

**ATLAS
OF THE
NON-MARINE MOLLUSCA
OF THE
BRITISH ISLES**

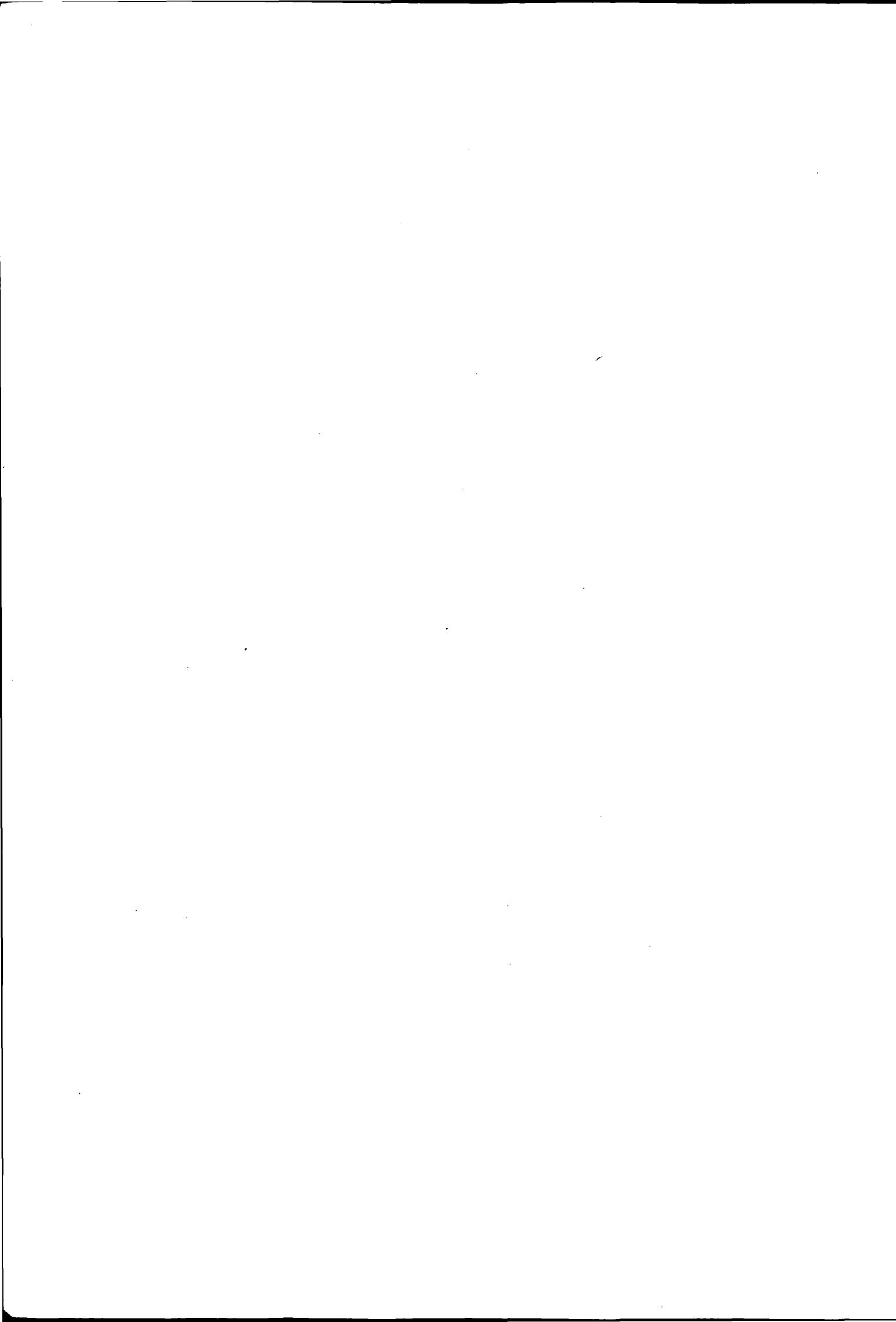


**Conchological Society of
Great Britain and Ireland
Natural Environment Research Council**

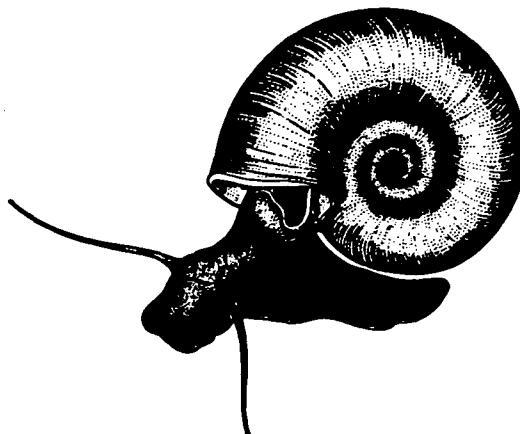
The cover shows *Cernuella virgata* on Sea-beet (*Beta maritima* L.)
at Lulworth Cove, Dorset (photograph by Derek Rands)

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**EUROPEAN INVERTEBRATE SURVEY
ATLAS
OF THE
NON-MARINE MOLLUSCA
OF THE
BRITISH ISLES**



edited by
M.P. KERNEY

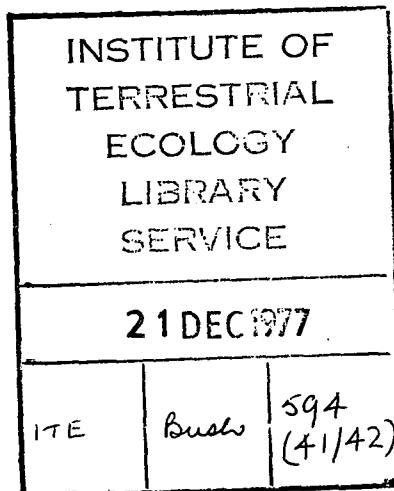
for the

Conchological Society of Great Britain and Ireland and the
Biological Records Centre, Institute of Terrestrial Ecology, Monks
Wood Experimental Station, Abbots Ripton, Huntingdon.

1976.

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Introduction

The land and freshwater Mollusca are not among the more neglected animal groups. Their scientific study has a long history in Britain, and the restricted distribution of certain species has attracted comment at least since the 17th century. In one respect publication of this atlas in the present year is specially appropriate: the Conchological Society of Great Britain & Ireland was founded exactly a hundred years ago, and it was in the same year (12 October 1876) that its first secretary, W.D. Roebuck, began systematically to accumulate authenticated records of land and freshwater molluscs for what was shortly to become the Society's official *Census of Distribution*. The units of recording adopted by Roebuck were the well-known botanical vice-counties of H.C. Watson (for Great Britain) and C.C. Babington and R.L. Praeger (for Ireland). The *Census* passed through no fewer than seven published editions beginning in 1885. The earlier of these show distributions in tabular form only, but the two last (Roebuck and Boycott, 1921; Ellis, 1951) also include complete sets of vice-comital maps. Earlier versions of a number of these had already appeared in Taylor's *Monograph* (1894-1921) from 1902 onwards. Increments were published annually in the Non-marine Recorder's Report in the *Journal of Conchology*, an arrangement which continues to the present day.

For Ireland, a set of vice-comital maps using the "typomap" system devised by Praeger (1906) was published by Stelfox as long ago as 1911, in what still remains the standard work on the distribution of non-marine molluscs in that country.

In 1961, following the example of the botanists, the Conchological Society decided to adopt the method of grid mapping. Systematic surveys were organized, and by 1976 about 115,000 new 10-kilometre square records had been filed. In addition, all earlier usable records contained in the thirty-odd M.S. volumes of the Society's vice-comital *Census* have been incorporated, and - for the rarer species - publications and museum collections have been searched. For Ireland, where the recent work remains less complete than in Britain, an attempt has been made to extract exhaustively all the accessible data (Kerney, 1973).

The result may be judged from the pages which follow. The first map makes it clear that already a very good coverage of the British Isles has been achieved. Thinly-worked areas of course

remain, but nevertheless the broad differences shown on this map do in fact significantly reflect true differences in regional species diversity ascribable mainly to climatic, topographical or geological factors. The individual distribution patterns may therefore be broadly accepted as "real", apart from a few cases involving recent segregates, special difficulties of identification, the minuteness or elusiveness of particular species, or other similar problems of which field workers will be aware.

The scheme is the most detailed undertaken for any invertebrate group of comparable size. Several molluscs previously unsuspected in the British Isles have been found (e.g., *Vitrea subrimata*, *Boettgerilla pallens*, *Sphaerium solidum*). Also, we now have much better information on questions of status, and of changes in distribution with time. Some species which were believed to be rare have turned out to be not uncommon, whilst some are obviously declining, and a few appear to be at serious risk. The value of such data as a guide to taking appropriate measures for protecting endangered species is evident. There have also been a number of less tangible results of the scheme. Collections made in the course of the surveys have focussed attention on problems of taxonomy and of geographical variation, for example in the *Arionidae* and *Limacidae*. In some cases an examination of interim distribution maps has revealed hitherto unsuspected relationships, suggesting further lines of enquiry. Research into field ecology has undoubtedly been stimulated.

It is hoped that publication of this first edition of the atlas will promote further interest in distribution studies, and will contribute towards the eventual compilation of unified maps for the Mollusca of Europe using the methods recommended by the committee of the European Invertebrate Survey (EIS); a few trial maps have already been published (Kerney, 1976a).

Special notes

The nomenclature and taxonomic arrangement adopted here follows the recent check lists by Waldén (1976) and Kerney 1976b), and is also in conformity with that to be used in a forthcoming field-guide to the terrestrial species of north-west Europe (Cameron and Kerney, in preparation). Specific synonyms used in the standard text book *British Snails* (Ellis, 1926; 1969) and in the last non-marine Census list (Ellis, 1951) are given in the index, plus a few others which may sometimes be encountered in 20th century British literature, notably in the classic papers of Boycott (1934, 1936) (The many generic name synonyms will, it is hoped, mostly be obvious and have been disregarded).

A very few taxa are not mapped separately owing to lack of sufficiently detailed information: these are *Arion rufus* (included with *Arion ater*, aggregate), *Limax flavus*, segregate (included with *Limax flavus*, aggregate) and *Euconulus alderi* (included with *Euconulus fulvus*, aggregate).

Naturalized introductions (e.g., *Hygromia cinctella*) are shown on the maps, although rare casuals (e.g., *Cochlostoma septemspirale*) and species established only in greenhouses (e.g., *Zonitoides arboreus*) have been omitted. Three possibly extinct species of doubtful status (*Milax nigricans*, *Bradybaena fruticum*, *Cernuella neglecta*) have however been included.

On most of the maps records not confirmed living for particular grid squares since 1950 are shown by a separate symbol. In practice, the great majority of such records fall into the period 1876-1914, whilst those in the "1950 onwards" category are nearly all later than 1961. Concentrations of old records in certain areas (especially in Ireland) should not necessarily be taken as evidence of recent extinction without first consulting the post-1950 coverage map.

Fossil occurrences are shown for certain terrestrial snails where there has been a significant contraction of range during the Flandrian (Postglacial) period; these are *Pomatias elegans*, *Acicula fusca*, *Succinea oblonga*, *Oxyloma sarsi*, *Truncatellina cylindrica*, *Vertigo pusilla*, *V. substriata*, *V. moulinsiana*, *V. lilljeborgi*, *V. alpestris*, *V. geyeri*, *V. angustior*, *Leiostyla anglica*, *Lauria sempronii*, *Spermodea lamellata*, *Ena montana*, *Zonitoides excavatus*, *Macrogaster rophii*, *Monacha cartusiana*, *Helicodonta obvoluta* and *Helicigona lapicida*.

Finally, it may be noted that as an aid to the interpretation of the distribution patterns a set of transparent overlays will shortly be published by the Biological Records Centre.

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C.Moriarty, M.J.Morphy, R.W.Morrell,
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Dr B.Nau, Dr P.Newell, A.Norris, W.J.Norton,

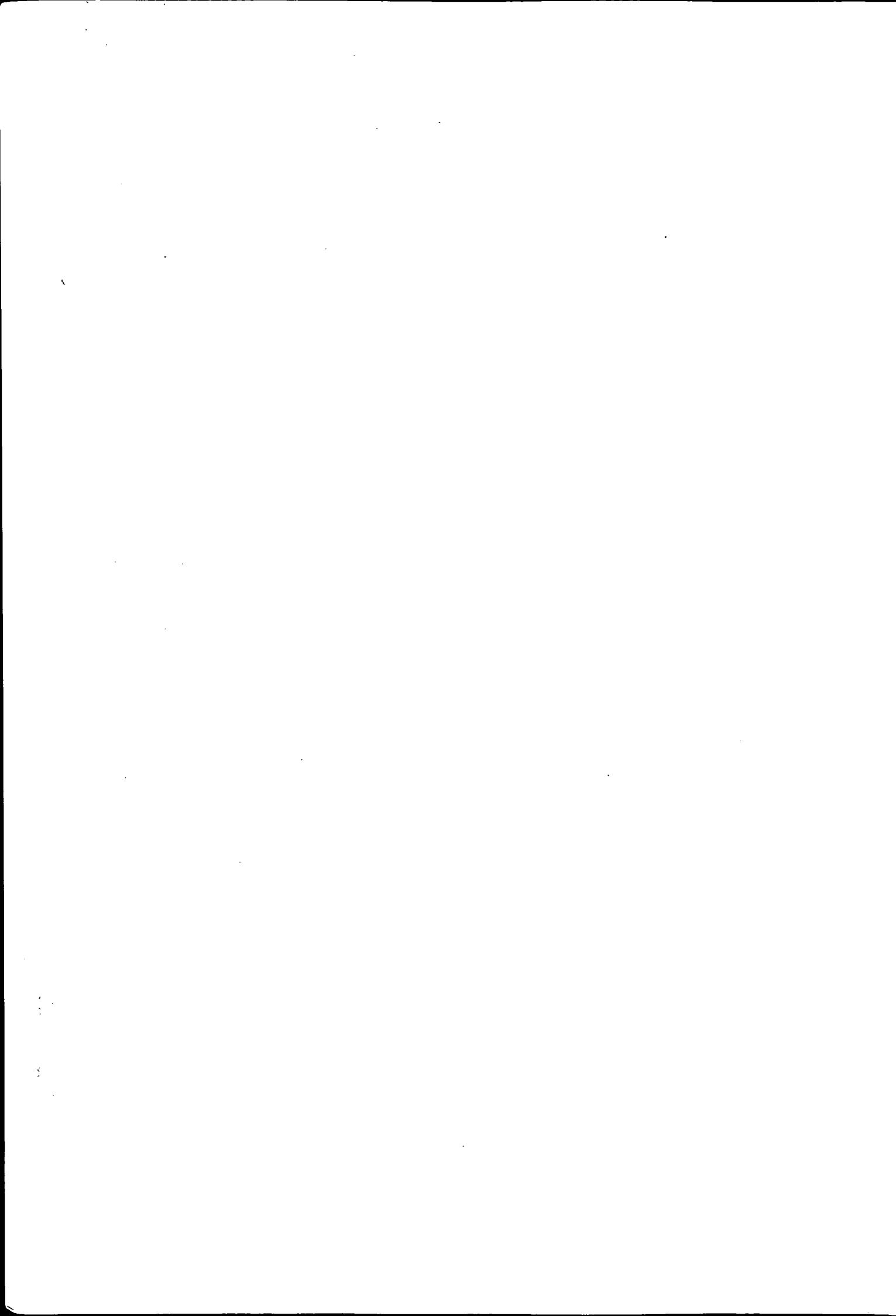
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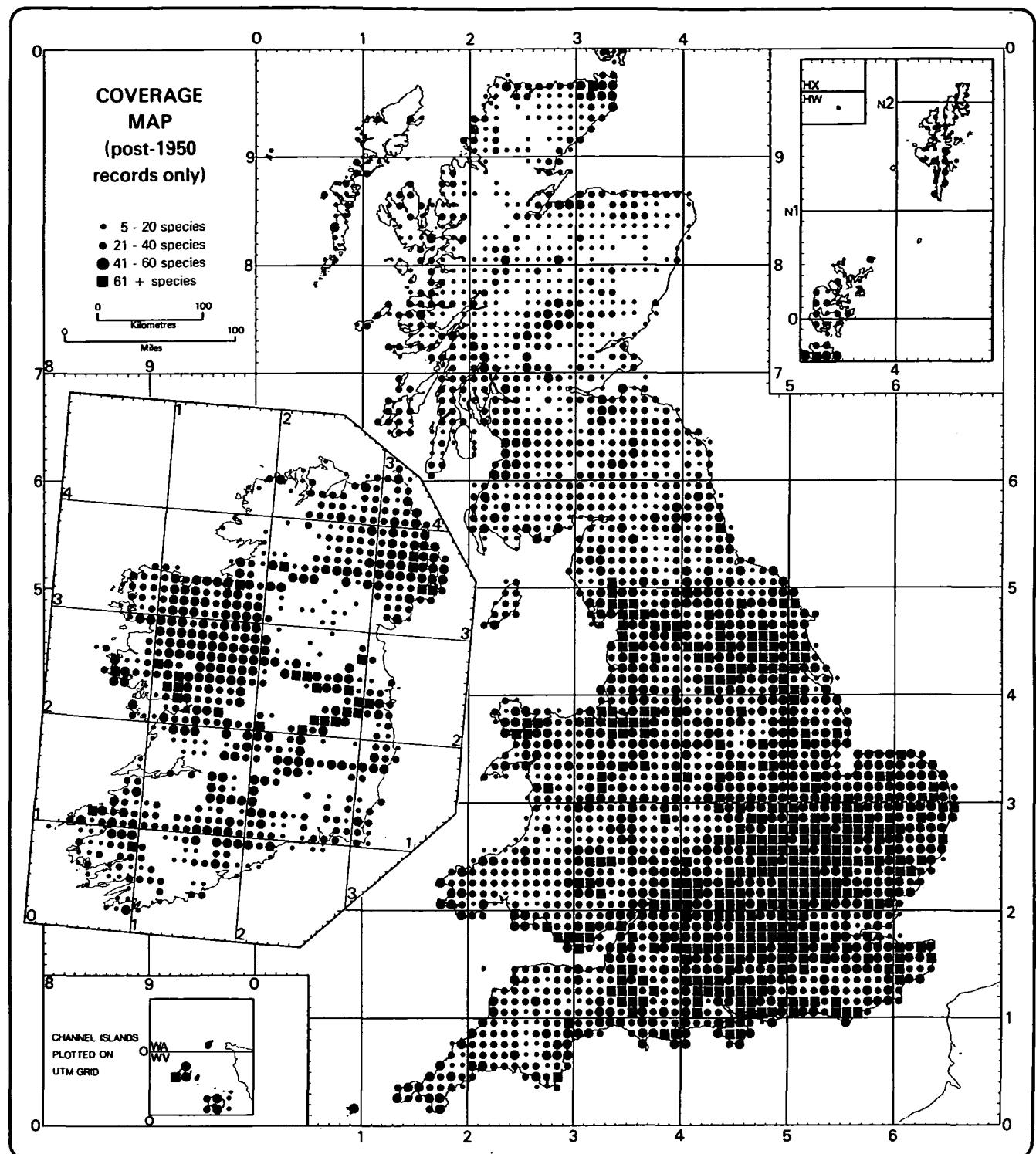
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 May 1976

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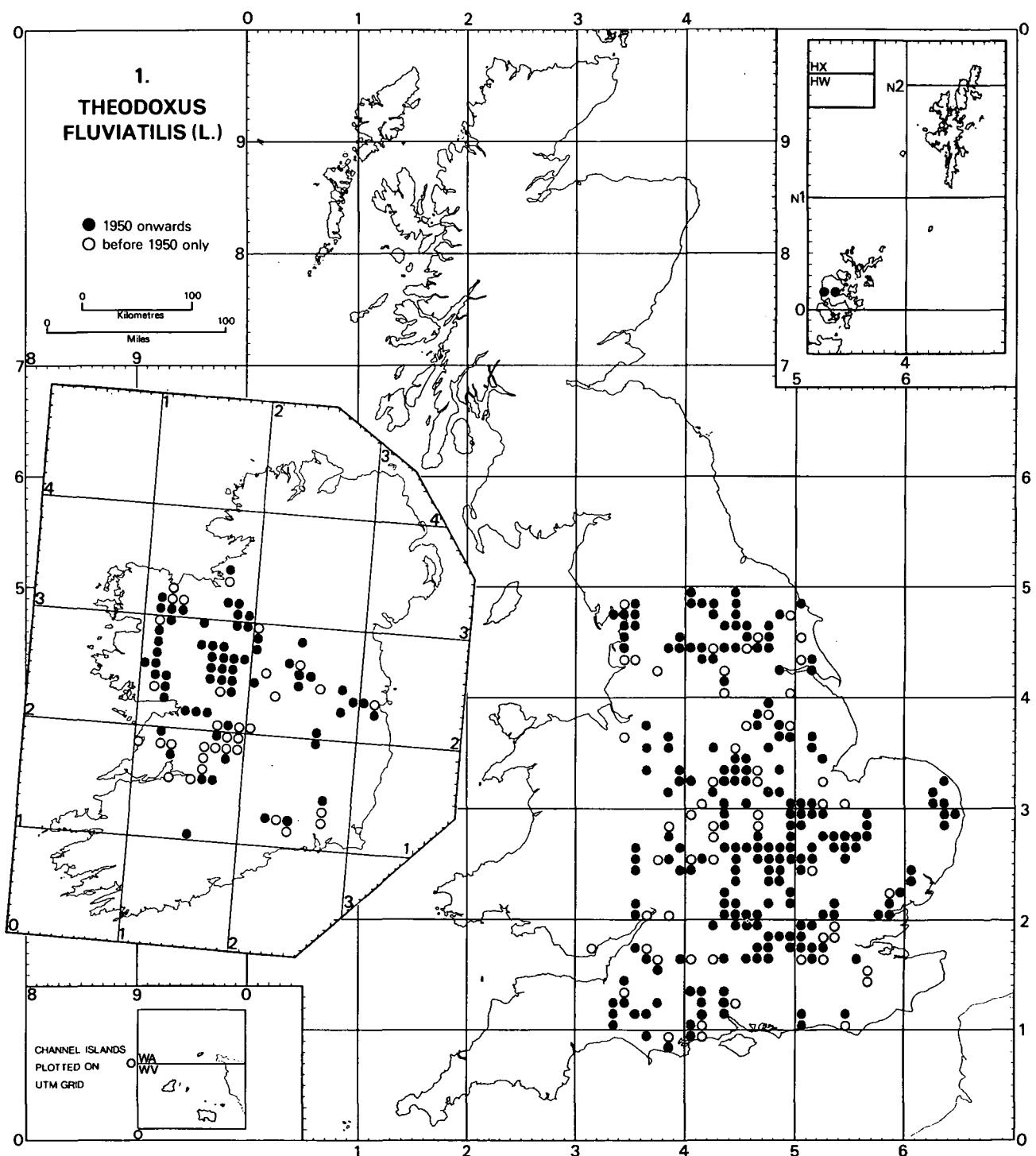




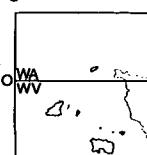
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FLUVIATILIS (L.)**

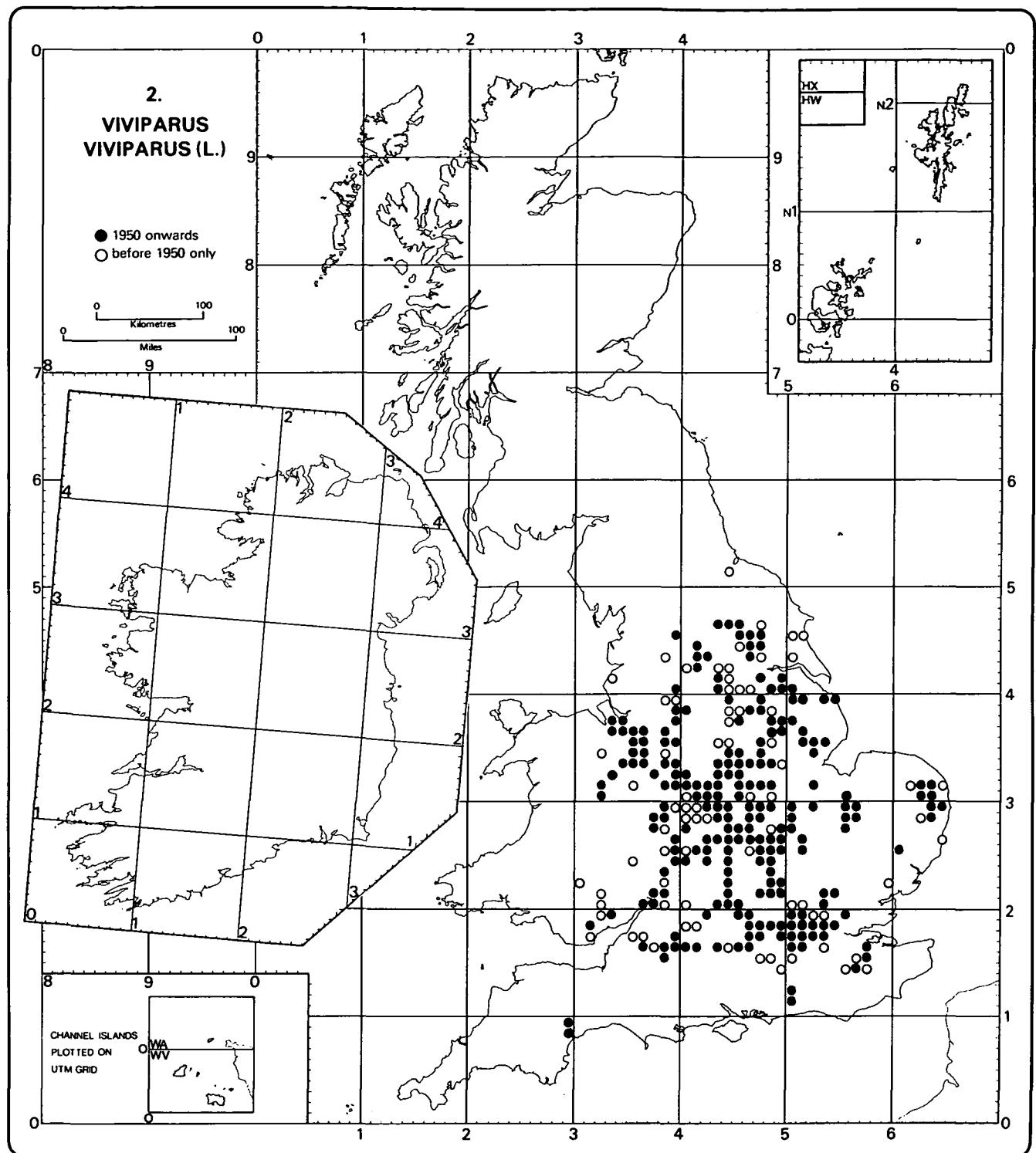
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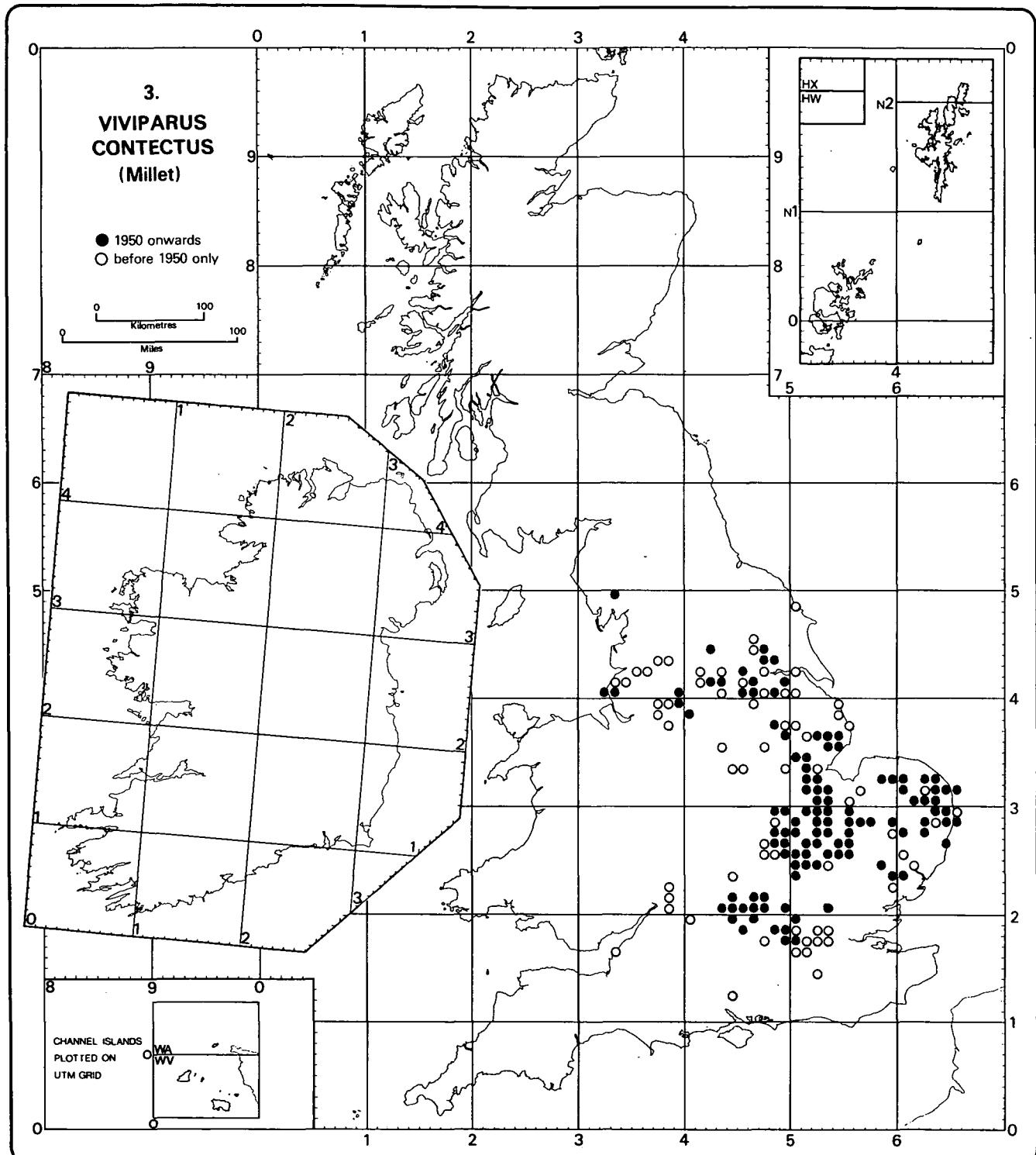
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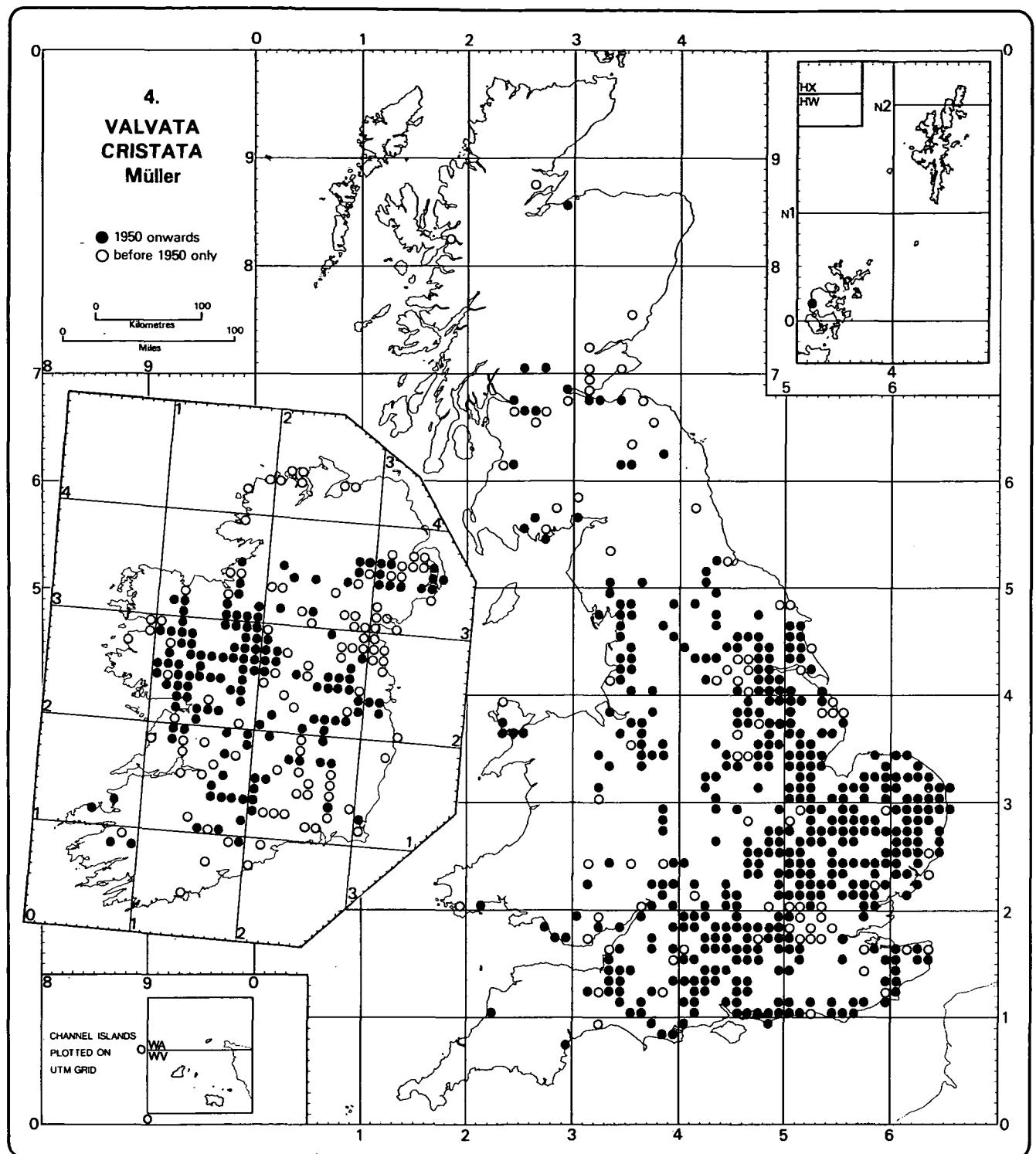


CHANNEL ISLANDS
PLOTTED ON
UTM GRID





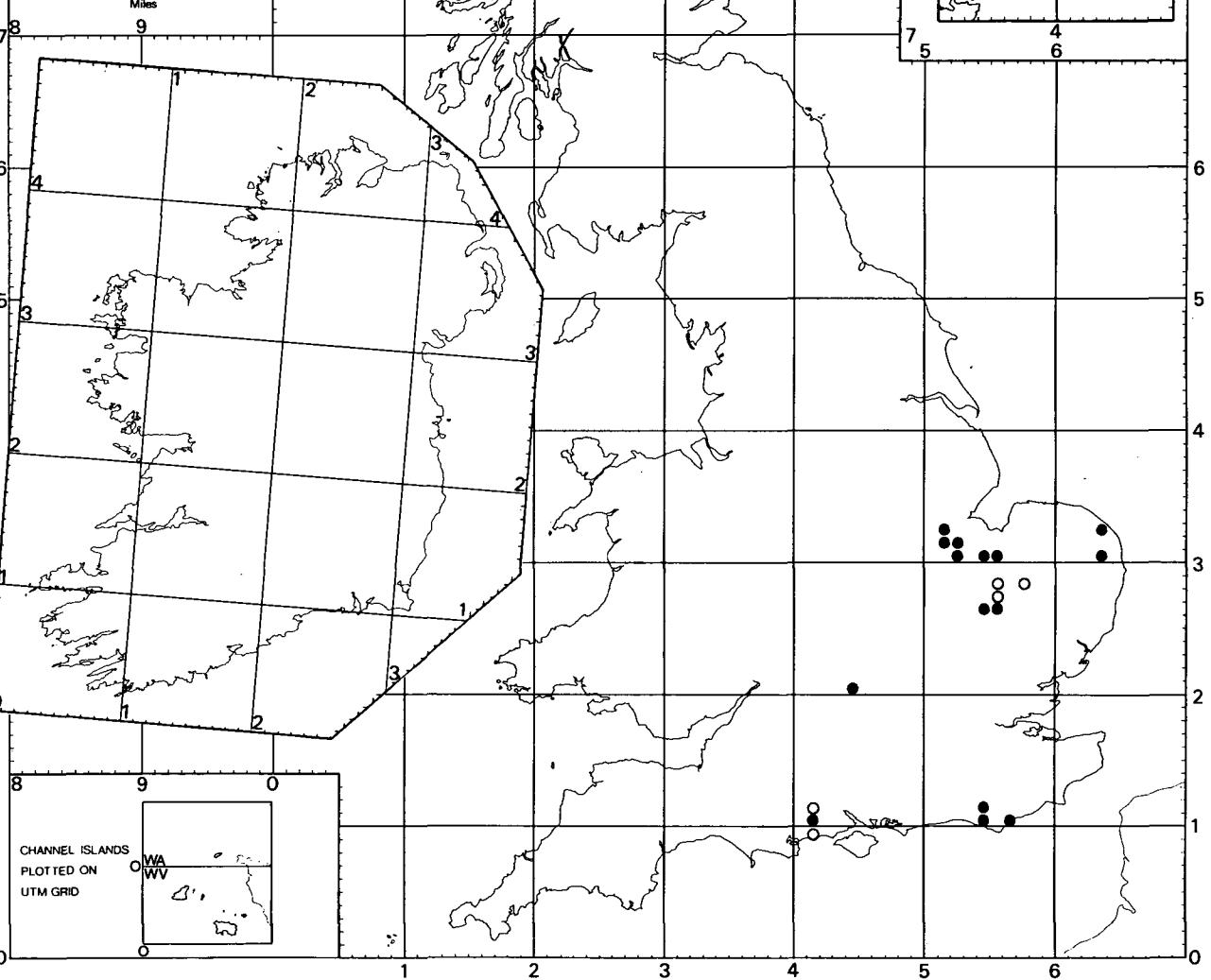
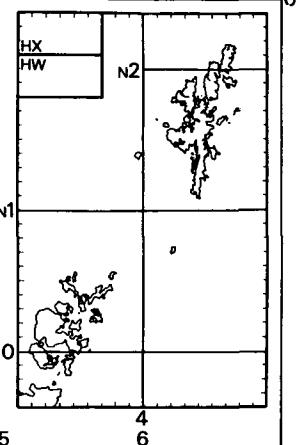




5.
**VALVATA
MACROSTOMA**
Mörch

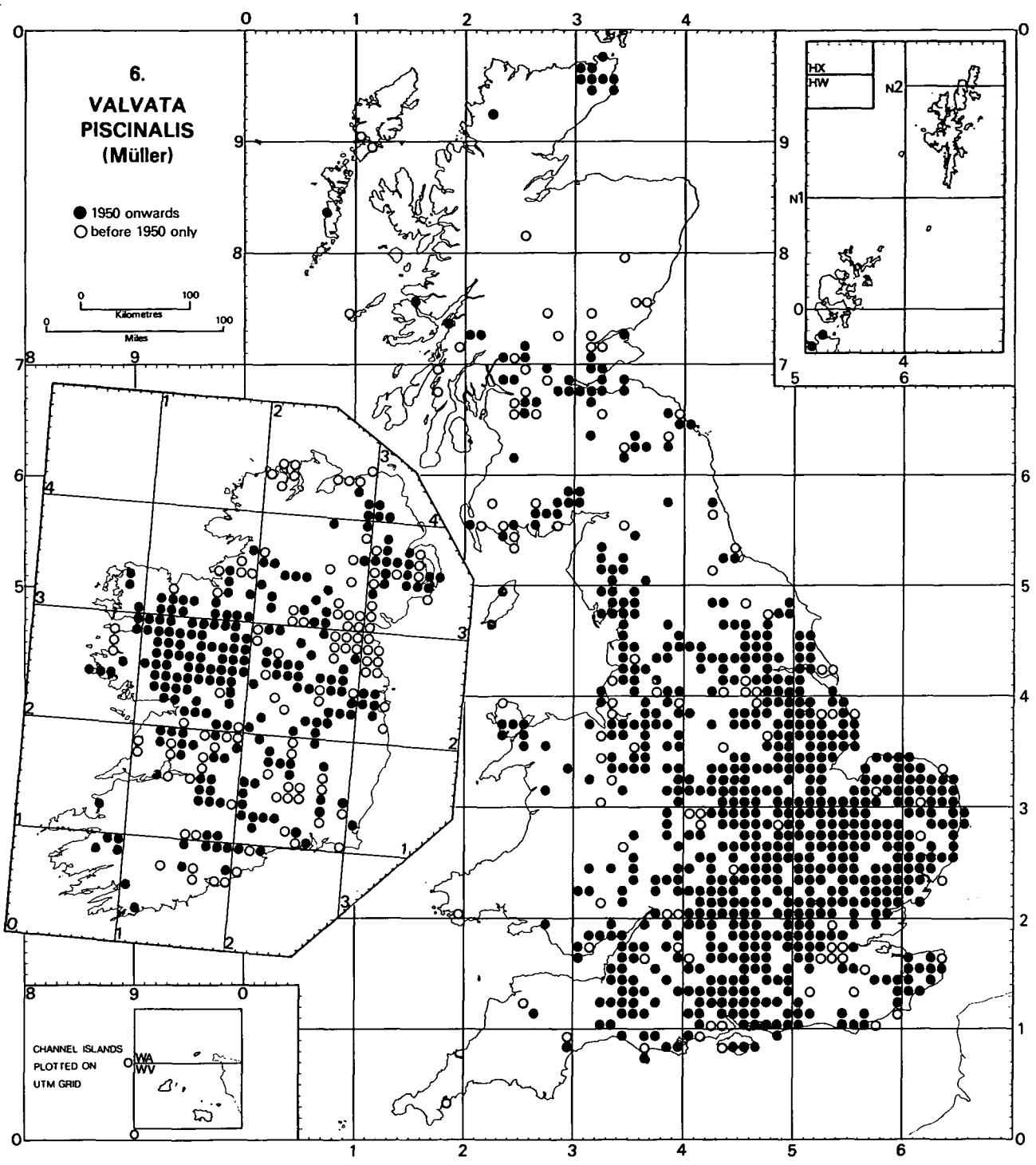
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0 Miles 100



**6.
VALVATA
PISCINALIS
(Müller)**

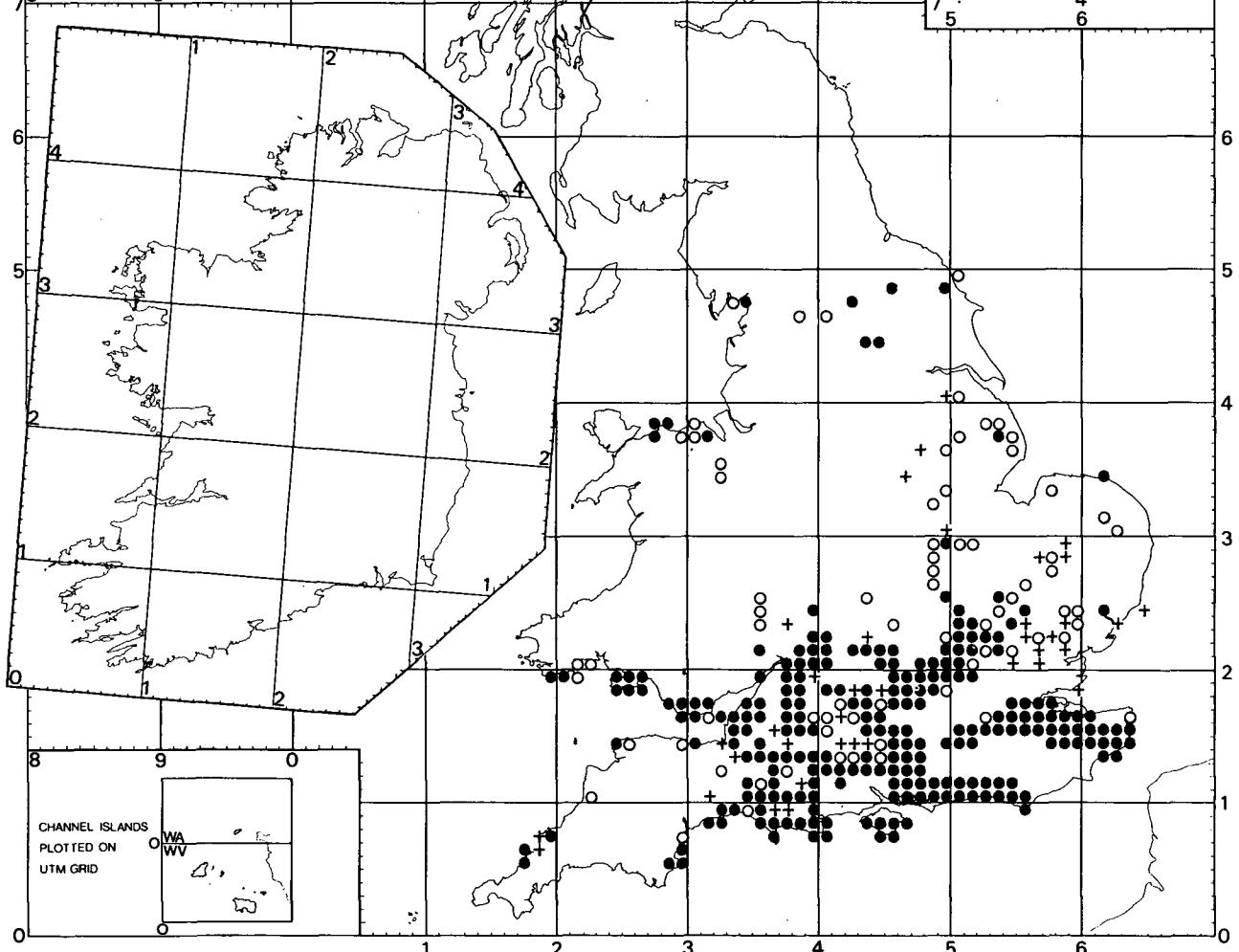
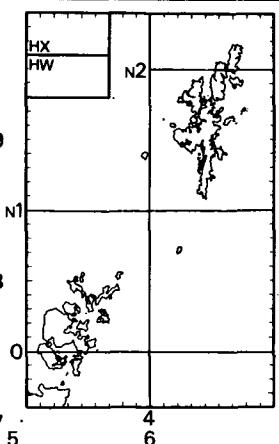
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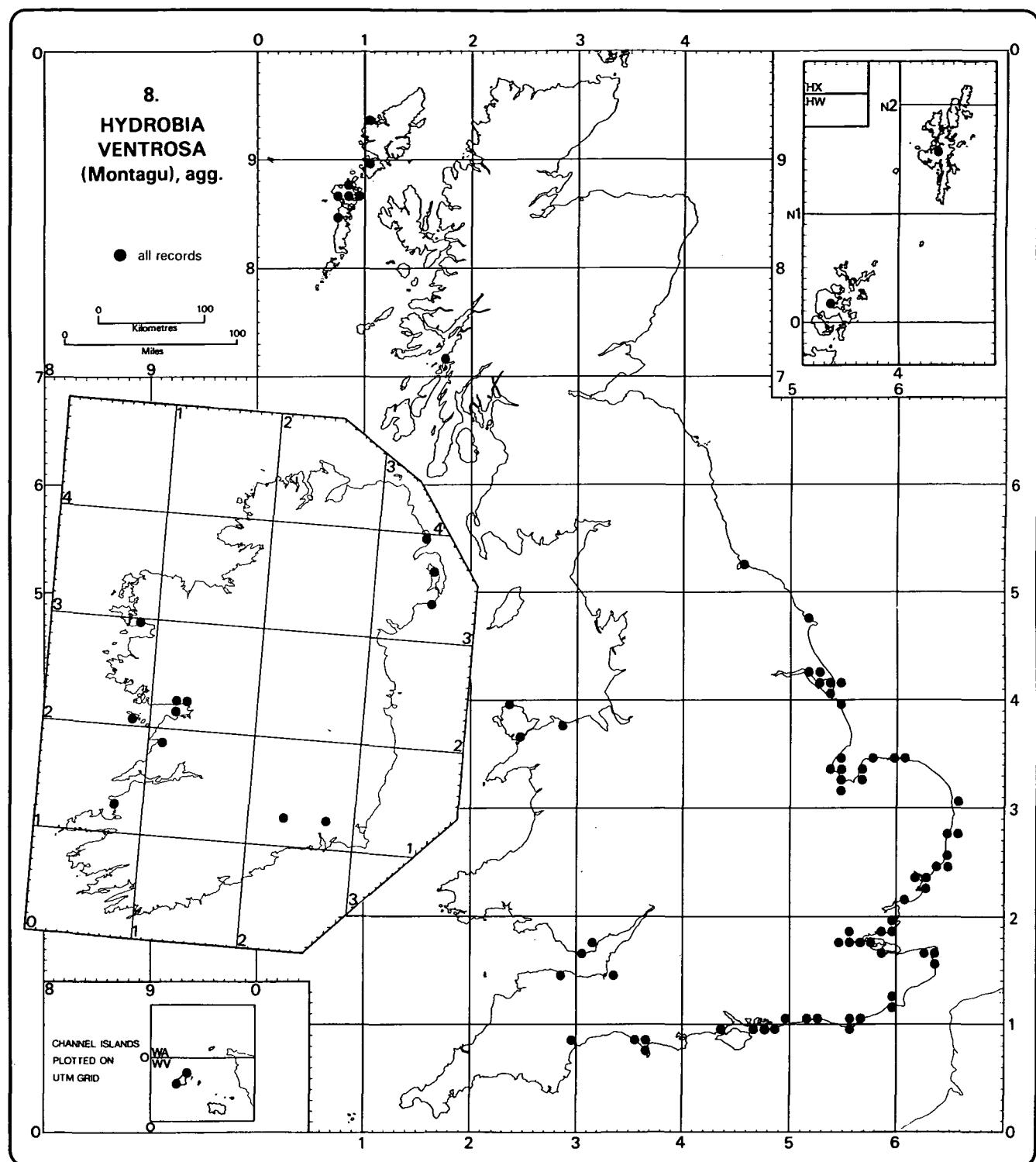


7.
**POMATIAS
ELEGANS**
 (Müller)

- 1950 onwards
- before 1950 only
- + Flandrian fossils

0 Kilometres 100 Miles

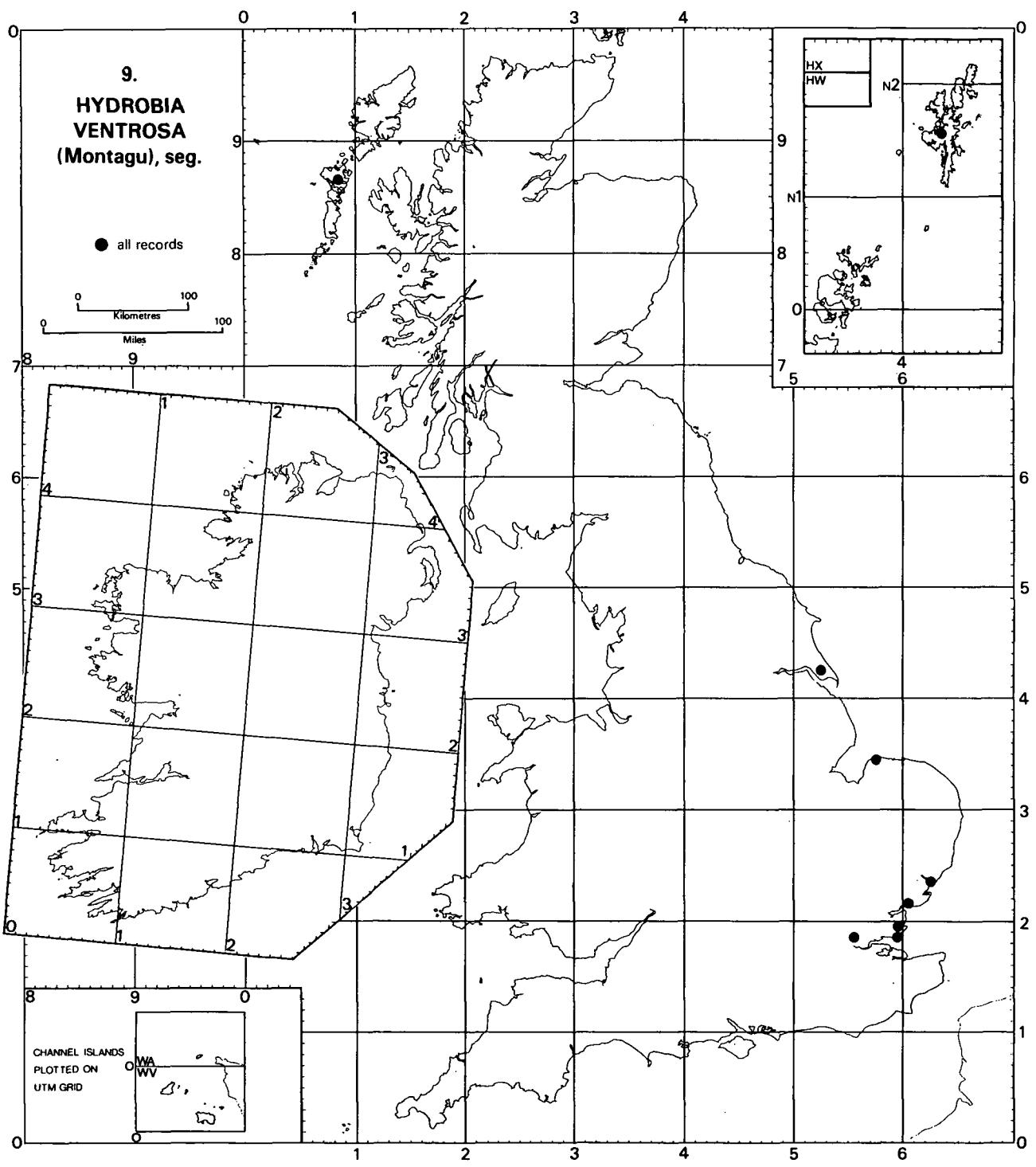
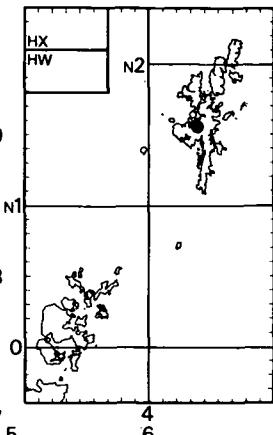


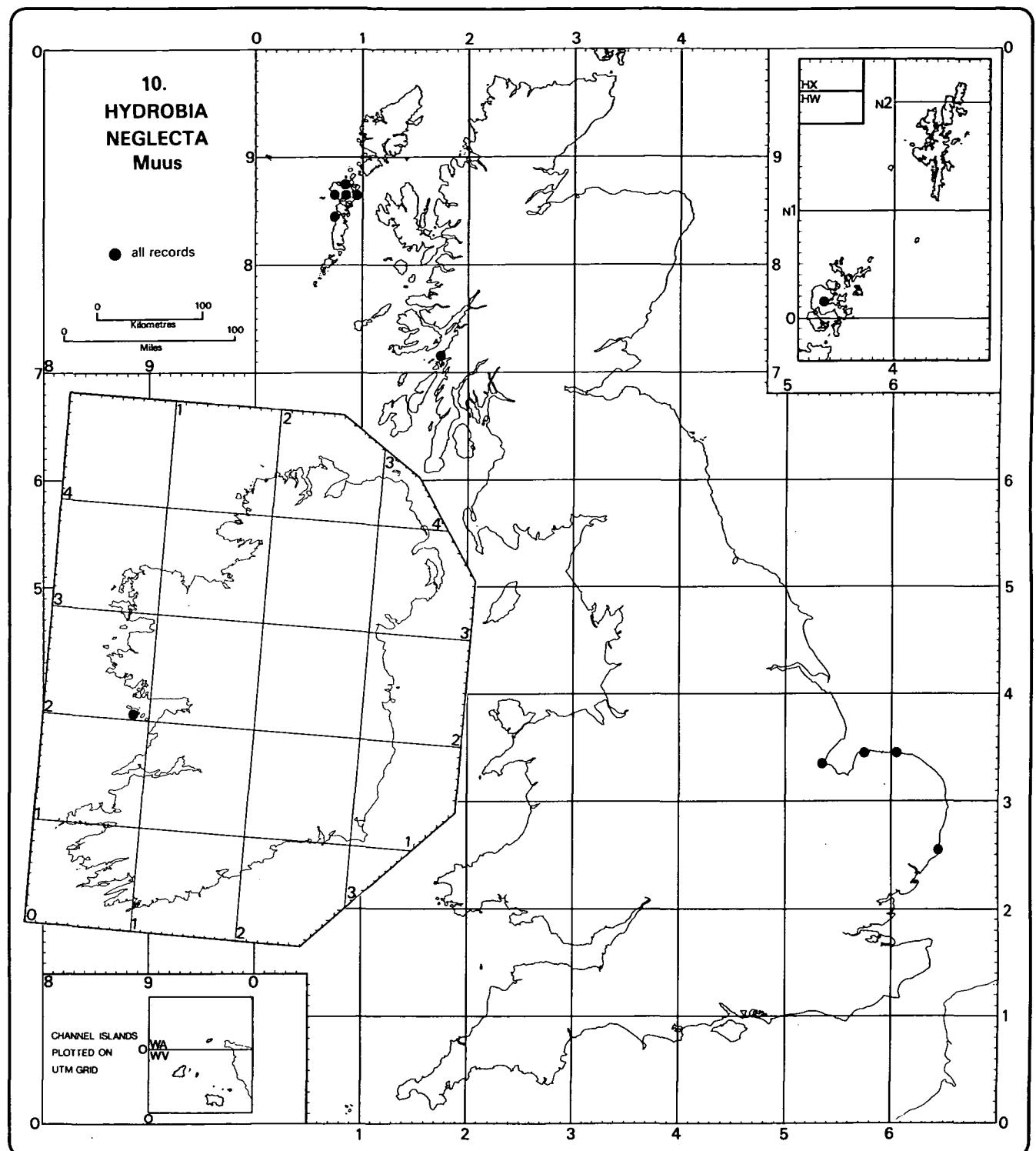


9.
**HYDROBIA
VENTROSA**
(Montagu), seg.

● all records

0 Kilometres 100
0 Miles 100



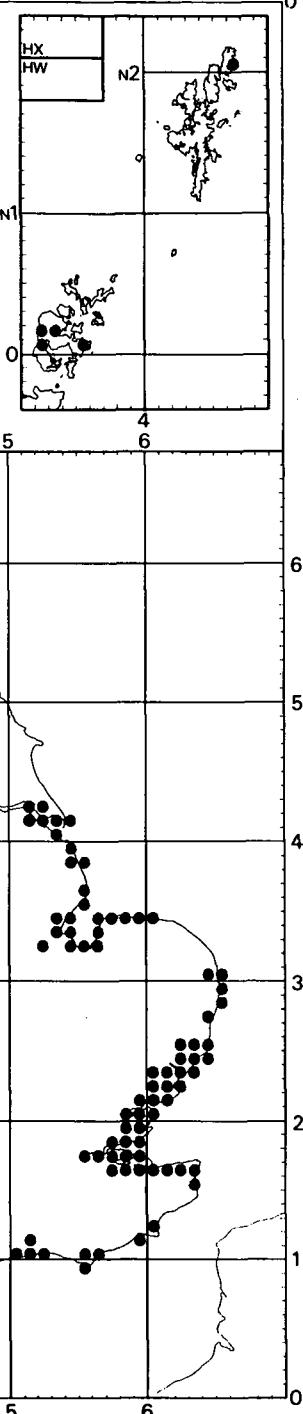


11.
**HYDROBIA
ULVAE**
(Pennant)

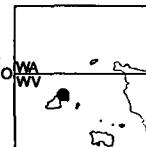
● all records

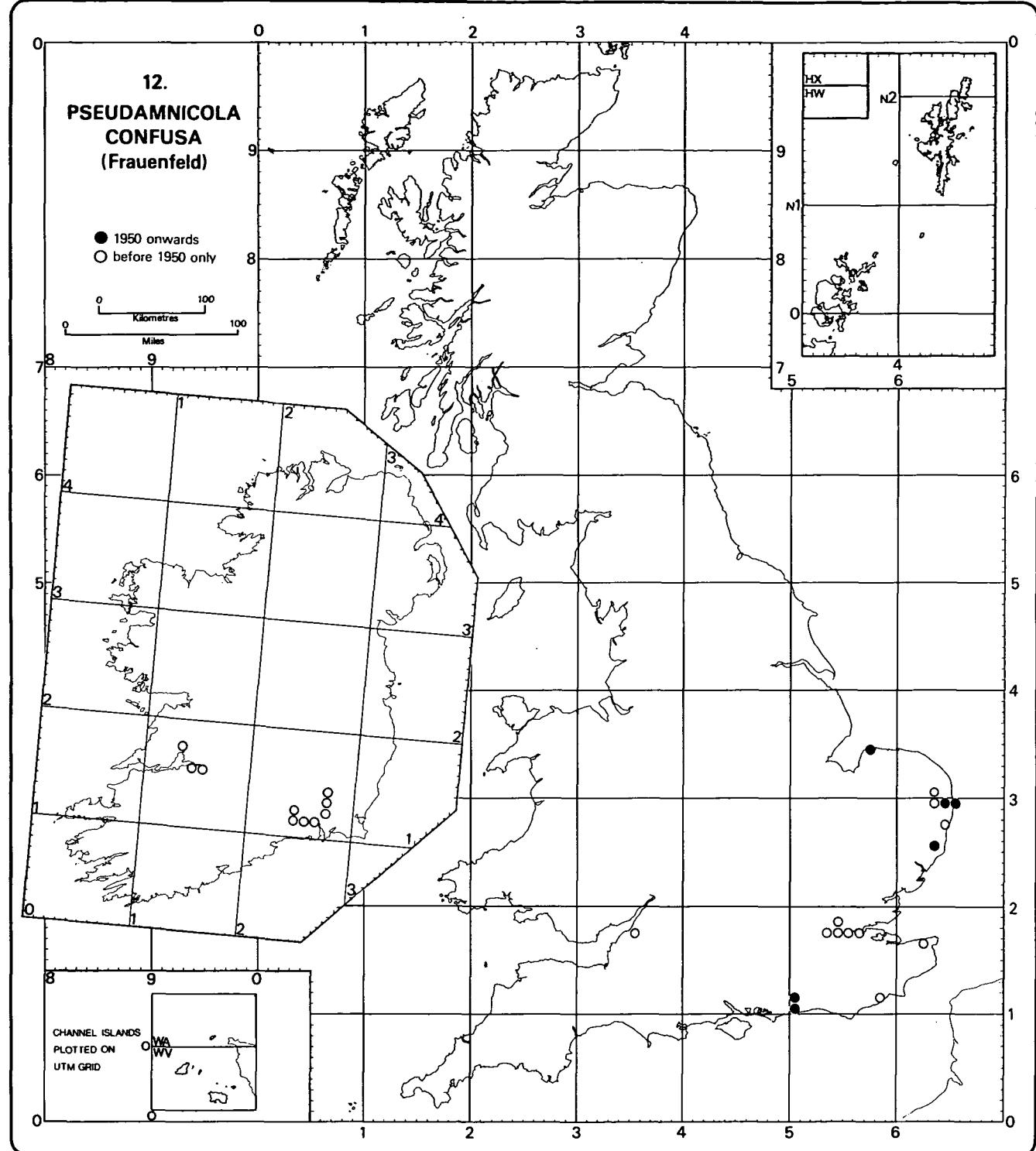
0 Kilometres 100

0 Miles 100



CHANNEL ISLANDS
PLOTTED ON
UTM GRID





13.
POTAMOPYRGUS
JENKINSI
(Smith)

● all records

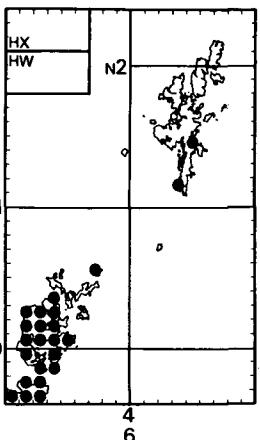
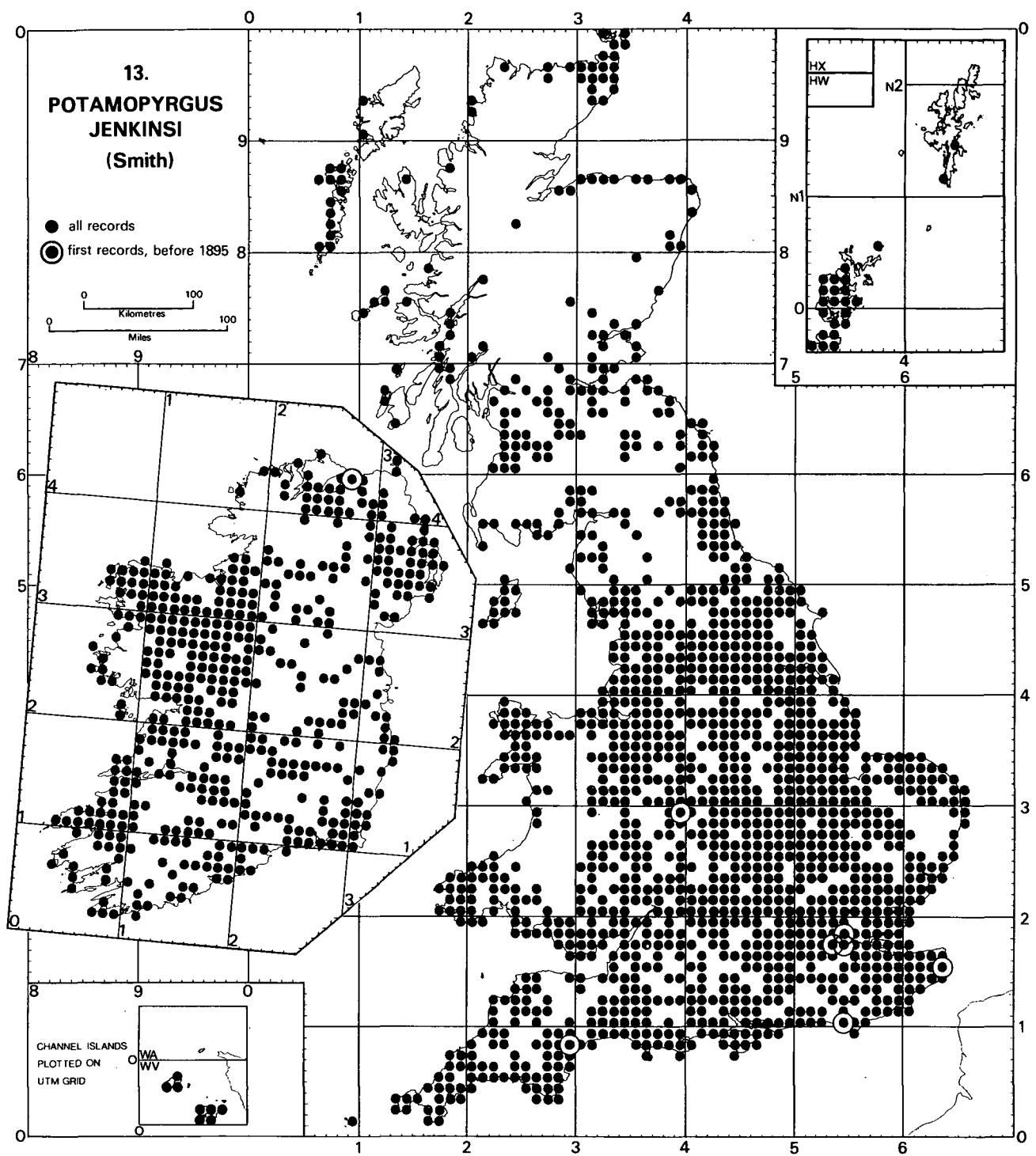
○ first records, before 1895

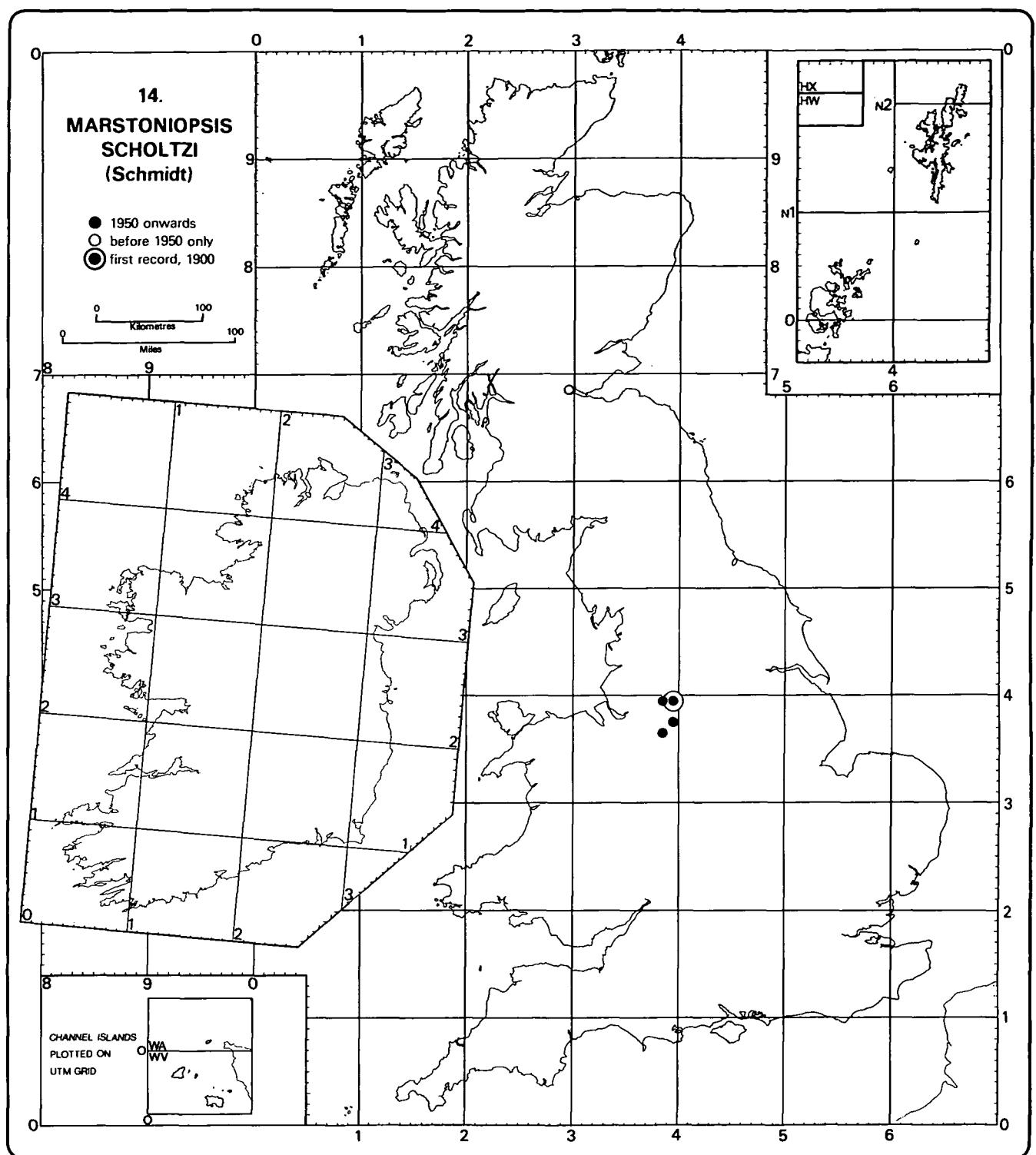
Kilometres

Miles

0 100

0 100





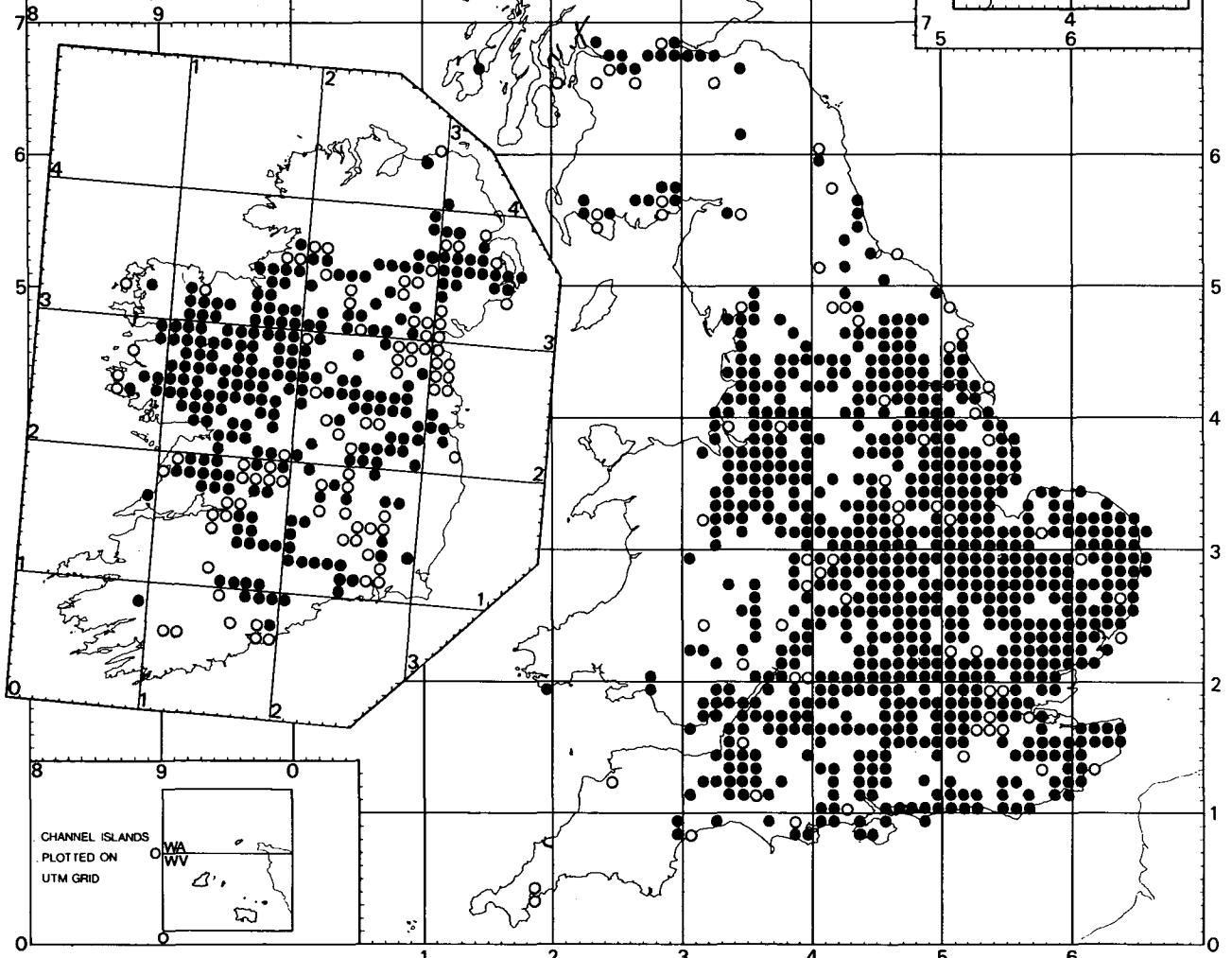
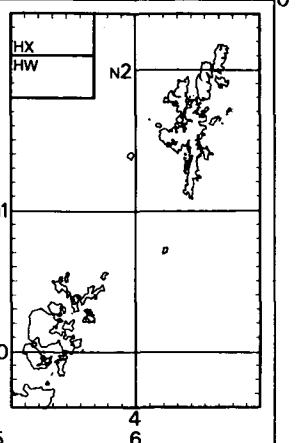
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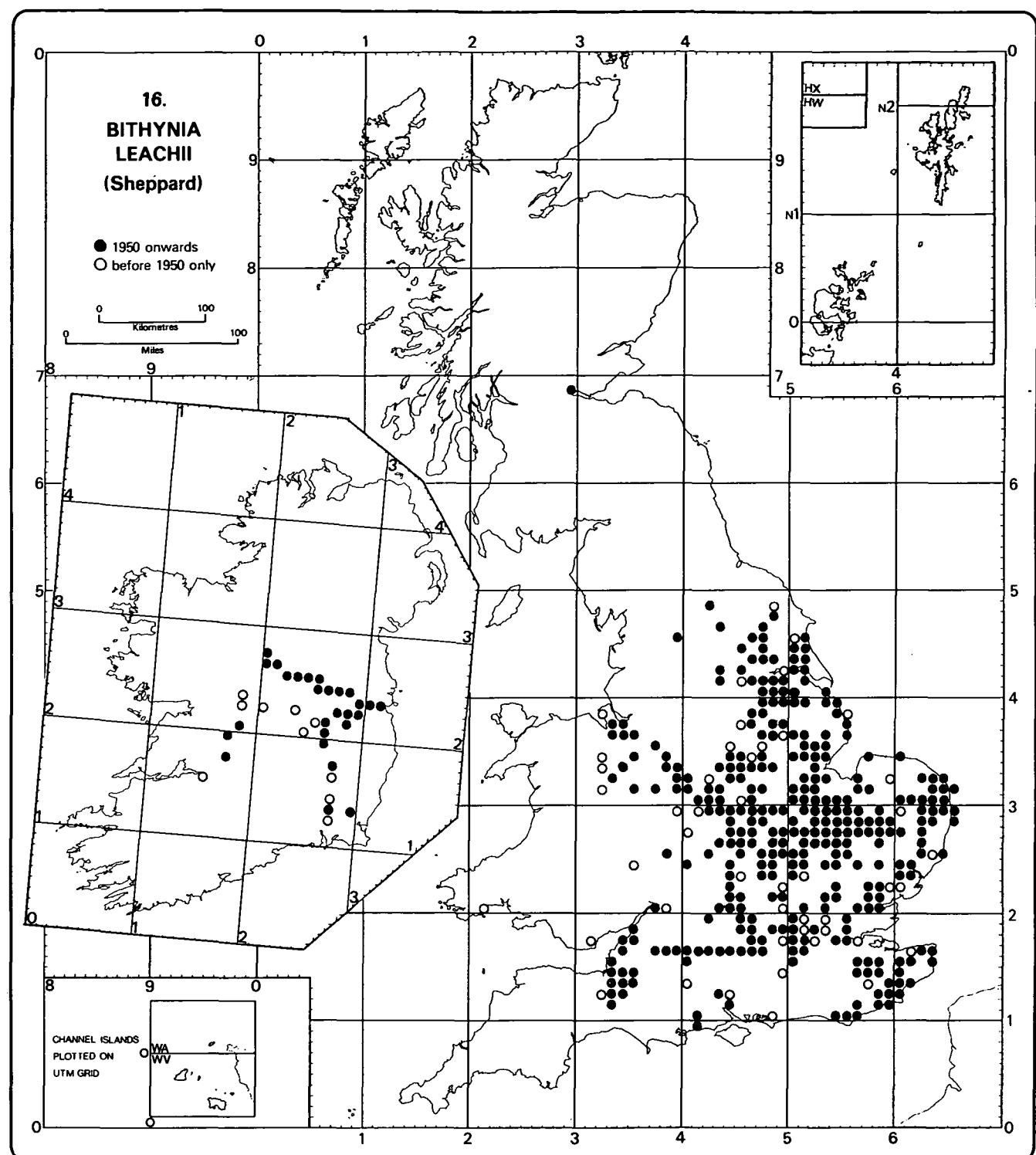
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BITHYNIA
TENTACULATA (L.)

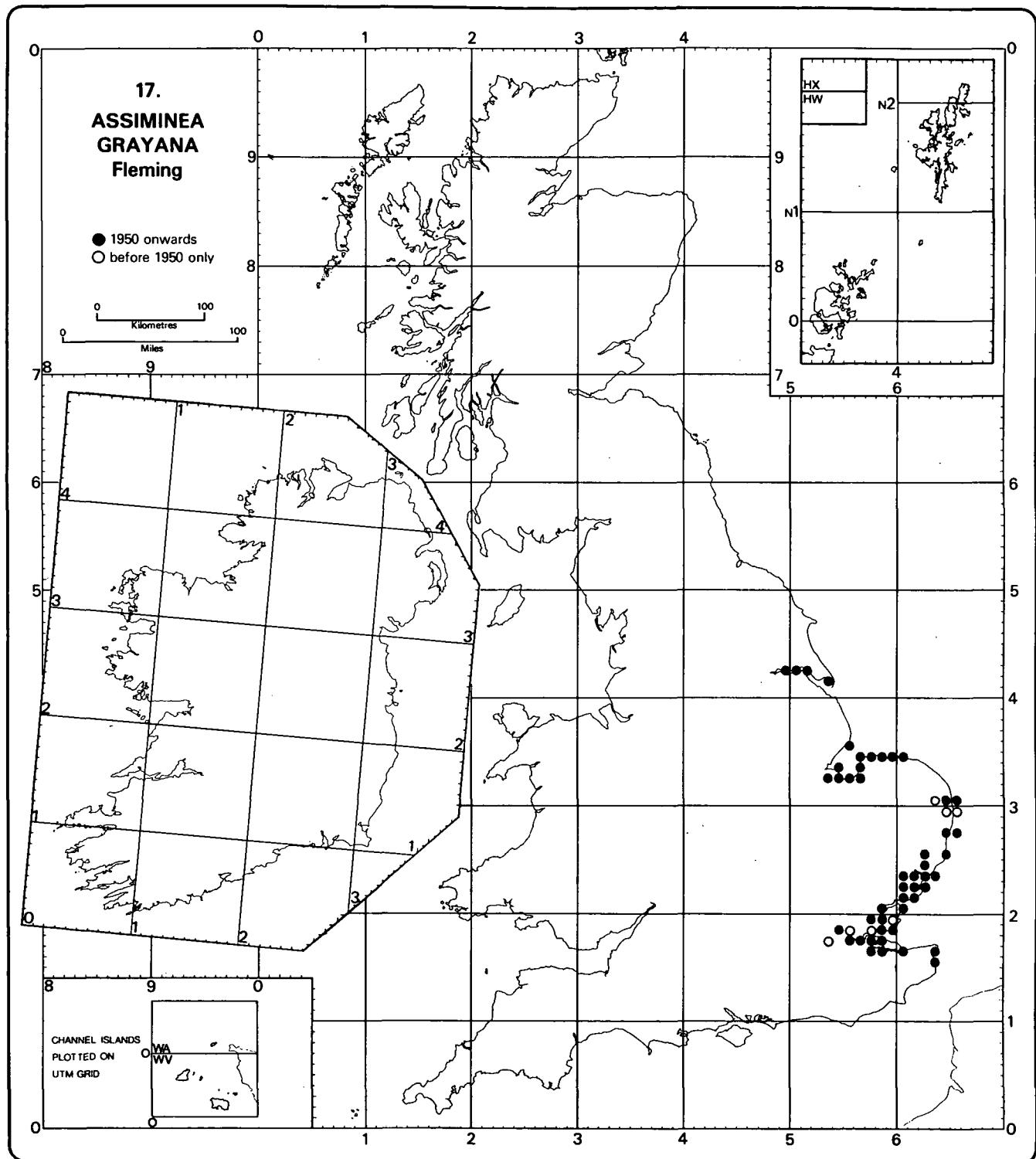
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 ○ before 1950 only

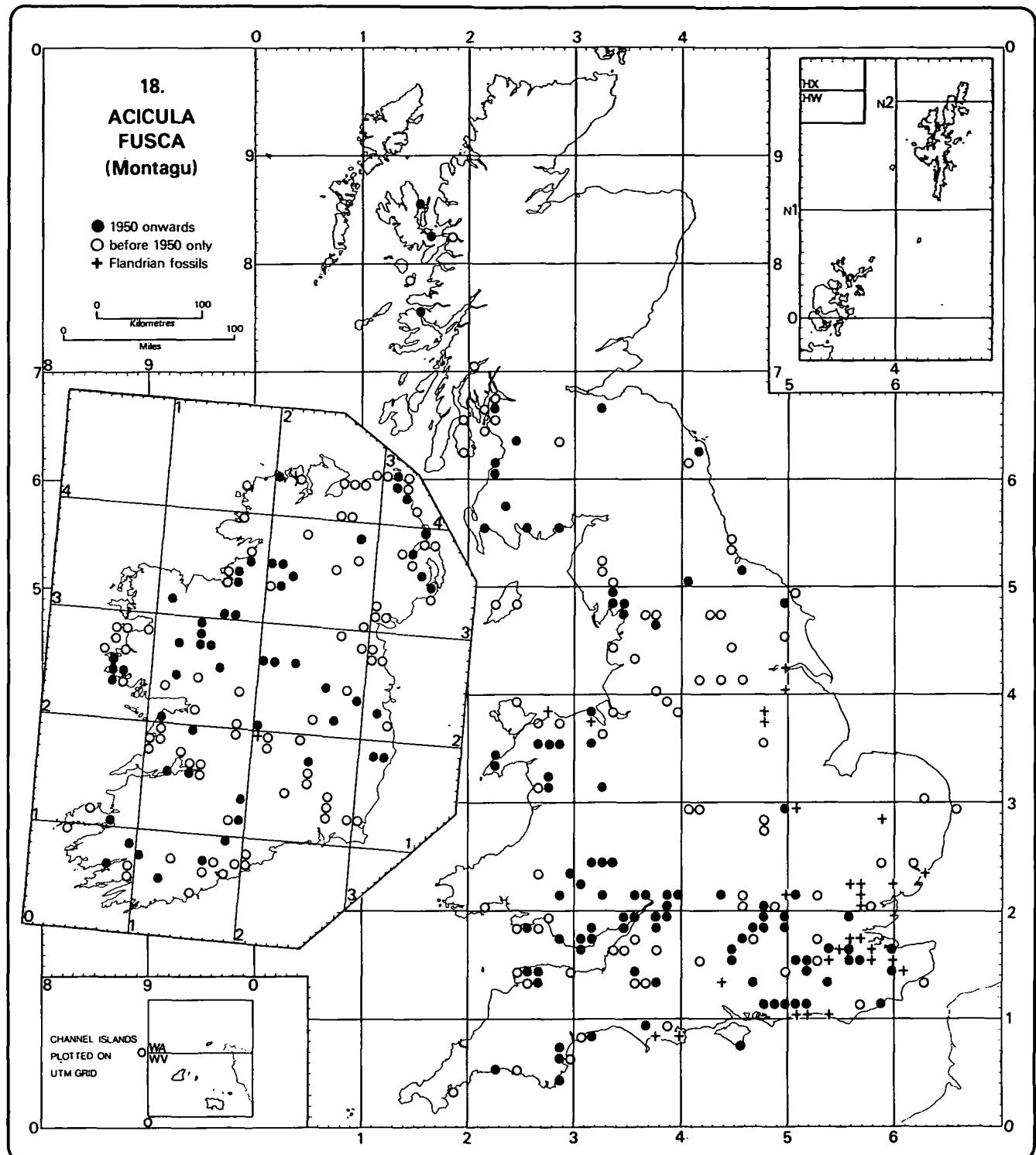
0 100 Kilometres

0 100 Miles







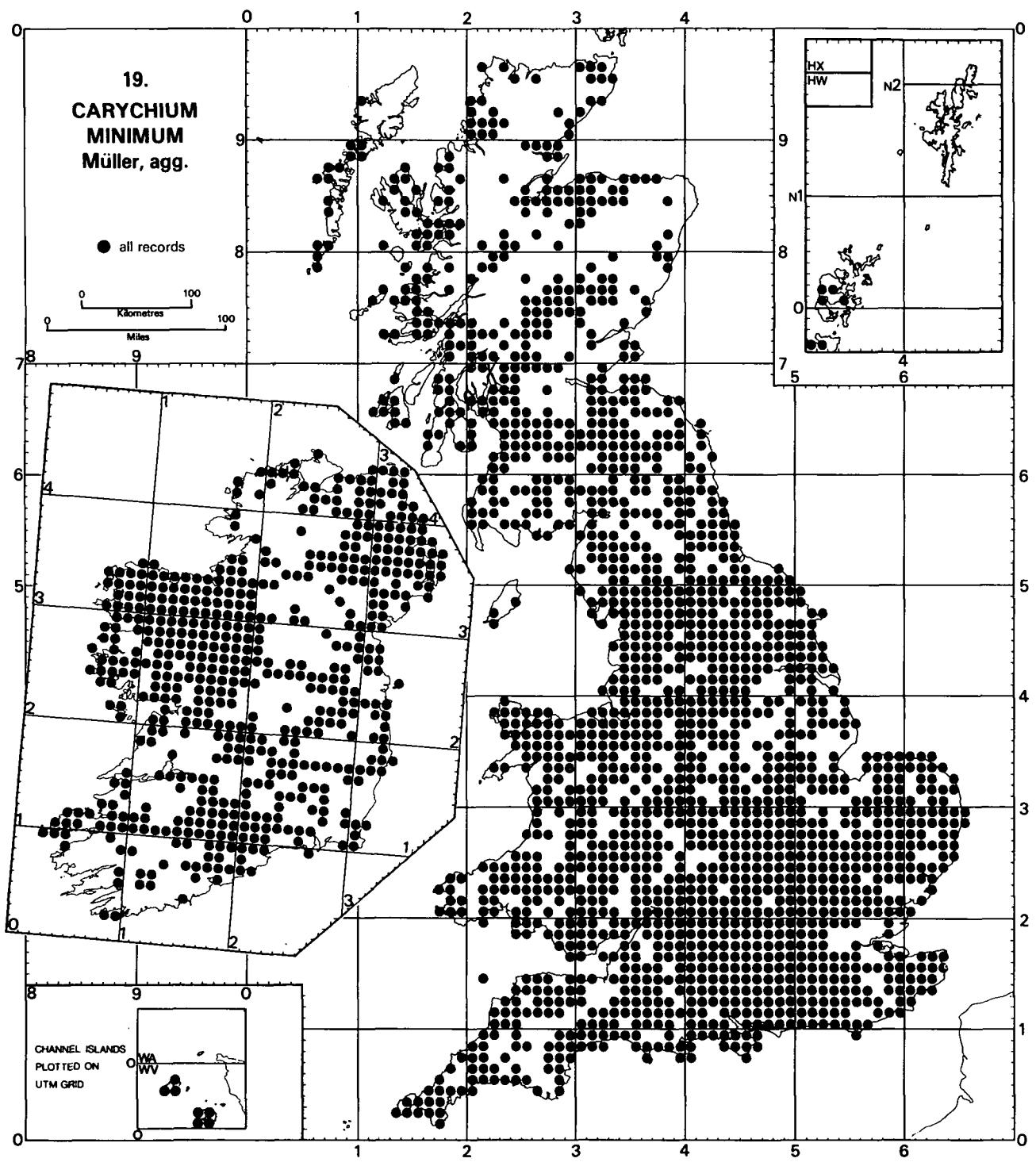


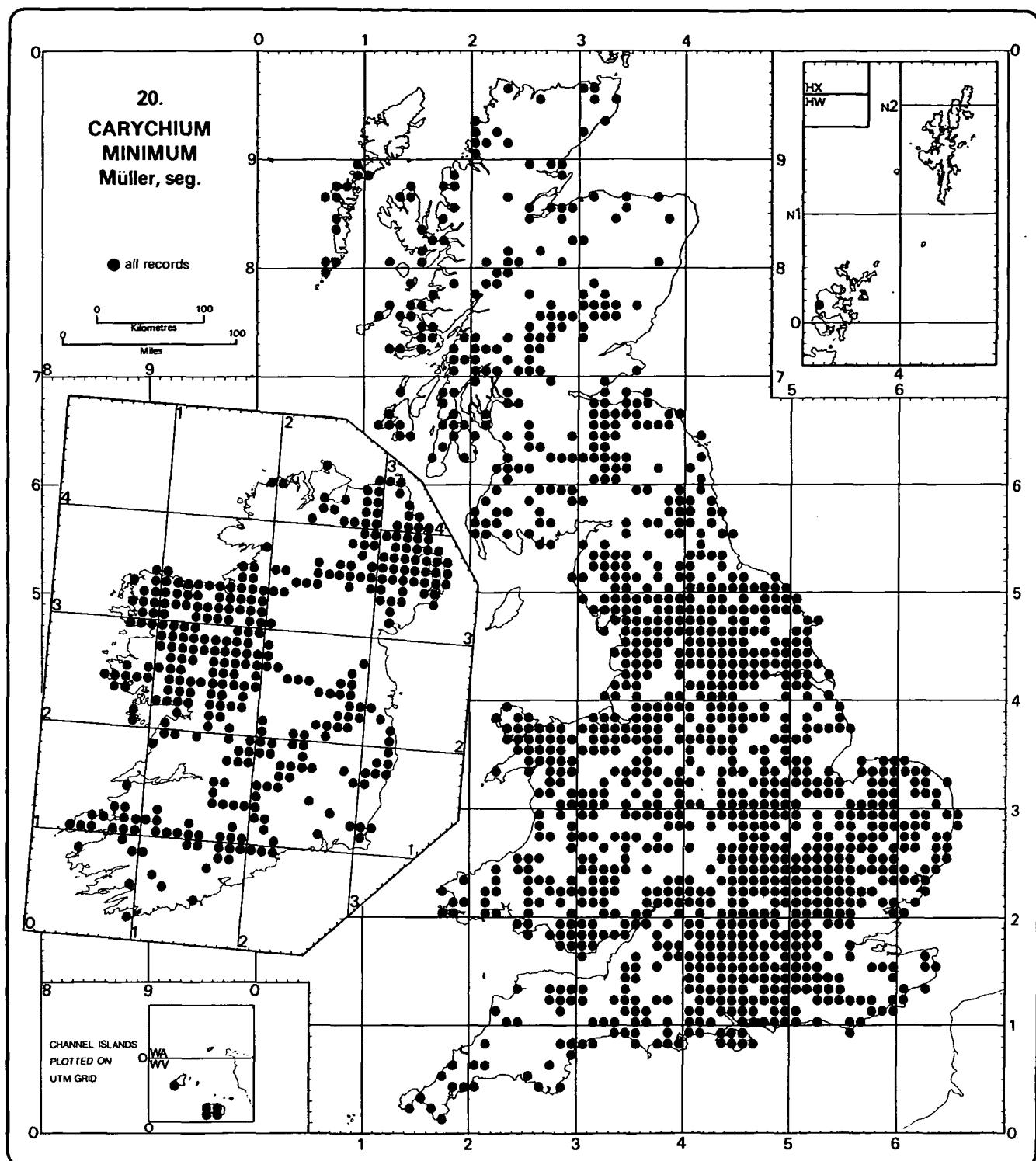
19.
**CARYCHIUM
MINIMUM**
Müller, agg.

● all records

0 Kilometres

0 Miles

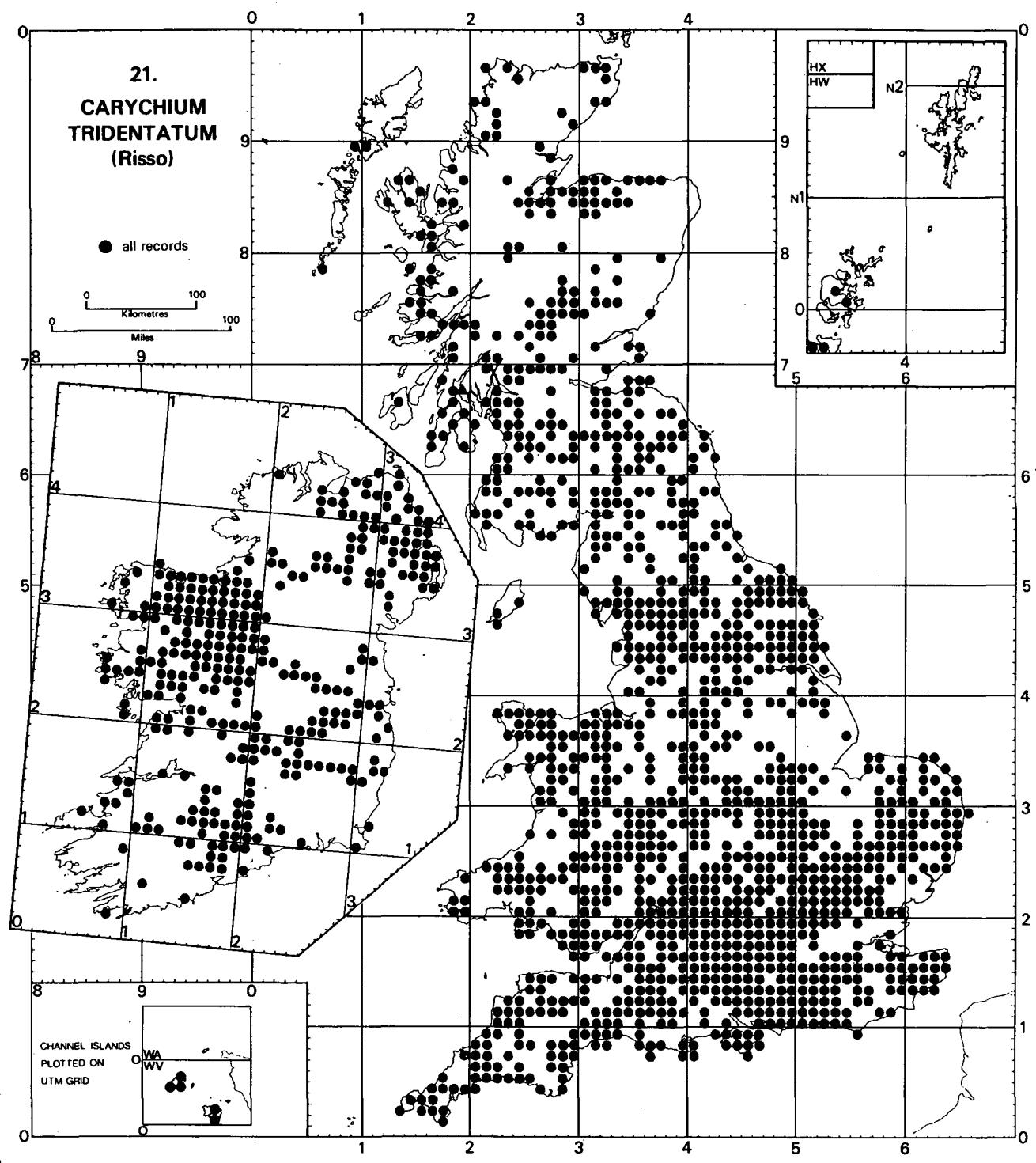
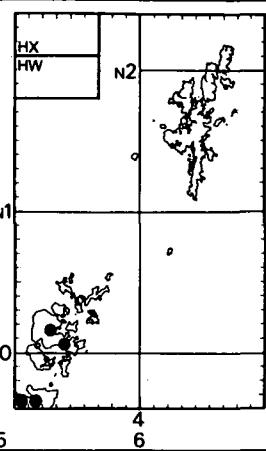


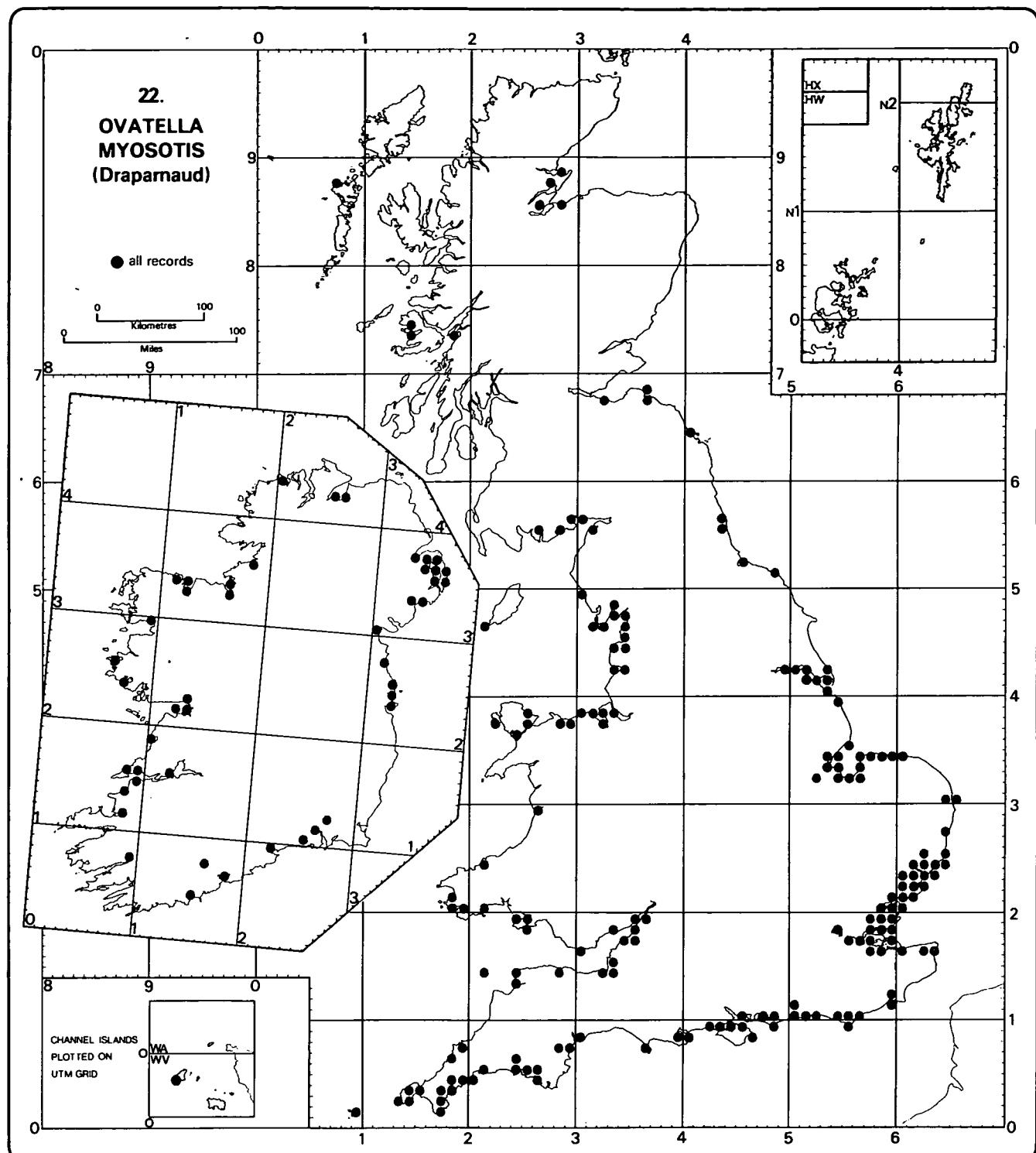


21.
CARYCHIUM
TRIDENTATUM
(Risso)

● all records

0 Kilometres
100 Miles

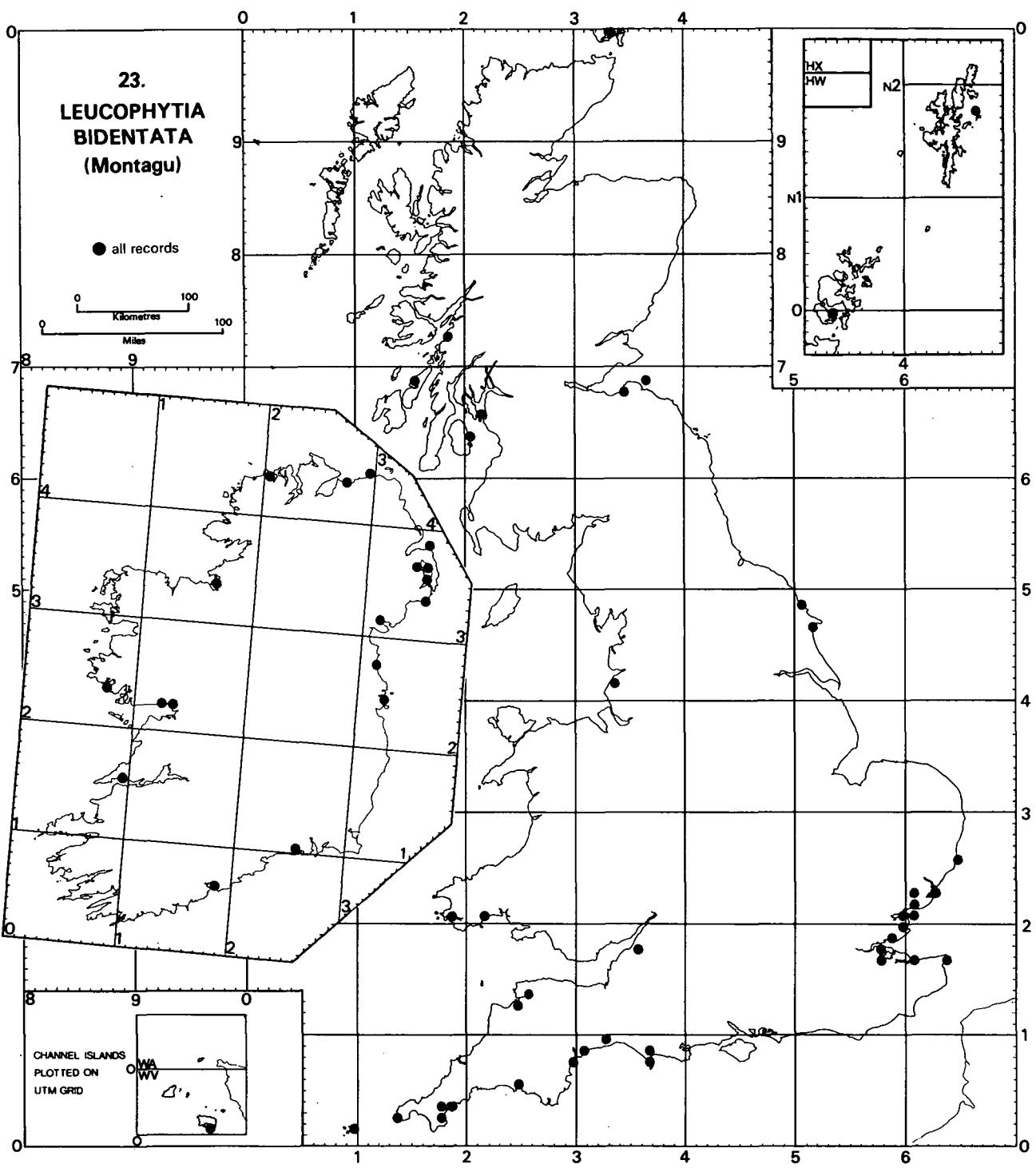


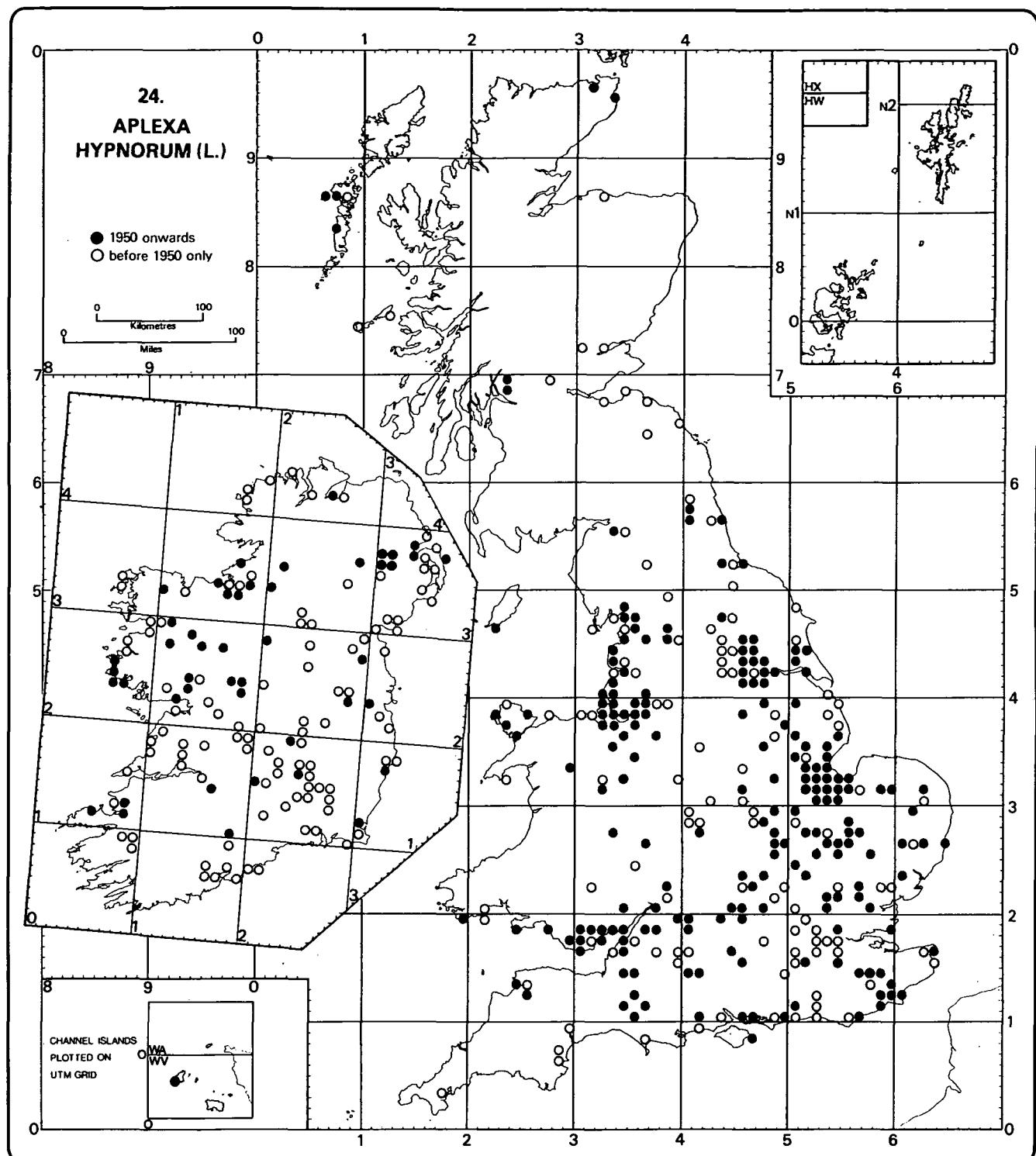


23.
LEUCOPHYTIA
BIDENTATA
(Montagu)

● all records

0 Kilometres
100 Miles

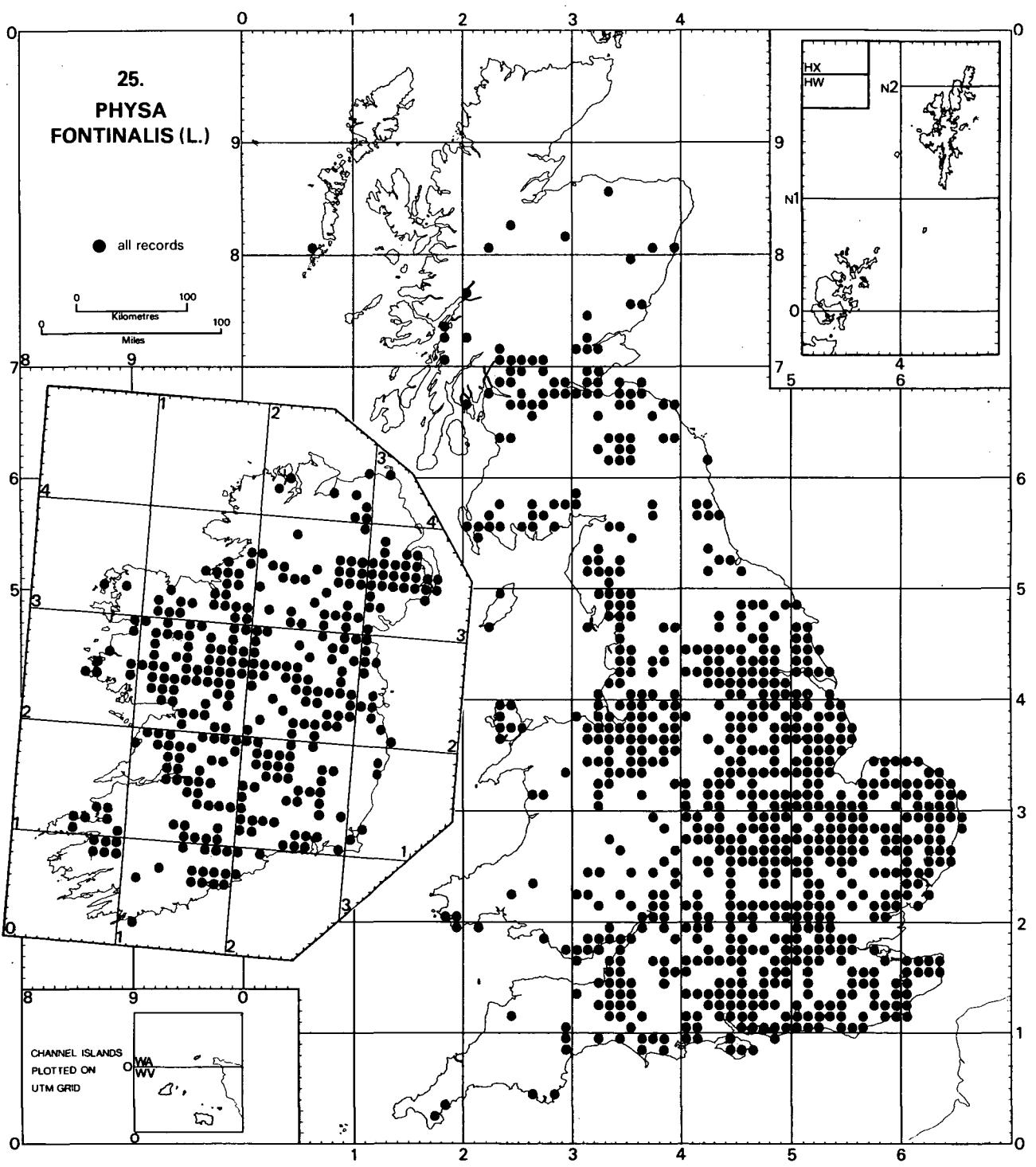


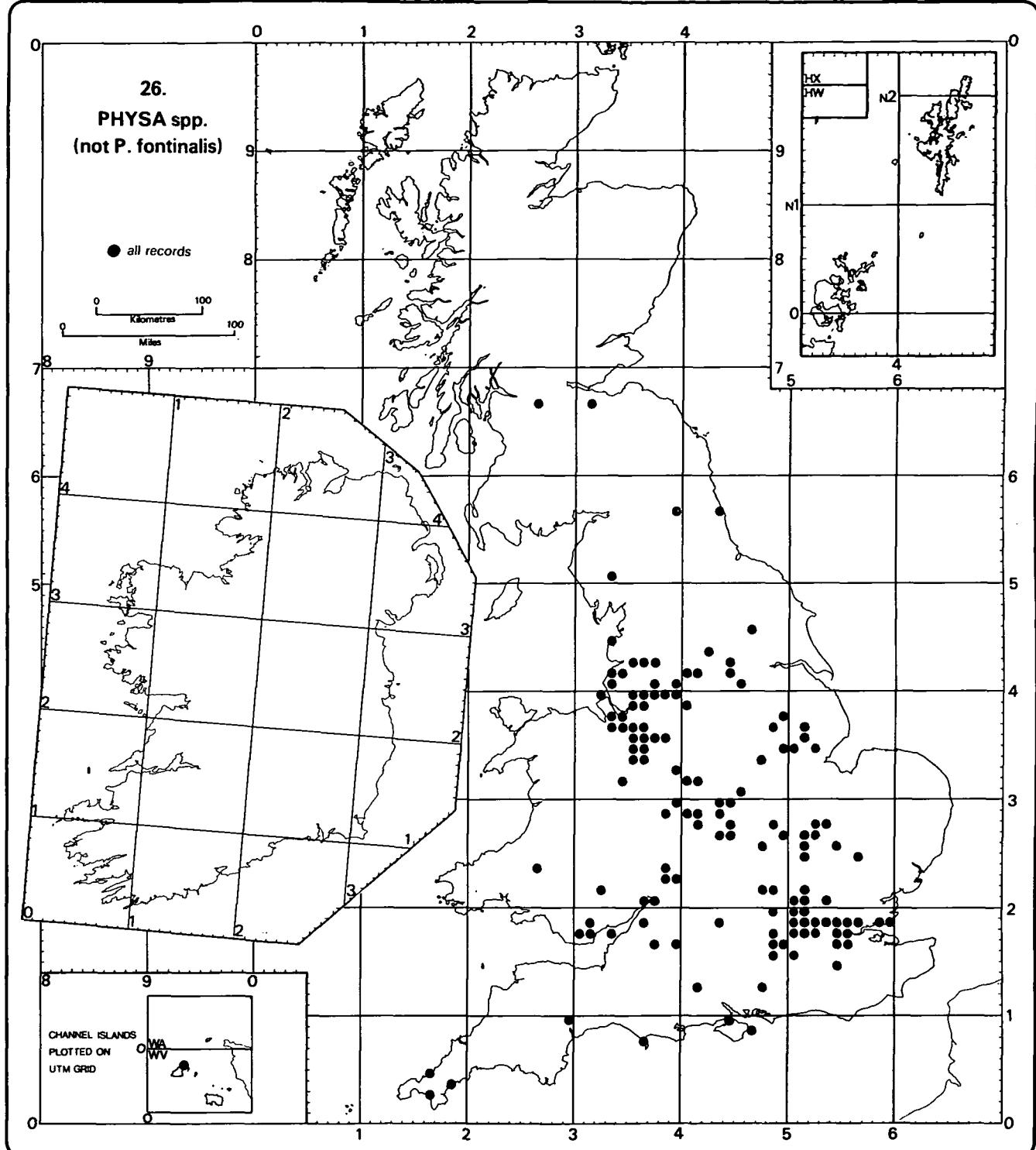


25.
PHYSA
FONTINALIS (L.)

● all records

0 Kilometres
100 Miles





27.
PHYSA cf.
ACUTA
Draparnaud

● all records

0 Kilometres
0 Miles
100

7 8 9

6 7 8 9

5 6 7 8 9

4 5 6 7 8 9

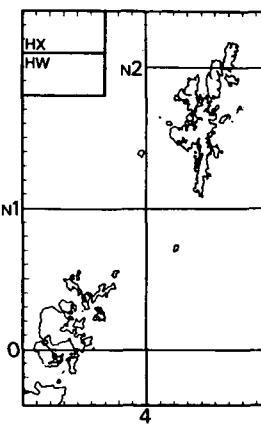
3 4 5 6 7 8 9

2 3 4 5 6 7 8 9

1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8 9



0

6

5

4

3

2

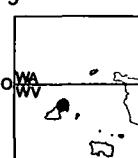
1

0

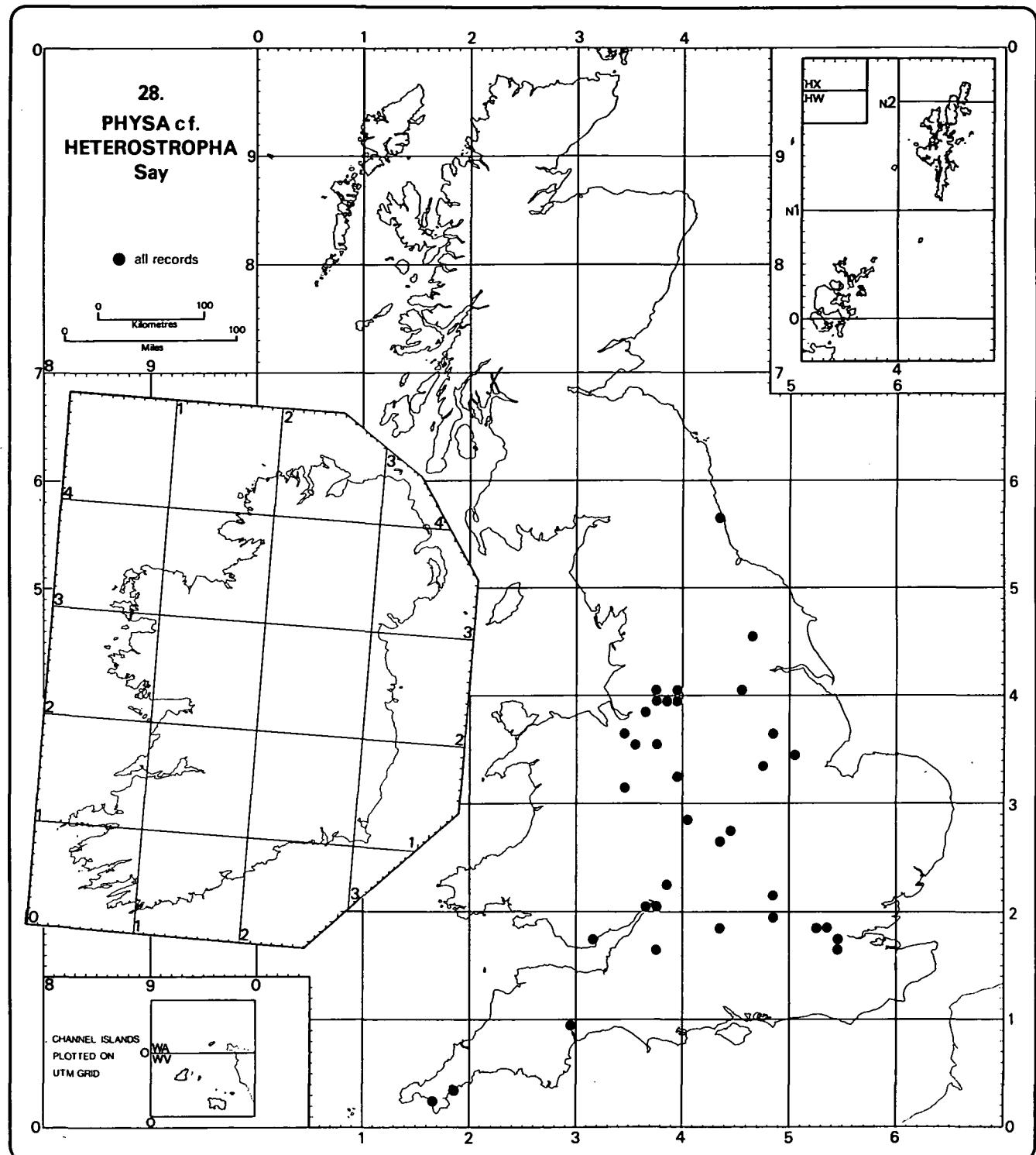
1

0

CHANNEL ISLANDS
PLOTTED ON
UTM GRID



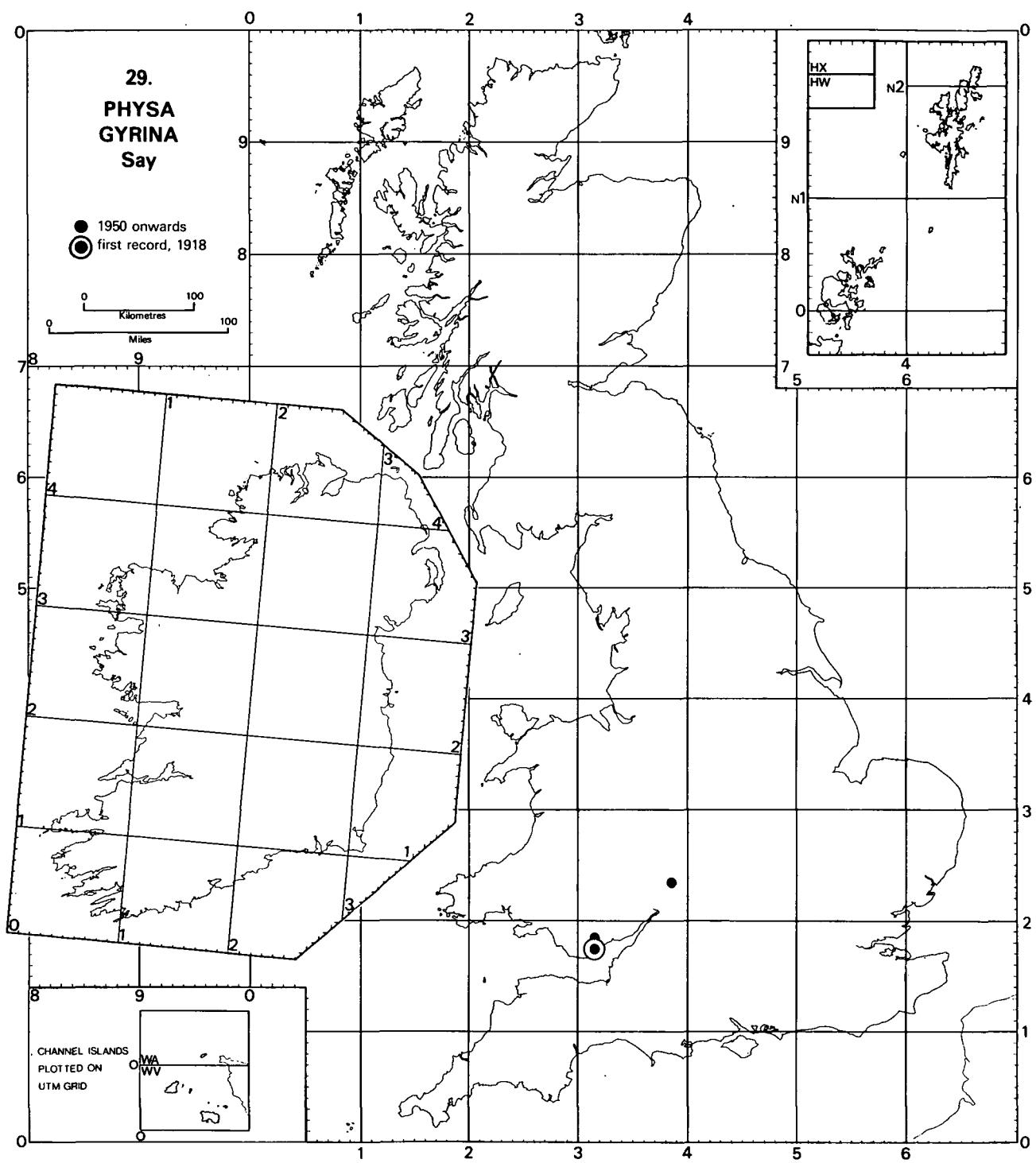
1 2 3 4 5 6 7 8 9

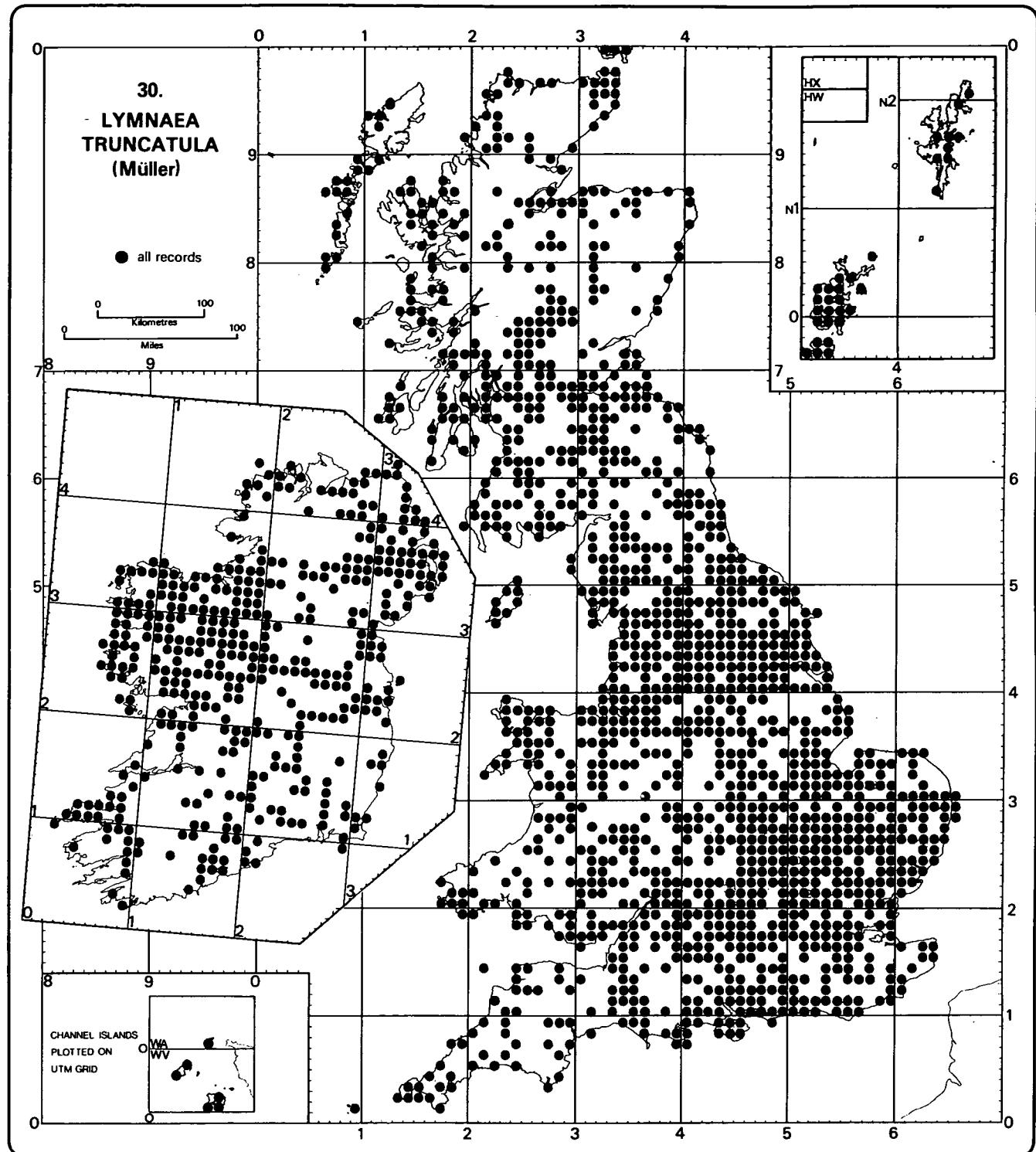


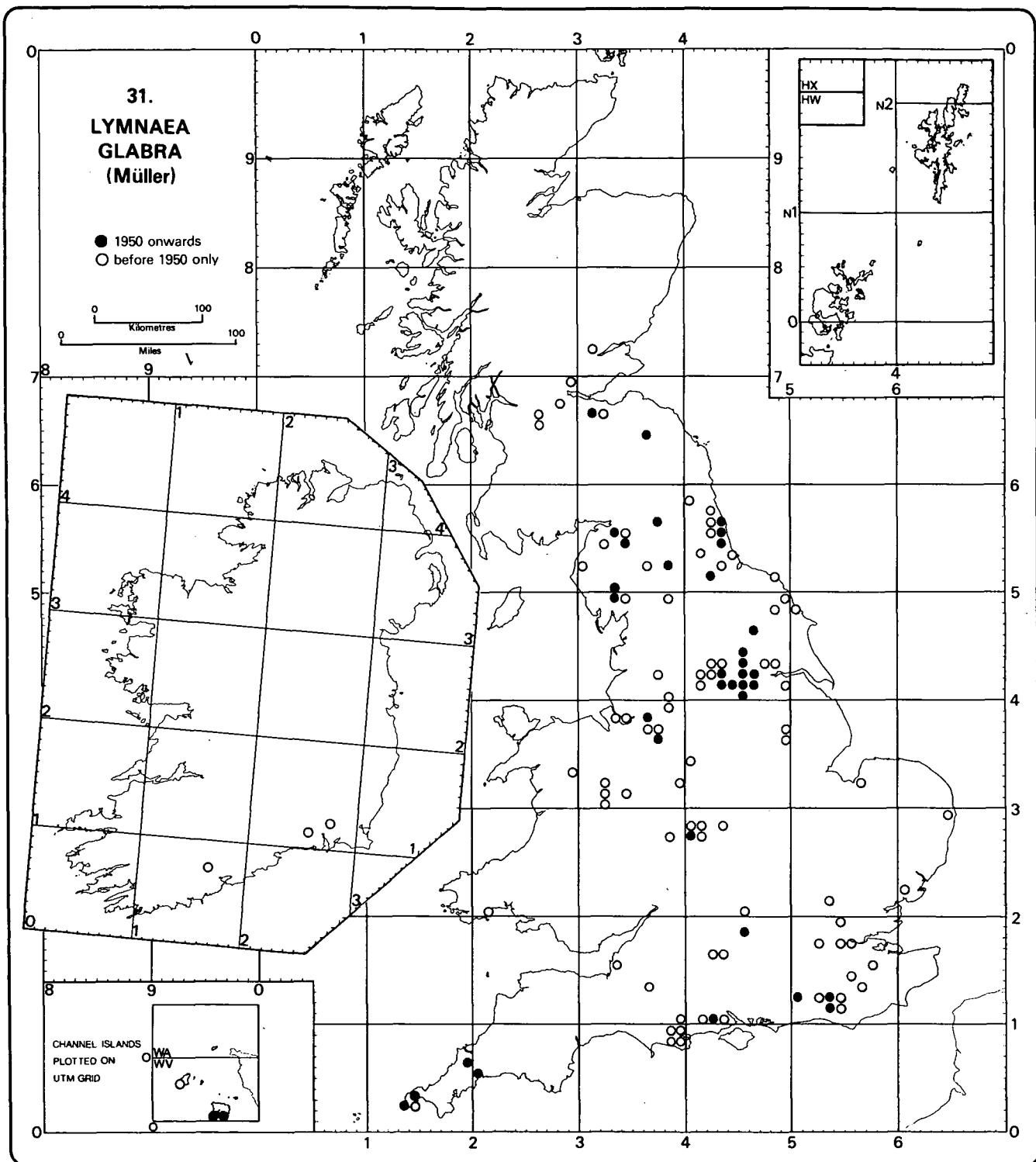
29.
PHYSA
GYRINA
Say

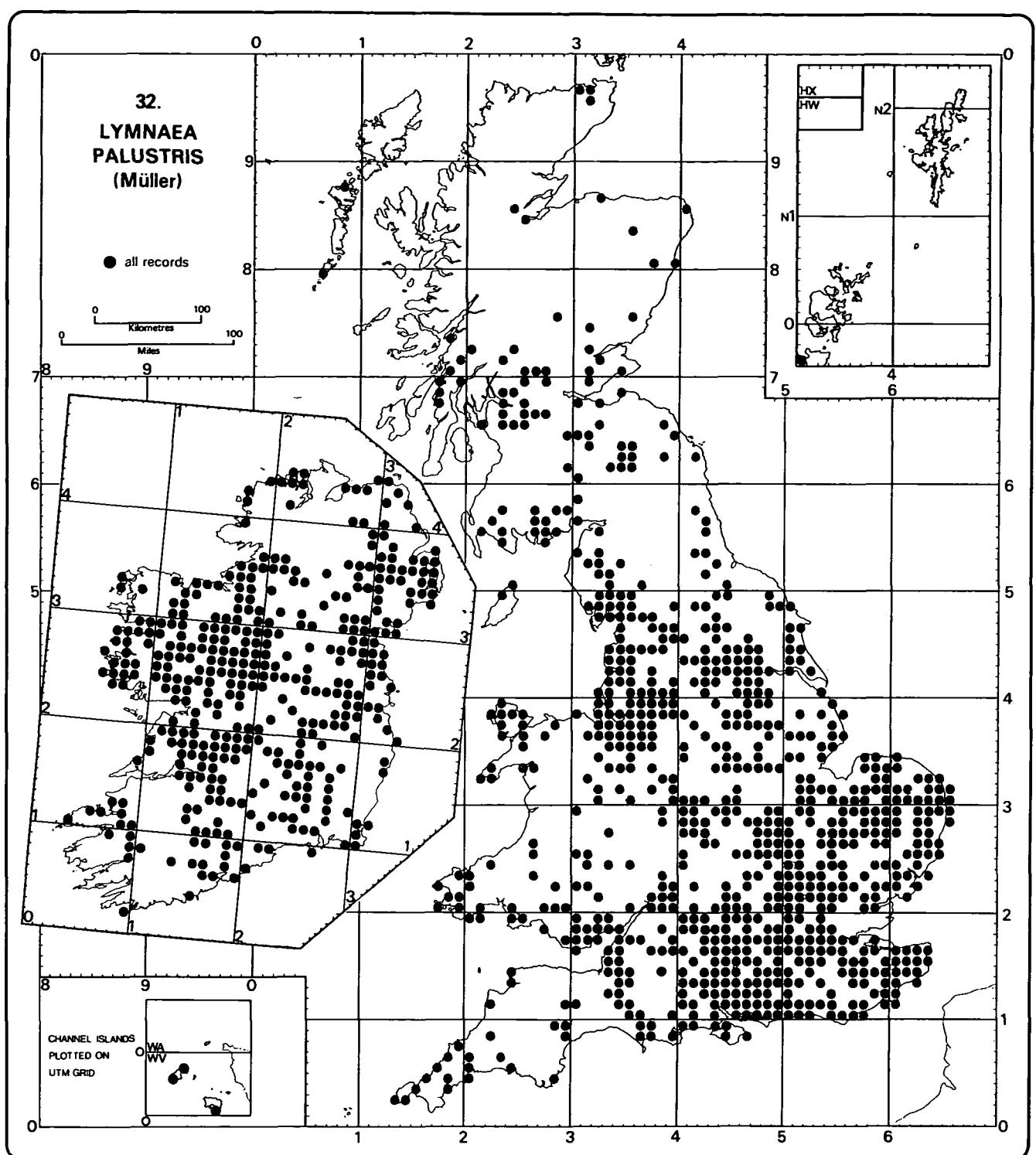
● 1950 onwards
○ first record, 1918

0 Kilometres
0 Miles







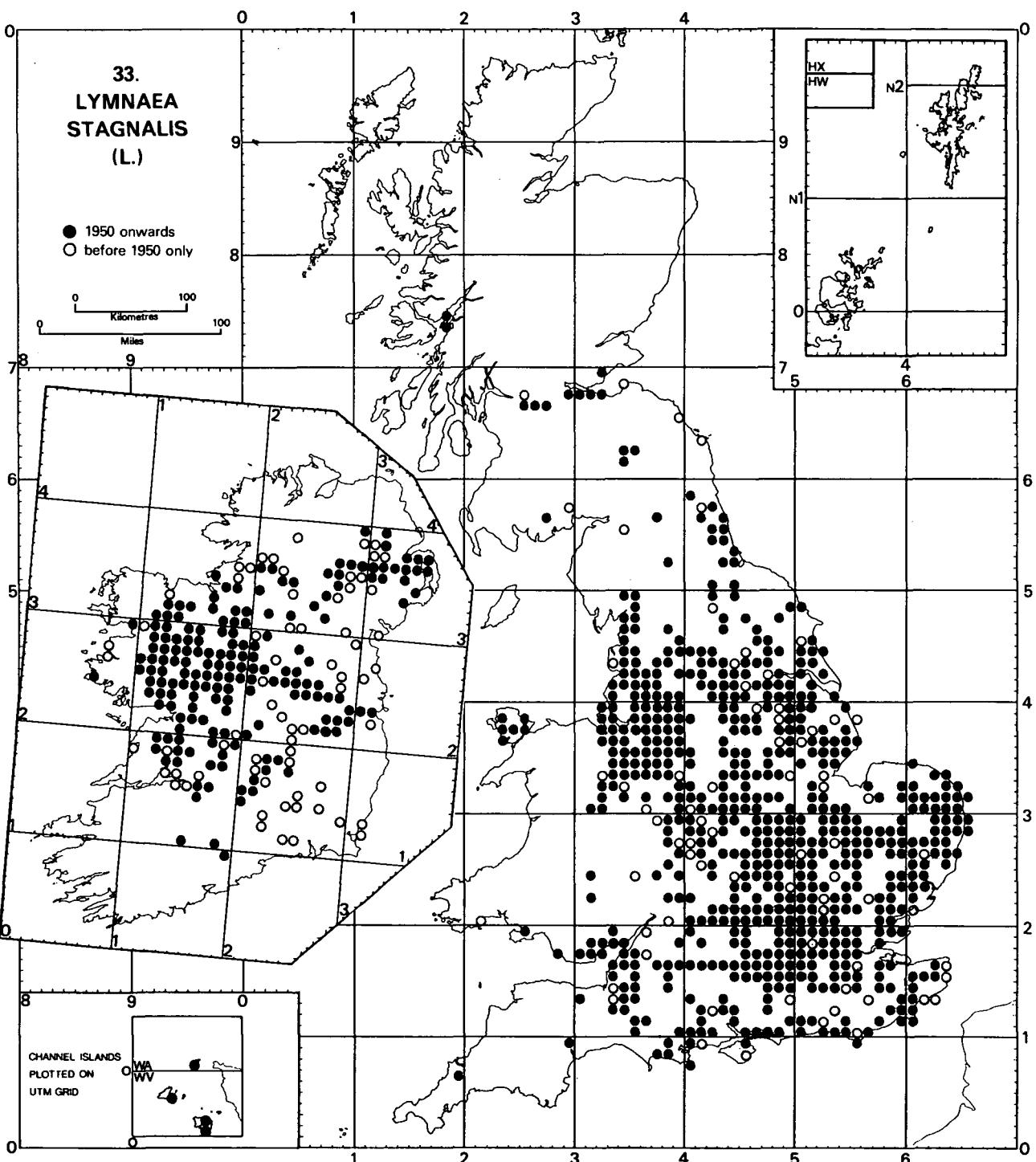


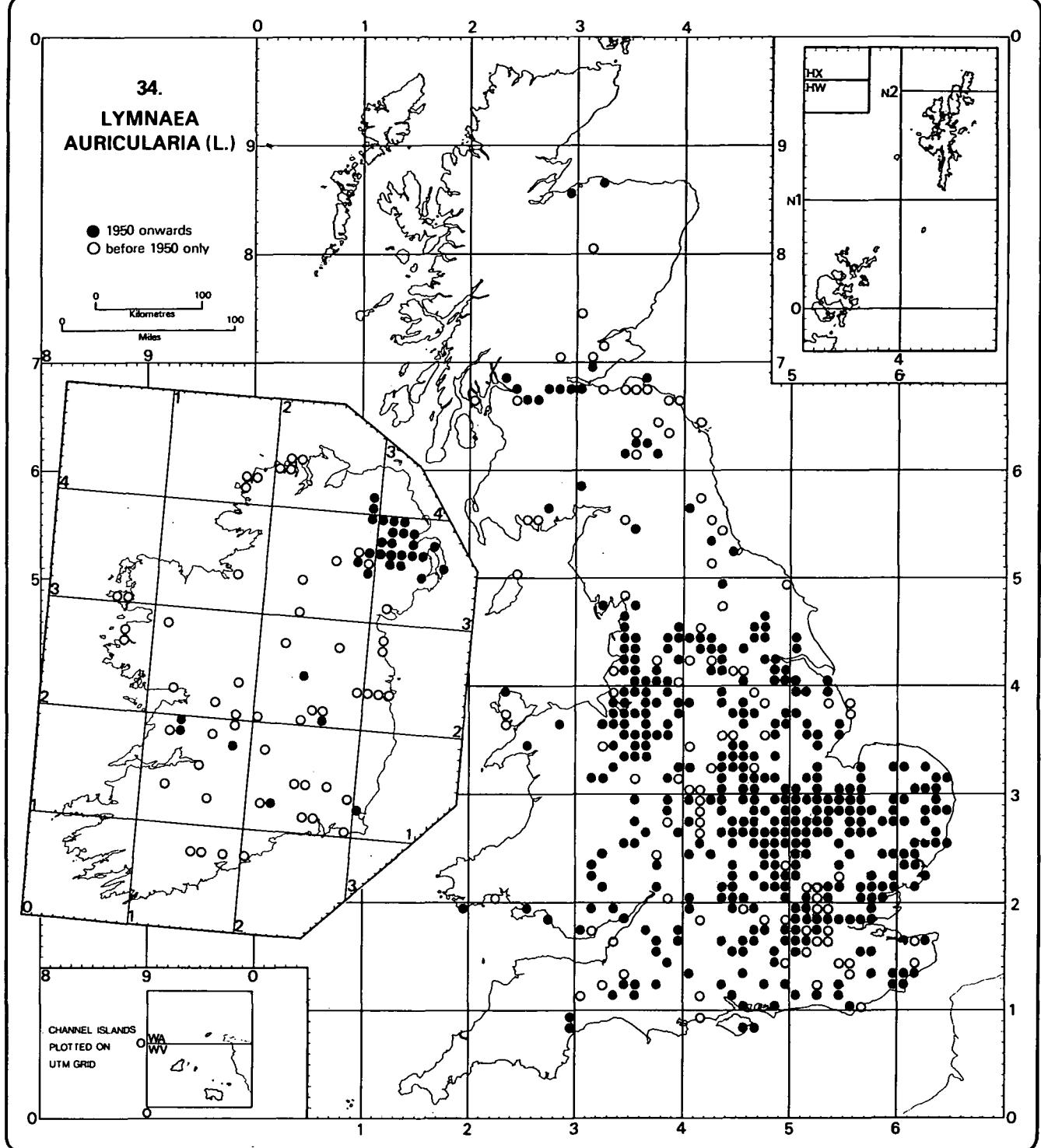
33.
**LYMNAEA
STAGNALIS**
(L.)

● 1950 onwards
○ before 1950 only

0 Kilometres 100

0 Miles 100

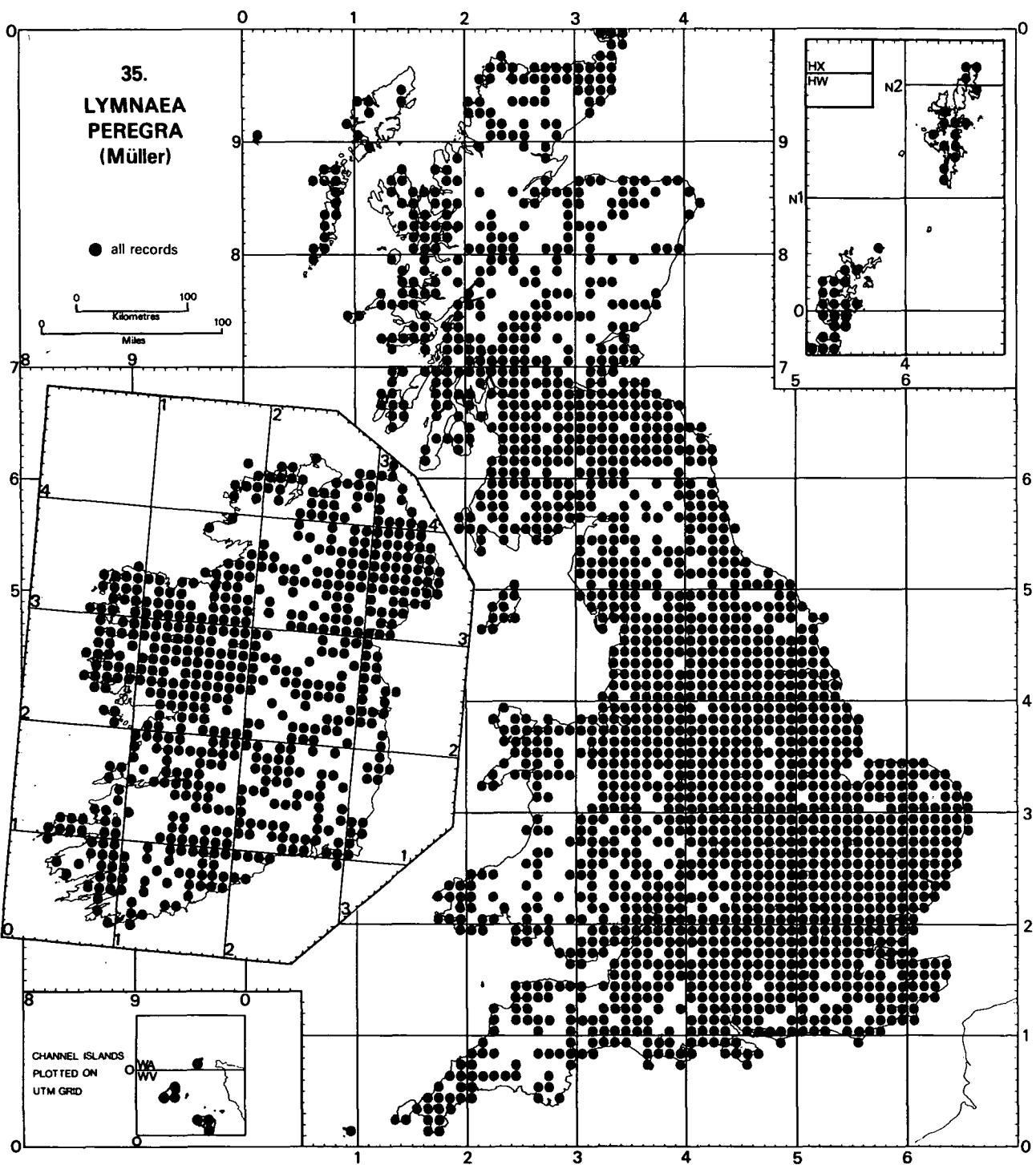


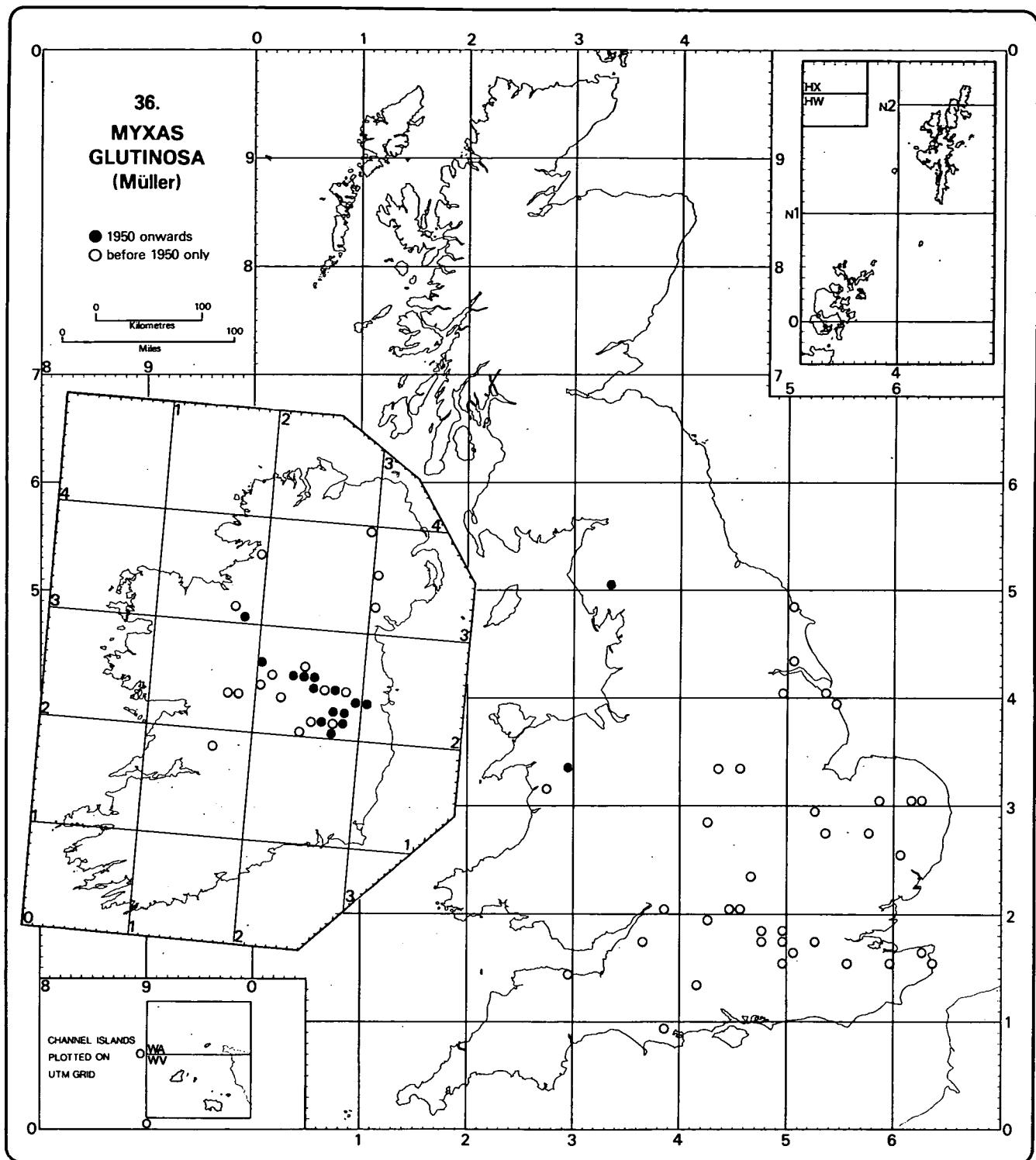


35.
**LYMNAEA
PREGRA**
(Müller)

● all records

0 Kilometres
100 Miles

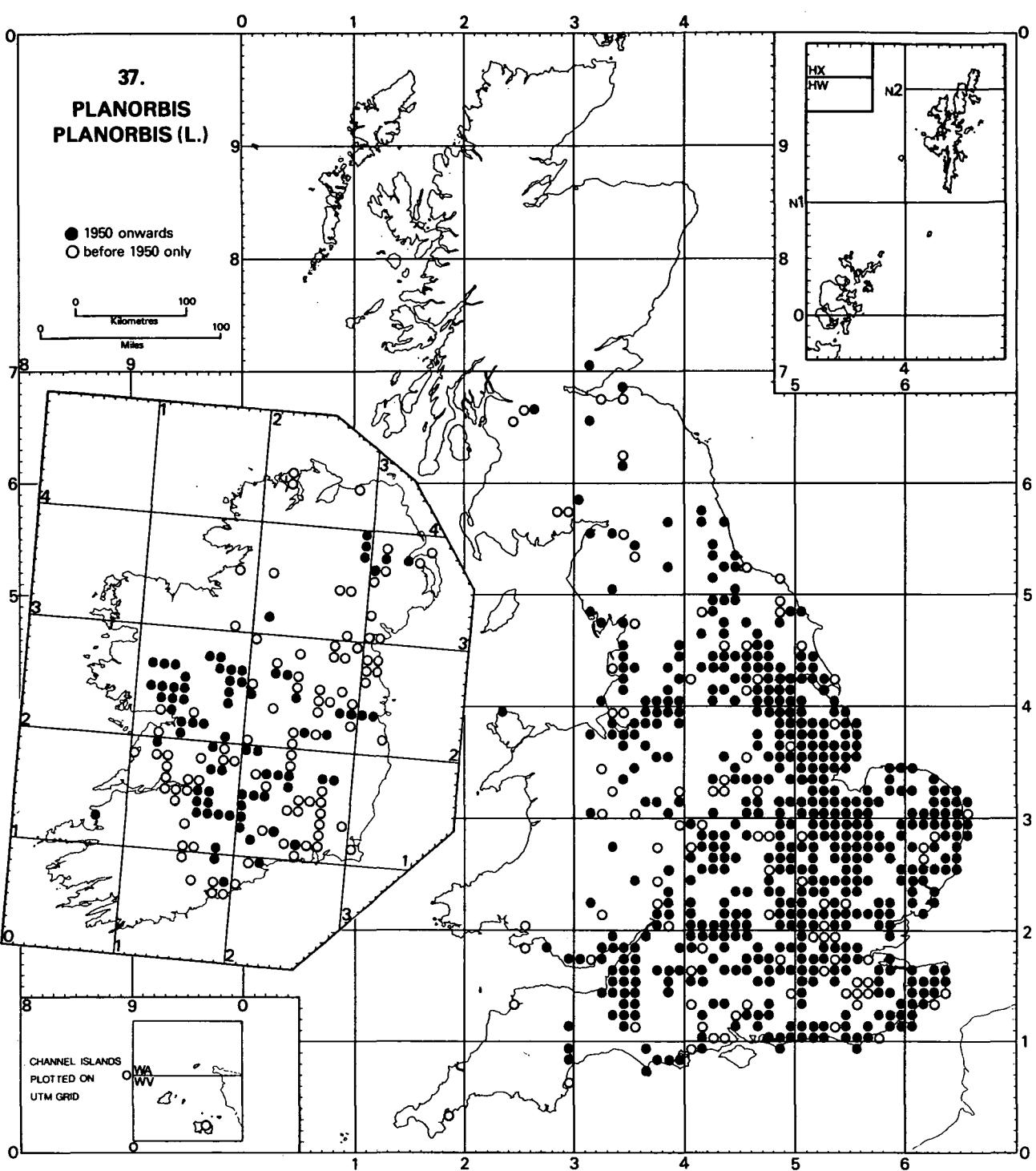


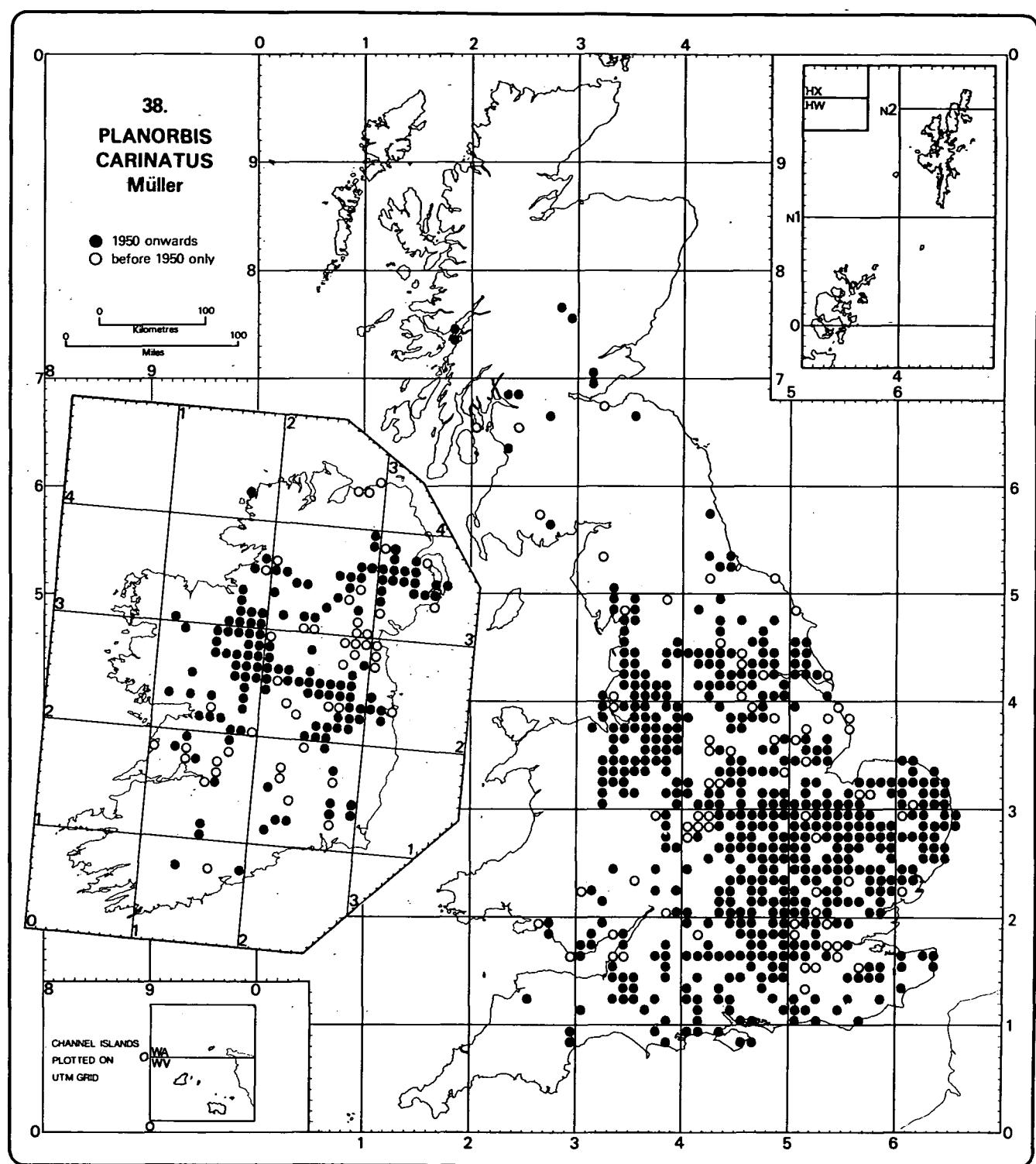


37.
PLANORBIS
PLANORBIS (L.)

● 1950 onwards
○ before 1950 only

0 Kilometres
100 Miles

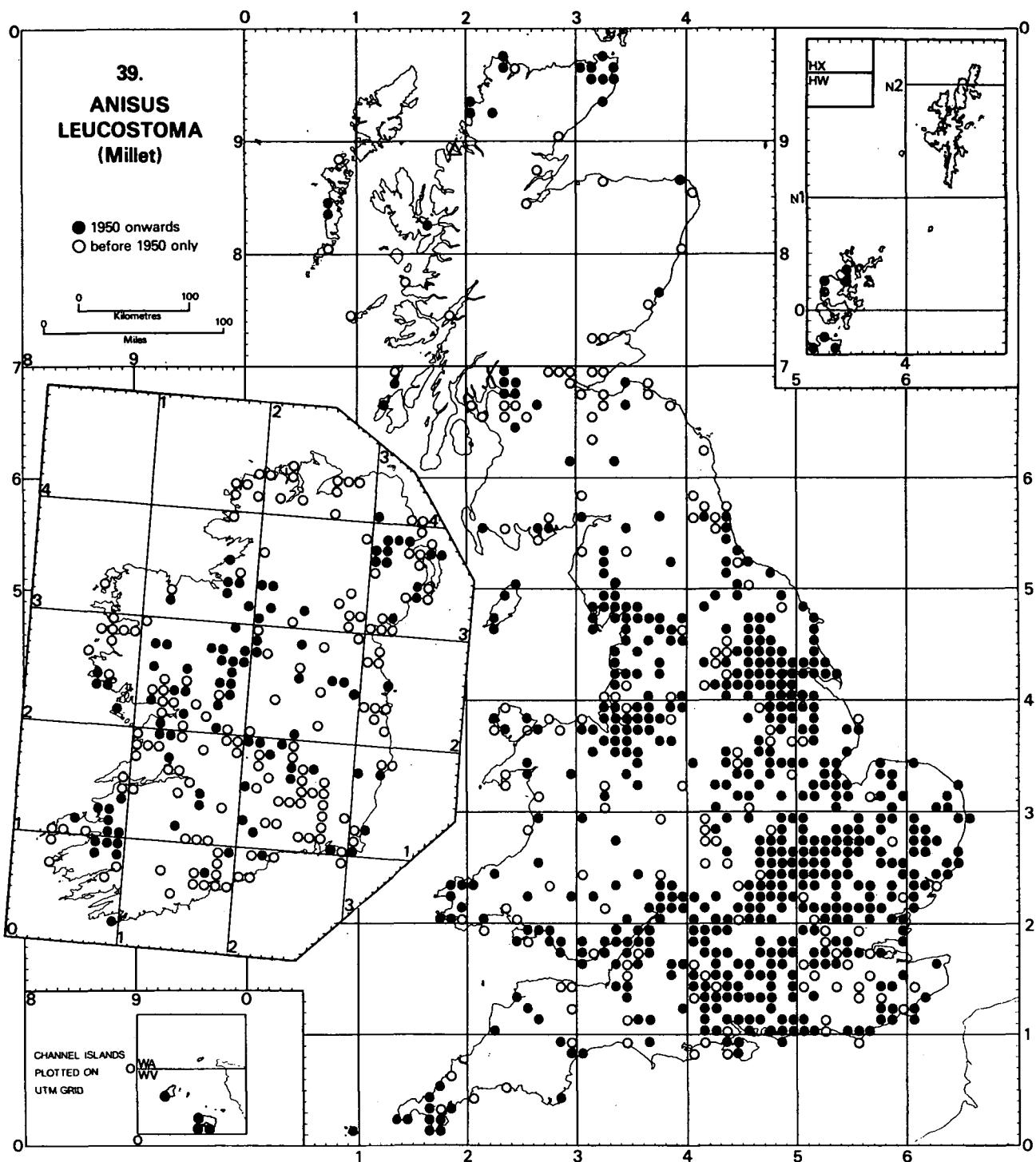


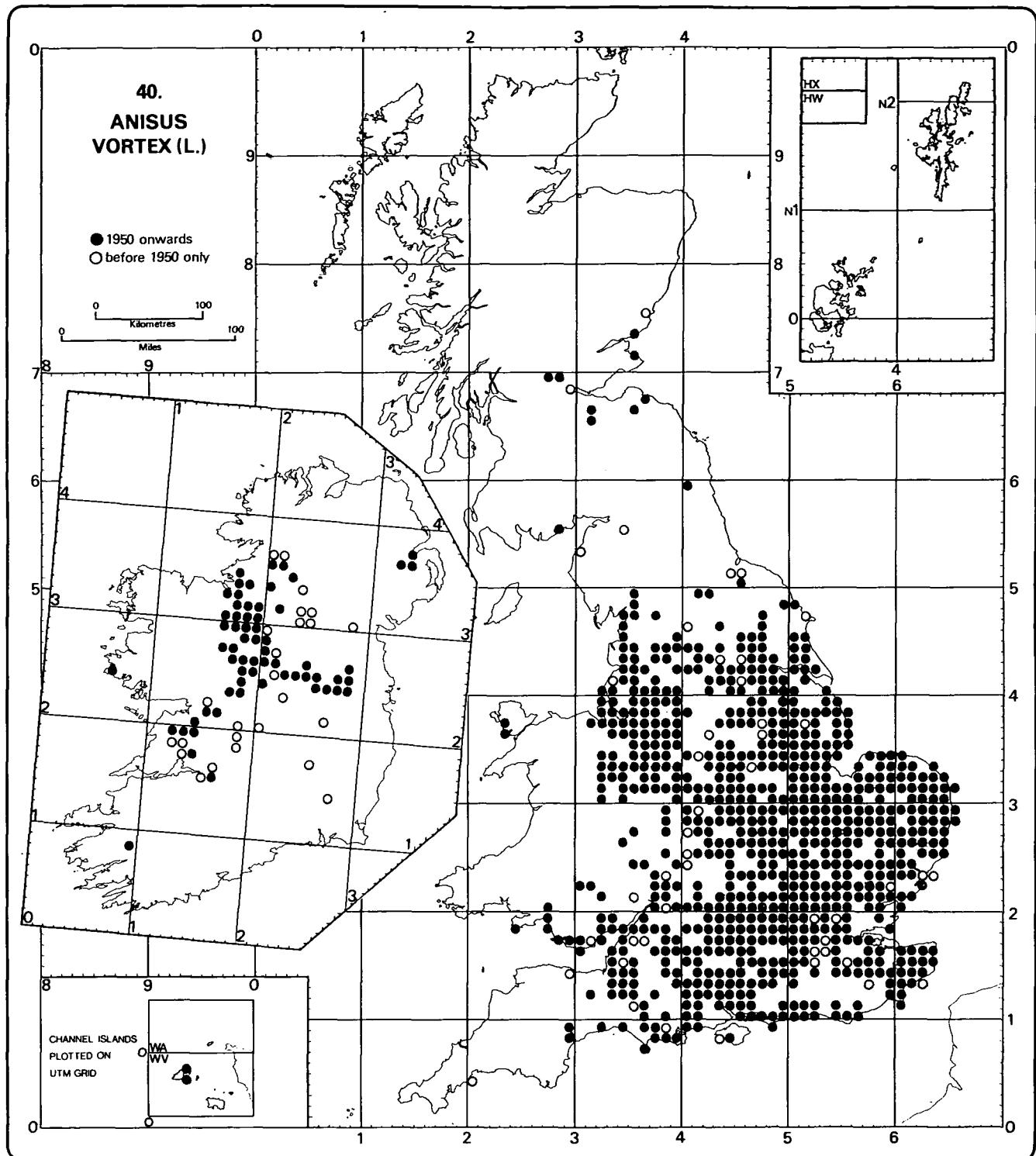


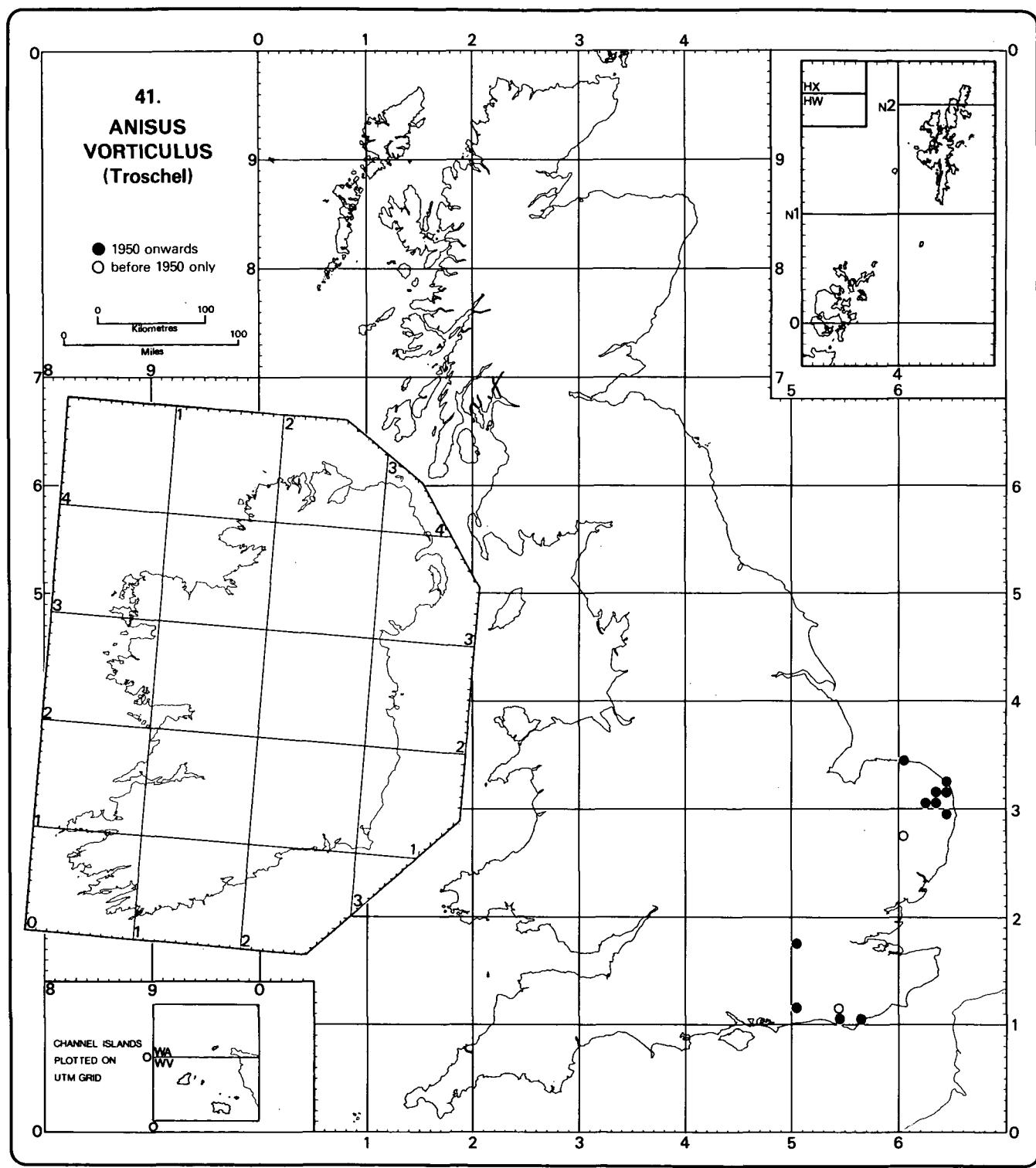
39.
ANISUS
LEUCOSTOMA
(Millet)

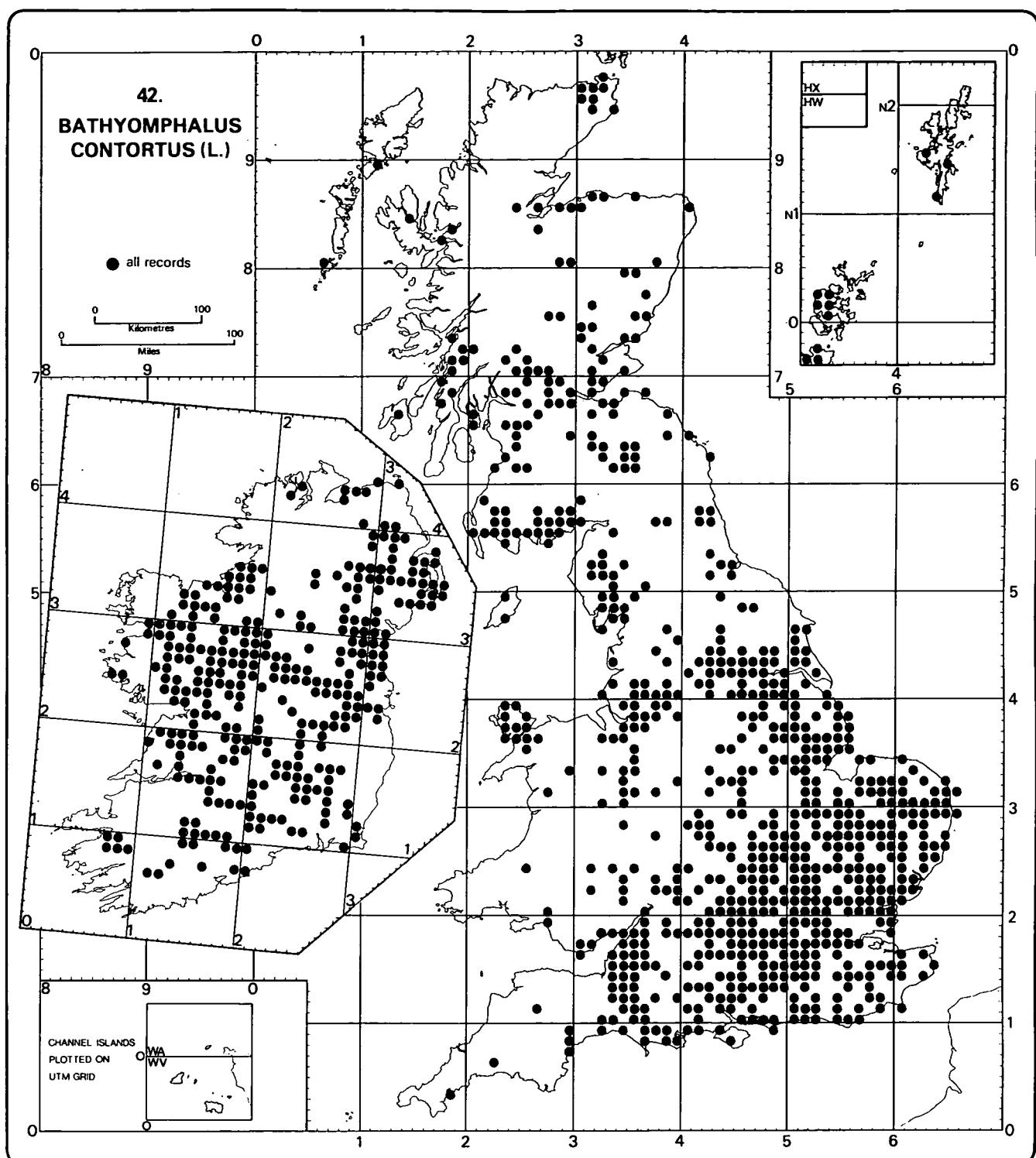
● 1950 onwards
○ before 1950 only

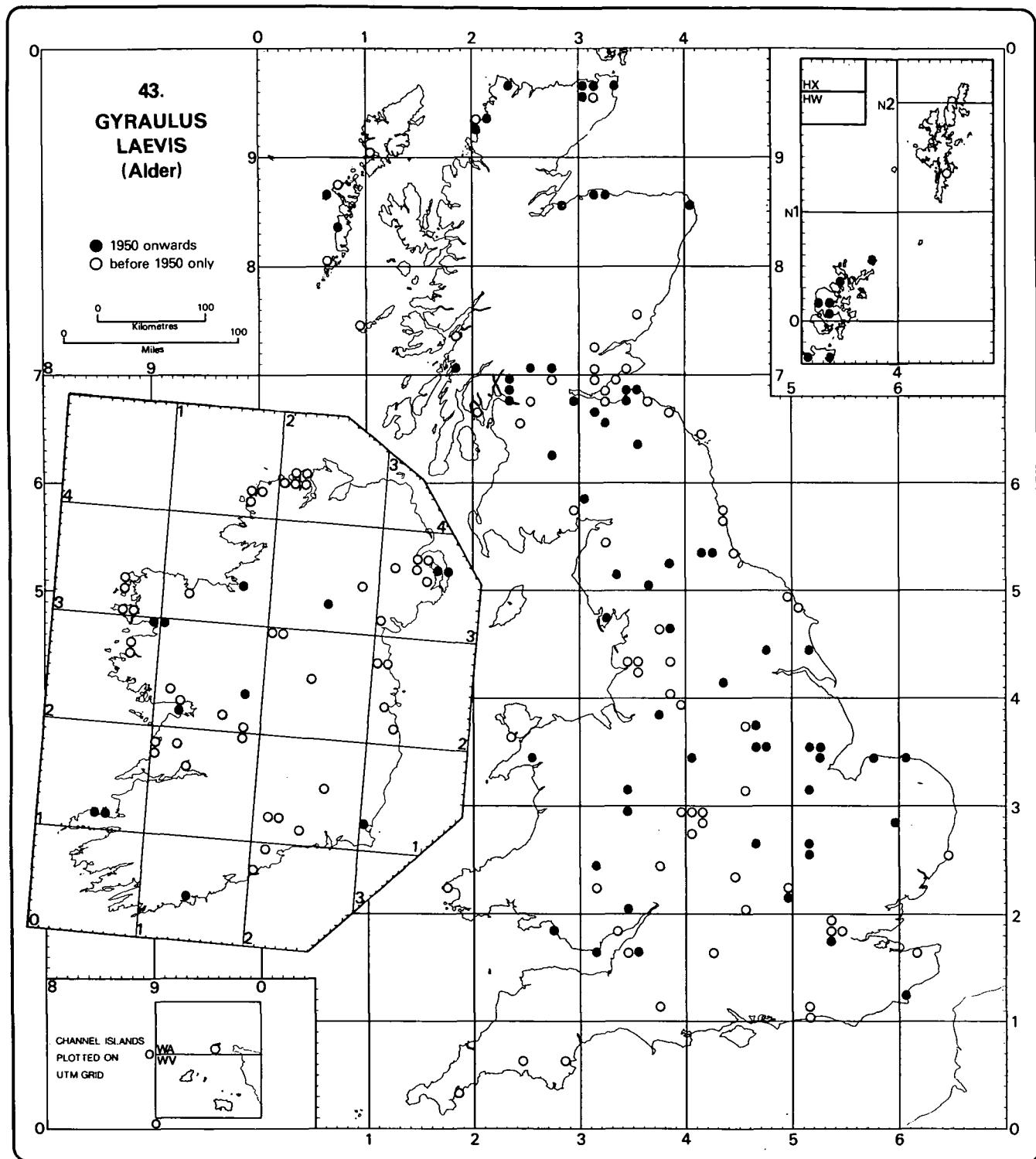
0 Kilometres 100 Miles

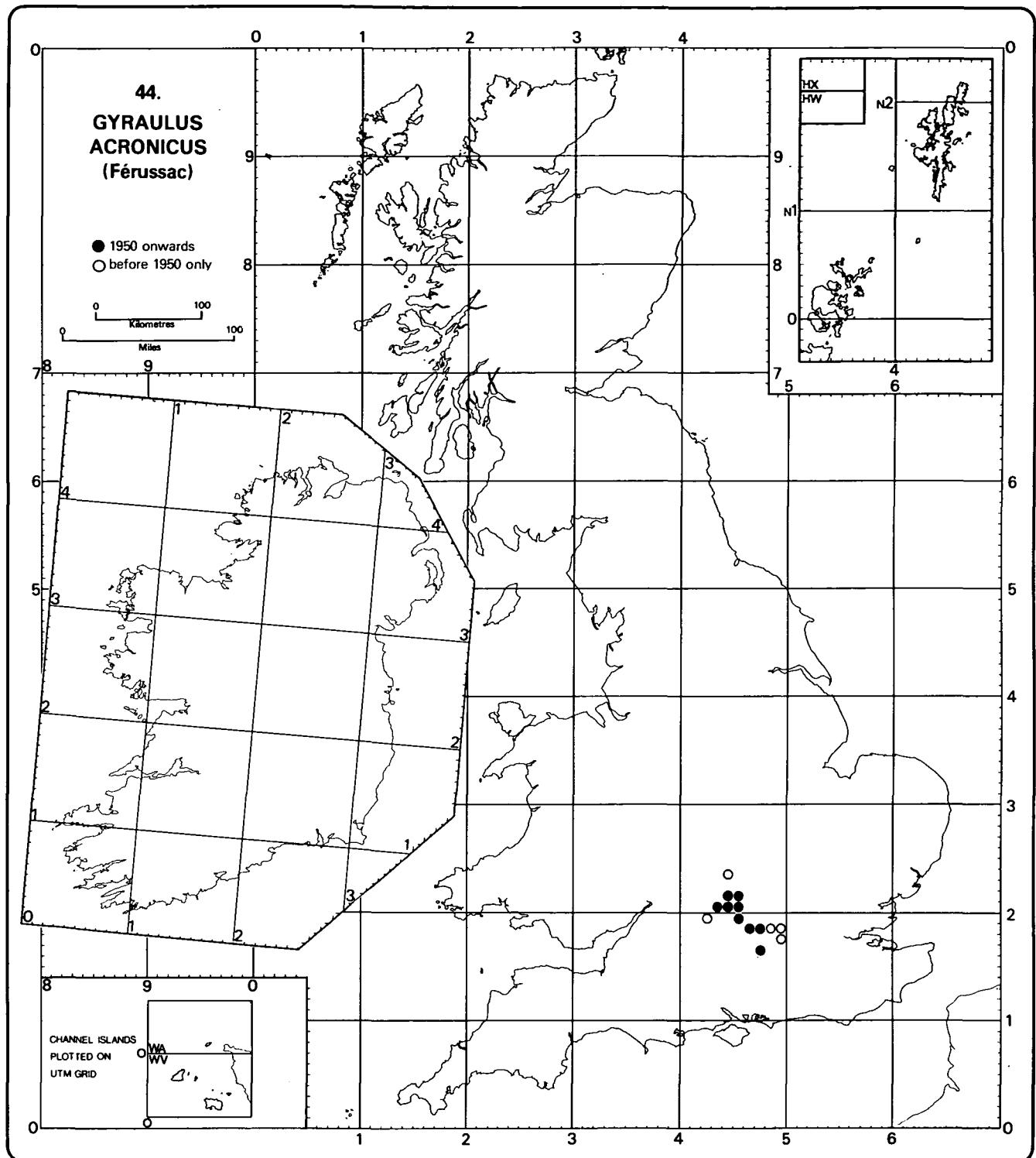


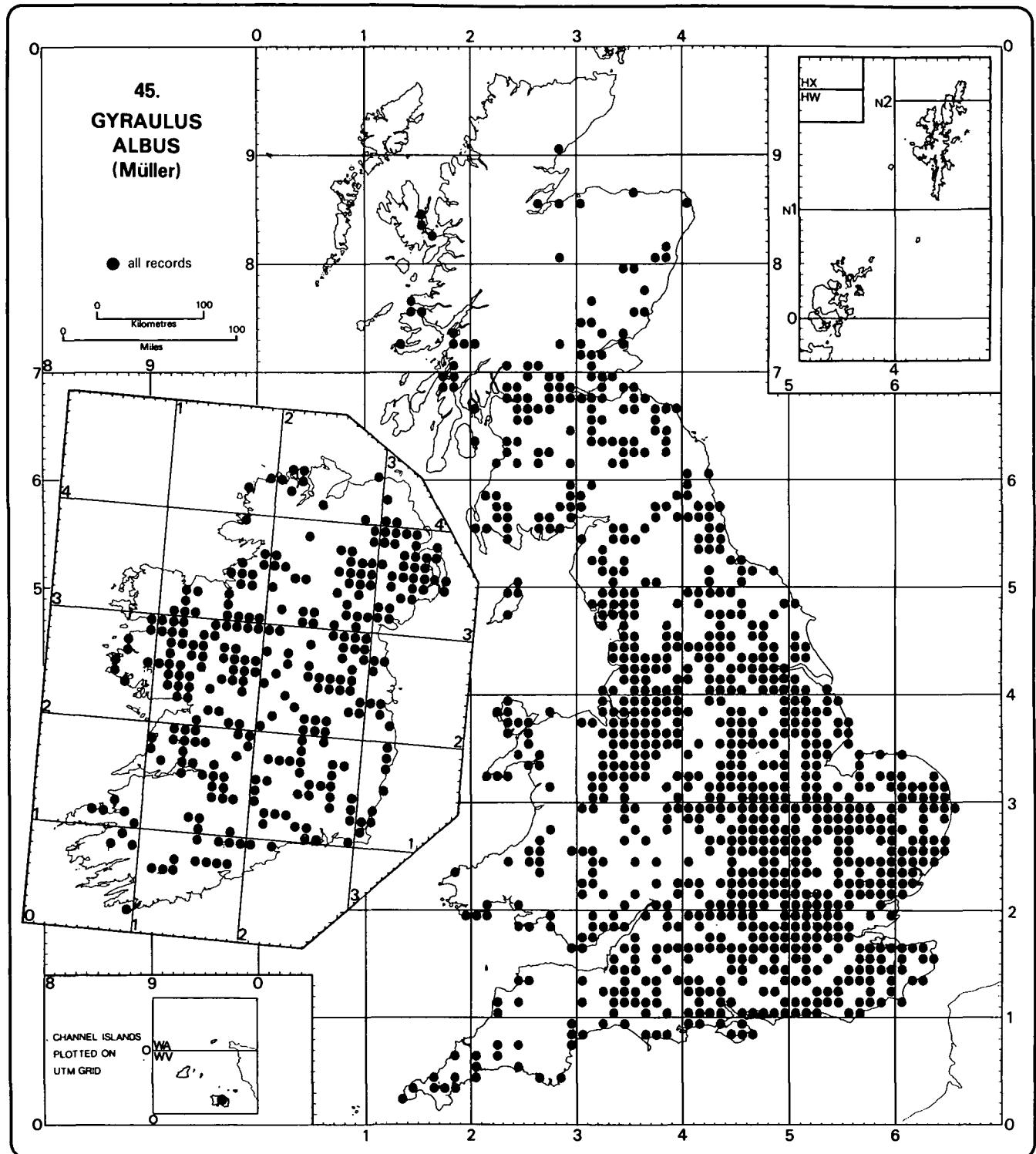


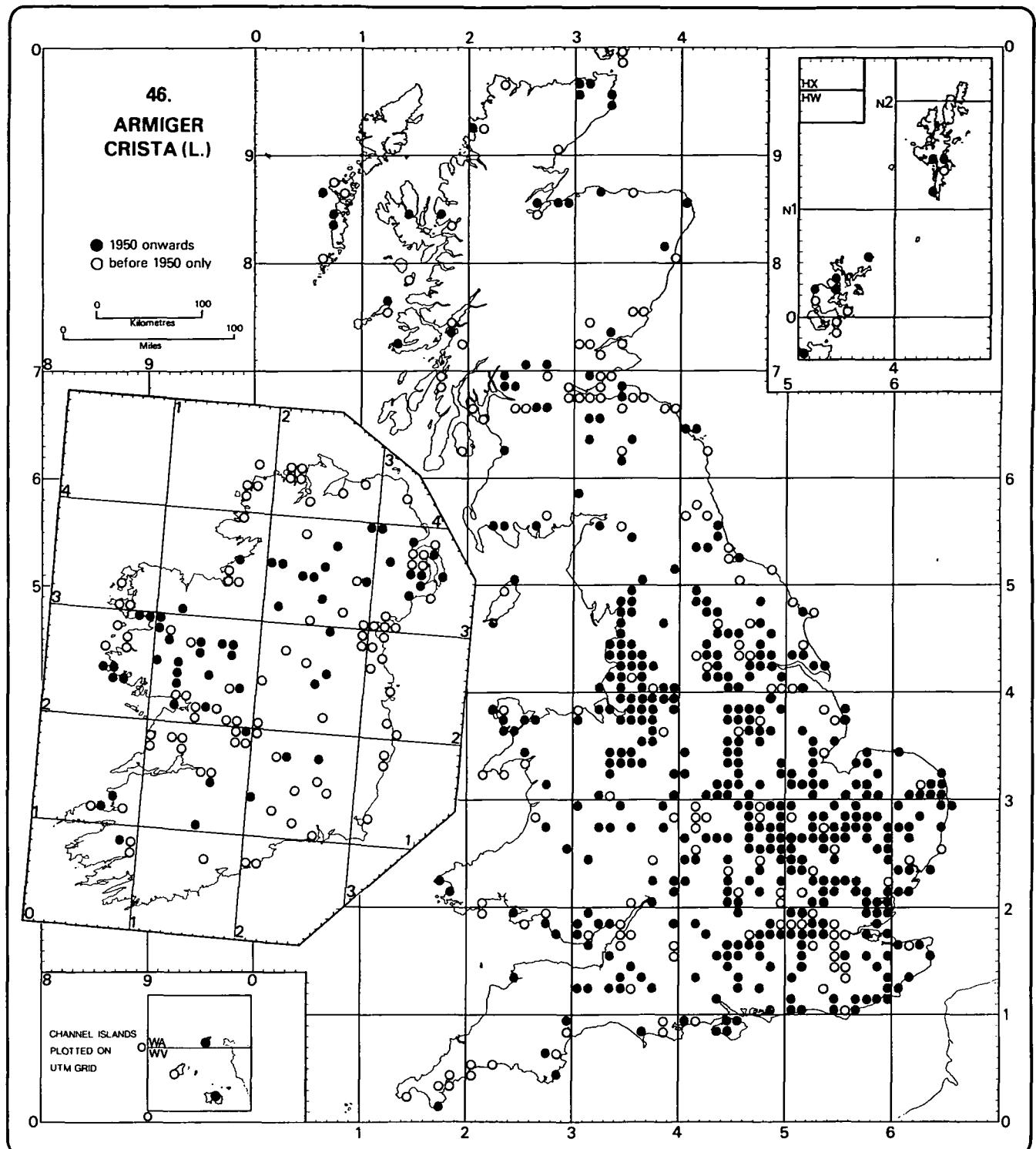








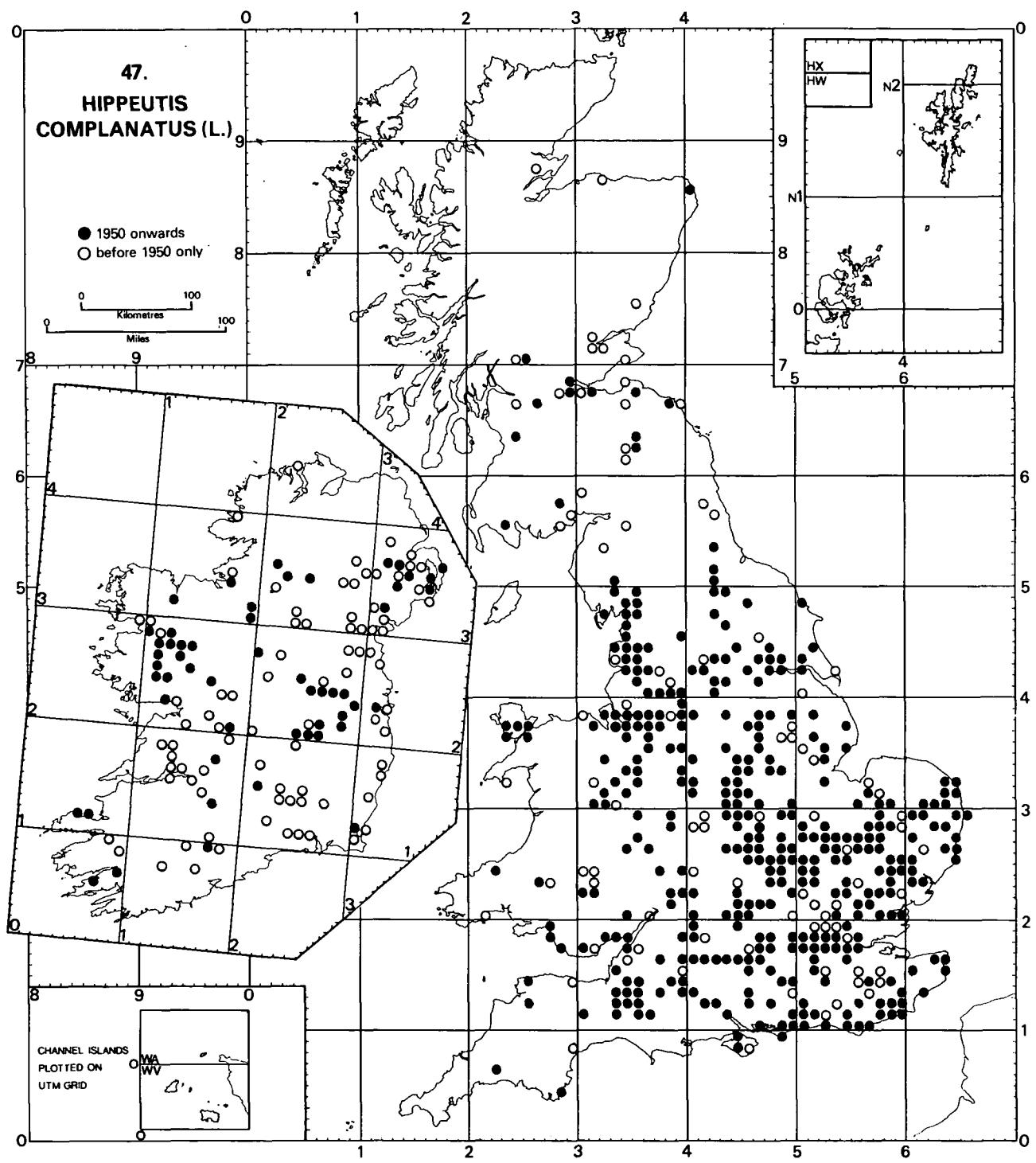


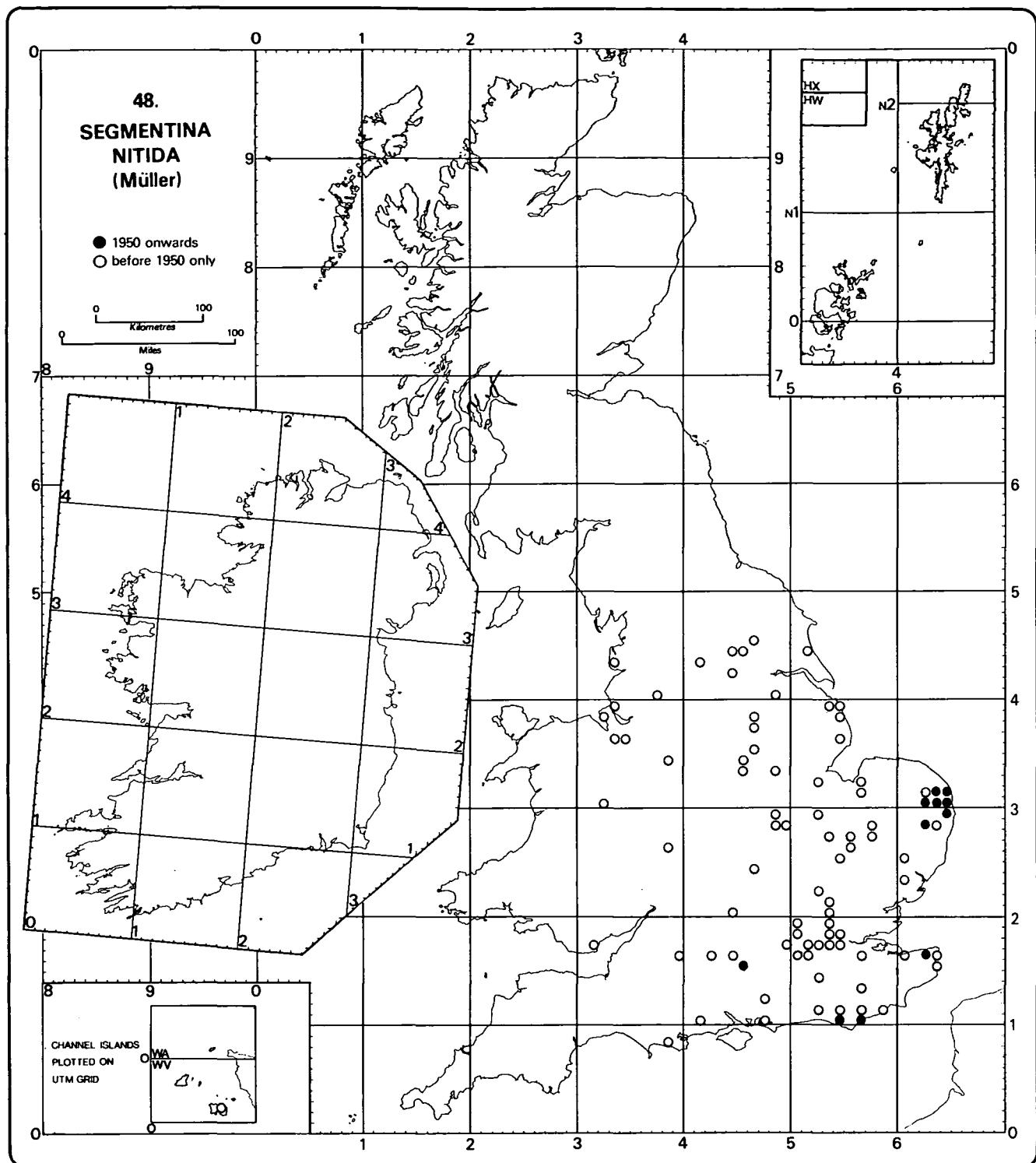


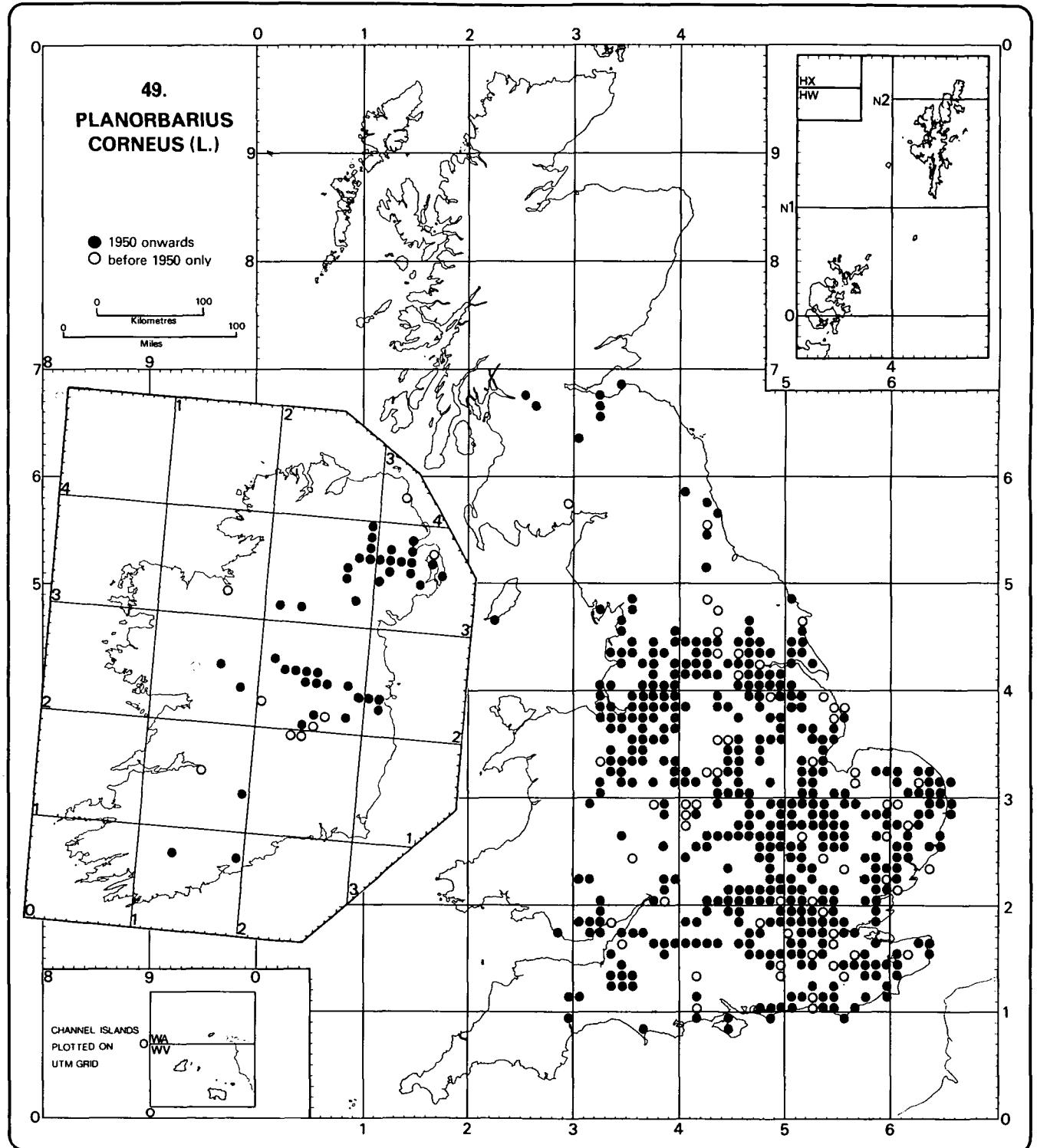
47.
**HIPPEUTIS
 COMPLANATUS (L.)**

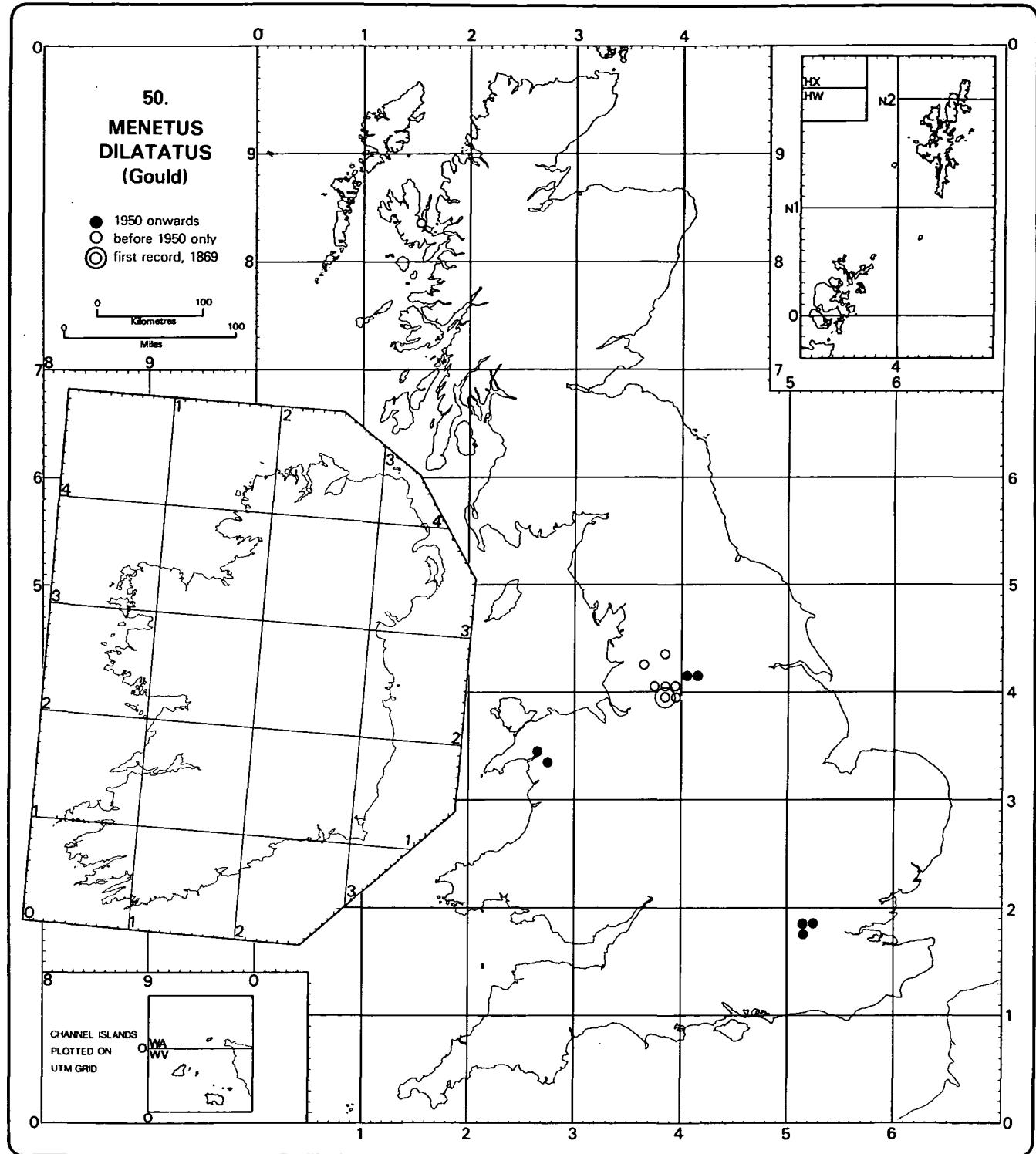
● 1950 onwards
 ○ before 1950 only

0 Kilometres
 0 Miles





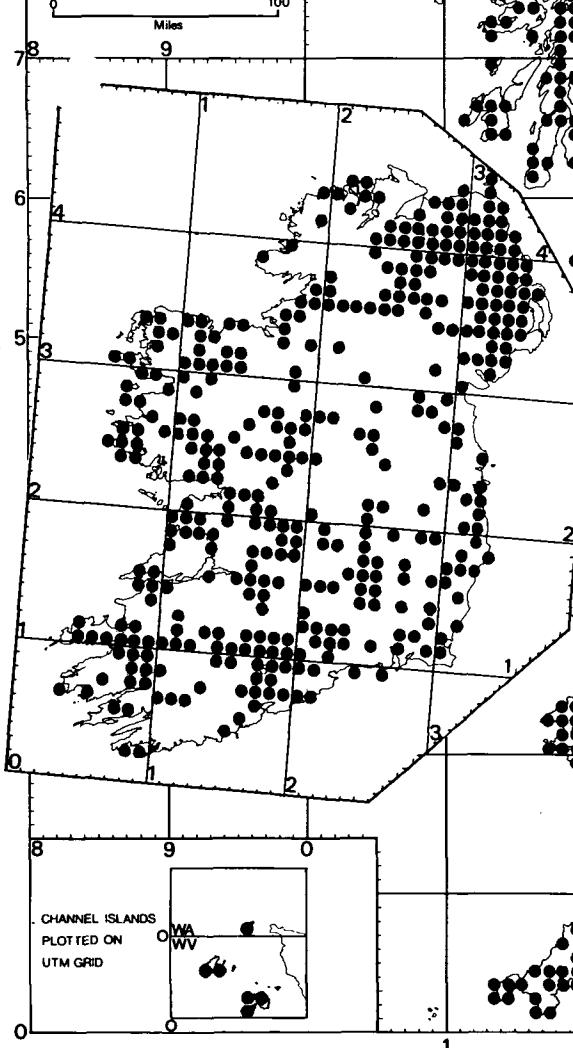




51.
ANCYLUS
FLUVIATILIS
Müller

● all records

0 Kilometres
0 Miles



0 1 2 3 4

0

9

8

7

6

5

4

3

2

1

0

0

9

8

7

6

5

4

3

2

1

0

0

6

5

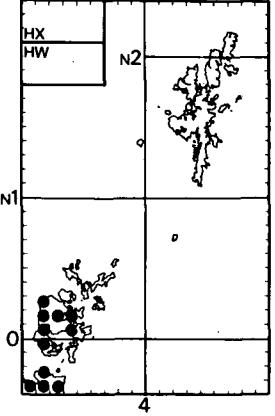
4

3

2

1

0



1

2

3

4

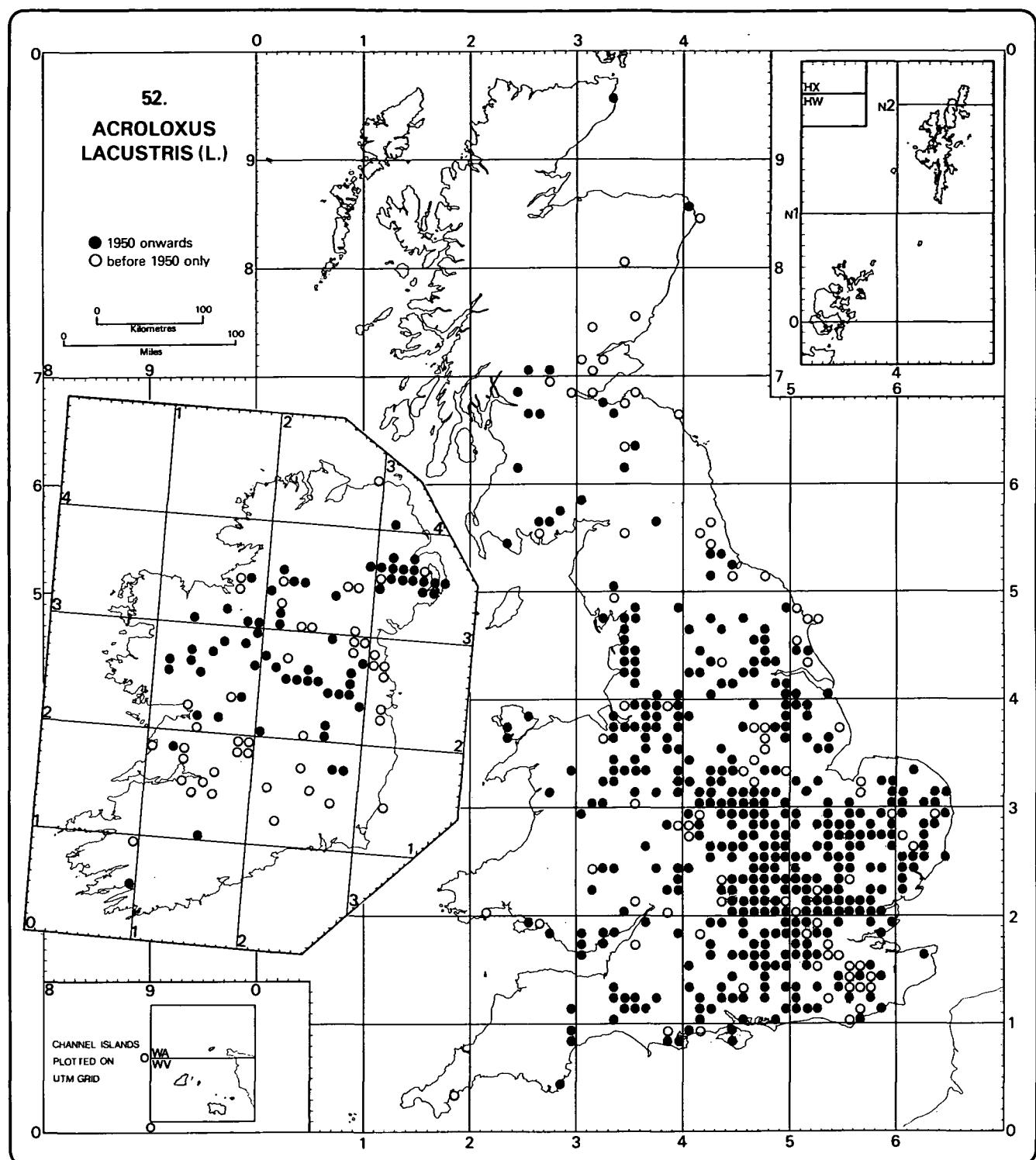
5

6

7

8

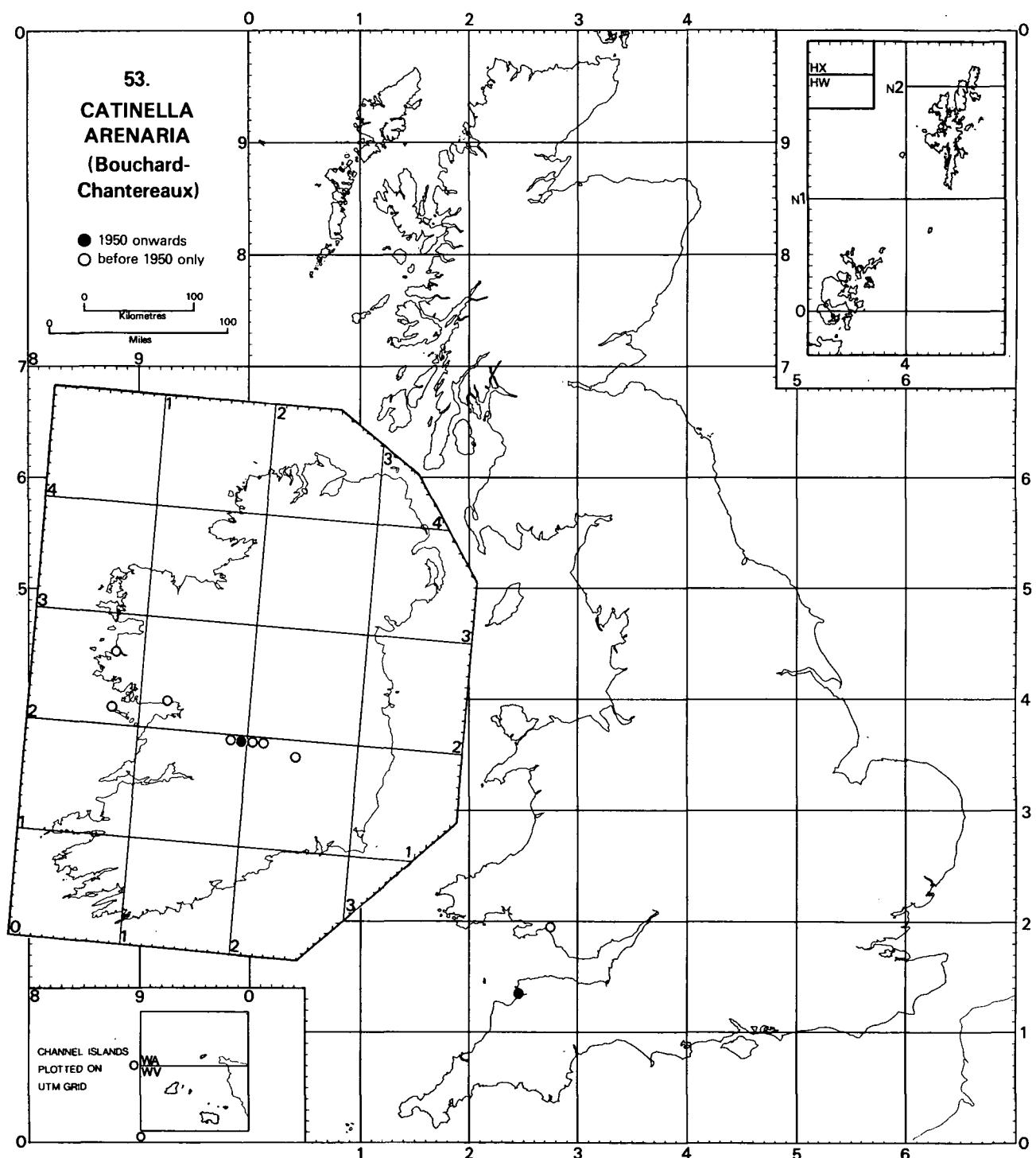
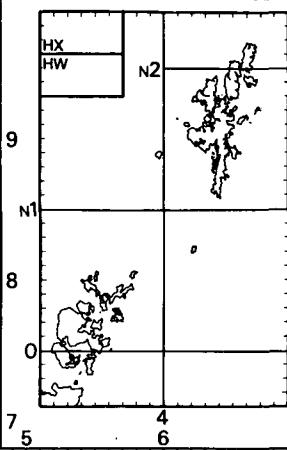
9

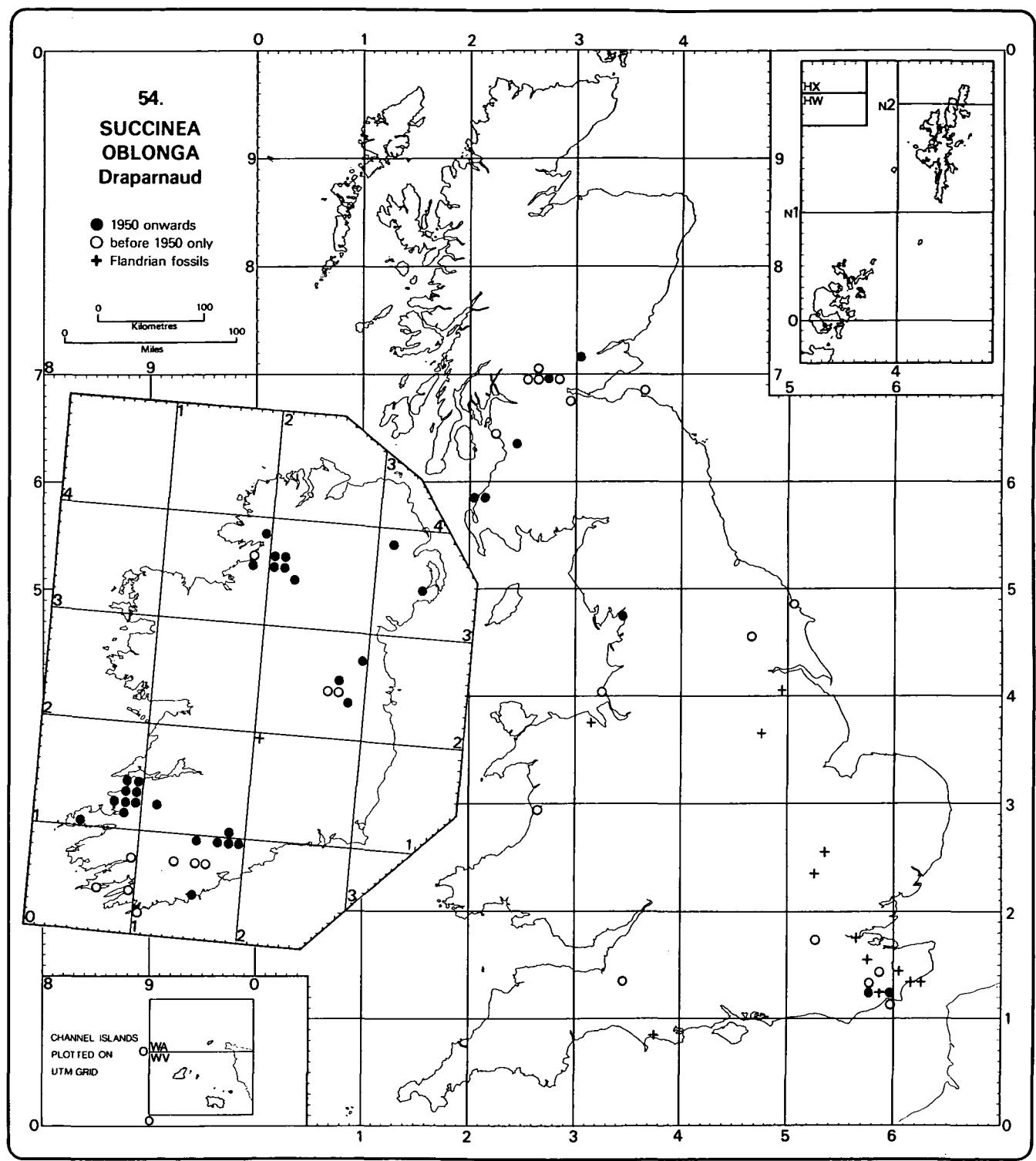


53.
CATINELLA
ARENARIA
(Bouchard-
Chantereaux)

● 1950 onwards
○ before 1950 only

0 Kilometres
0 Miles

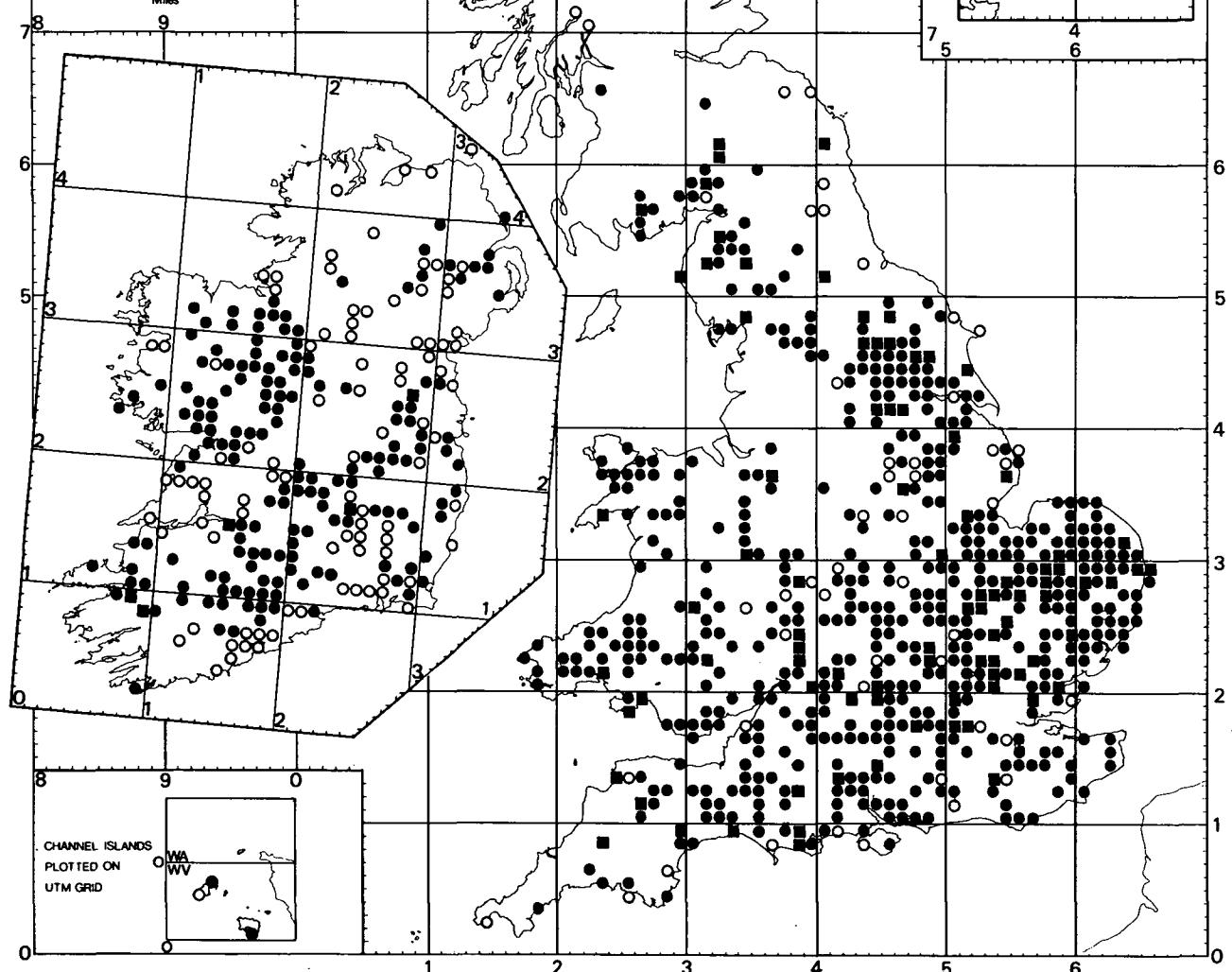


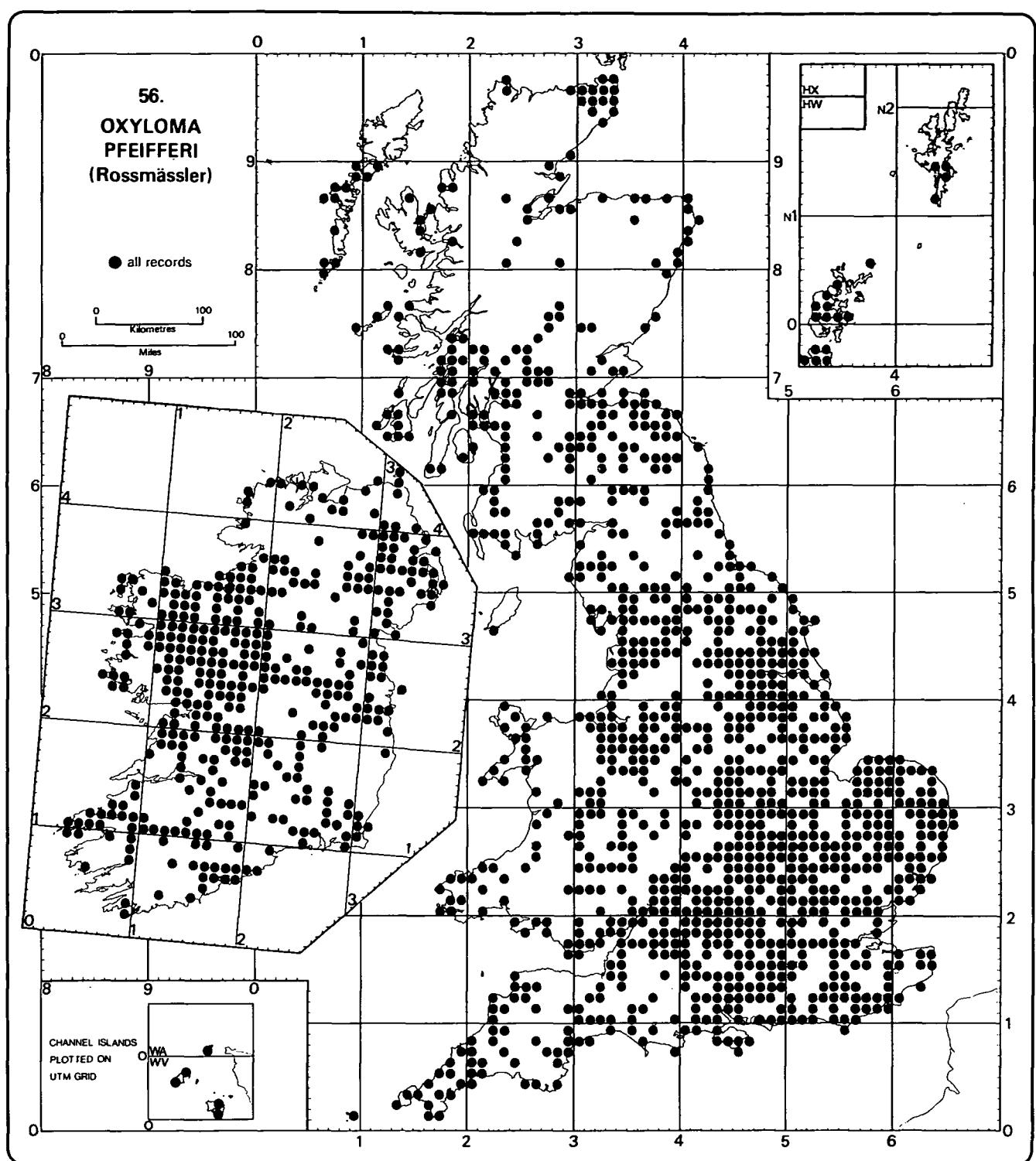


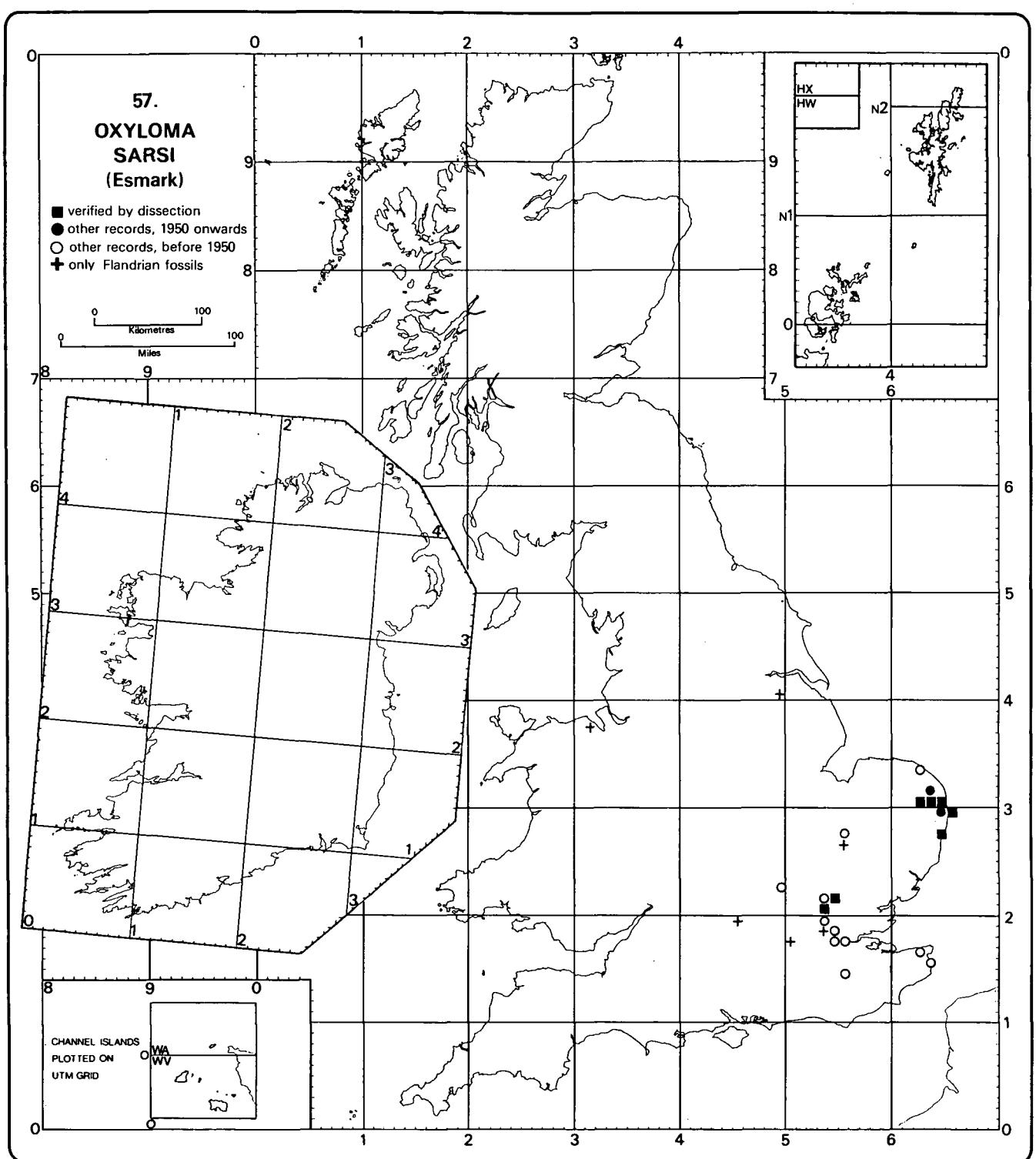
55.
SUCCINEA
PUTRIS (L.)

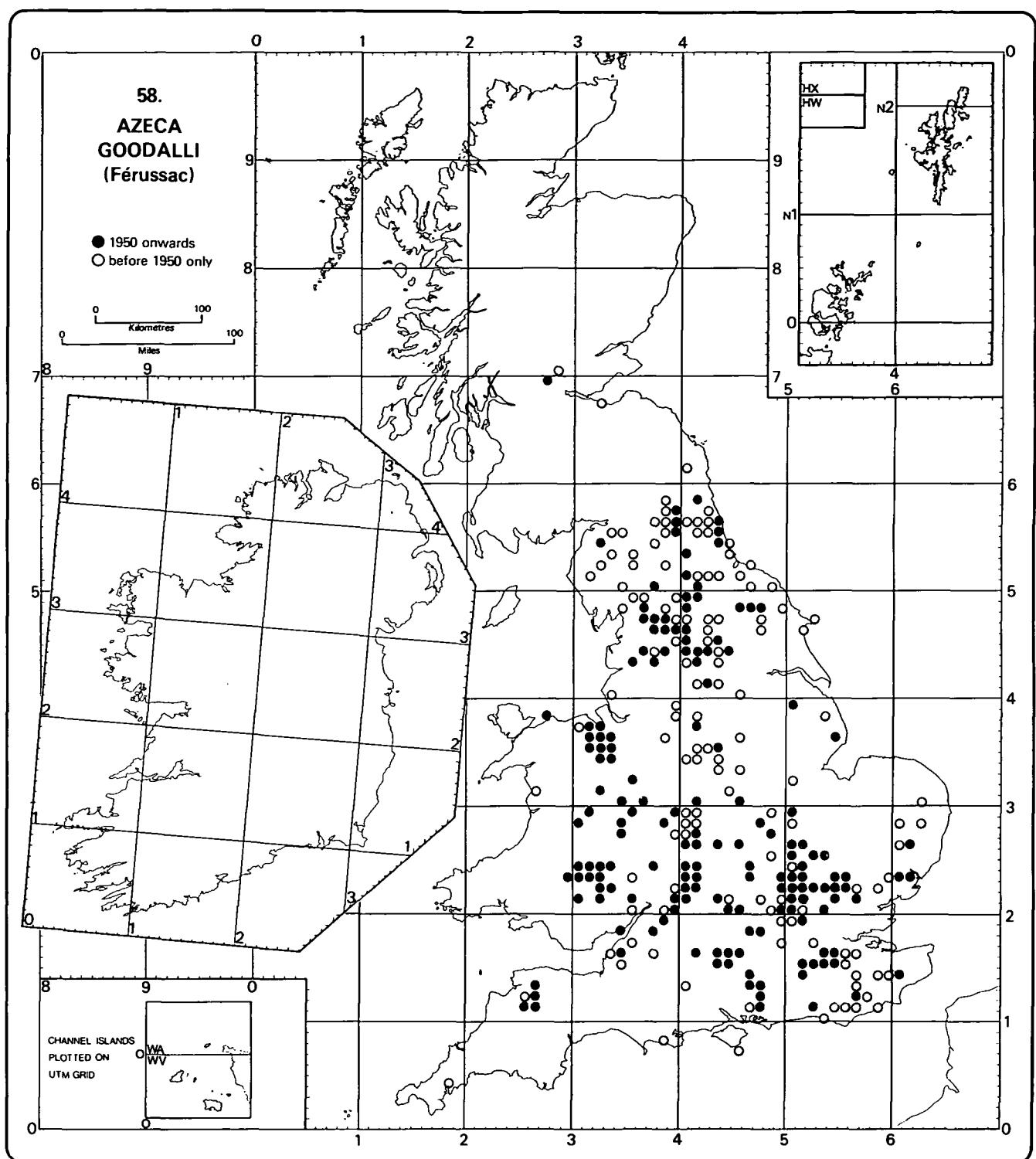
- verified by dissection
- other records, 1950 onwards
- other records, before 1950 only

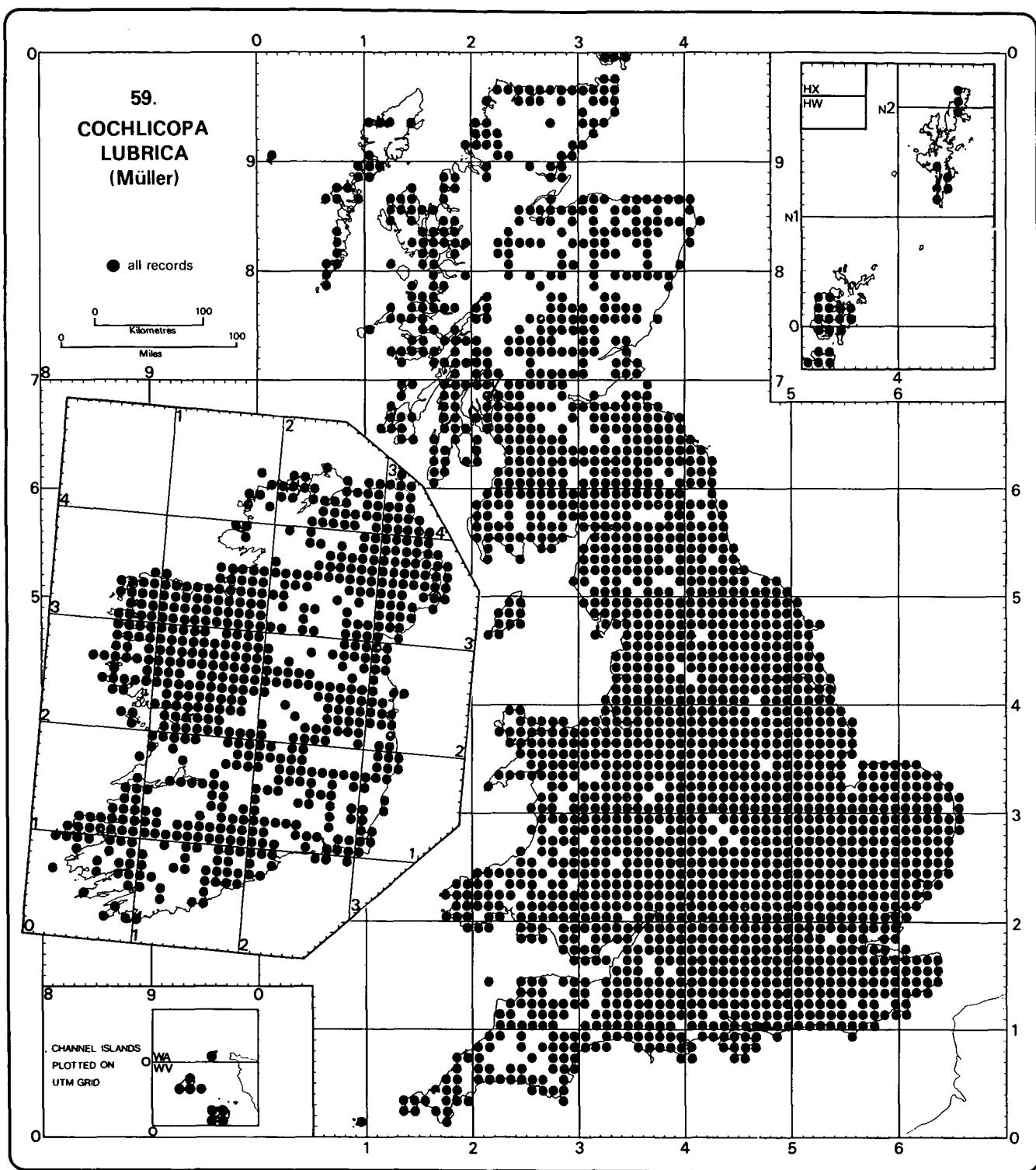
0 Kilometres
100 Miles

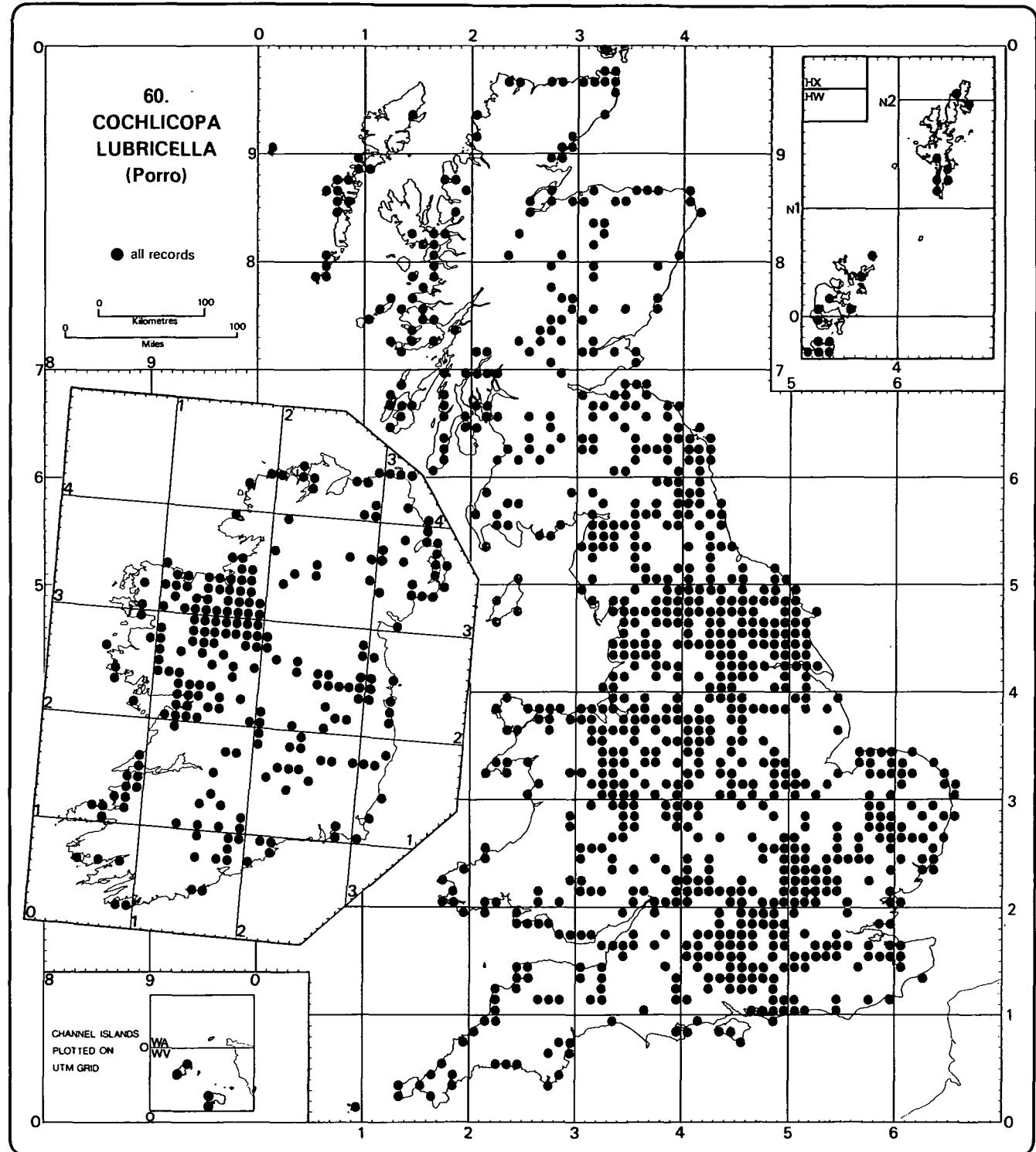


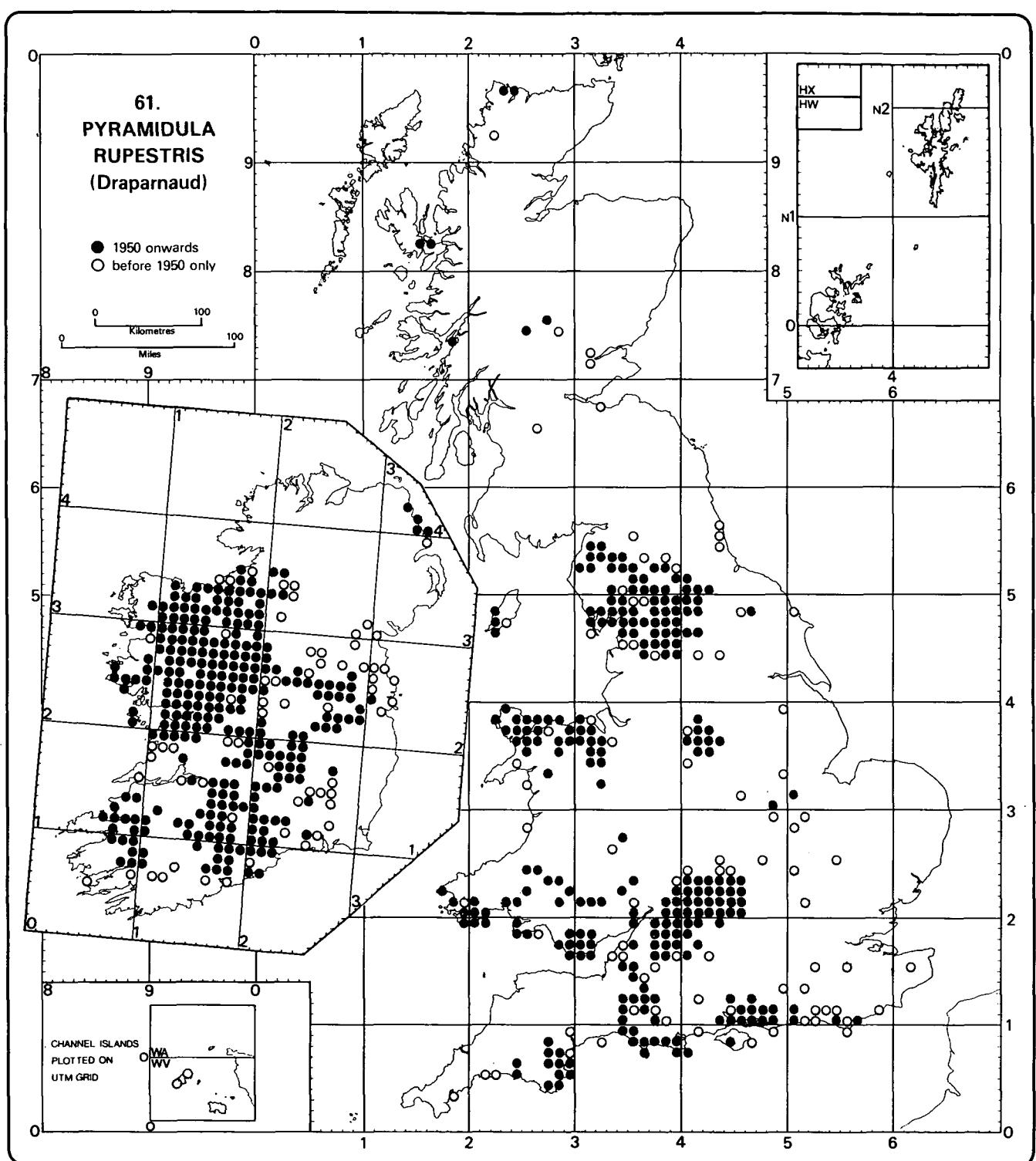


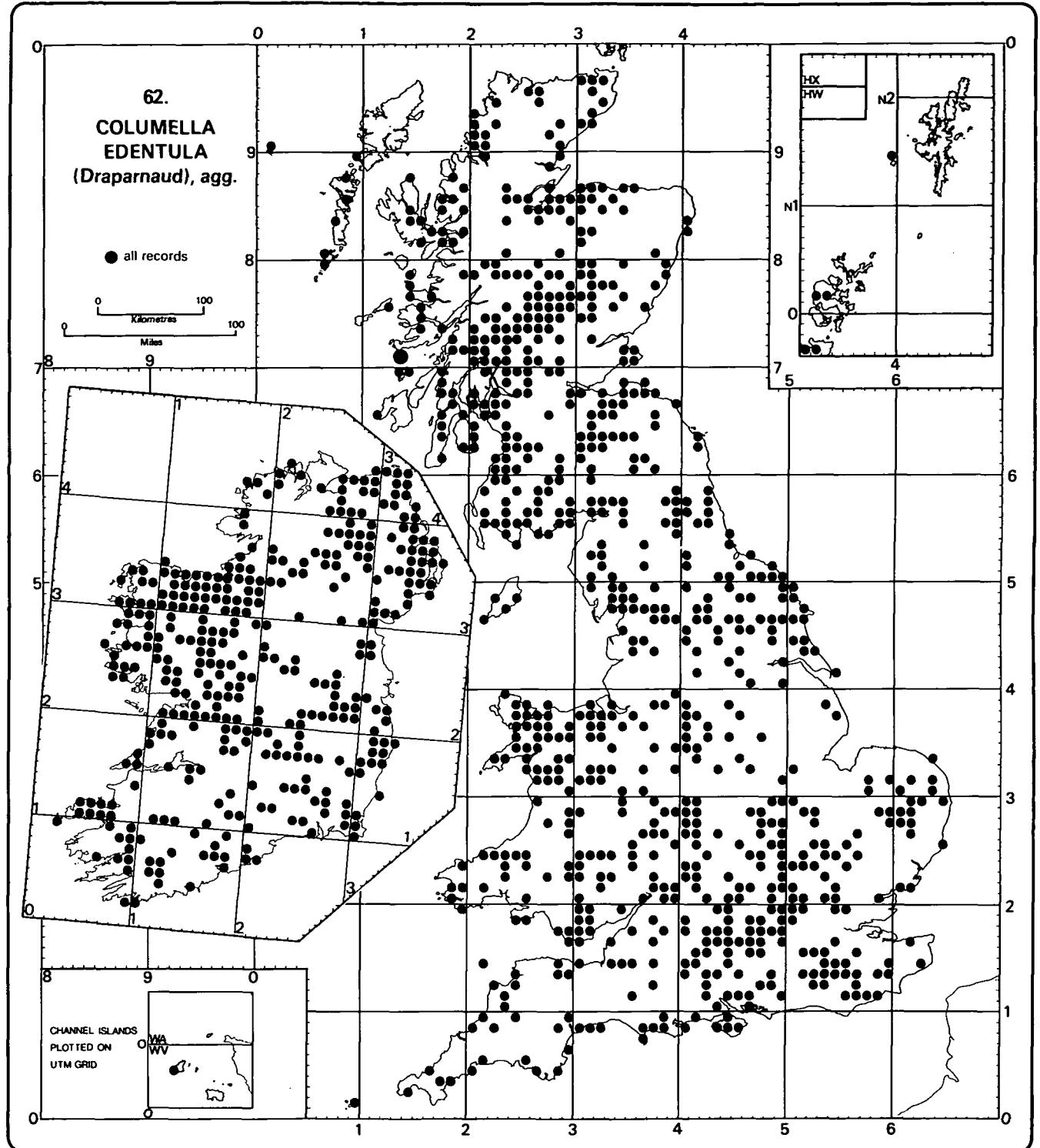








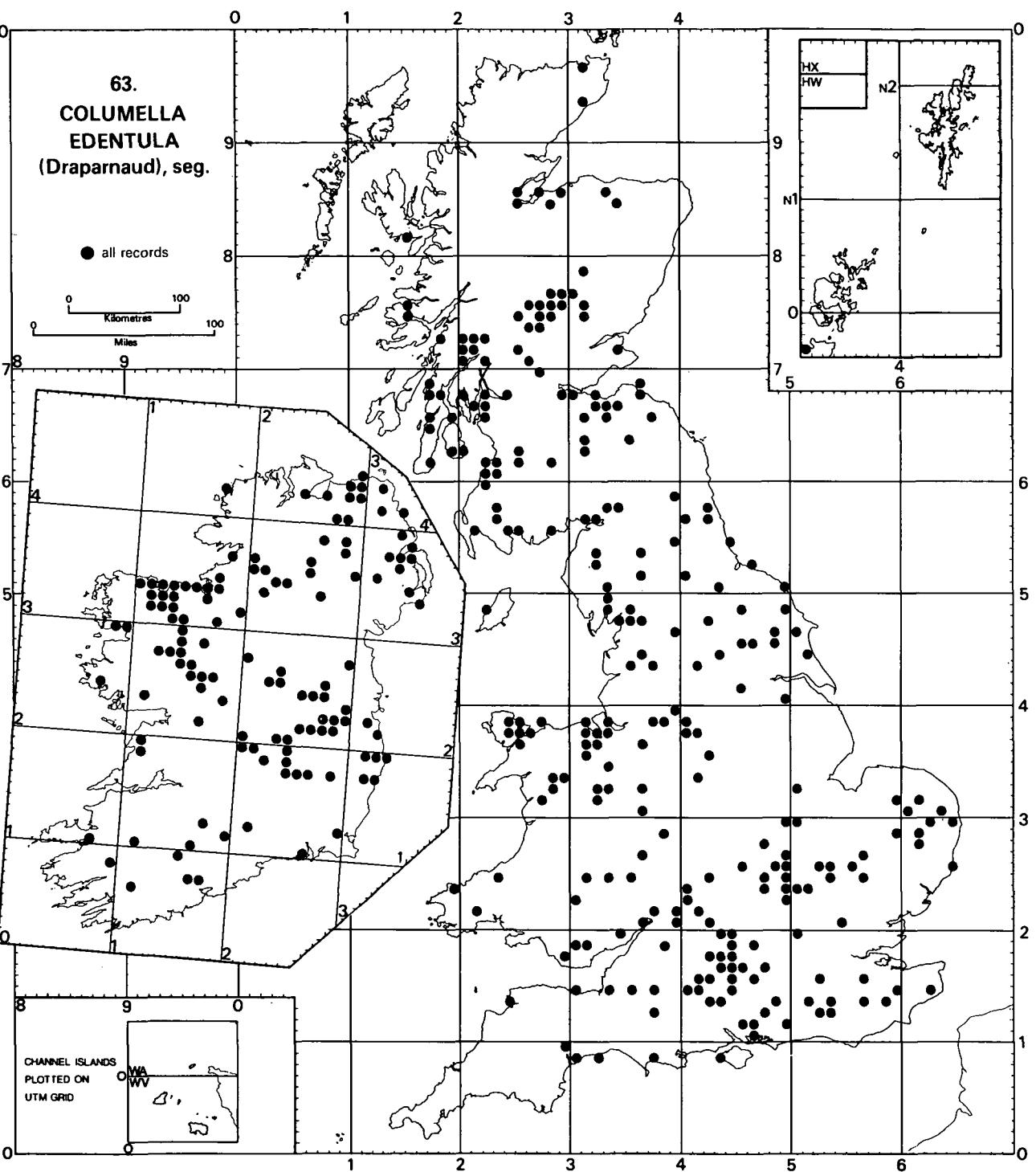


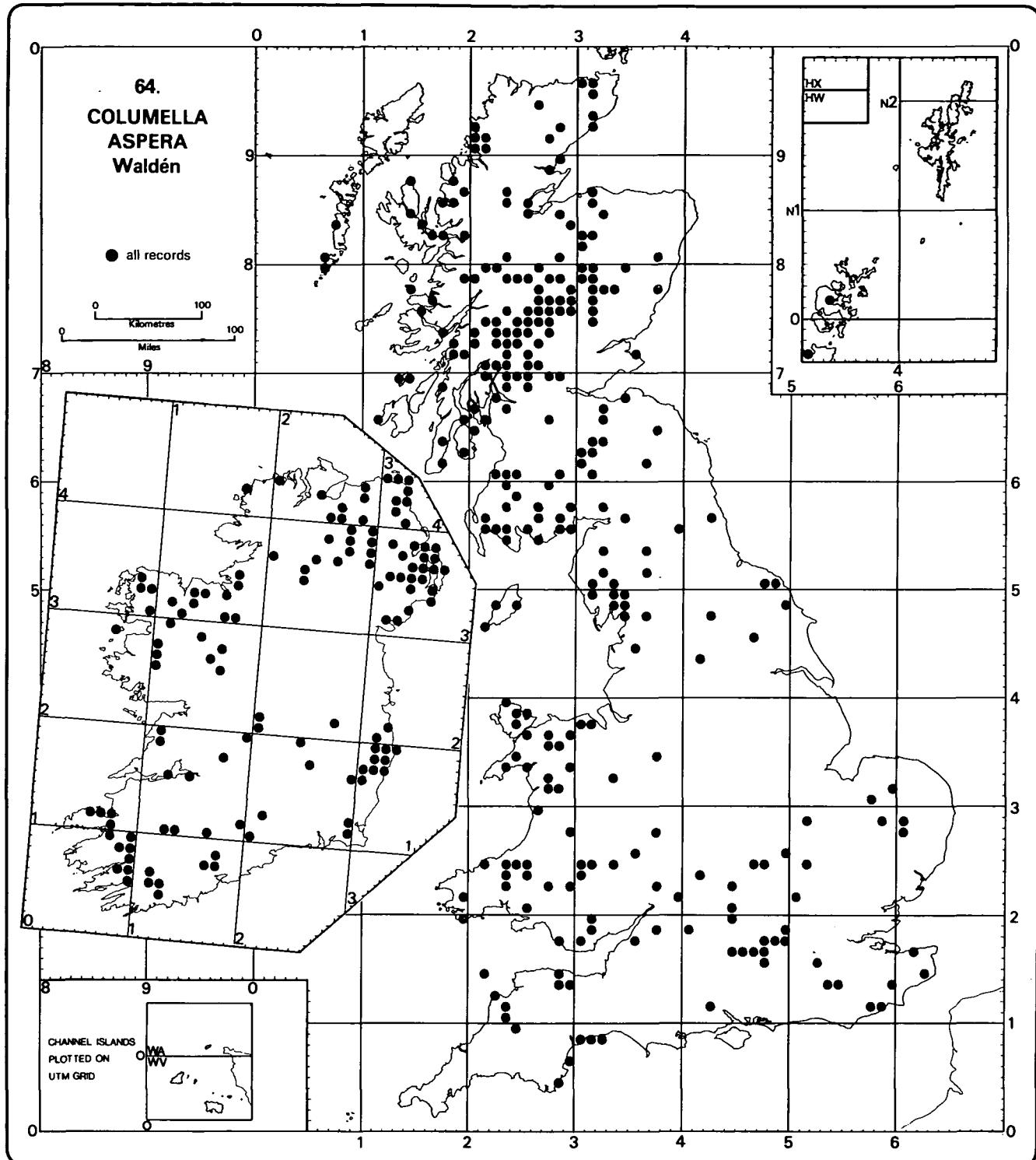


63.
COLUMELLA
EDENTULA
(Draparnaud), seg.

● all records

0 Kilometres
100 Miles

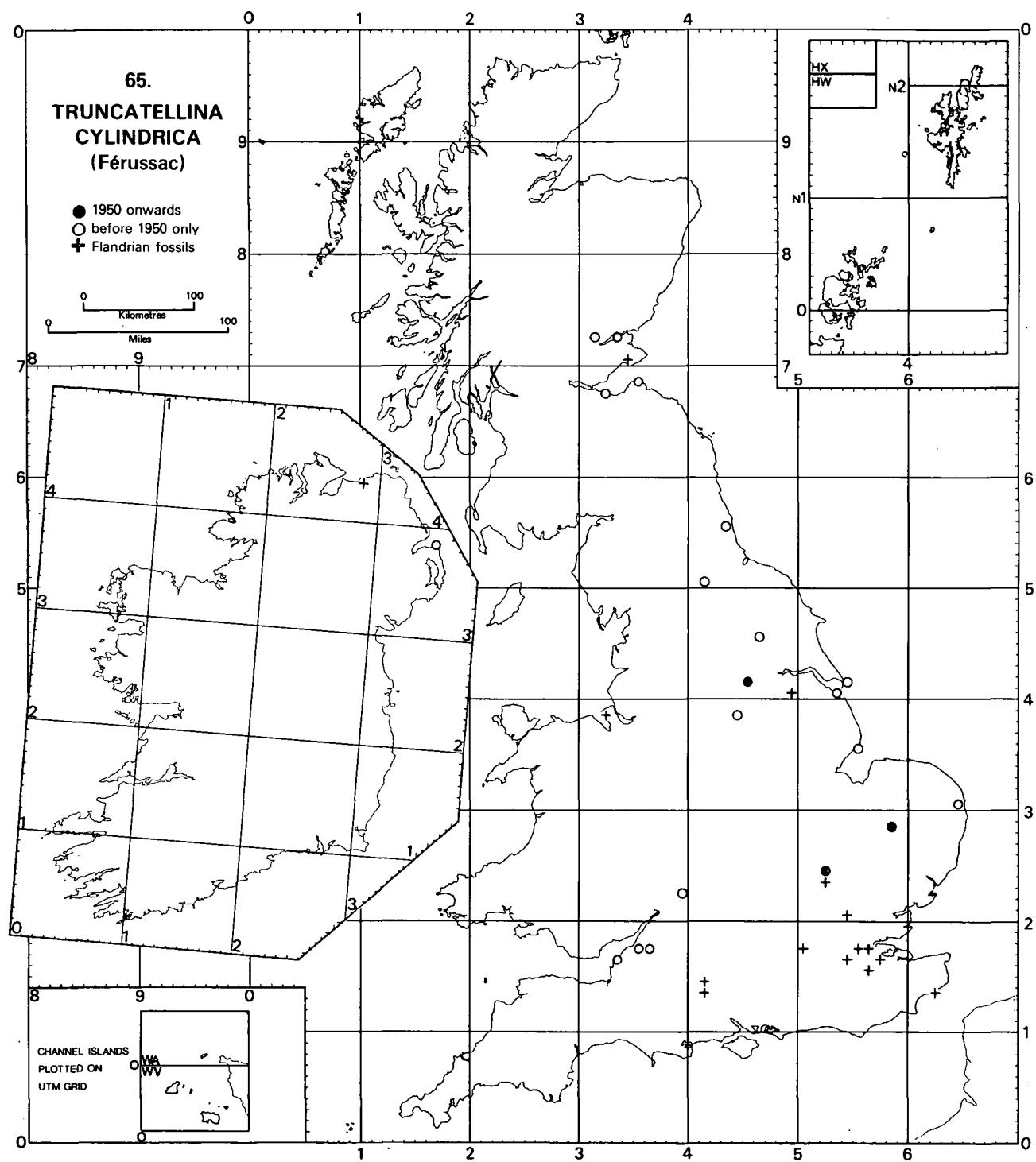


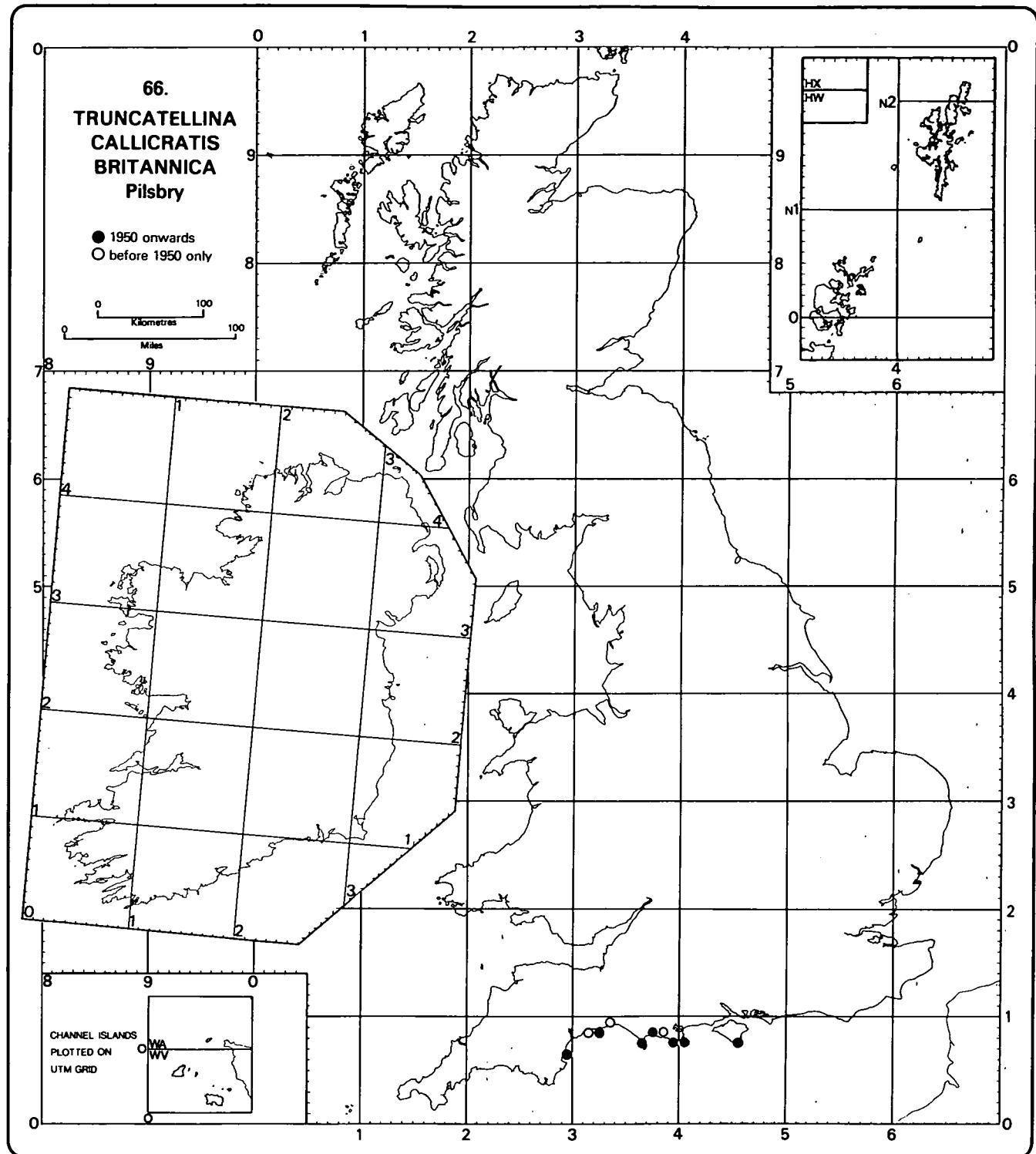


65.
**TRUNCATELLINA
CYLINDRICA**
(Férussac)

- 1950 onwards
- before 1950 only
- + Flandrian fossils

0 Kilometres 100
0 Miles 100

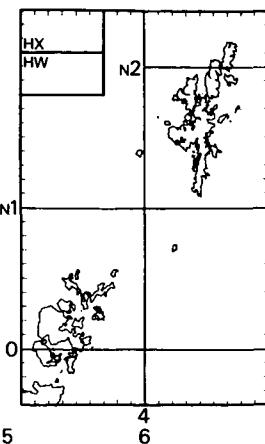
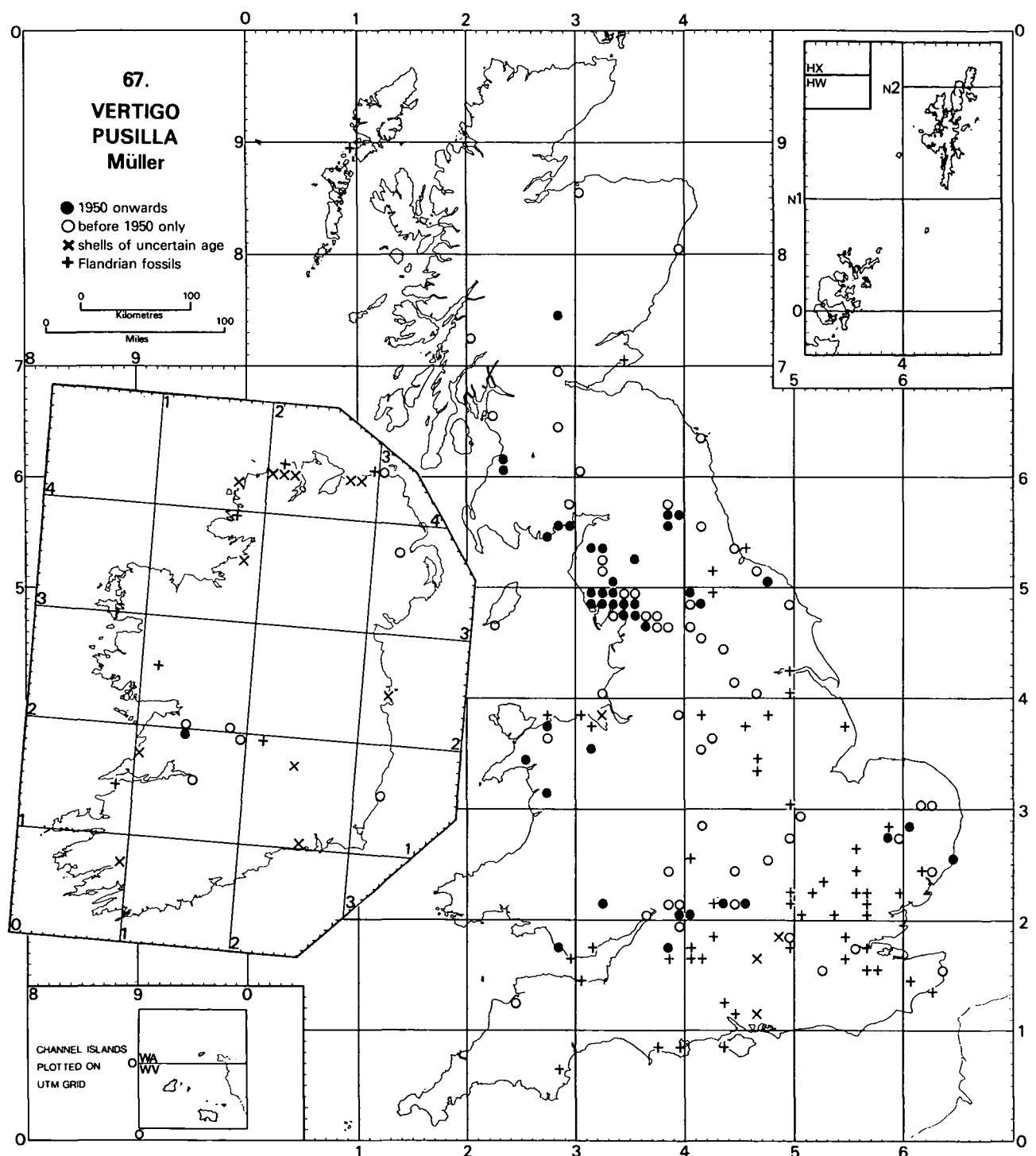


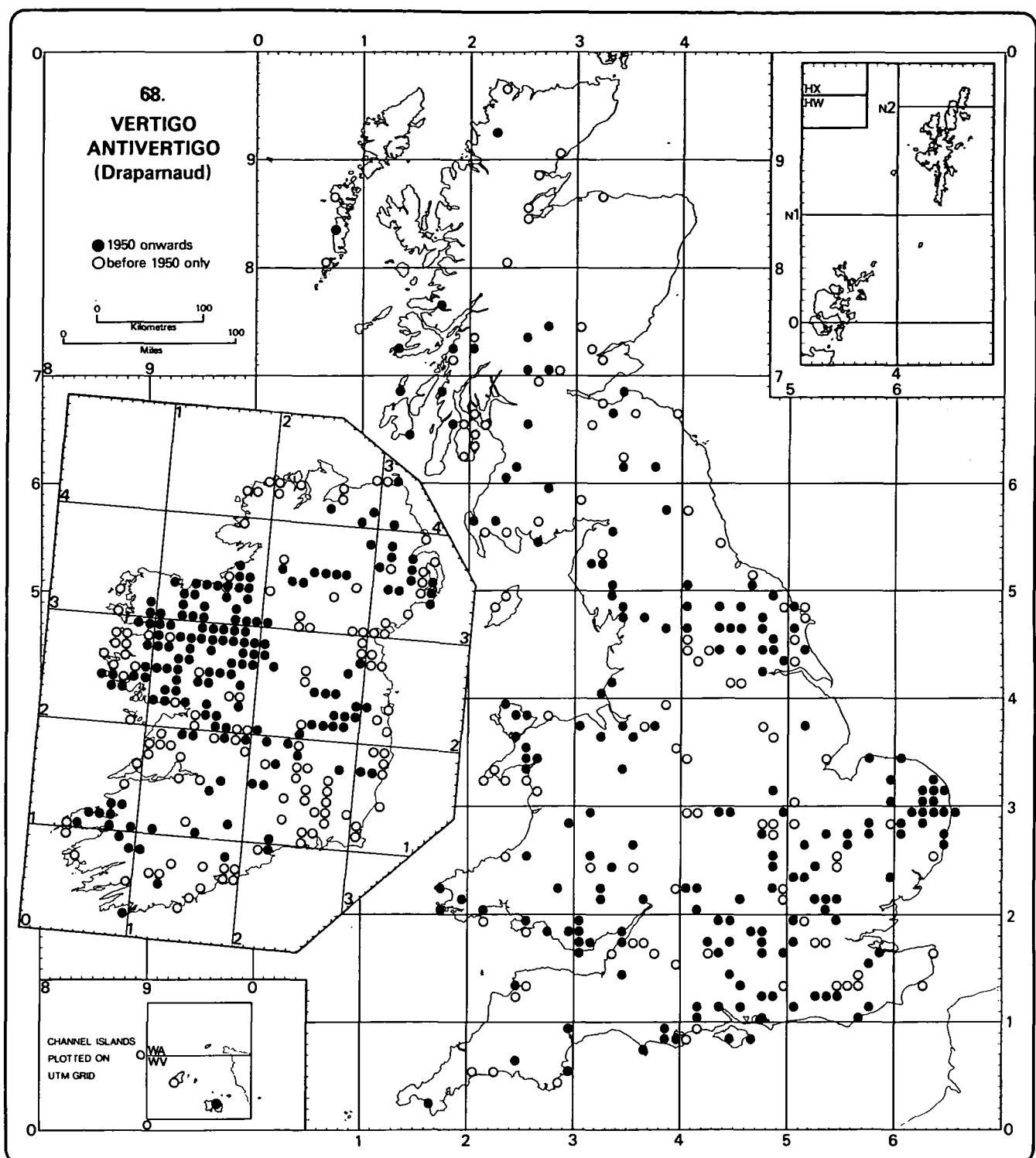


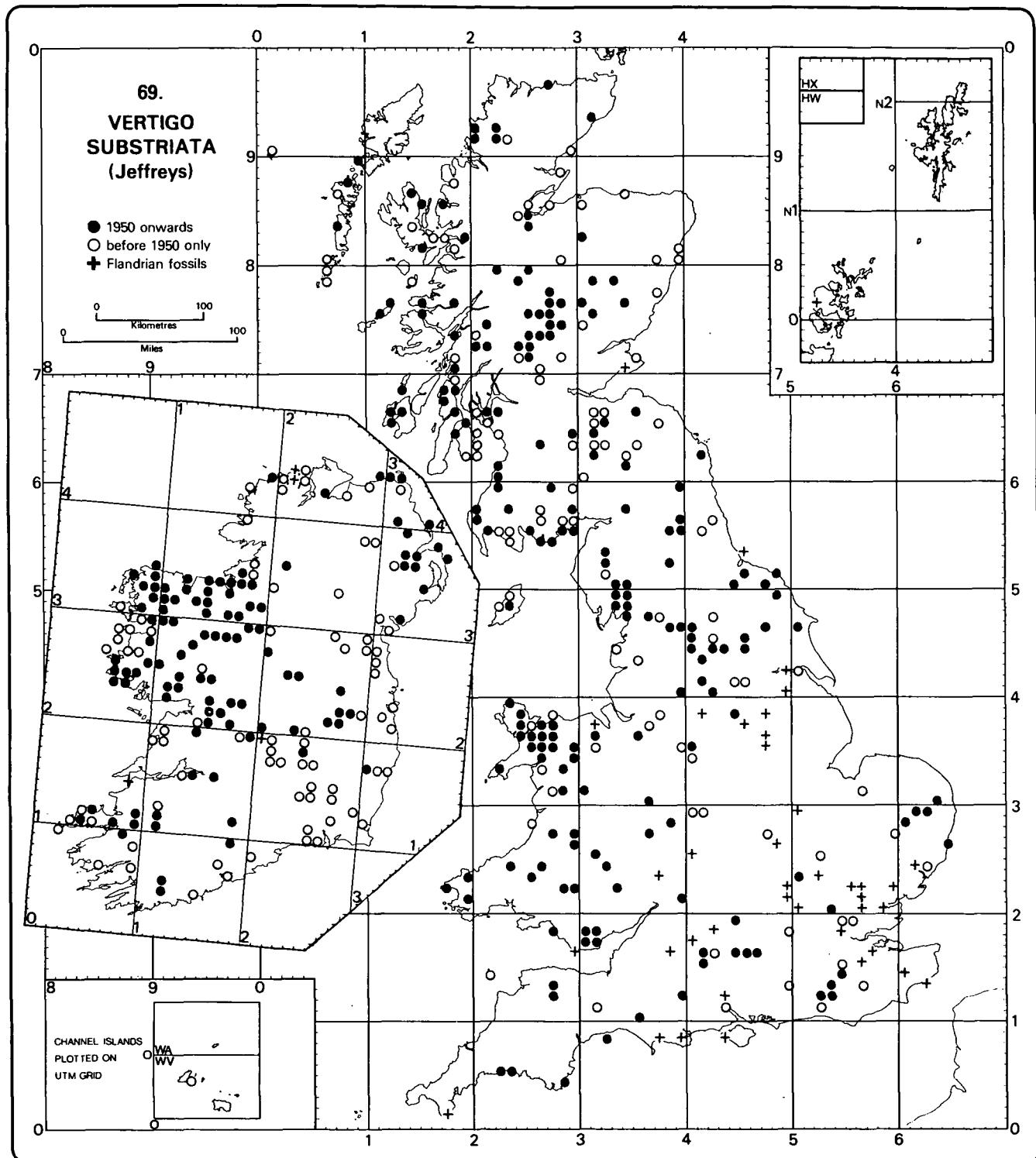
67.
**VERTIGO
PUSILLA**
 Müller

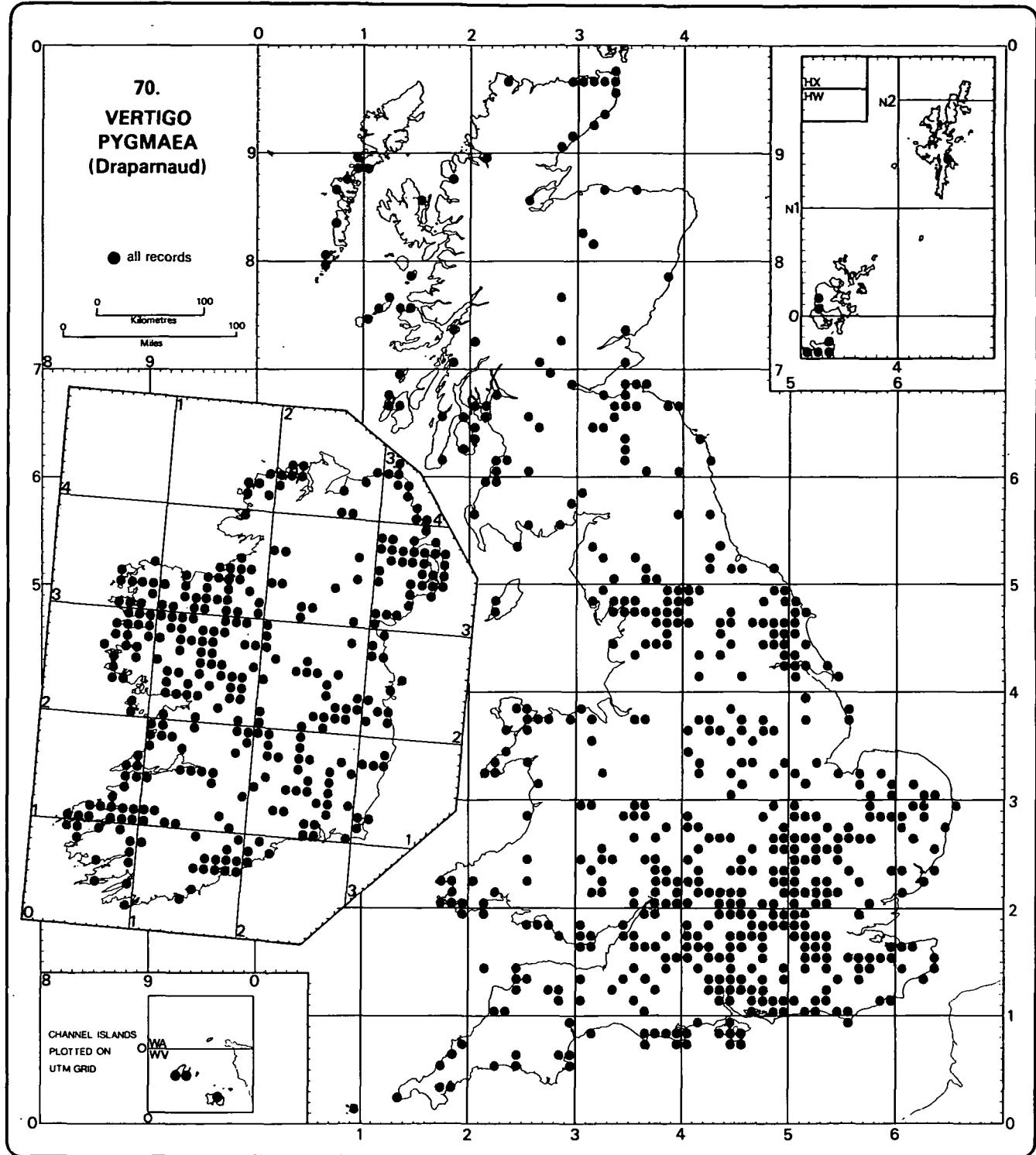
- 1950 onwards
- before 1950 only
- ✗ shells of uncertain age
- + Flandrian fossils

0 Kilometres
 0 Miles





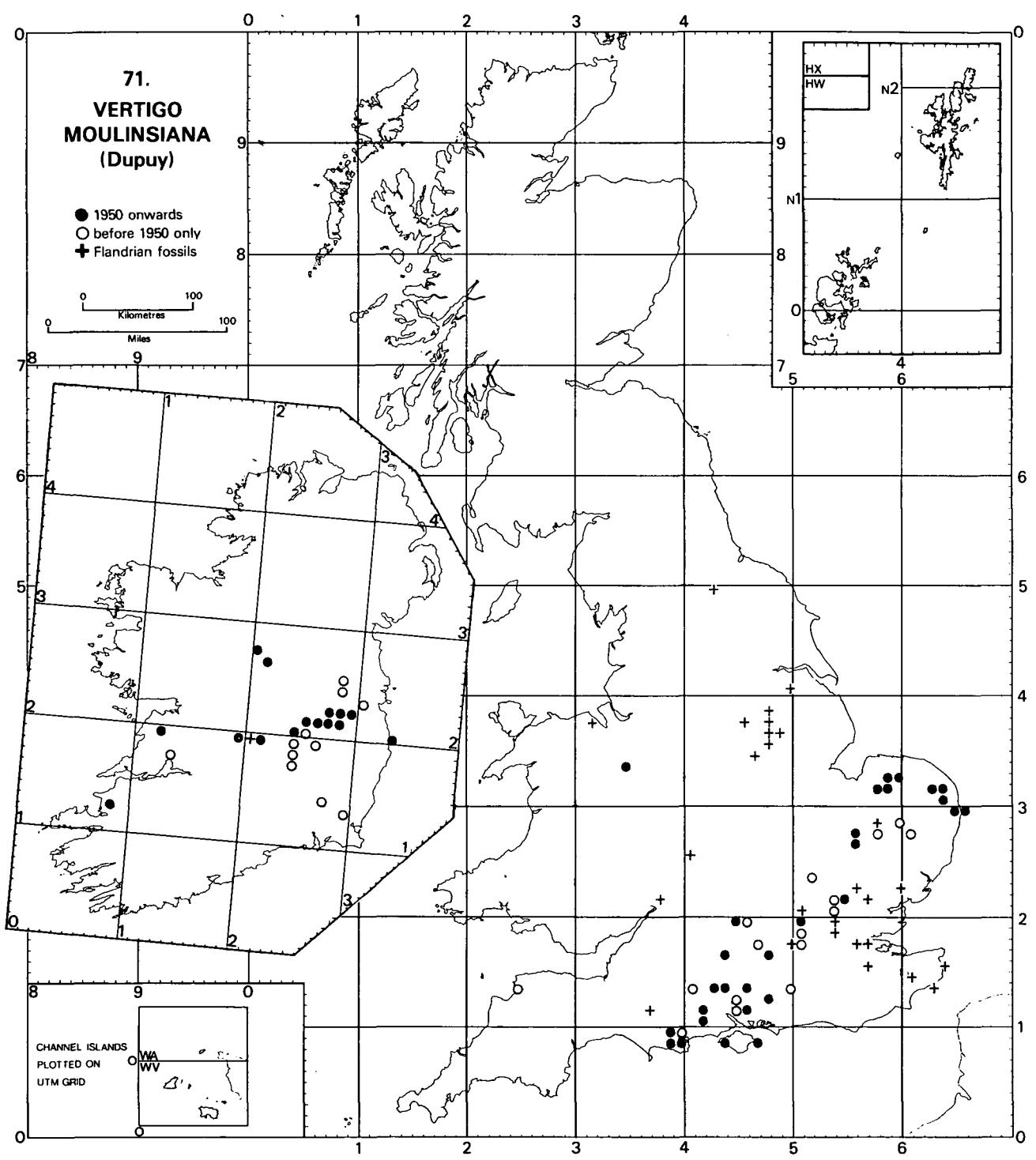


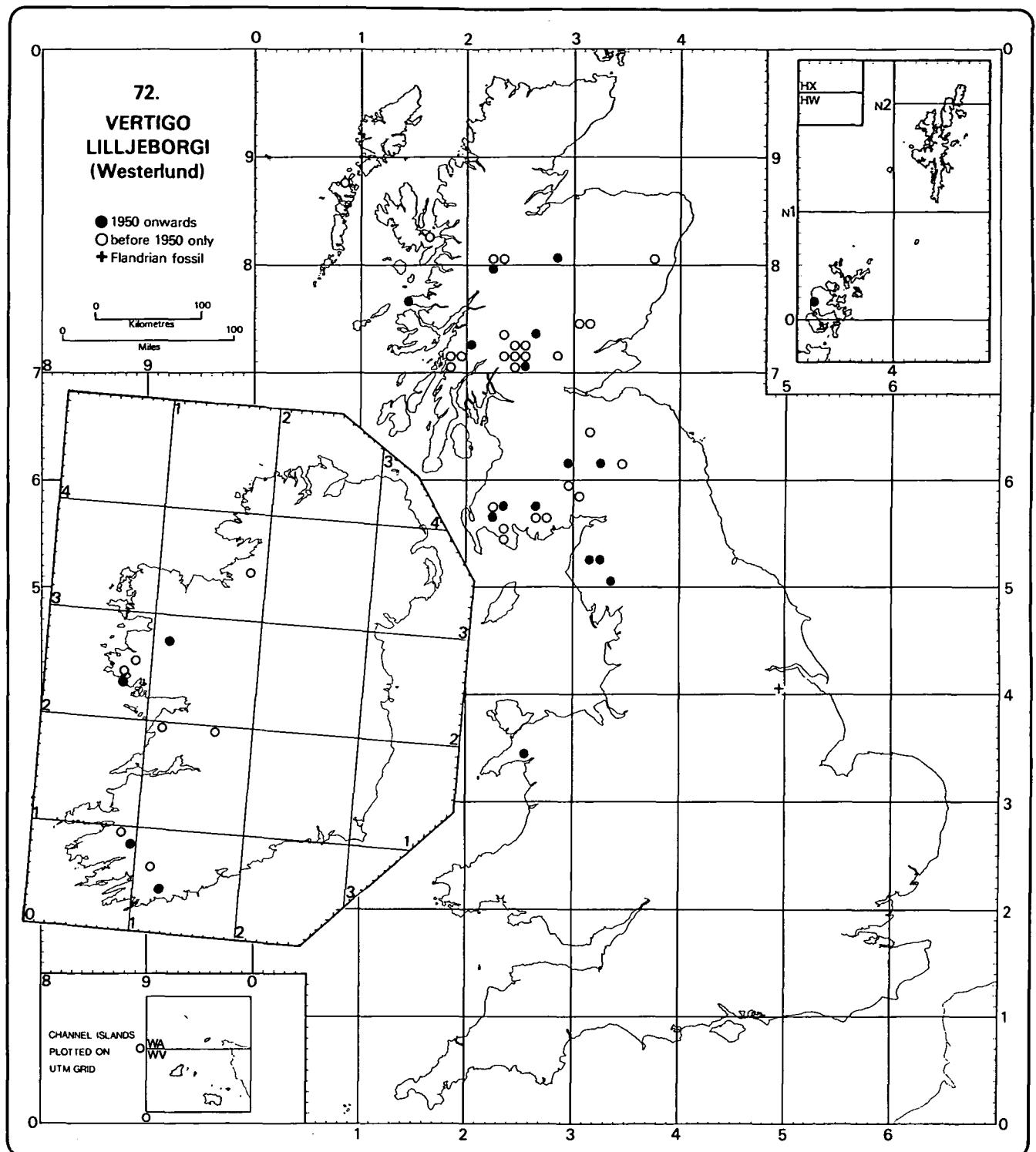


71.
VERTIGO
MOULINSIANA
(Dupuy)

- 1950 onwards
- before 1950 only
- + Flandrian fossils

0 Kilometres
100 Miles

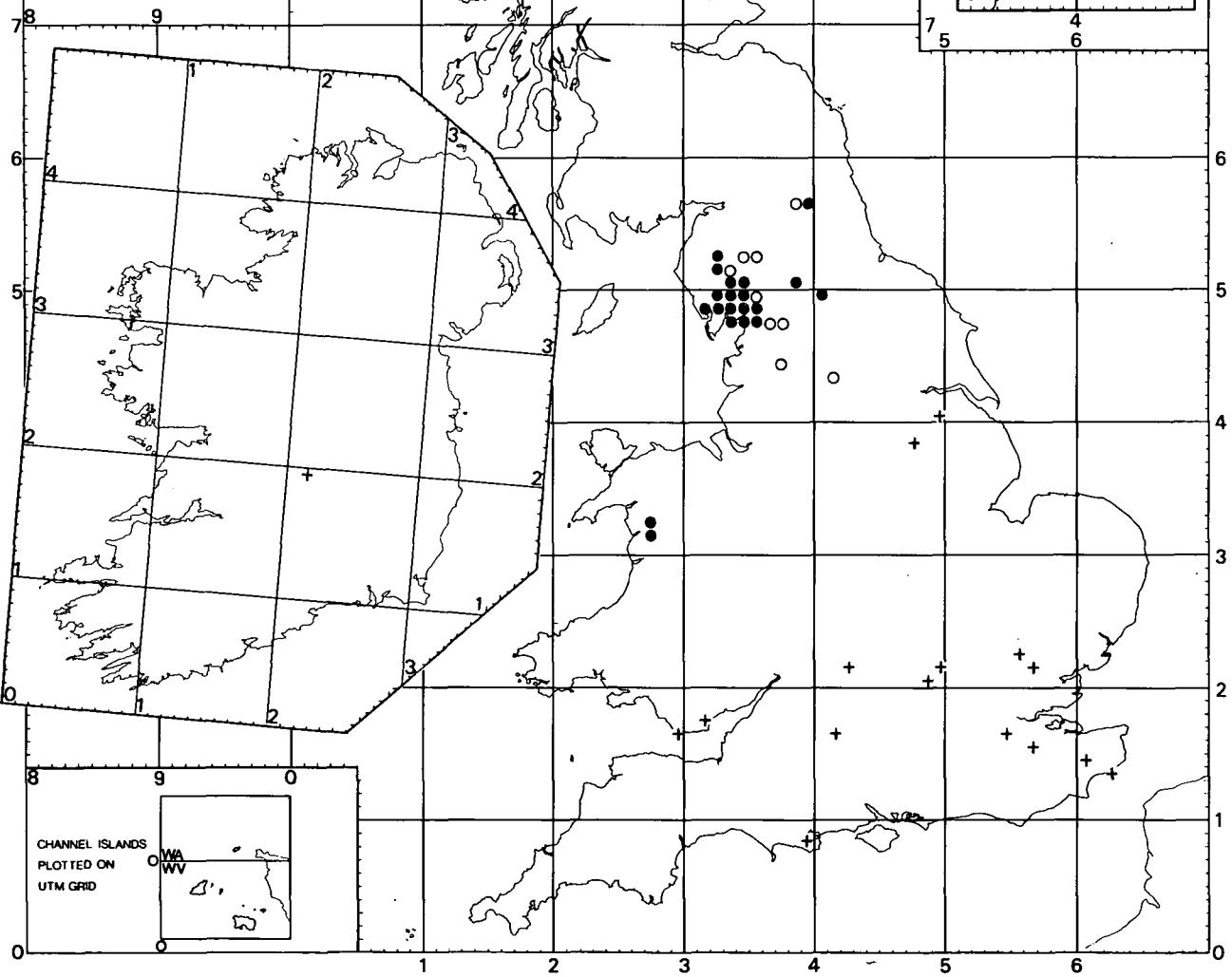


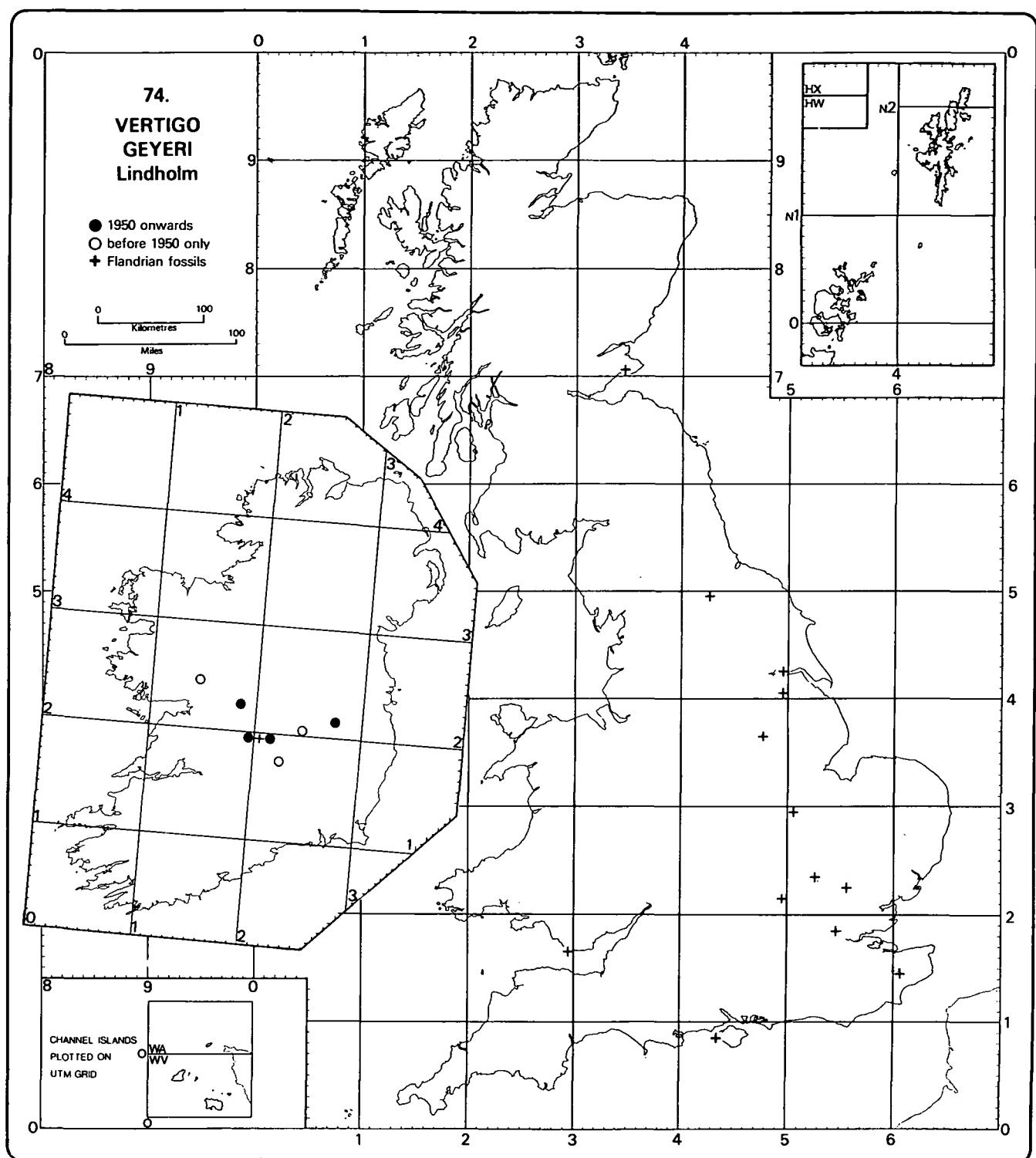


73.
**VERTIGO
ALPESTRIS**
Alder

- 1950 onwards
- before 1950 only
- + Flandrian fossils

0 Kilometres
100 Miles

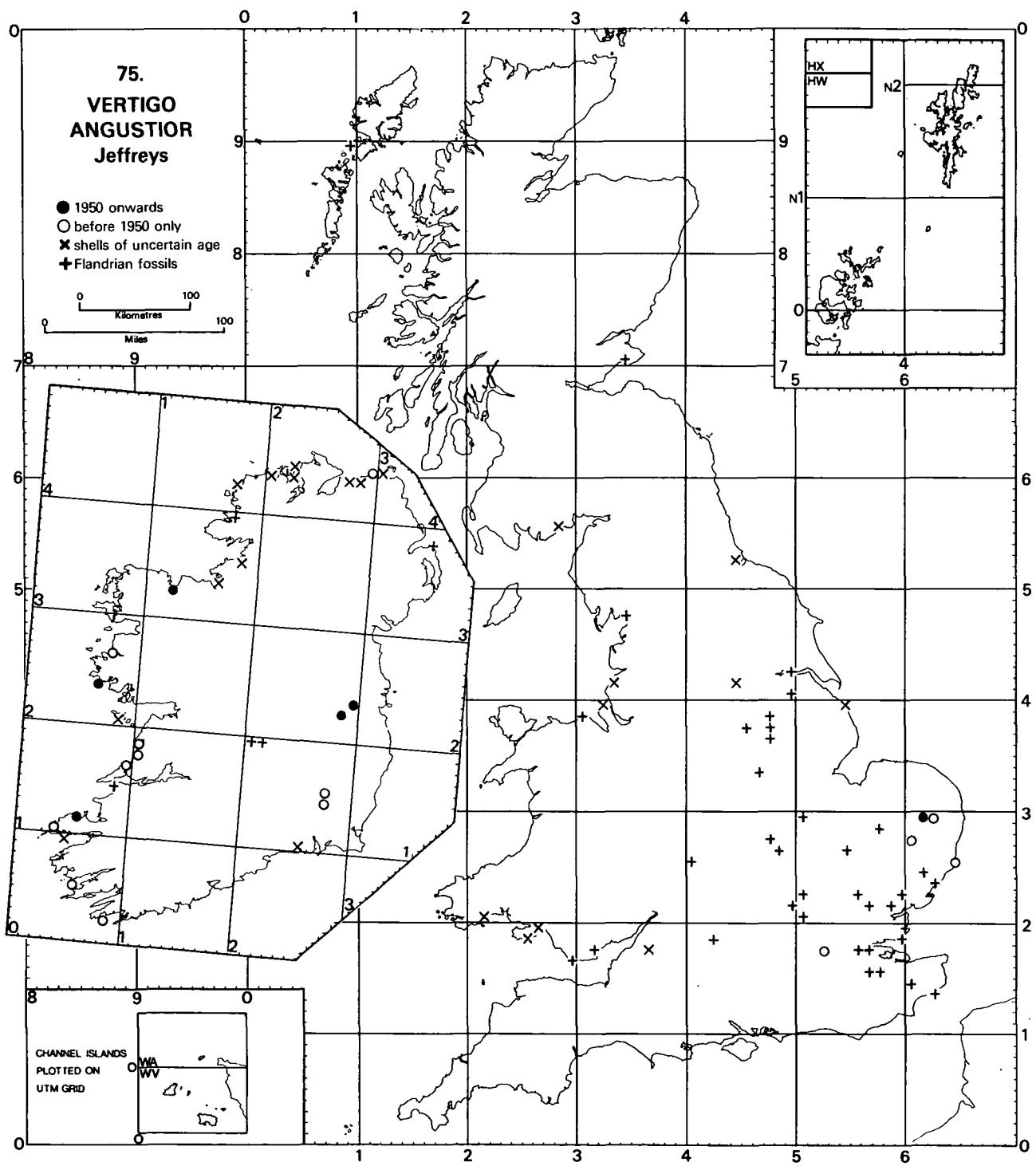


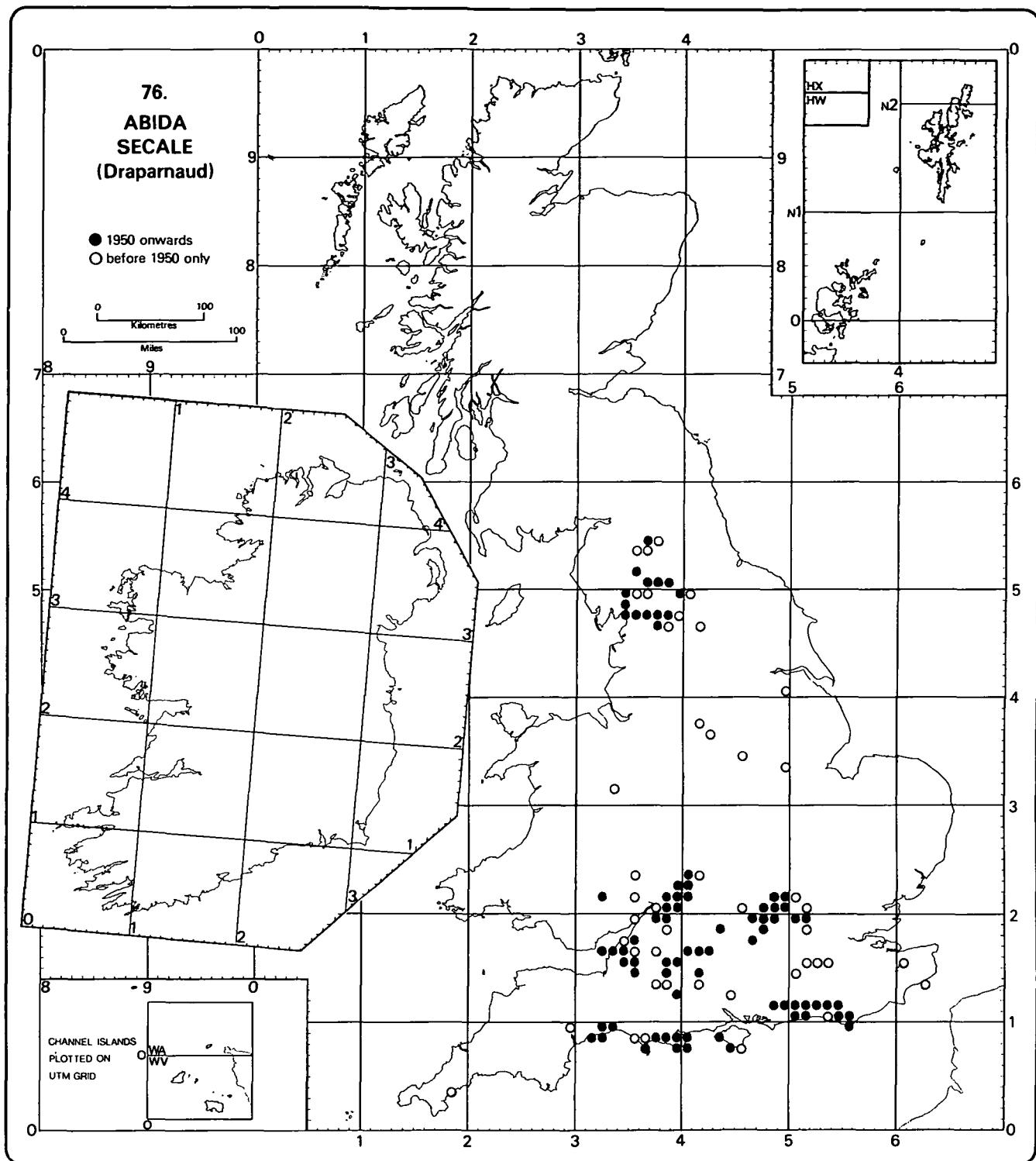


75.
**VERTIGO
ANGUSTIOR**
Jeffreys

- 1950 onwards
- before 1950 only
- ✗ shells of uncertain age
- + Flandrian fossils

0 Kilometres 100
Miles

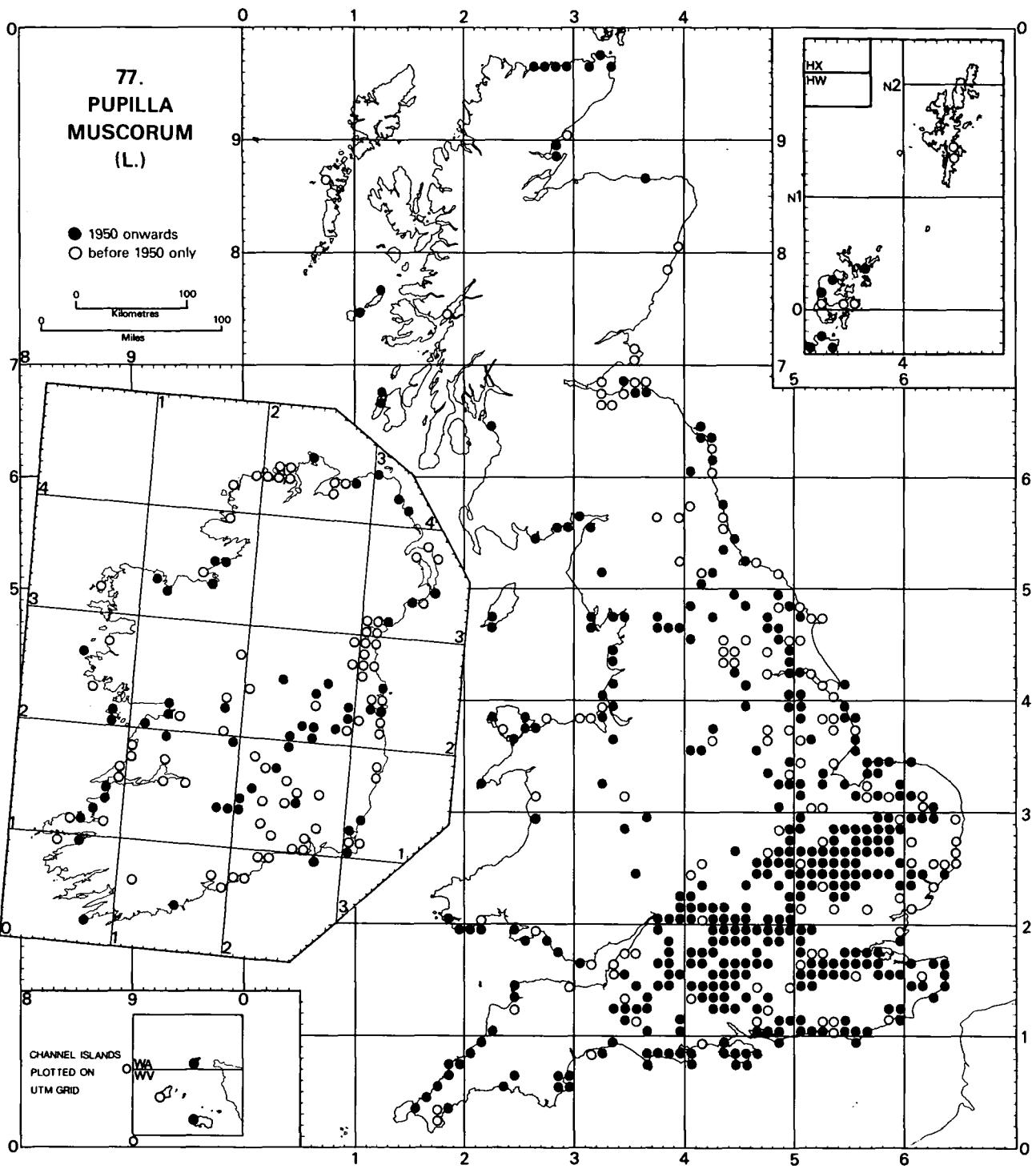


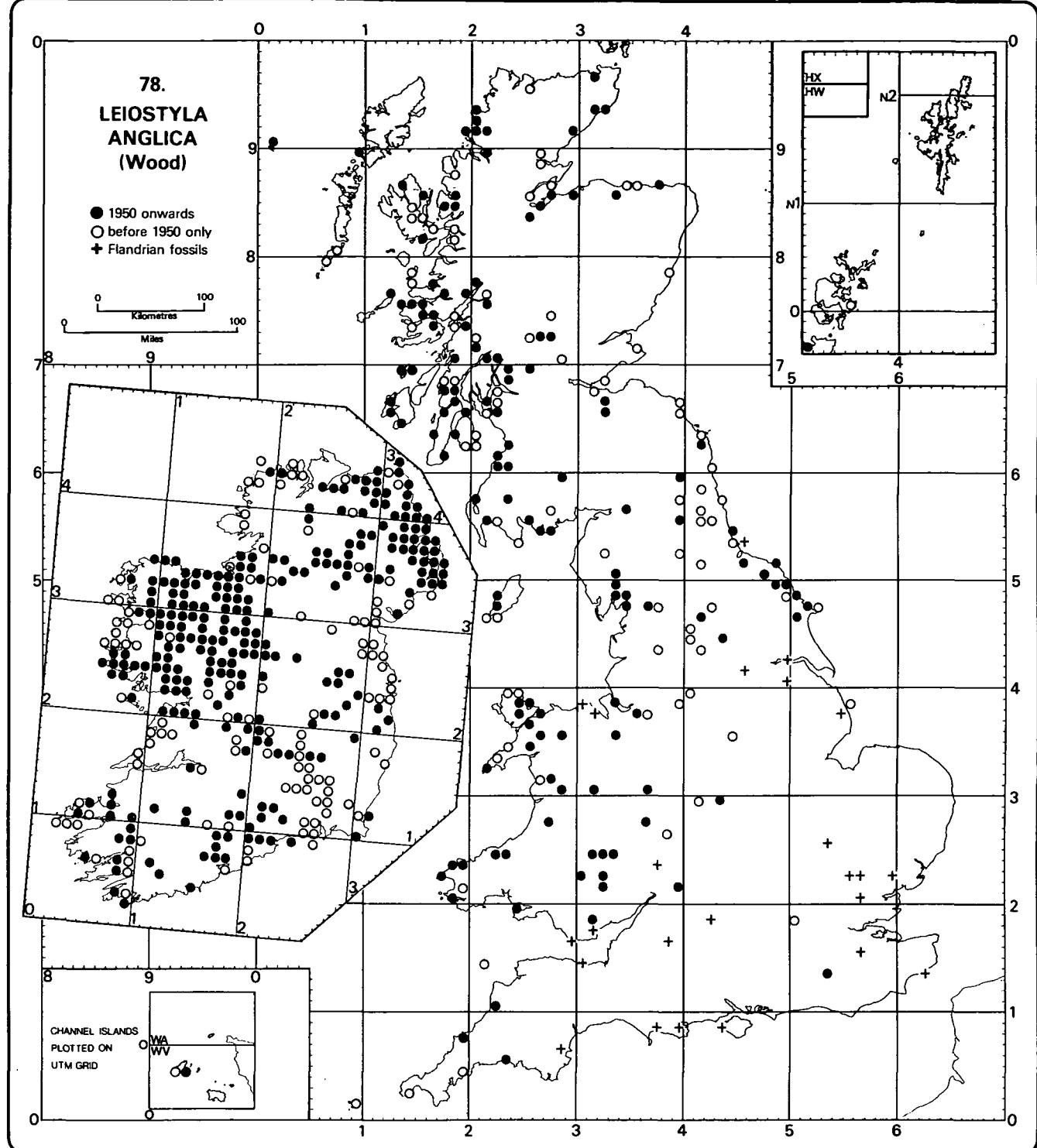


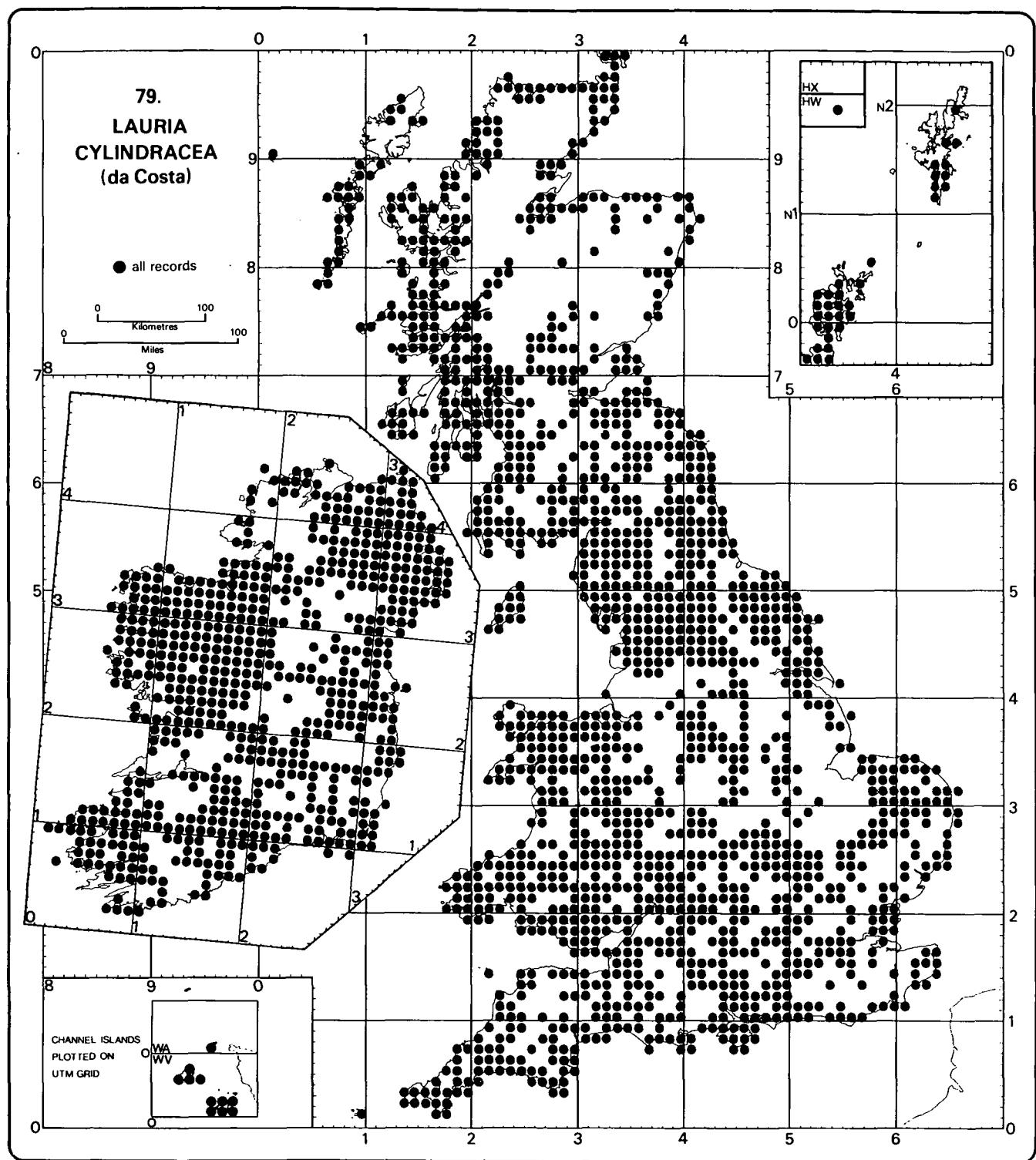
77.
**PUPILLA
MUSCORUM**
(L.)

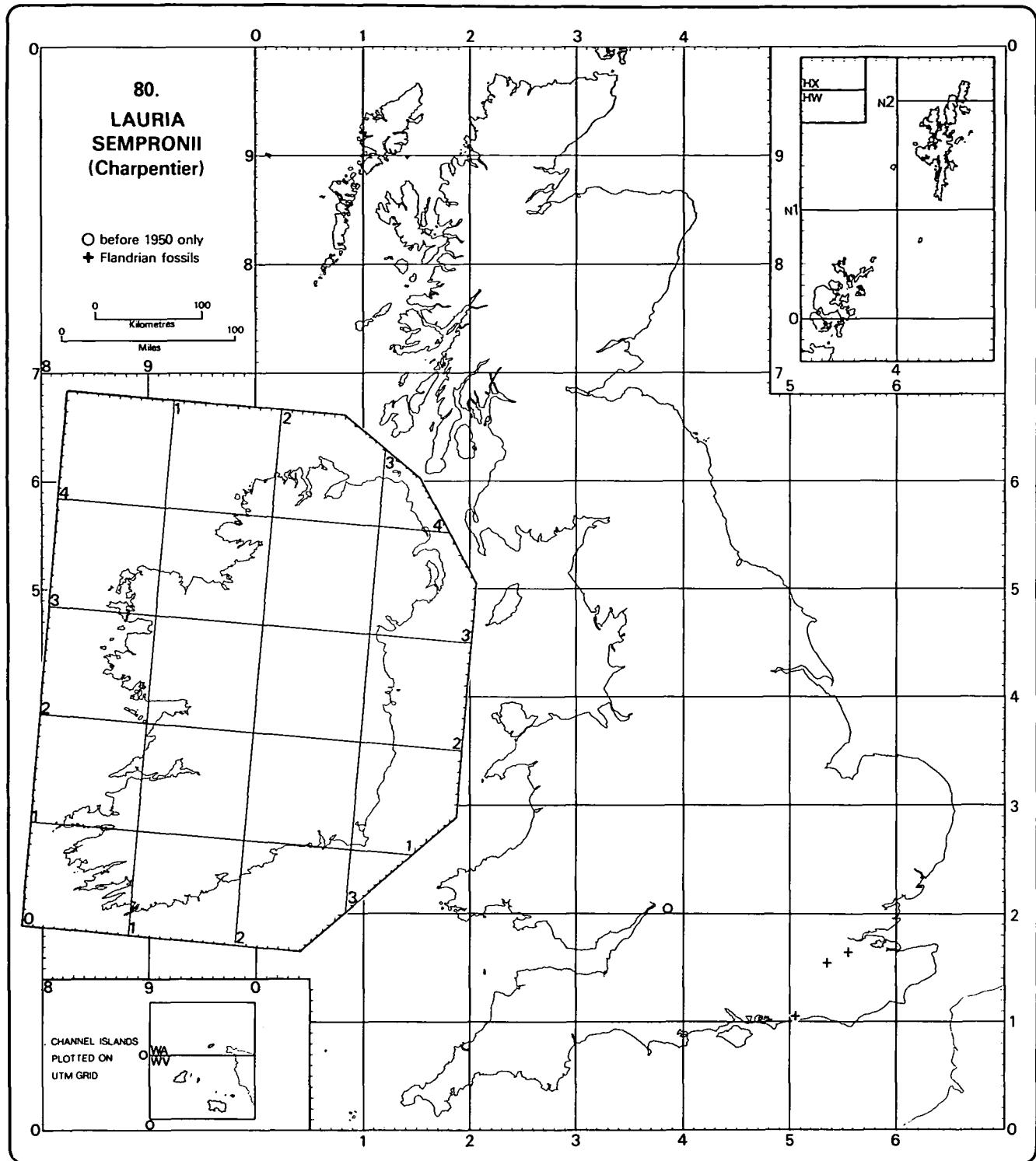
● 1950 onwards
○ before 1950 only

0 Kilometres 100 Miles





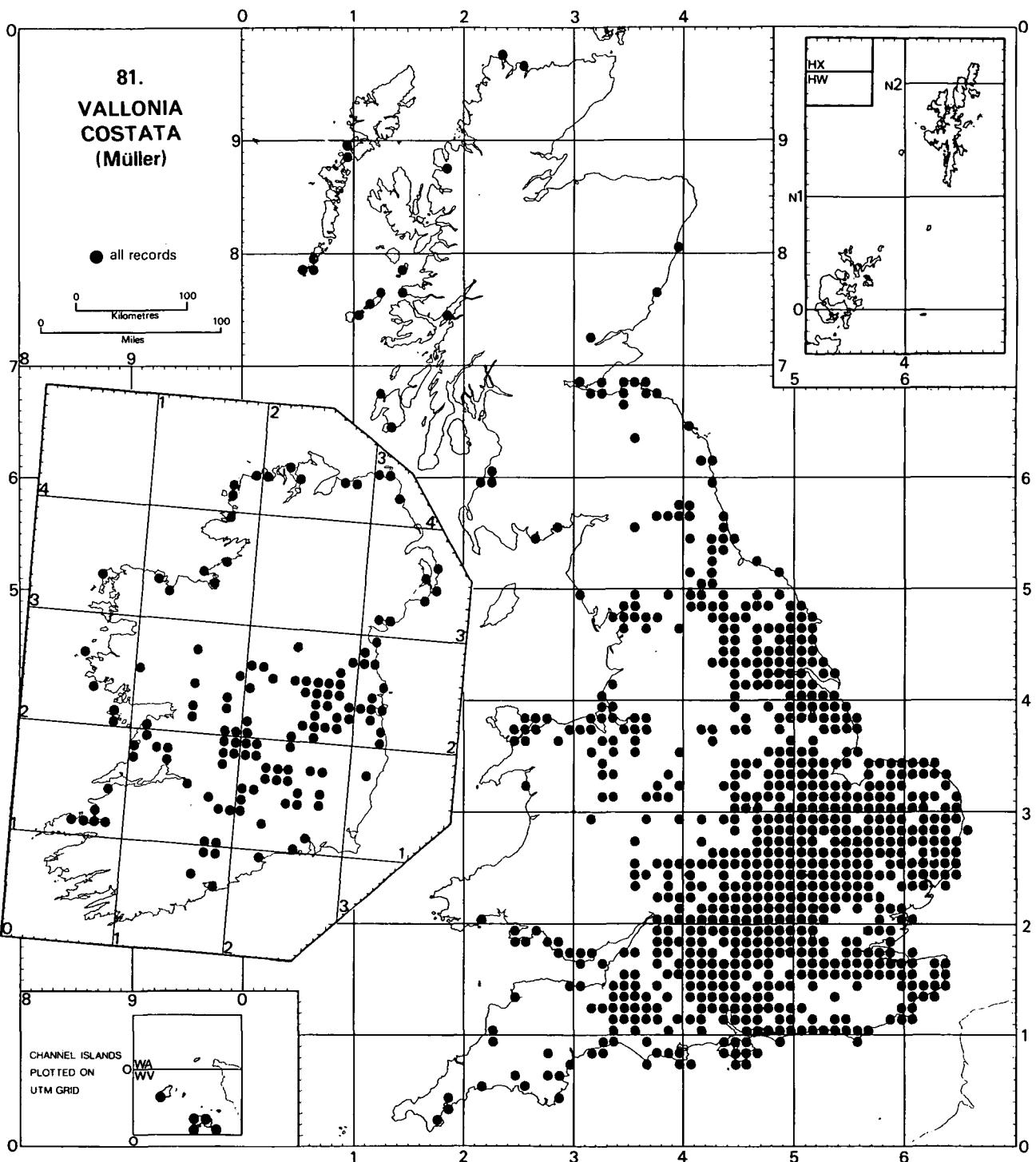


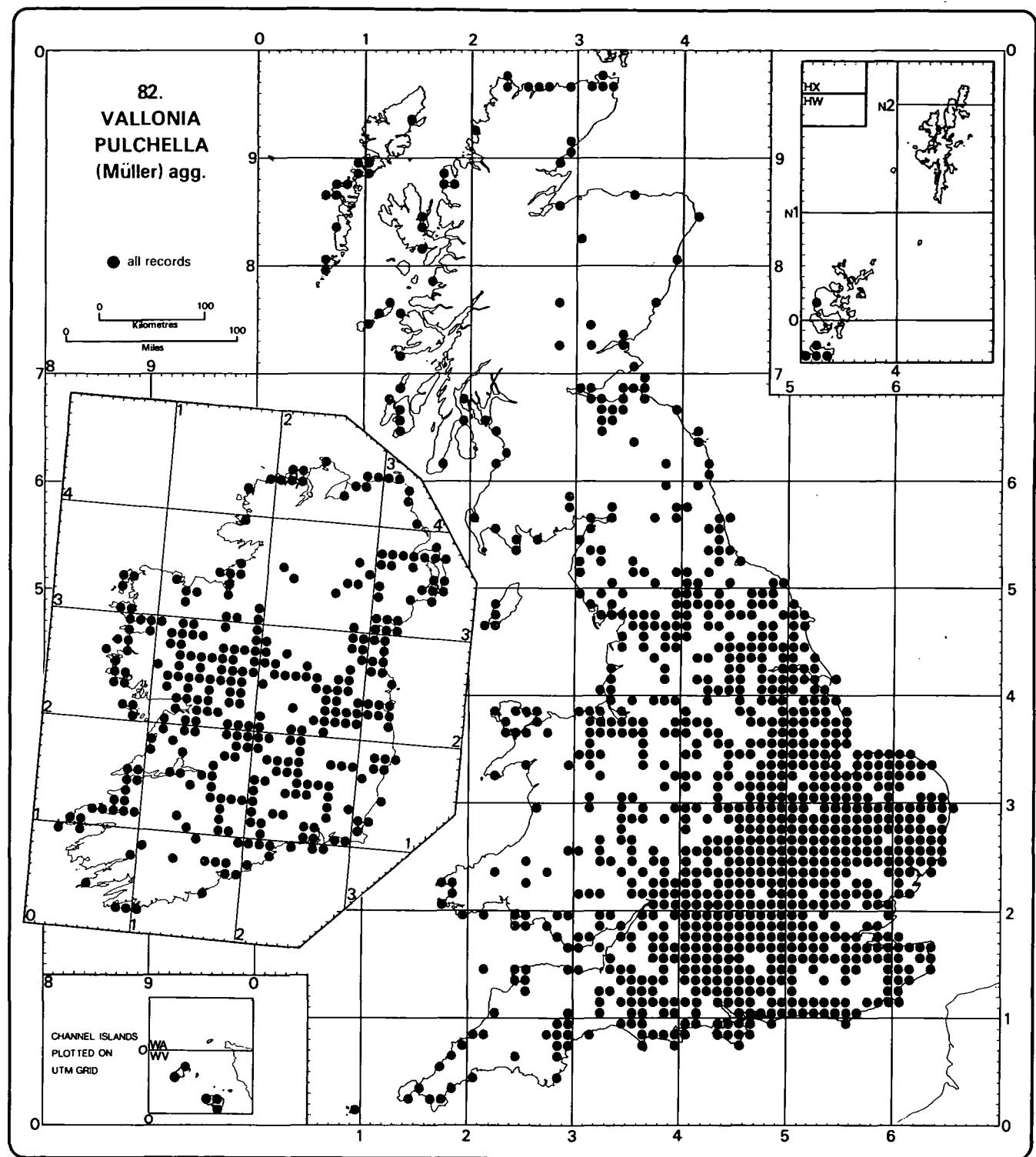


81.
**VALLONIA
COSTATA**
(Müller)

● all records

0 Kilometres
0 Miles



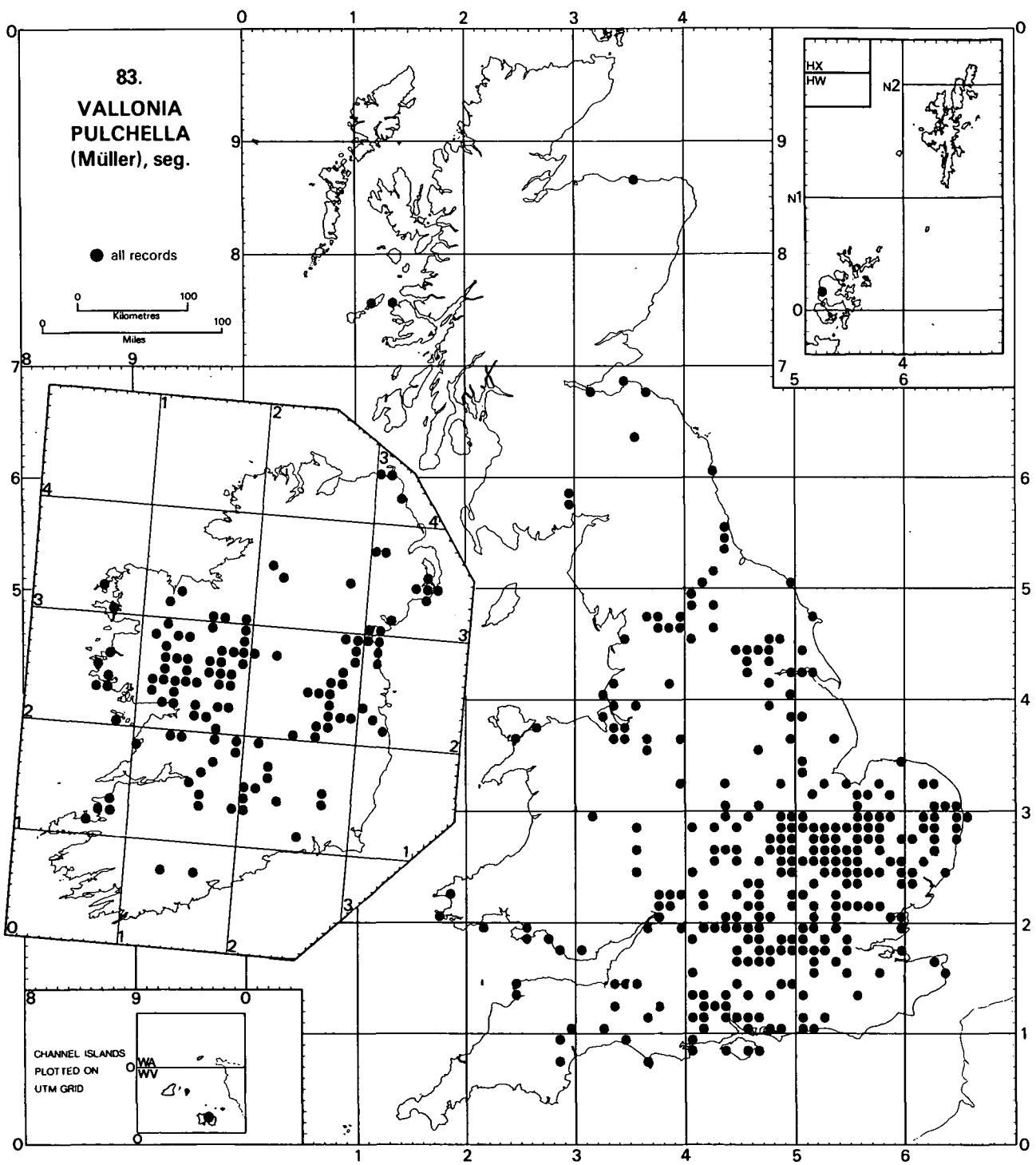


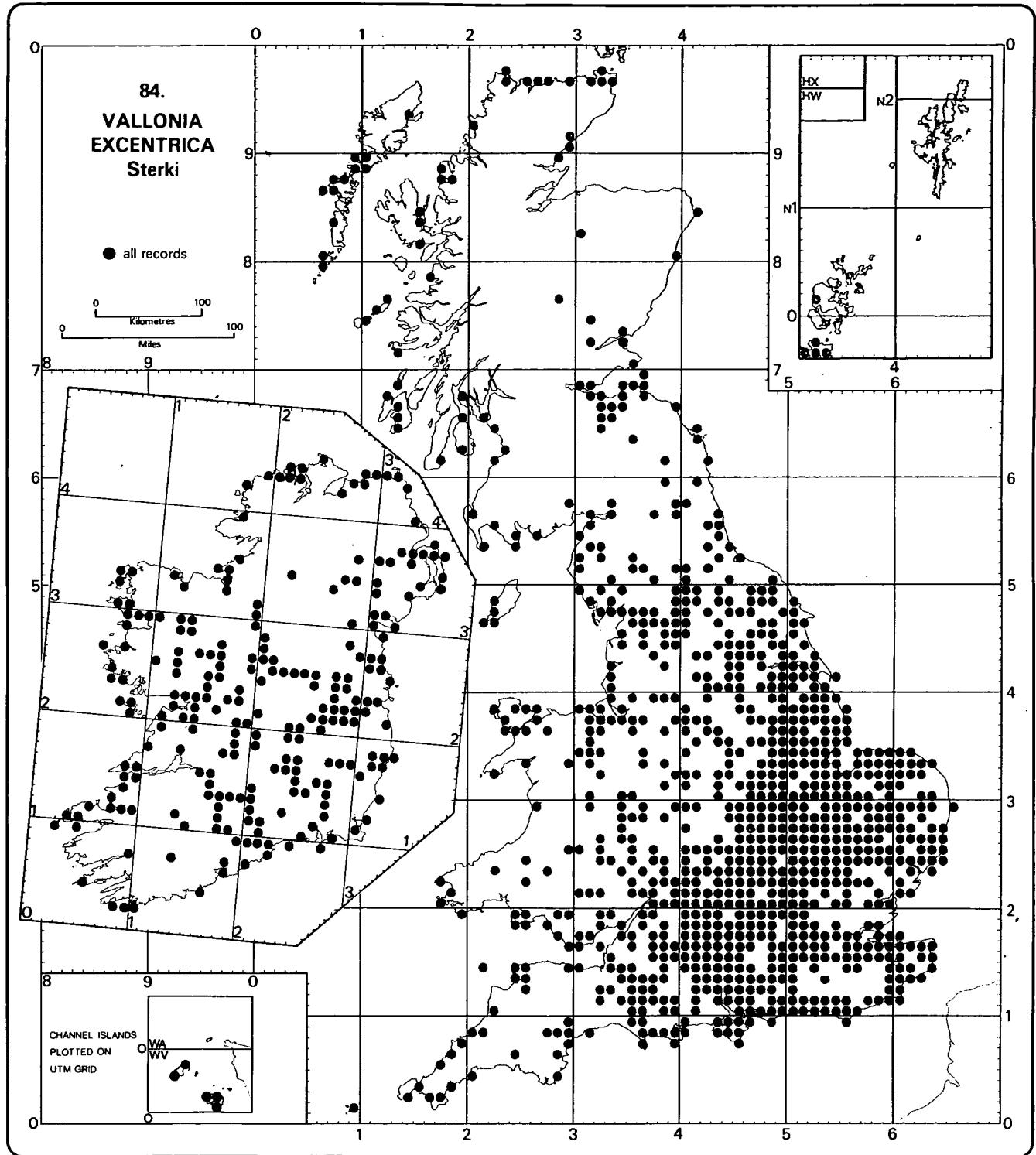
83.
VALLONIA
PULCHELLA
(Müller), seg.

● all records

0 Kilometres
100 Miles

0 100

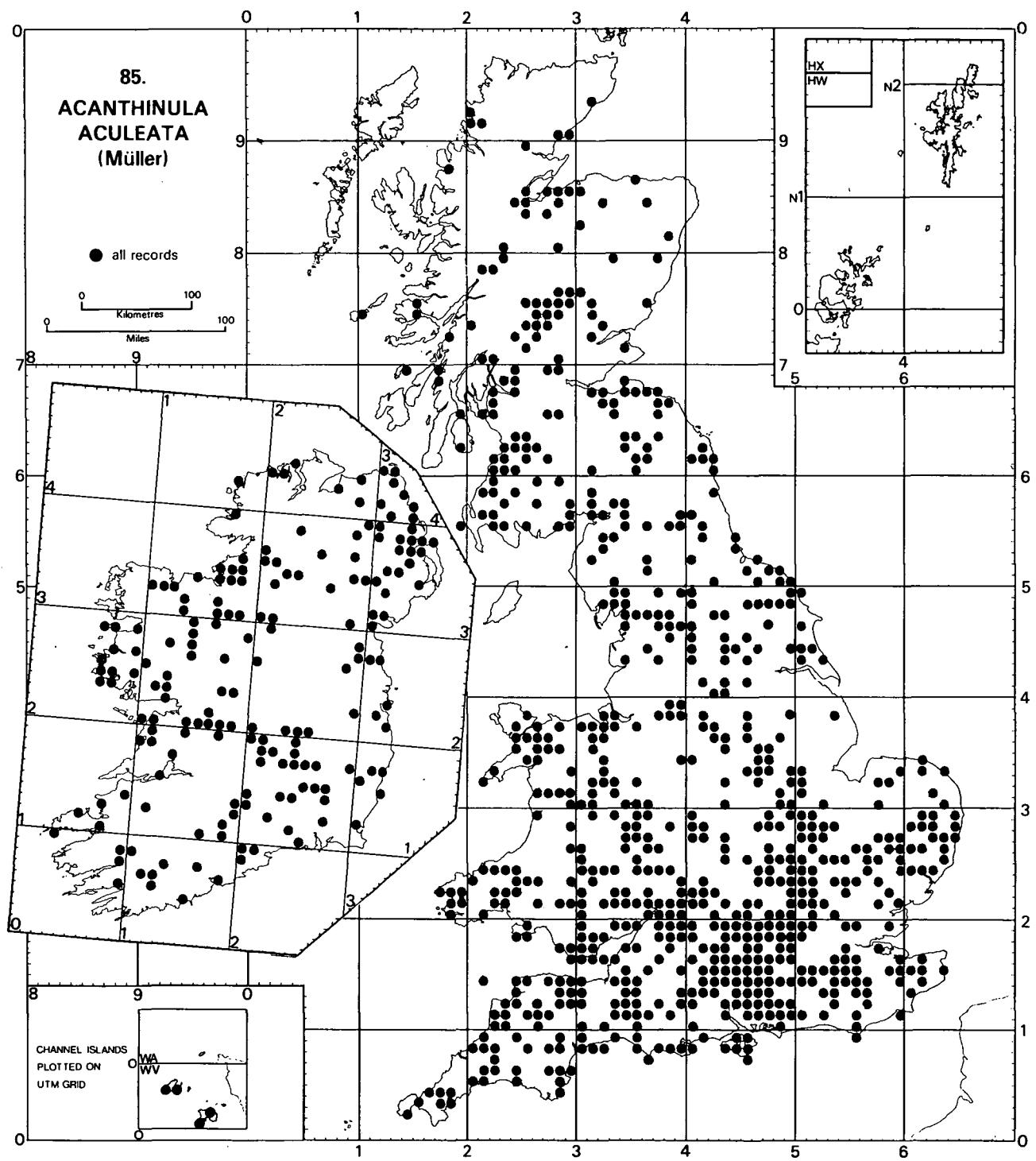


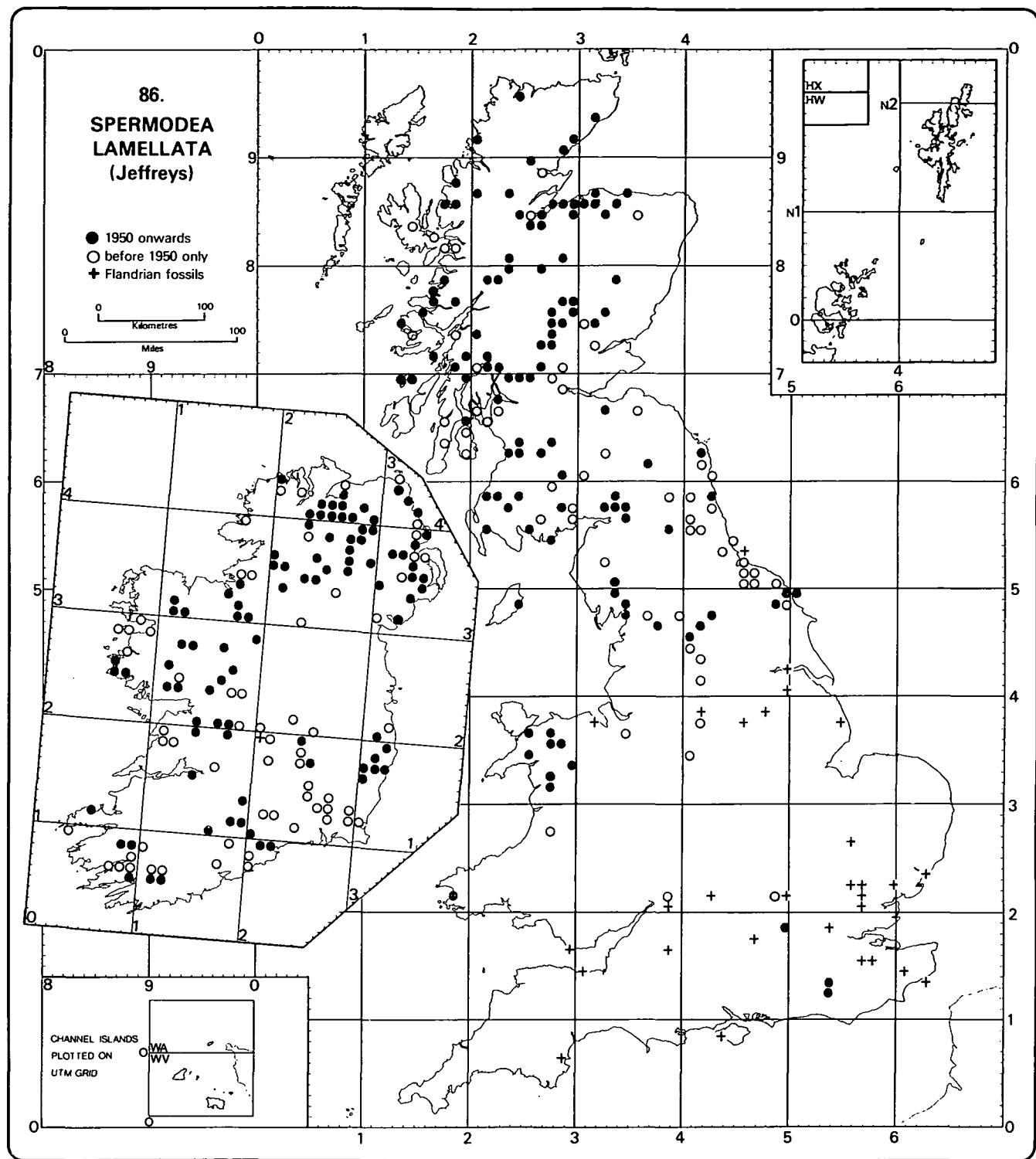


85.
**ACANTHINULA
ACULEATA**
(Müller)

● all records

0 Kilometres
100 Miles

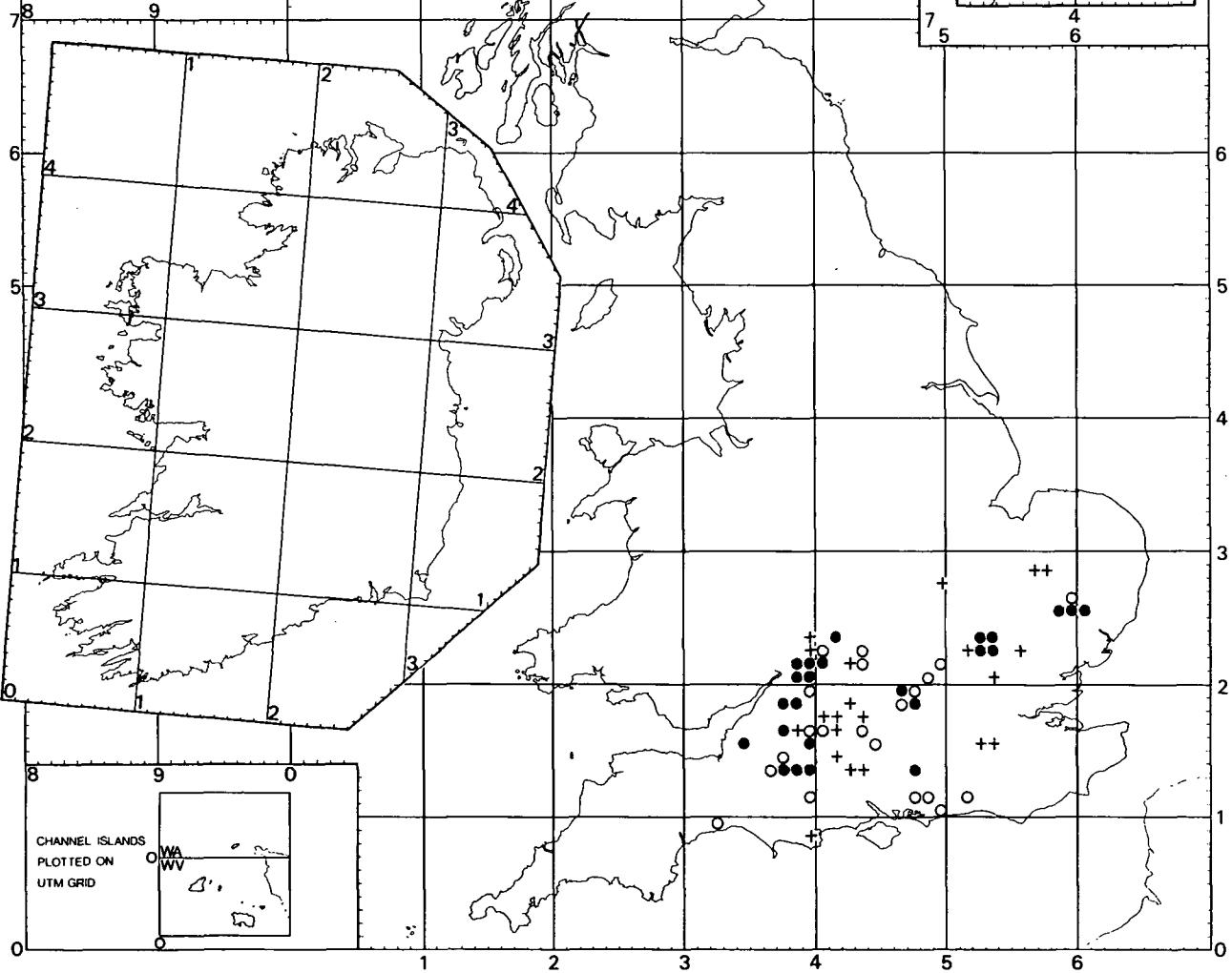
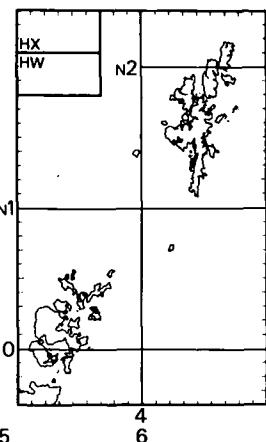


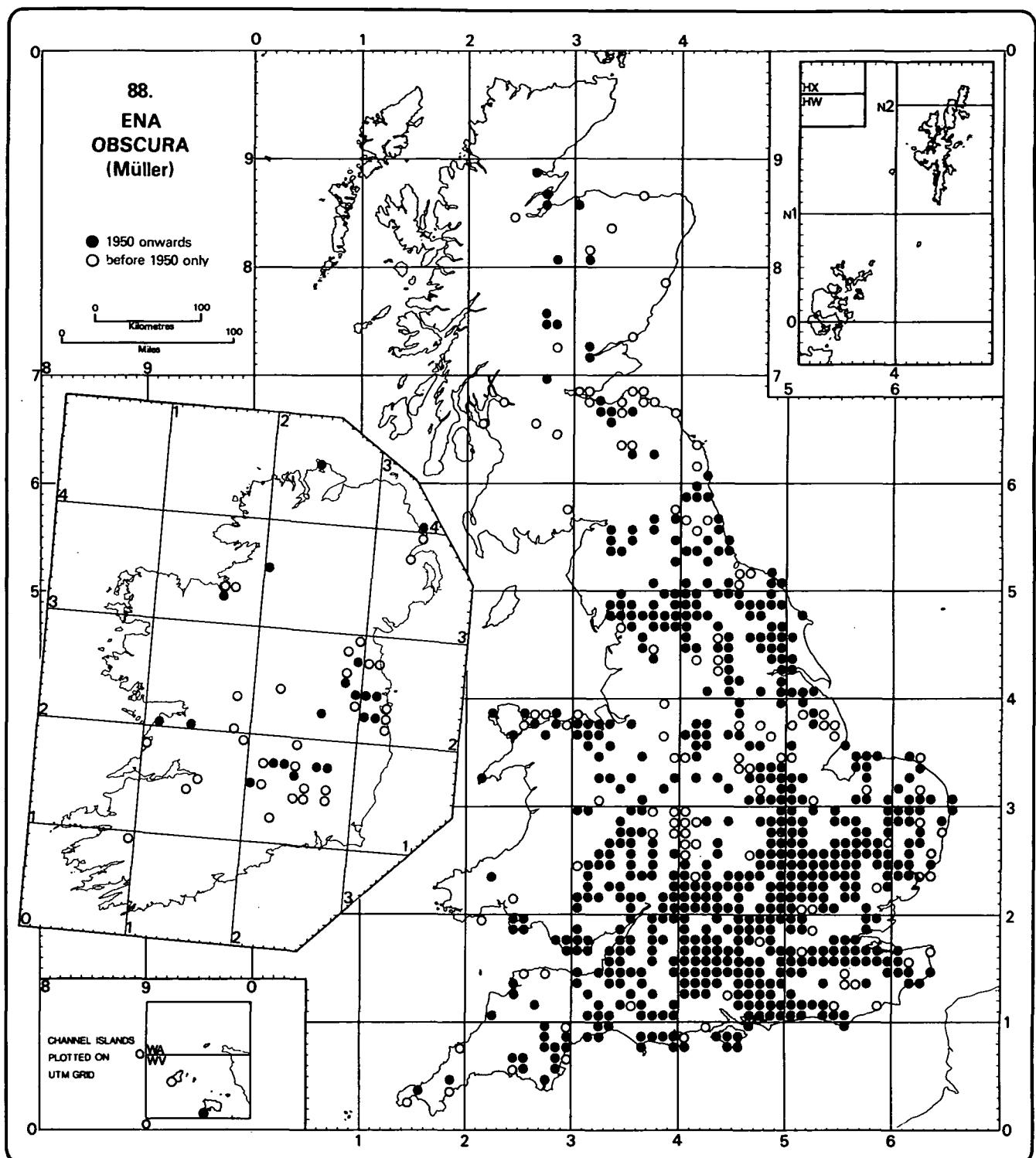


87.
ENA
MONTANA
(Draparnaud)

- 1950 onwards
- before 1950 only
- + Flandrian fossils

0 Kilometres 100 Miles

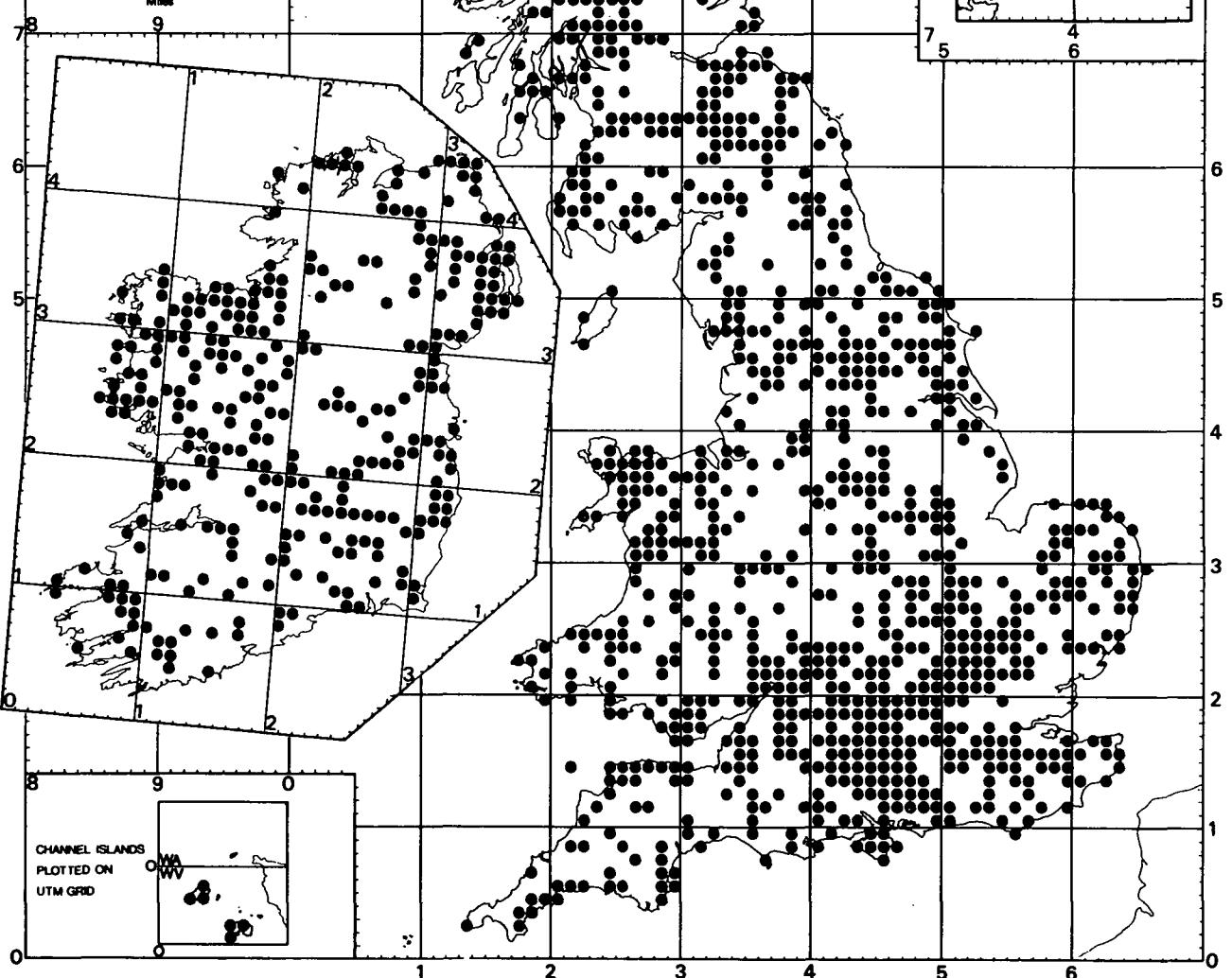


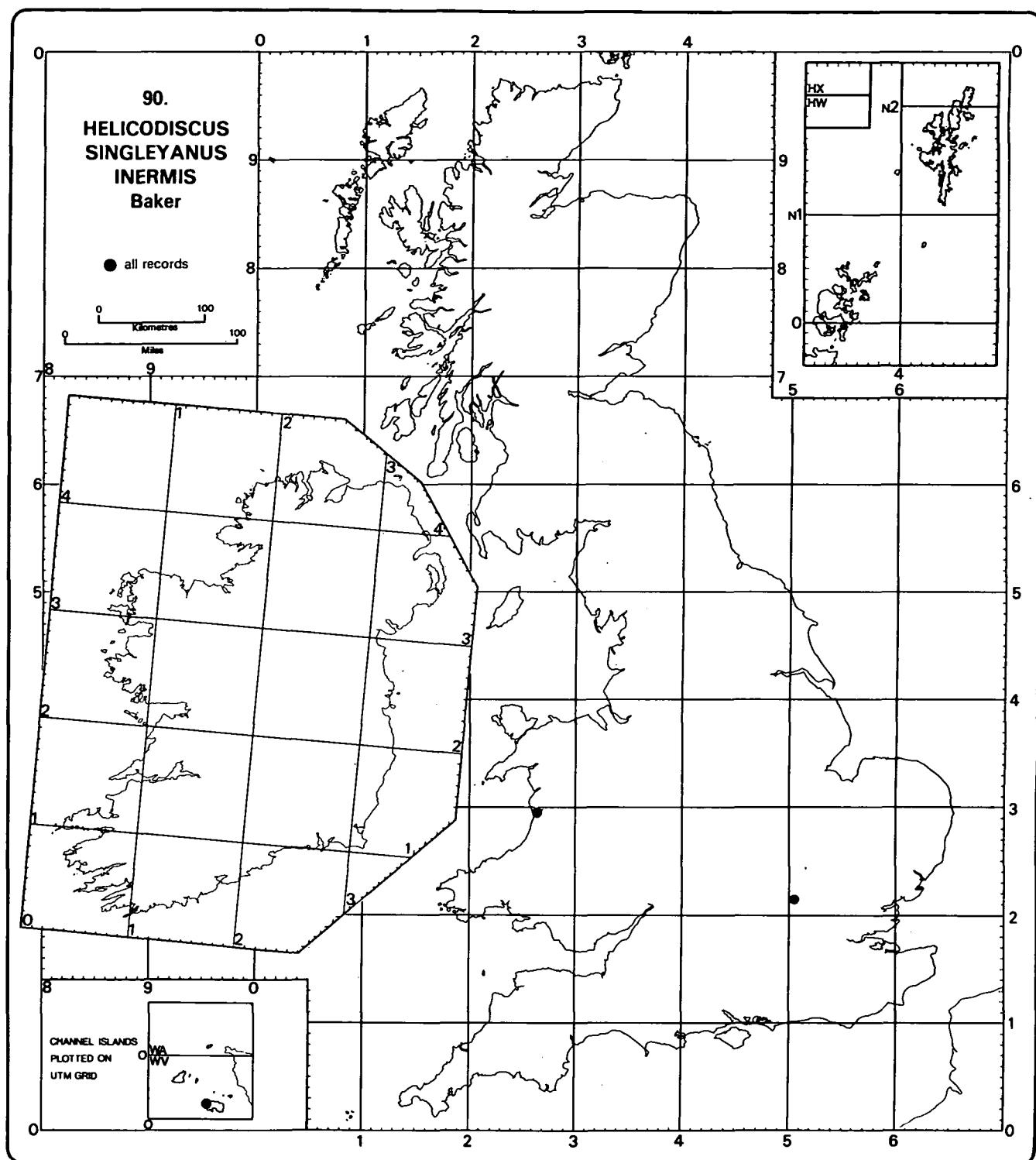


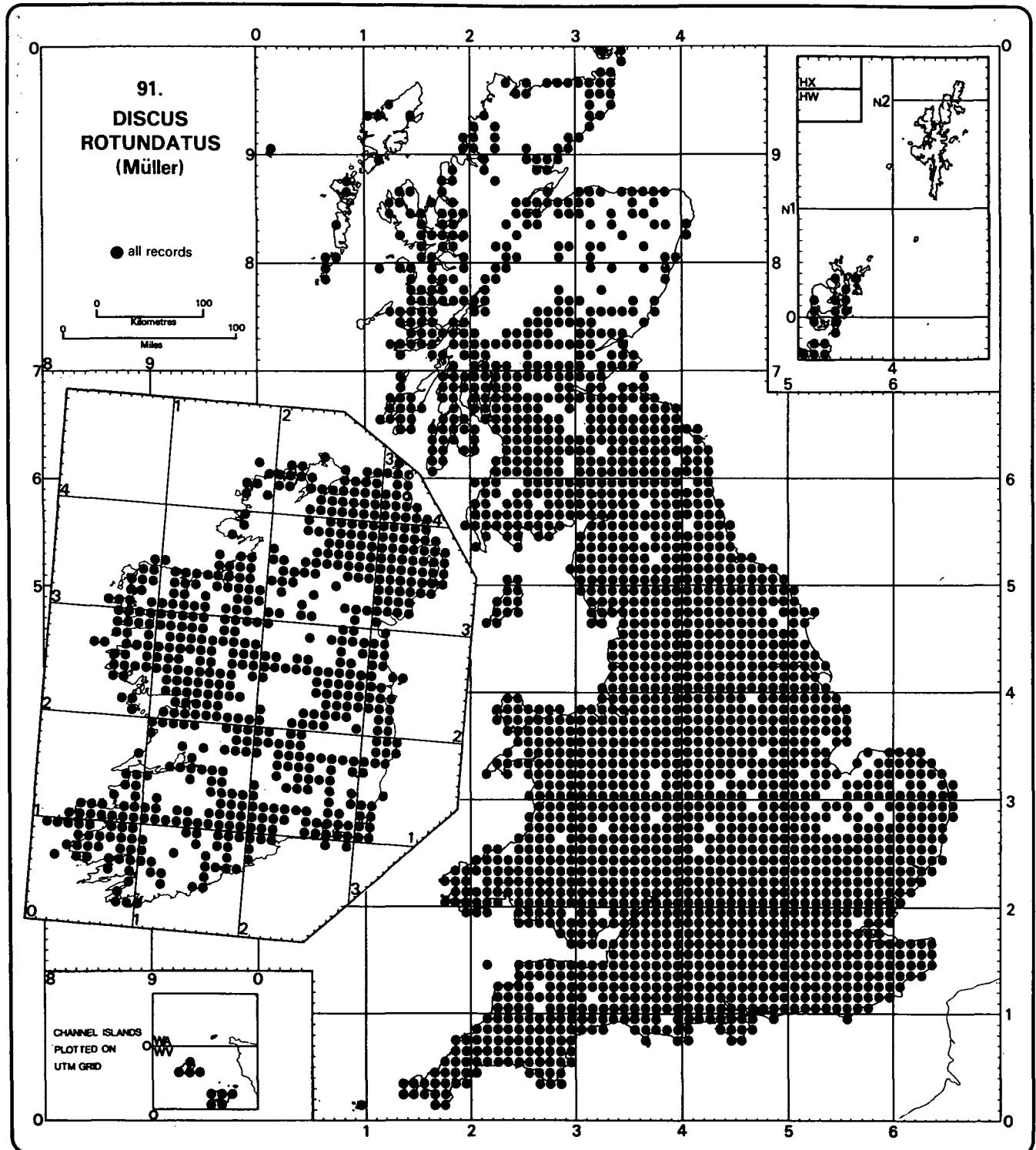
89.
PUNCTUM PYGMAEUM
(Draparnaud)

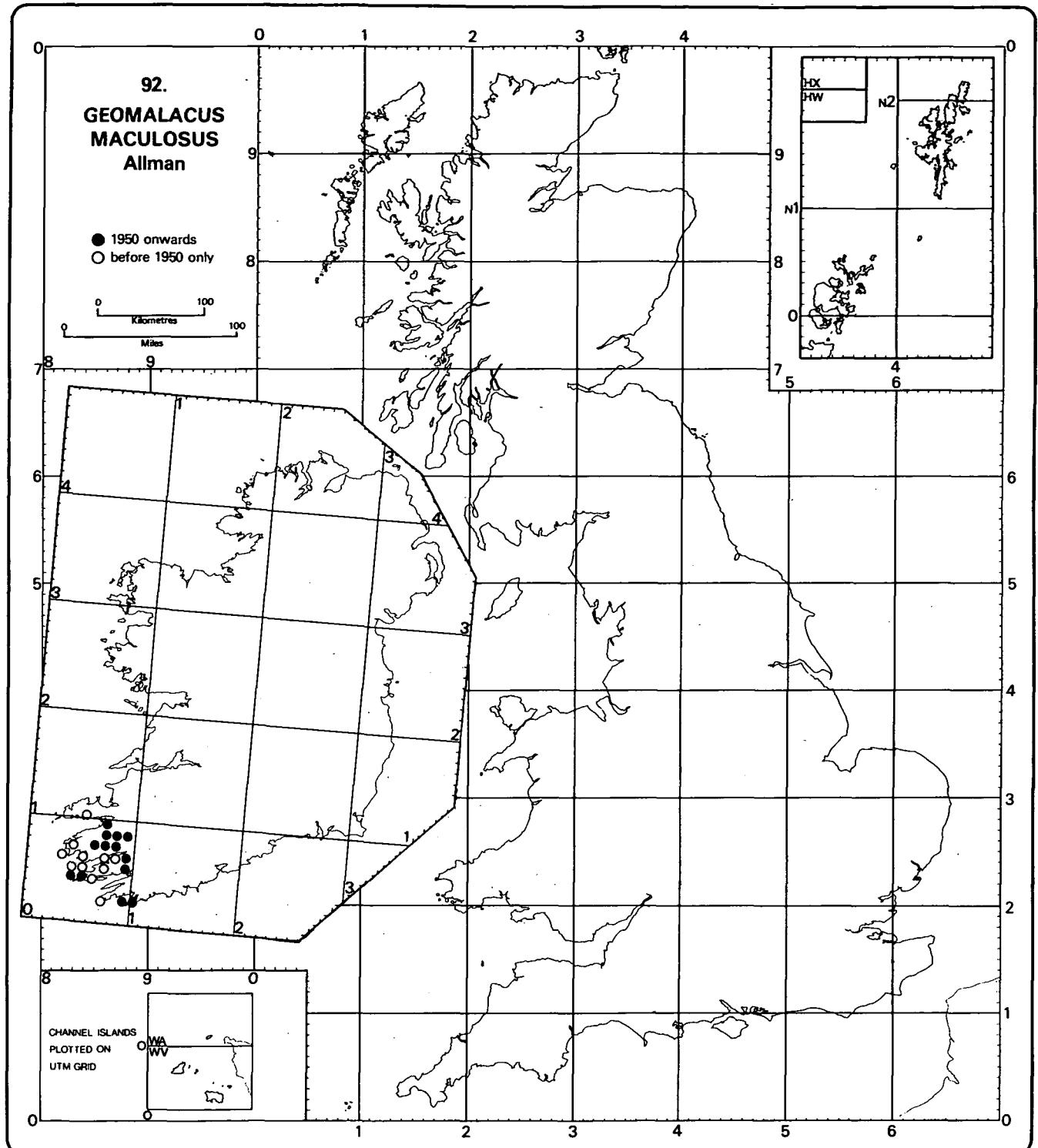
● all records

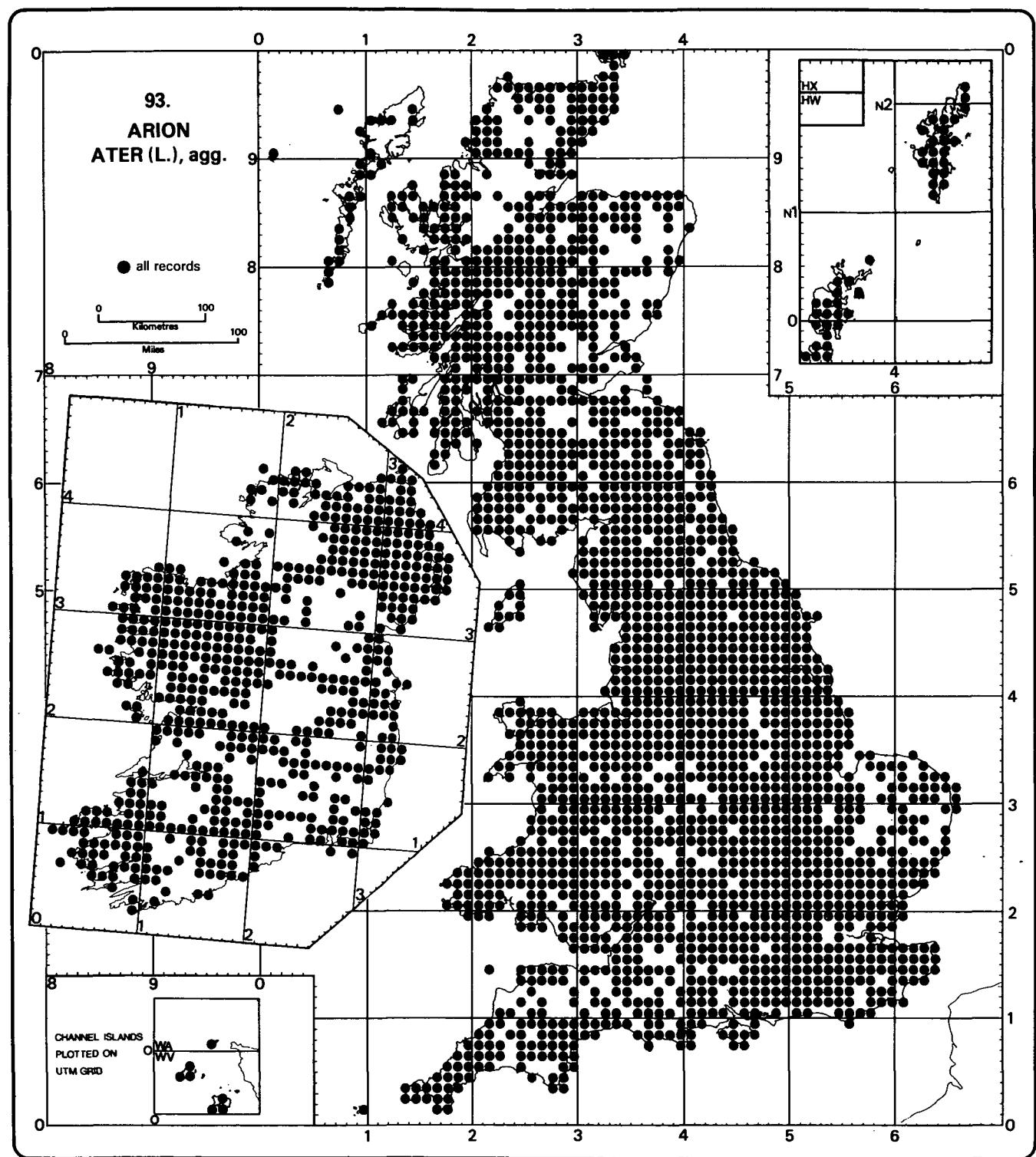
0 Kilometres
100 Miles

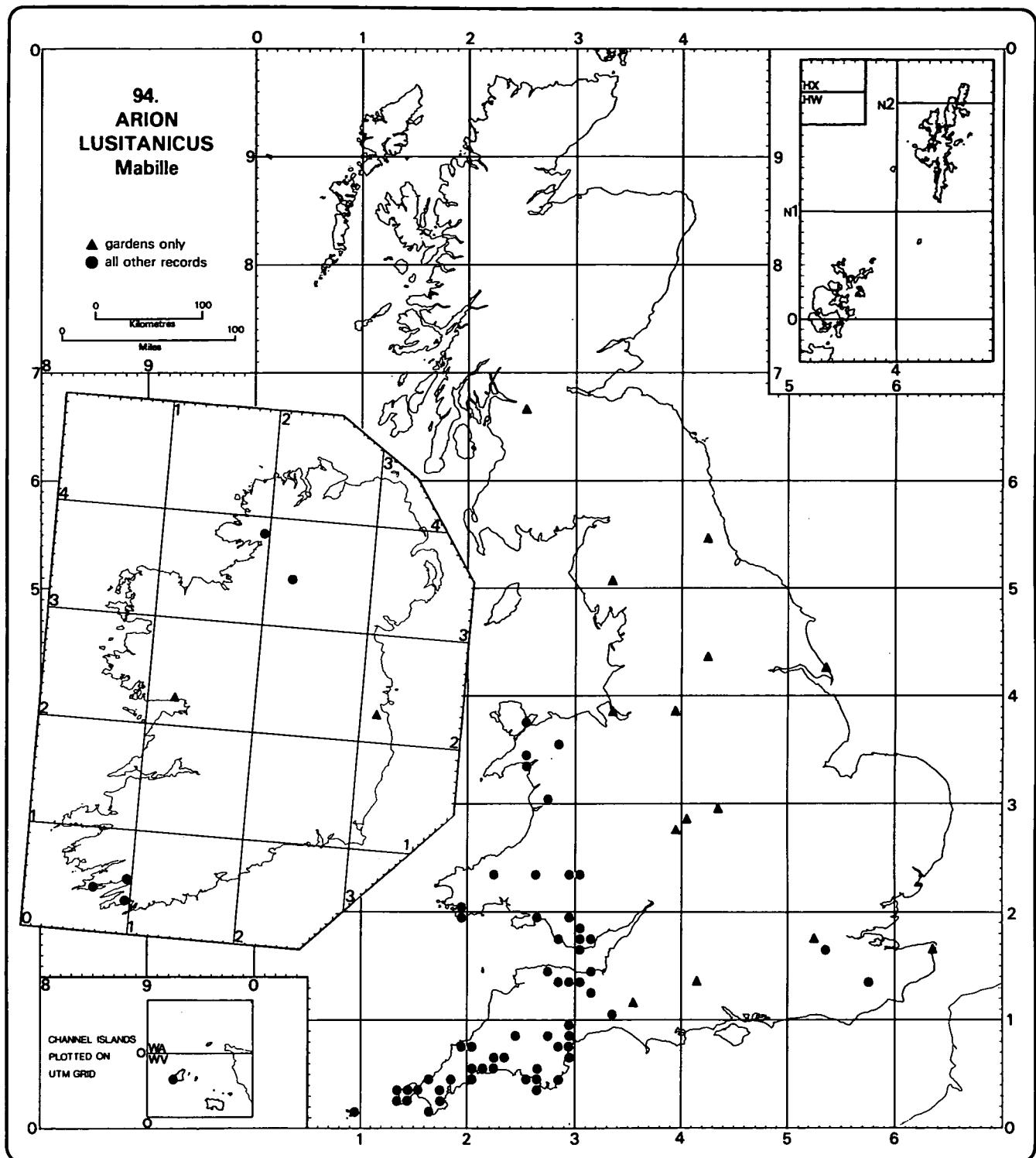


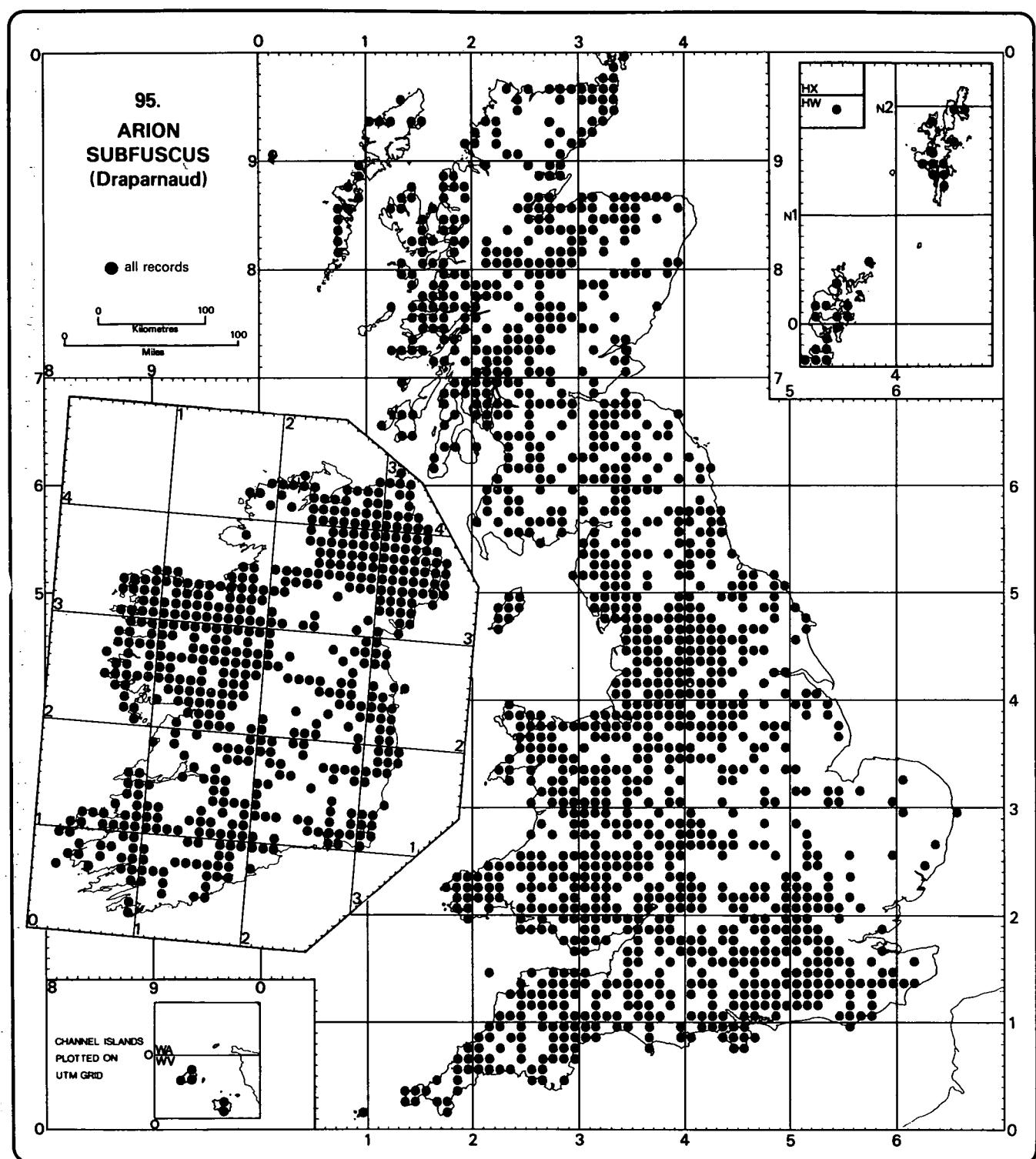


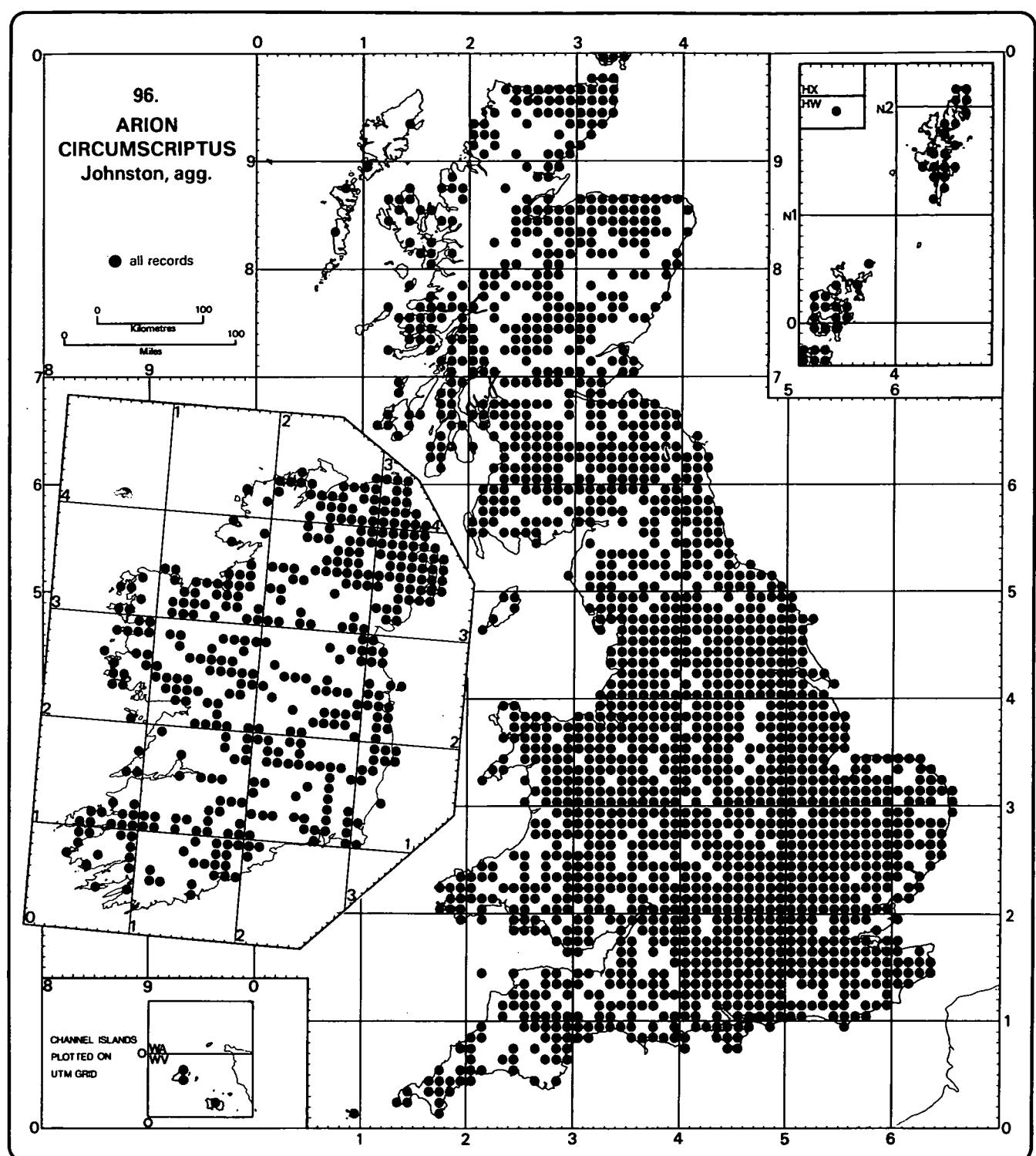












97.
ARION
CIRCUMSCRIPTUS
Johnston, seg.

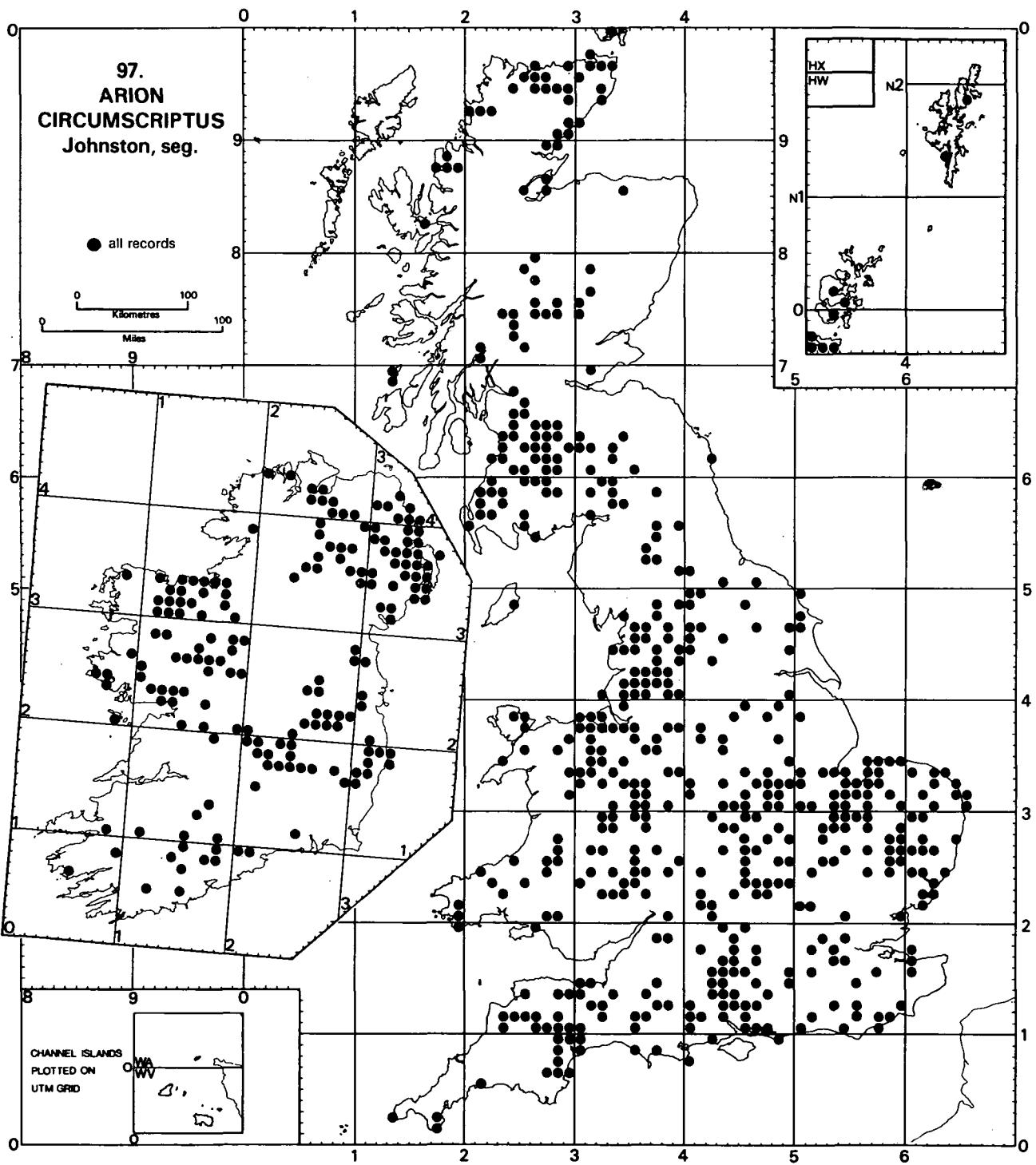
● all records

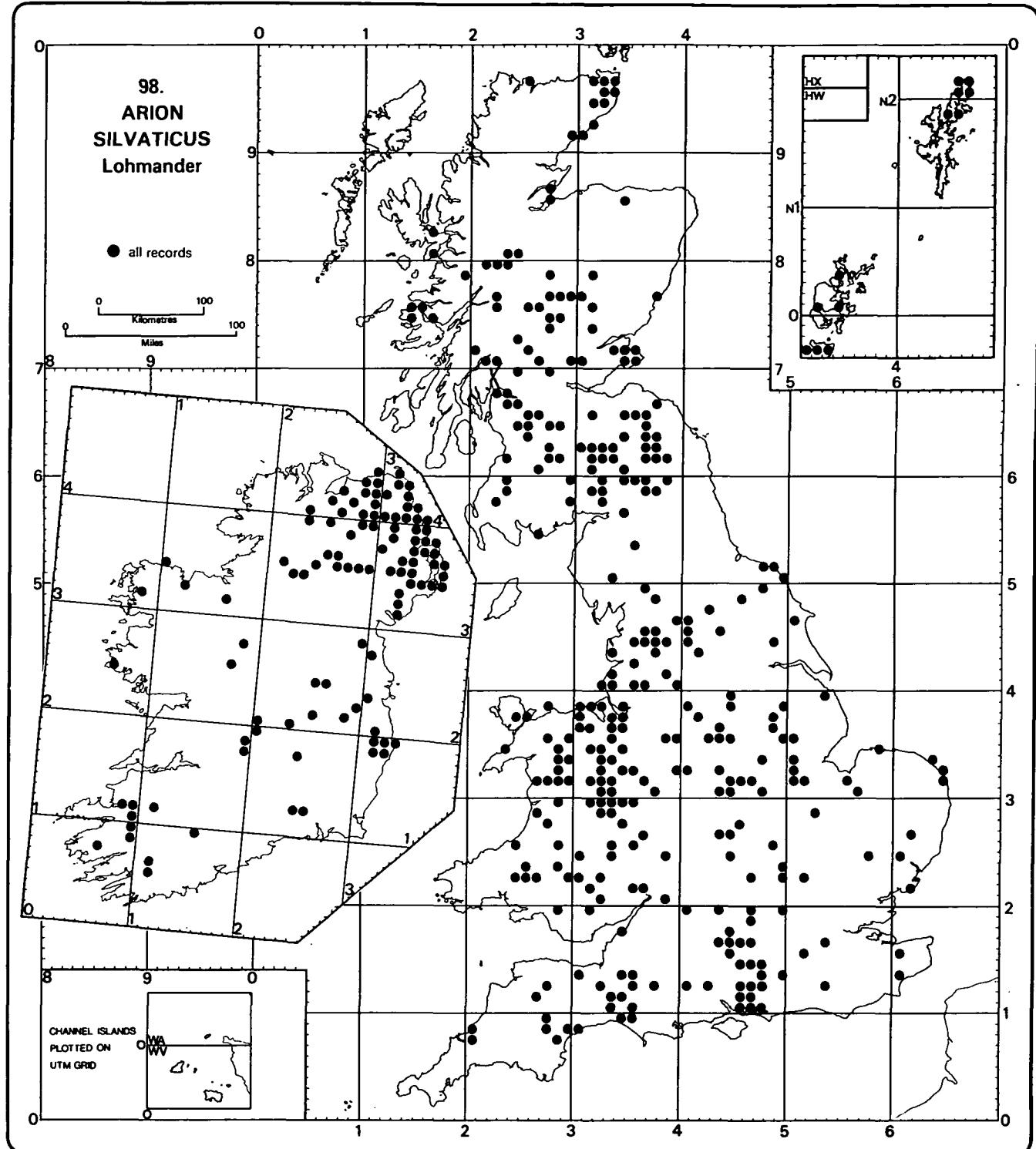
Kilometres

100

Miles

100

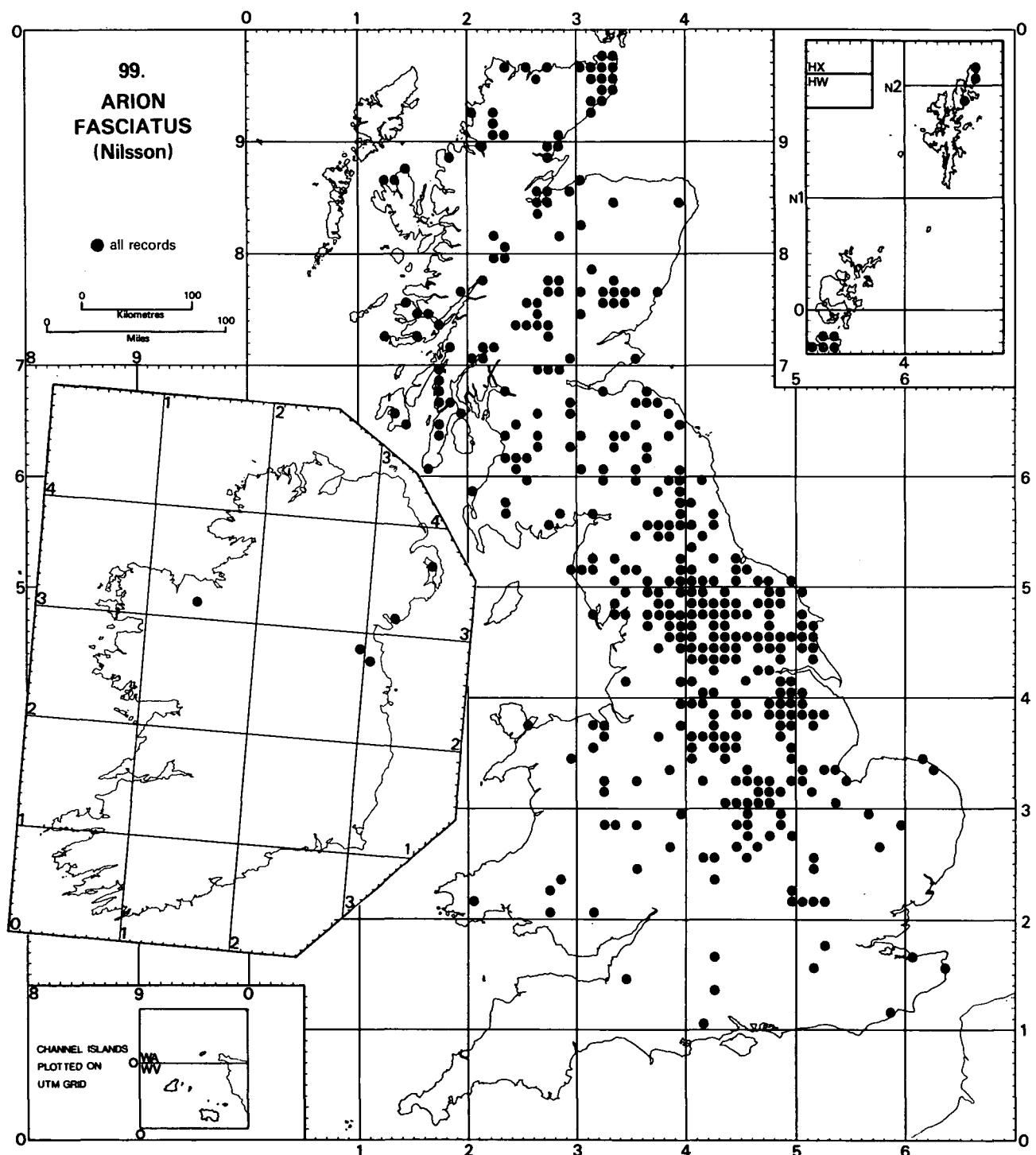




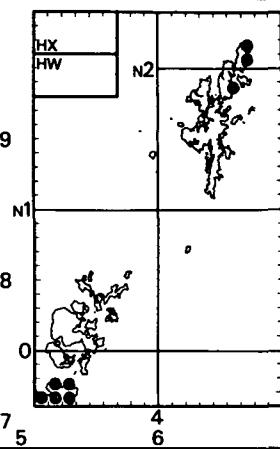
99.
ARION
FASCIATUS
(Nilsson)

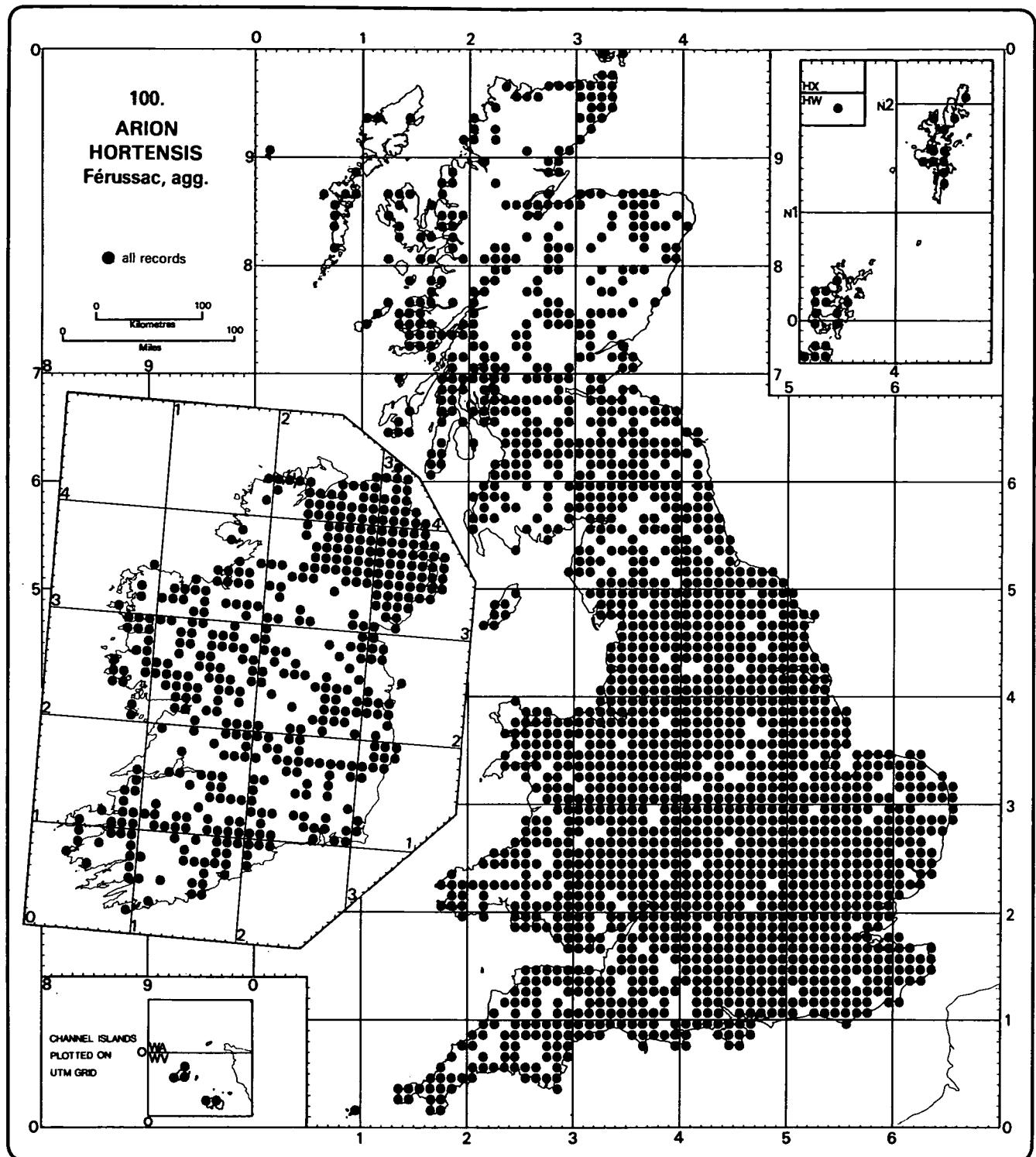
● all records

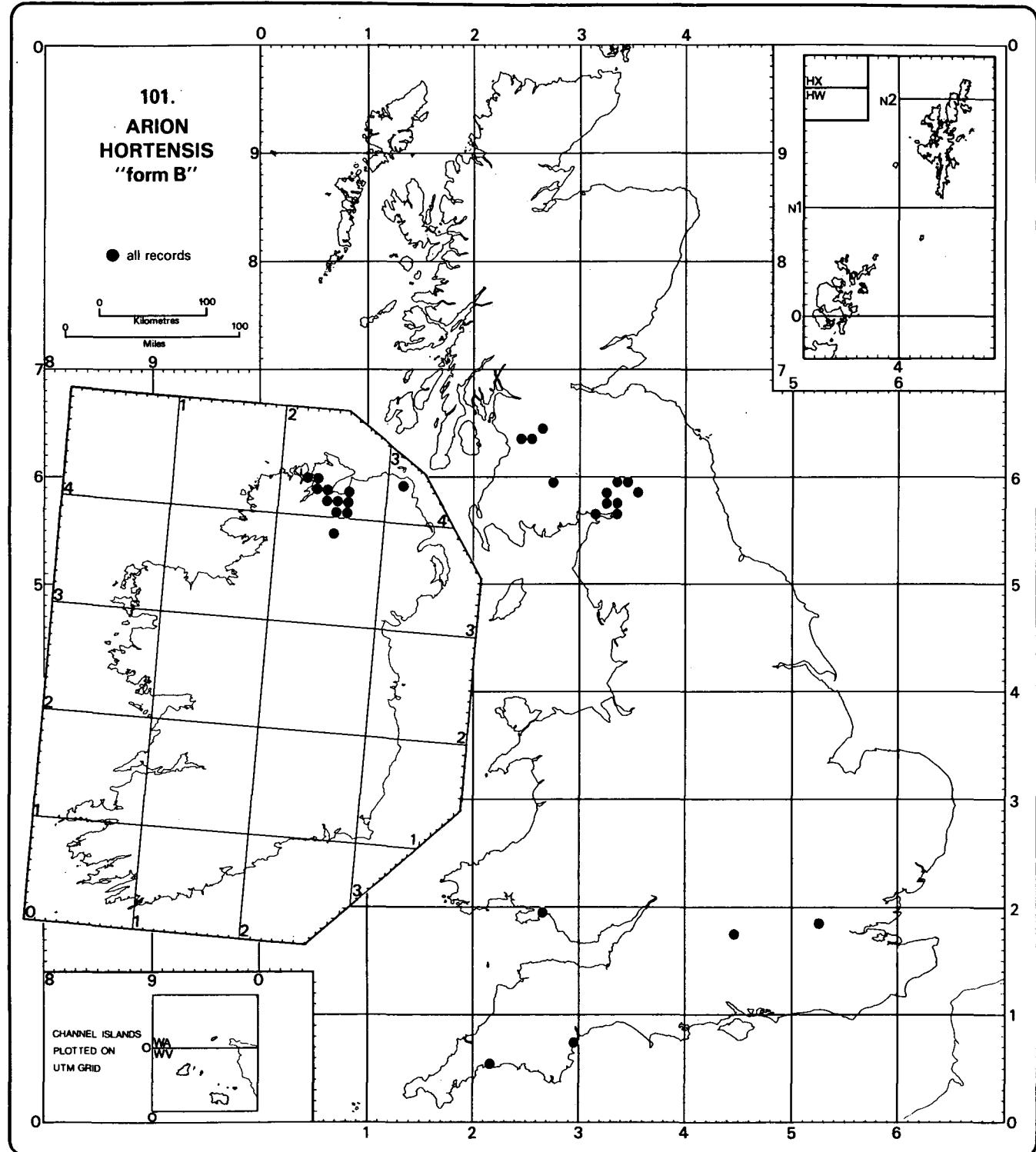
0 Kilometres
0 Miles

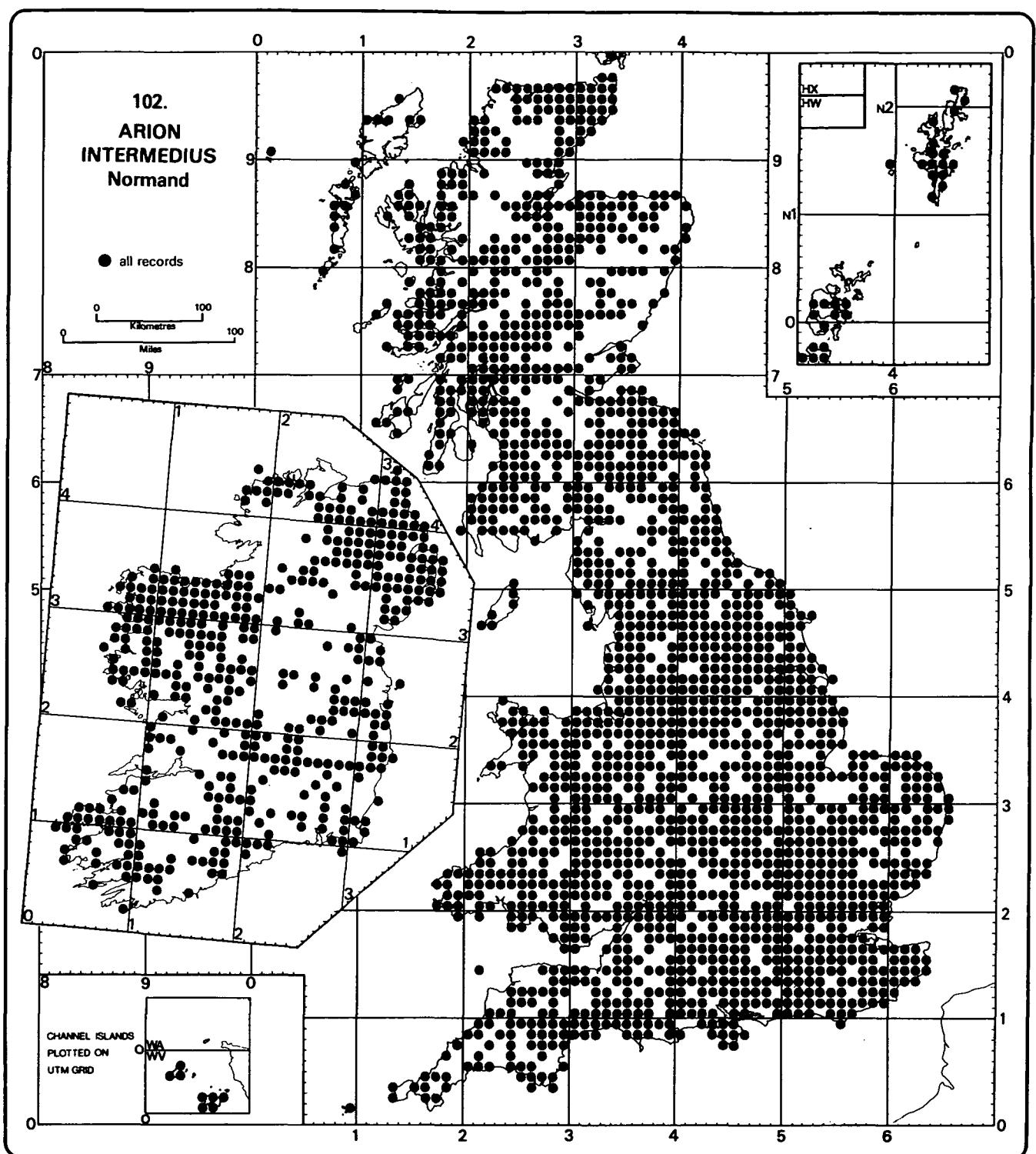


CHANNEL ISLANDS
PLOTTED ON
UTM GRID





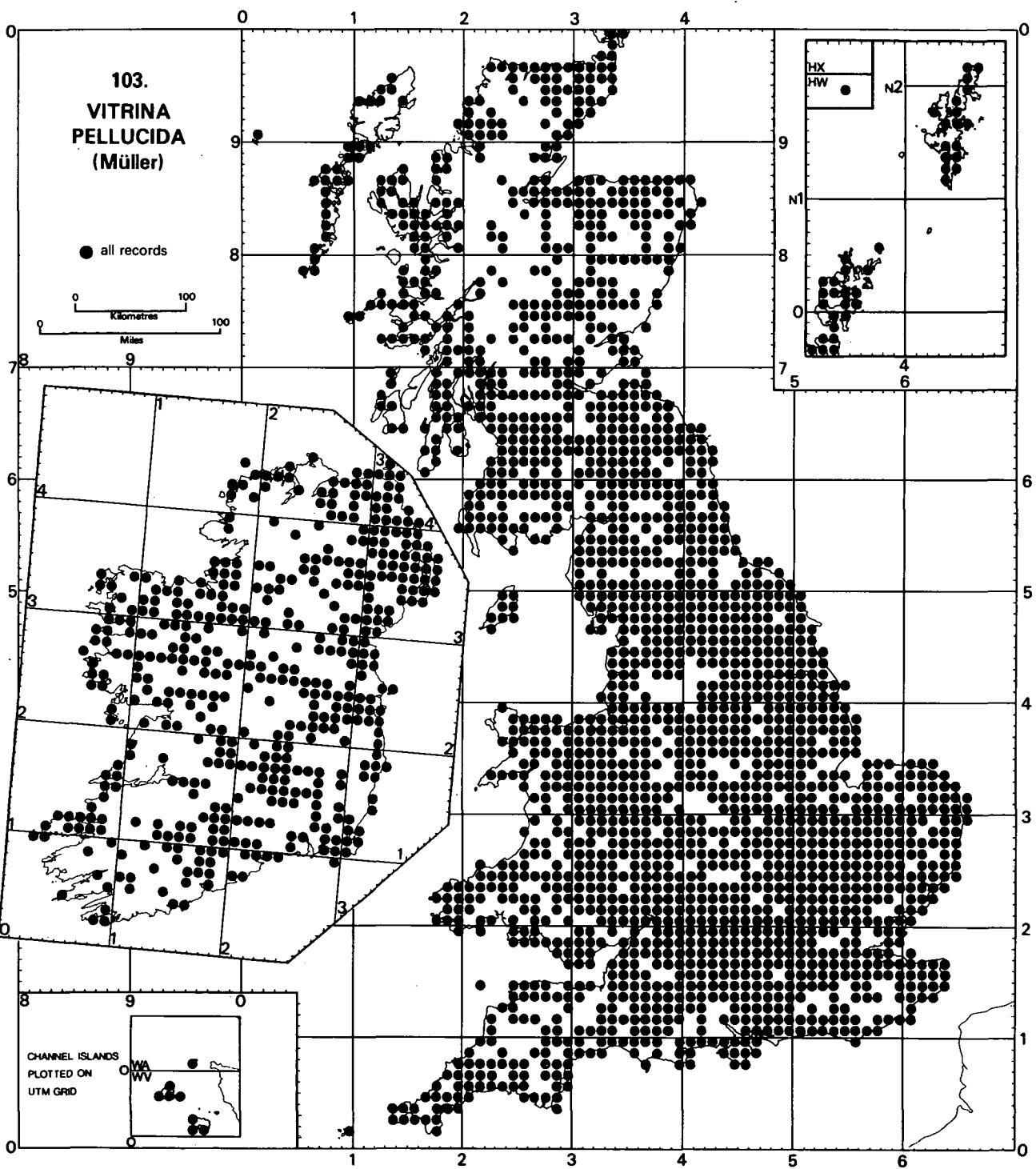




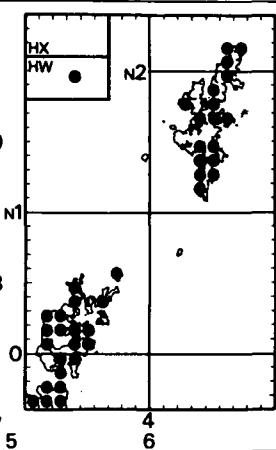
103.
**VITRINA
PELLUCIDA**
(Müller)

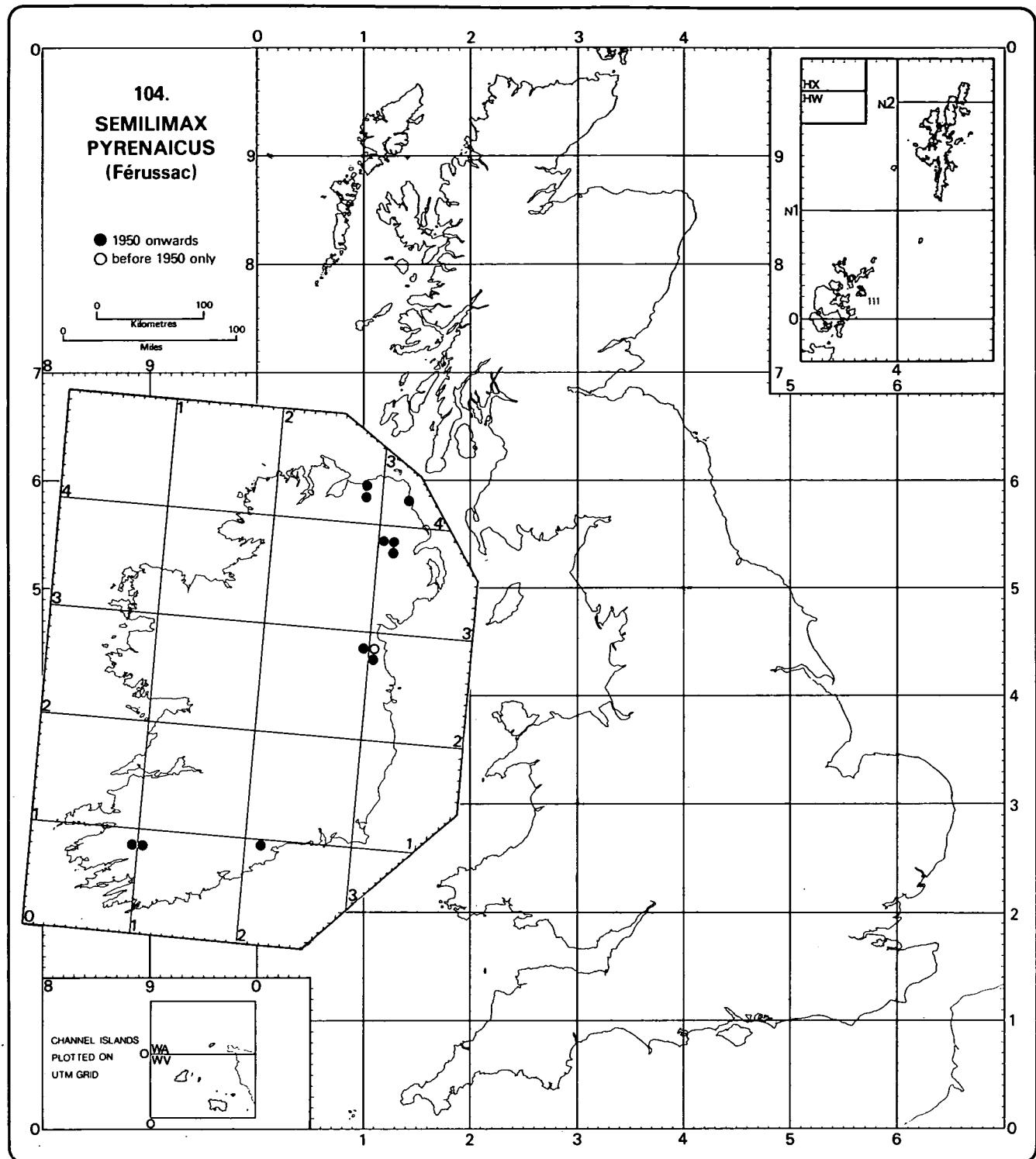
● all records

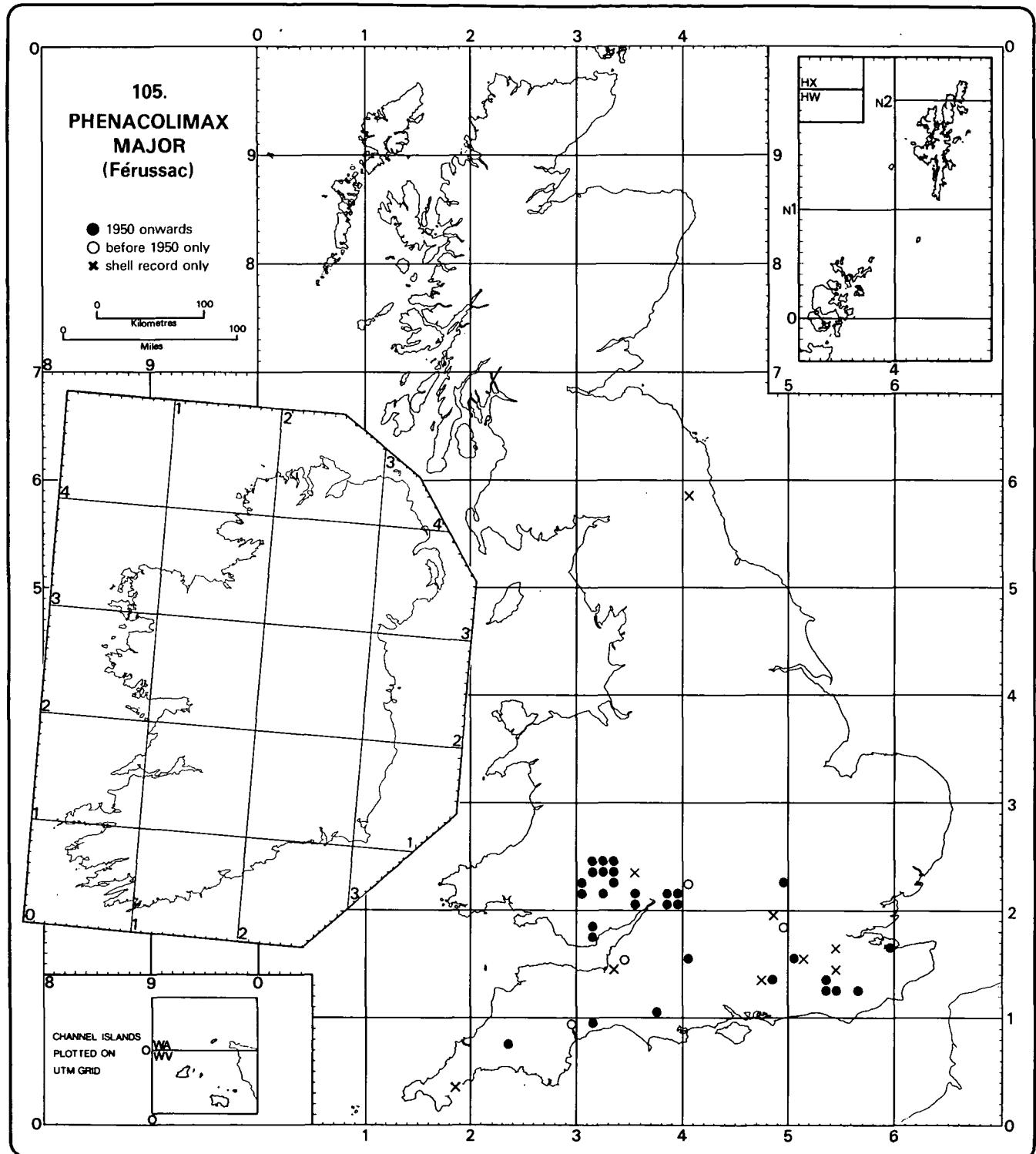
0 Kilometres
100 Miles
100

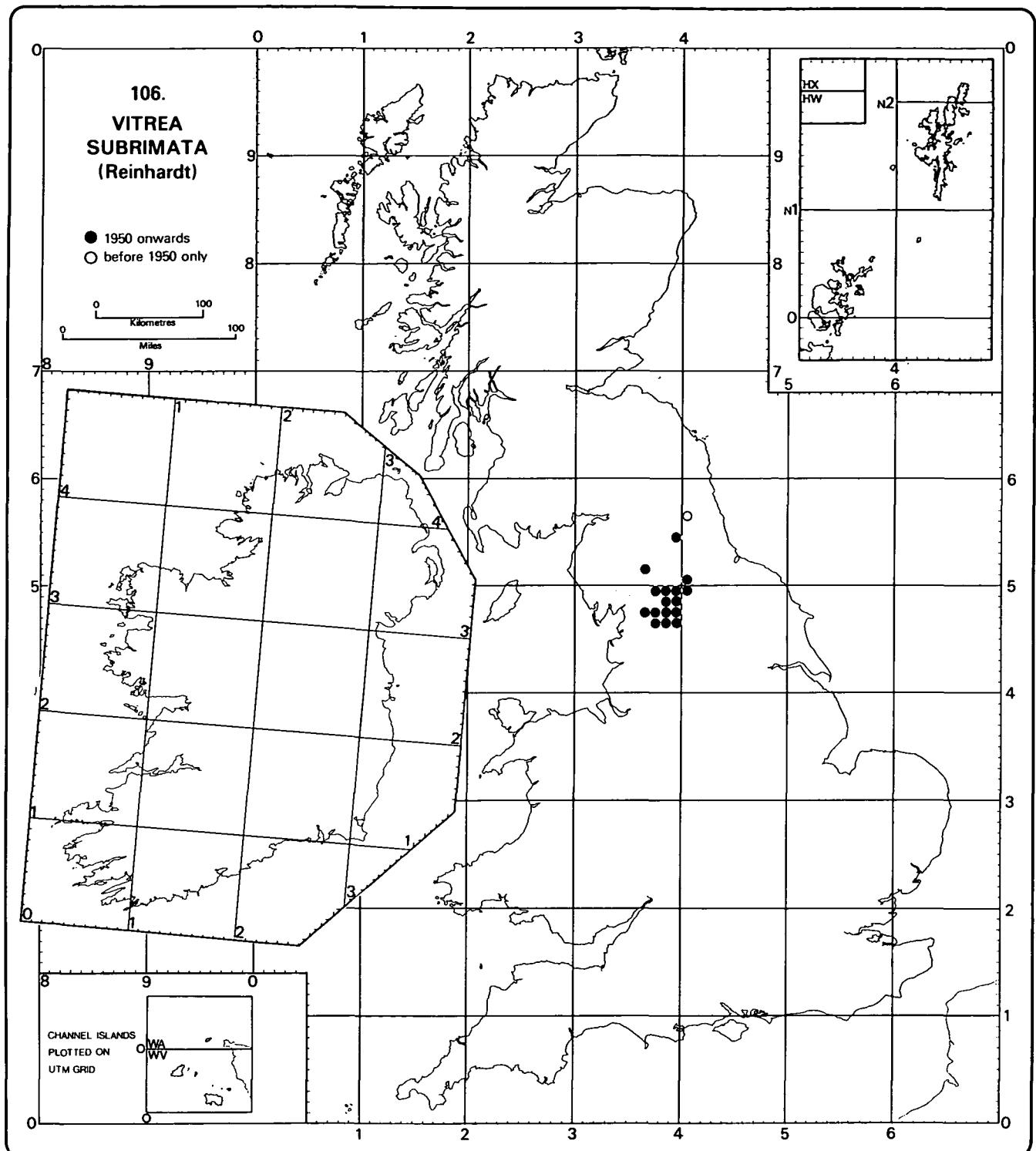


CHANNEL ISLANDS
PLOTTED ON
UTM GRID







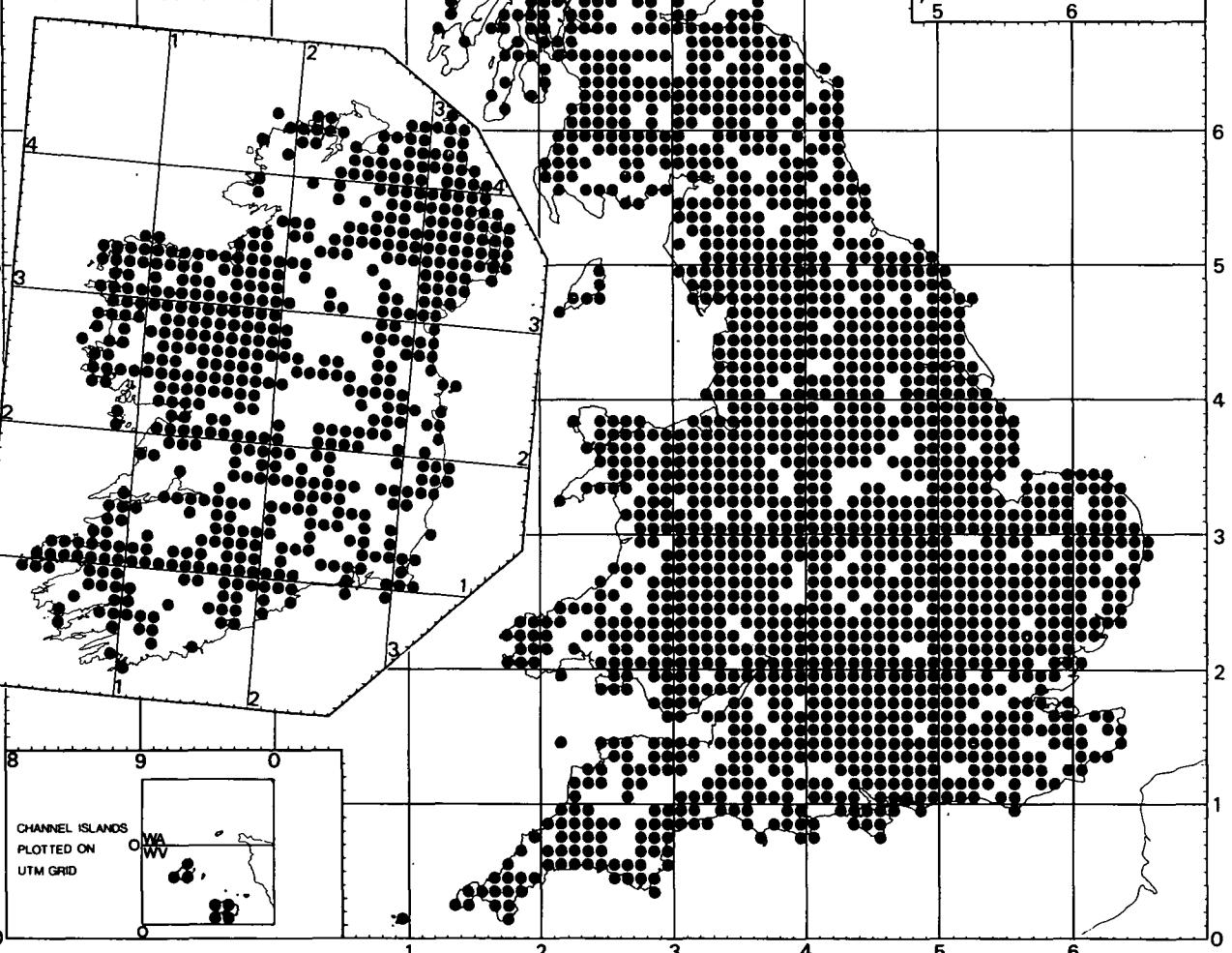
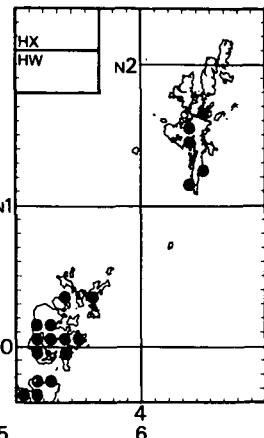


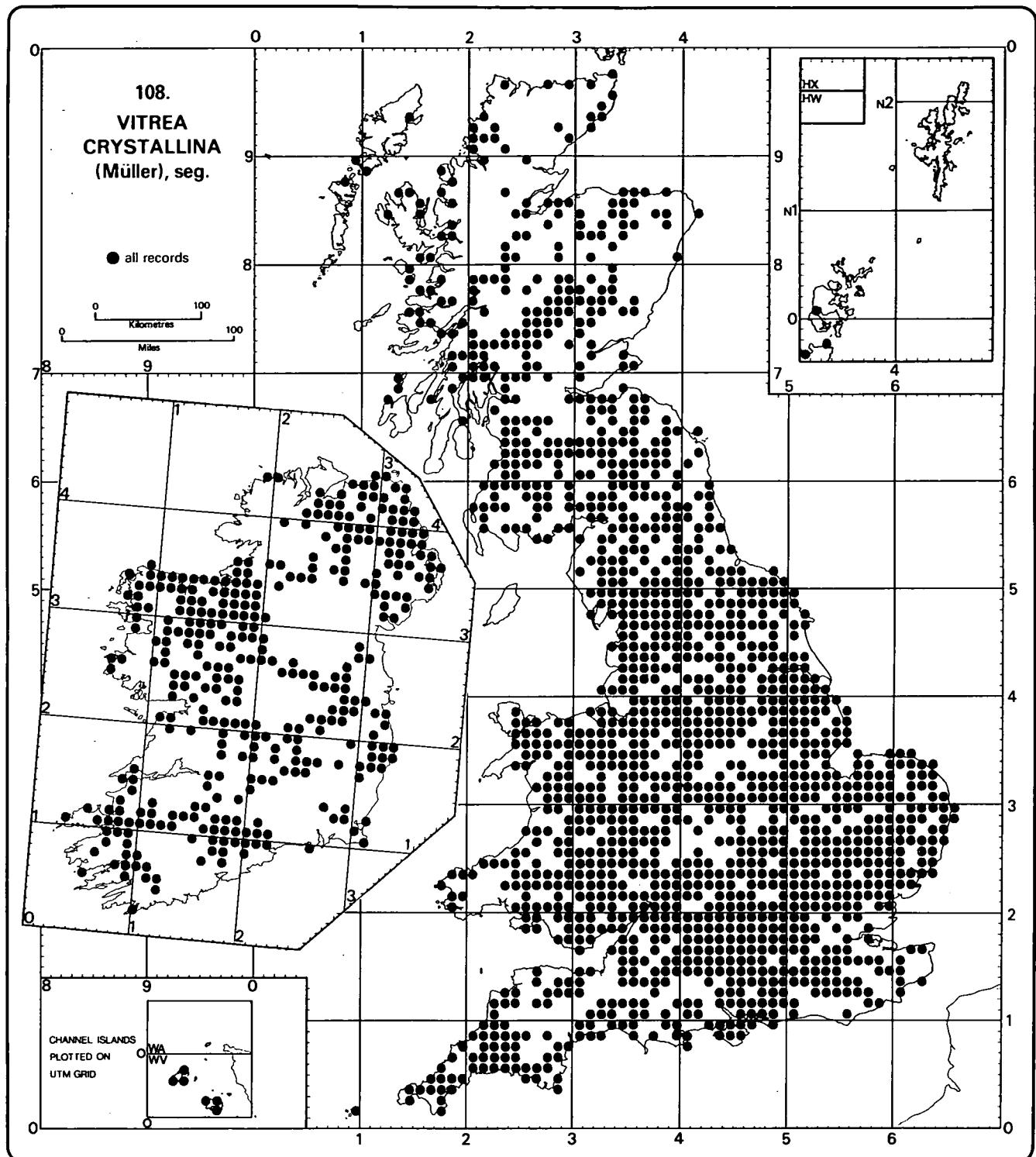
107.
VITREA
CRYSTALLINA
(Müller), agg.

● all records

0 Kilometres
0 Miles

100 100

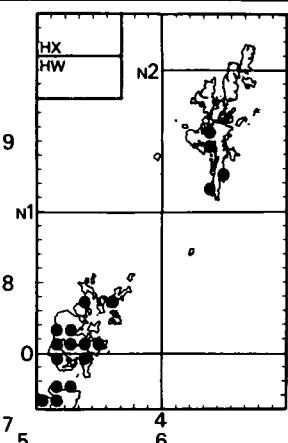
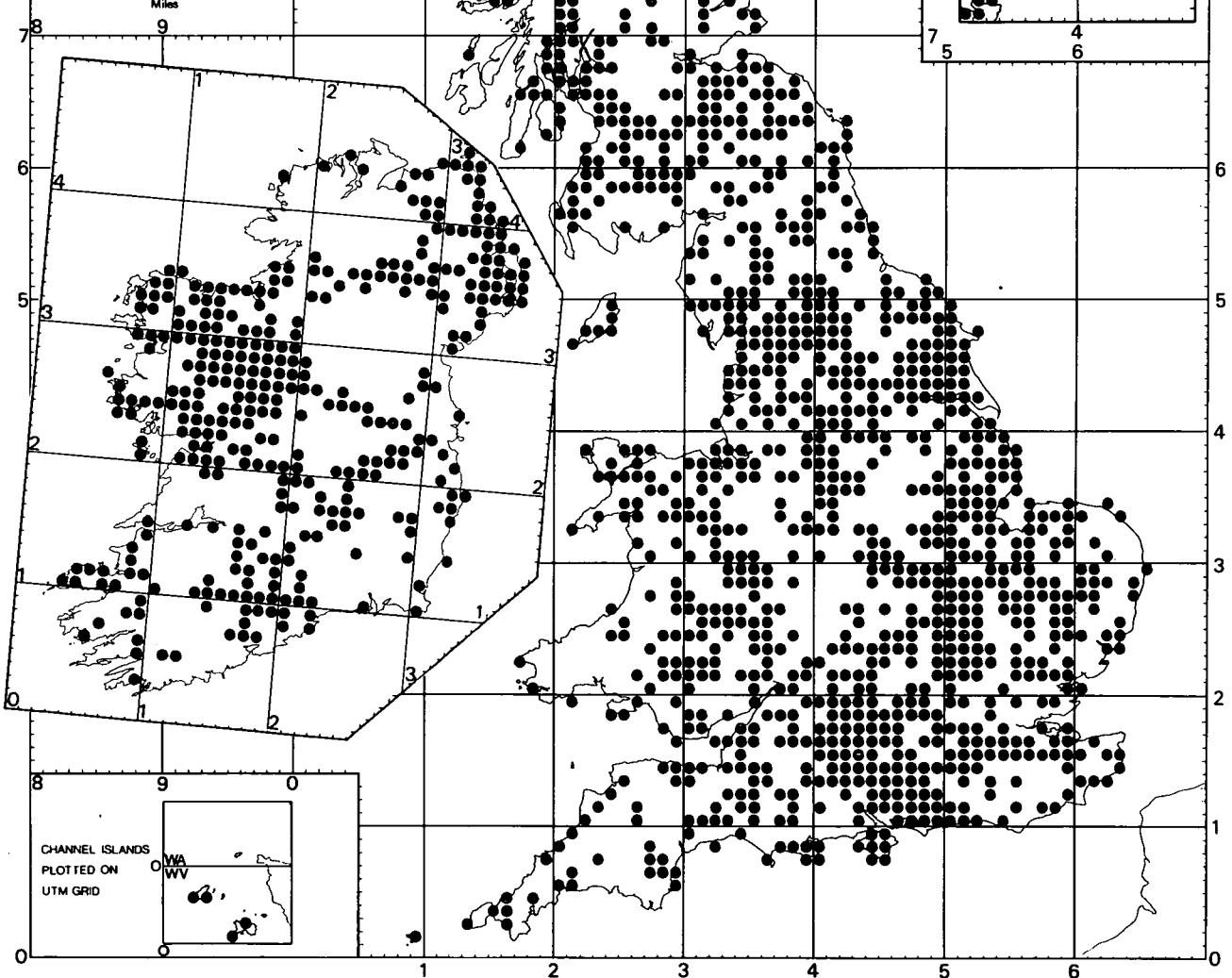


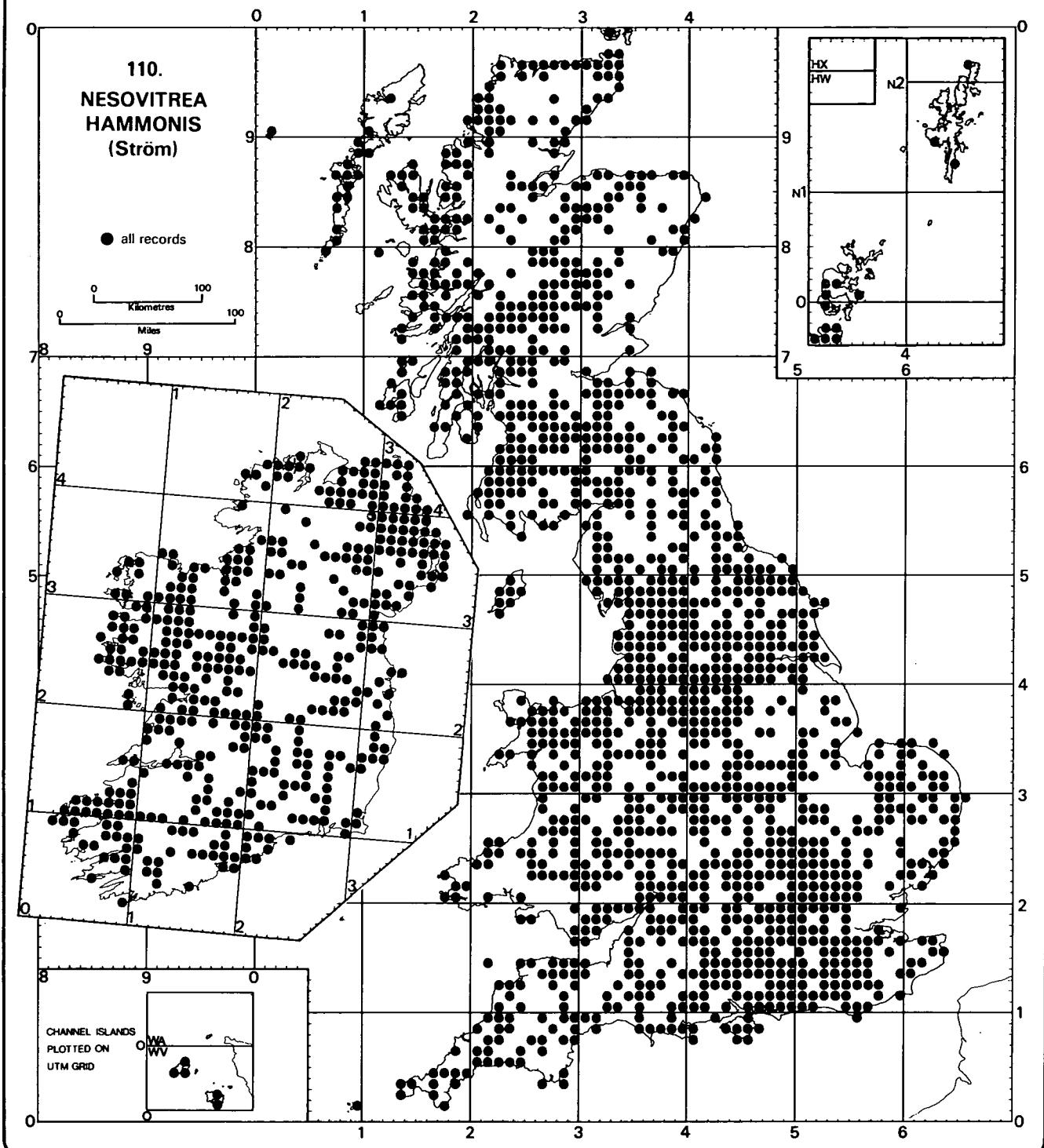


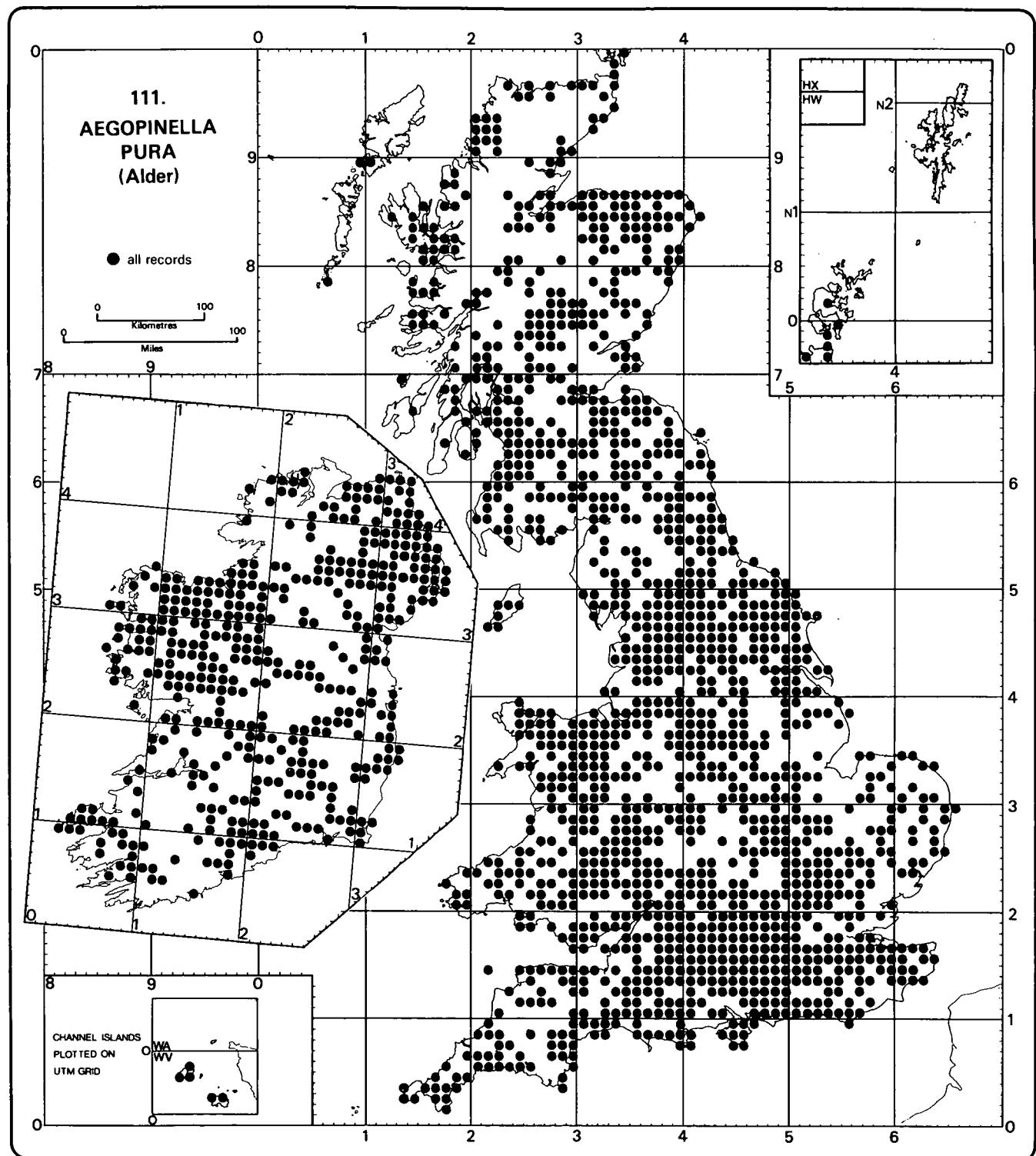
109.
**VITREA
CONTRACTA**
(Westerlund)

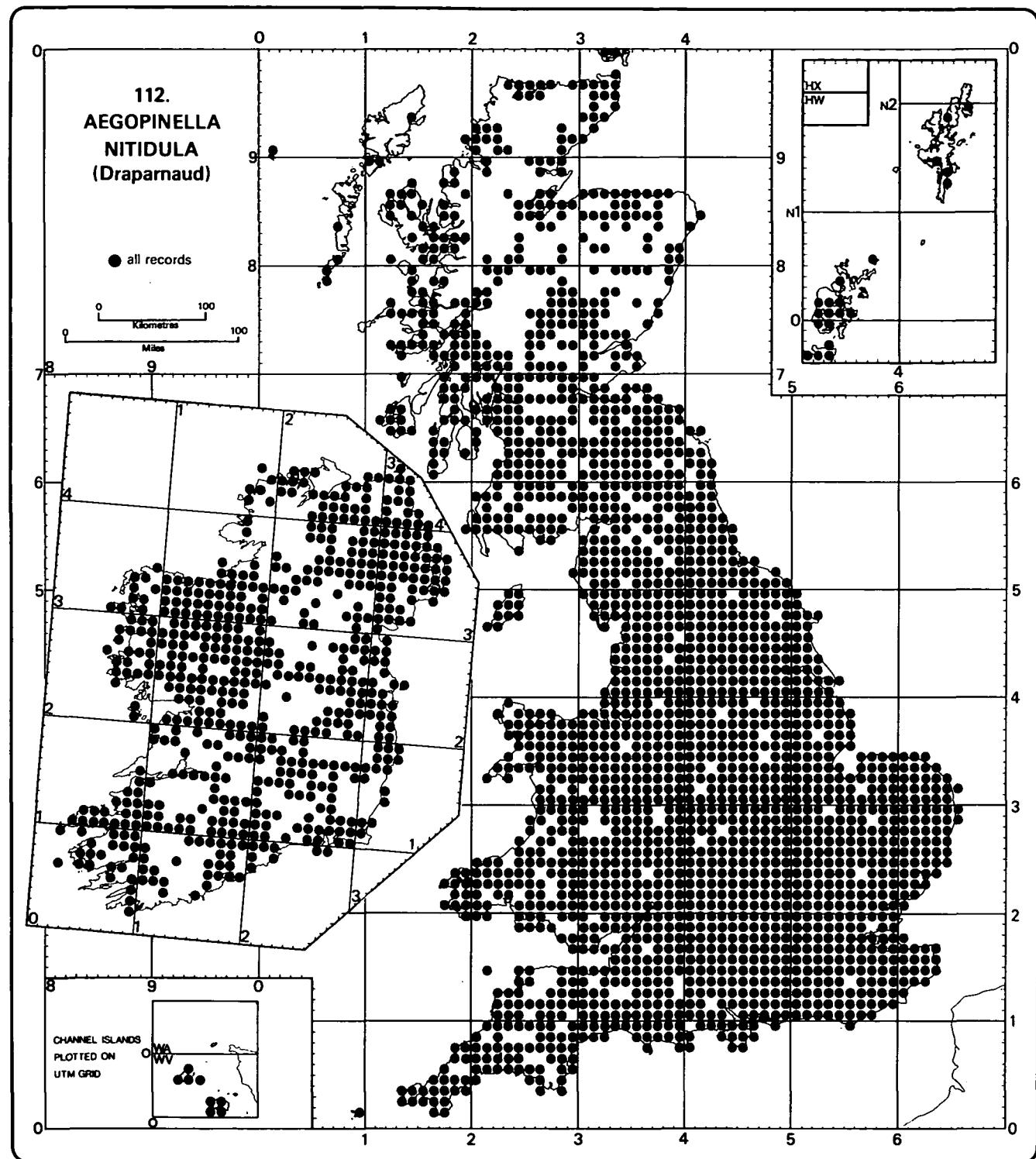
● all records

0 Kilometres
0 Miles





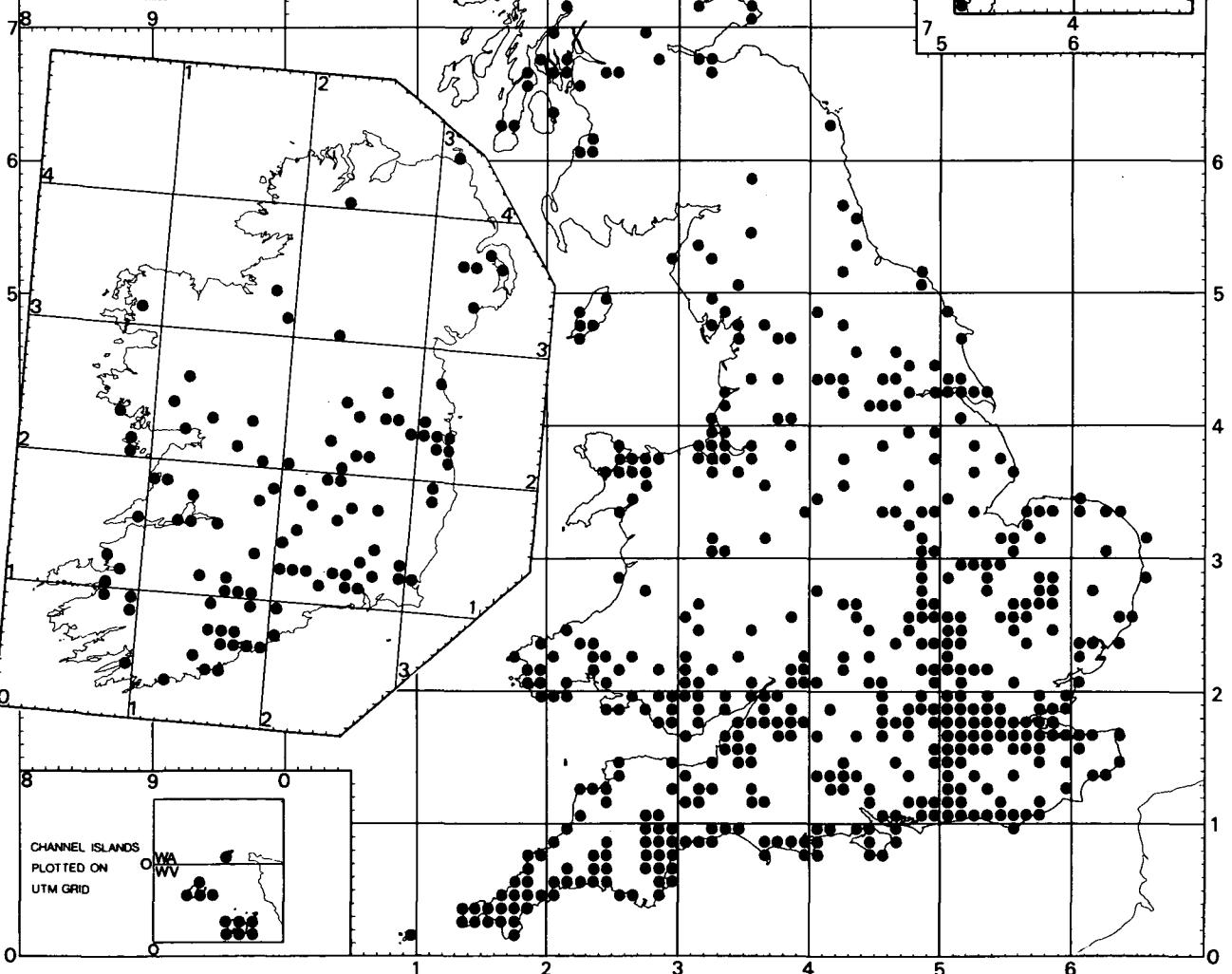


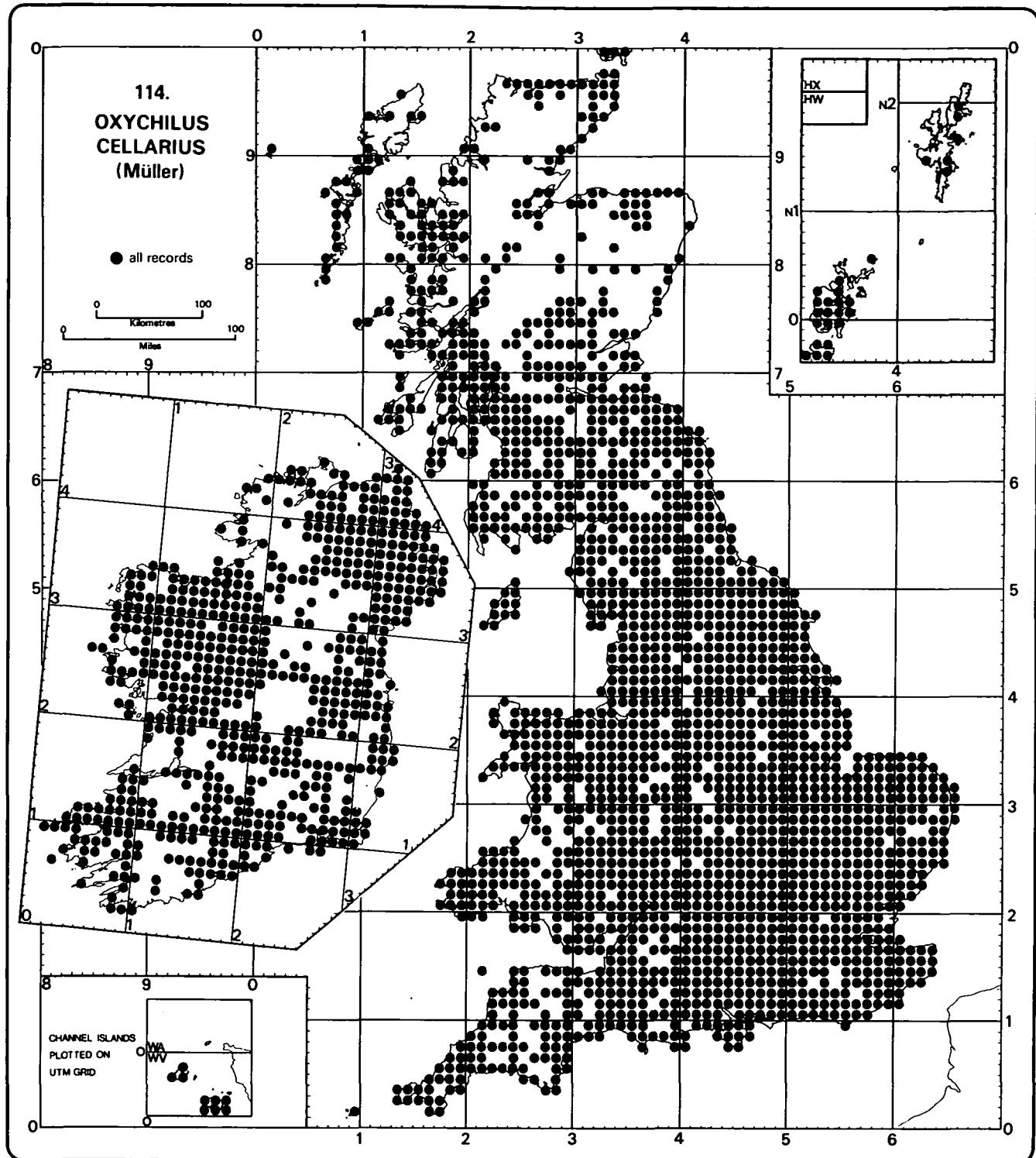


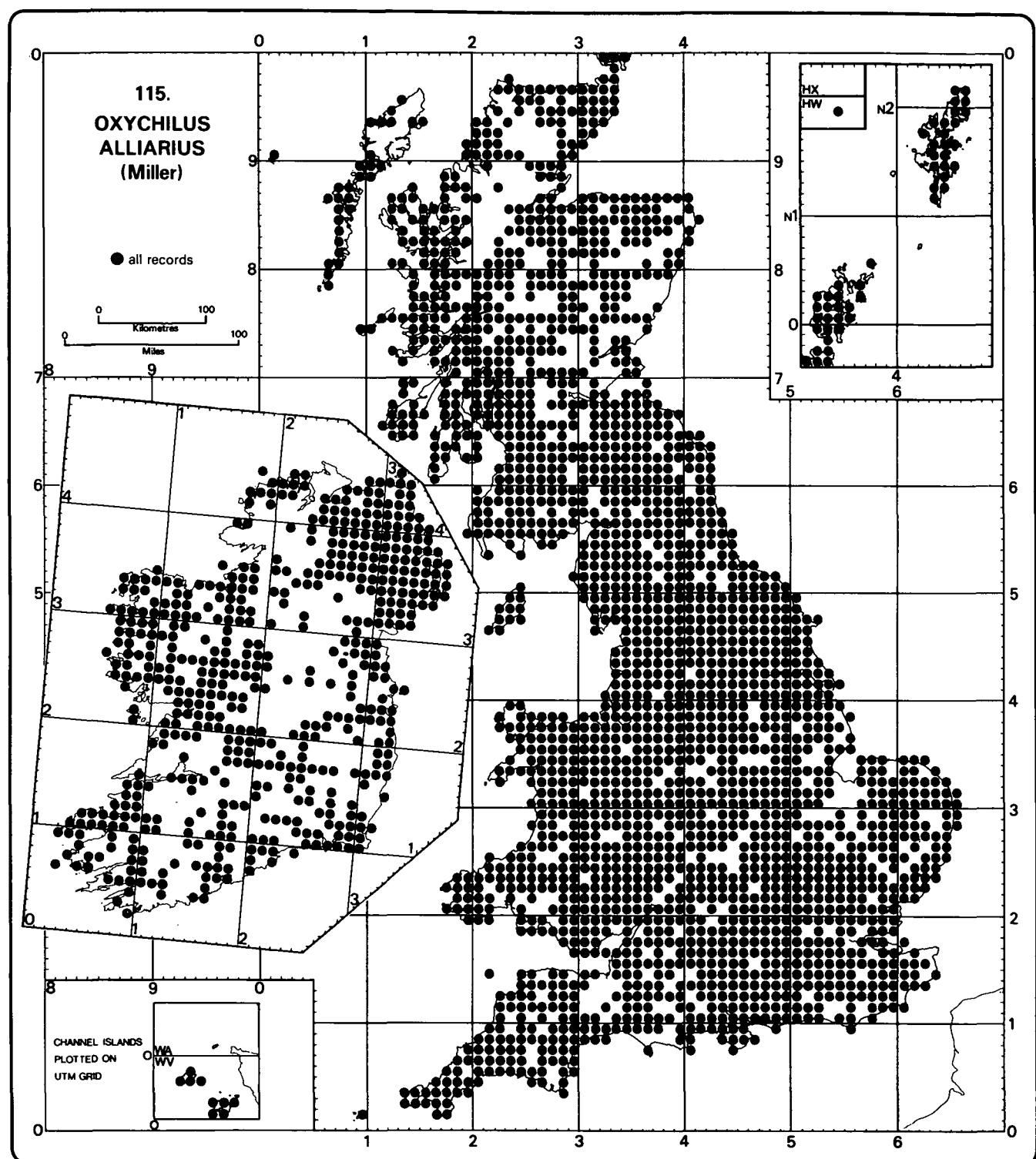
113.
OXYCHILUS
DRAPARNAUDI
(Beck)

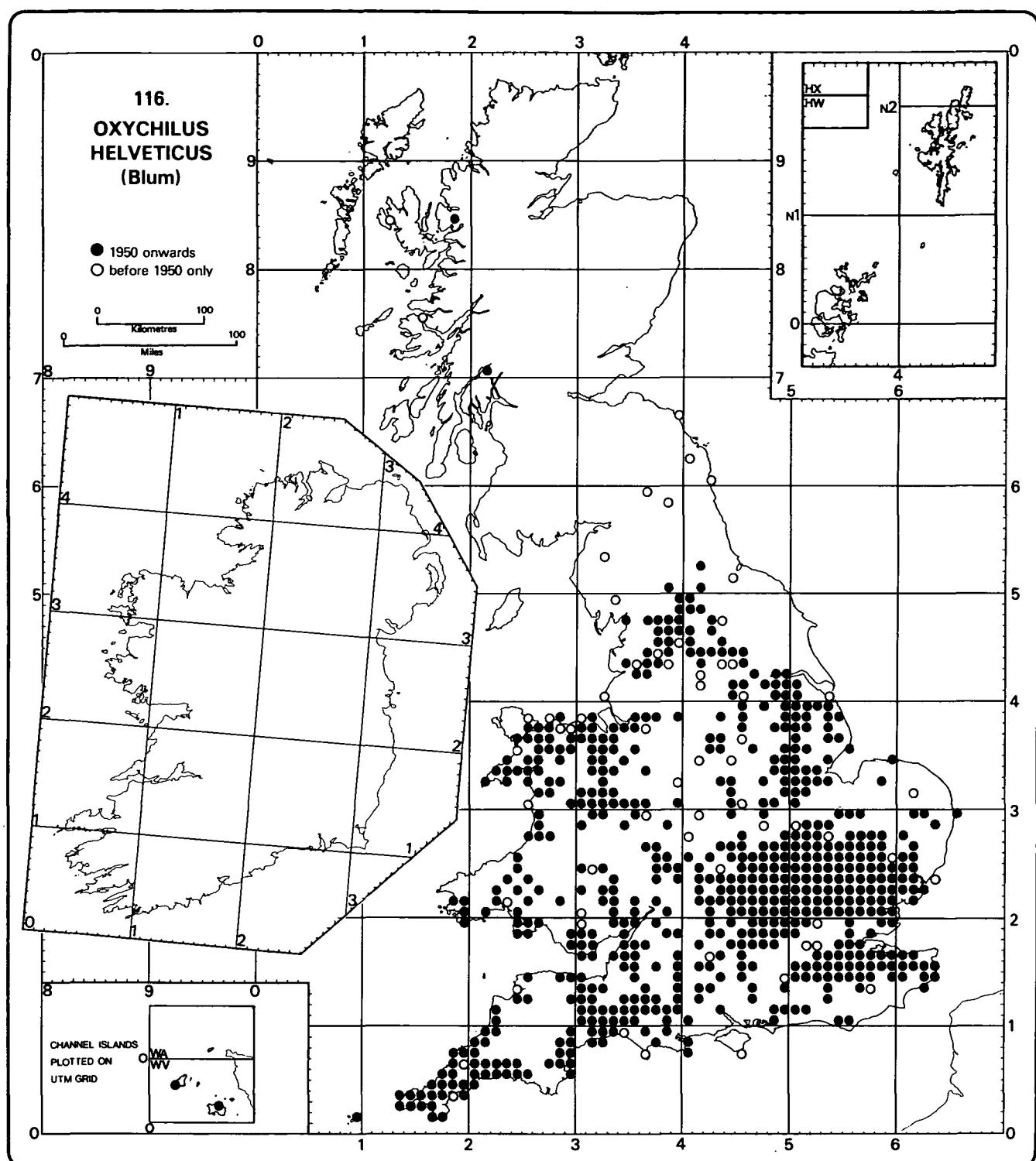
● all records

0 Kilometres
100 Miles





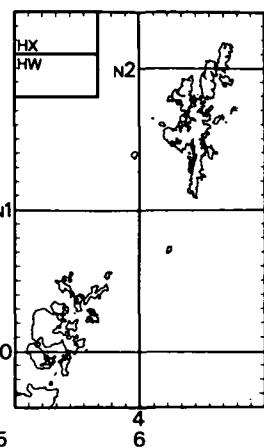
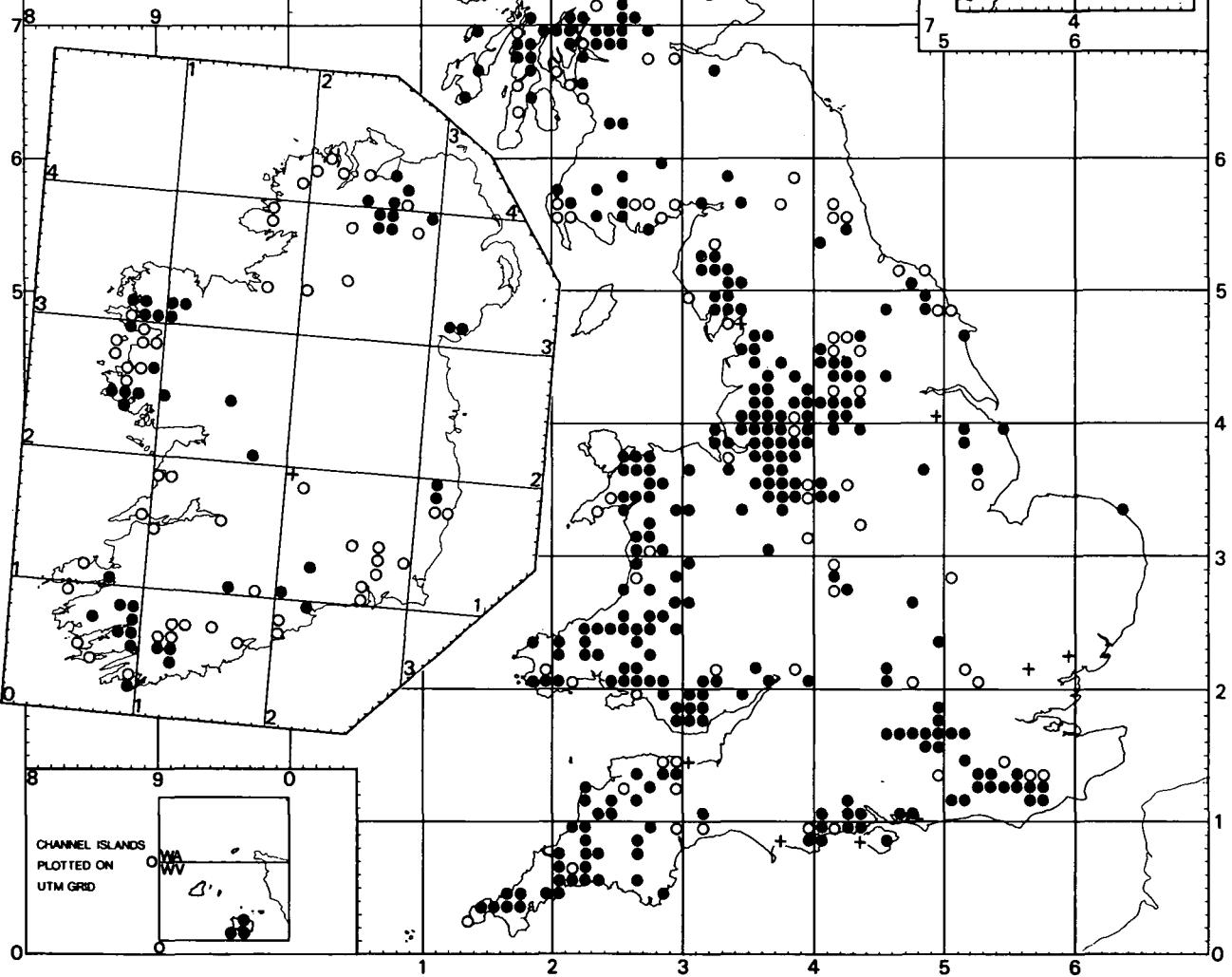


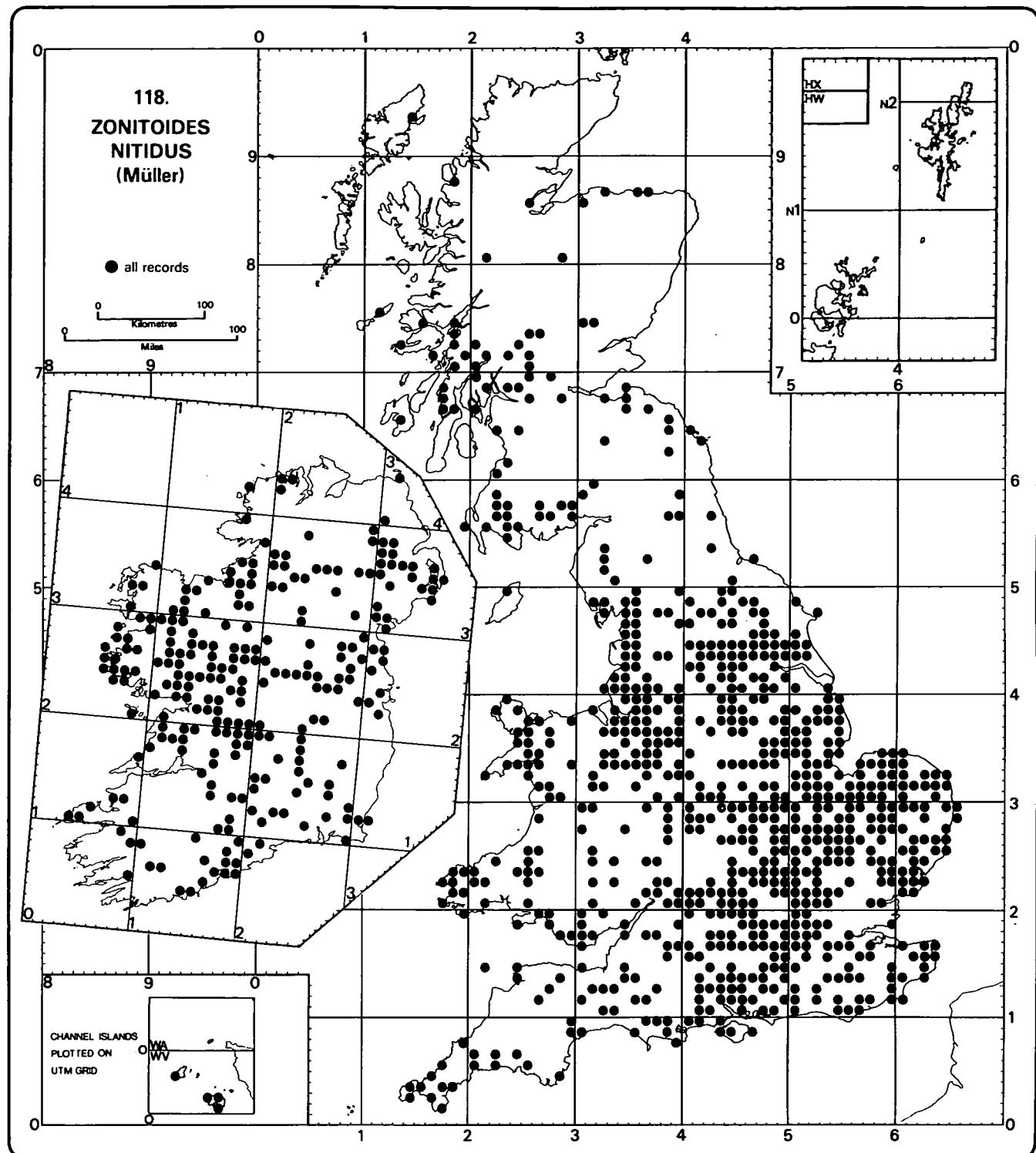


117.
**ZONITOIDES
EXCAVATUS**
(Alder)

- 1950 onwards
- before 1950 only
- + Flandrian fossils

0 Kilometres
100 Miles

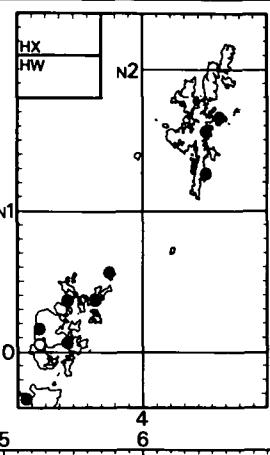




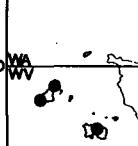
119.
MILAX
GAGATES
(Draparnaud)

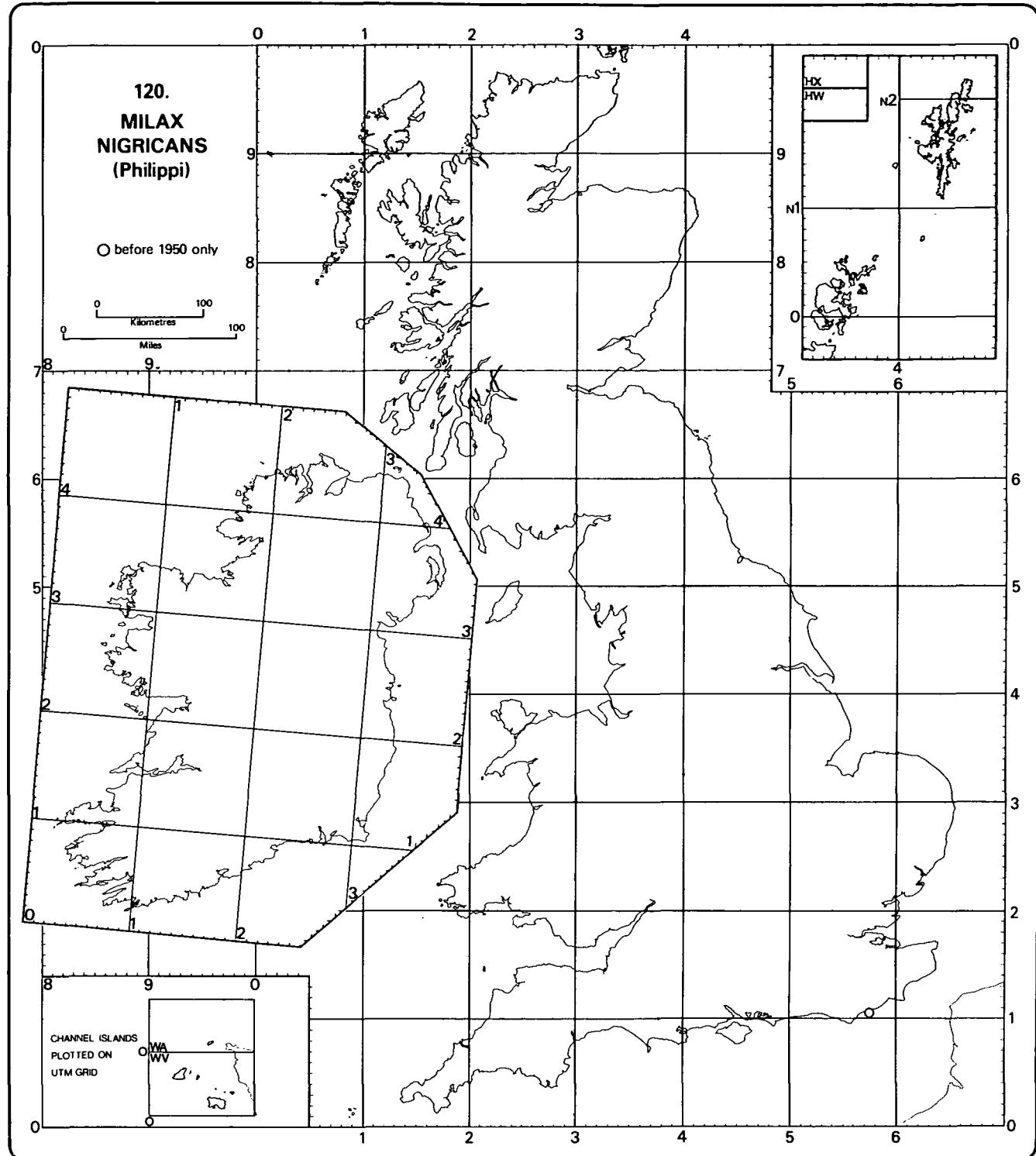
● verified 1930 onwards
○ before 1930 only

0 Kilometres
0 Miles



CHANNEL ISLANDS
PLOTTED ON
UTM GRID

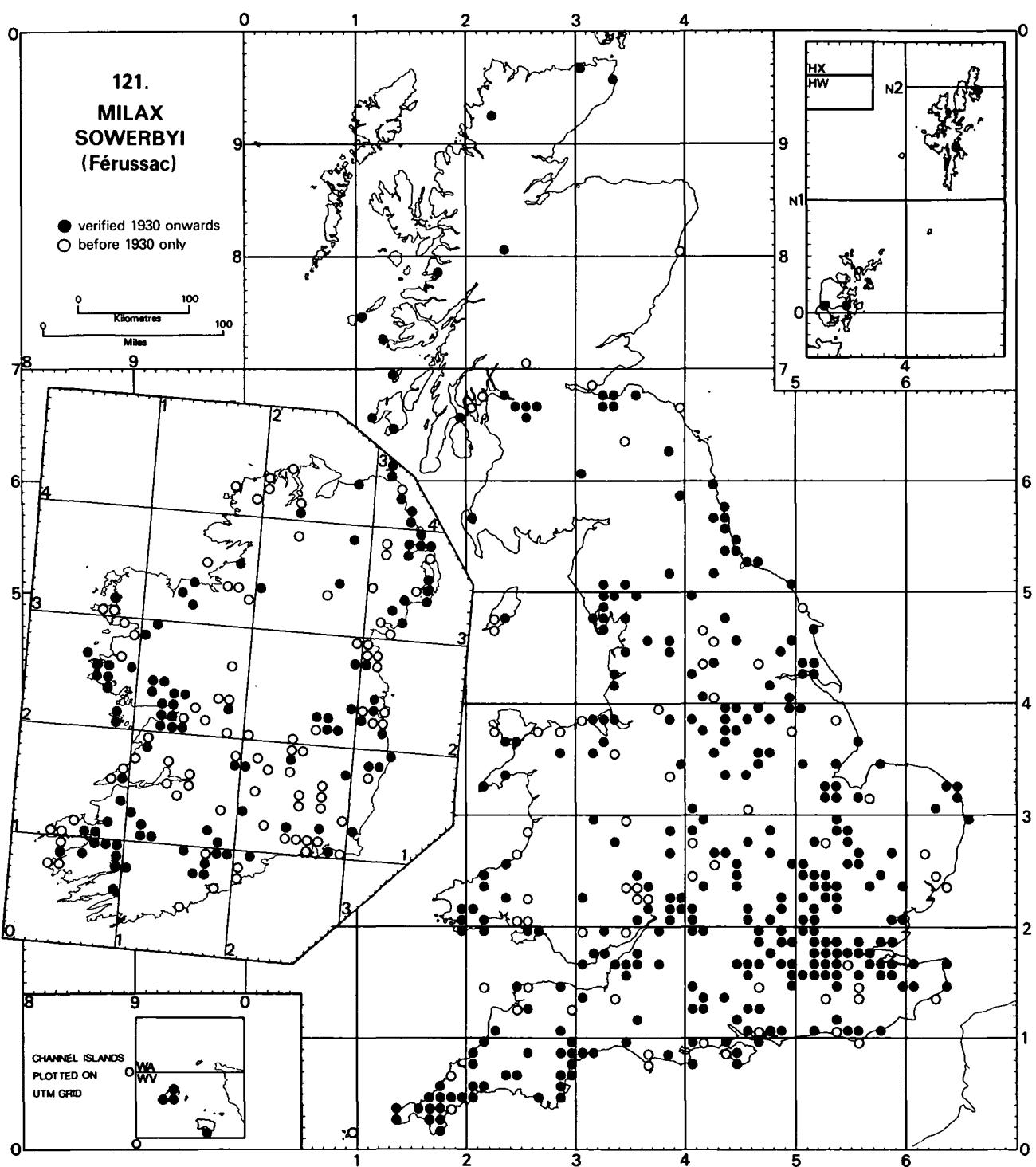


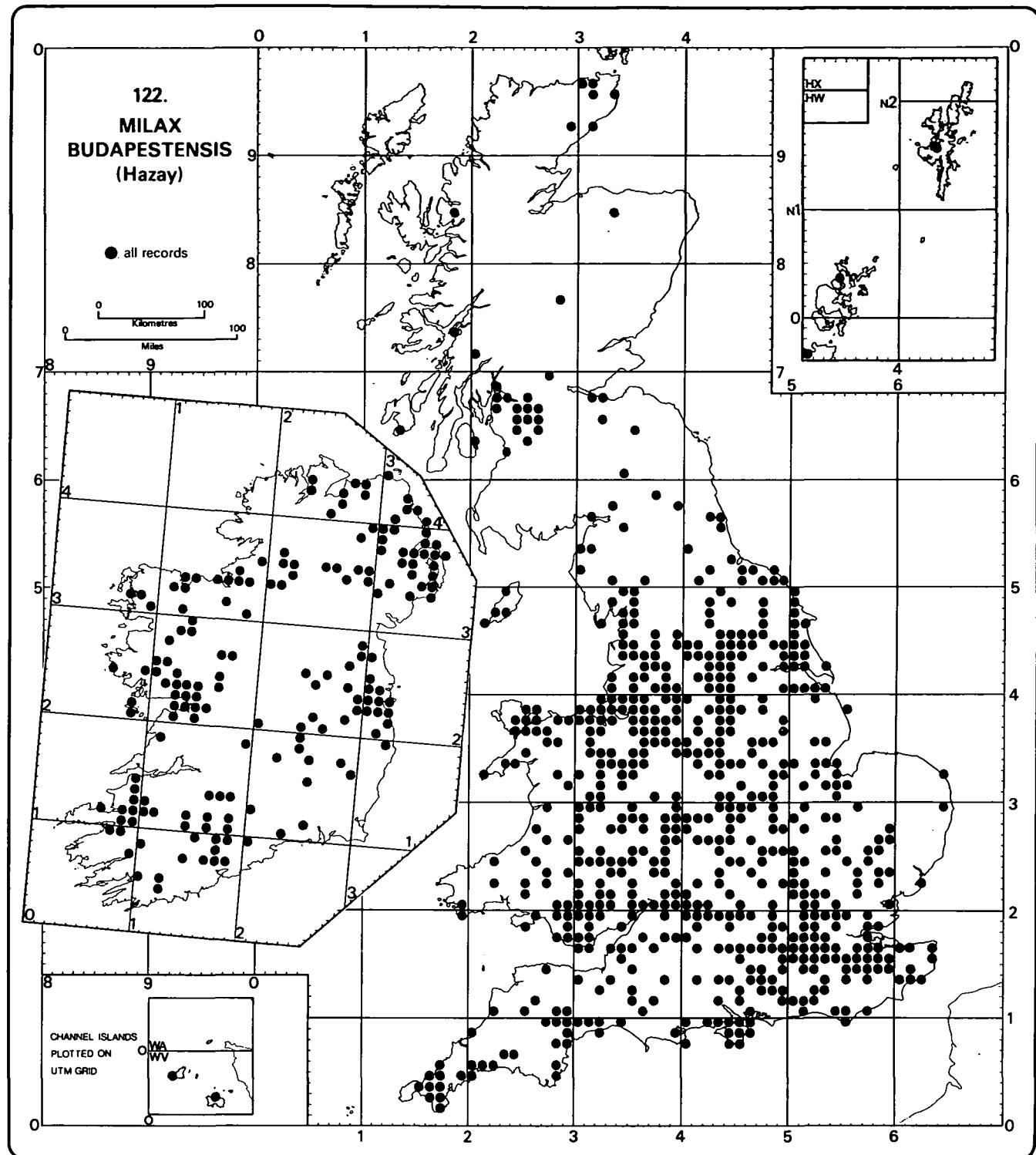


121.
MILAX
SOWERBYI
(Férussac)

● verified 1930 onwards
○ before 1930 only

0 Kilometres
100 Miles

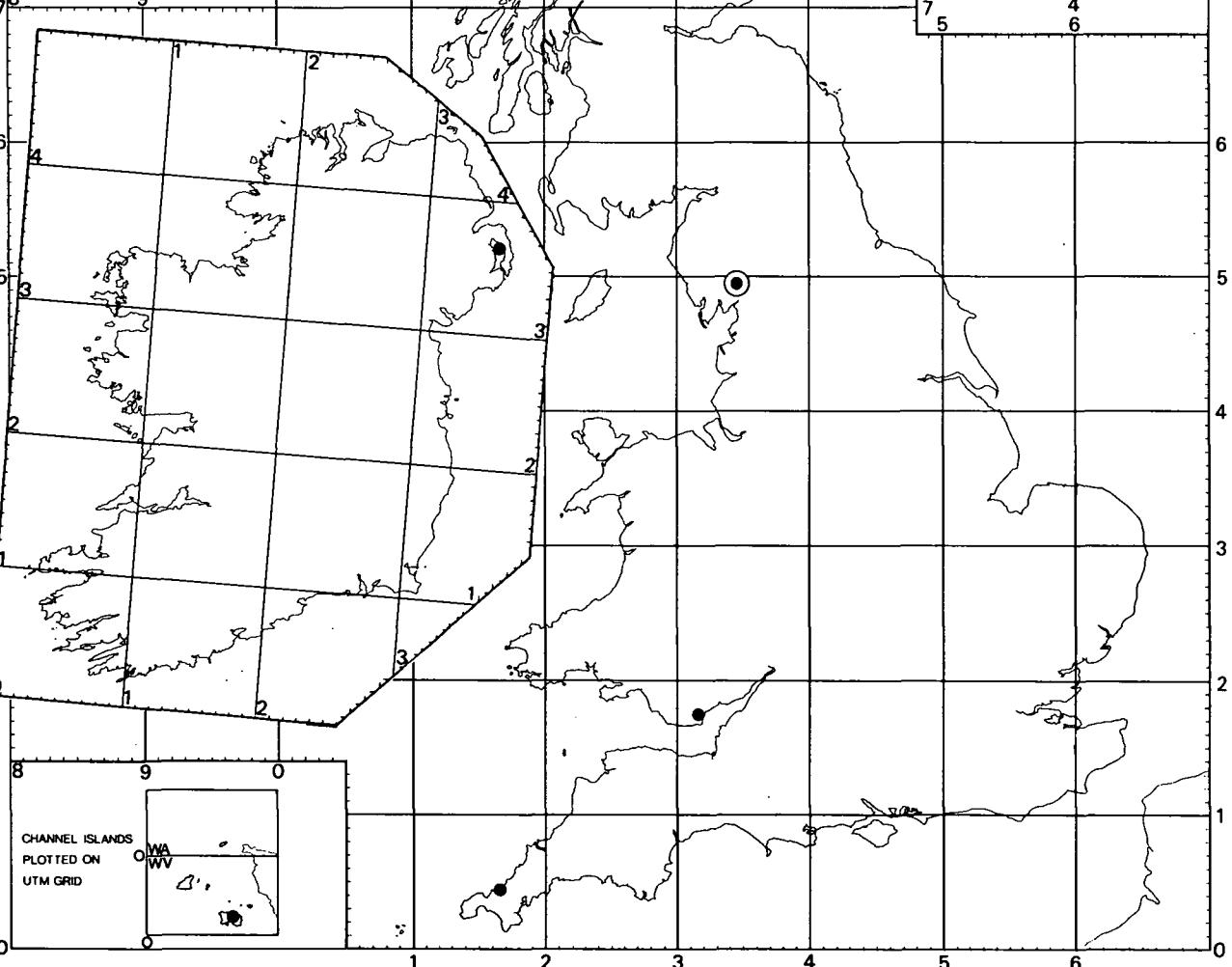
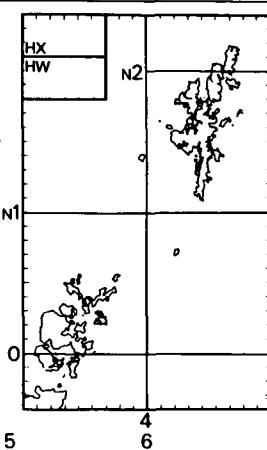


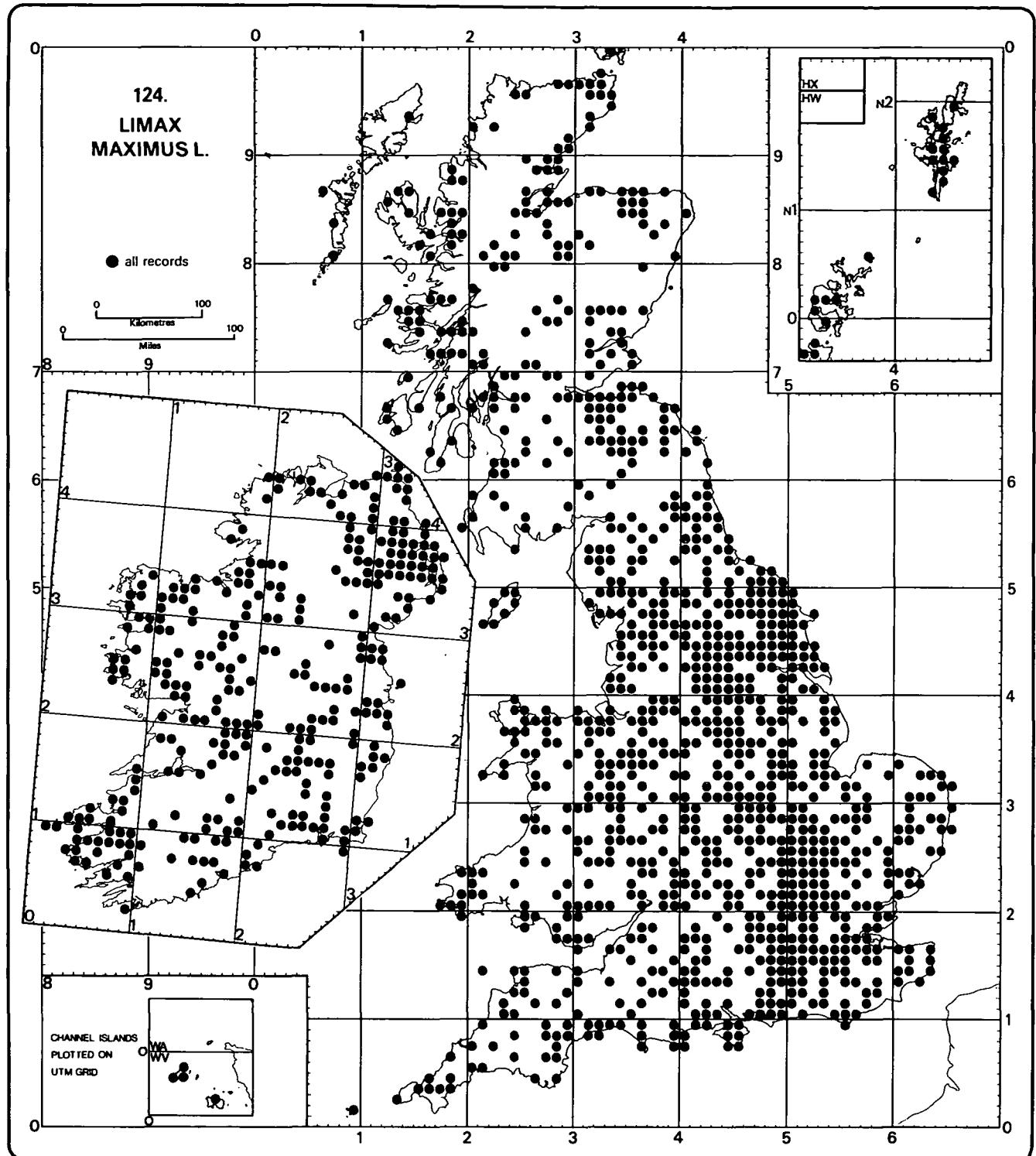


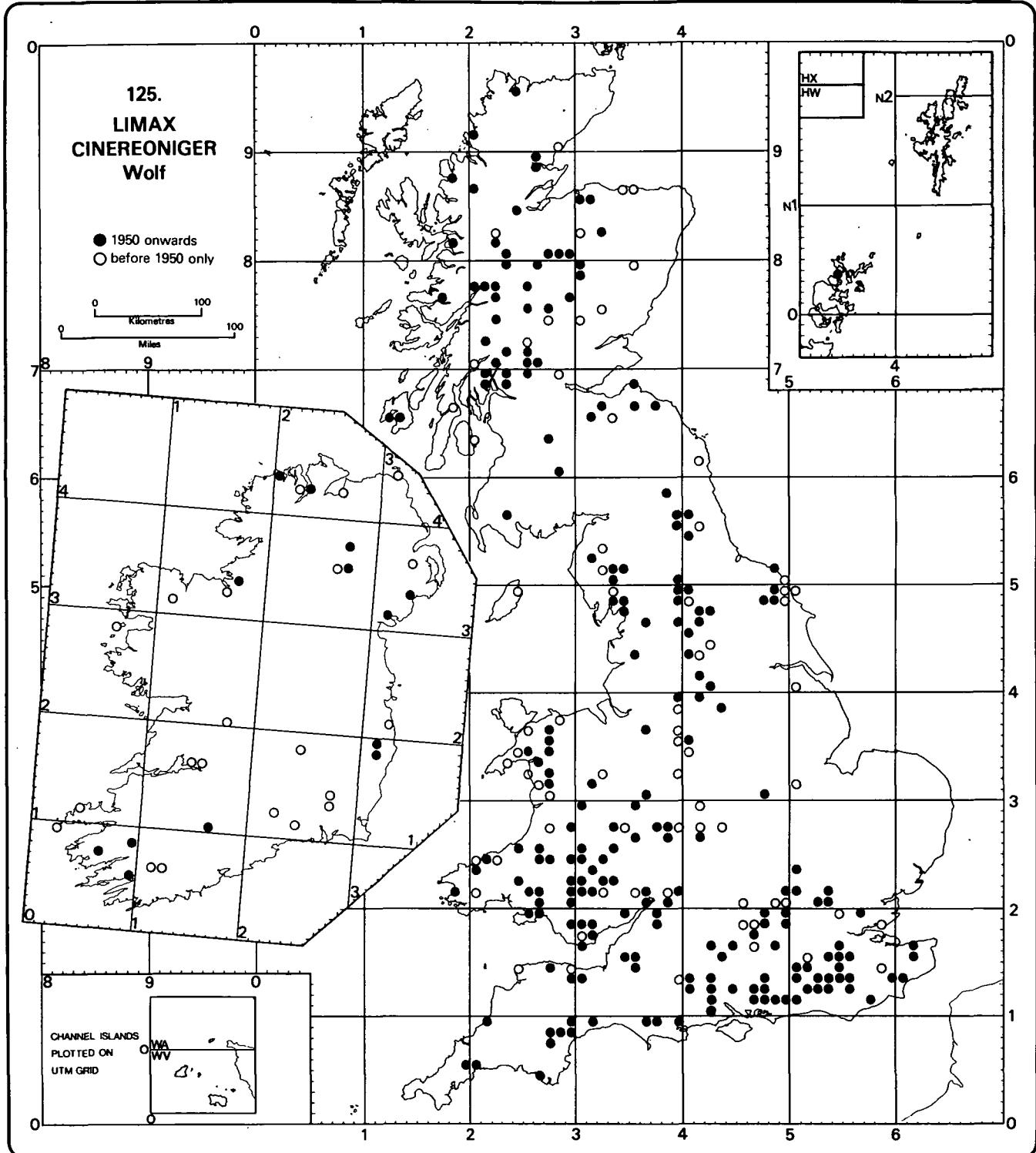
123.
**BOETTGERILLA
PALLENS**
Simroth

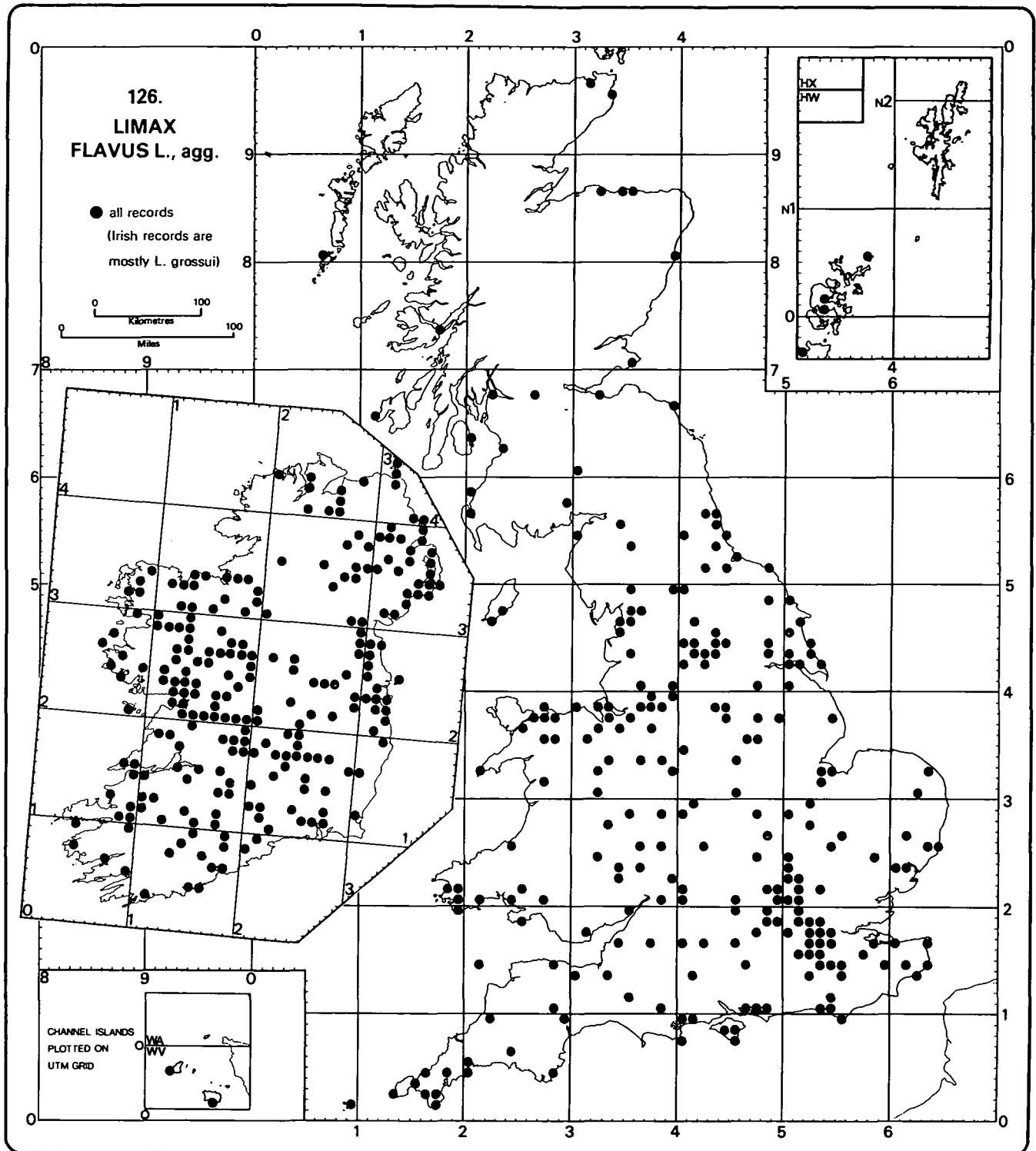
● 1972 onwards
○ first record, 1972

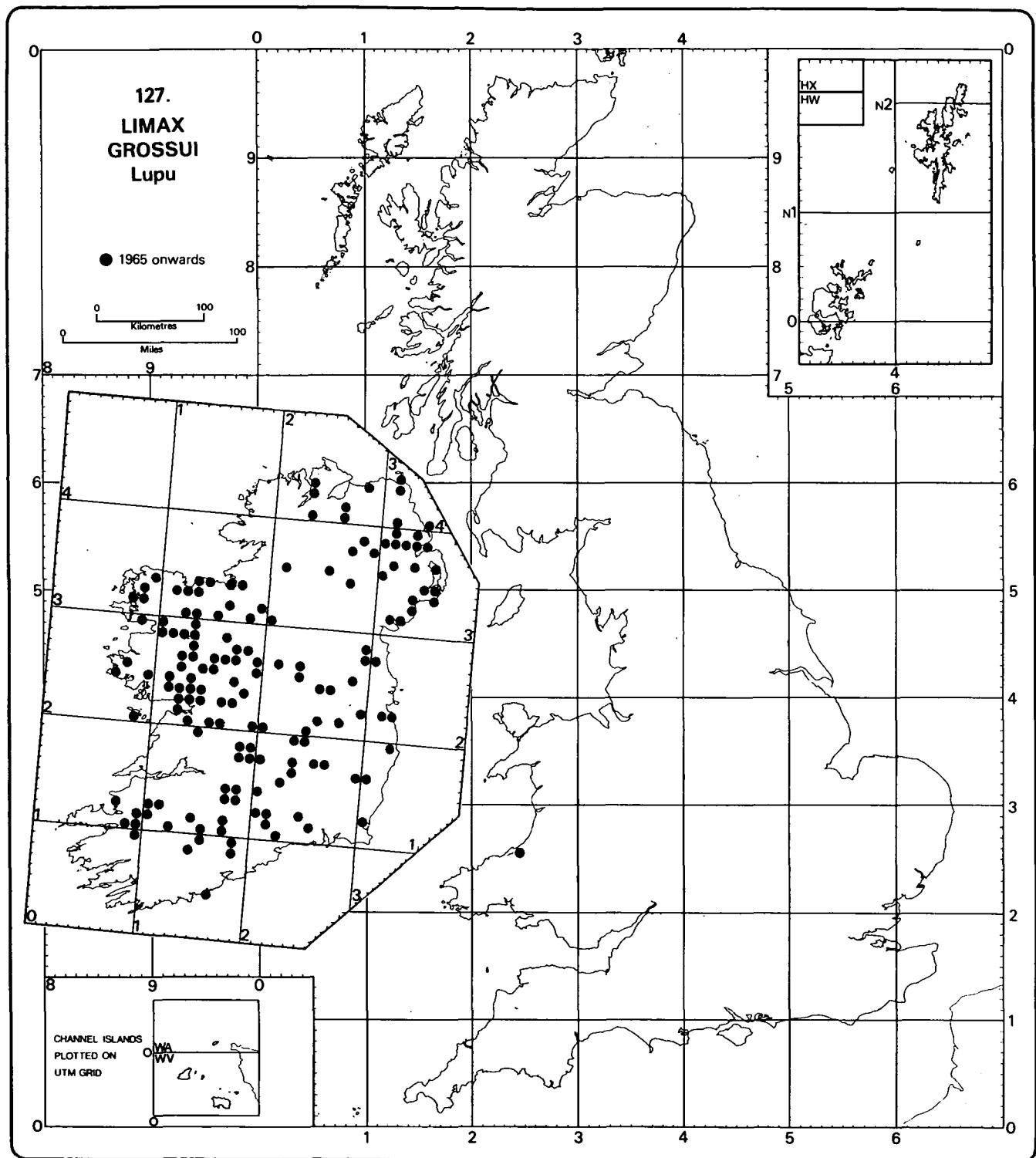
0 Kilometres 100 Miles

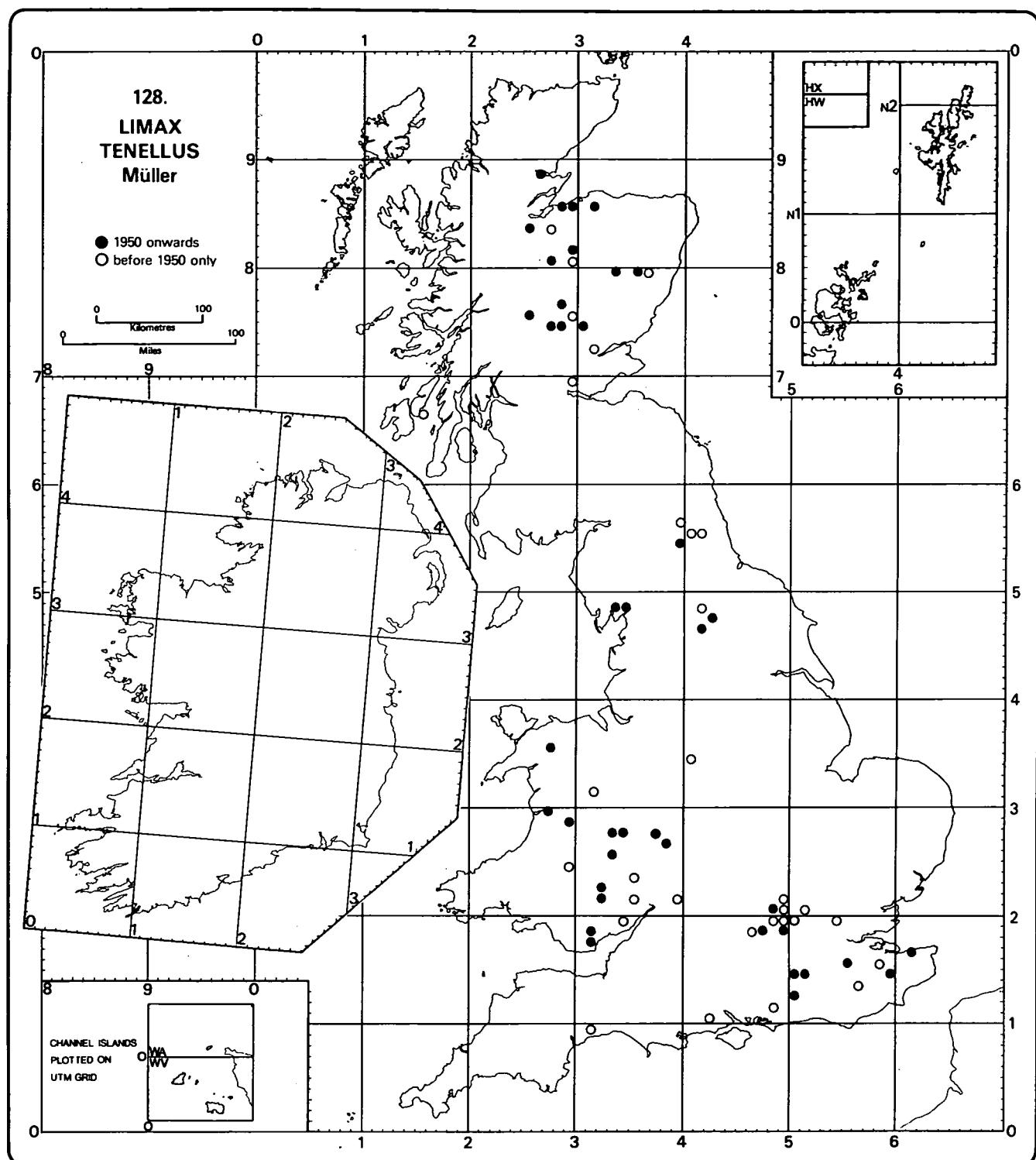


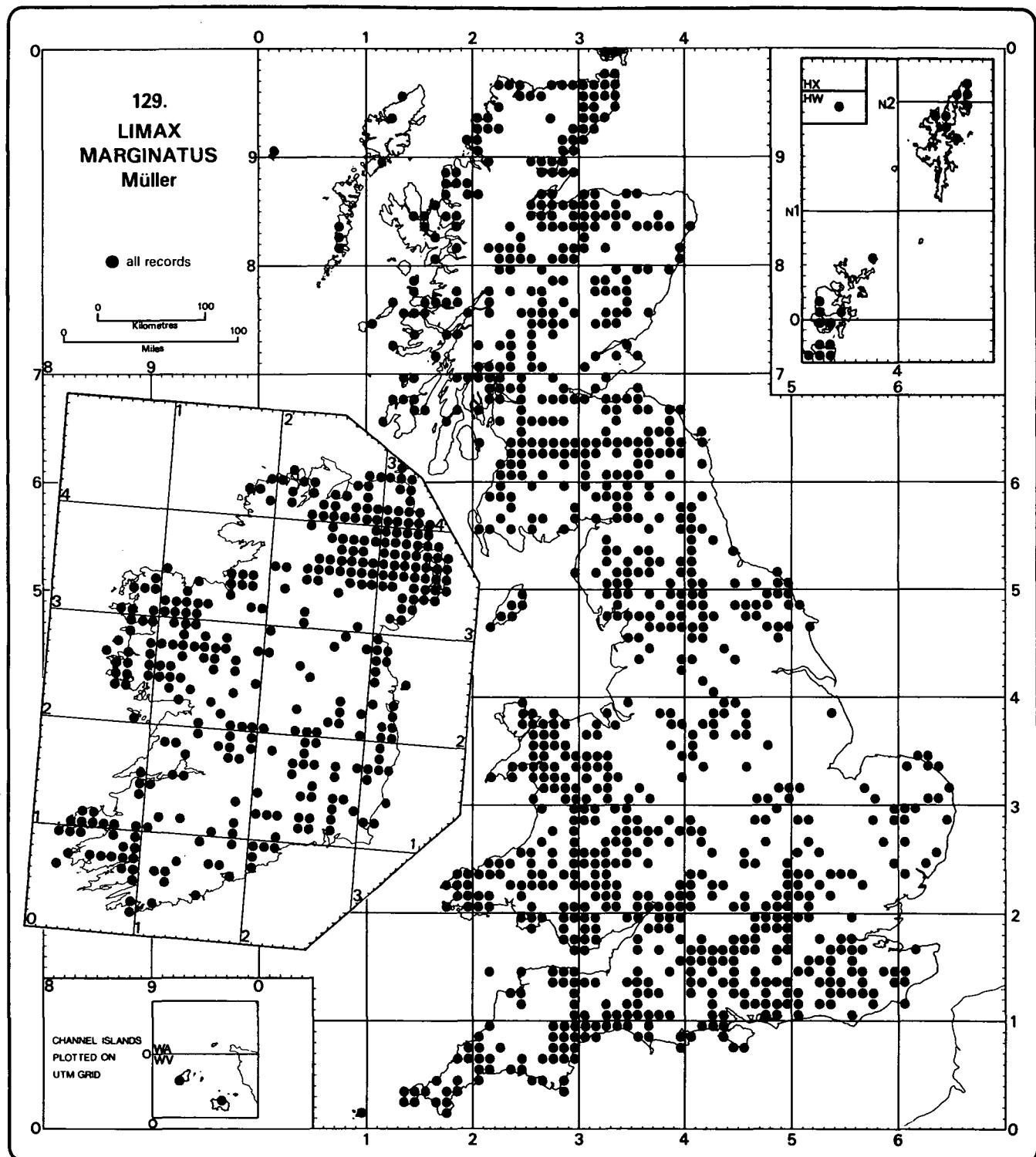


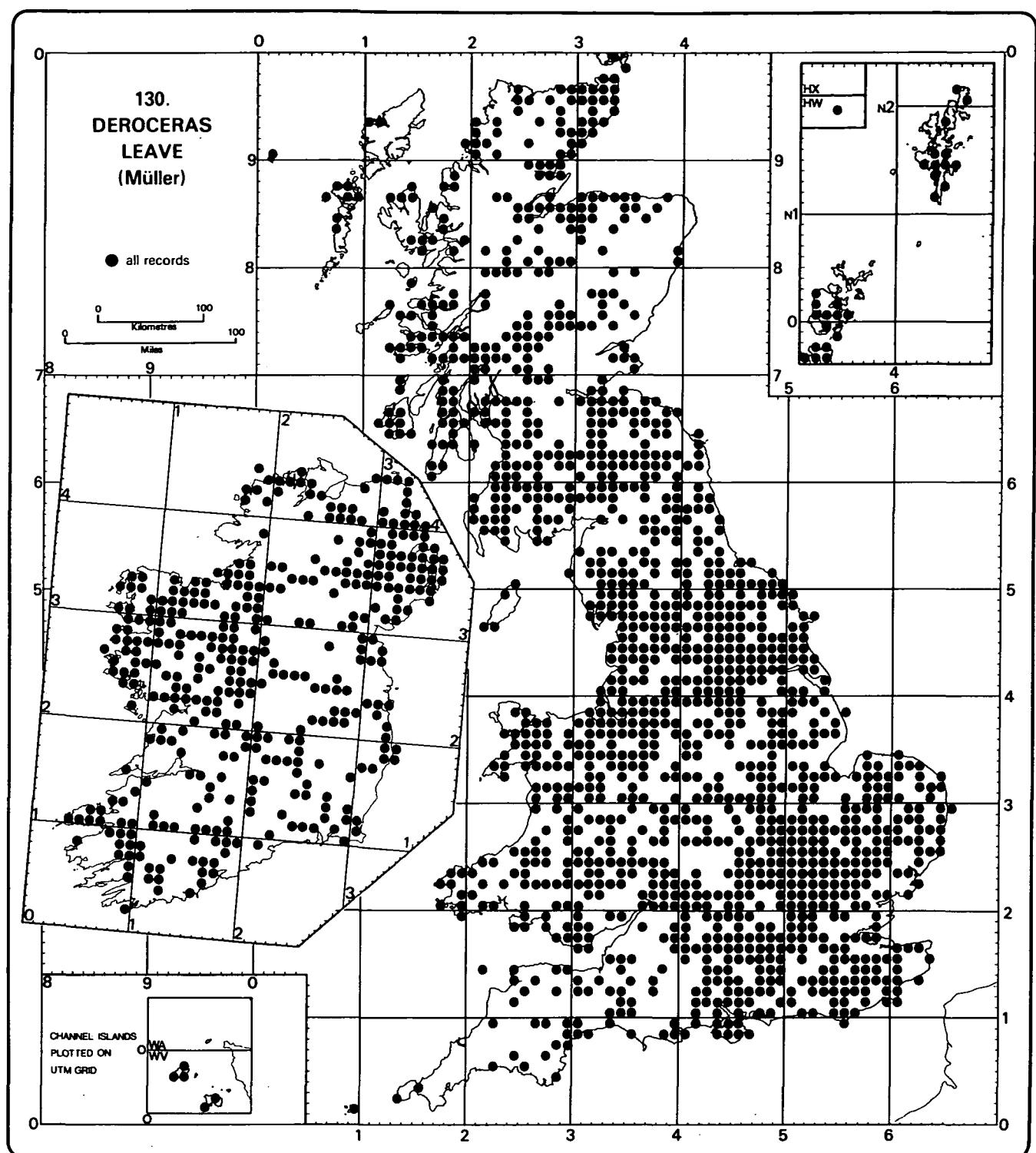










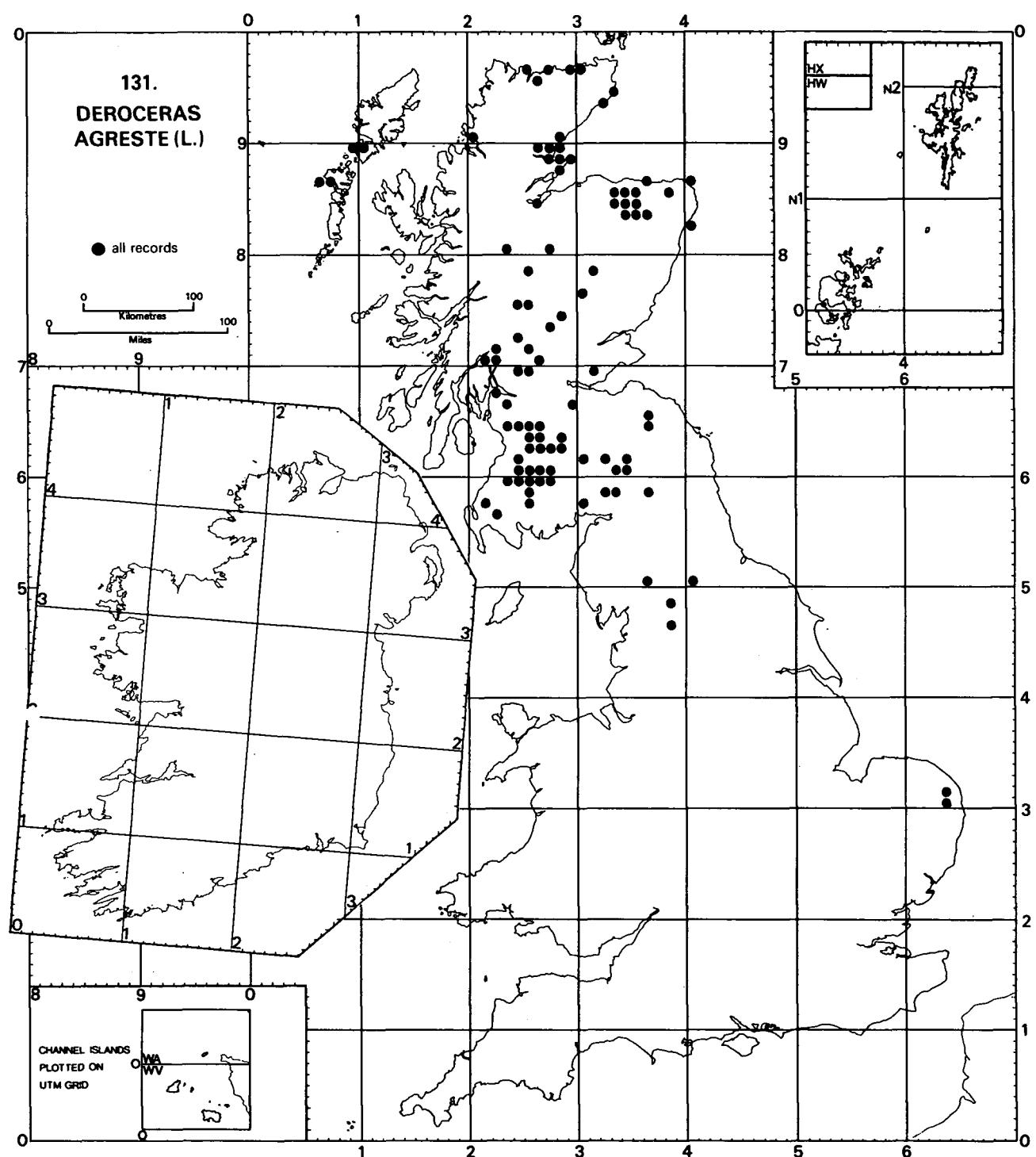


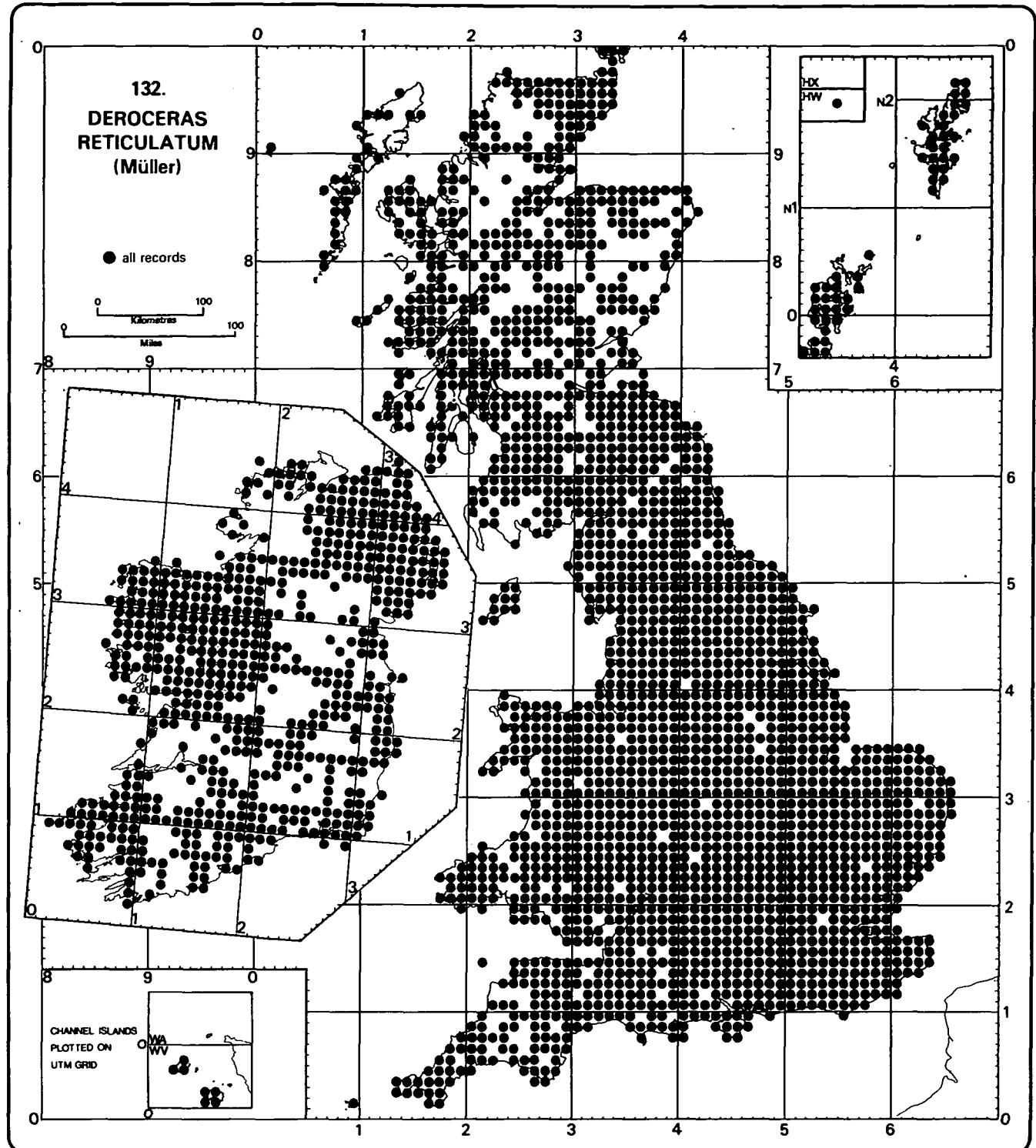
131.
**DEROCERAS
AGRESTE (L.)**

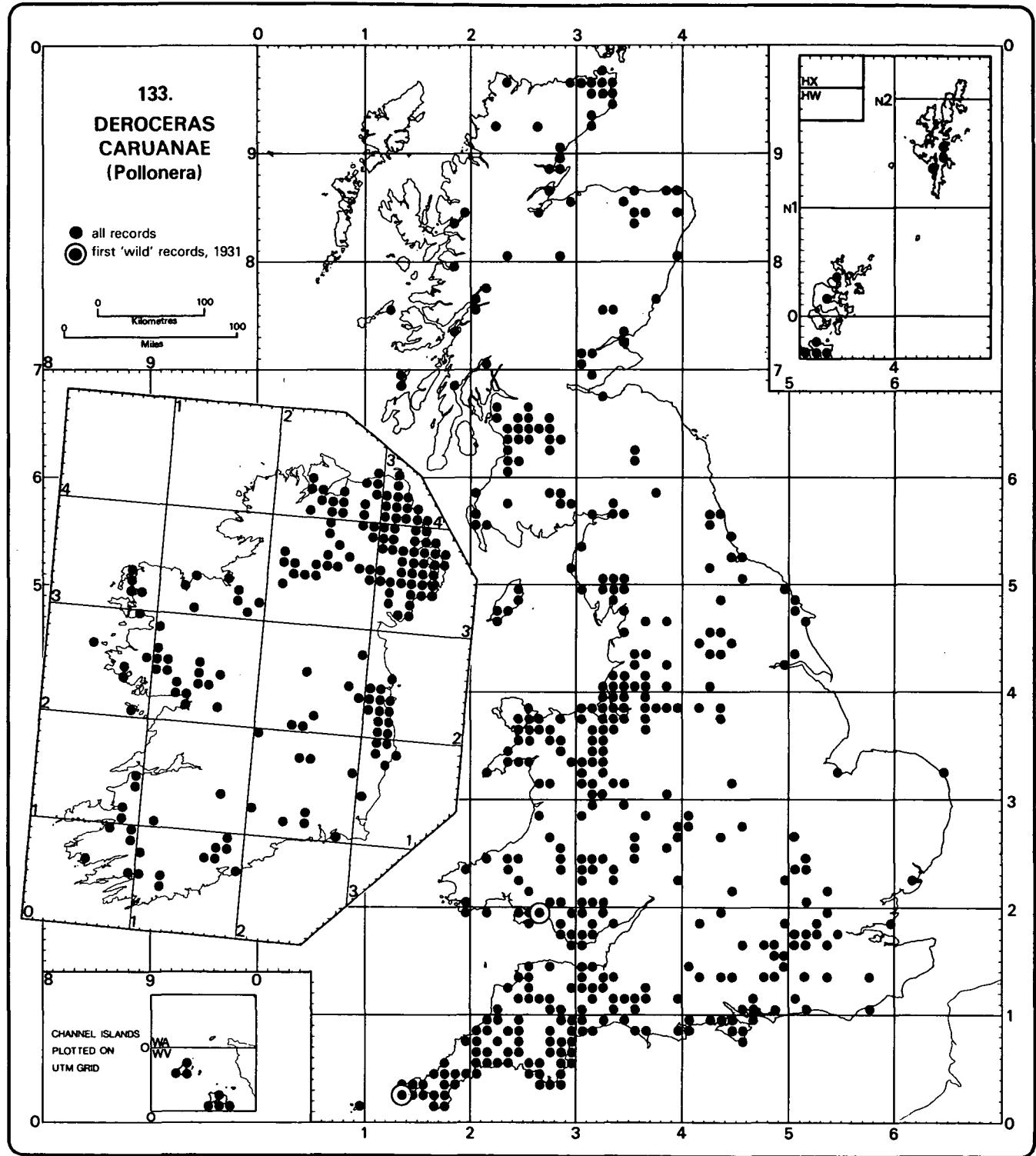
● all records

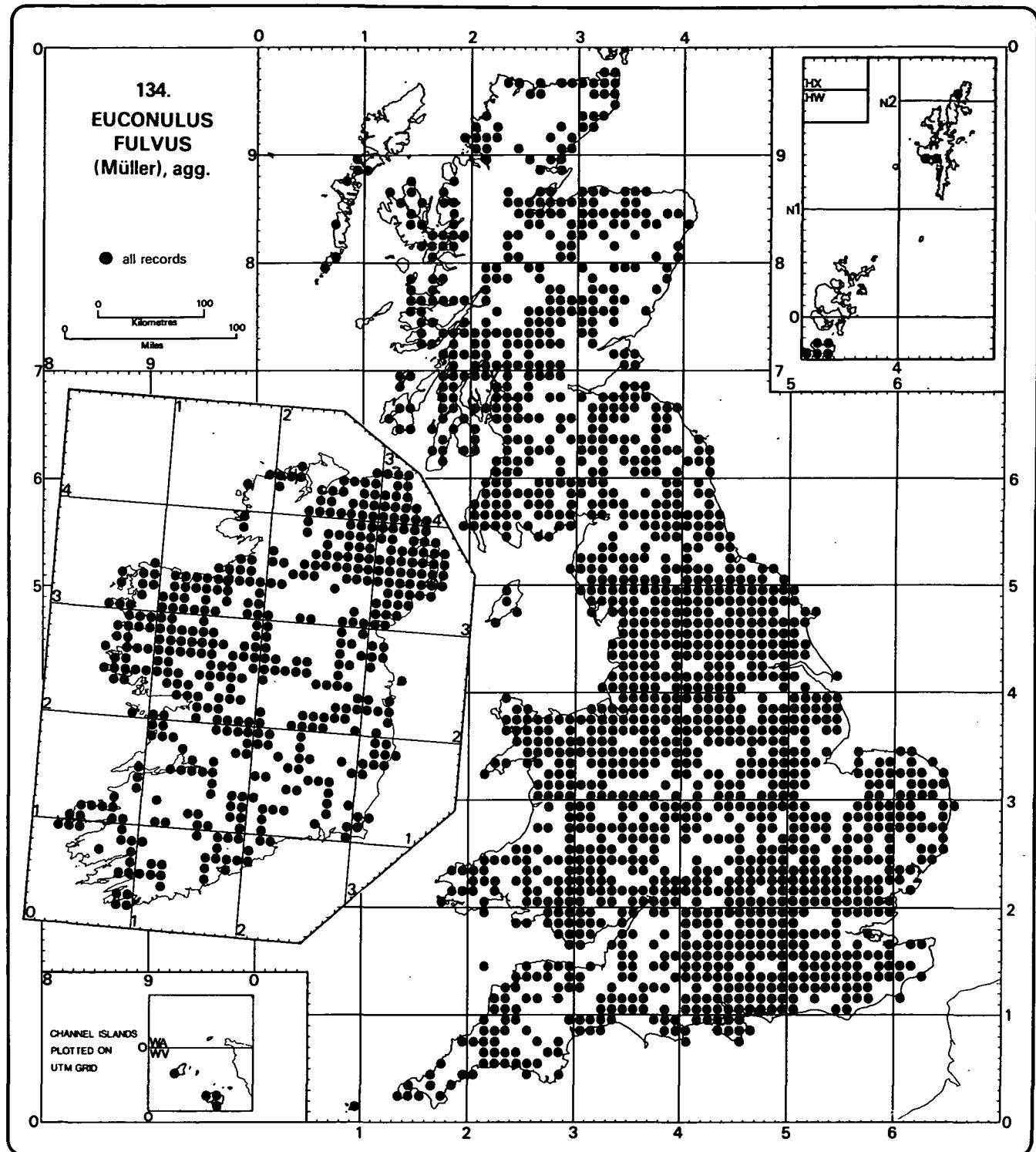
0 Kilometres 100

0 Miles 100







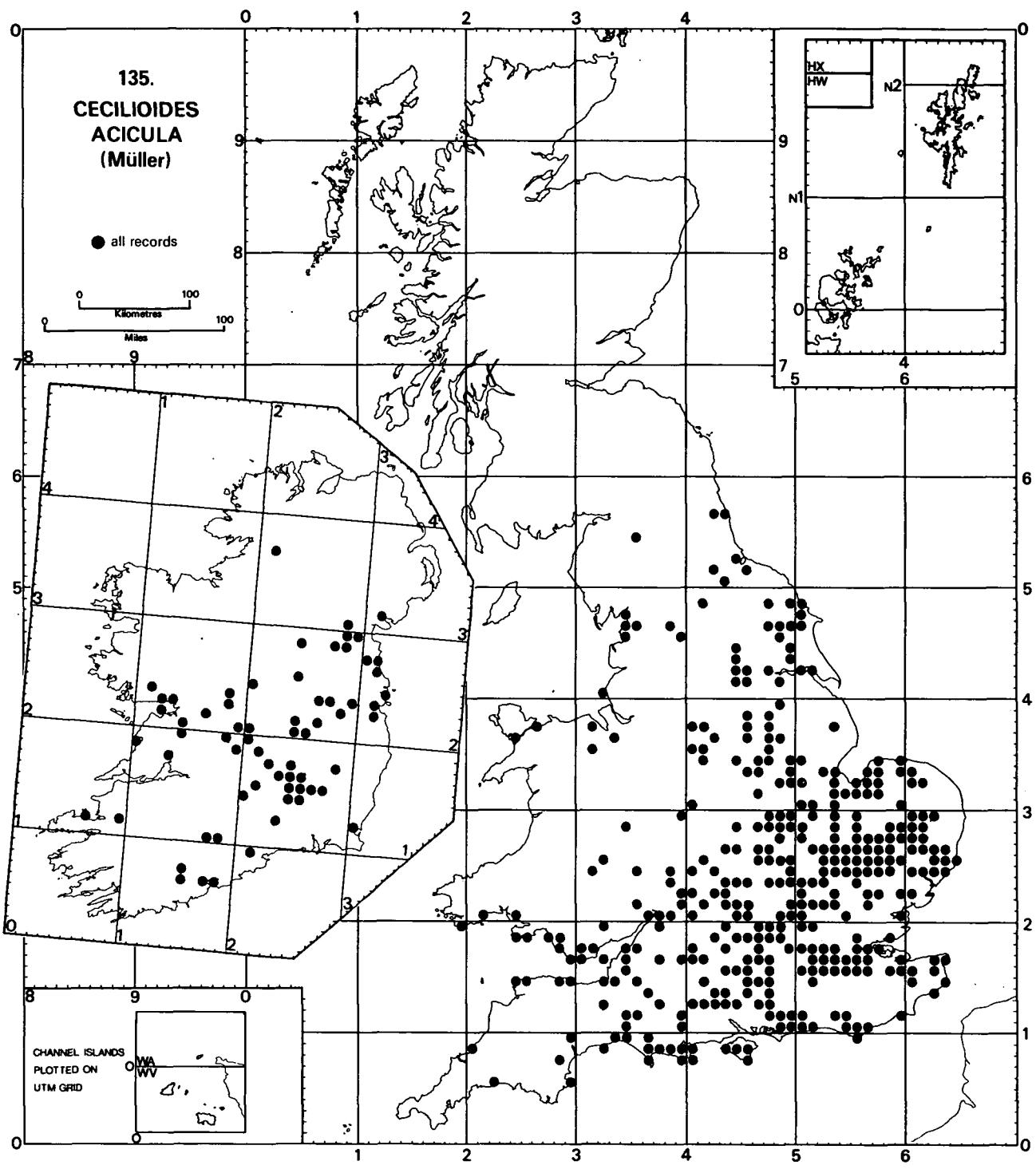


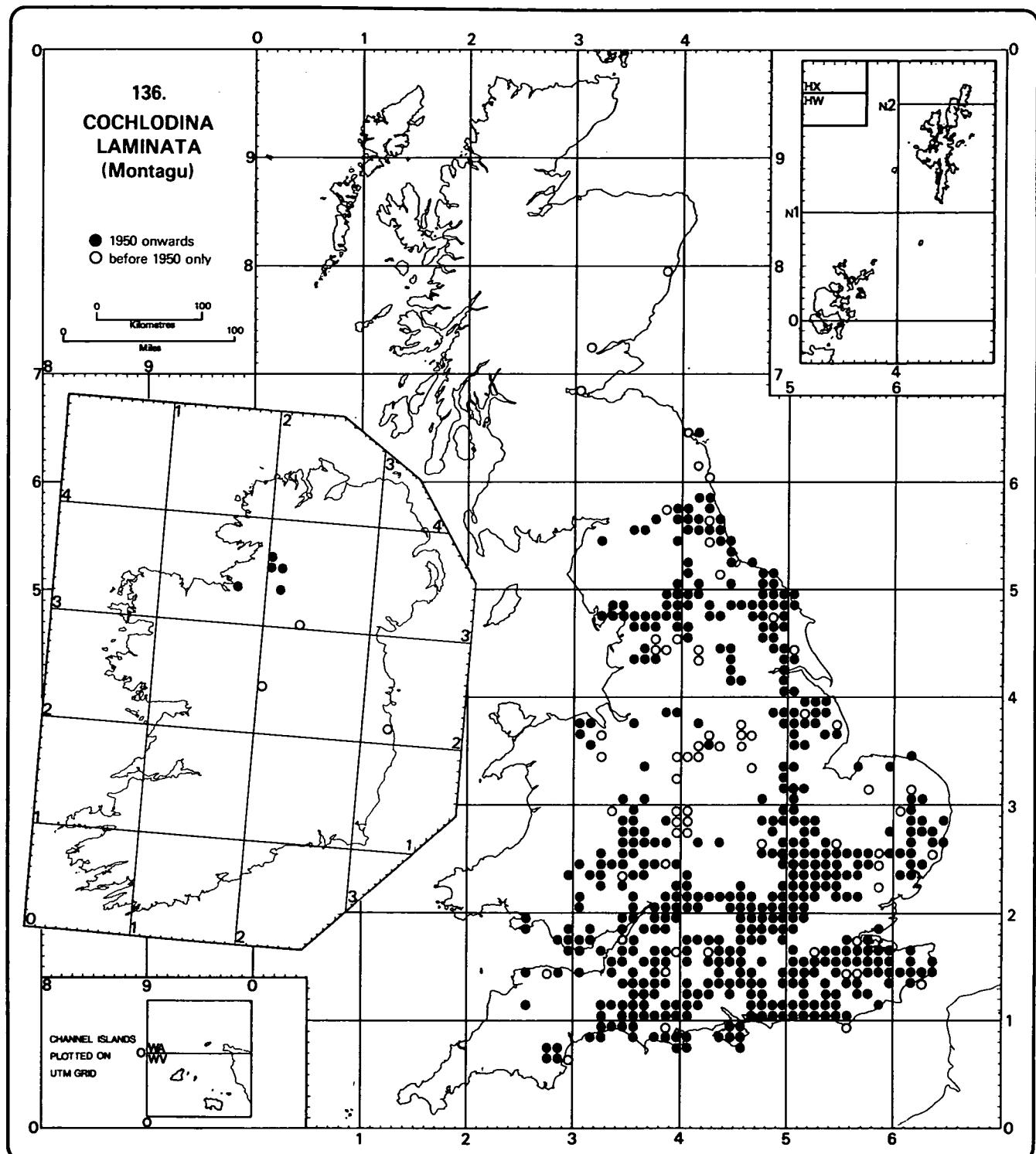
135.
**CECILIOIDES
ACICULA**
(Müller)

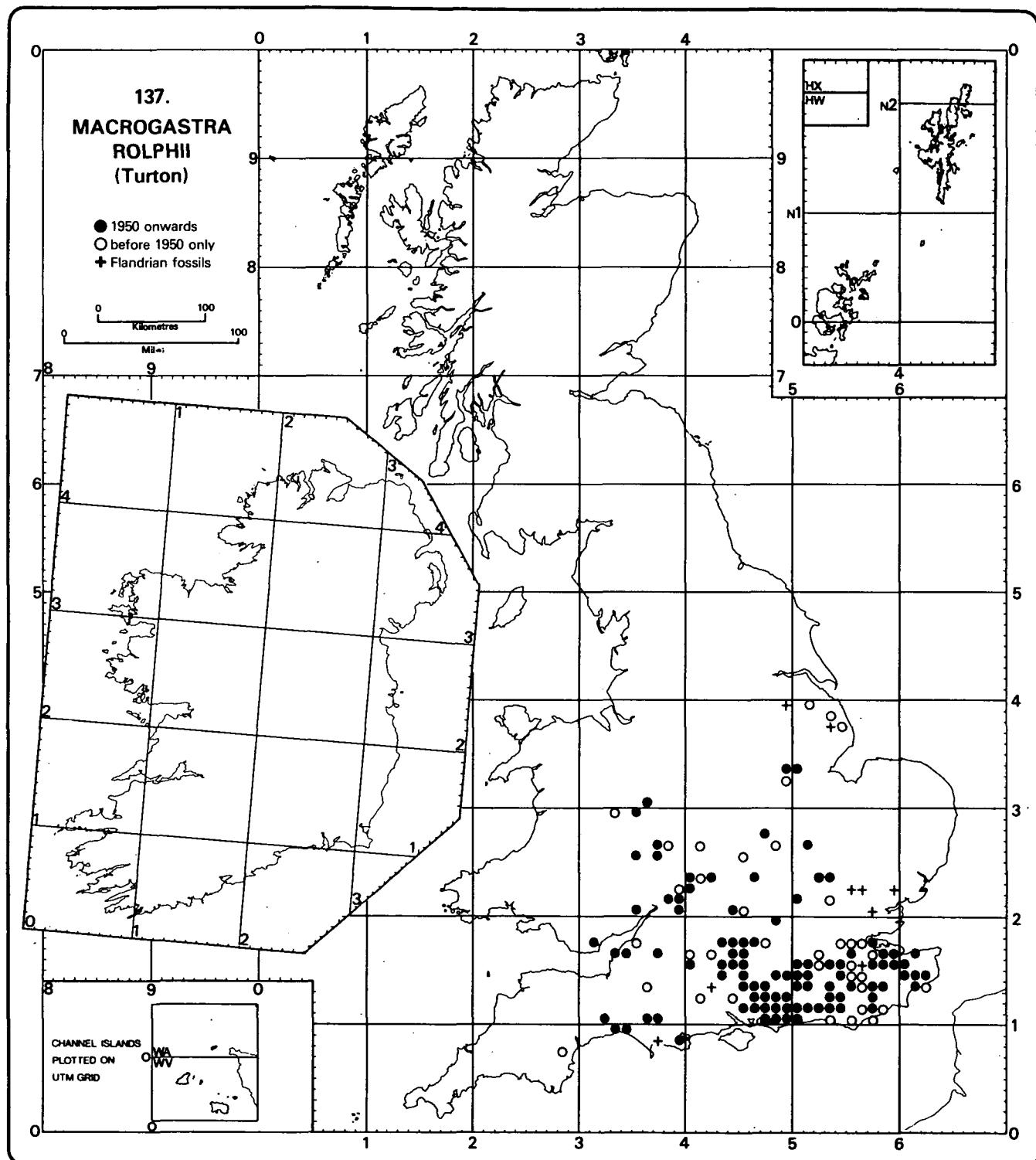
● all records

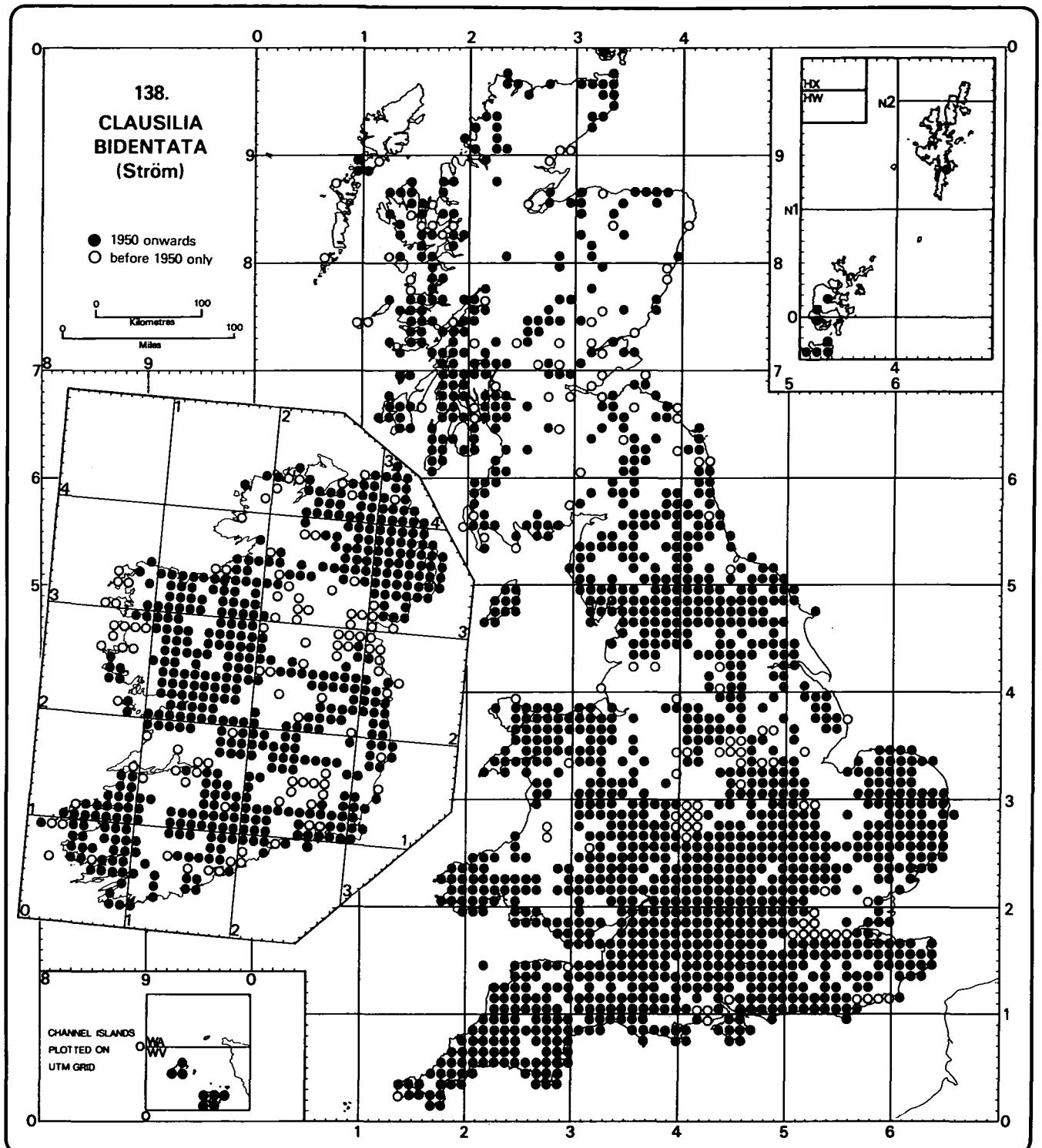
0 Kilometres

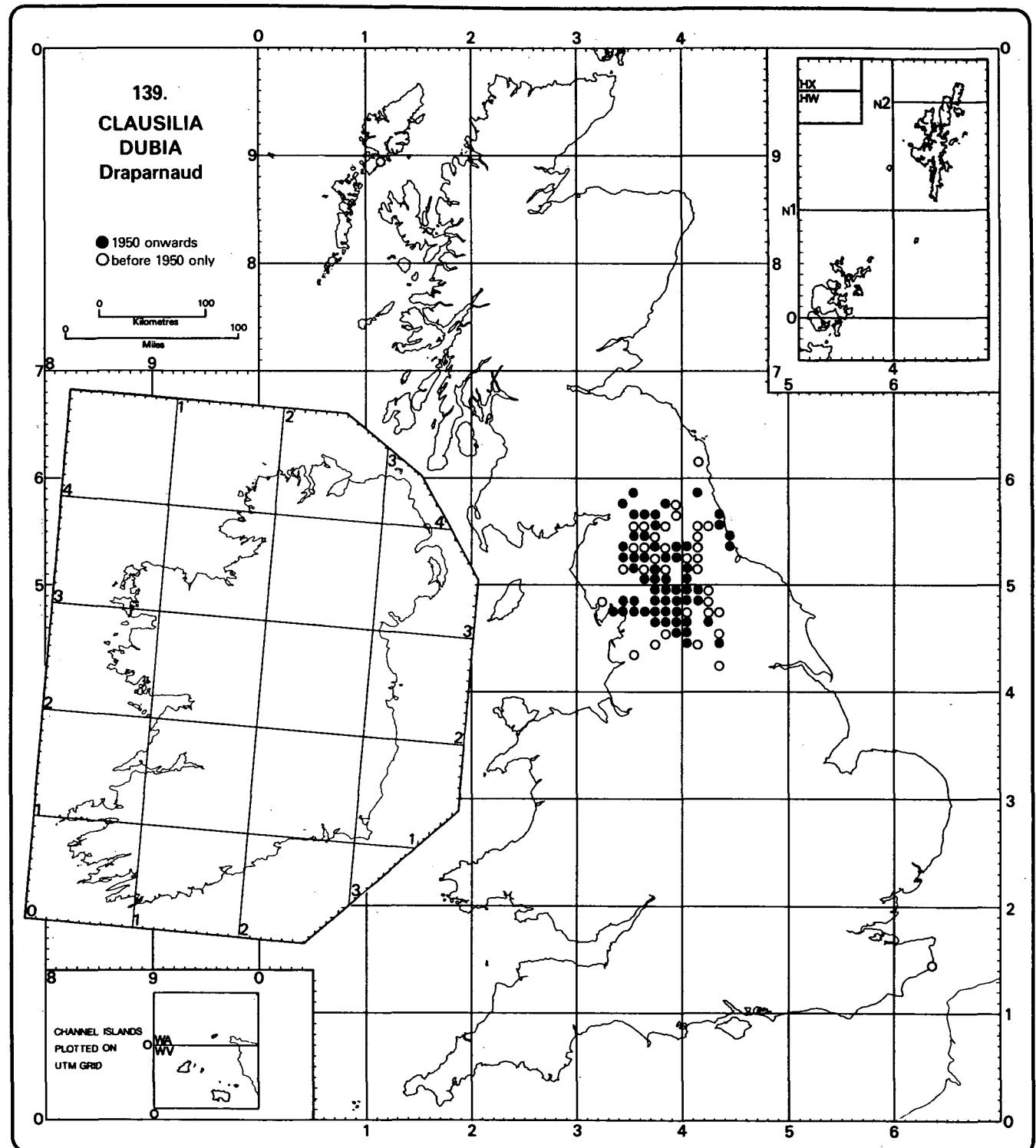
0 Miles

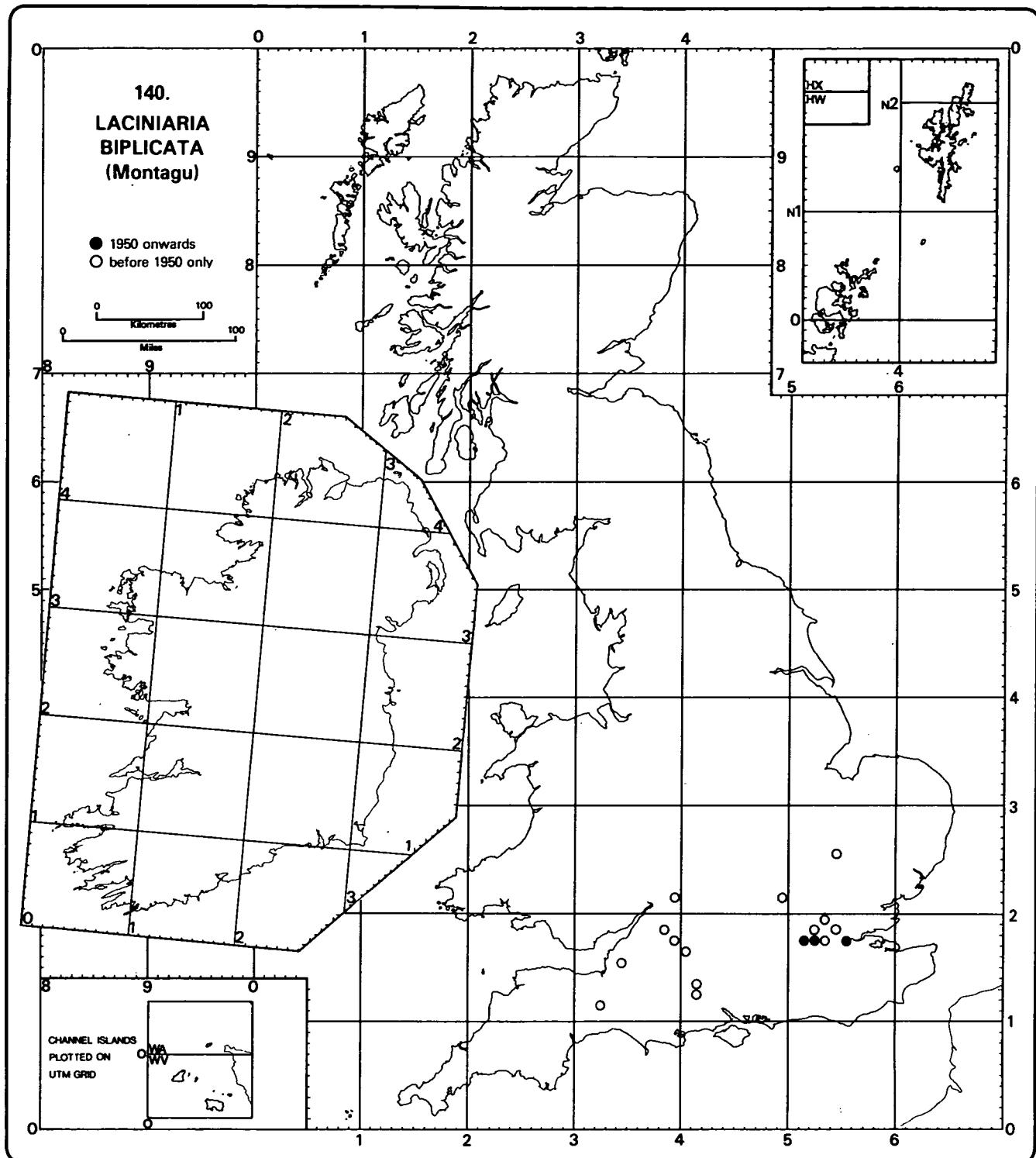


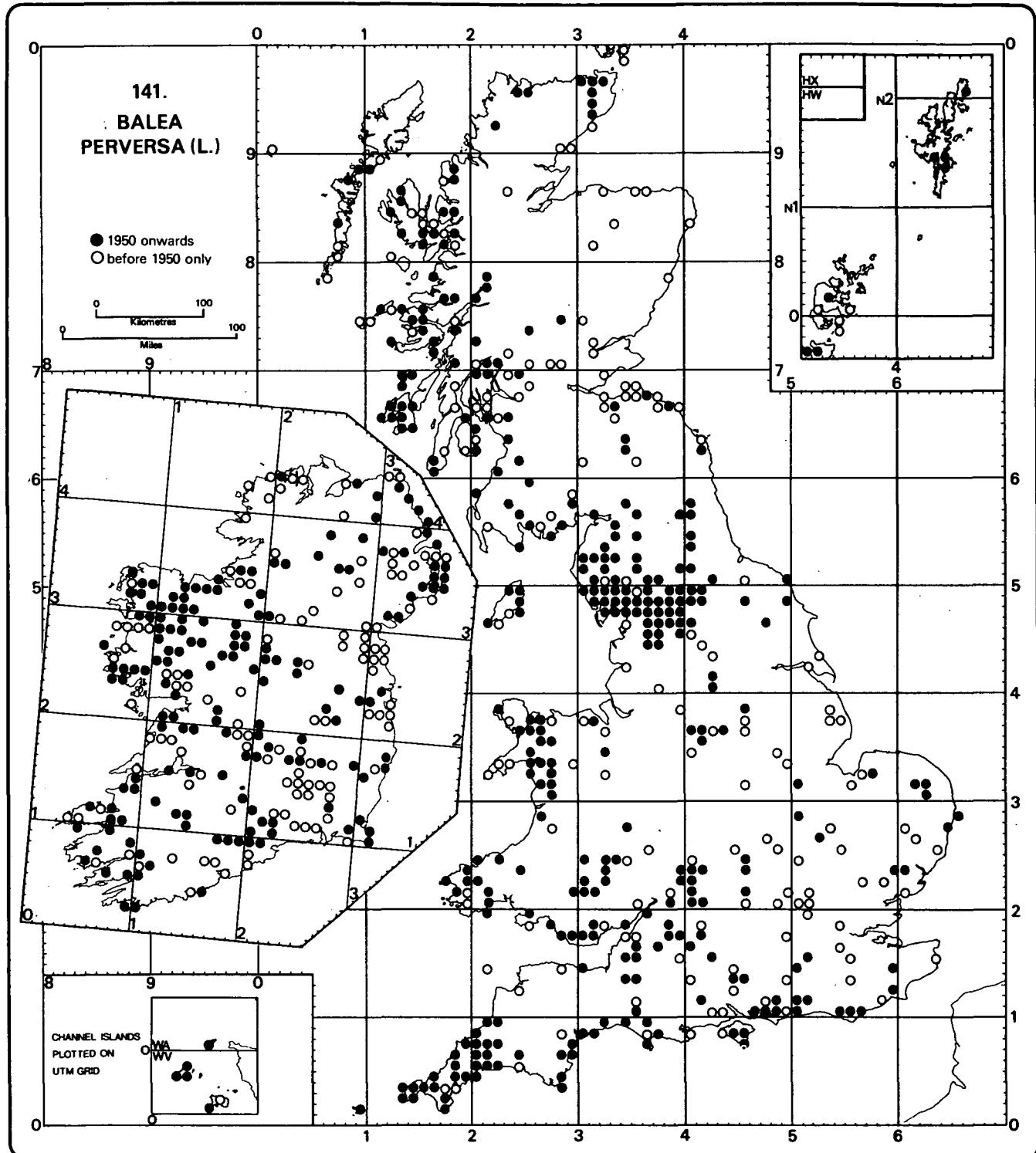


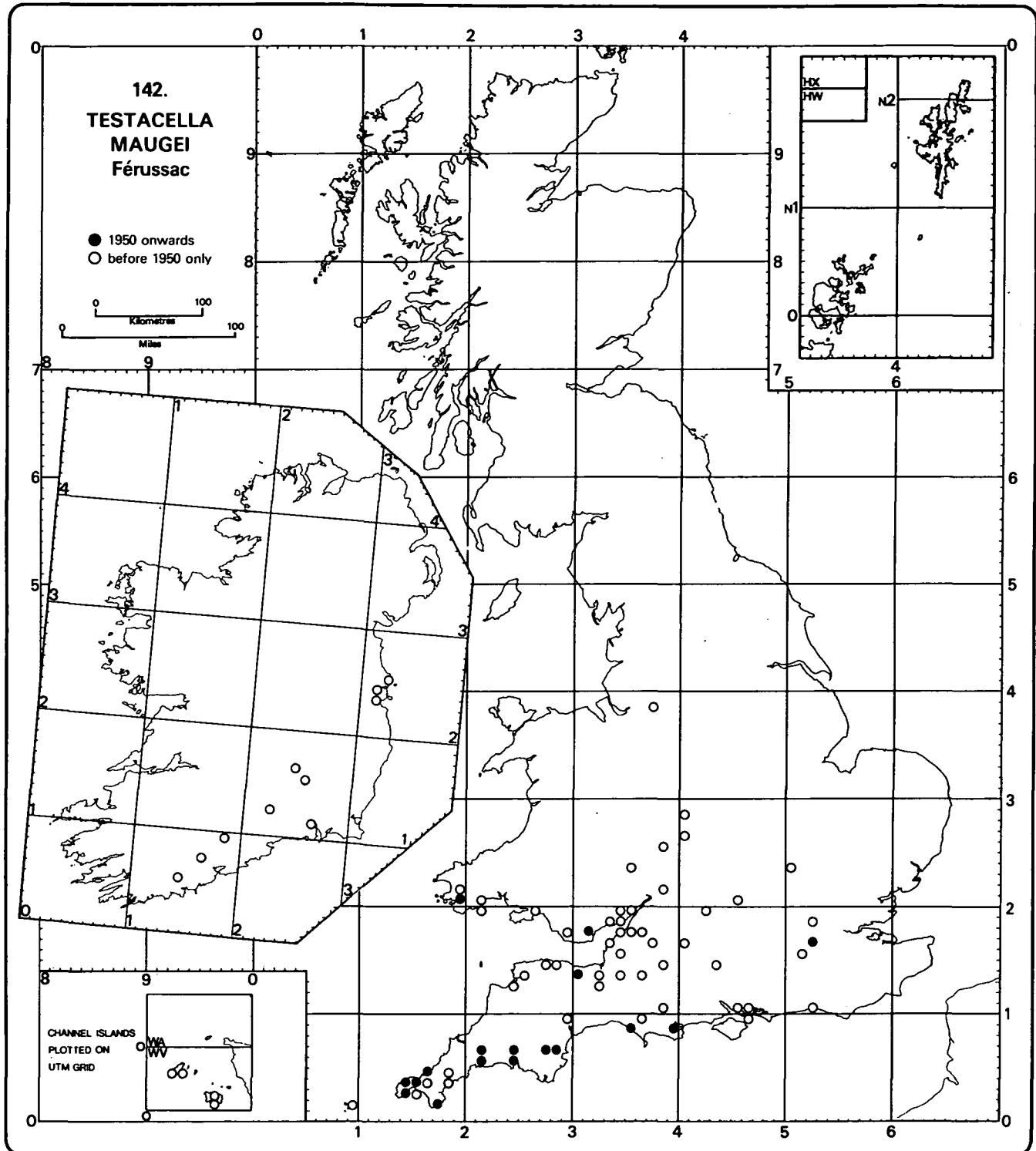








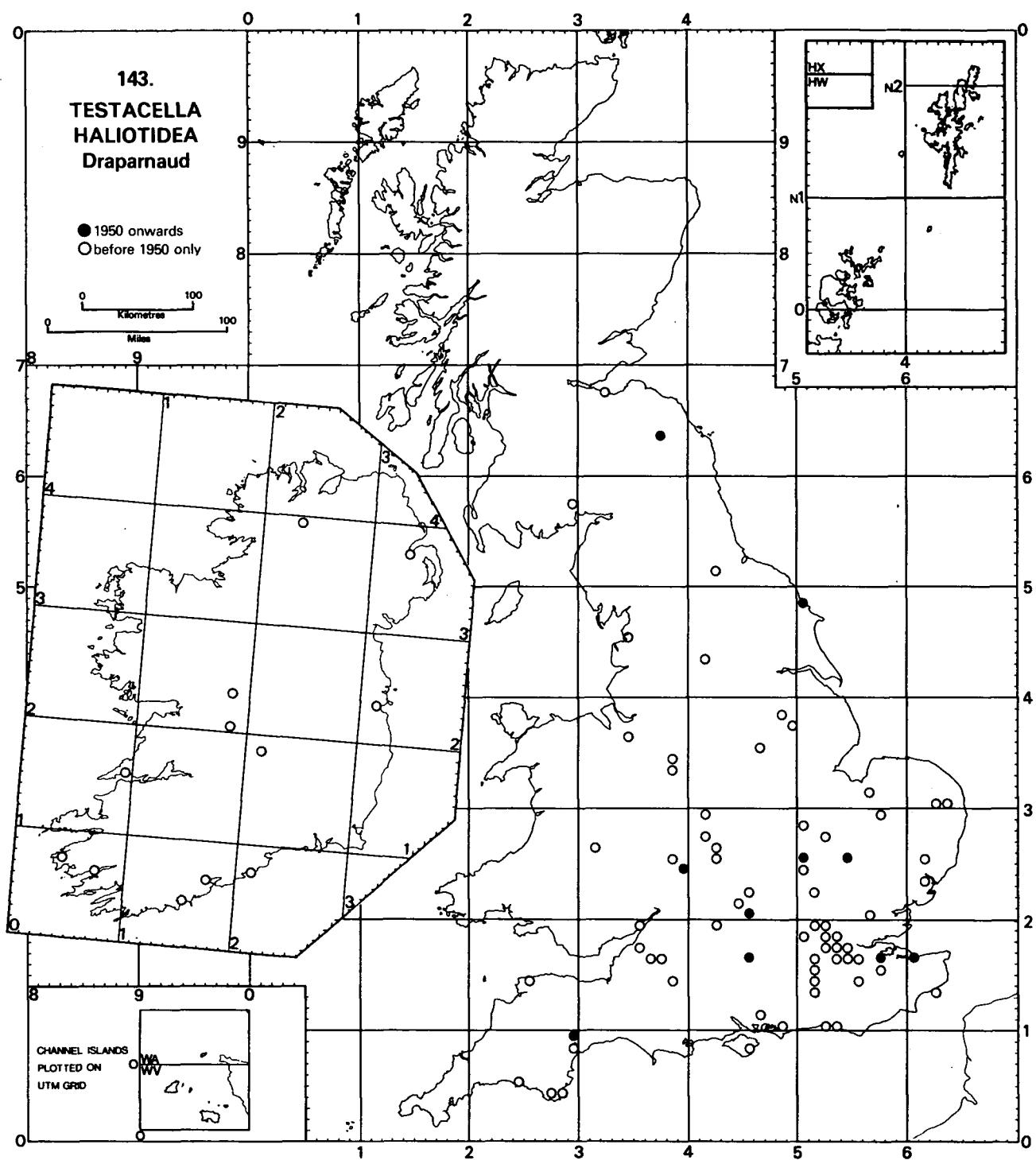




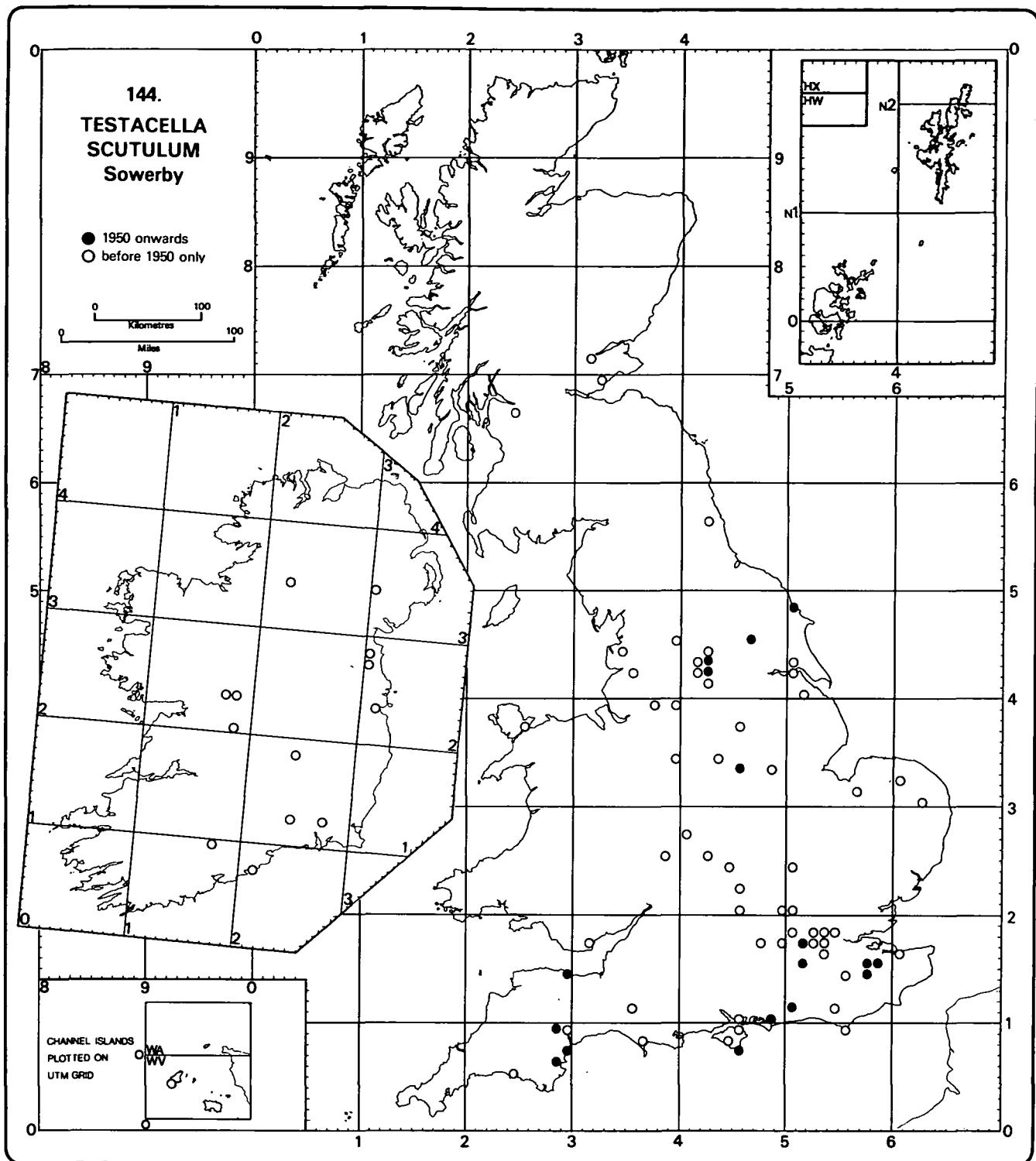
143.
TESTACELLA
HALIOTIDEA
Draparnaud

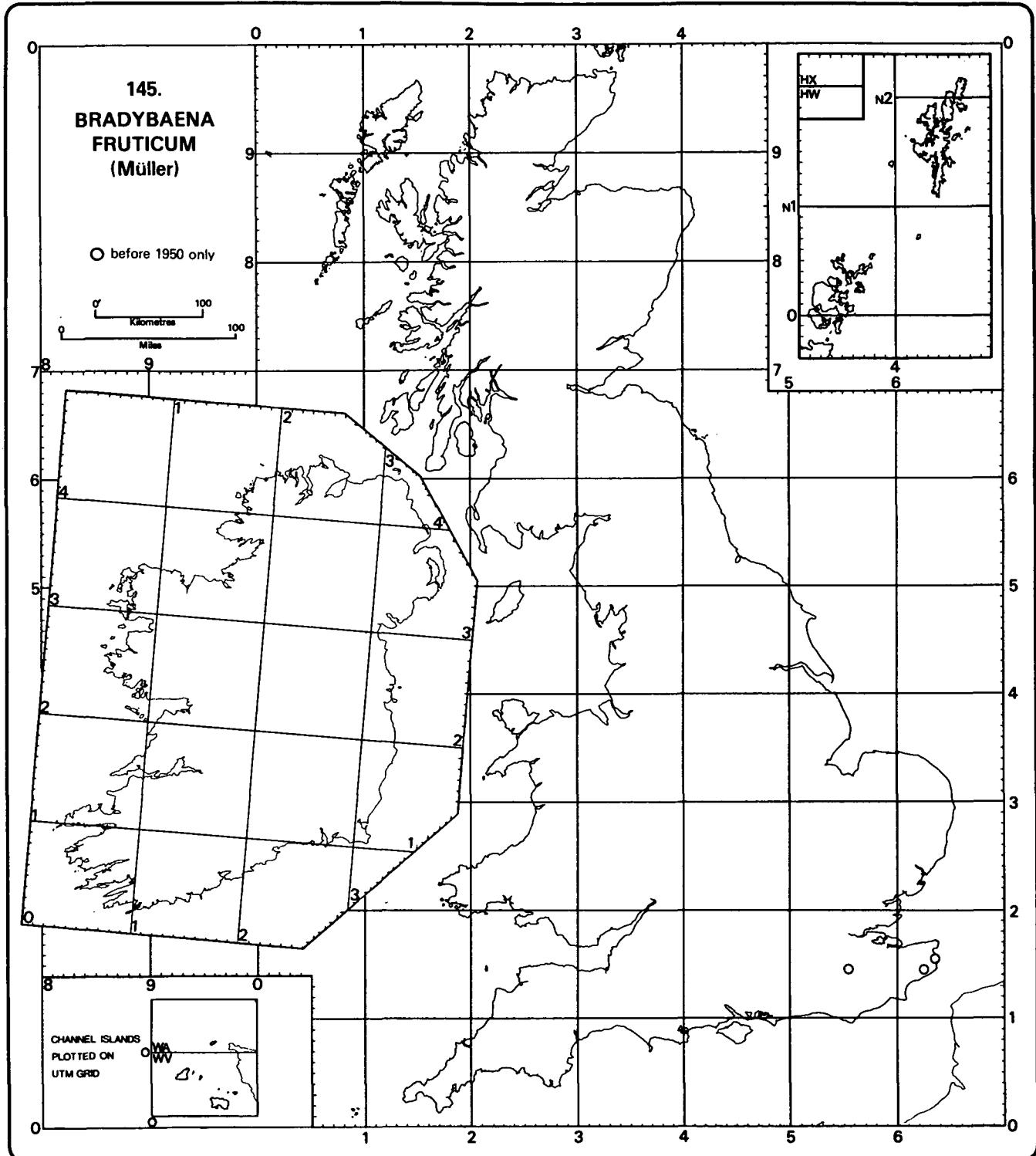
● 1950 onwards
○ before 1950 only

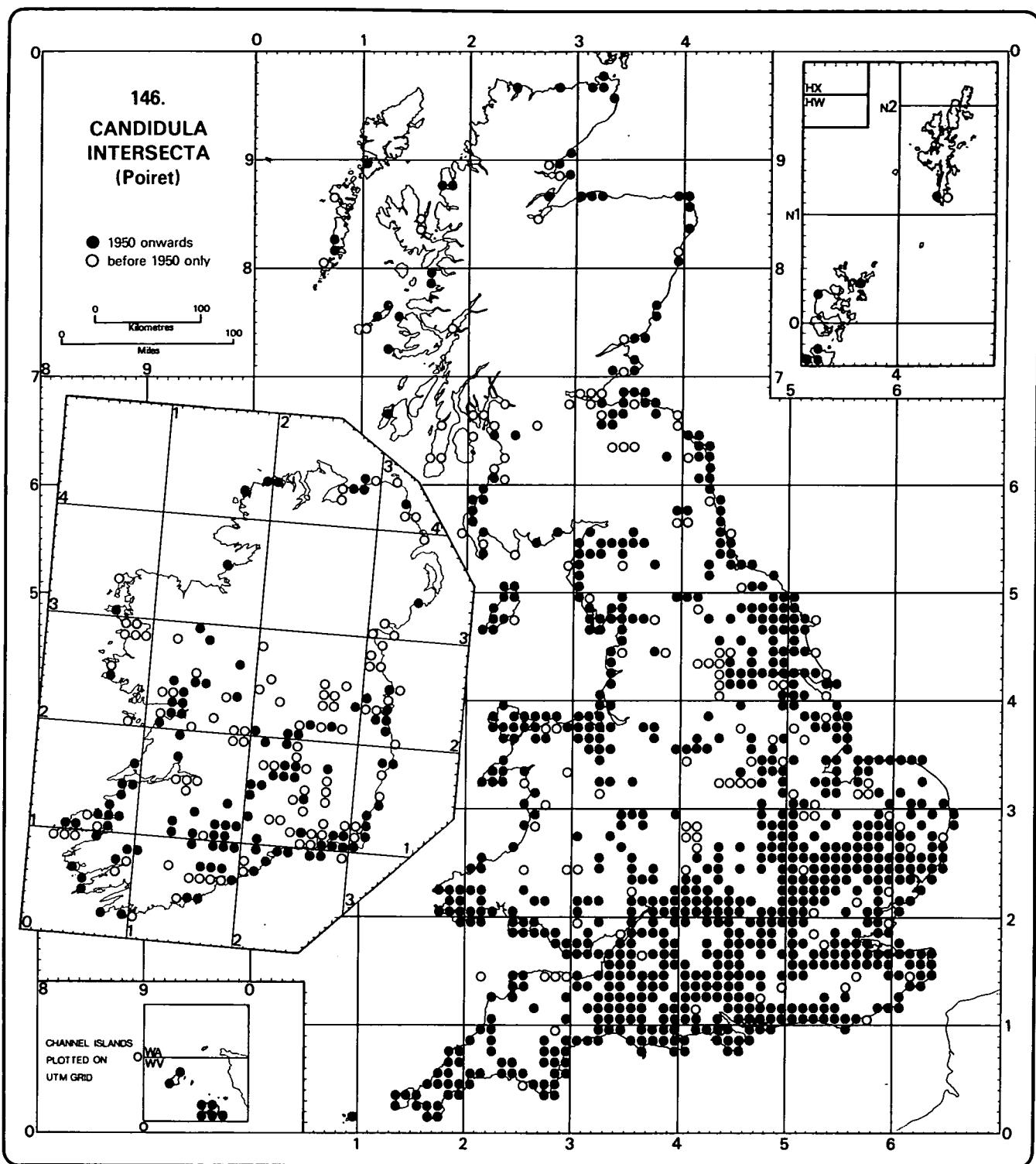
0 Kilometres
100 Miles



CHANNEL ISLANDS
PLOTTED ON
UTM GRID



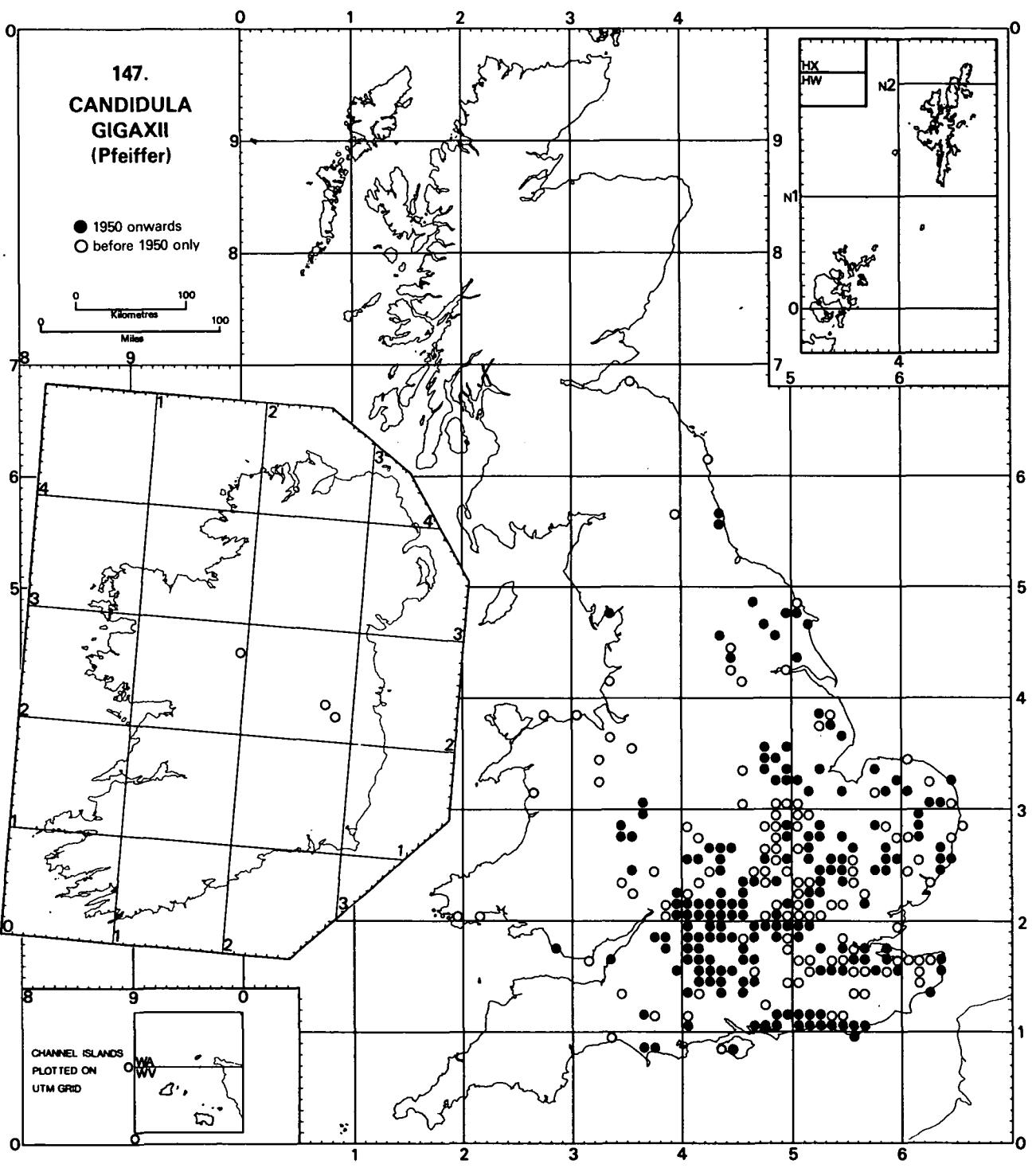
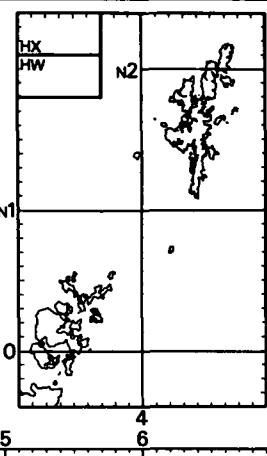


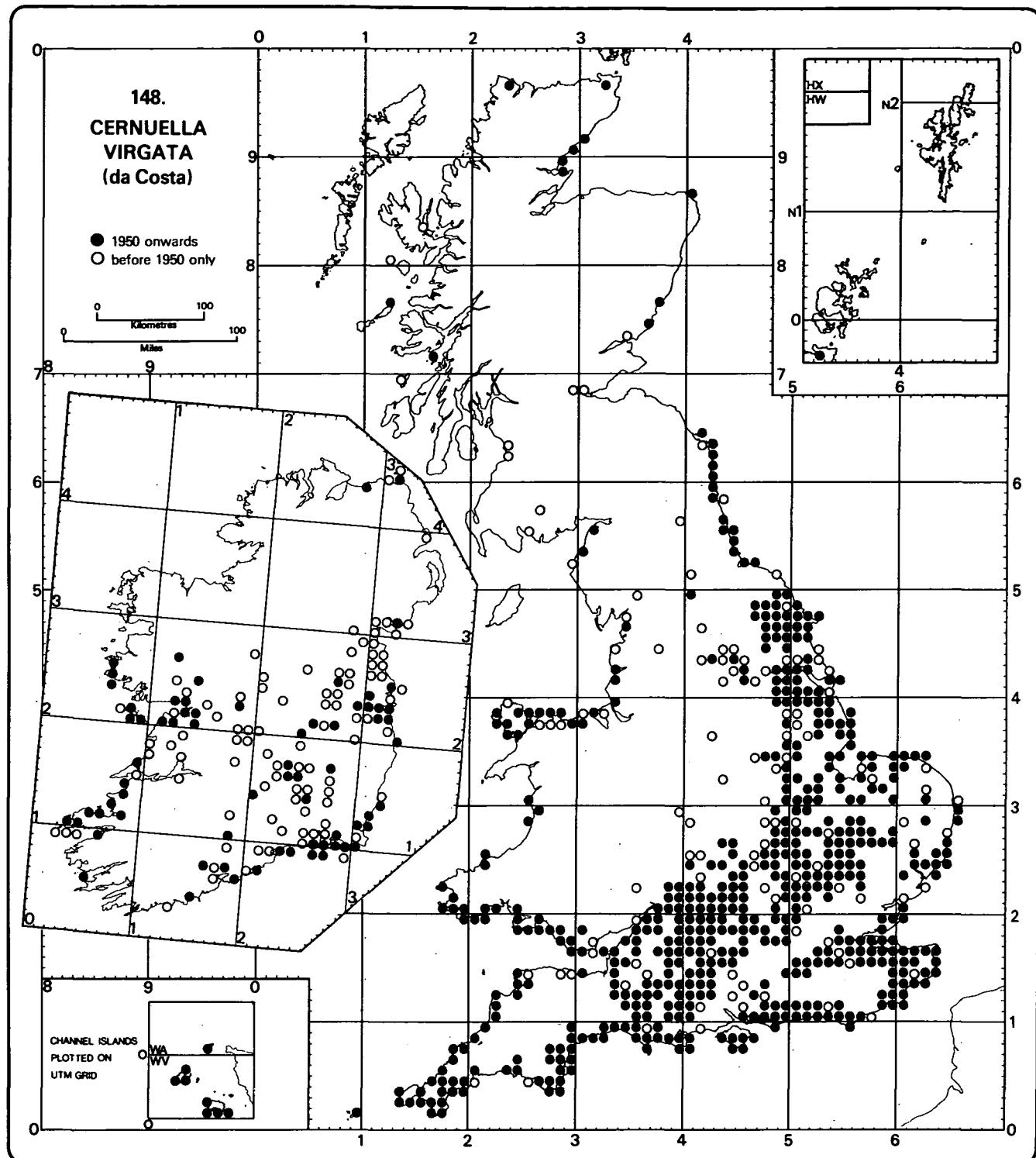


147.
CANDIDULA
GIGAXII
(Pfeiffer)

● 1950 onwards
○ before 1950 only

0 Kilometres 100
0 Miles 100

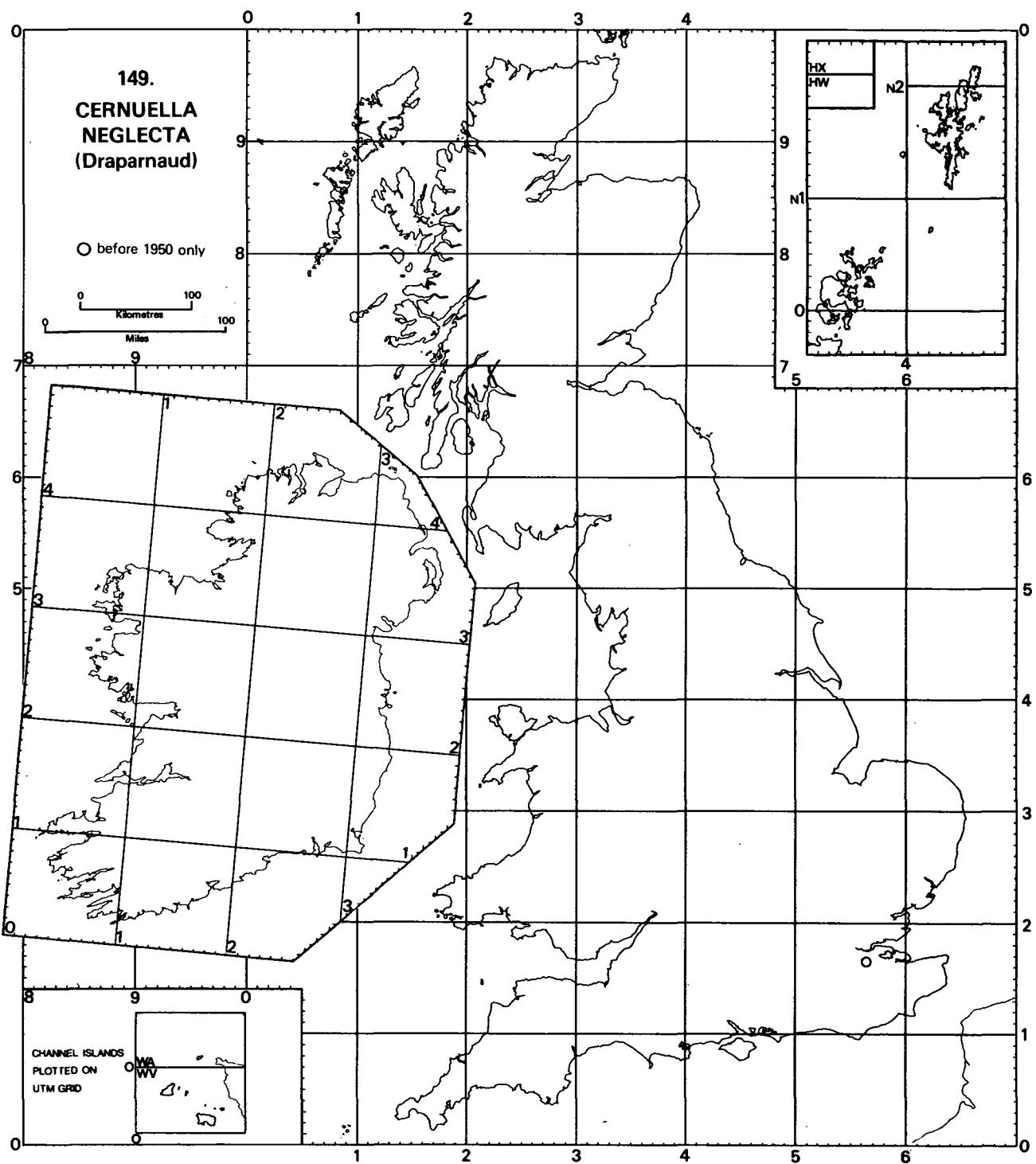


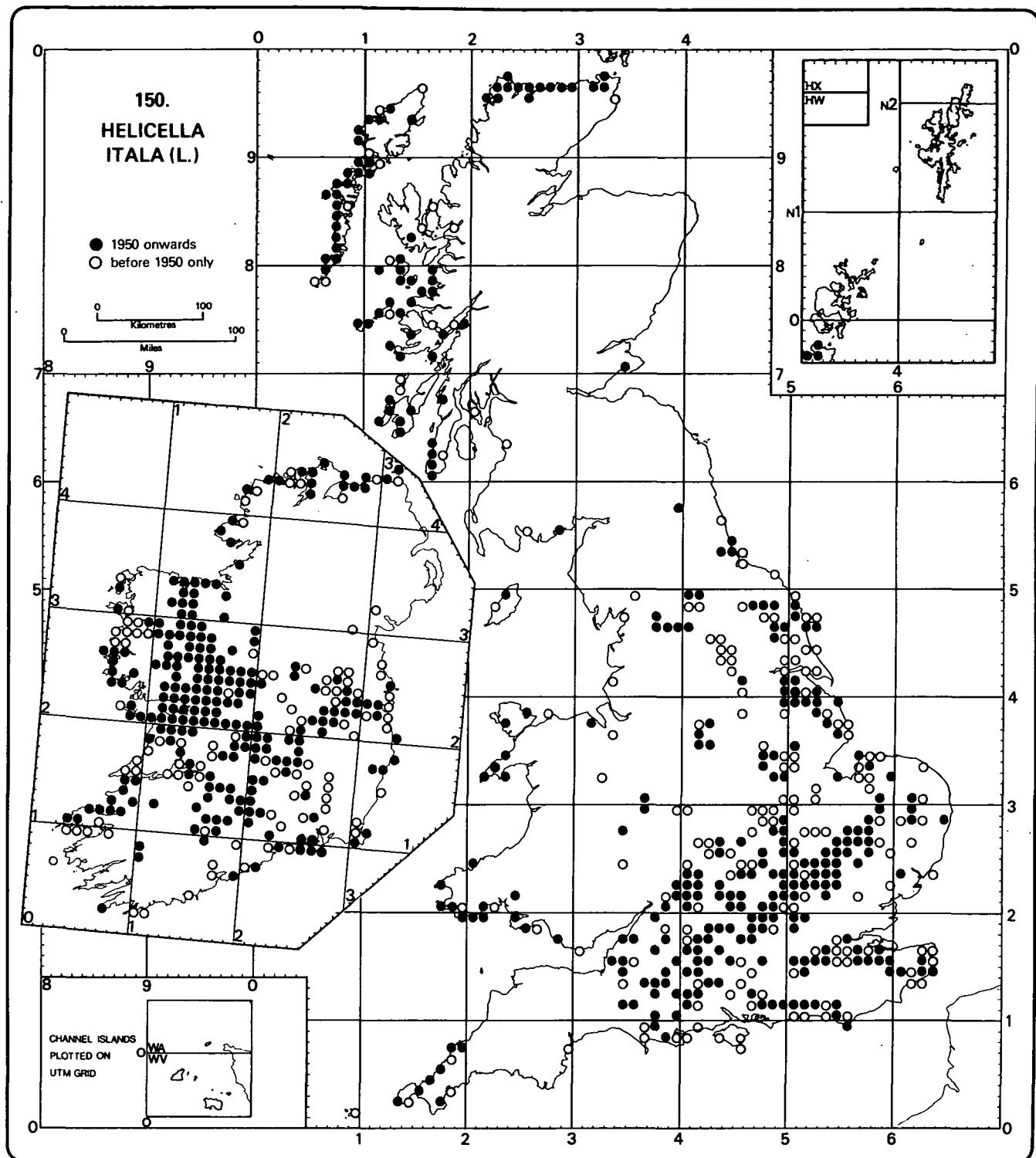


149.
CERNUELLA
NEGLECTA
(Draparnaud)

○ before 1950 only

0 Kilometres
0 Miles

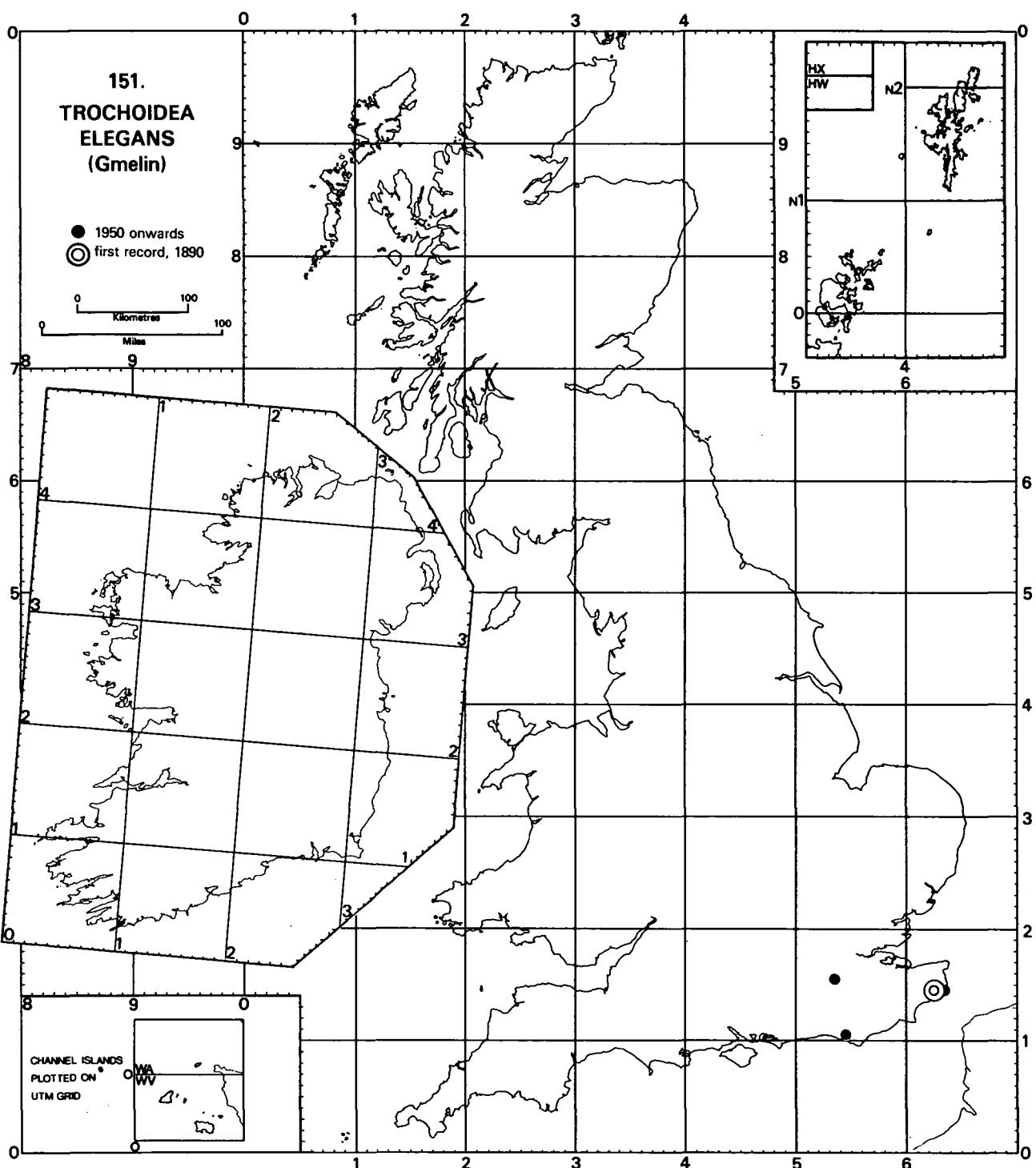


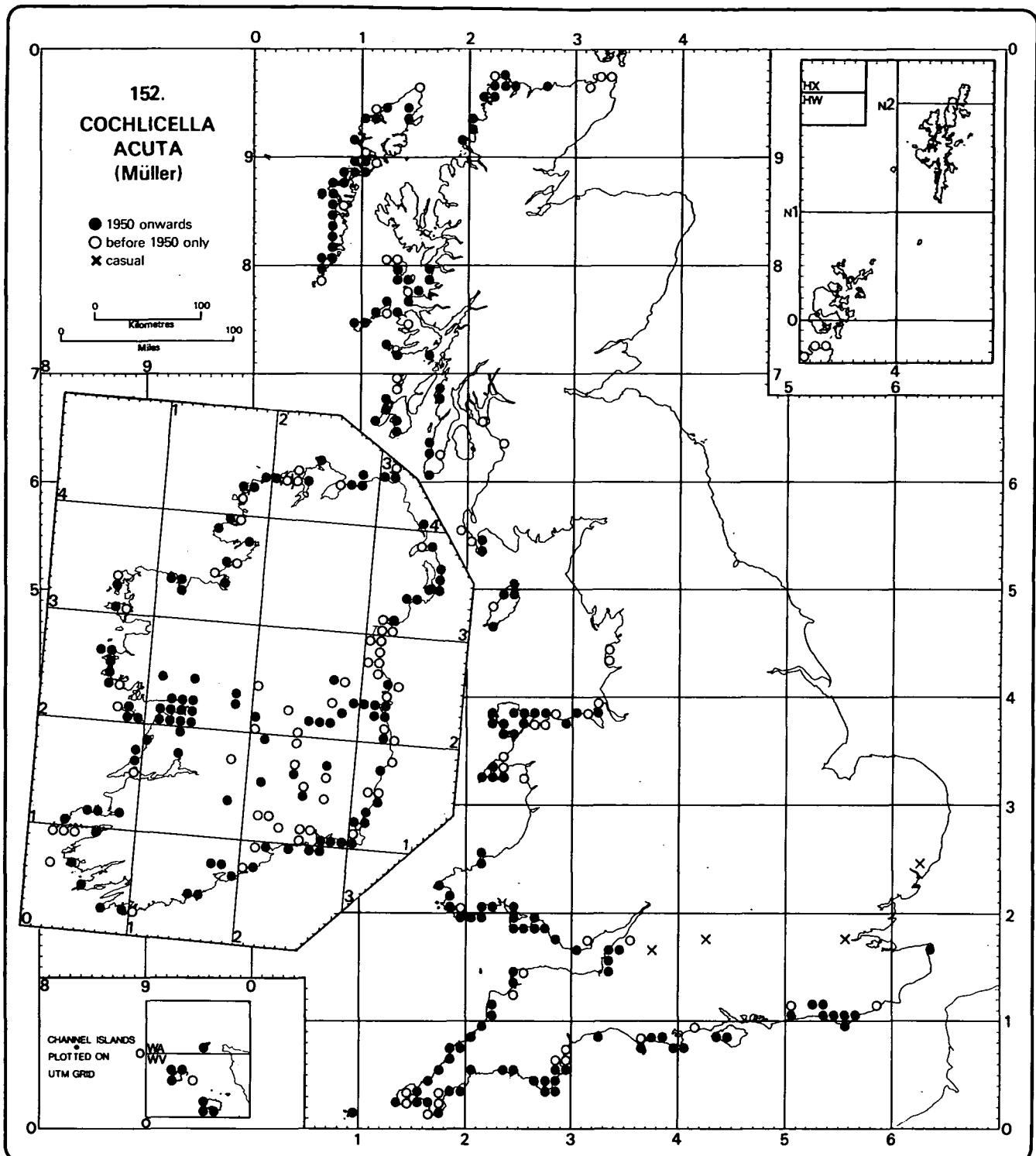


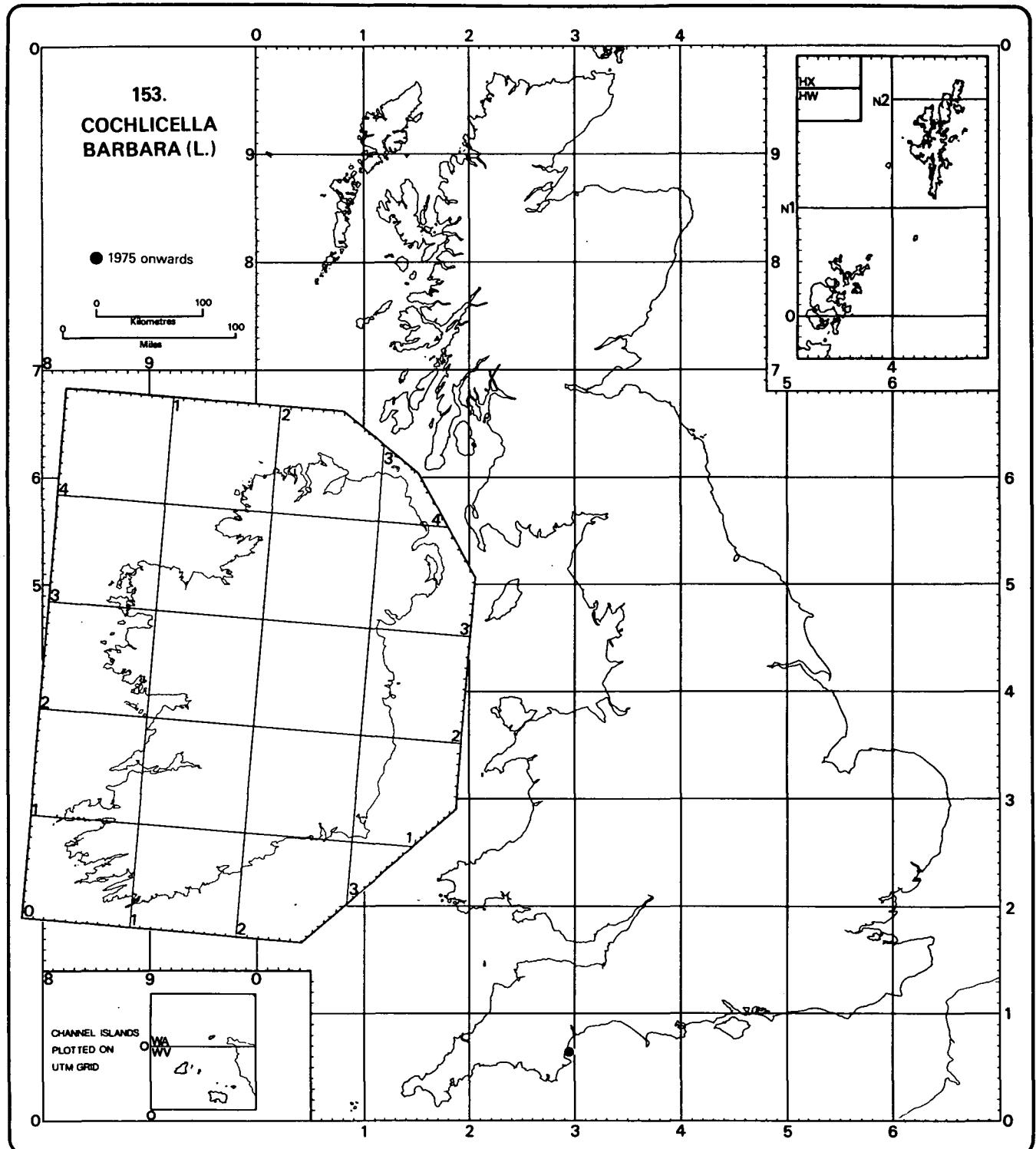
151.
**TROCHOIDEA
ELEGANS**
(Gmelin)

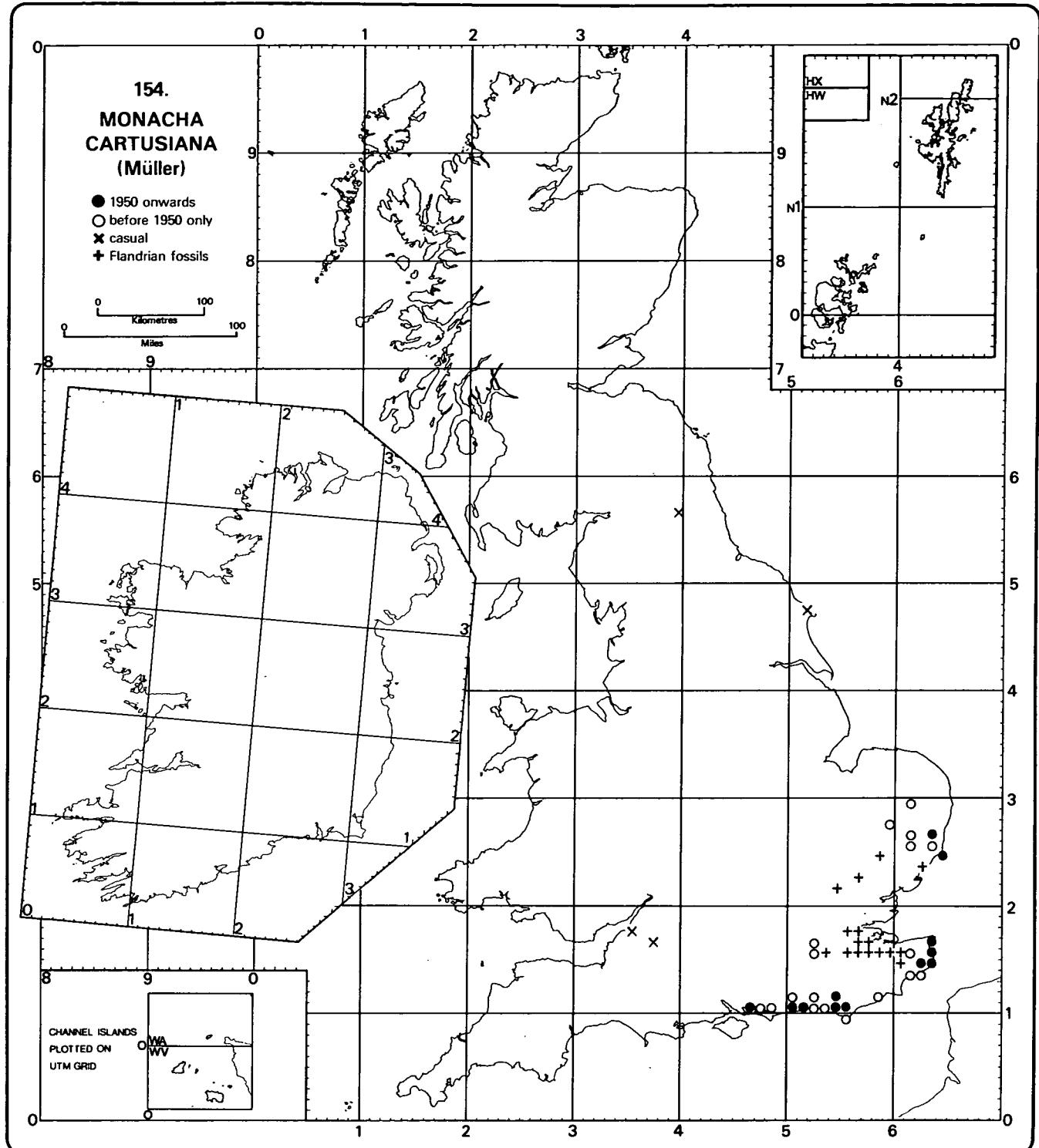
- 1950 onwards
- first record, 1890

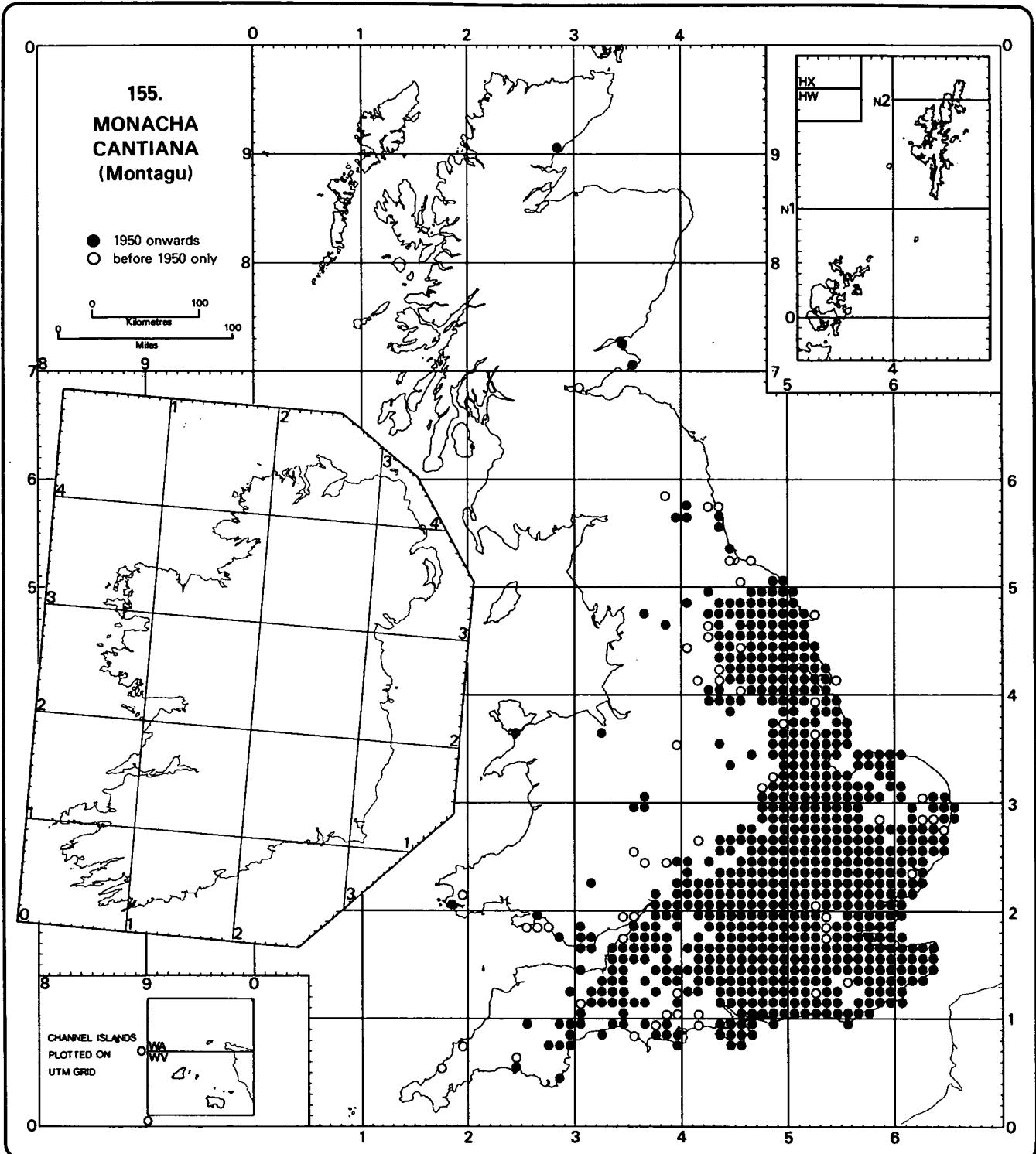
0 Kilometres
100 Miles

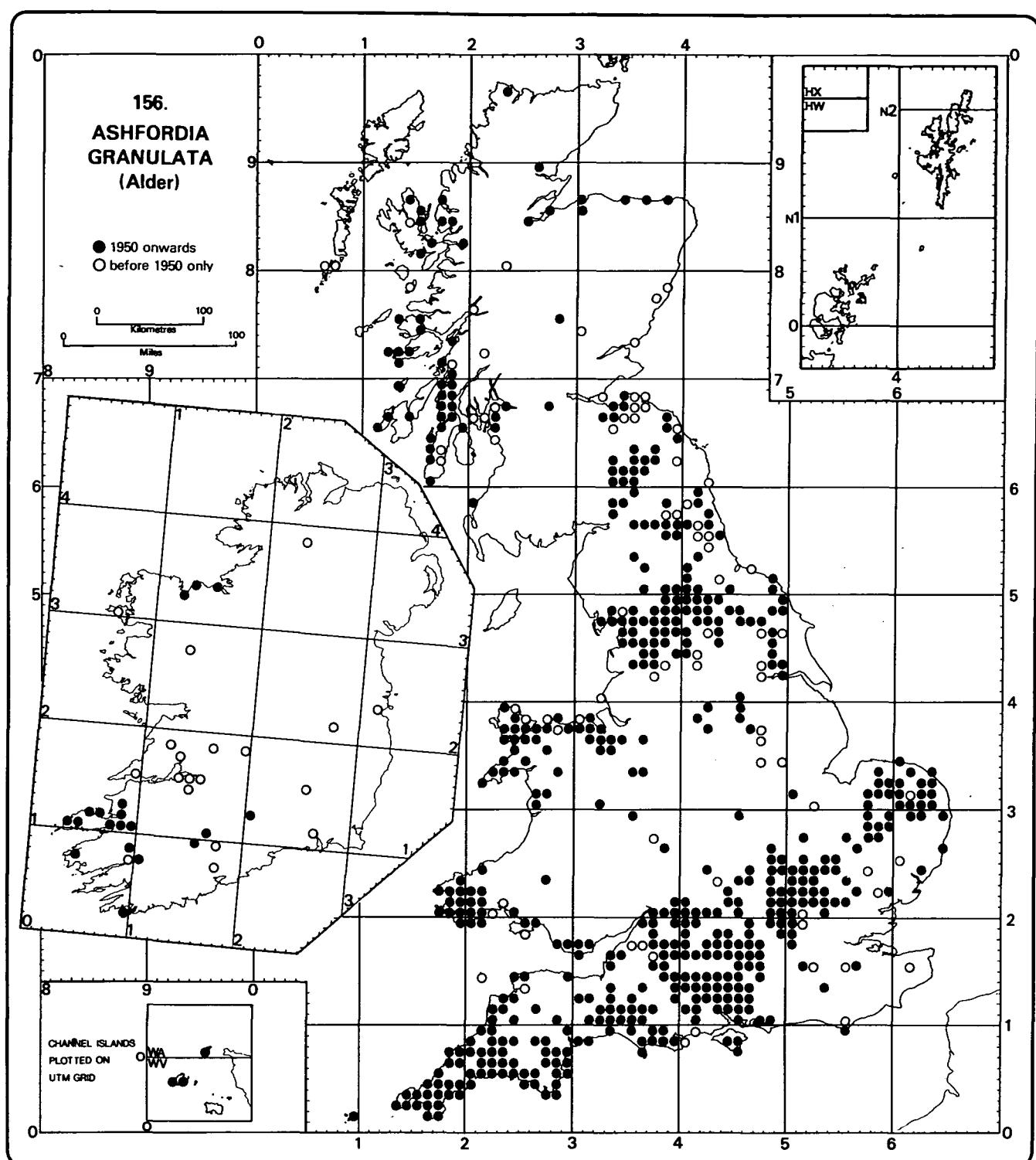








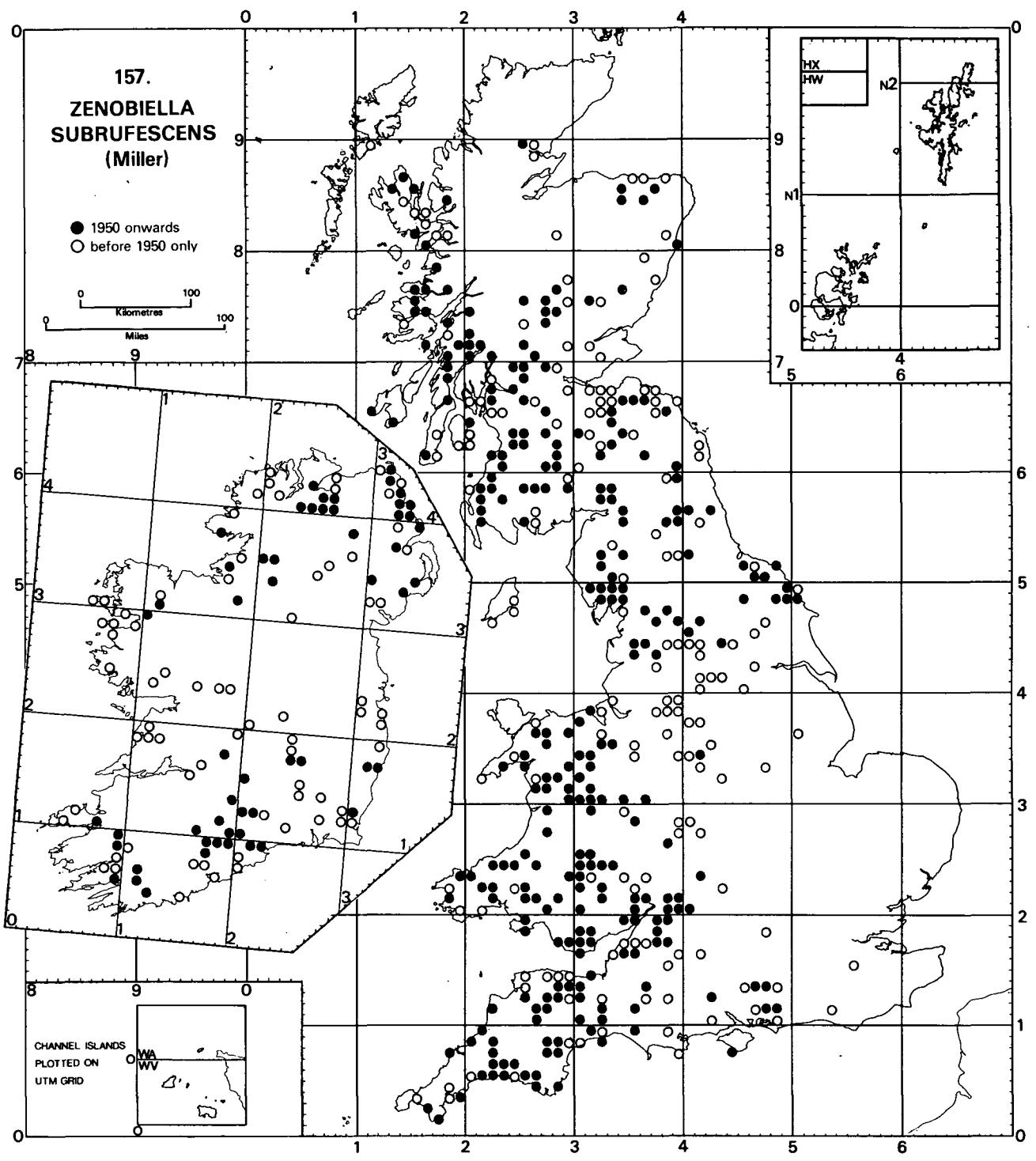


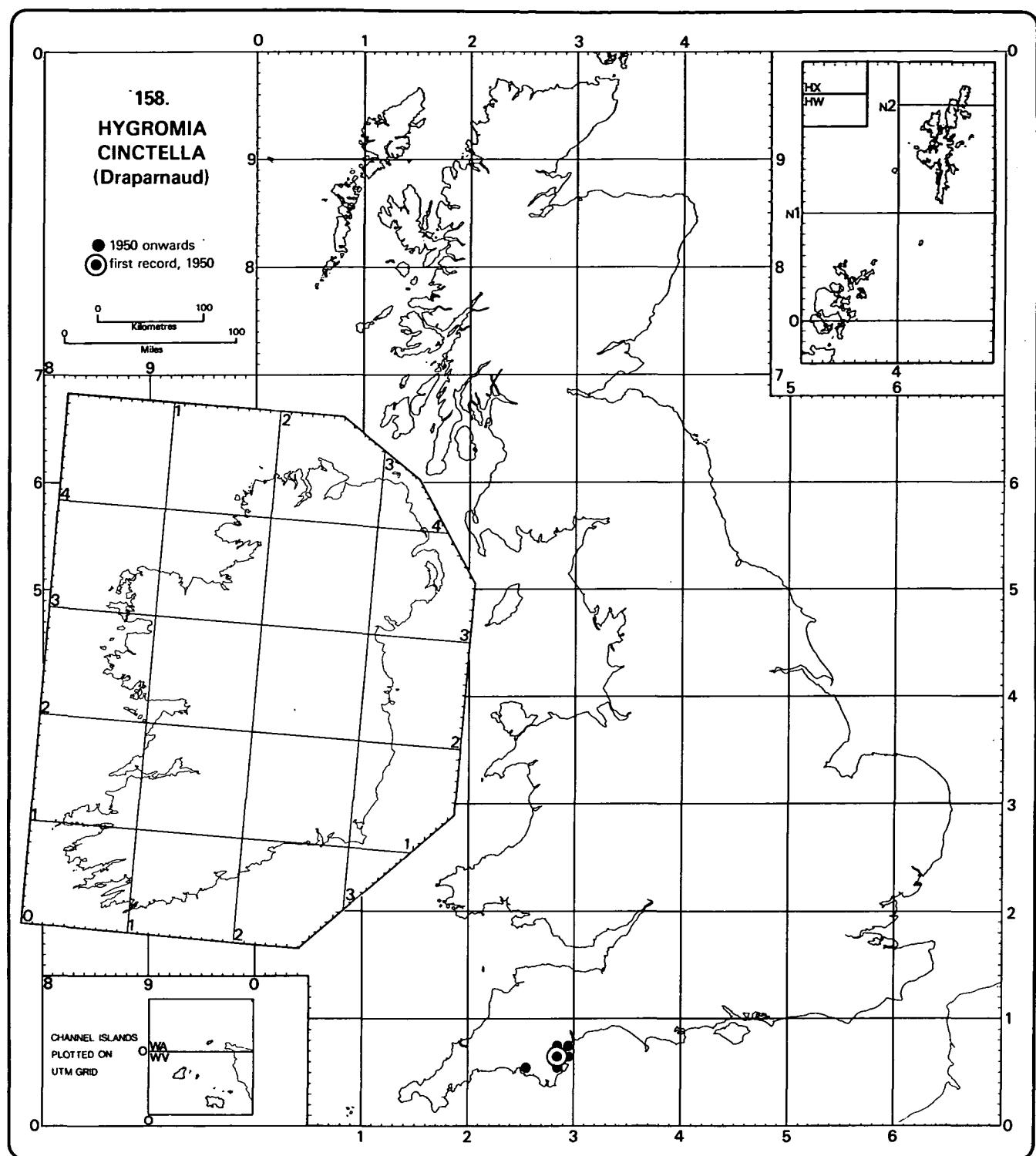


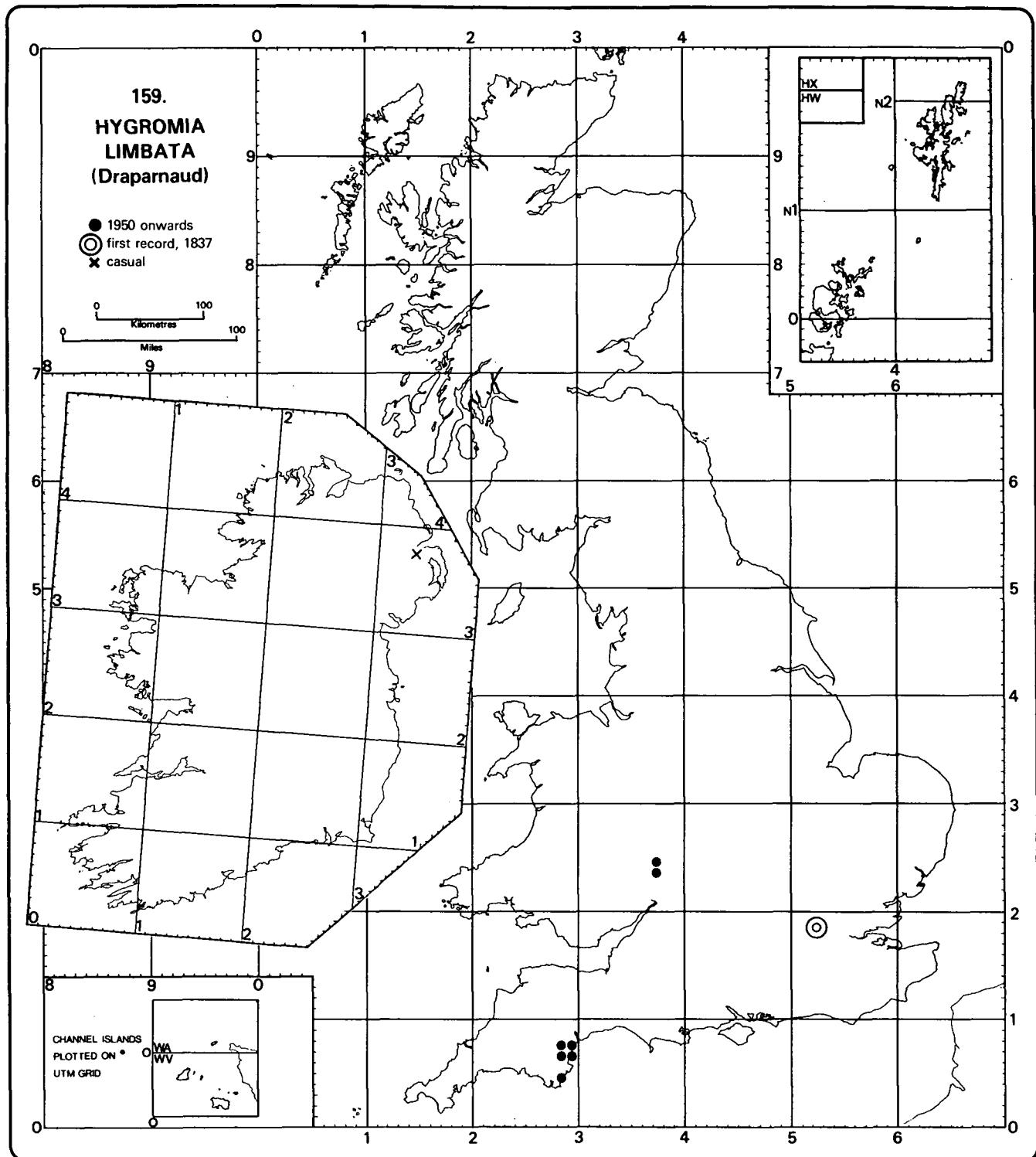
157.
ZENOBIELLA
SUBRUFESCENS
(Miller)

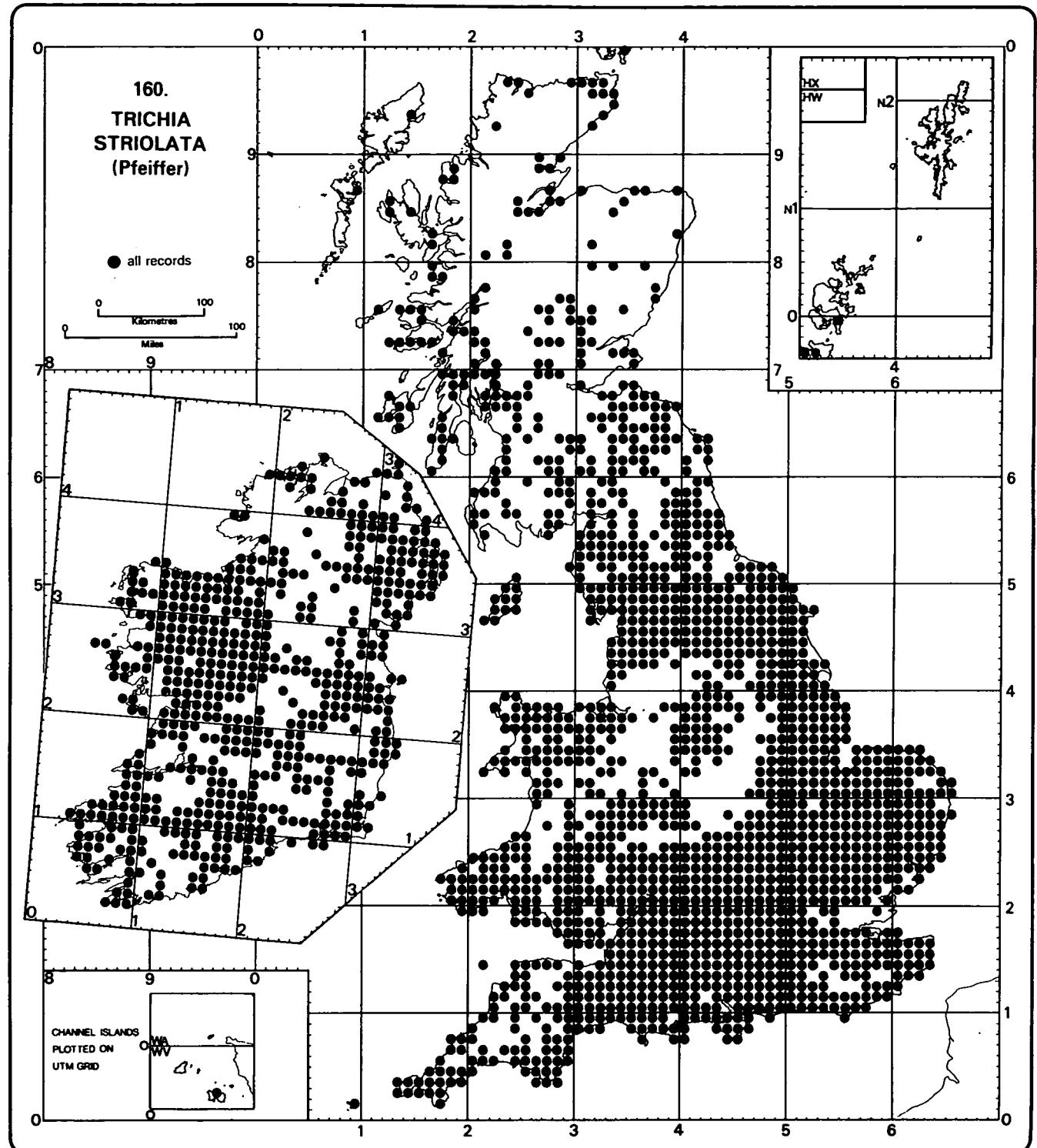
● 1950 onwards
○ before 1950 only

0 Kilometres
100 Miles





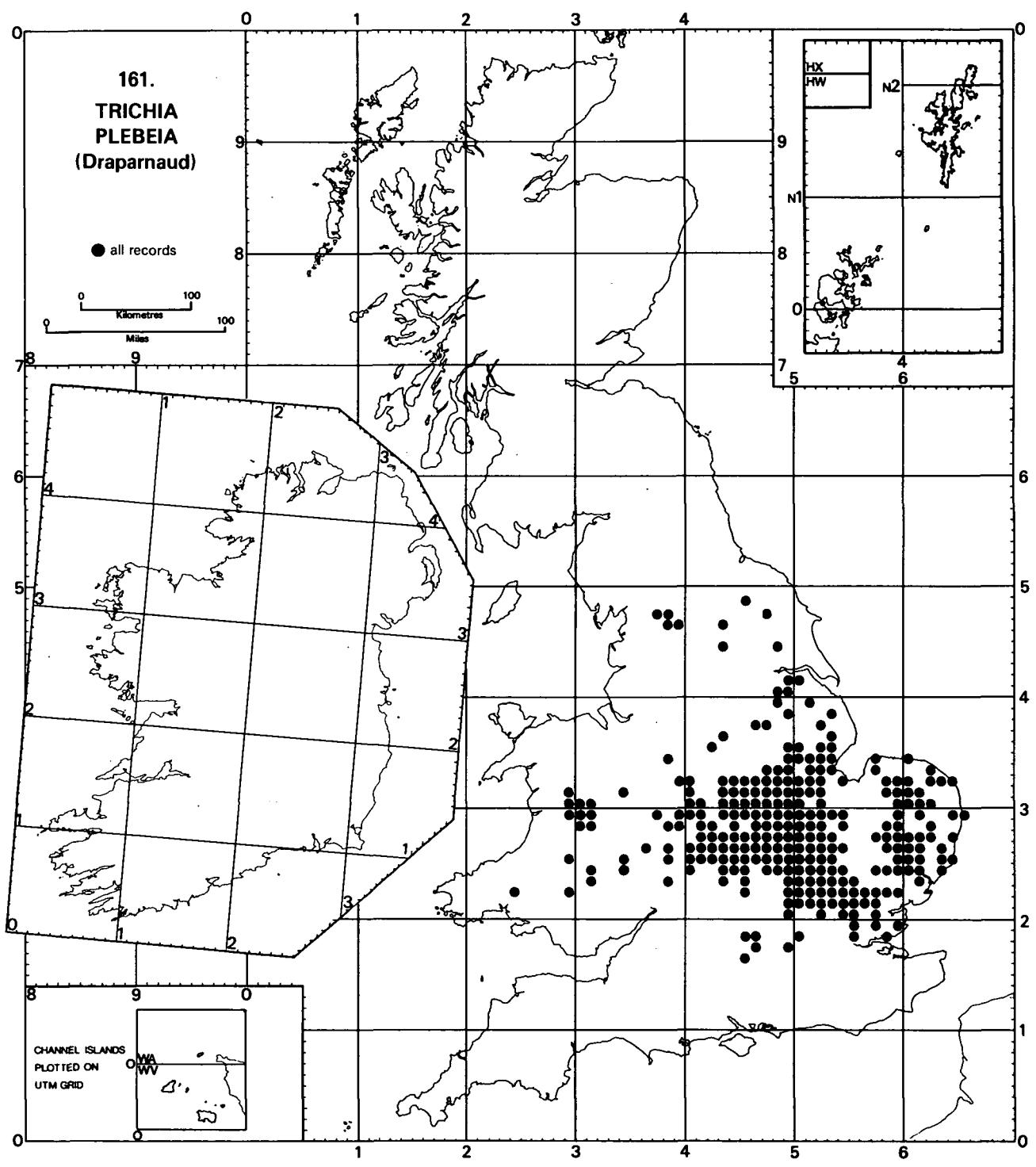


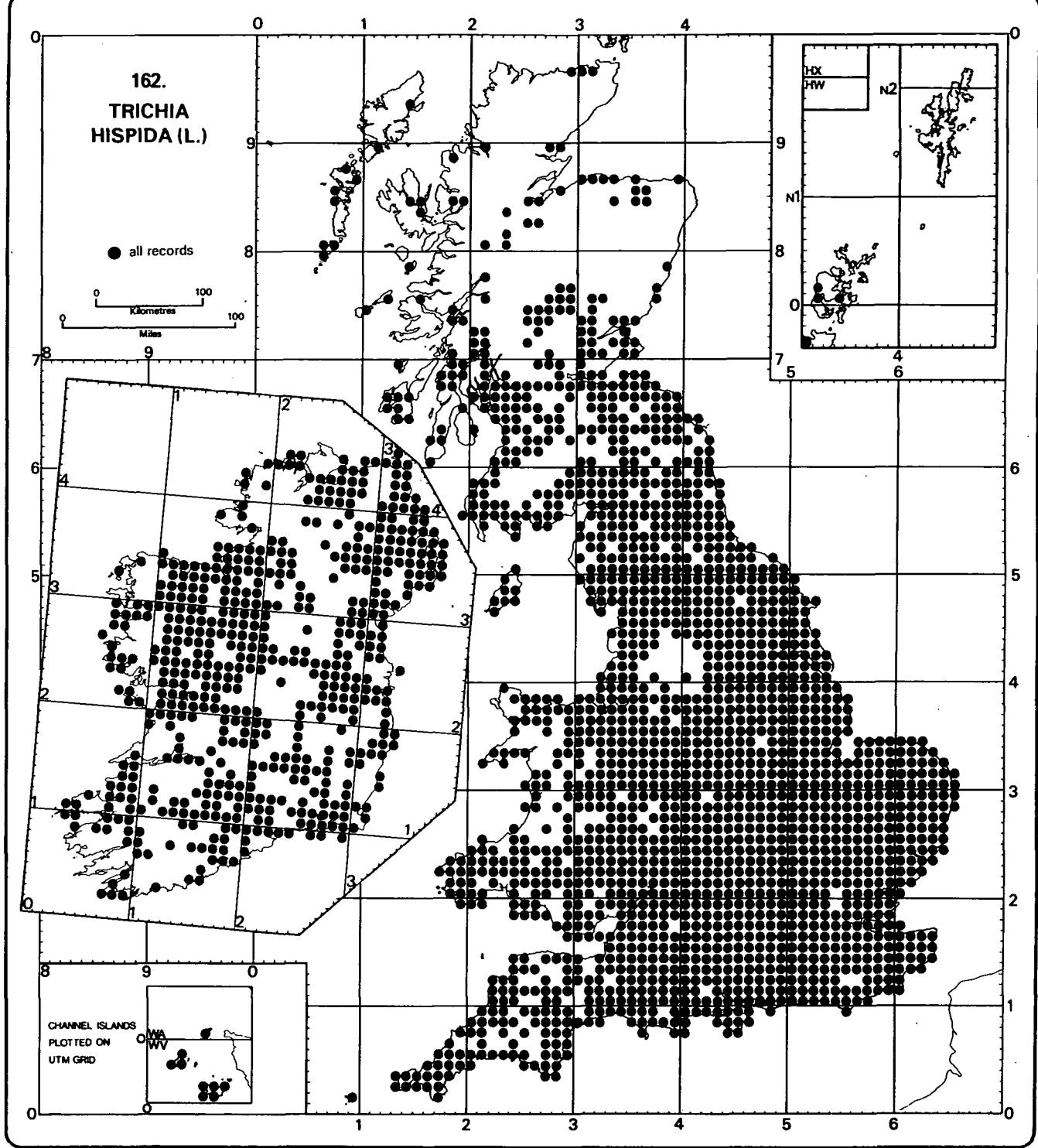


161.
TRICHLIA
PLEBEIA
(Draparnaud)

● all records

0 Kilometres
100 Miles



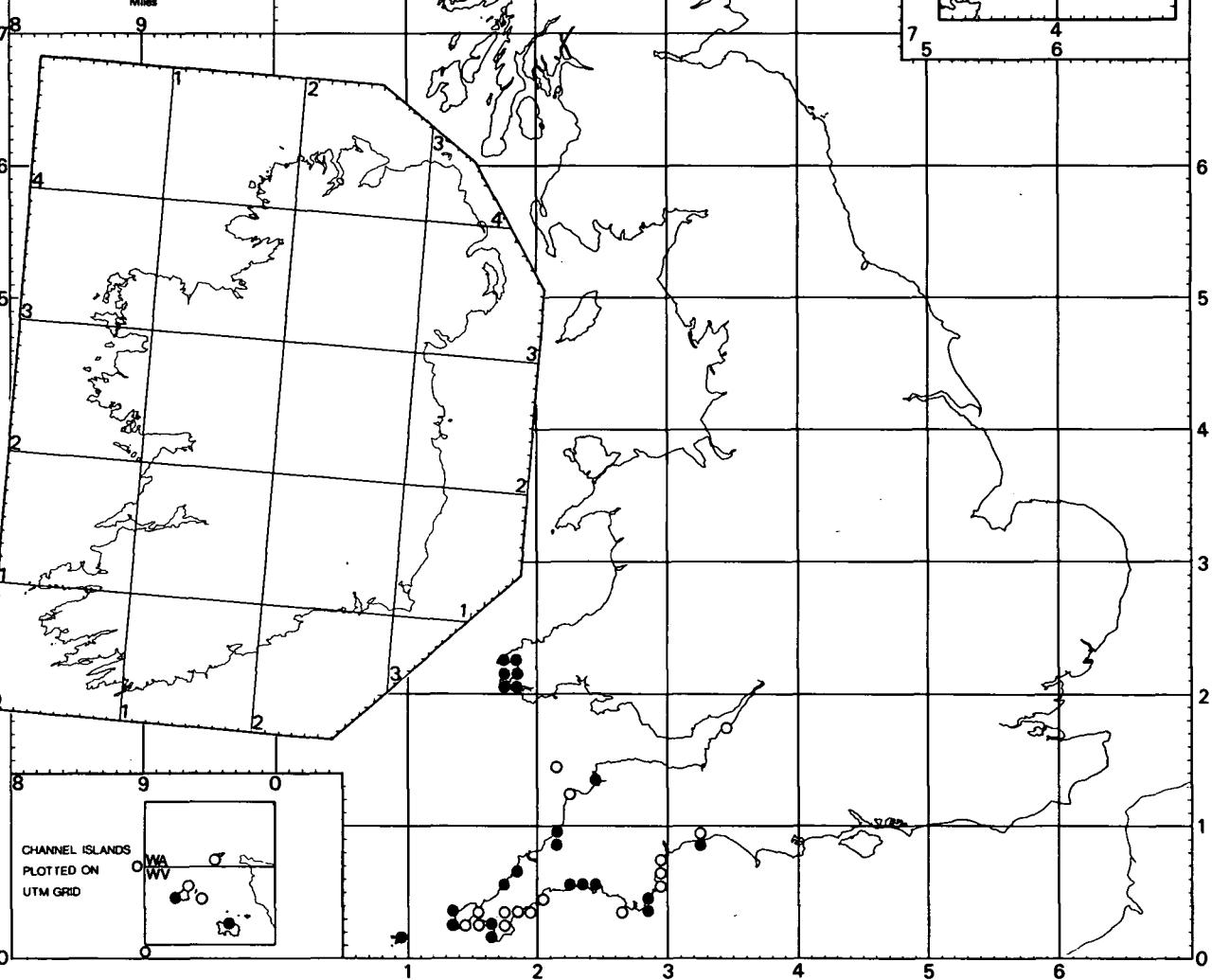
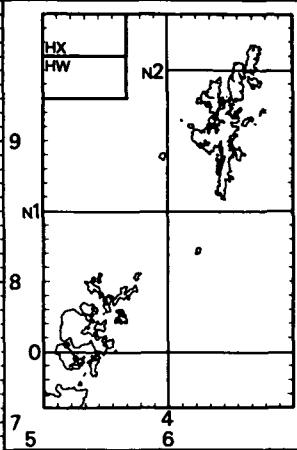


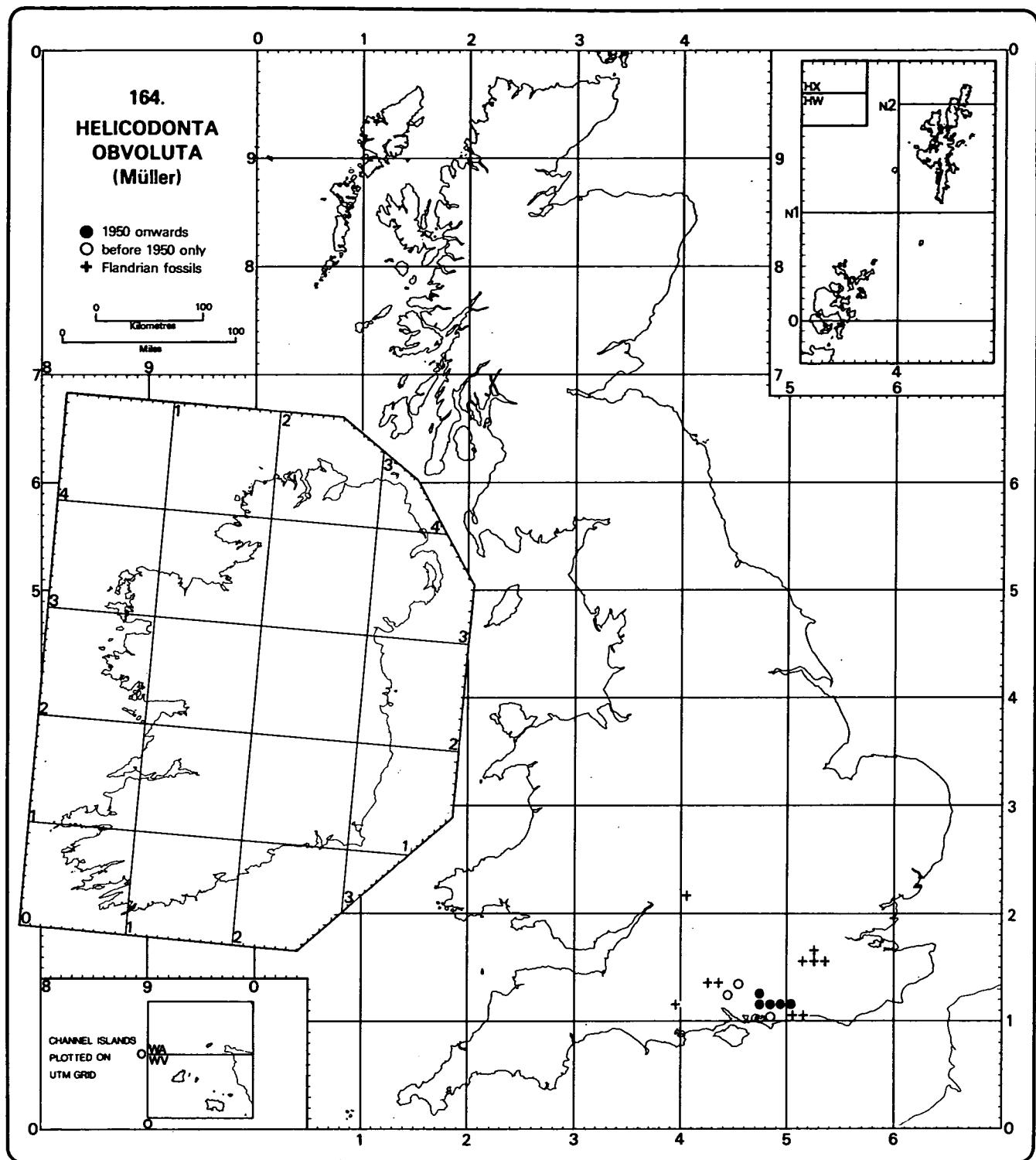
163.
PONENTINA
SUBVIRESCENS
(Bellamy)

● 1950 onwards
○ before 1950 only

0 Kilometres 100

0 Miles 100

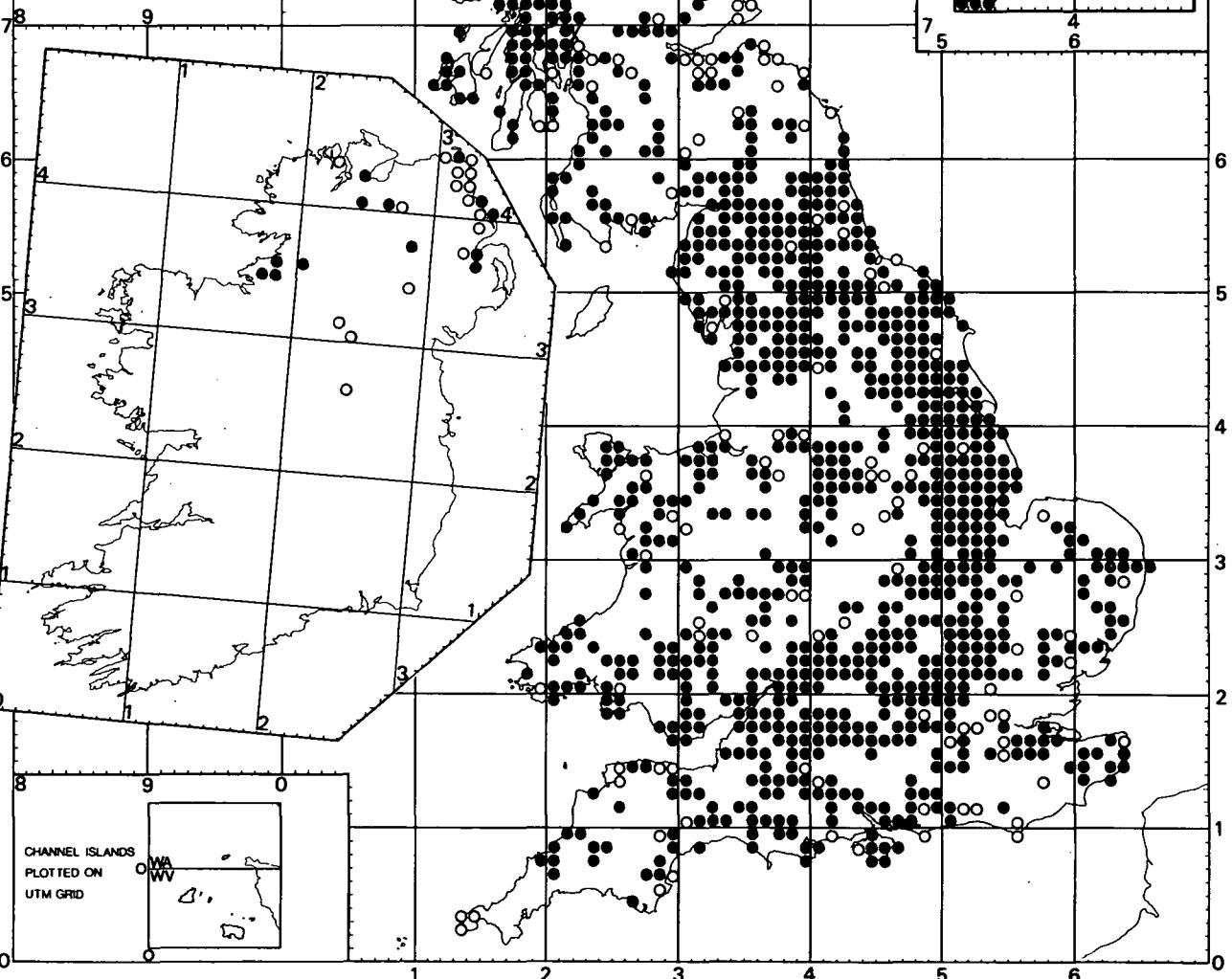
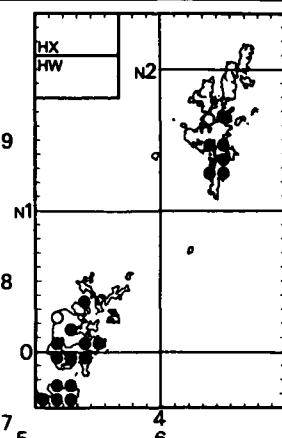




165.
ARIANTA
ARBUSTORUM (L.)

● 1950 onwards
○ before 1950 only

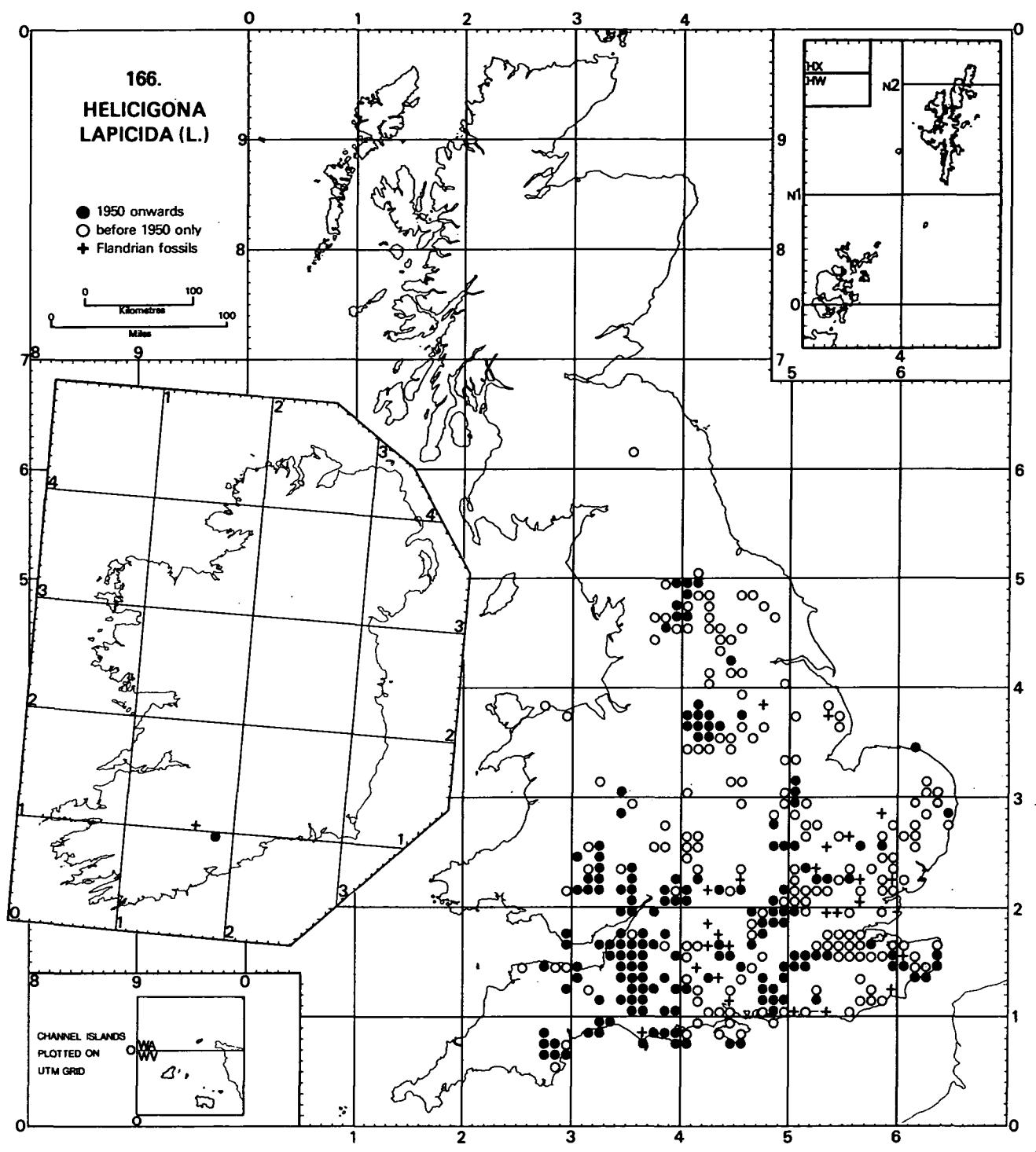
0 Kilometres
100 Miles



CHANNEL ISLANDS
PLOTTED ON
UTM GRID

166.

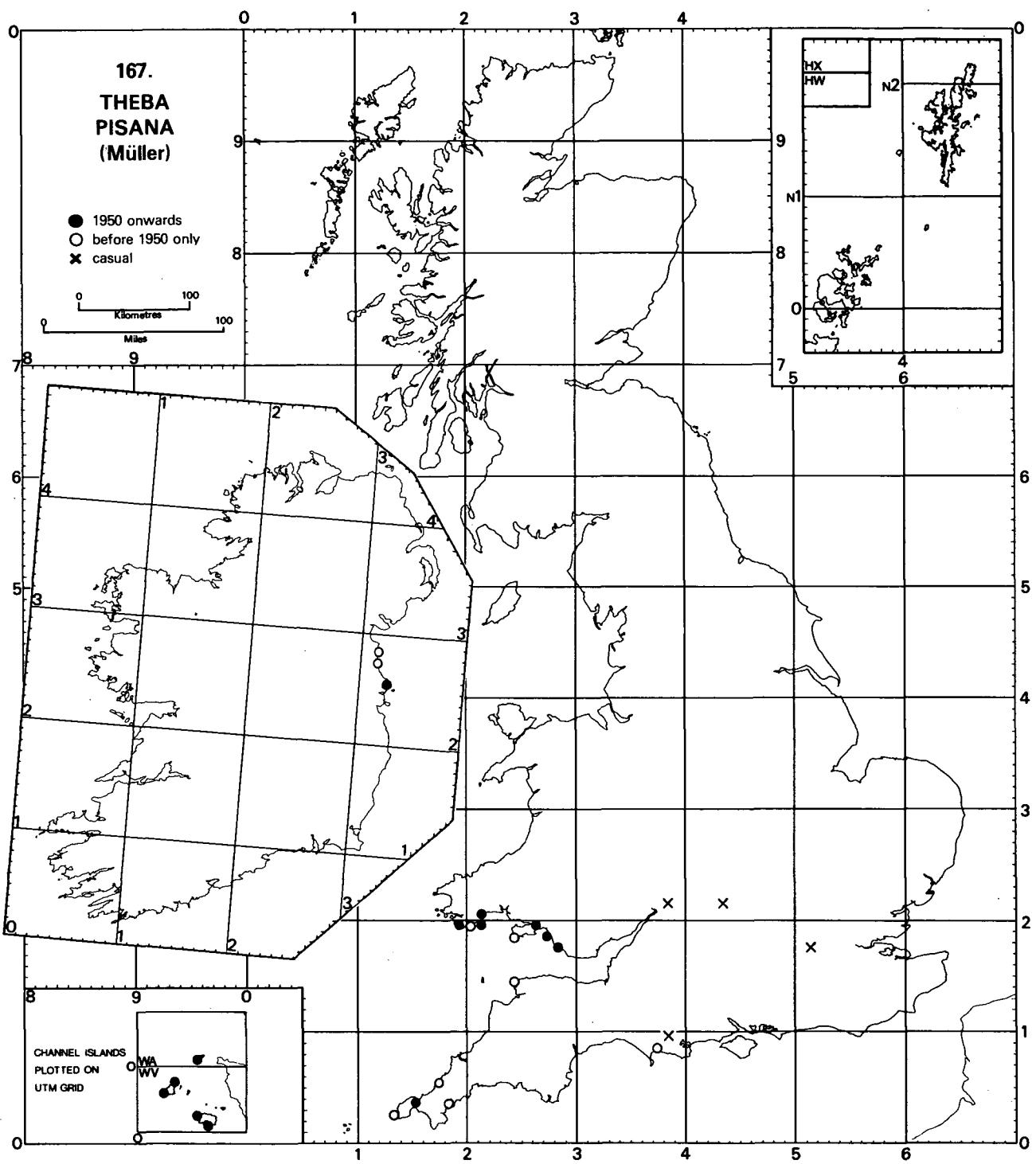
- 1950 onwards
- before 1950 only
- + Flandrian fossils

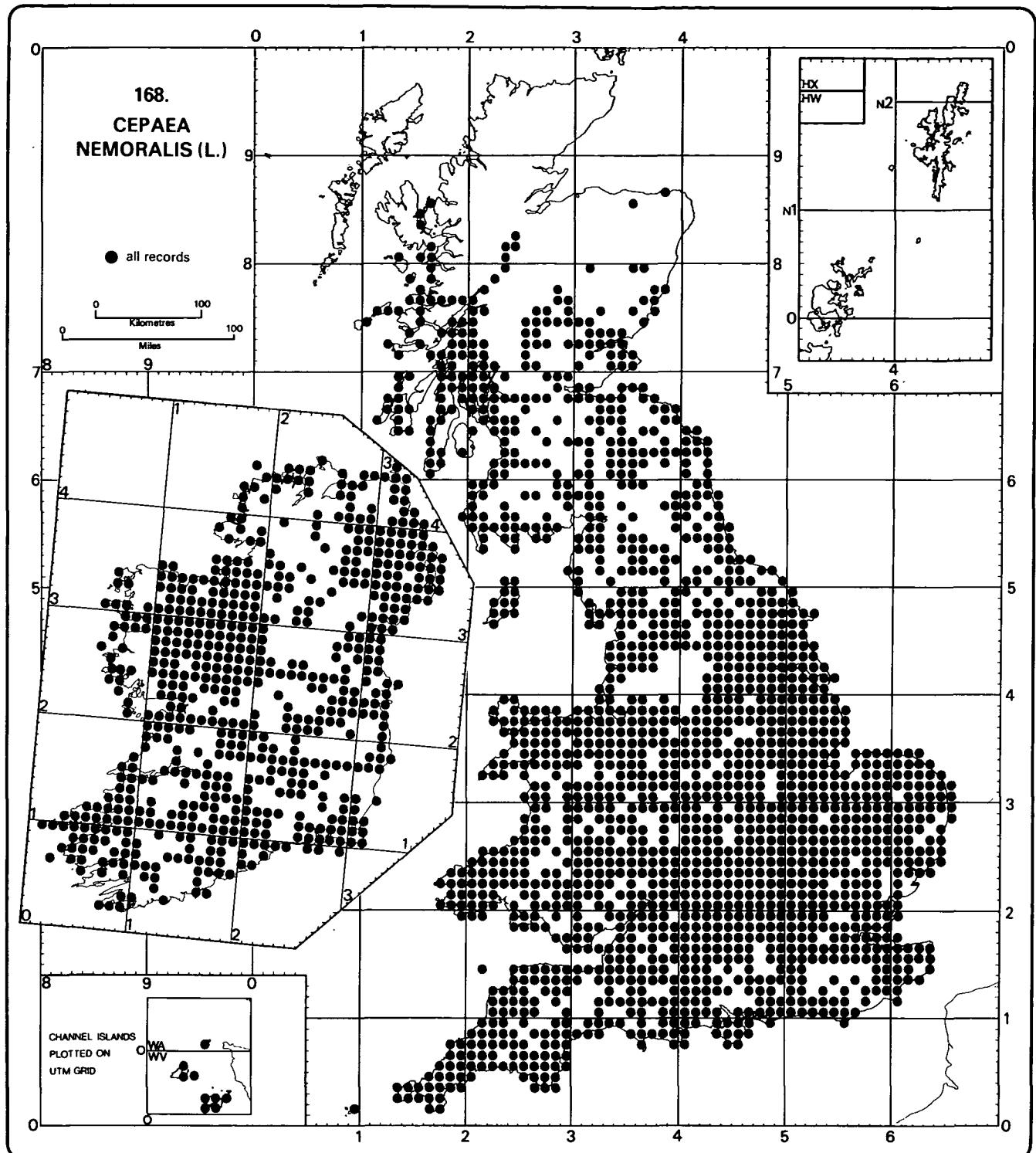


167.
THEBA
PISANA
(Müller)

- 1950 onwards
- before 1950 only
- ✗ casual

0 Kilometres 100 Miles



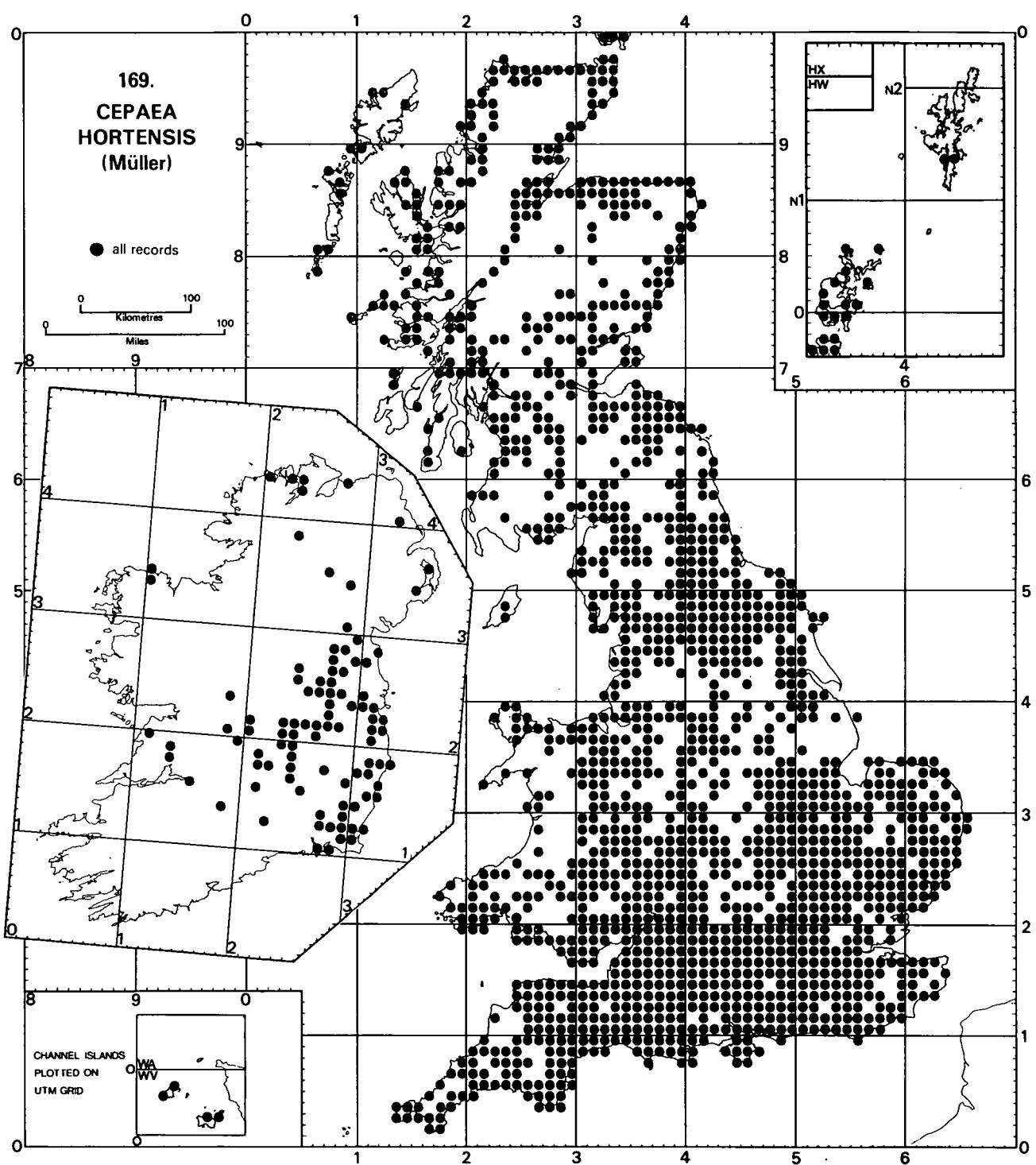


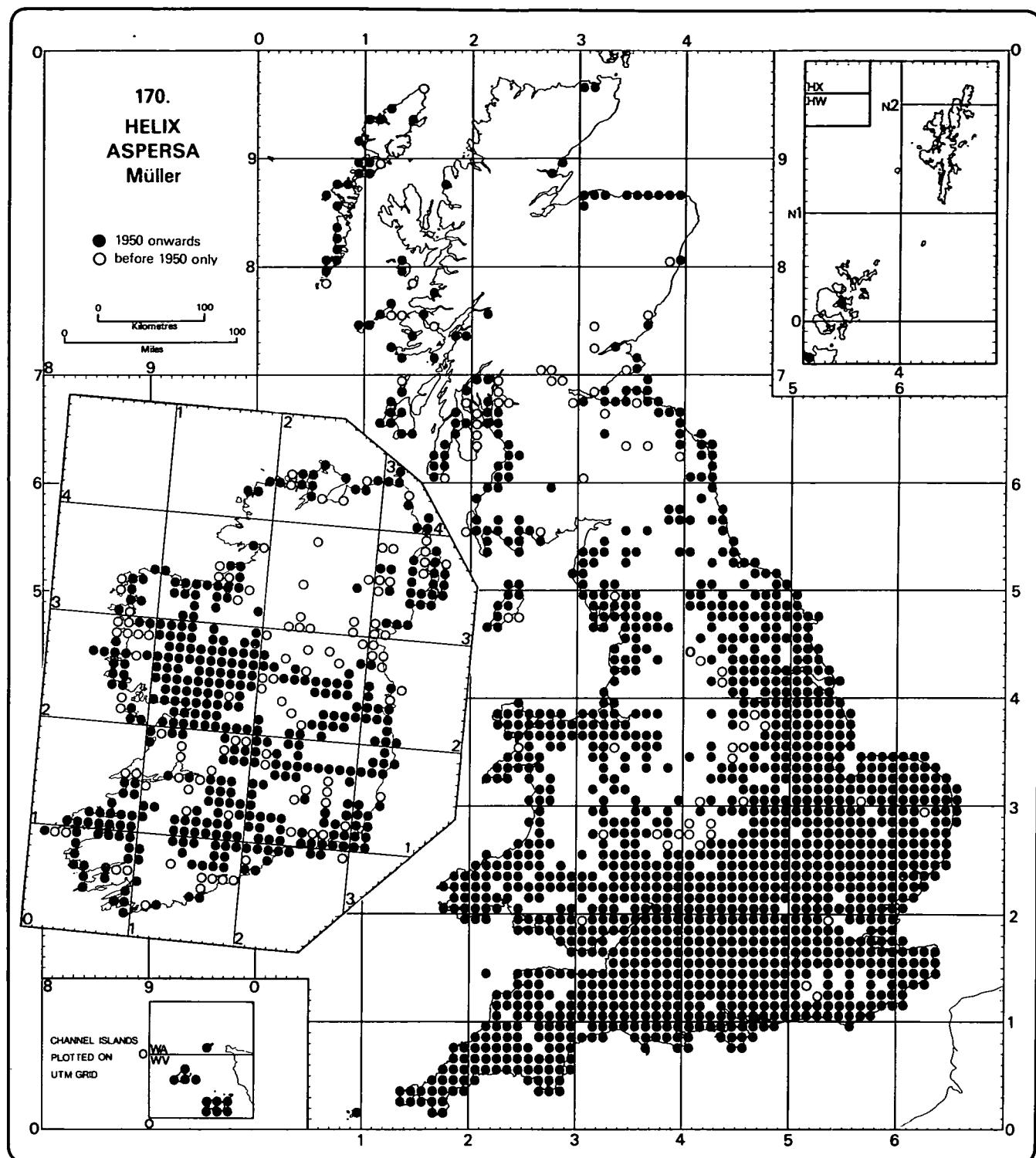
169.
CEPAEA
HORTENSIS
(Müller)

● all records

0 Kilometres

0 Miles

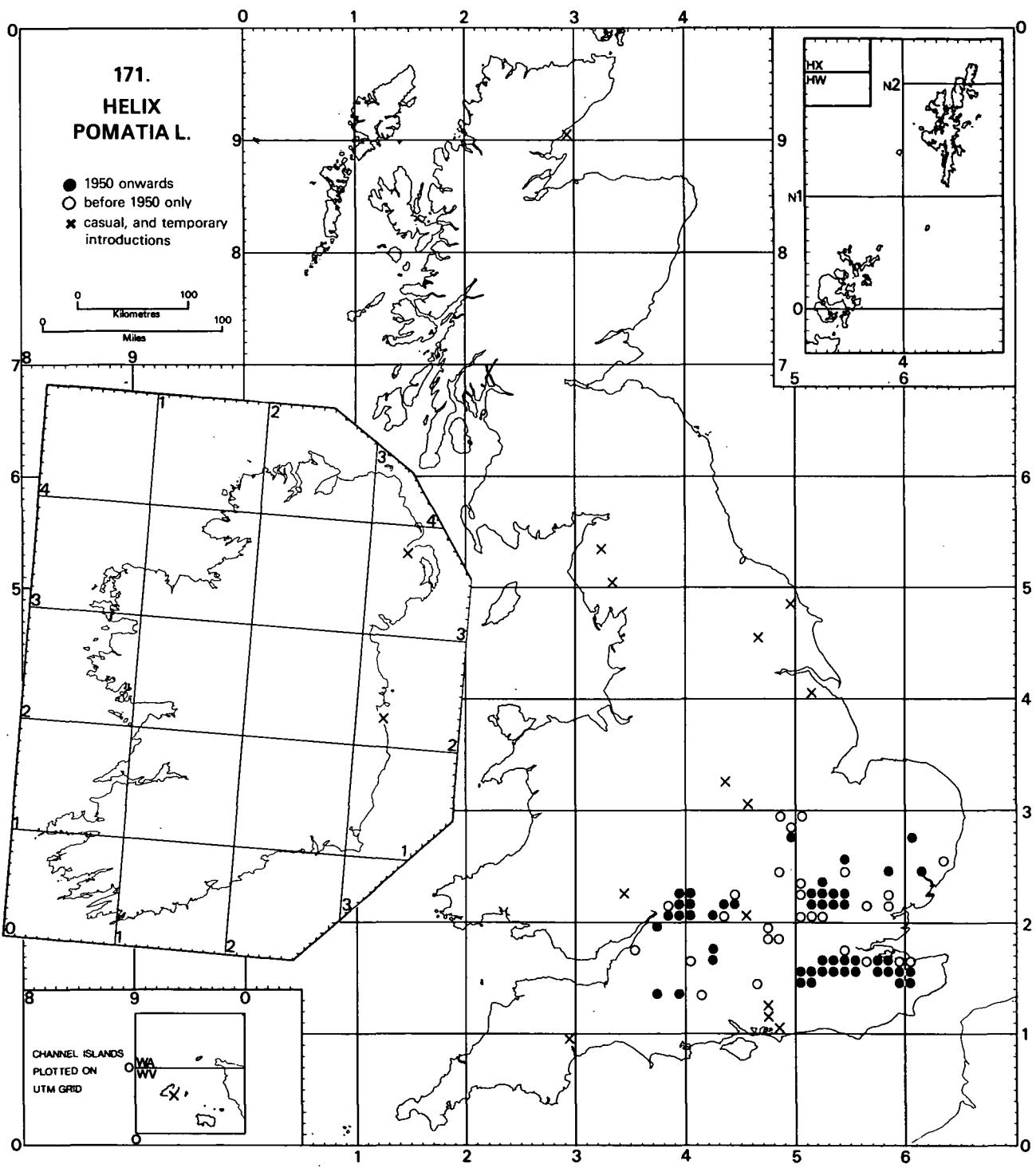


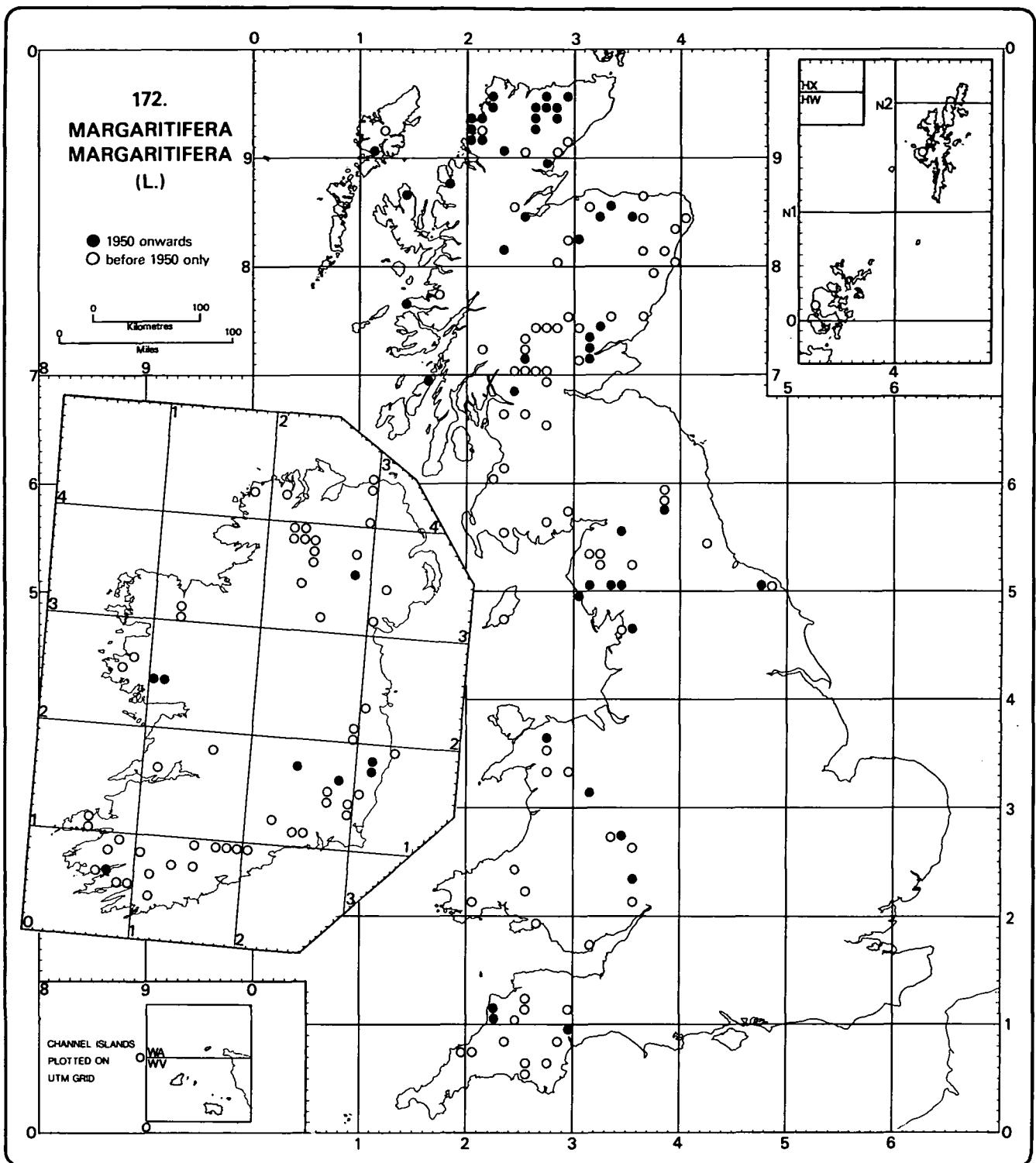


171.
HELIX
POMATIA L.

- 1950 onwards
- before 1950 only
- ✗ casual, and temporary introductions

0 Kilometres
100 Miles

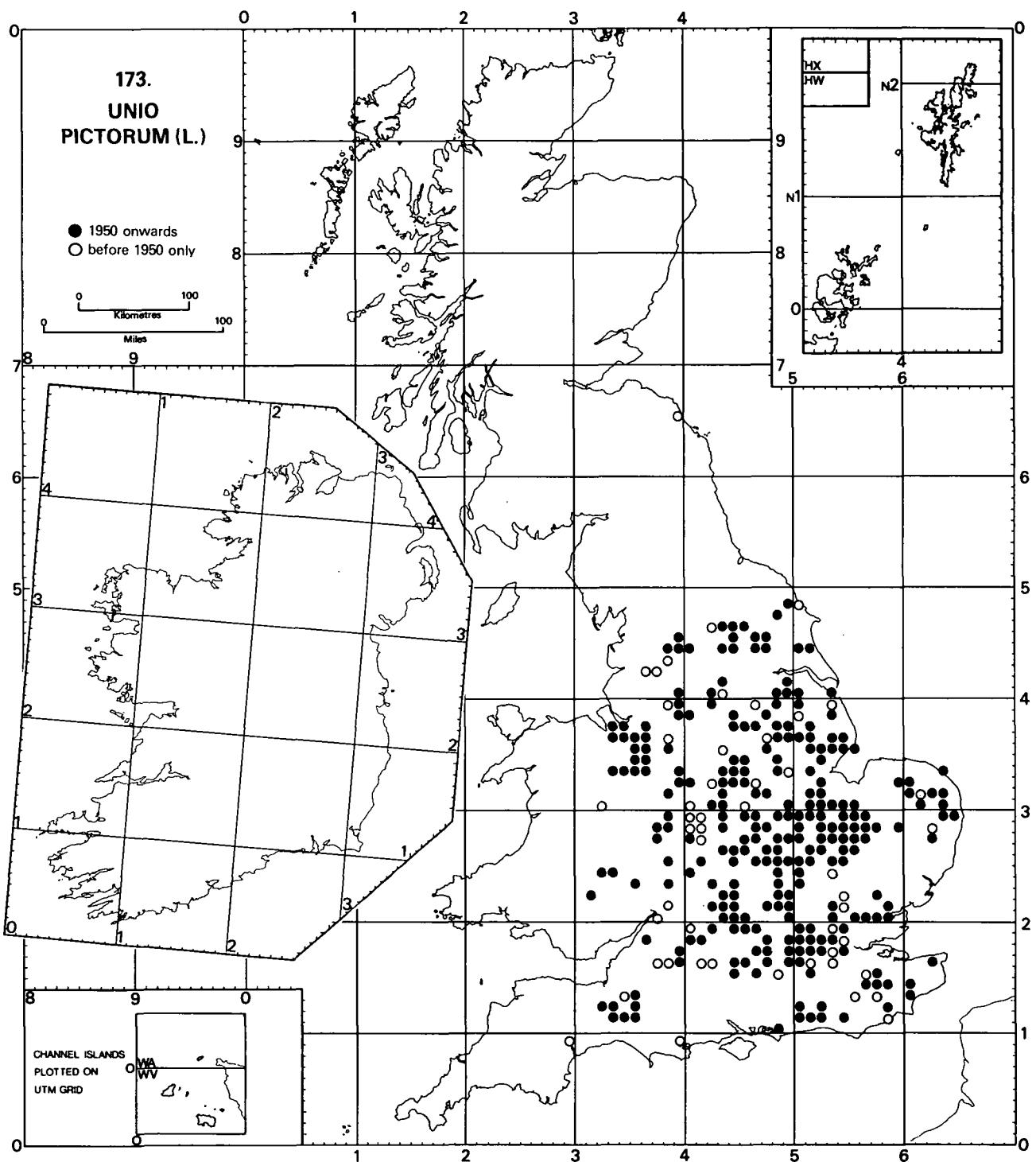
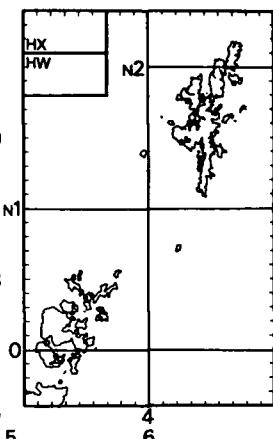


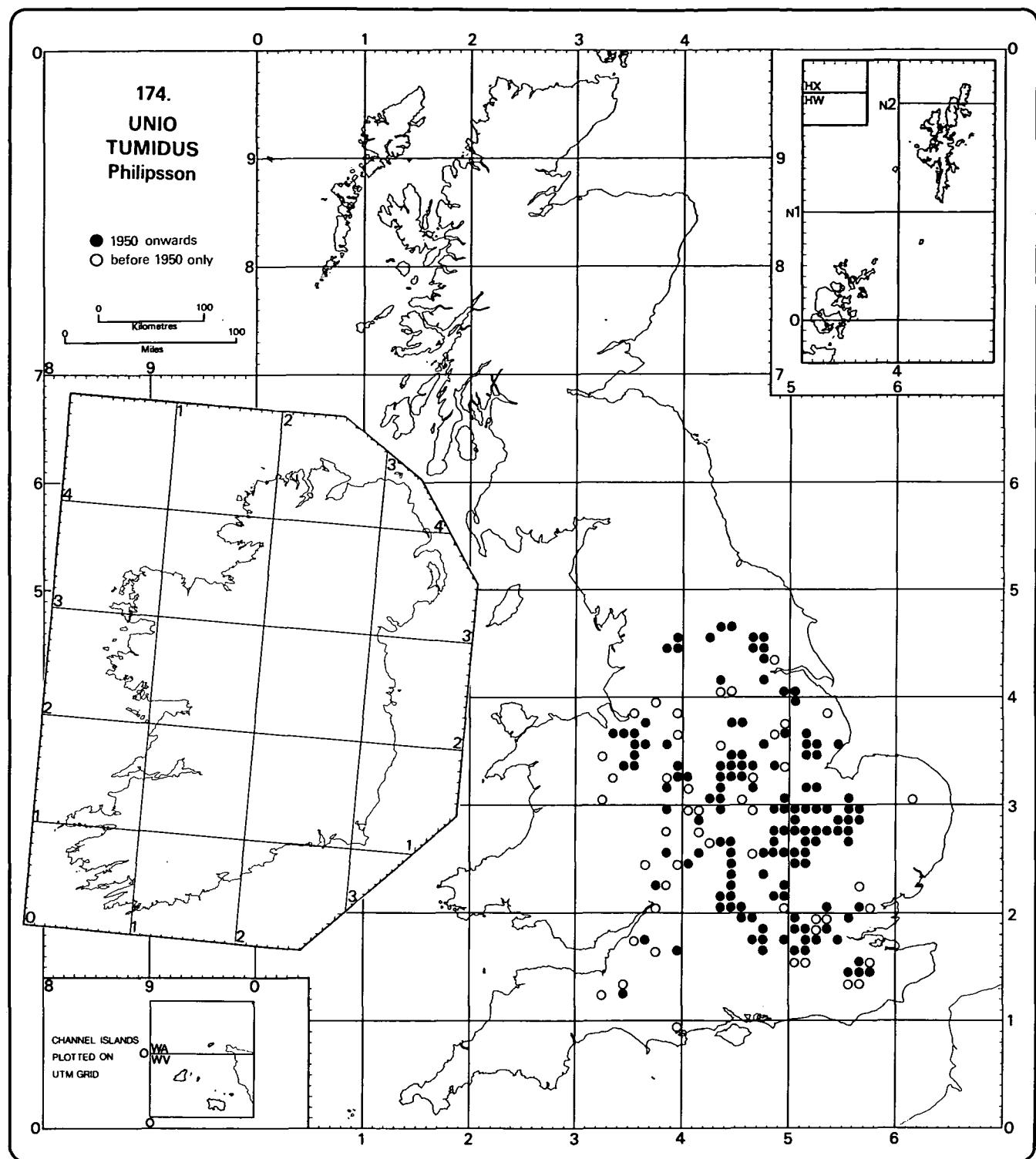


173.
UNIO
PICTORUM (L.)

● 1950 onwards
○ before 1950 only

0 Kilometres 100 Miles

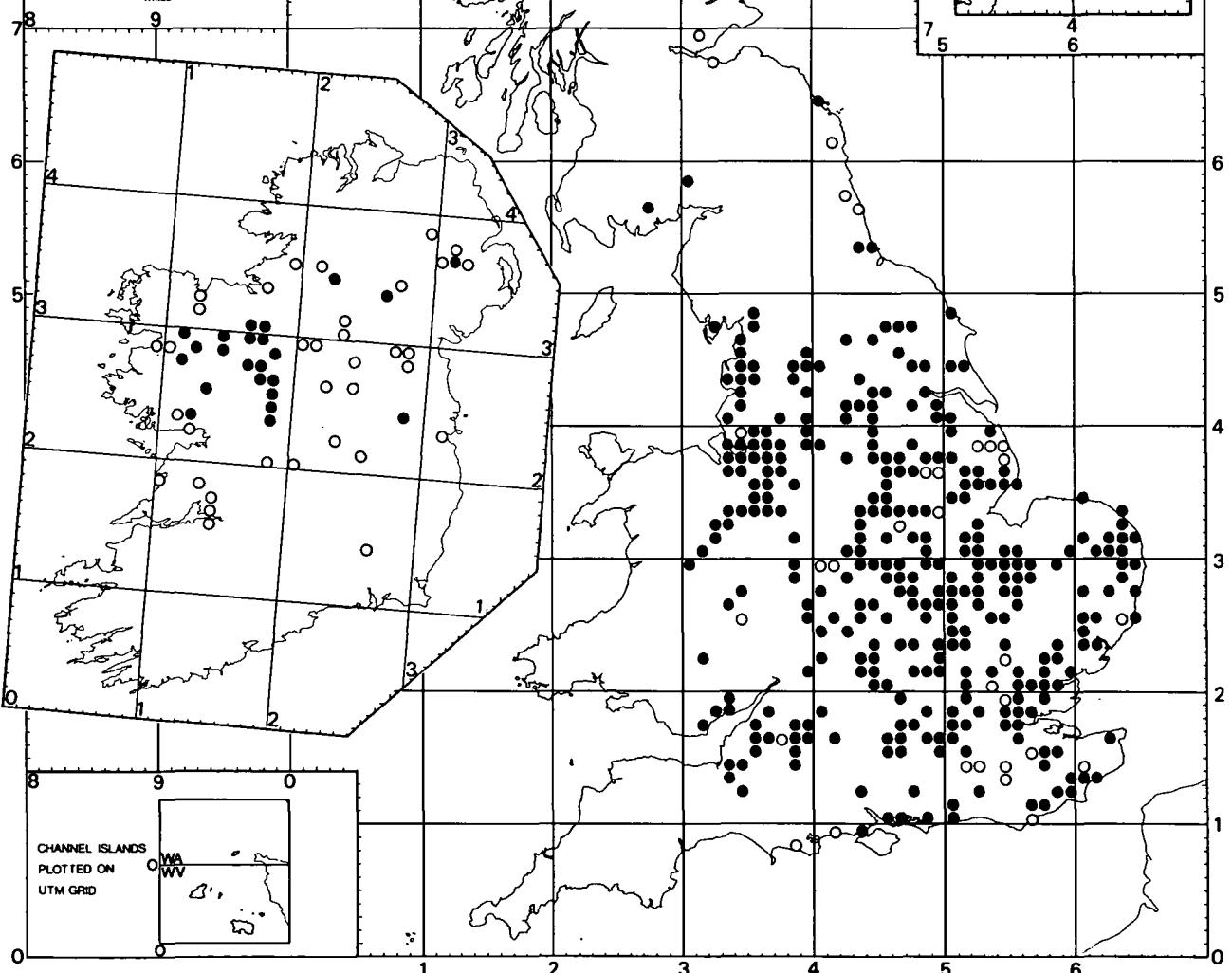


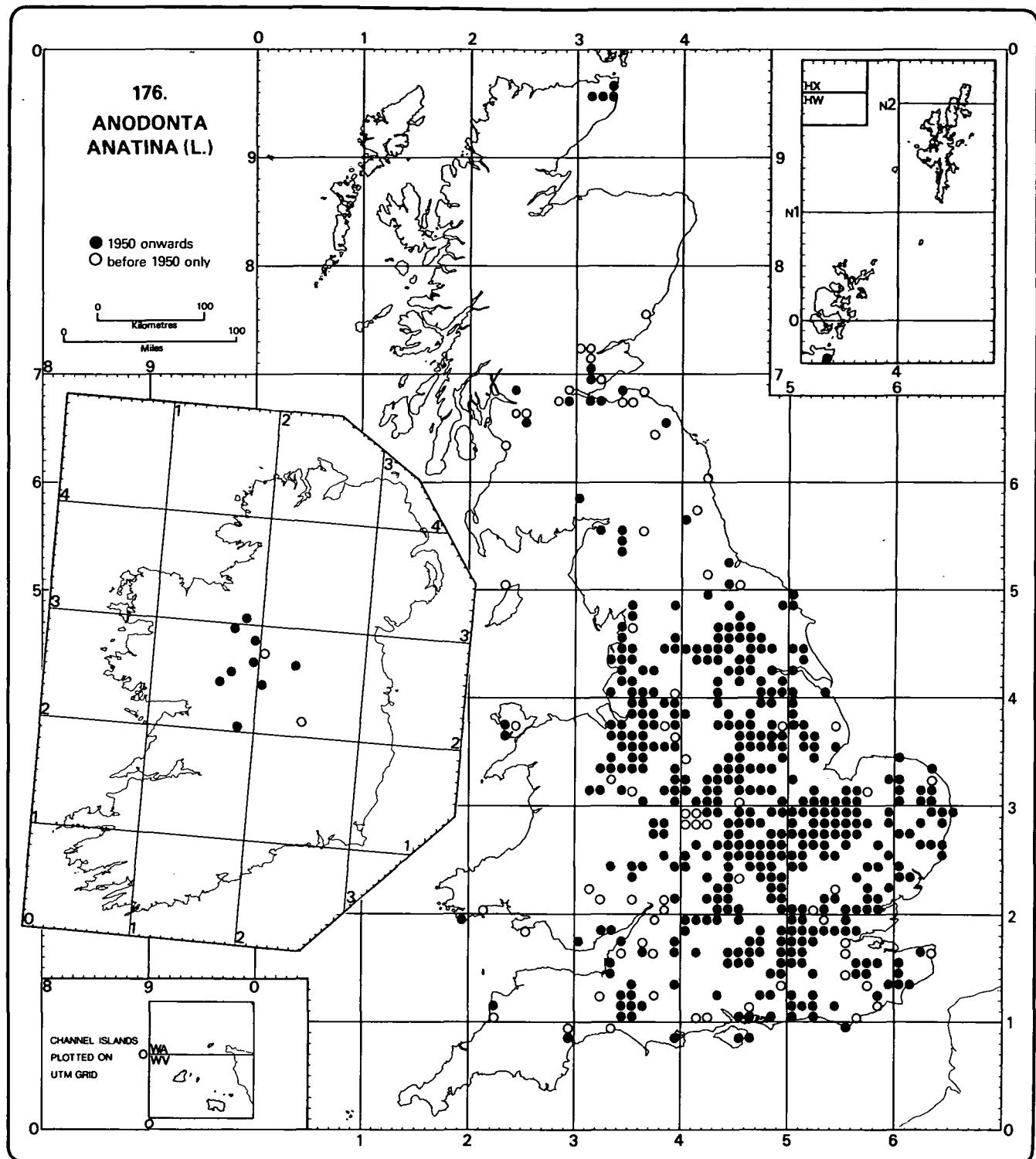


175.
ANODONTA
CYGNEA (L.)

● 1950 onwards
○ before 1950 only

0 Kilometres
100 Miles
100

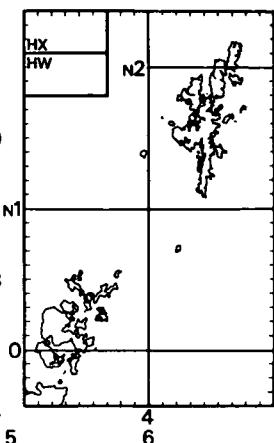
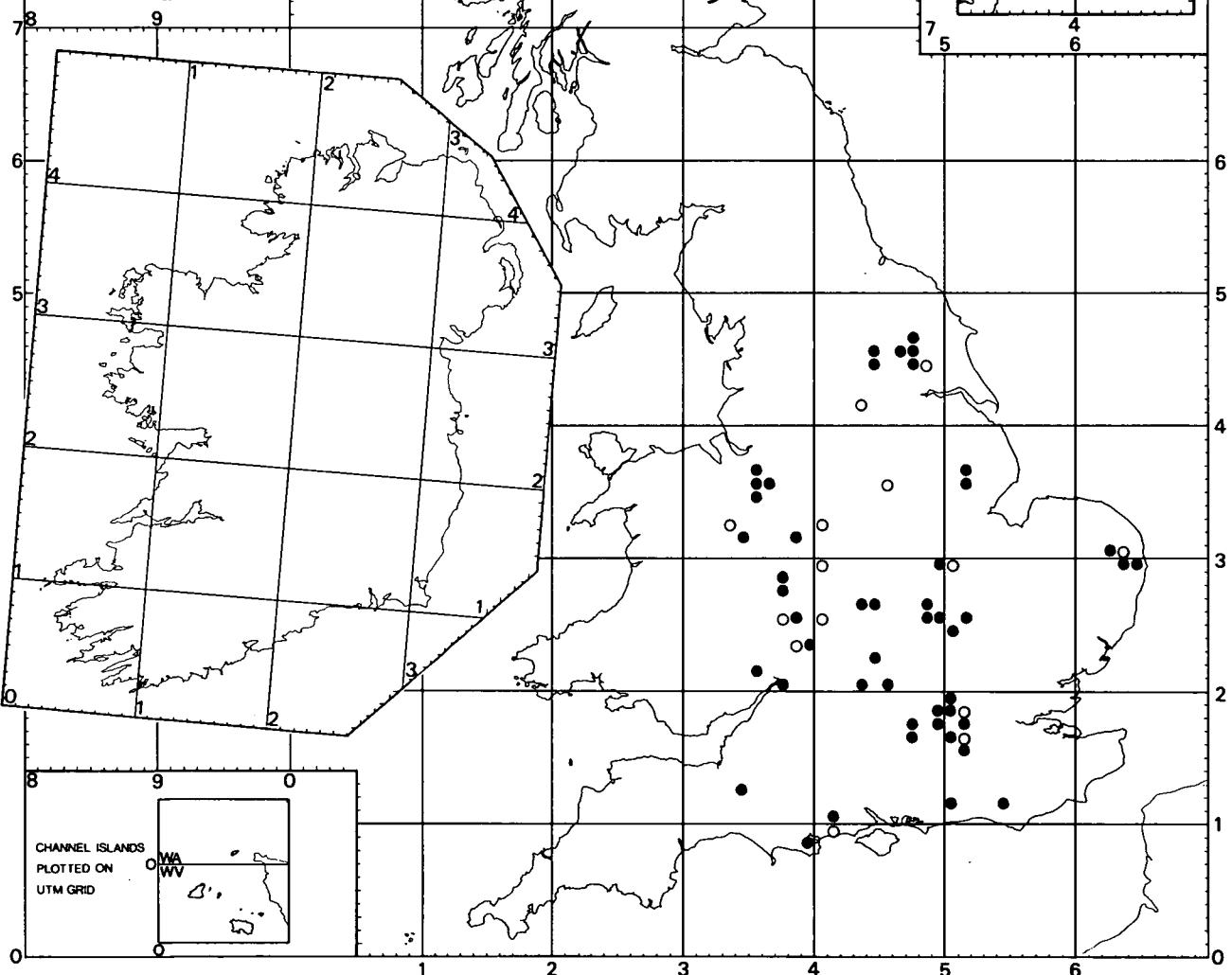


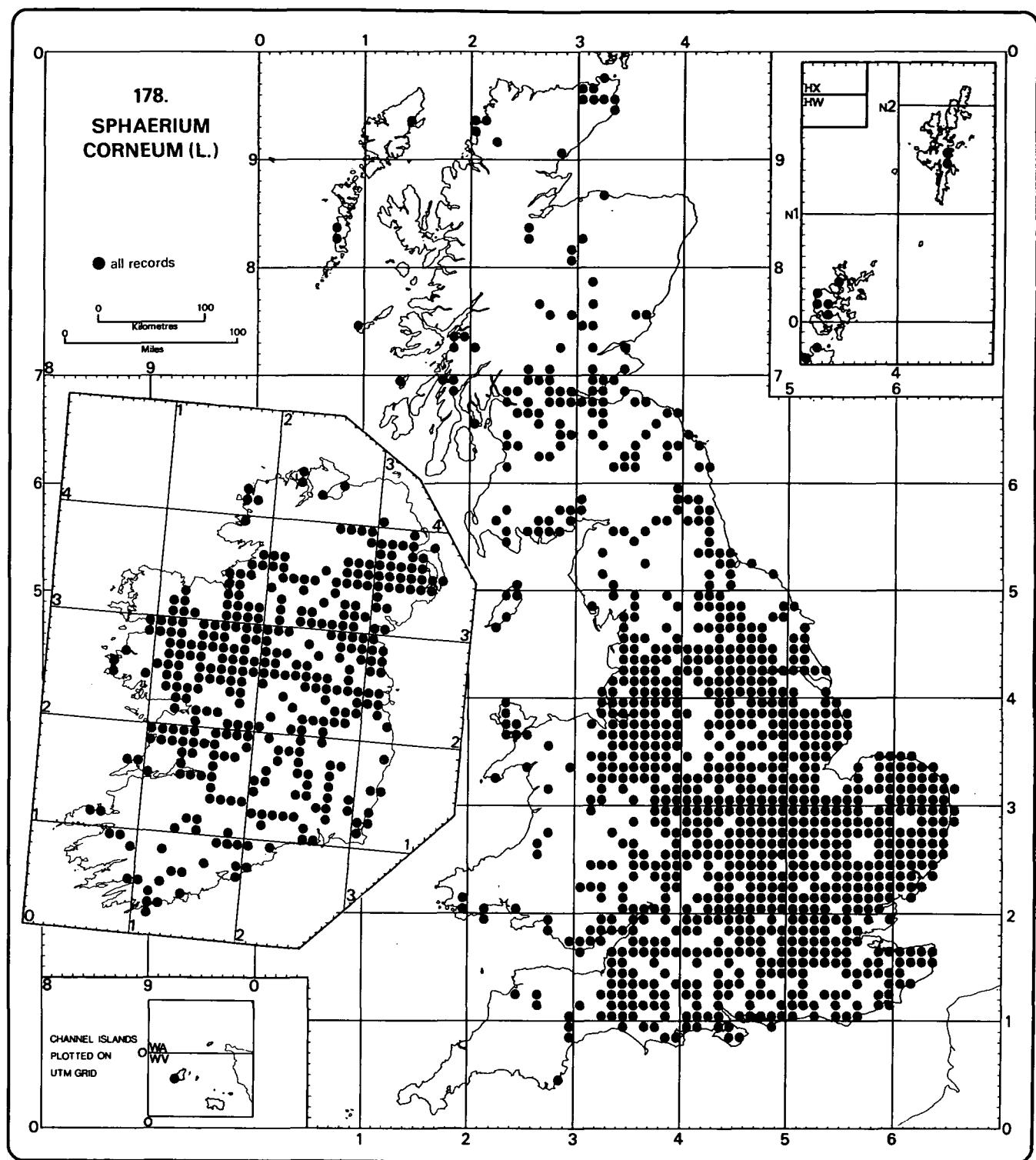


177.
**PSEUDANODONTA
COMPLANATA**
(Rossmässler)

● 1950 onwards
○ before 1950 only

0 Kilometres
100 Miles

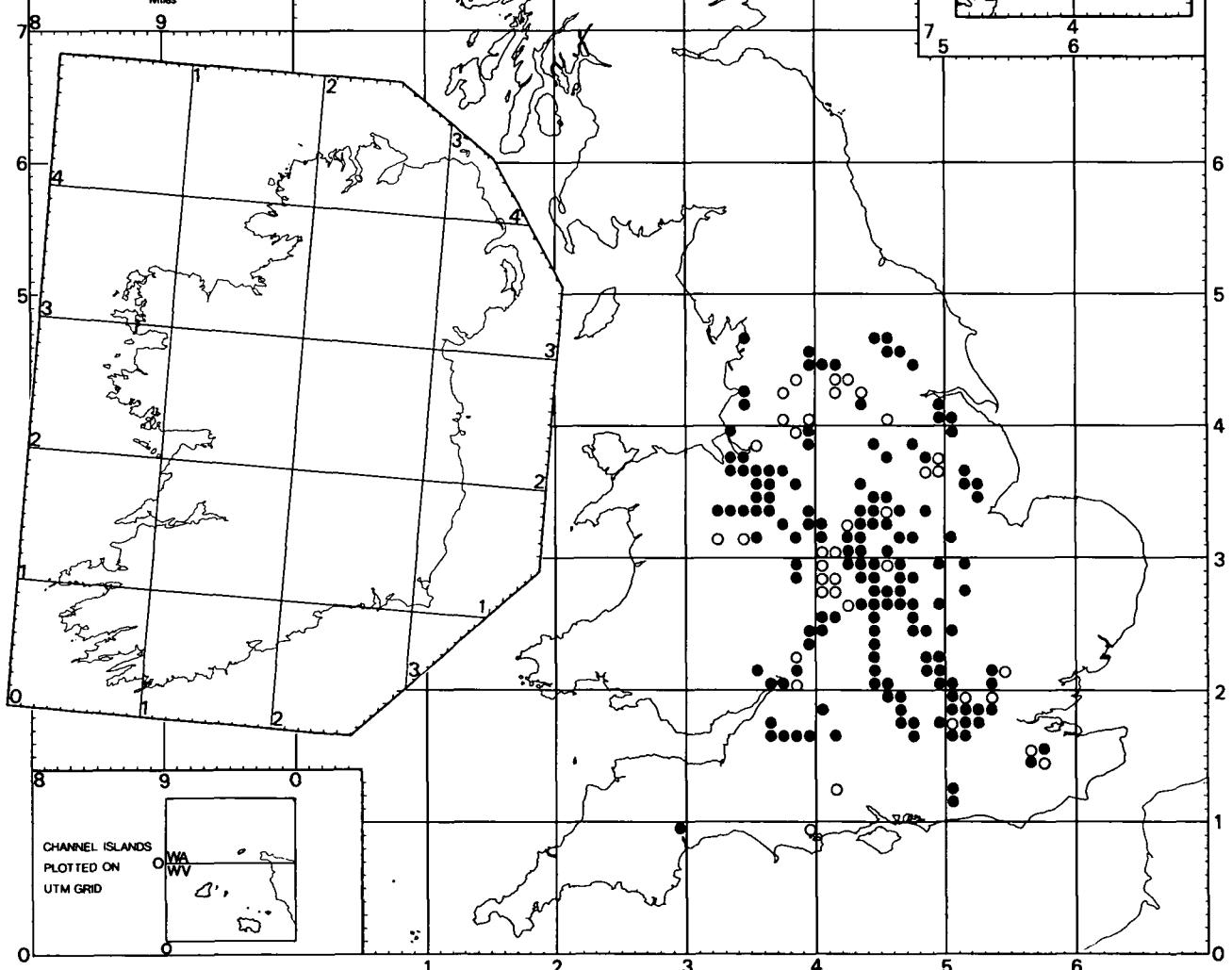


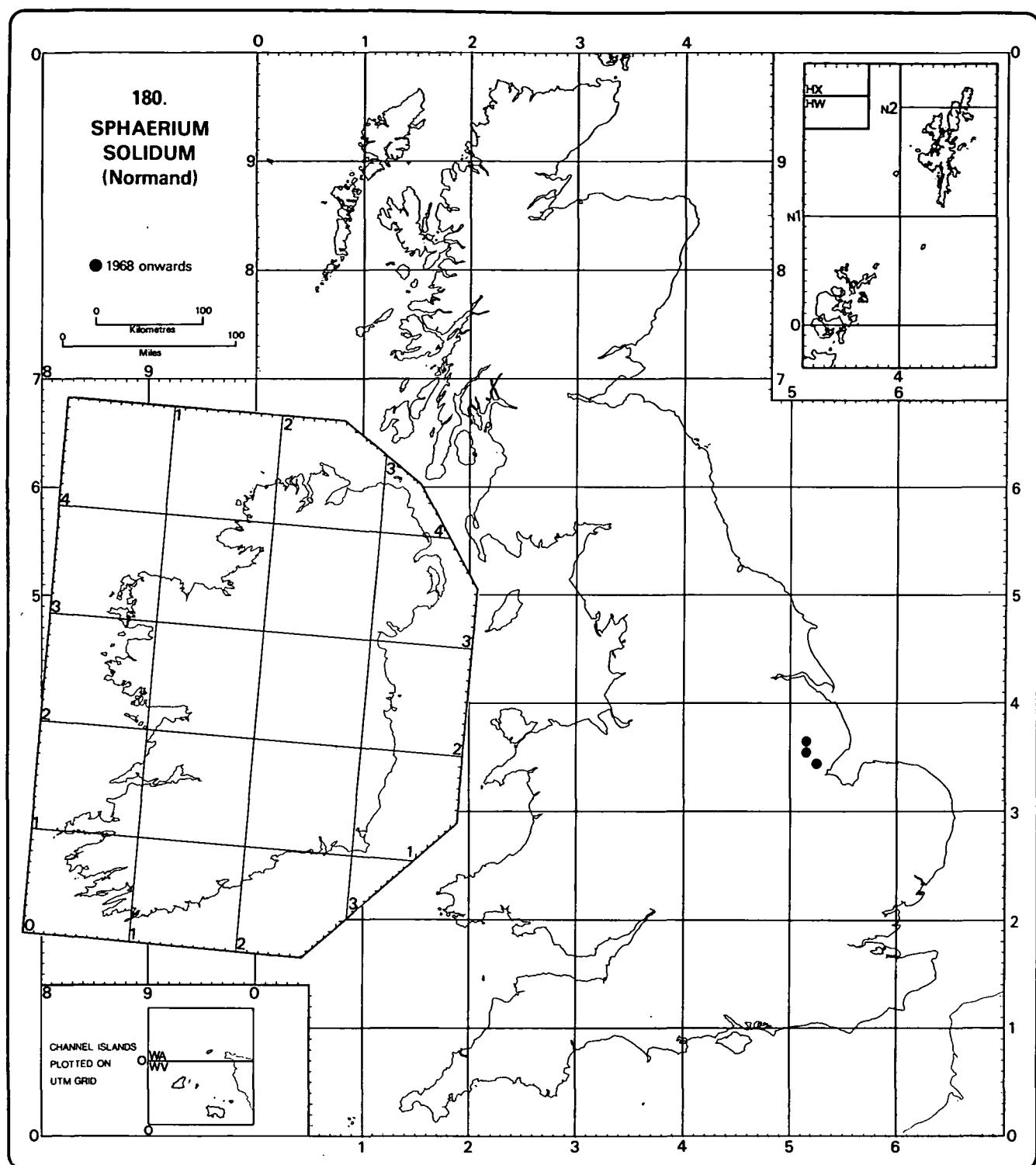


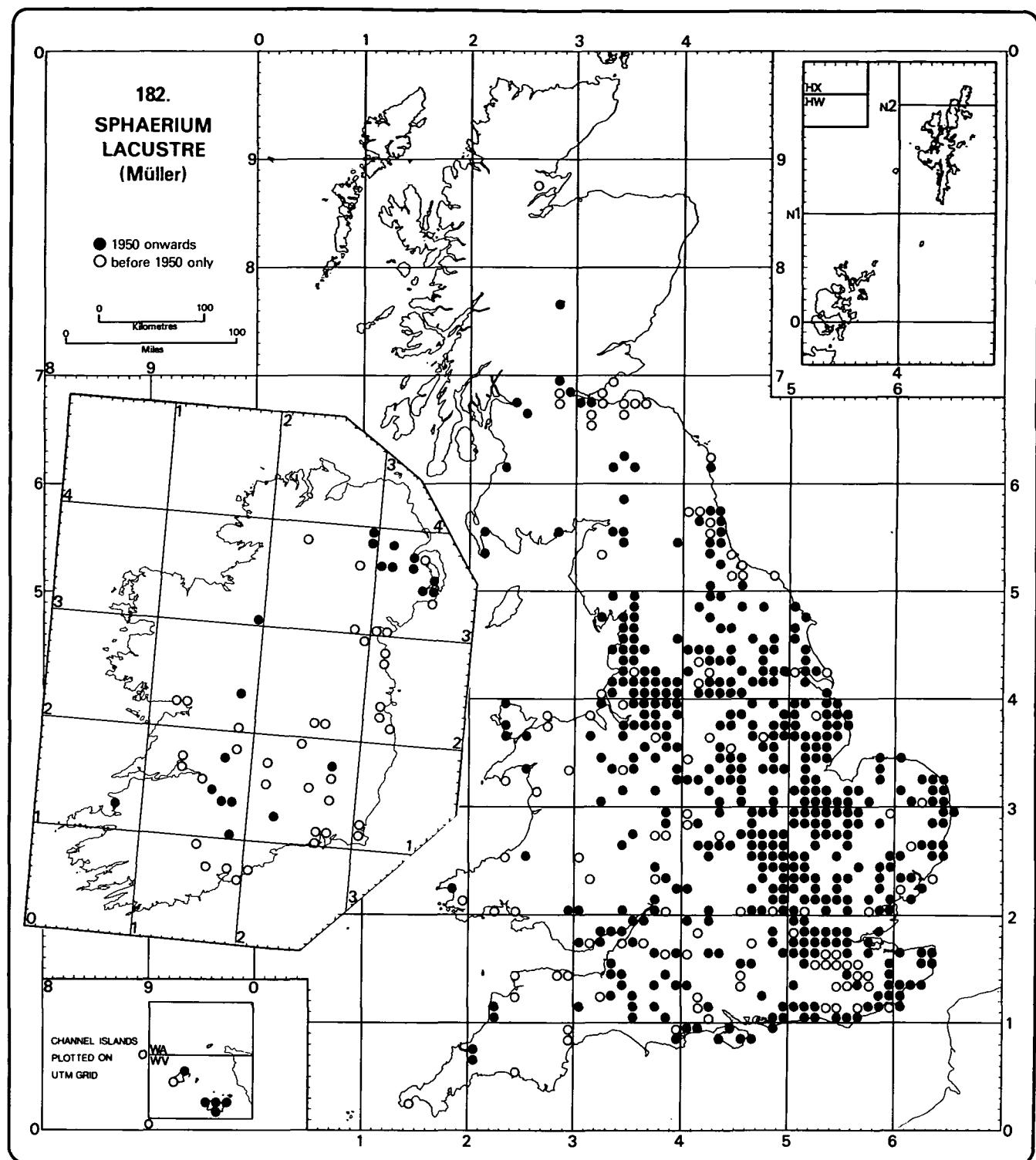
179.
**SPHAERIUM
RIVICOLA**
(Lamarck)

● 1950 onwards
○ before 1950 only

0 Kilometres
0 Miles



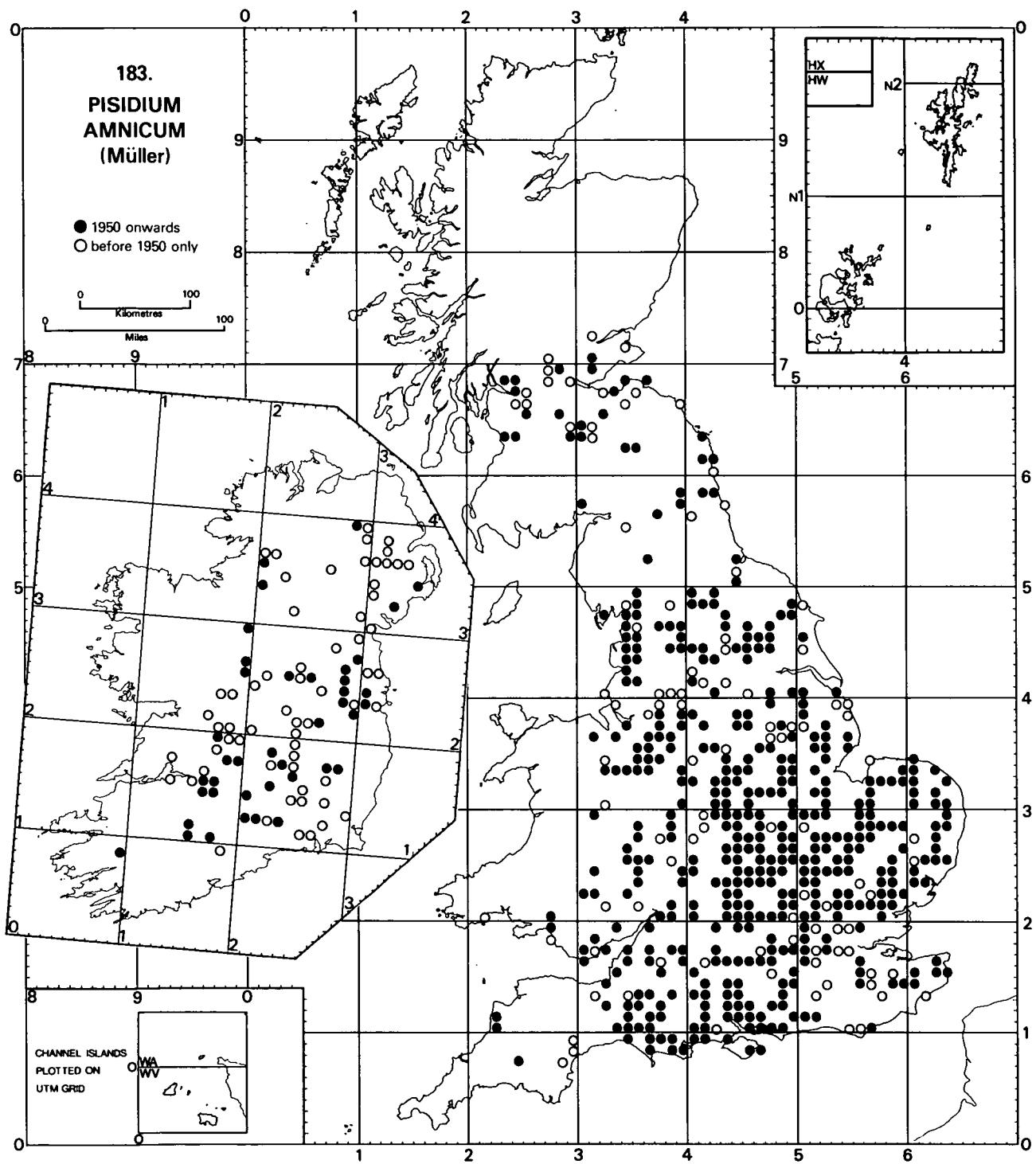
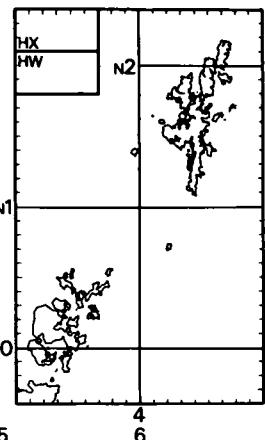


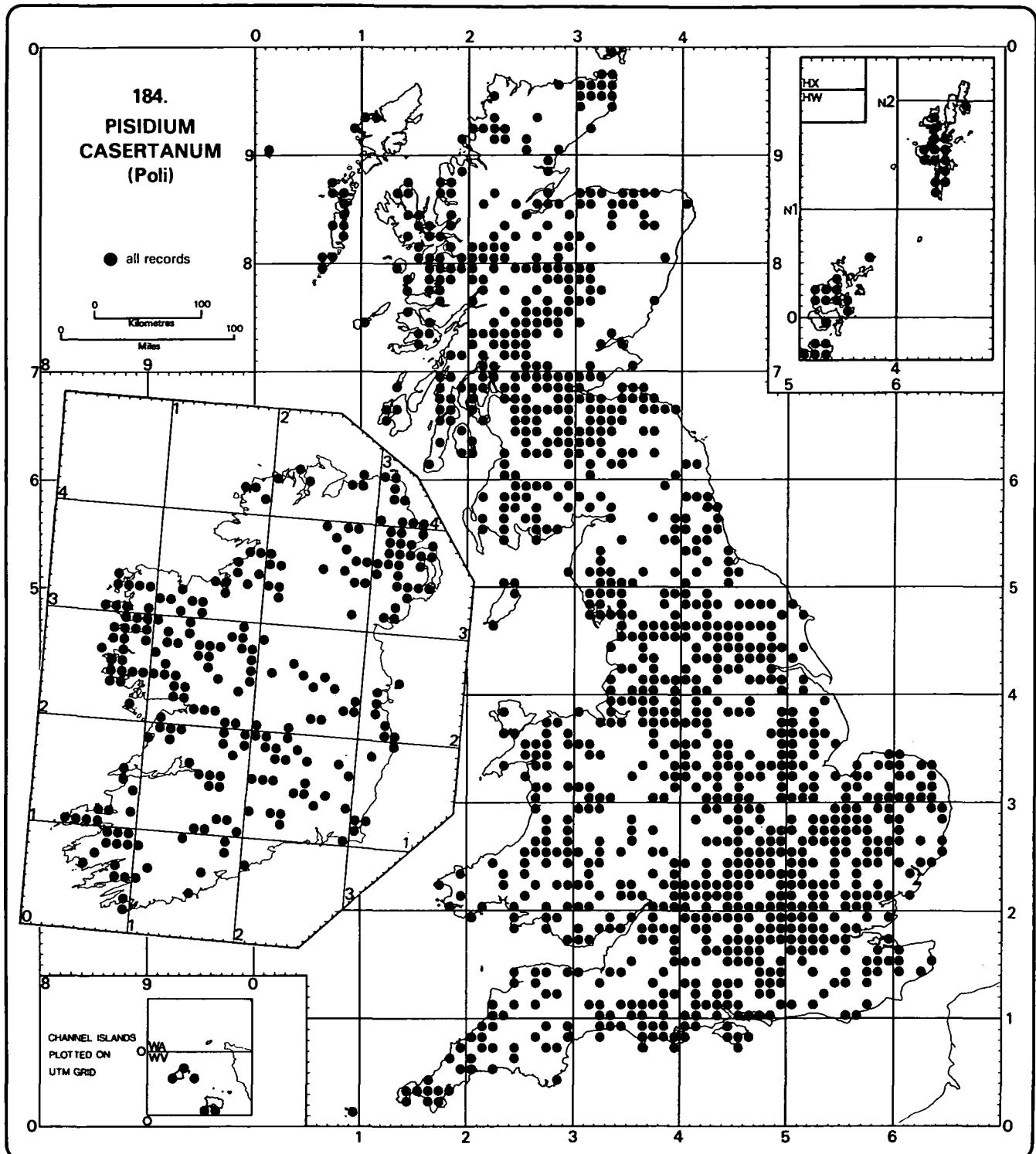


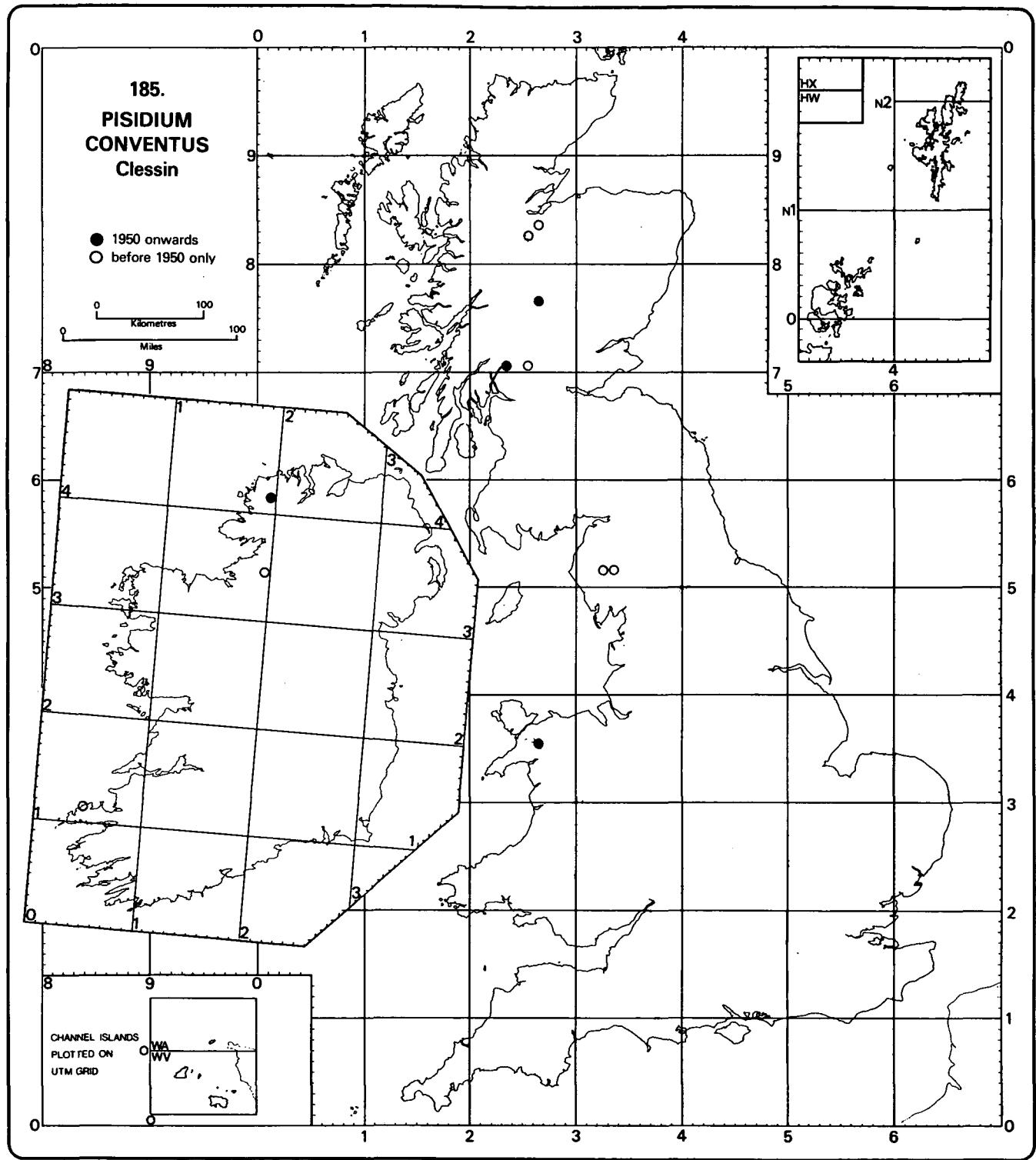
183.
**PISIDIUM
AMNICUM**
(Müller)

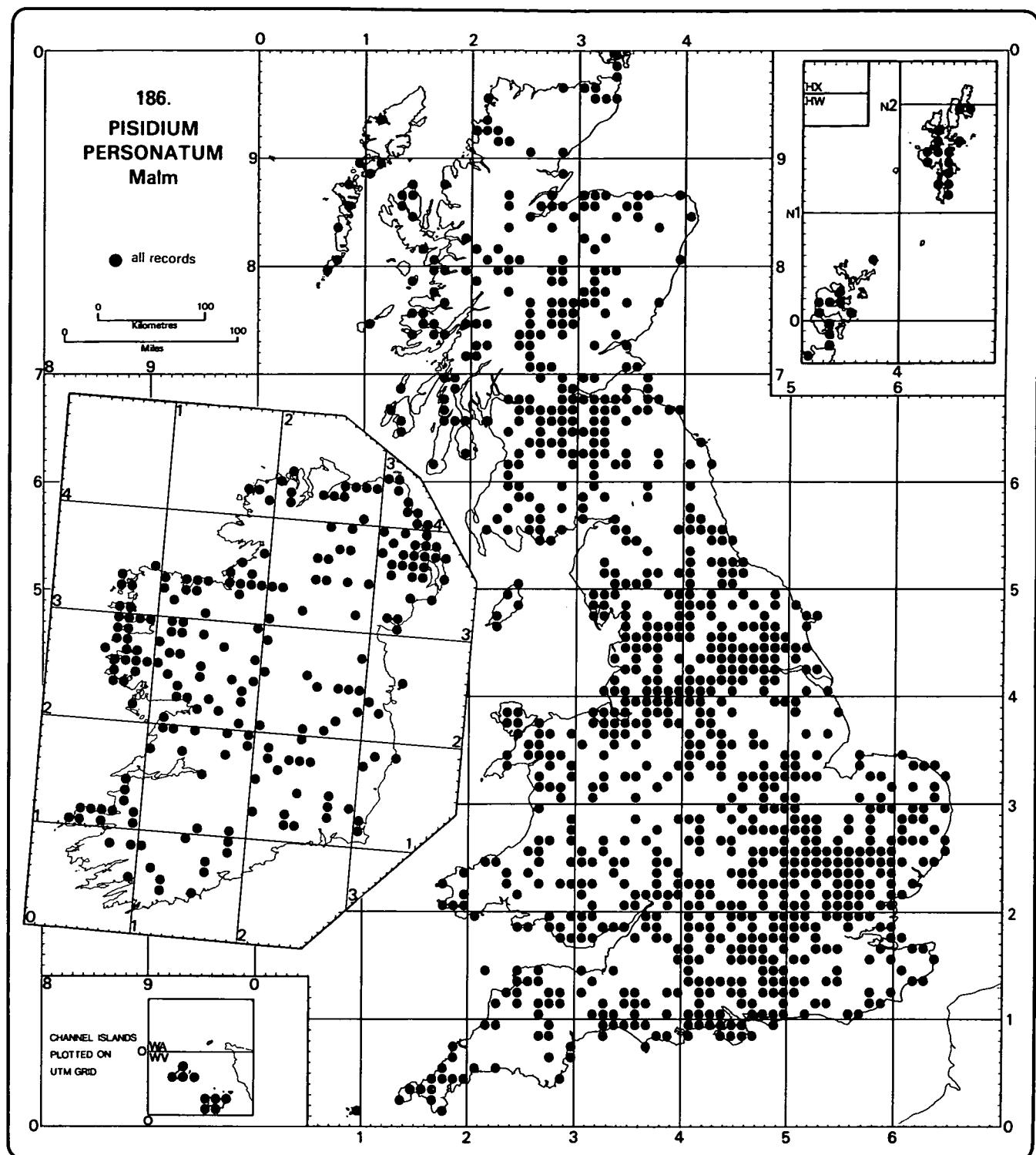
● 1950 onwards
○ before 1950 only

0 Kilometres
100 Miles







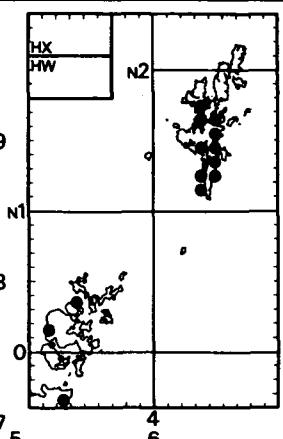
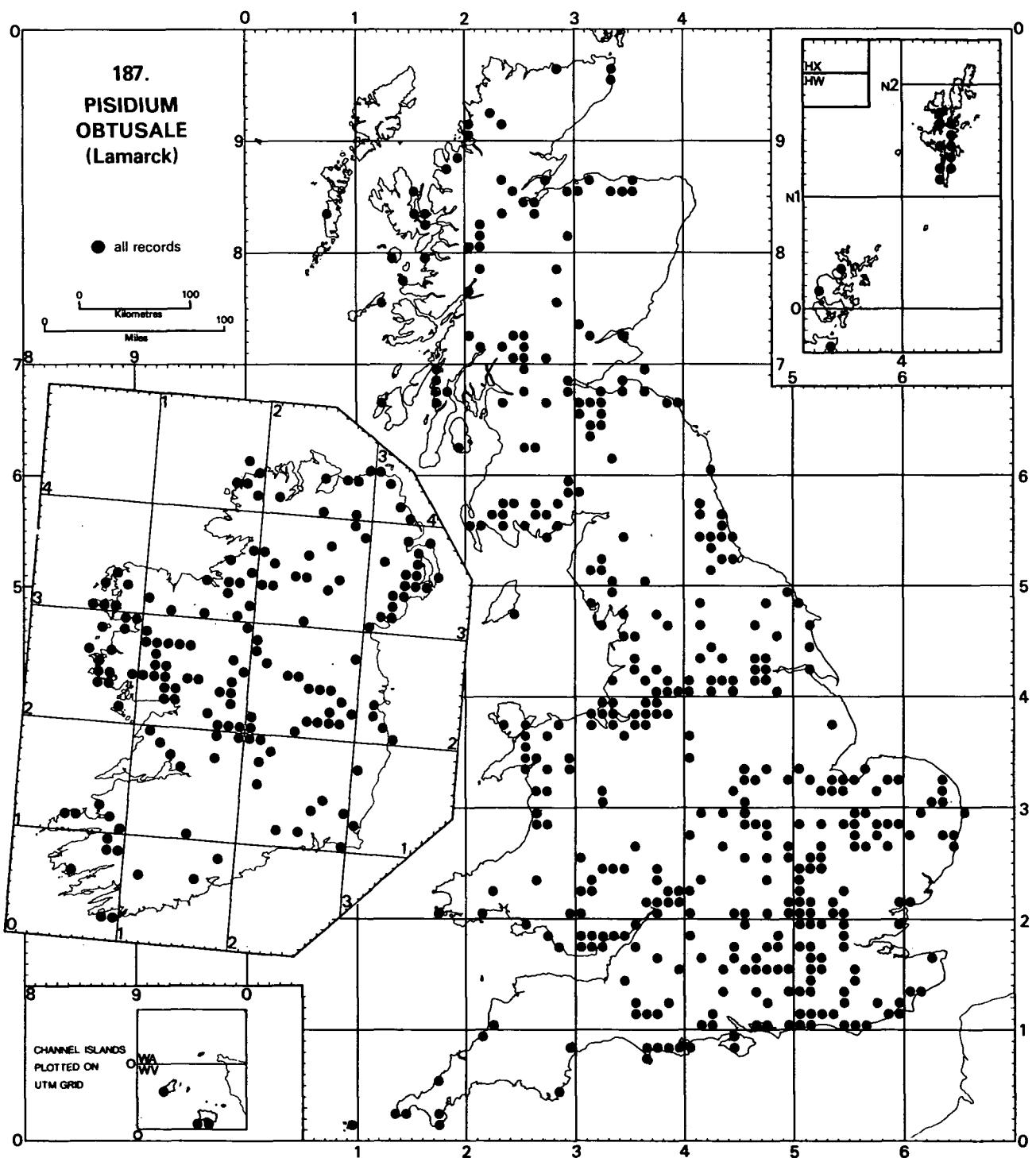


187.
PISIDIUM
OBTUSALE
(Lamarck)

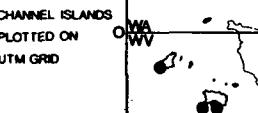
● all records

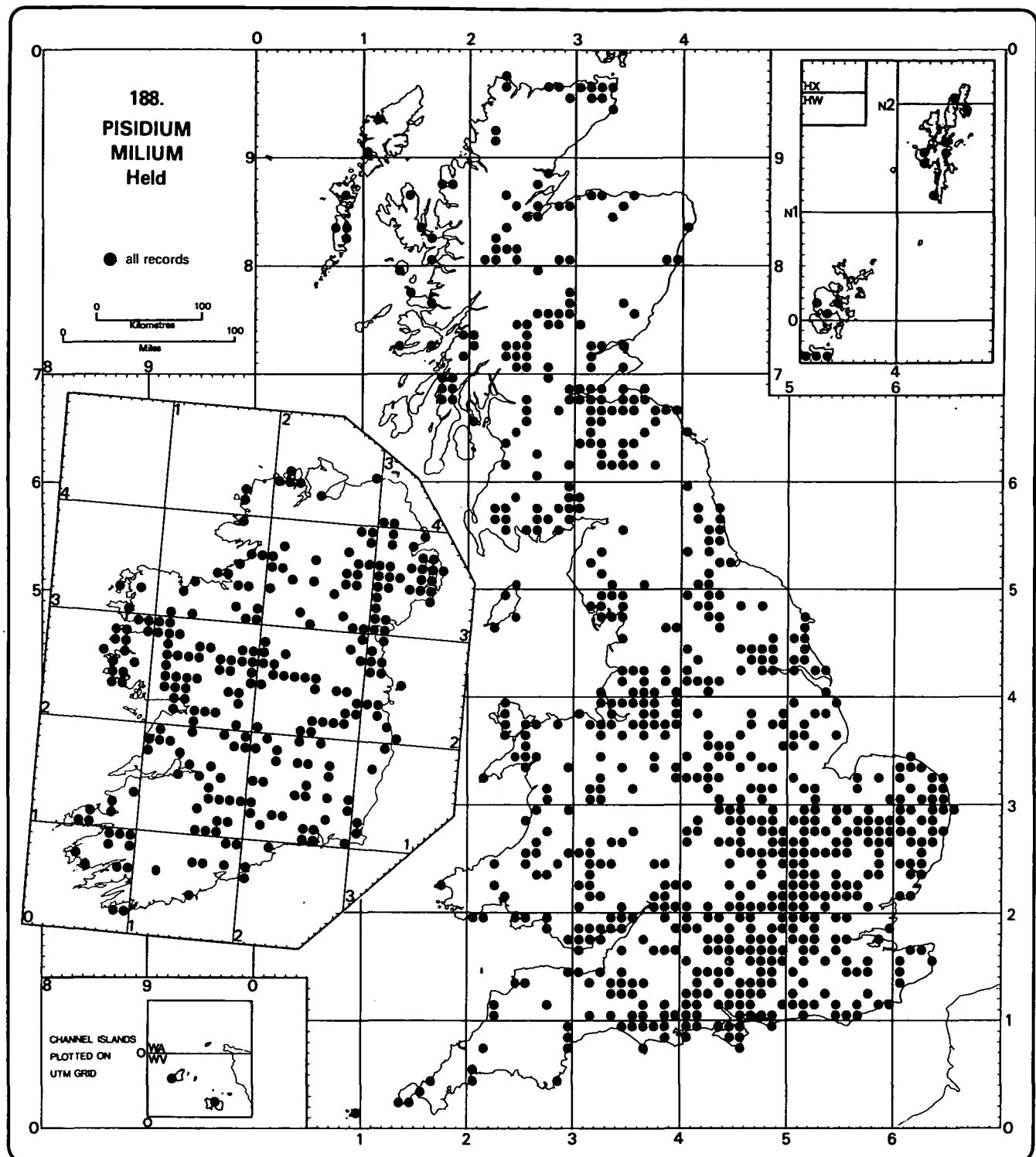
0 Kilometres 100

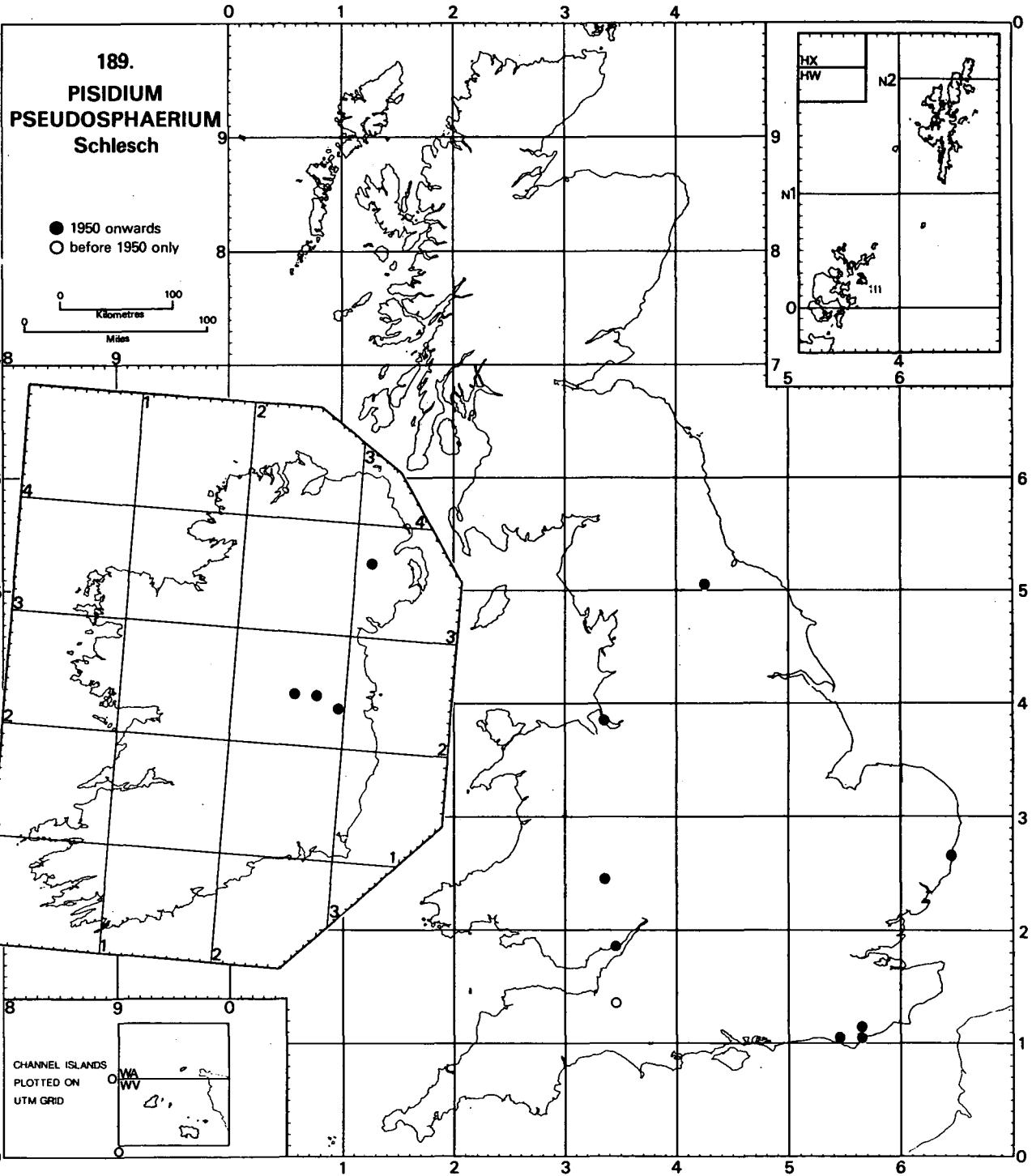
0 Miles 100

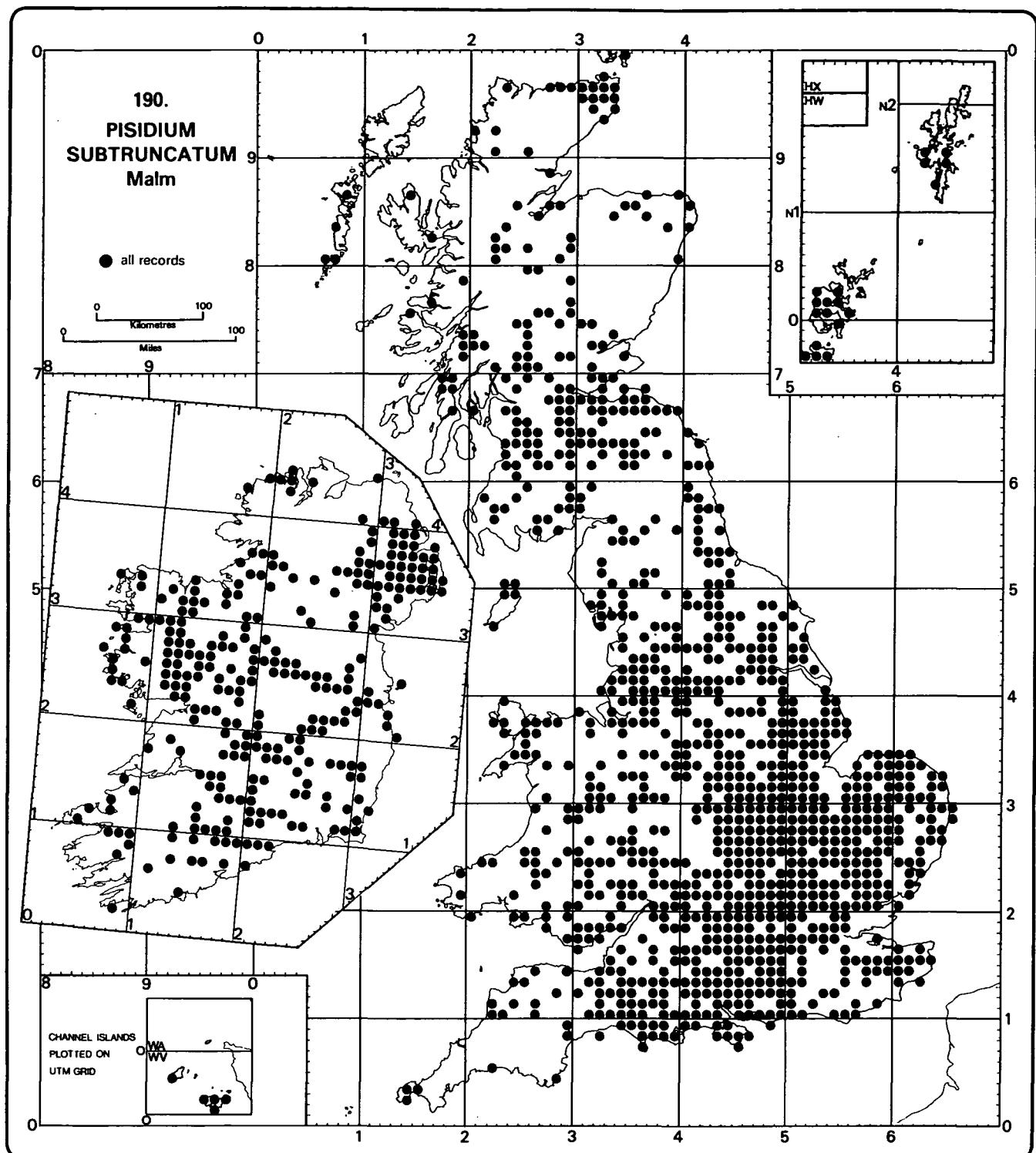


CHANNEL ISLANDS
PLOTTED ON
UTM GRID





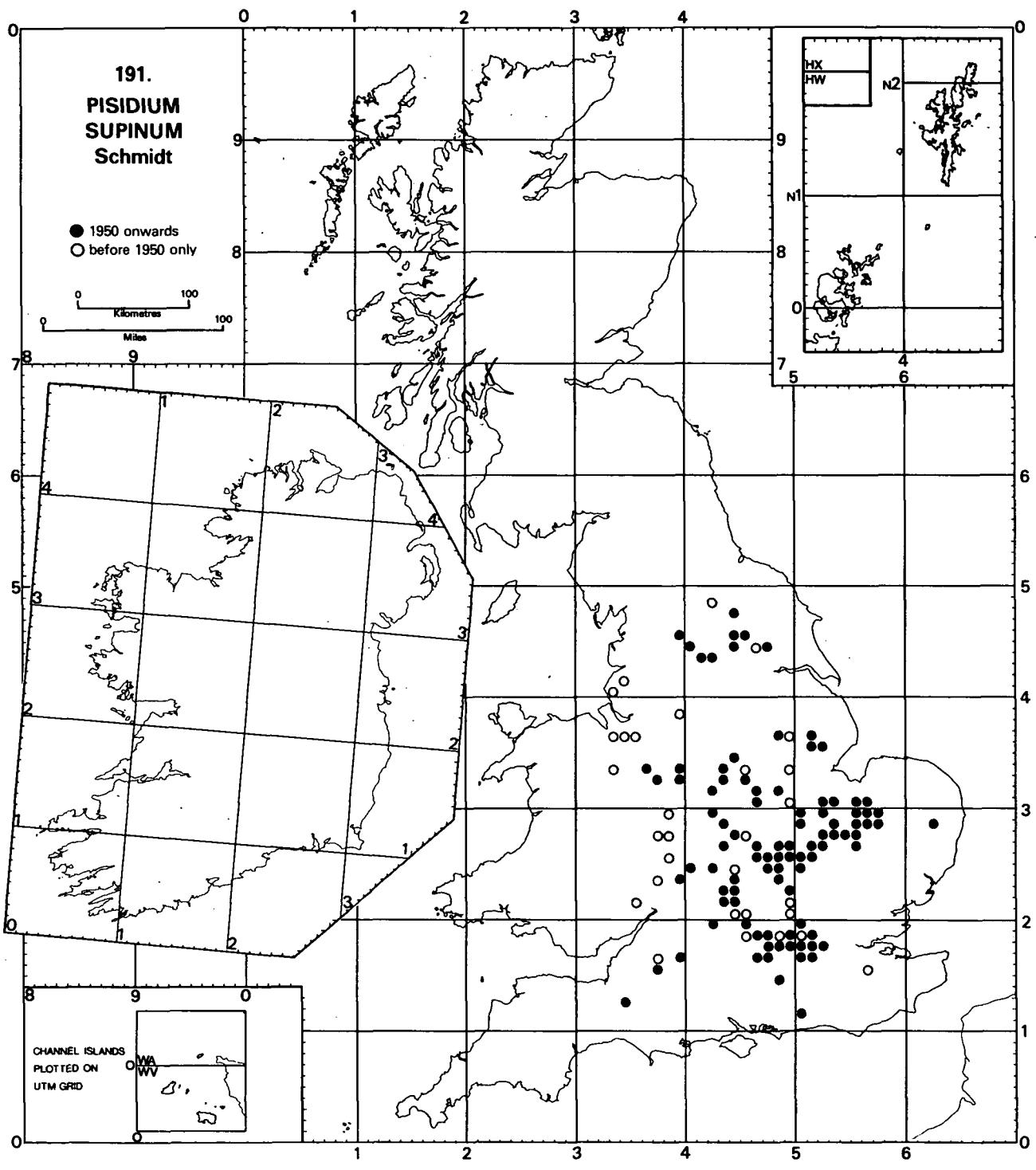


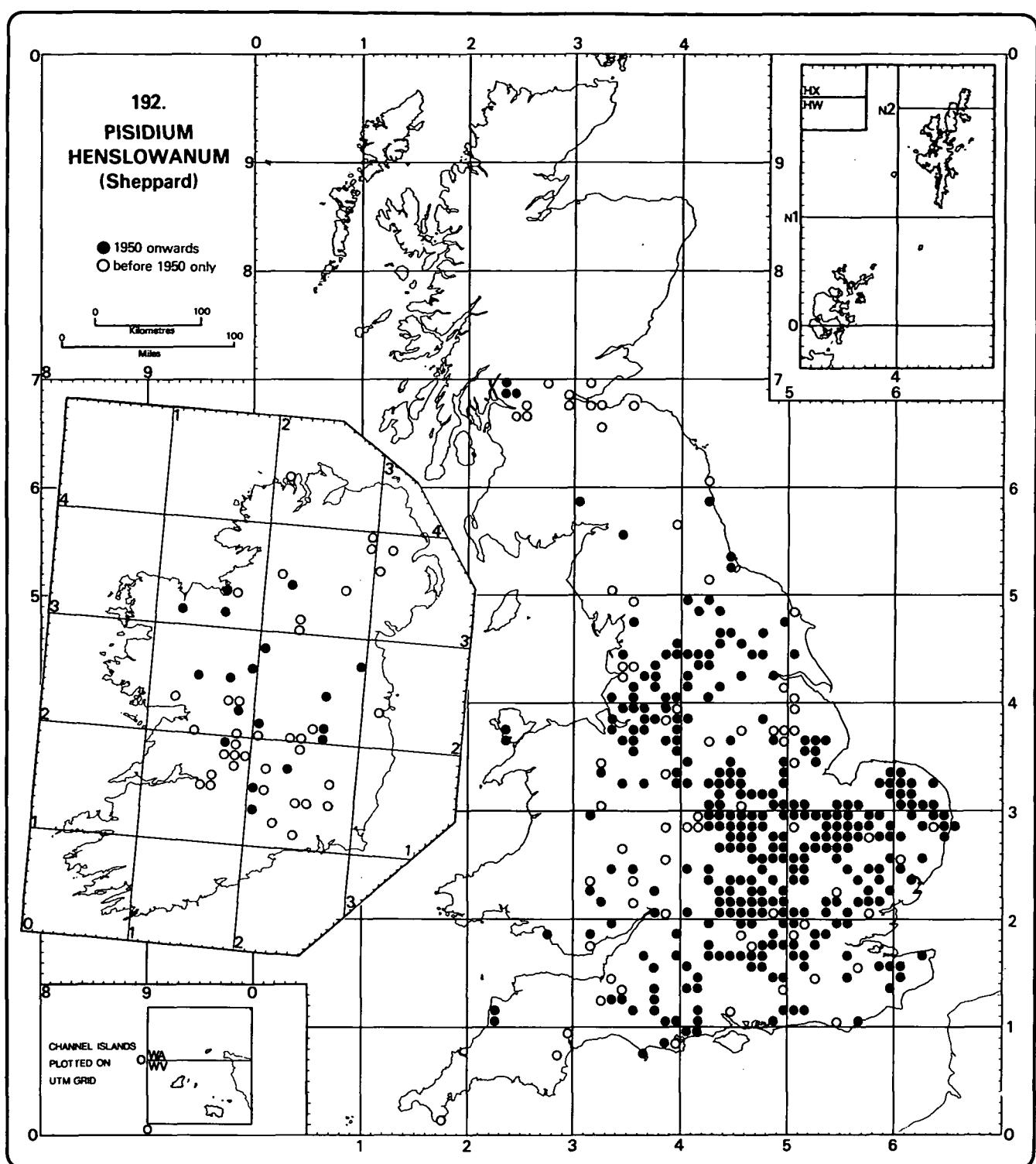


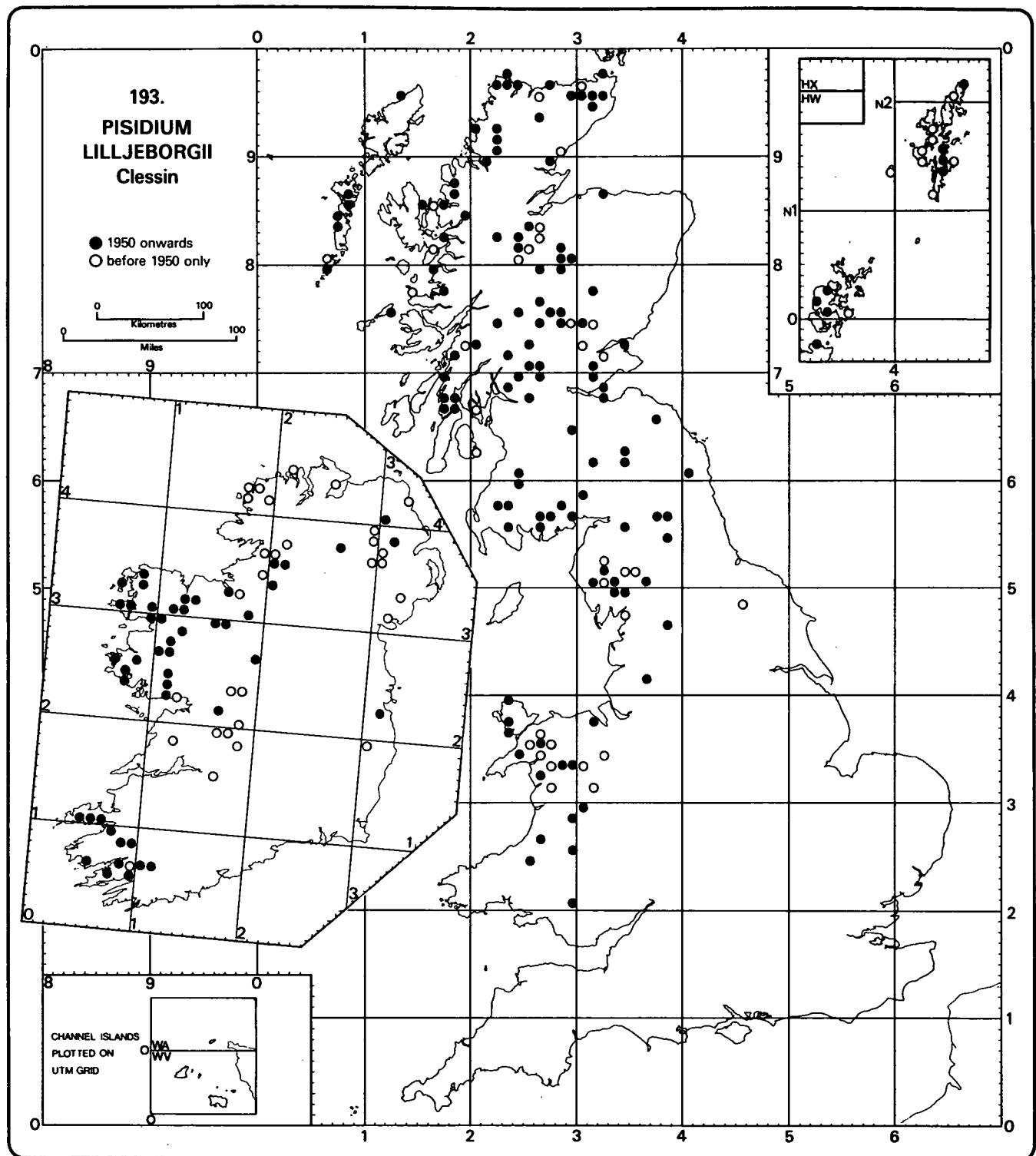
191.
PISIDIUM
SUPINUM
Schmidt

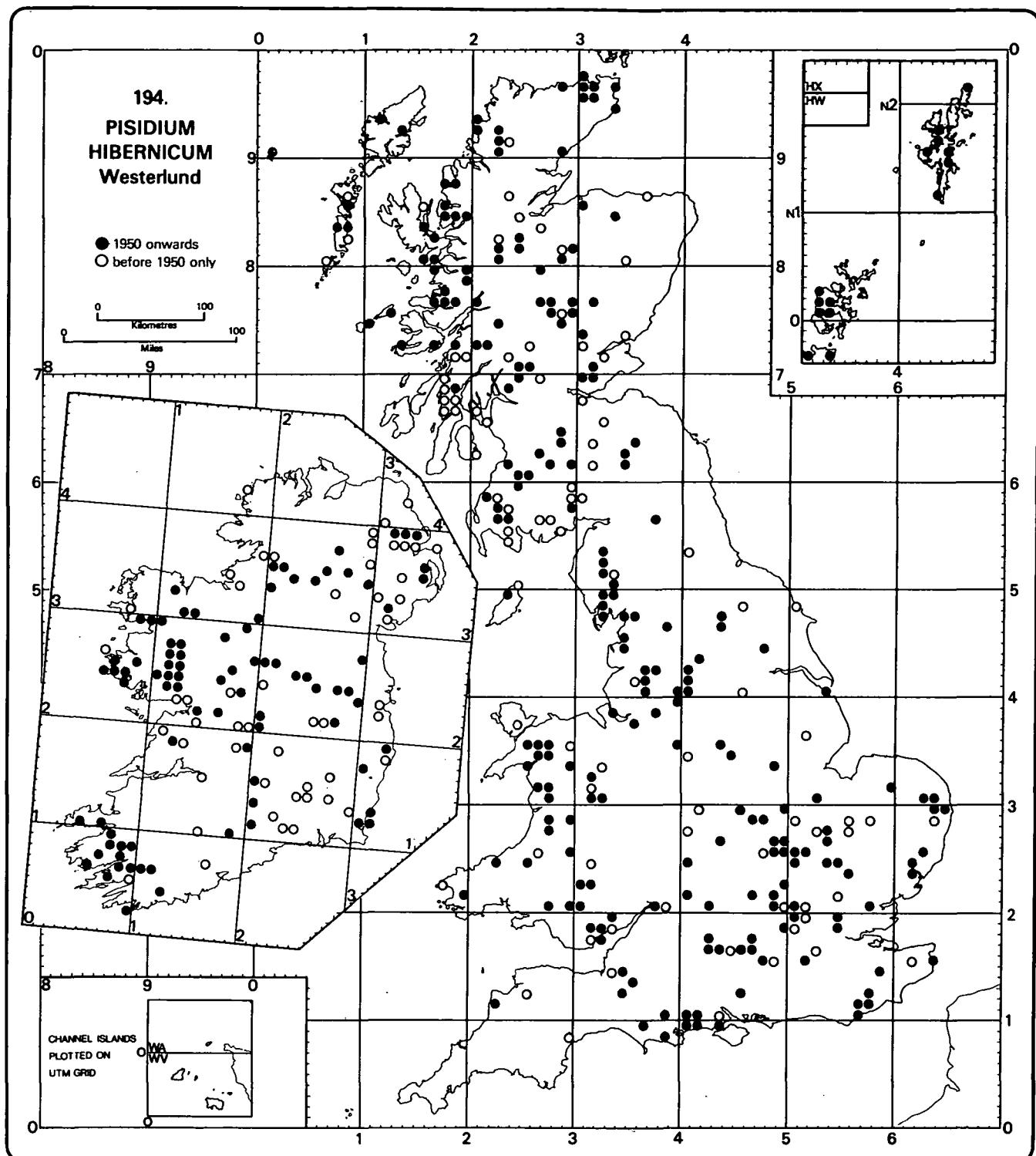
● 1950 onwards
○ before 1950 only

0 Kilometres 100 Miles







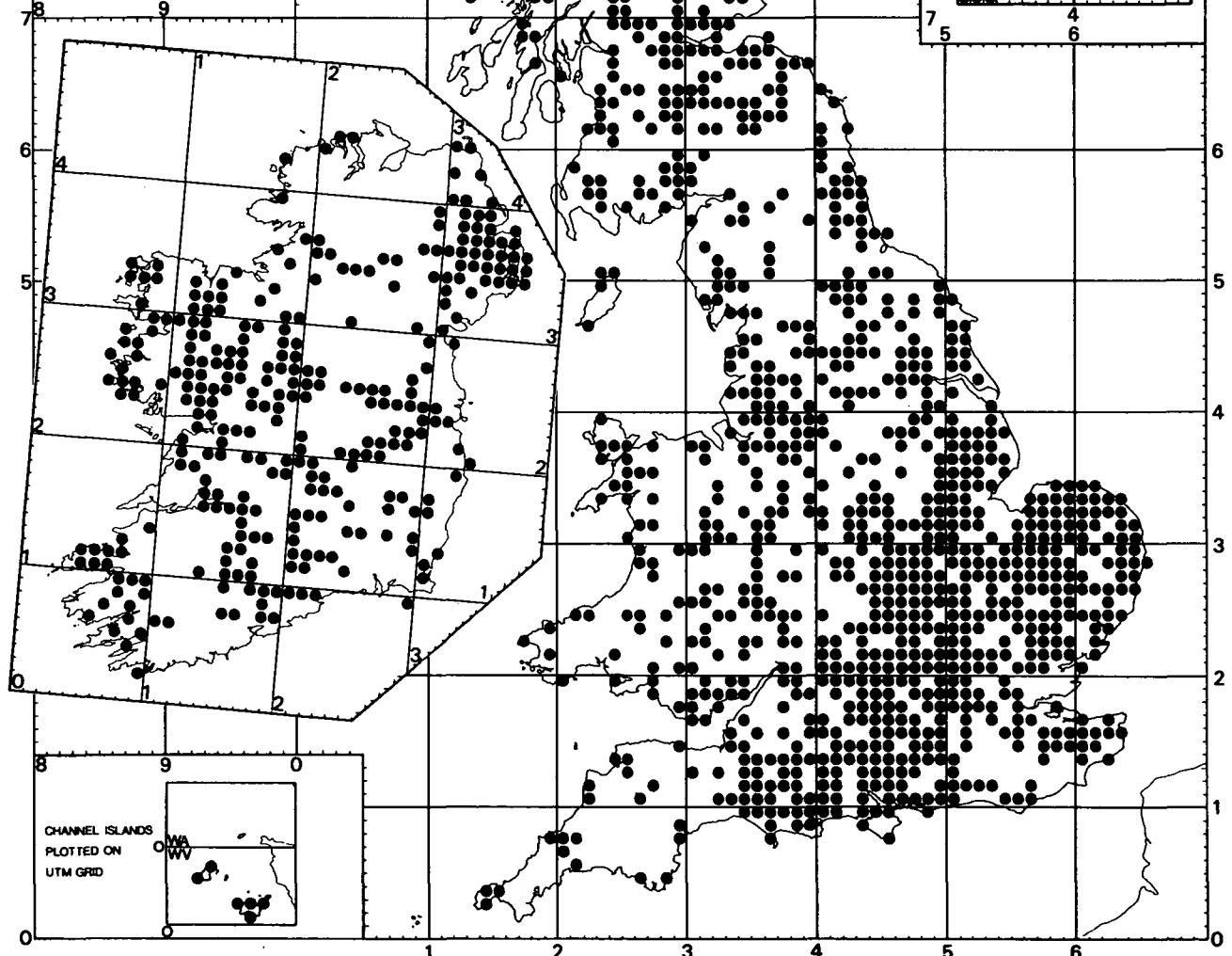
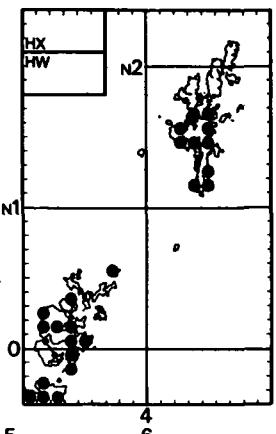


195.
**PISIDIUM
NITIDUM**
Jenyns

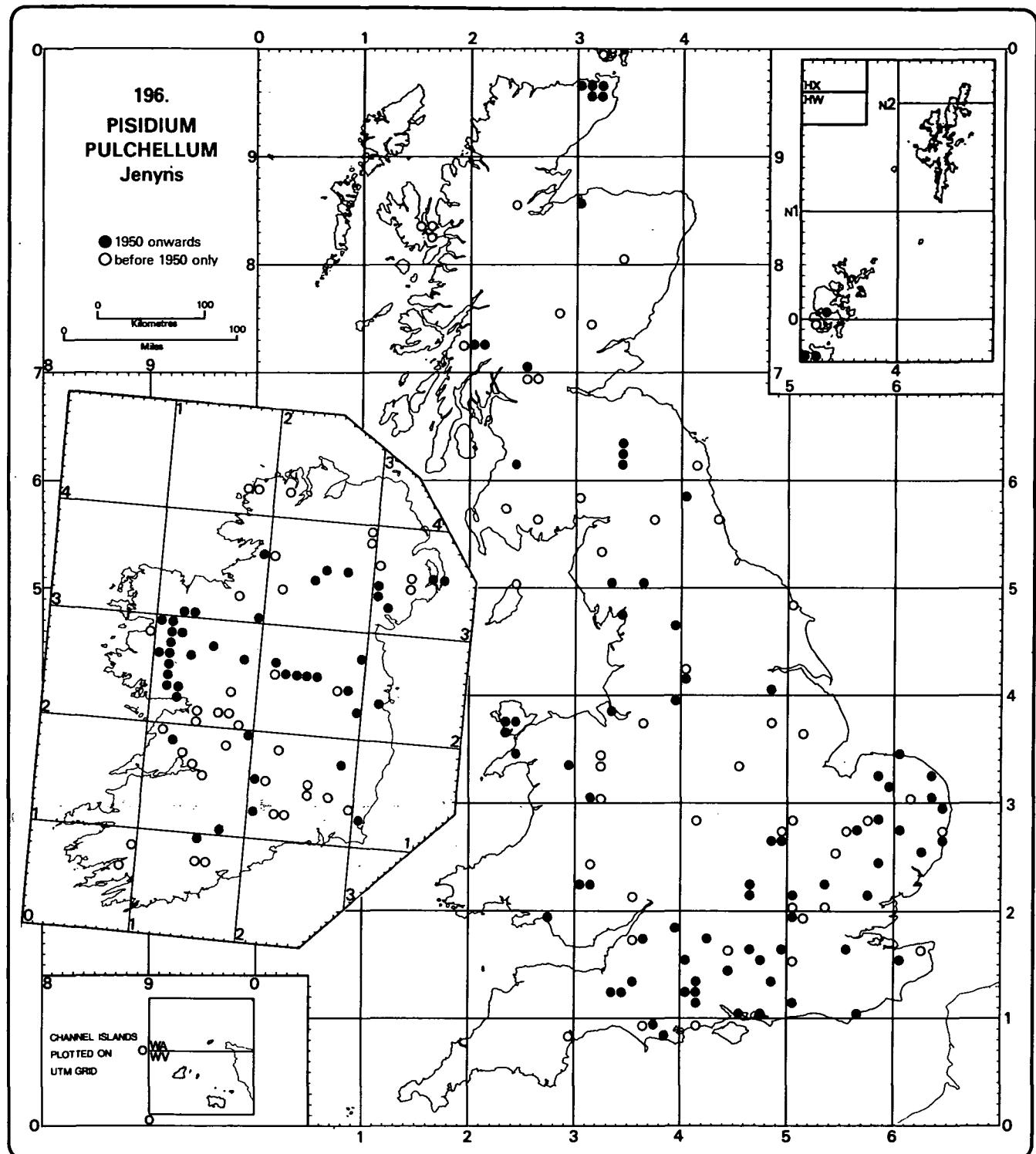
● all records

0 Kilometres 100

0 Miles 100



CHANNEL ISLANDS
PLOTTED ON
UTM GRID

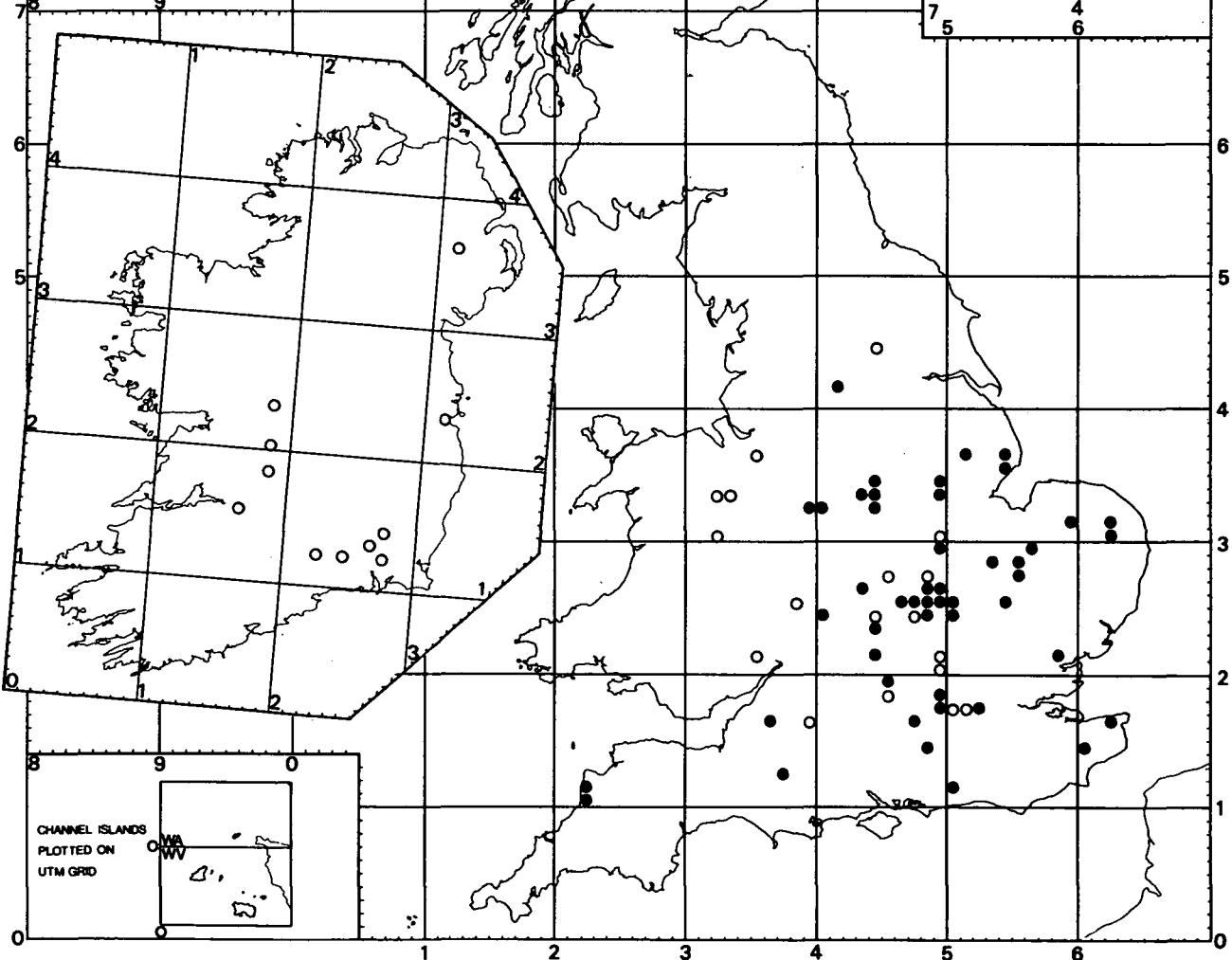
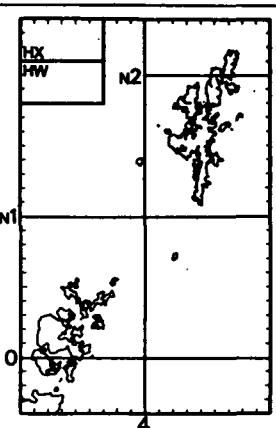


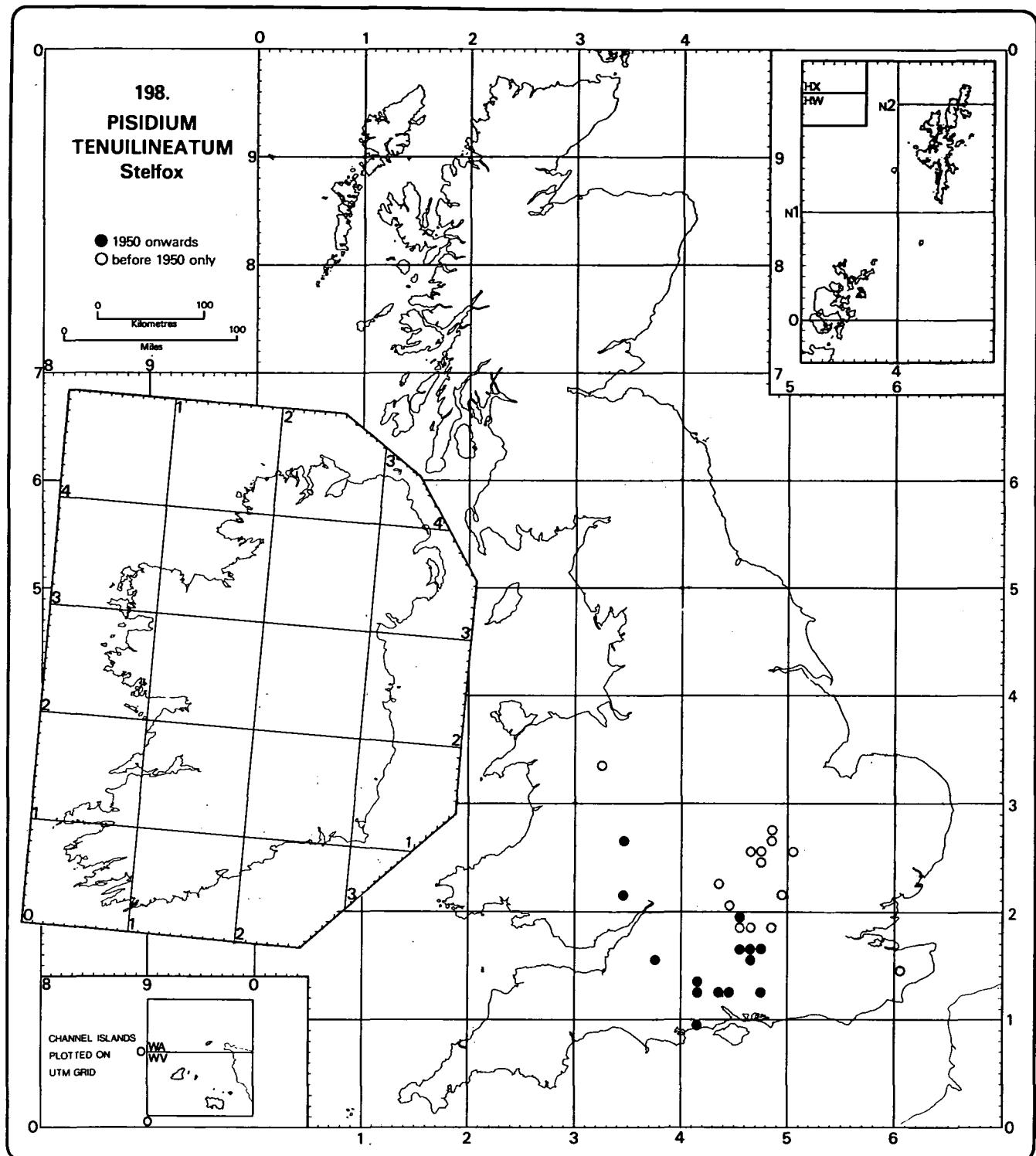
197.
PISIDIUM
MOITESSIERIANUM
Paladilhe

● 1950 onwards
○ before 1950 only

0 Kilometres 100

0 Miles 100

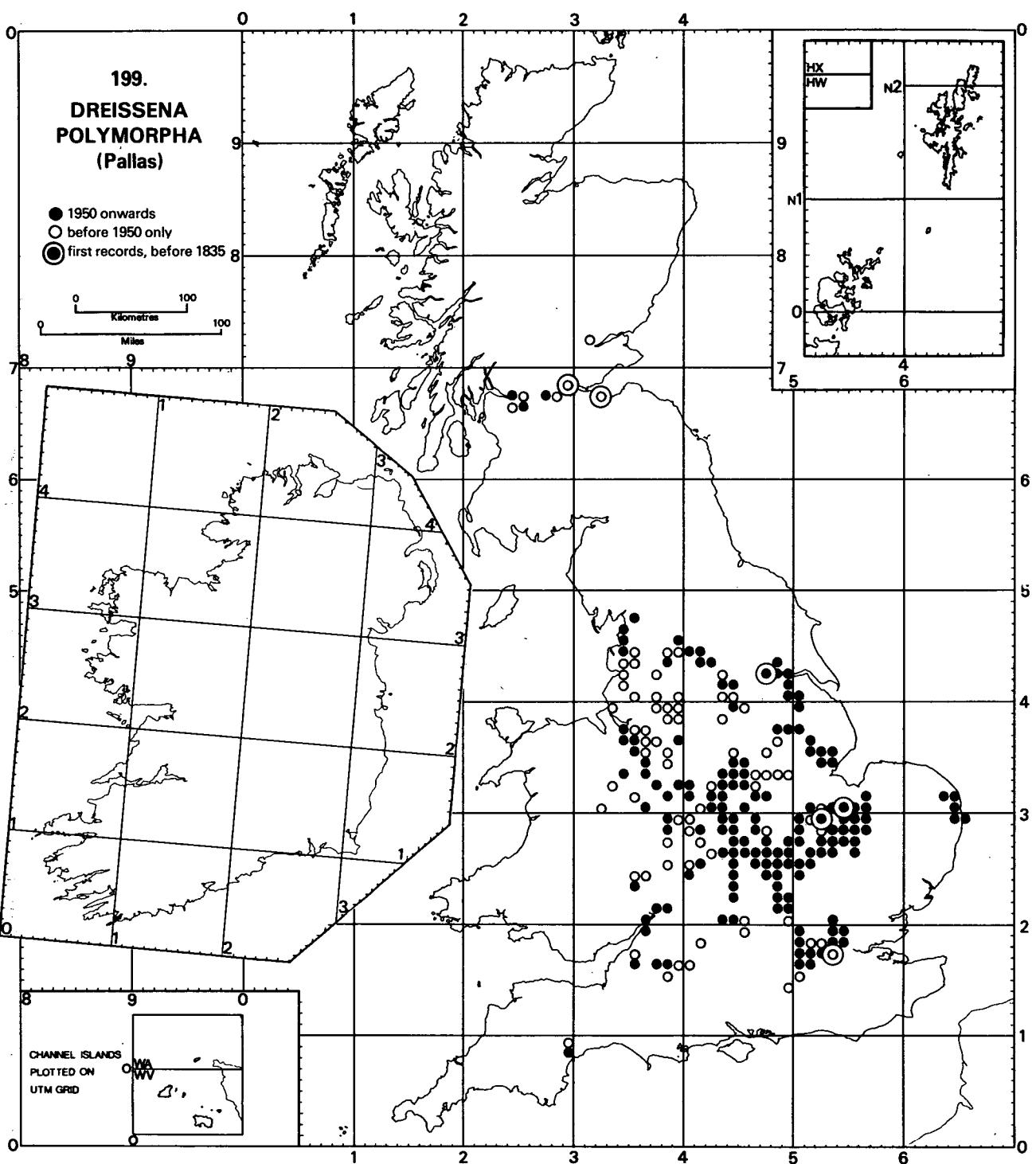




199.
DREISSENA
POLYMORPHA
(Pallas)

- 1950 onwards
- before 1950 only
- ◎ first records, before 1835

0 Kilometres
0 Miles



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