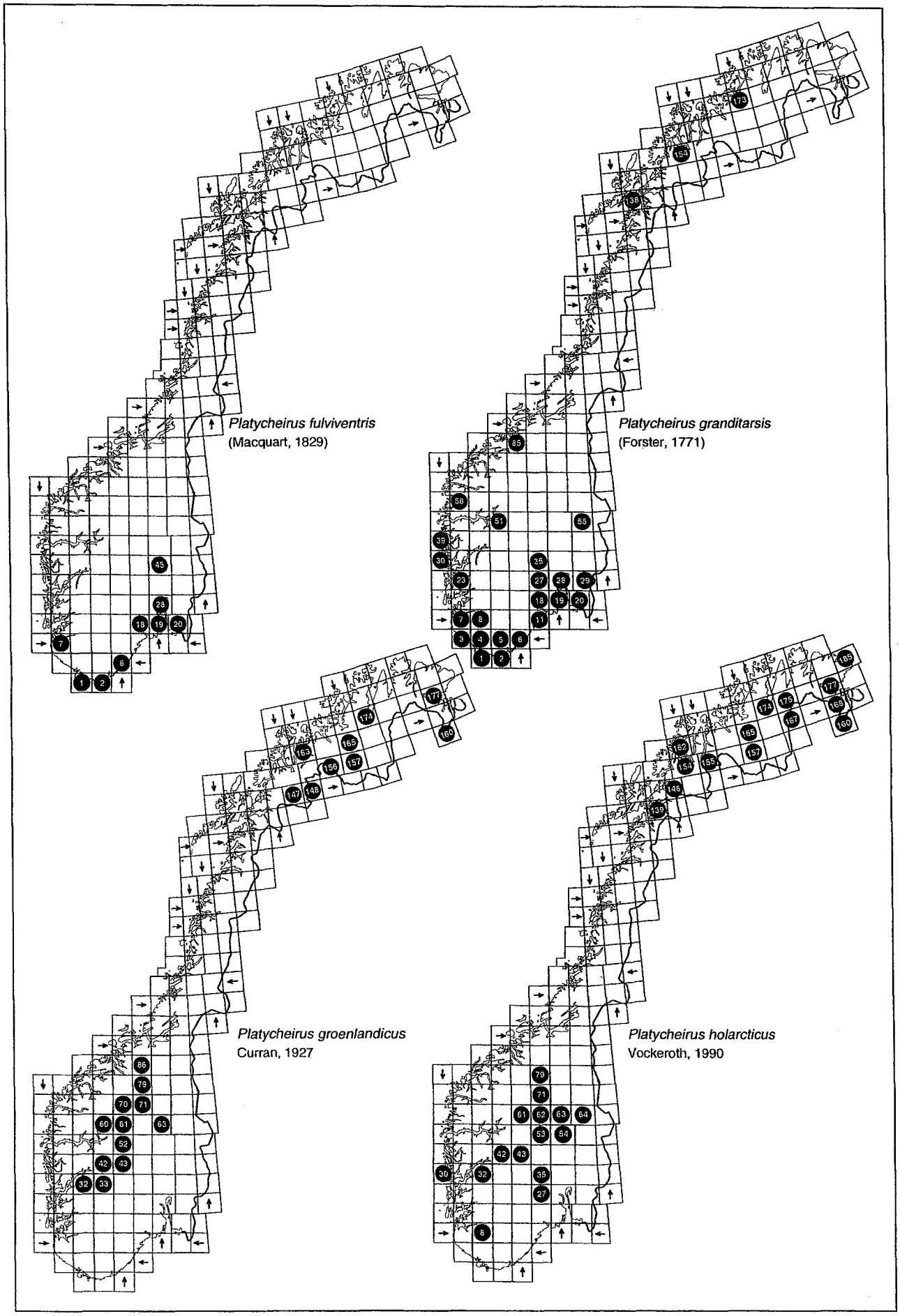


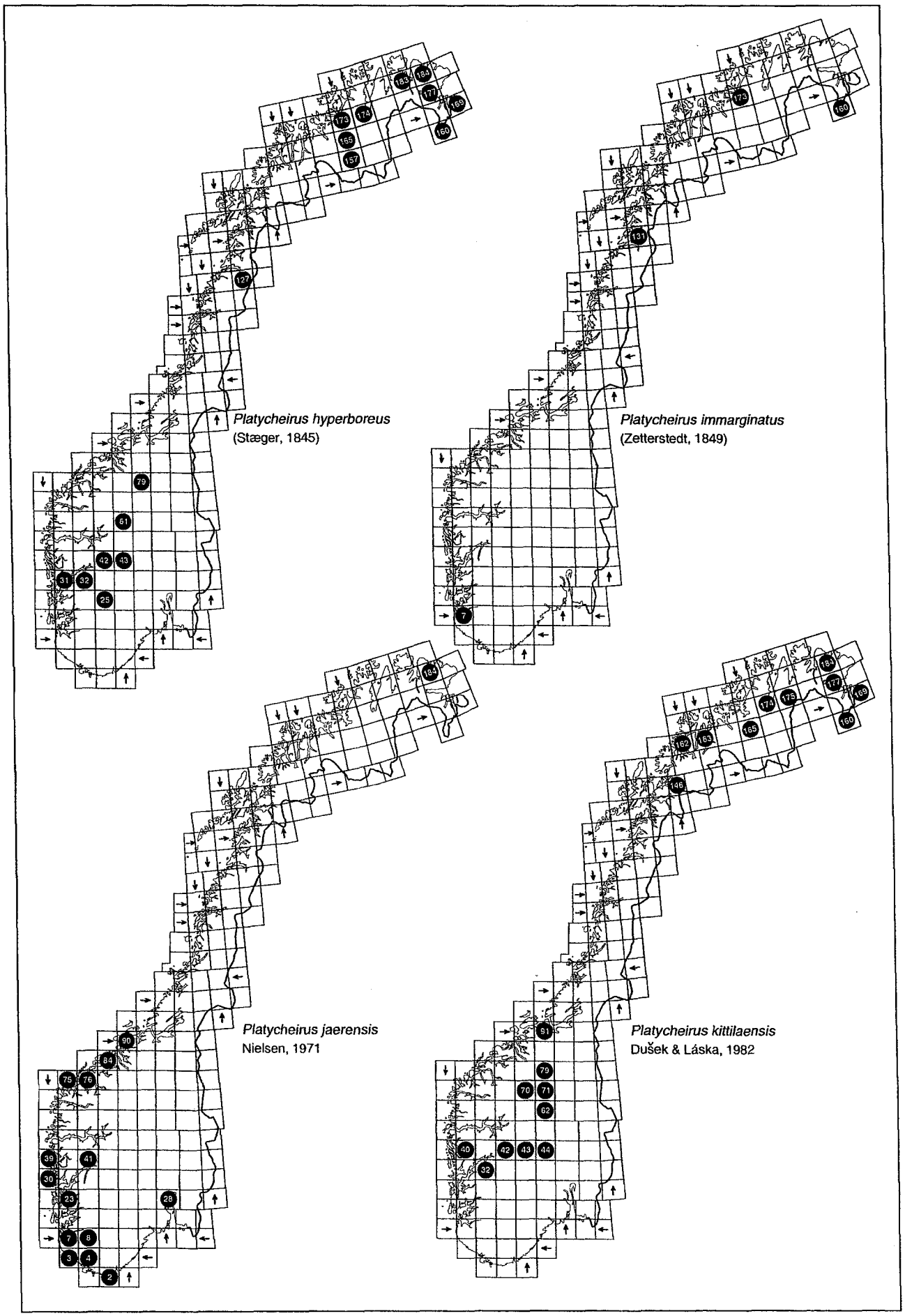


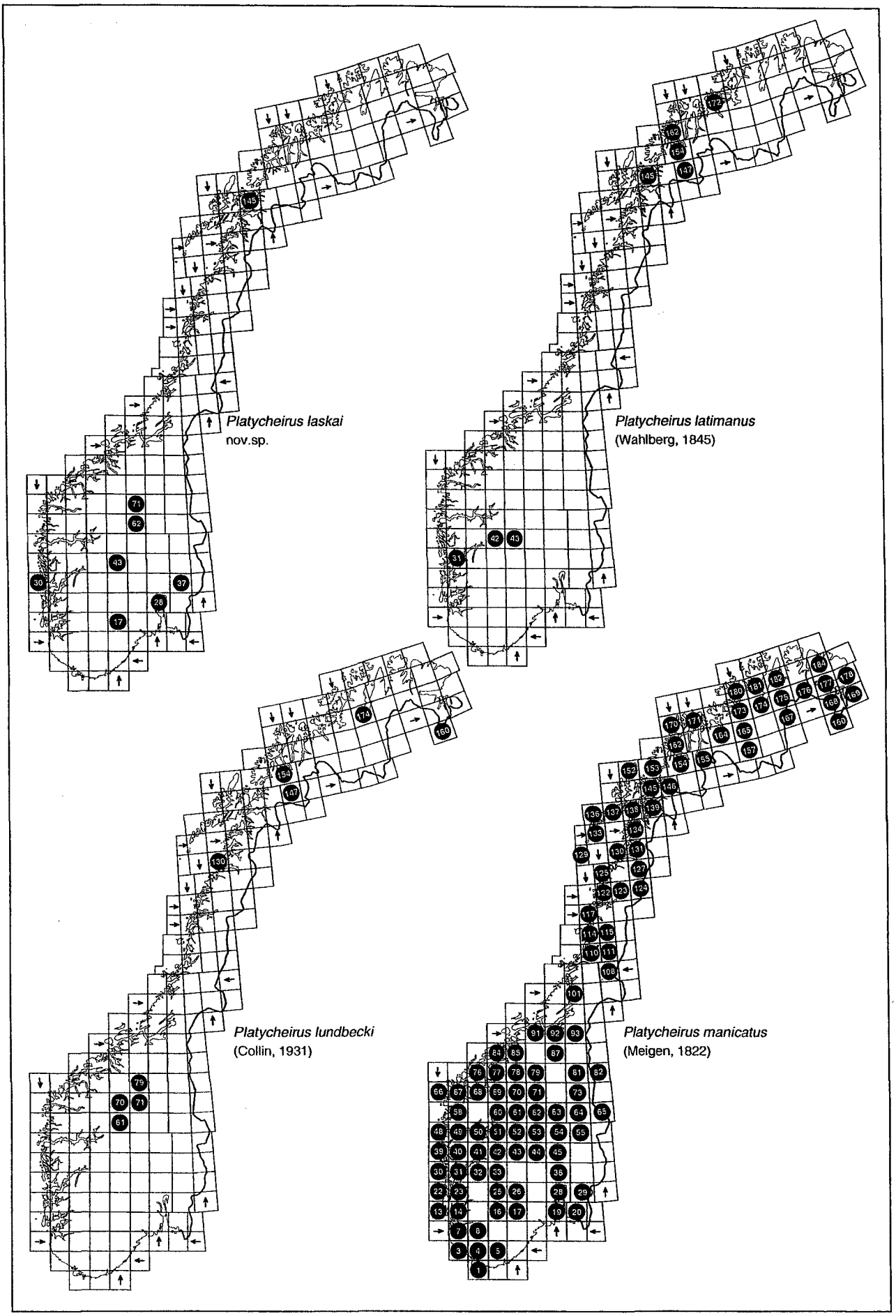


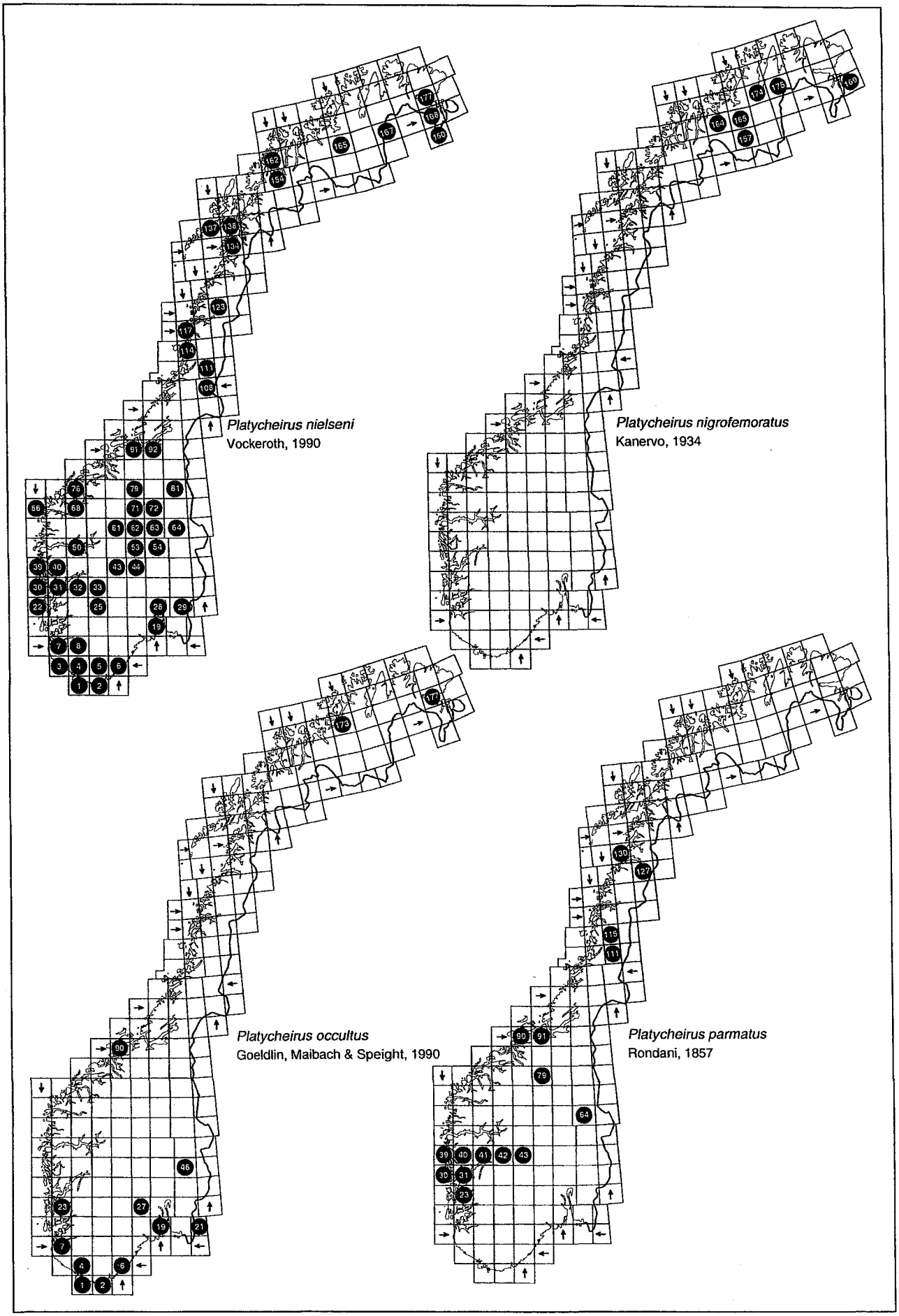


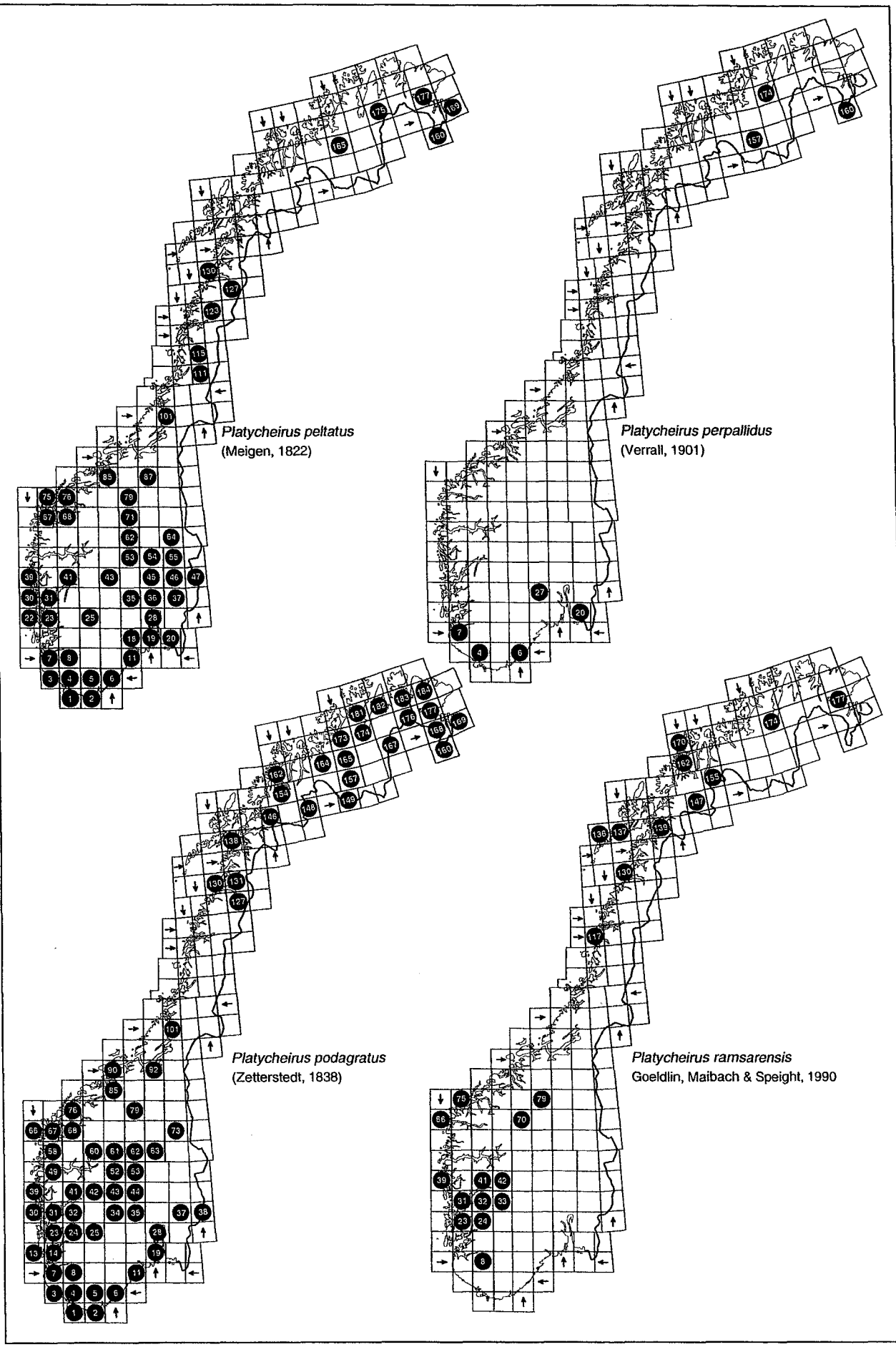


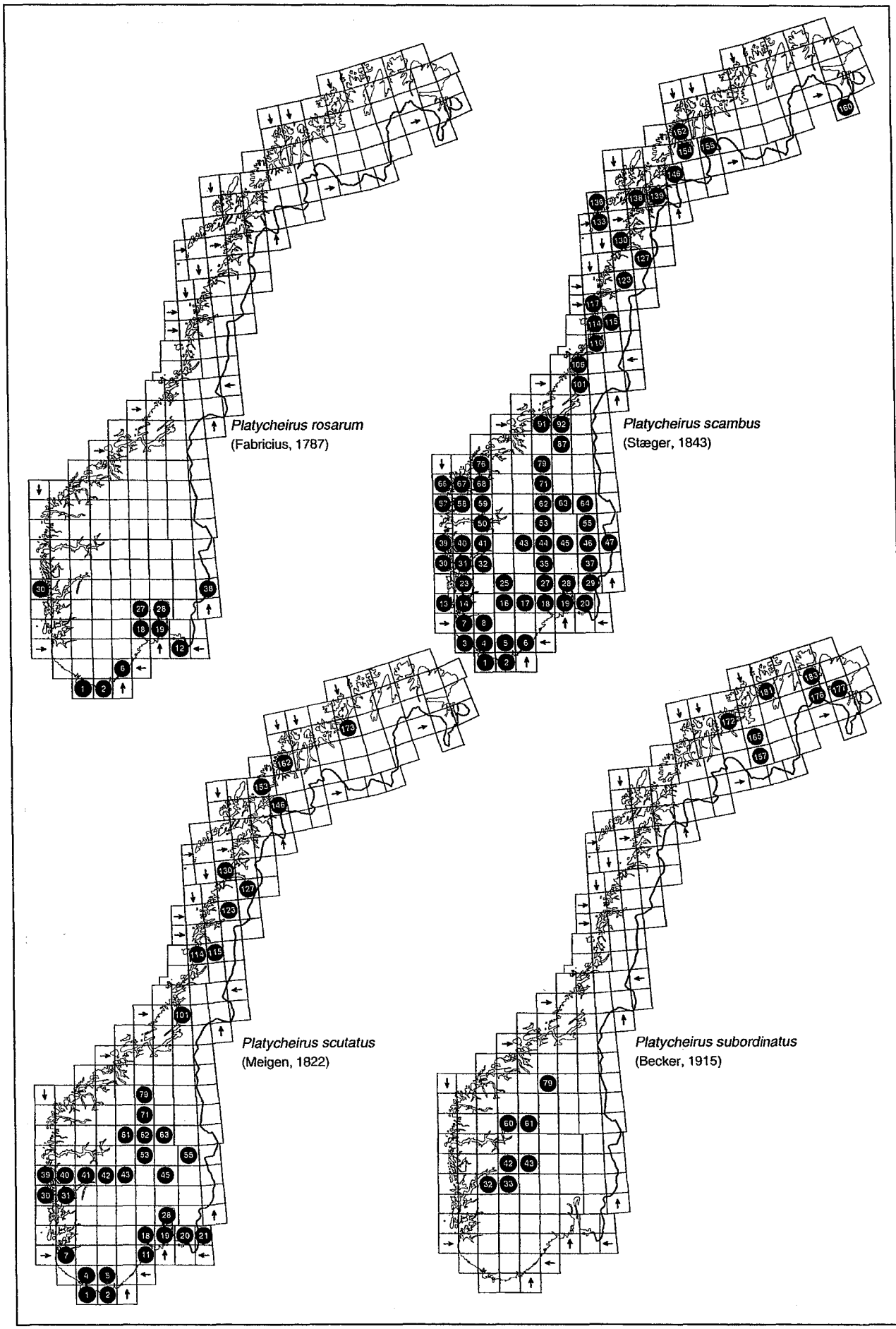


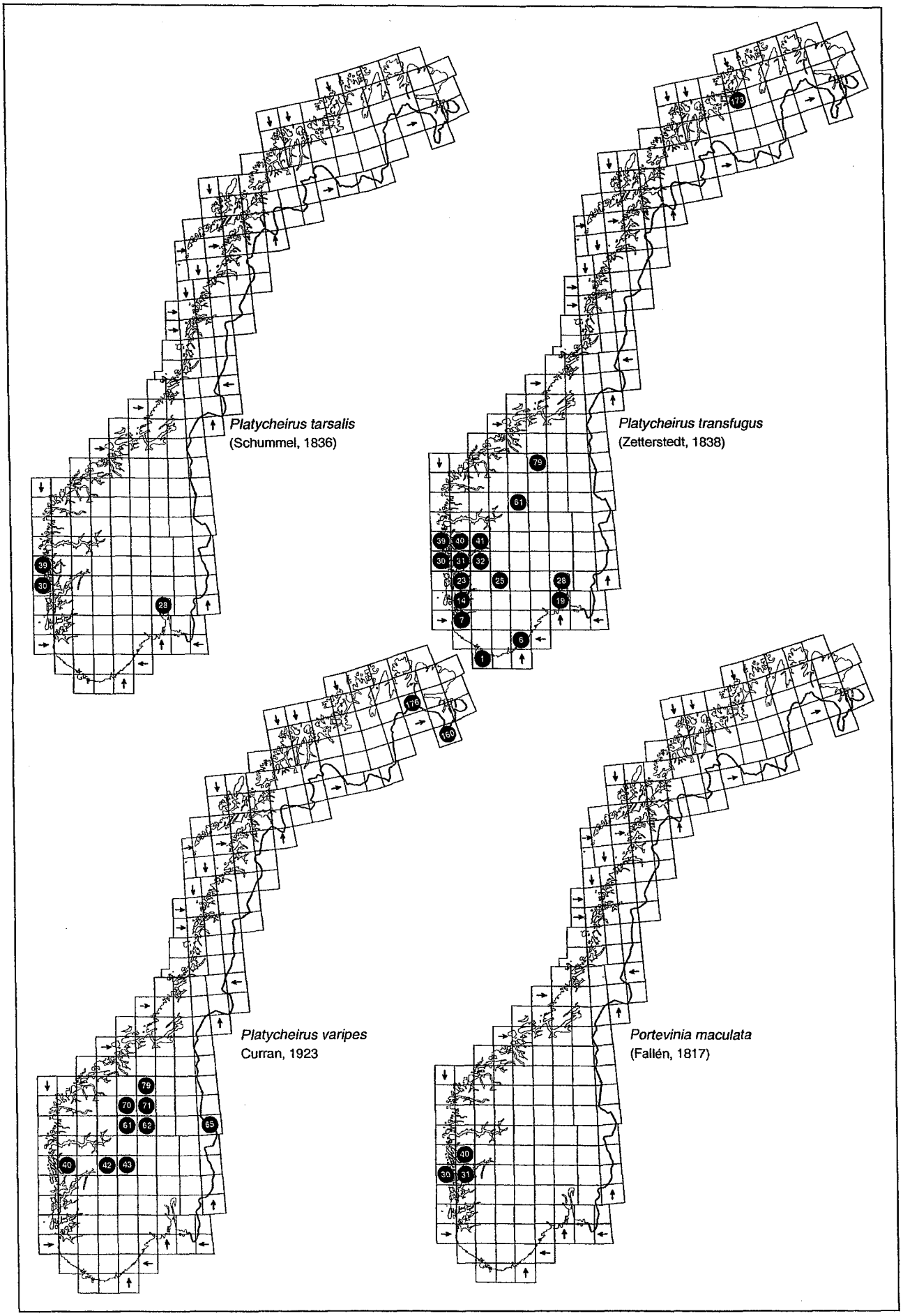


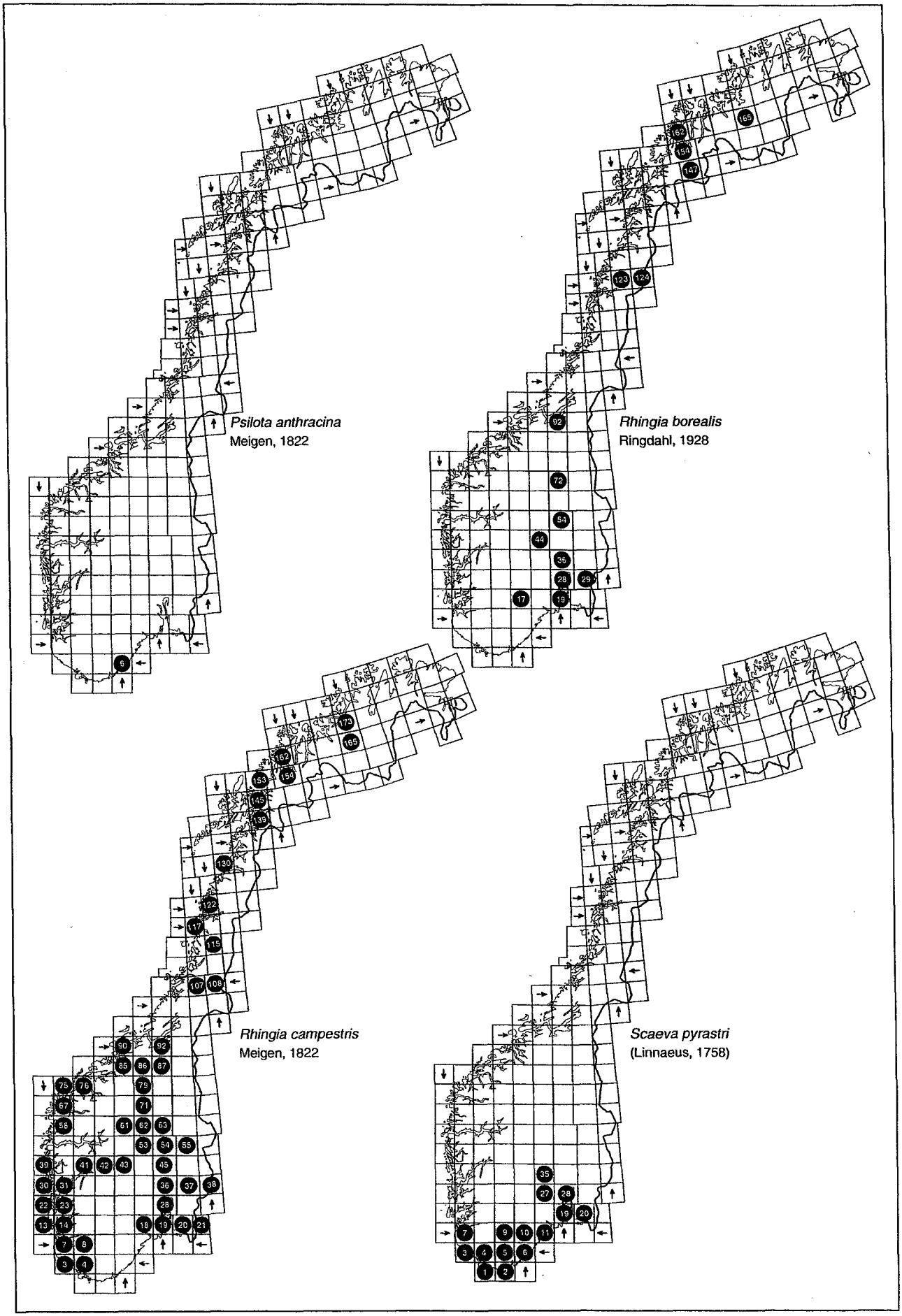


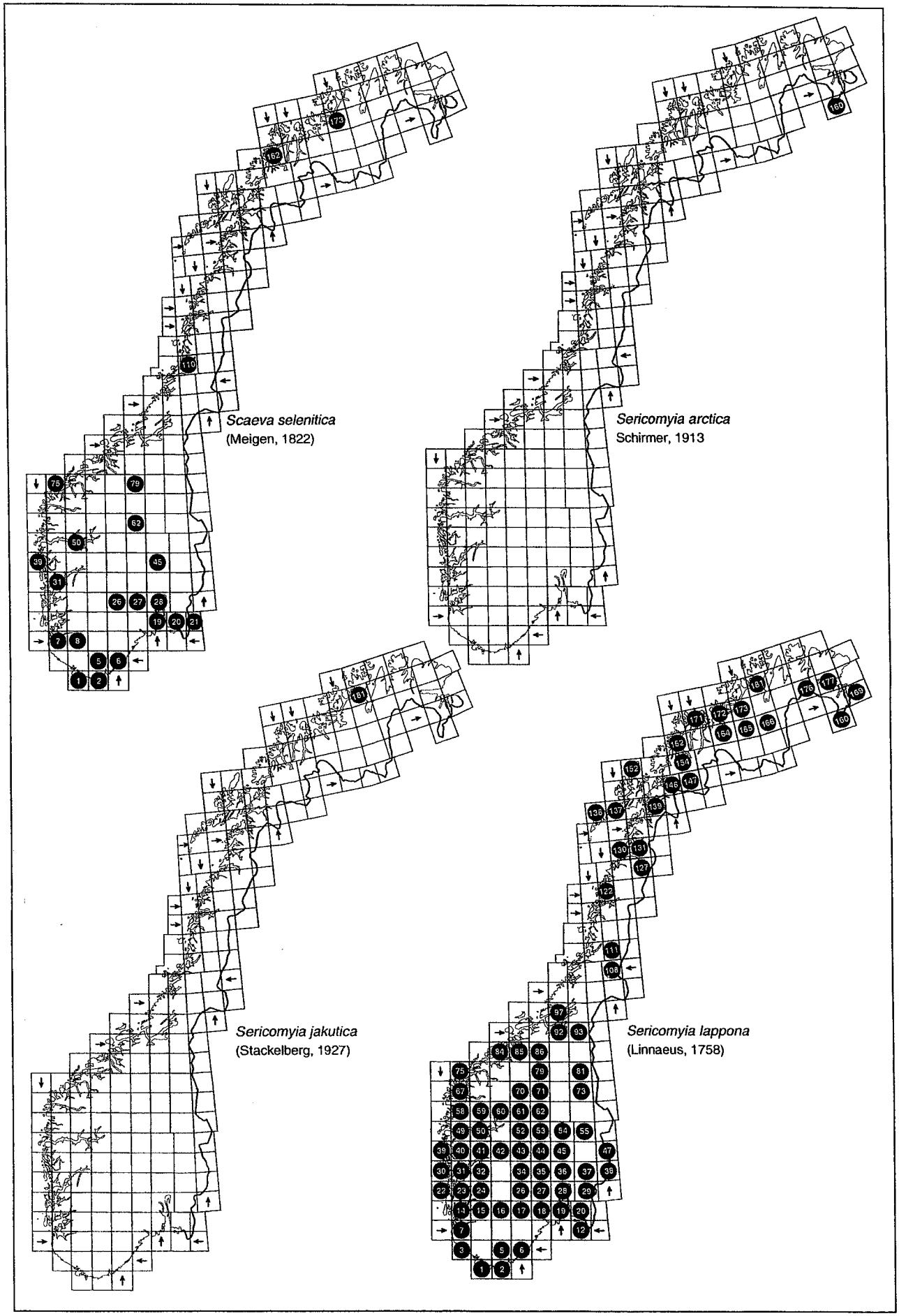


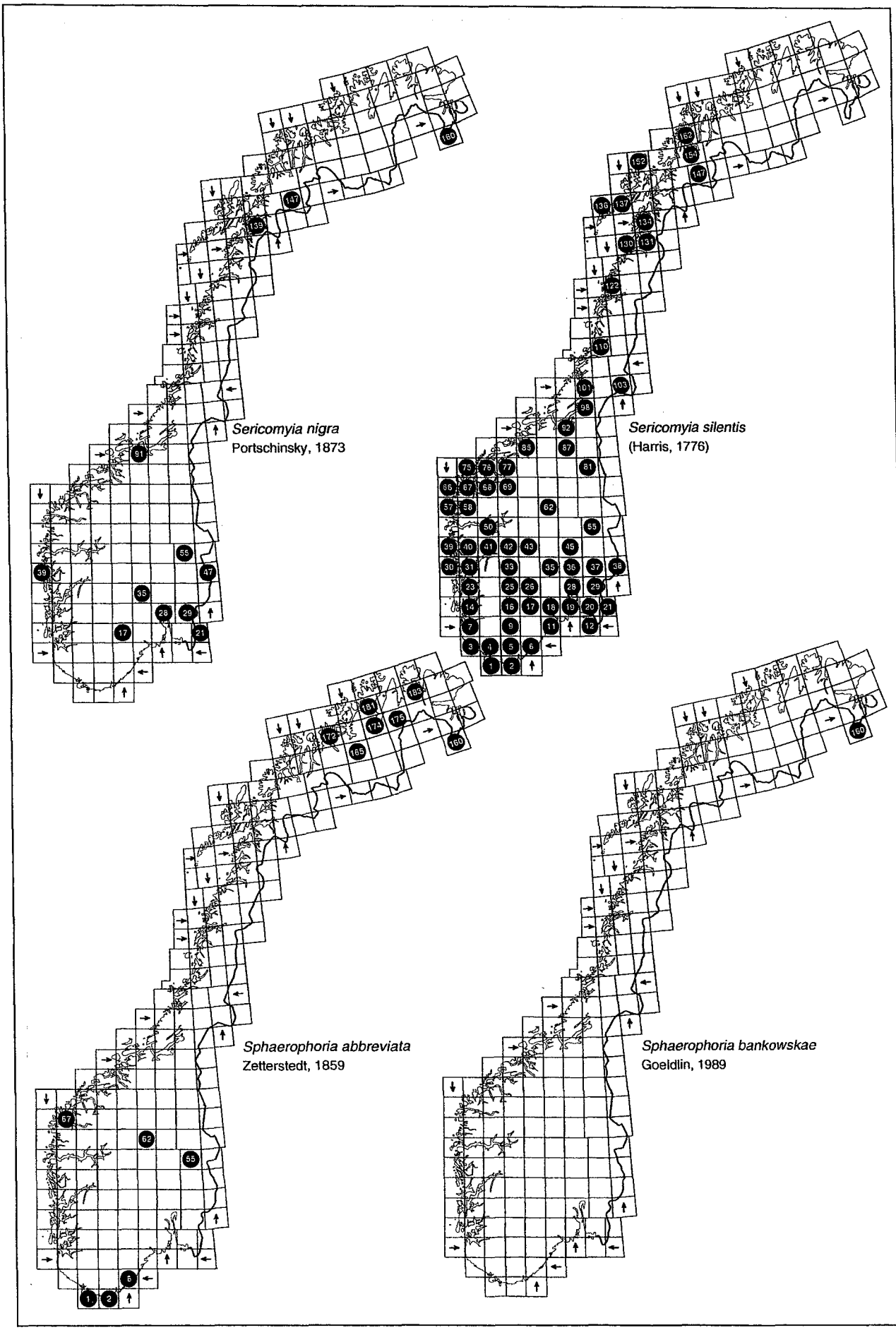


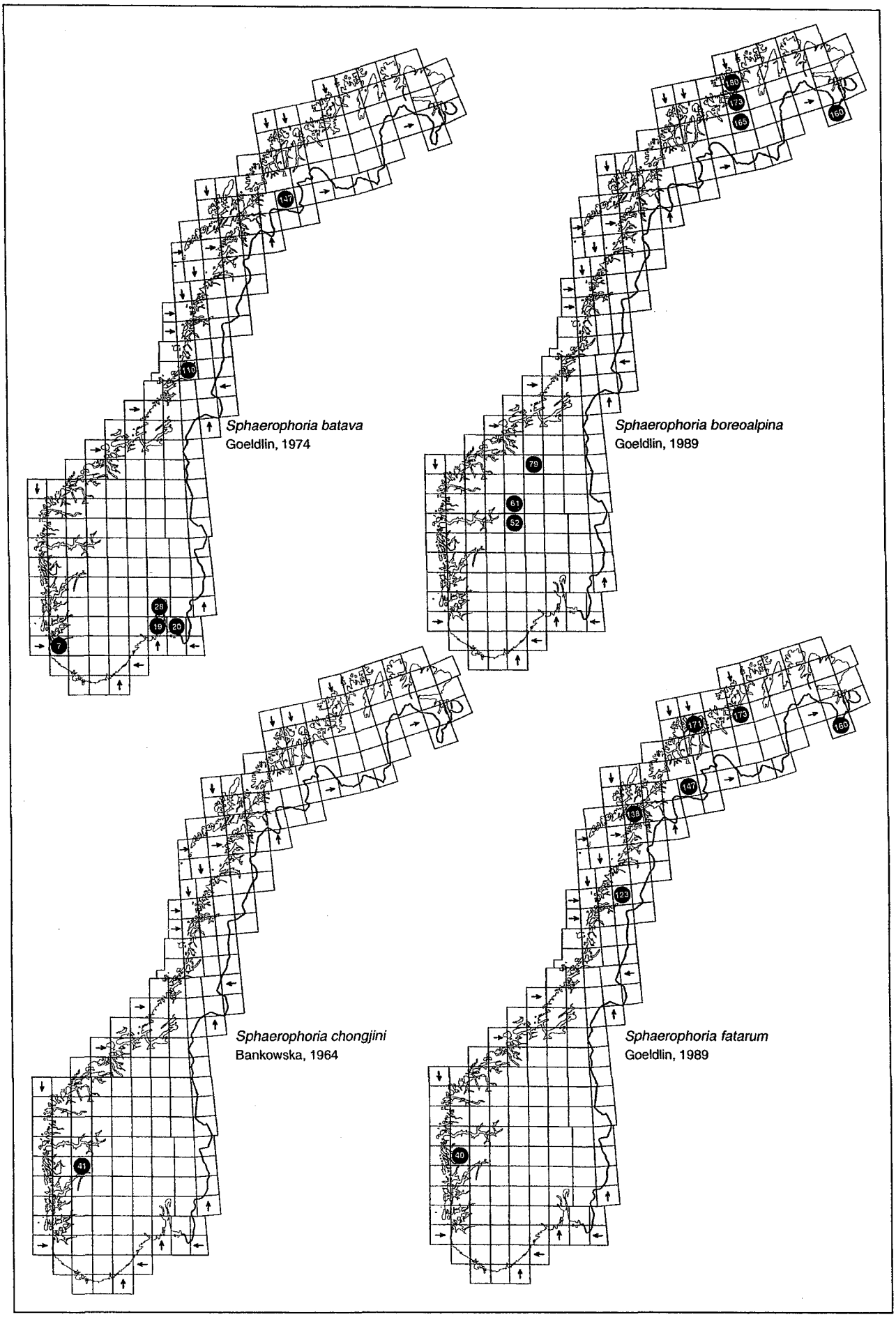


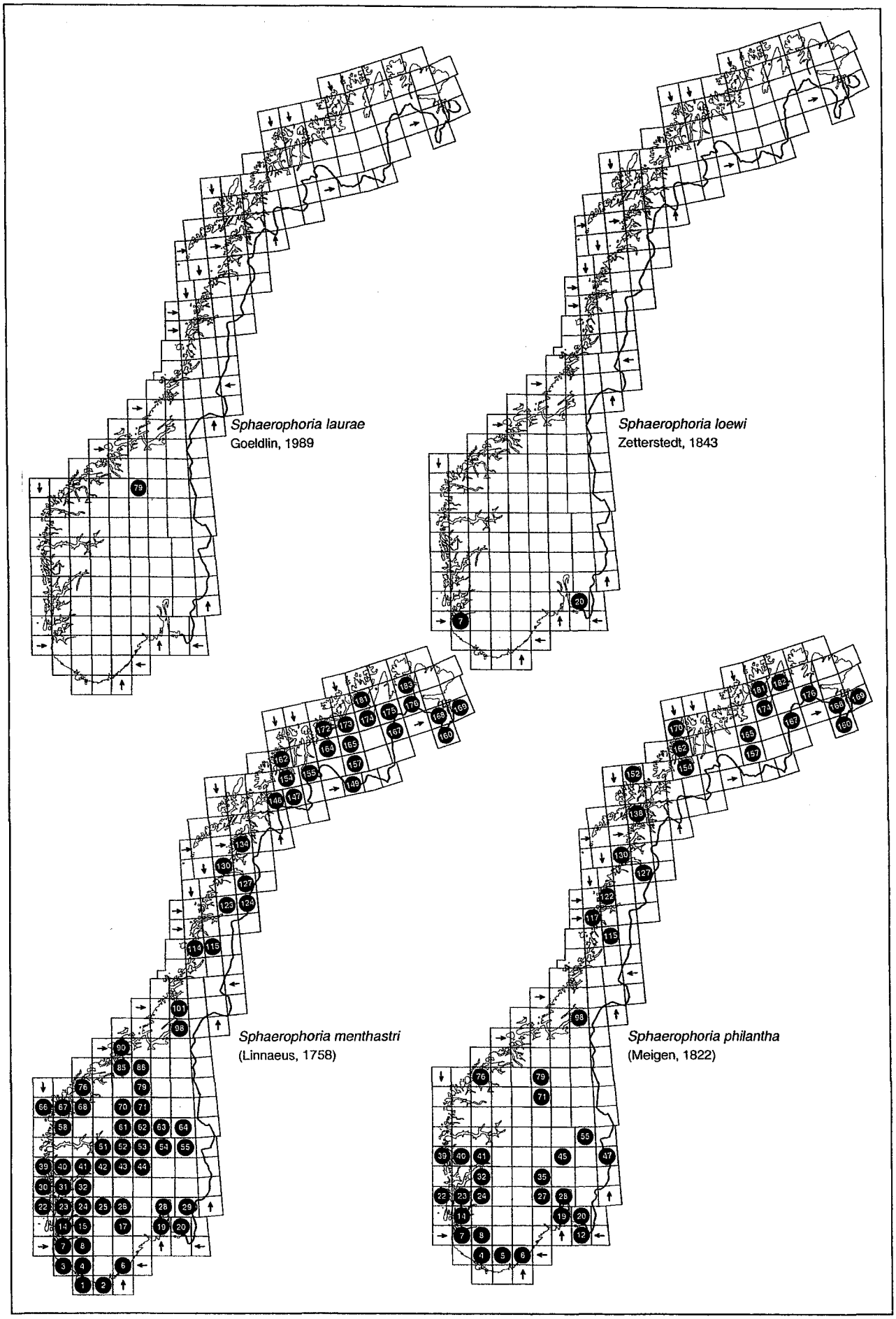


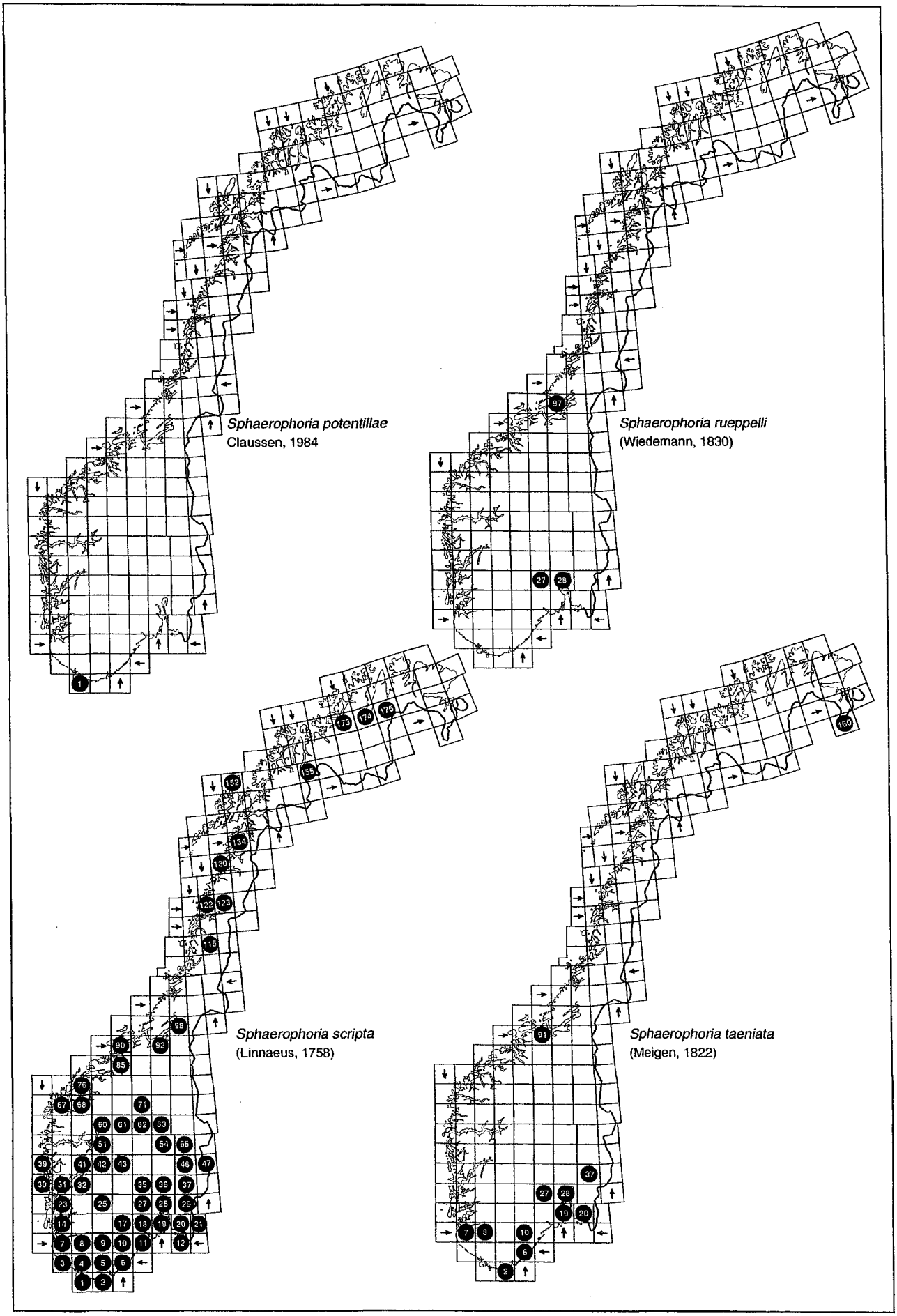


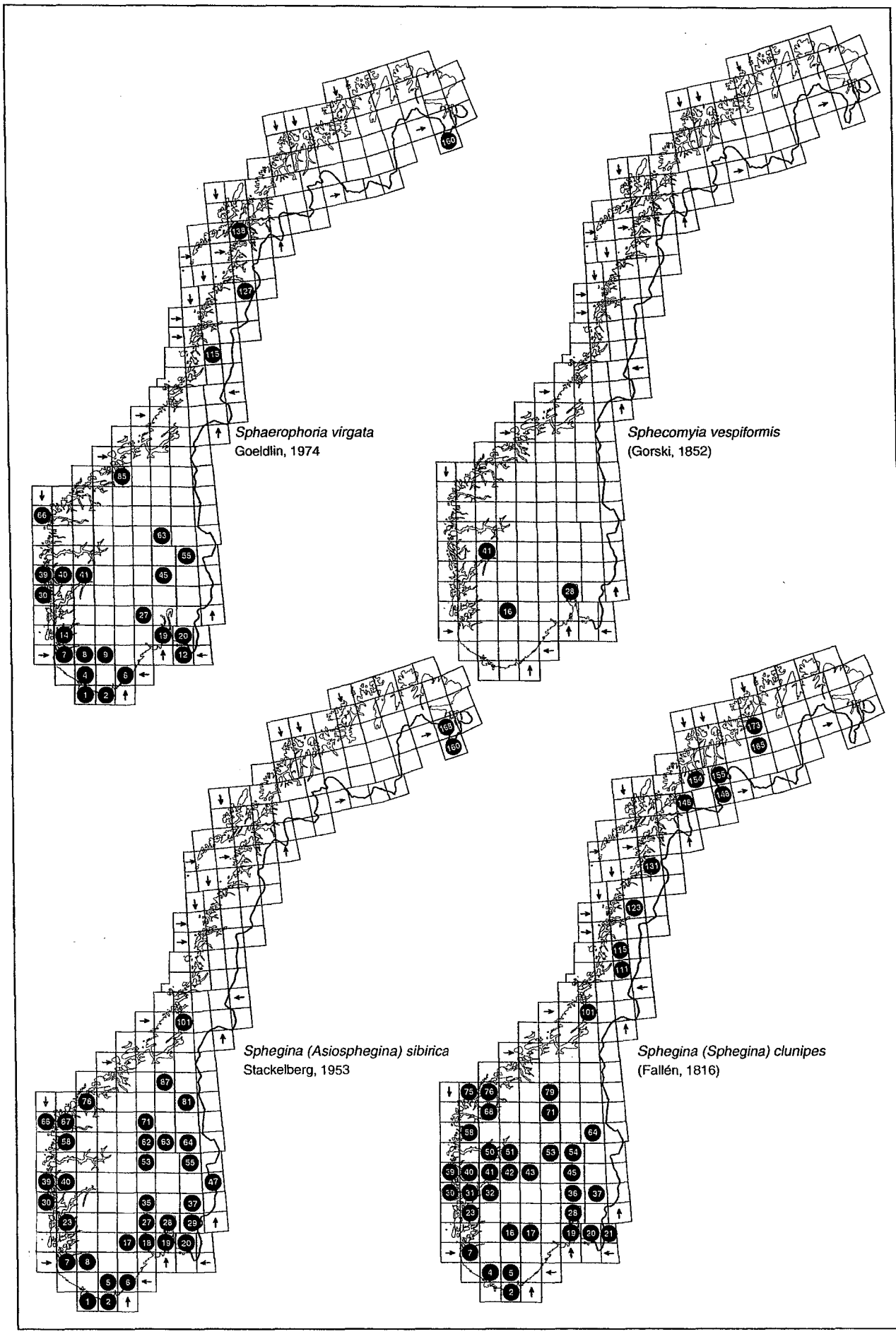


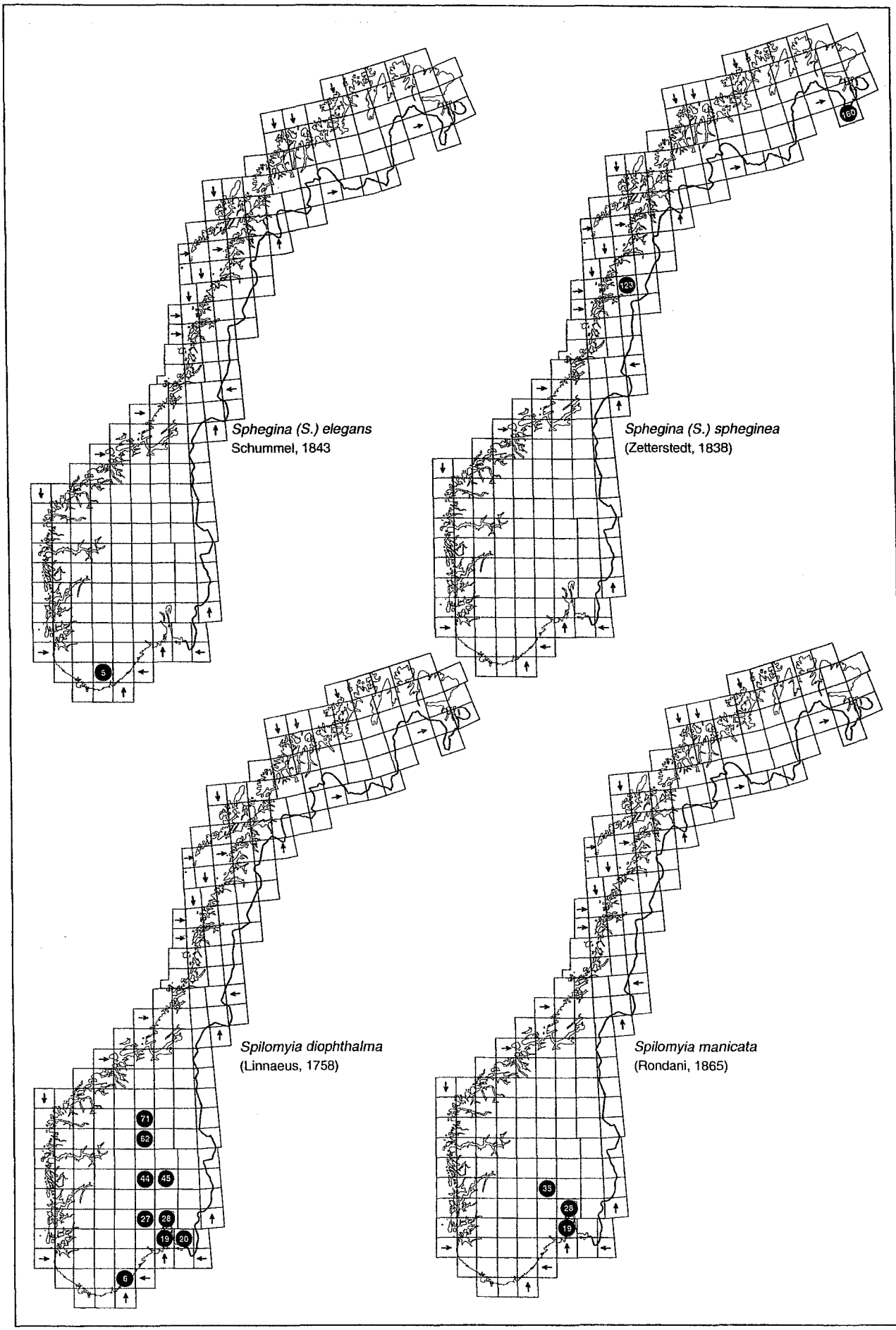


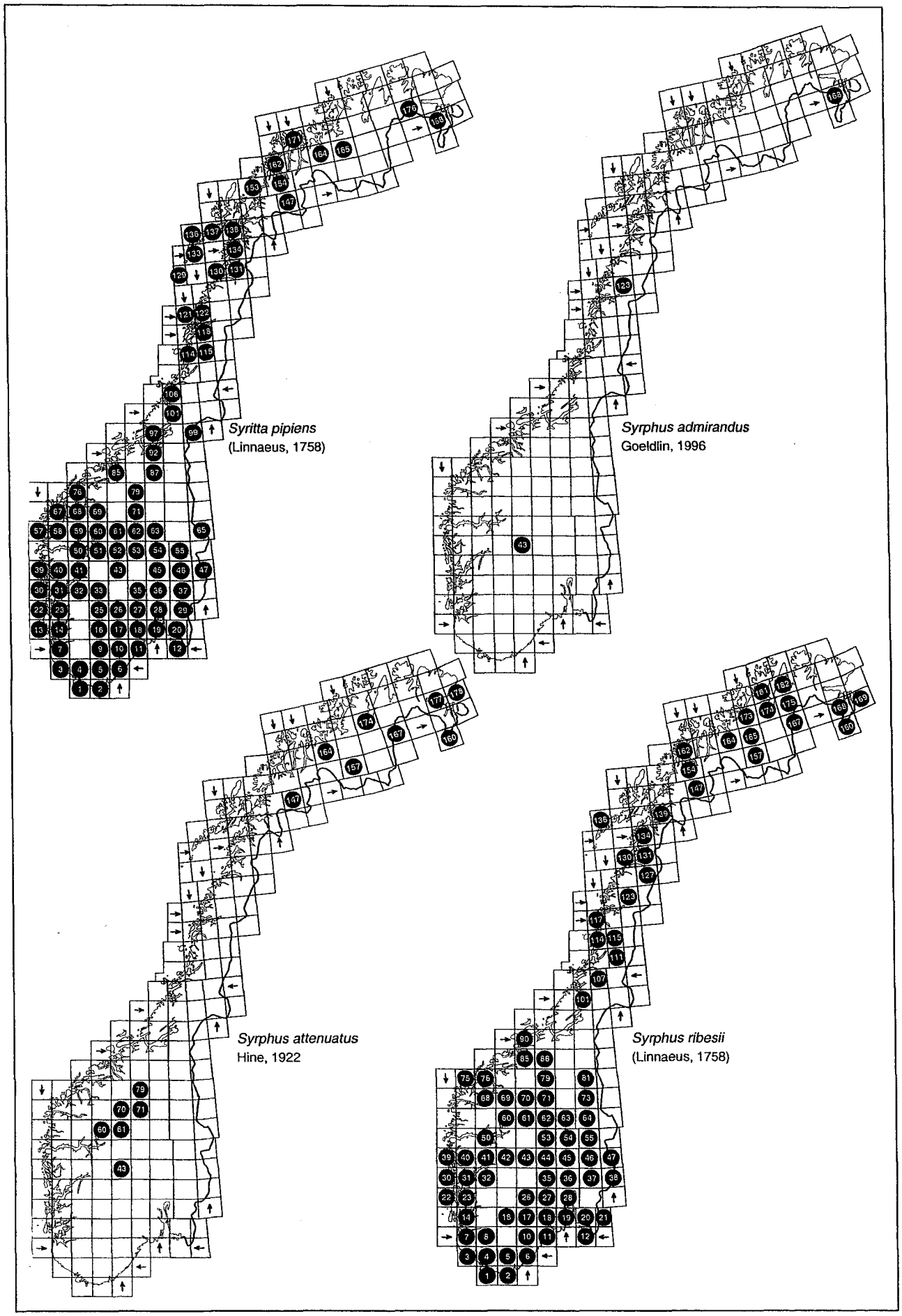


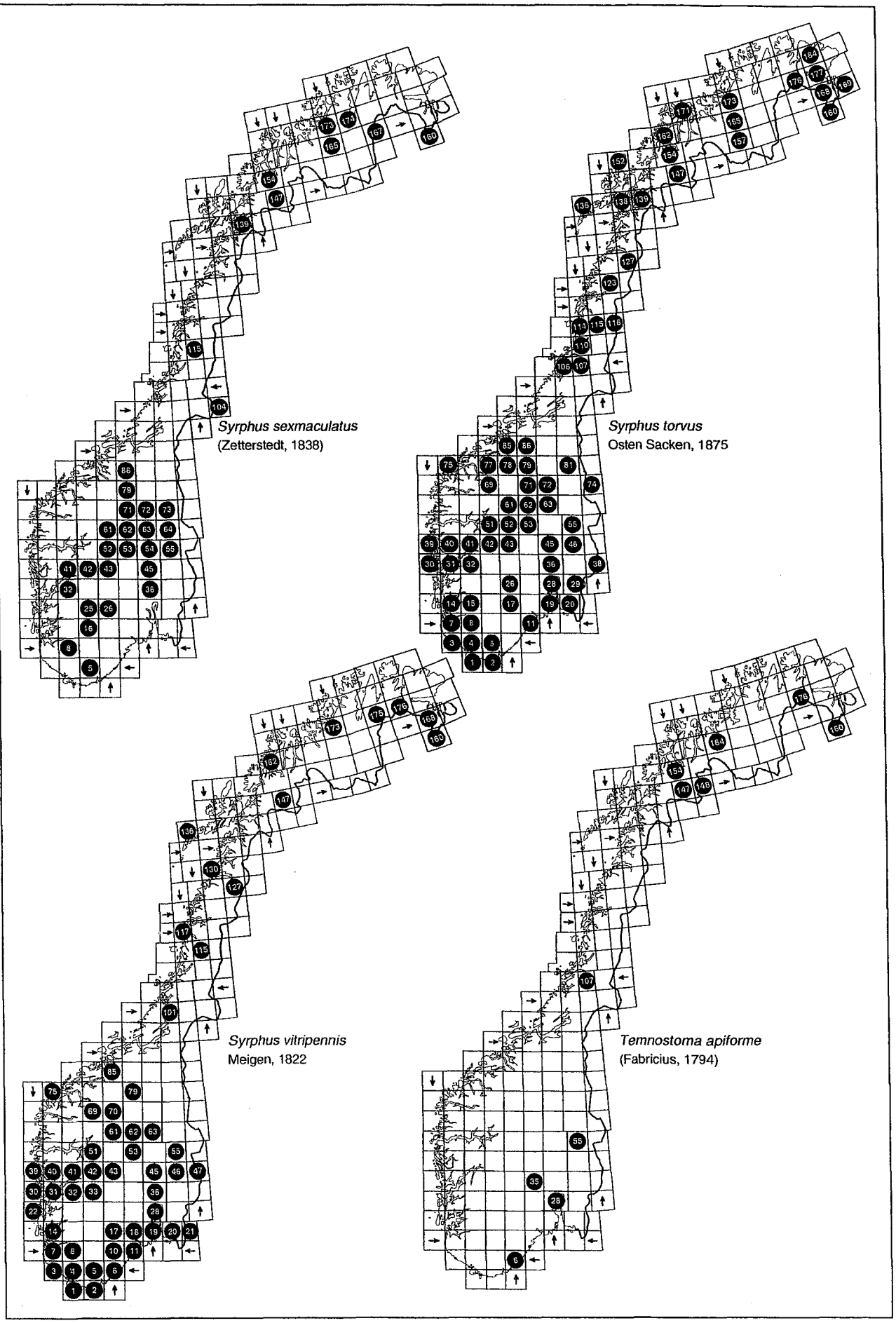


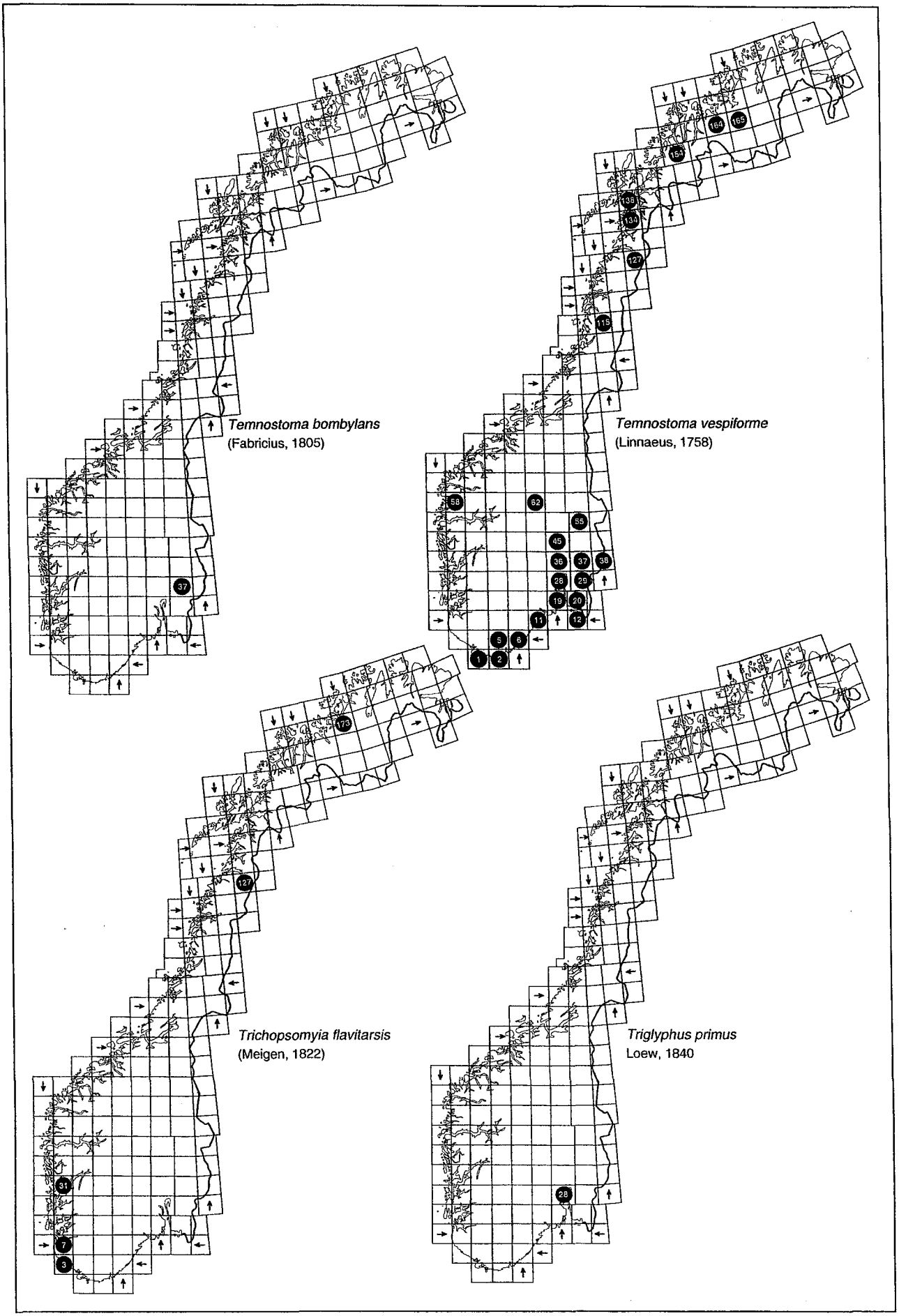


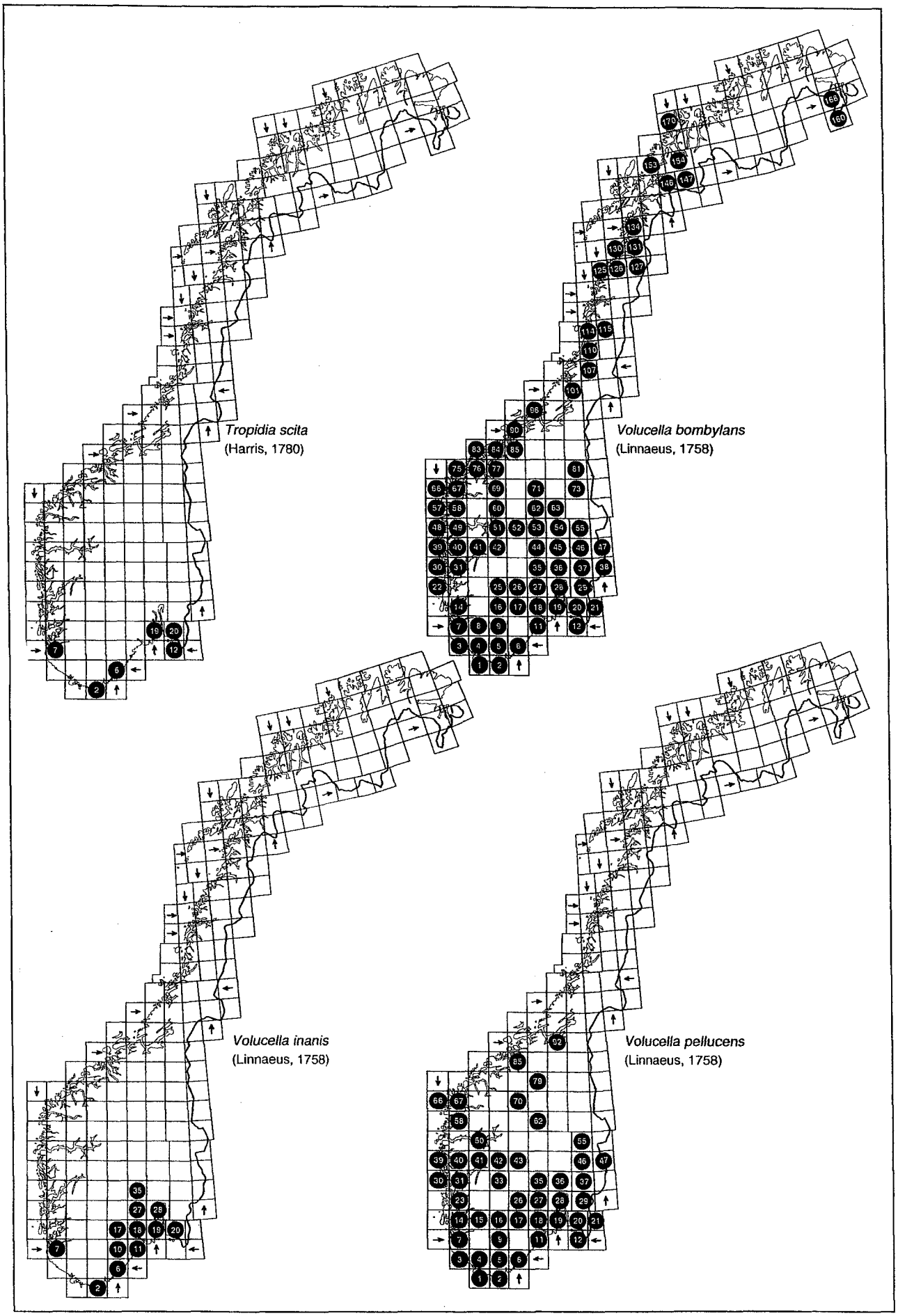


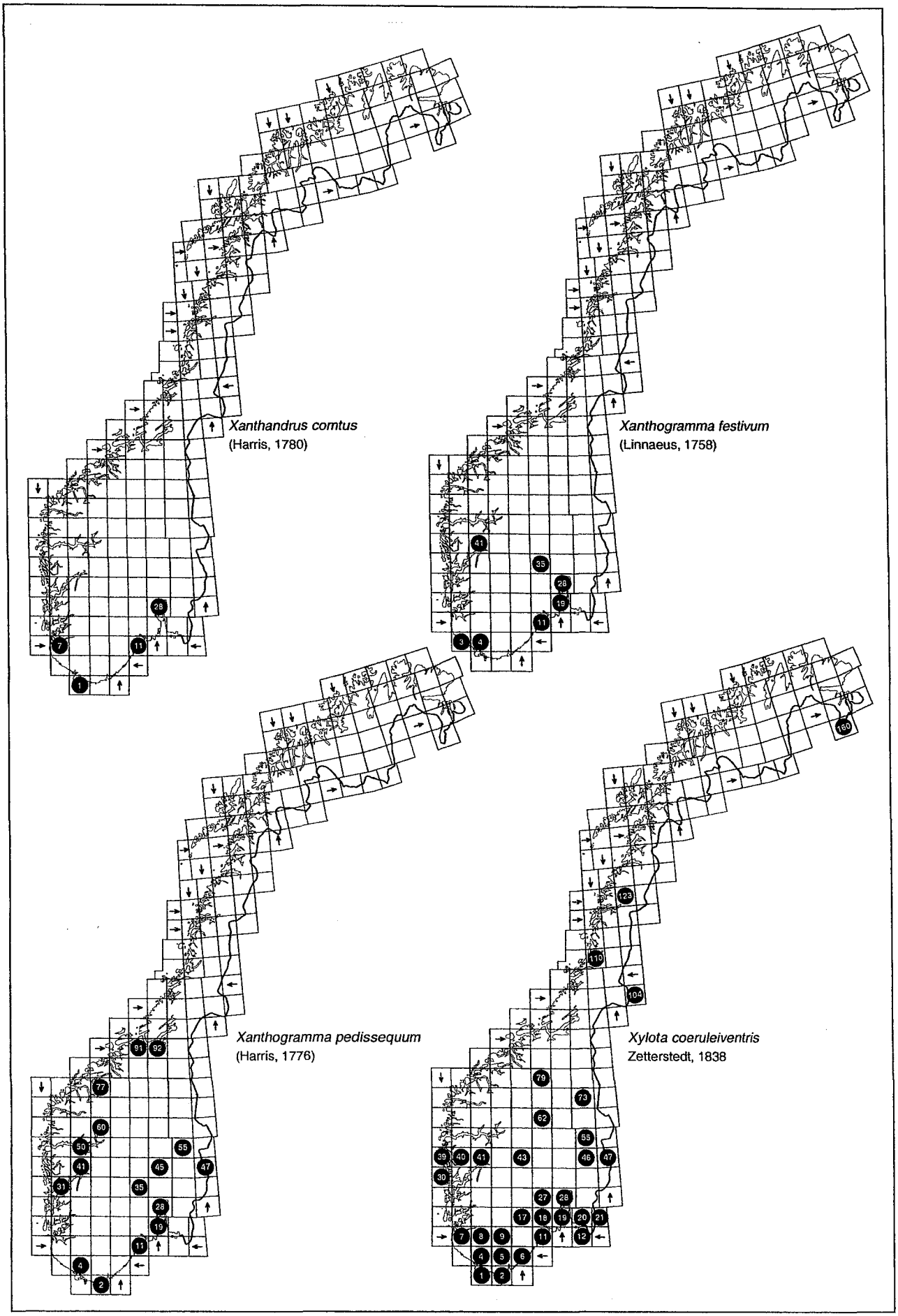


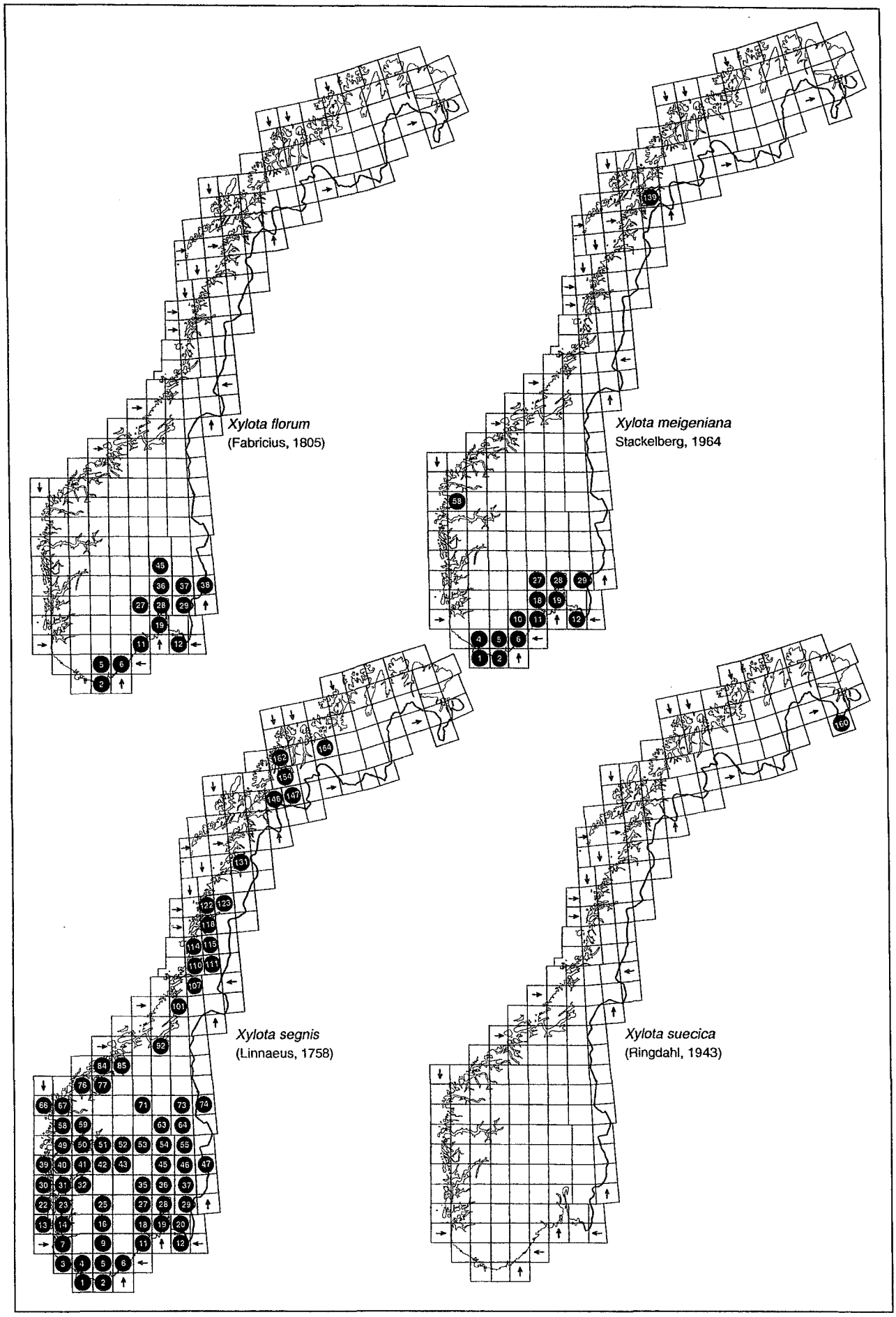


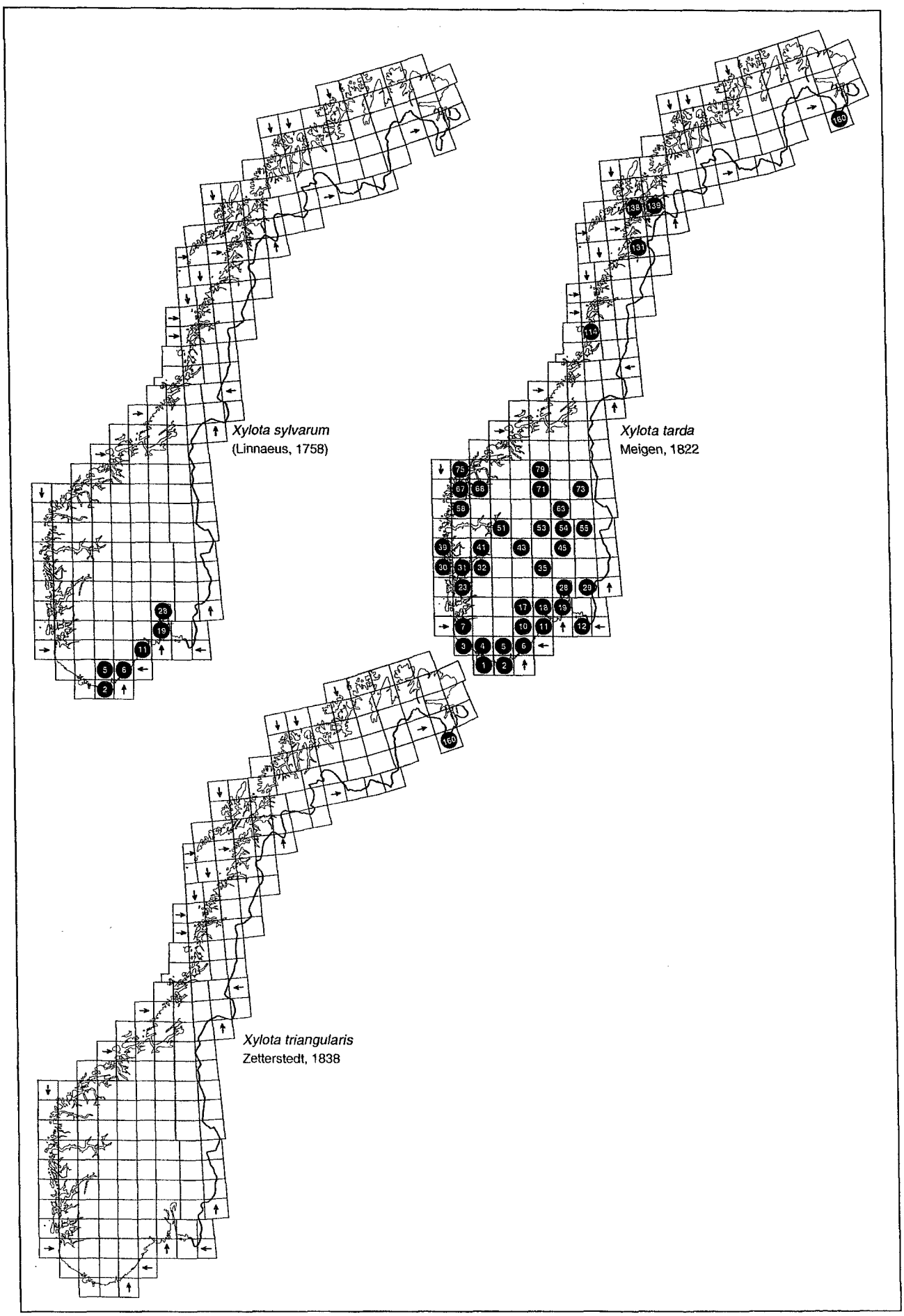












ISSN 0805-469X
ISBN 82-426-1004-5

NINA
FAGRAPPORT

NINA Hovedkontor
Tungasletta 2
7485 TRONDHEIM
Telefon: 73 80 14 00
Telefax: 73 80 14 01

NINA
Norsk institutt
for naturforskning