

Natural Environment Research Council

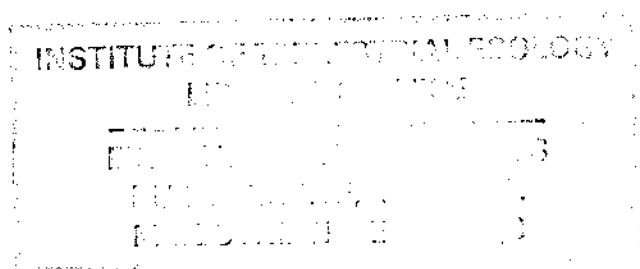
Institute of Terrestrial Ecology

INSTRUCTIONS FOR RECORDERS

Compiled by

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Second Edition



Biological Records Centre,
Monks Wood Experimental Station,
Abbots Ripton,
Huntingdon, Cambs., PE17 2LS

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The Institute of Terrestrial Ecology (ITE) was established in 1973, from the former Nature Conservancy's research stations and staff, joined later by the Institute of Tree Biology and the Culture Centre of Algae and Protozoa. ITE contributes to and draws upon the collective knowledge of the fourteen sister institutes which make up the *Natural Environment Research Council*, spanning all the environmental sciences.

The Institute studies the factors determining the structure, composition and processes of land and freshwater systems, and of individual plant and animal species. It is developing a sounder scientific basis for predicting and modelling environmental trends arising from natural or man-made change. The results of this research are available to those responsible for the protection, management and wise use of our natural resources.

Nearly half of ITE's work is research commissioned by customers, such as the Nature Conservancy Council who require information for wildlife conservation, the Forestry Commission and the Department of the Environment. The remainder is fundamental research supported by NERC.

ITE'S expertise is widely used by international organisations in overseas projects and programmes of research.

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INTRODUCTION

The distribution maps schemes aim to collect records of the occurrence of the plants and animals in the British Isles, from which distribution maps (Figs. 1 & 2), lists of localities of particular species and lists of species from particular localities can be prepared.

If the maps are to show the distribution of species rather than of recorders, then the surveys on which they are based must cover the area as evenly as possible. To achieve this all the schemes aim to compile lists of all the species occurring in each of the 10 km squares of the Ordnance Survey National Grid [or Irish Grid or UTM (Universal Transverse Mercator Grid) as applicable].

The organisation of data collection may be undertaken by the appropriate national biological society, individual naturalists or the Biological Records Centre (BRC).

Observers are asked to survey one or more 10 km squares searching them thoroughly, visiting as many habitats as possible. The records are then entered on one of two types of card, the Species-list Card or the Individual Record Card. Where a Nature Reserve exists within a 10 km square separate cards should be completed for it.

Special cards are also available for abstraction of data from museum and private collections as well as the literature. The precise use of all these cards is described in detail in the following pages.

Completed cards should be returned to the scheme organiser or as instructed by them. A list with the addresses of the organisers is included with these instructions.

In all questions of doubt please consult:

Institute of Terrestrial Ecology,
Biological Records Centre,
Monks Wood Experimental Station,
Abbots Ripton,
HUNTINGDON, Cambs., PE 17 2LS

Telephone: Abbots Ripton (04873) 381

SPECIES-LIST CARDS (Figs. 3 & 4)

These cards are used for recording the presence of species within a 10 km square or smaller area. When more detailed information is to be given, e.g. for rare or critical species, introductions and escapes, an Individual Record Card (q.v.) should be completed.

These Cards have been prepared for all the major groups of plants and animals. The card for each group consists of a printed list of all the species, or a selection of the commoner ones, in full or abbreviated form in alphabetical order for the group as a whole, or a broad taxonomic sub-division.

For the vascular plants species lists have been compiled for each of seven regions and Species-list Cards prepared accordingly. The boundaries of these regions are shown in Fig.5. Each species is preceded by its code number. The species found in the square are recorded by crossing through the name (but NOT the number preceding the name) preferably in pencil. Species not listed should be added in clear handwriting under "Other Species".

One card should be completed for each 10 km square, or locality or Nature Reserve from which records are being made for each date class as advised by the scheme organiser(s).

The "common data" boxes at the top of the card should be completed as follows:-

GRID REF. Enter 10 km square reference (or more precise reference when appropriate)

e.g.

3	1	1	-	-	0	-	-
---	---	---	---	---	---	---	---

 10 km square

or

3	1	1	1	7	0	5	5
---	---	---	---	---	---	---	---

 100 m square
(see section on grid references)

LOCALITY (1) In the case of a 10 km square give the name of the most prominent place appearing in that square.

(2) In the case of a Nature Reserve or more precise locality the name of the Reserve or locality as given on the 1:50,000 O.S. map should be entered.

HABITAT Describe briefly. In the case of records from a whole 10 km square this may be inapplicable.

RECORDER'S NAME This box only appears on recently produced cards. Enter your own name.

DATE The date(s) on which the records were made – NOT the date of completion or submission of the card. When a period is involved give first and last dates.

V.C. NO.	Enter the Vice County number (See Fig.6 and table 1).
V.C.	Enter Vice County name. (See table 1).
ALT.	Enter altitude in feet or metres (state WHICH) when appropriate.
CODE NO.	Enter your personal code number. This will be allocated by the scheme organiser.

For some schemes (e.g. Isopod Study Group) more elaborate cards are used. Special instructions for the completion of these will be issued by the schemes' organiser(s).

Each card has a type number in the bottom right hand corner (on the back on double sided cards) which should be quoted when requesting supplies of cards.

OTHER SPECIES CARD — GEN 1 (Fig.7)

This card is used in conjunction with a Species-list Card (q.v.) when there is insufficient space in the "Other Species" section of that card.

Species being recorded should be listed in clear handwriting or typed on the card leaving the left hand margin blank.

The Grid Ref, Date of records and Recorder's personal Code No. should be entered in the boxes at the top left hand corner of the card.

INDIVIDUAL RECORD CARDS (Fig.8)

Terrestrial (Pink)

These cards are used for recording **one** species from **one** locality. They should be used only when it is desirable to give more information about a specimen (e.g. precise location) than is allowed for on the Field Cards. They must be used for rare and critical species; and should also be used for recording hybrids (see 'Sub-species'). Data written in the boxes provided on the front of the card will be transferred to 80-column punched cards which can be processed by computer and by the machinery at BRC. All non-numeric information must be written *clearly*, e.g. printed or in capitals; illegible records will be rejected.

The original hand-written cards received by the Centre will have only the species number and the Vice-county number punched so as not to obliterate the written record. They will then be sorted mechanically for filing. **If they are at all damaged the machines will not accept them and they will have to be re-written.** For this reason they must **NOT** be:

- a. used in the field;

- b. folded;
- c. fastened together with paper clips;
- d. held together with rubber bands unless protected by cardboard.

The card should be completed as follows:

- GENUS & SPECIES** Name, preferably scientific.
- SUB-SPECIES, ETC.** Name of sub-species, variety or 2nd parent of hybrid.
- GRID REFERENCE** Using the 8 spaces provided fill in the grid reference (see instructions for grid references) e.g. 52/231746

5	2	2	3	1	7	4	6
---	---	---	---	---	---	---	---

 ; if only 1 km grid reference

known e.g. 32/71-84-

3	2	7	1	-	8	4	-
---	---	---	---	---	---	---	---

 ;

if only 10 km grid reference known, e.g. 44/51

4	4	5	-	-	1	-	-
---	---	---	---	---	---	---	---

VICE COUNTY Name and number, e.g.

South Devon		
		3

(See Fig.6 and table 1)

LOCALITY

Enter the name of the town or village marked on the appropriate 1:50,000 O.S. map or the distance and direction from such a place. If possible this should be stated in twenty letters or less, e.g. 3 km S.W. Kimbolton or 5 mls. N. Cambridge.

ALTITUDE

When known this should be stated in feet or, preferably, metres, e.g.

	3	5	7m

metres

1000 ft.		

feet

N.B. Do not put measurements in feet in the boxes for metres.

HABITAT

Describe the habitat in which the specimen was found, if possible to fit one of the following categories:

- 0 Woodland
- 1 Scrub
- 2 Lowland heath
- 3 Basic grassland
- 4 Neutral or acid grassland
- 5 Marsh or fen
- 6 Aquatic habitats
- 7 Hedgerow and roadside
- 8 Waste ground, walls (ruderal)
- 9 Natural open habitats, cliffs and screes, mountain tops, sand dunes, shingle

- 10 Arable
- 11 Bog and moorland
- 12 Non-classifiable

For classes 0-9 and 12 it should also be stated if the habitat is maritime.

DATE Insert day, month and year,
 e.g. 23rd August, 1966

2	3	0	8	1	9	6	6
---	---	---	---	---	---	---	---

RECORDER'S NAME In the case of a **field record** this is the name of the person who saw the specimen and is filling in the card. For a **museum specimen** it will be the name of the collector which appears on the label. For a **literature record** it will be the name cited.

RECORDER'S NUMBER In the case of a **field record** this will be the personal code number of the person who has seen the species and is filling in the card. In the case of a **museum** or **literature** record it will be the number of the person filling in the card.

Rarity, status, source and stage are recorded by drawing a diagonal line through the appropriate box. The abbreviations are as follows:

RARITY RARE = locally rare (normally used only when the species is known to be confined to a single locality not exceeding 1 km square in extent within a 10 km square).

EXT. = locally extinct (known to have occurred in the 10 km square but now absent (and not recorded for x years))

STATUS NAT. = native

INT. = introduced or planted deliberately

ESC. = escaped from garden, or zoo etc. accidentally

MIG. = migrant

CAS. = accidental or casual, not persisting in natural surroundings for more than a year or two.

SOURCE FLD. = field

MUS. = museum or herbarium

LIT. = literature

STAGE ♂ = male

♀ = female

♂♀ = worker or hermaphrodite

OVA = ova
 LARV. = larva
 PUPA = pupa
 SKIN = skin
 SKEL. = skeleton

ADDITIONAL DATA Place a diagonal line through the **small** box to the right if there are any additional data, and write these data or the reference to them **on the back of the card** (leave a margin of $\frac{1}{2}$ inch (2 cms) at each end) or in the space for comments.

COMMENTS & COMPILER Any brief comments may be written in this box, and/or the name of the person filling in the card if other than the recorder.

DETAILS OF SOURCE For **museum** records insert the name of the museum or herbarium in which the voucher material can be found, with the standard abbreviation if known; if in your own collection or that of the finder use PVT (Private).

e.g.

British Museum			
B	M	N	H

For literature records give the reference, e.g.

J. Soc. Brit. Ent.			

 2 : 22

EXPERT Name of the expert who determined the material (when other than the recorder), e.g.

E.R. Smith			

N.B. The boxes are for the initials.

Nothing should be written in the stippled areas on the card as these are needed for coding. Any additional information should be written on the back of the card (see Additional Data). Information should always be given in the form requested.

For some schemes it may be agreed to use one or more boxes for different purposes. When this is proposed it must be standardised within the scheme and all such modifications must be discussed with the *Biological Records Centre*. In certain cases a special card may be printed, e.g. for Marine Biological Recording (see below).

INDIVIDUAL RECORD CARDS (Figs.9a and 9b)

Marine (Yellow)

These cards differ in some details from the terrestrial cards. Those sections common to both environments should be completed according to the instructions for terrestrial cards, and those specific to marine use should be completed as follows:-

SEA AREA (or VICE COUNTY) Name and number (see Fig. 10 and table 2)

e.g.

Wight		
S	1	5

Note: Sea Areas are always prefixed "S".

LOCALITY OR LATITUDE AND LONGITUDE

Enter the name of the nearest town, village or coastal feature marked on the appropriate 1:50,000 O.S. map or the distance and direction from such a place. If possible this should be stated in sixteen letters or less, e.g. 3 km S.W. Eastbourne or 5 mls. N. Tynemouth.

Latitude and longitude when given should be to the nearest $\frac{1}{10}'$, e.g. 50° 18.5' N 4° 14.2' W.

DEPTH When known this should be stated in metres below chart datum,

e.g.

	1	0	0

TIDE LEVEL When known this should be given as one of the following categories:-

1. Intertidal but level not known
2. Supralittoral (above EHWS)
3. Supralittoral fringe (EHWS to HWN)
4. Upper midlittoral (HWN to MTL)
5. Midlittoral (about MTL)
6. Lower midlittoral (MTL to LWN)
7. Sublittoral fringe (LWN to ELWS)
8. Sublittoral (below ELWS)
9. Other

HABITAT Describe the habitat in which the specimen was found, if possible to fit the following categories:-

Habitat	Habit	Substrate
1. Offshore	1. Floating or stranded	1. Hard (rock, boulder, large stones, glass, etc.)
2. Open coast	2. Swimming (nekton)	2. Weed
3. Shore or sea loch, lagoon, marine part of estuary, or other sheltered place.	3. Plankton	3. Shell
4. Shore pool	4. Mobile epifauna	4. Pebbles, shingle, gravel
5. Freshwater stream on shore	5. Sessile epifauna	5. Shell or other calcareous gravel
6. Estuary (<i>brackish part</i>)	6. Burrowing or boring (infauna)	6. Muddy gravel
7. Saltmarsh	7. In crevices, under stones or underweed	7. Sand
8. Sand dunes	8. <i>Interstitial</i>	8. Muddy sand
9. Other	9. Epiphytic, epizoic, parasitic or commensal	9. Mud, clay or ooze

One category should be selected from **each** of the three classes.

ABUNDANCE Give a quantitative assessment where possible on the following scales:

Quantity	Unit
1. Present (no numerical data)	1. per sq. cm
2. <1	2. per sq. metre
3. 1 to 10	3. per cubic cm
4. 11 to 100	4. per cubic metre
5. 101 to 1000	5. per trawl haul
6. 1001 to 10000	6. per dredge haul
7. >10000	7. per 15 min. search on foot or diving
8. Absent (none found during careful search of suitable habitat)	8. per 30 min. search on foot or diving
9. Other	9. Other

One category should be selected from **each** of the two scales.

STAGE	REST	=	Resting stage
	SHELL	=	Shell
	8	=	Worn shell

N.B. If only worn shells are found please state under "comments"; such species are less likely to be found living in the vicinity, and may even be sub-fossil.

ONE SPECIES CARD — GEN 5 (Fig.11)

This card is intended for use when

- abstracting records from published lists

- b. recording data from museum or private collections
- and c. compiling locality lists for single species when it is inconvenient to use Individual Record Cards or Field Cards.

The card is completed as follows:

SPECIES	Scientific name in full with author's name if desirable.
RECORDER	Enter your name and code number.
COL./REF.	Name and location of collection or literature reference.
GEN. & SPEC. NO.	Leave blank. For office use only.
GRID REF.	10 km square reference or more precise reference when desirable (see section on Grid References).
V.C.	Vice County number. (See Fig.6 and table 1).
COLLECTOR	Name of collector or person responsible for record.
LOC.	Name of locality. Give place name or distance and direction from a named place.
DATE	Indicate to which date class(es) records refer or enter actual date, when appropriate.

GRID REFERENCES

England, Wales and Scotland

The National Grid of the Ordnance Survey is a system of reference for Britain. The country is divided initially into 100 km squares which are now given a letter designation (earlier maps used a numerical system which is still used by the BRC as it simplifies machine coding). These, with their numerical equivalents, are shown in Fig. 12.

Each of these 100 km squares is sub-divided into a hundred 10 km squares, which are the smallest units shown on the 20 mile/inch, 10 mile/inch, and quarter inch/mile maps. The 10 km squares are further sub-divided into 1 km squares on the 1:50,000, 1:25,000 and 1:10,000 maps. (The 1:25,000 maps usually cover exactly one 10 km square.) The 10 km squares are also marked on the maps in certain atlases such as the "Shell Nature Lovers Atlas", the "Readers Digest A.A. Book of the Road", the "A.A. Road Books of England, Wales and Scotland" and recent editions of the "A.A. Members Handbook".

Reference to Fig.12 will show that the boundaries of the 100 km squares are numbered along the top, bottom and sides of the map. To arrive at the grid reference to the 100 km squares, read the number of the line forming the western (left hand) boundary of the square (this number is at the top and bottom margins

of the map), and then the number of the line forming the southern boundary of the square (this number is on the sides of the map). These two numbers in the order given above form the 100 km square grid reference to the square to the N.E. of the point of intersection of the two lines, e.g. the letters SP on the map in Fig.12 are in 100 km square 42. The 100 km square reference is always quoted first and often separated from the rest of the reference by an oblique stroke.

The boundaries of each of the 10 km squares in a 100 km square are numbered in the same way and the grid references to them are arrived at by reading the numbers of the lines forming the western and southern boundaries of the square. Therefore point A in Fig.13 is in 10 km square 36. As this square forms part of 100 km square 42 the full 10 km square reference is 4236, or 42/36, or SP/36 using the alphabetic system of notation for the 100 km square.

The numbering of the boundaries of the 1 km squares in a 10 km square is on a modified system and they read, for example, 30, 31, 32, 33 etc. (see Fig.14). The grid references to them are, however, arrived at in the same way as before. Therefore point A in Fig.14 is in 1 km square 3365. As this forms part of 10 km square 36 in 100 km square 42, the full 1 km square reference is 423365 or 42/3365 or SP/3365. Where a more precise reference is required the 1 km square can be further sub-divided into tens by eye or by reference to the un-numbered divisions at the margin (1:25,000 maps), and the reference to point A cited as 42/33 4 65 3, the 4 and 3 being the estimated subdivisions from the western and southern boundaries of the 1 km square respectively.

When quoting the 10 km square and 1 km square references they are frequently written in the forms 42/3—6—and 42/33—65— respectively, and should be given in this form on BRC record cards. Further details of the National Grid system are given on all 1:50,000 O.S. maps.

Ireland

The Irish Grid is a similar system but with a different point of origin and consequently it does not align with the British National Grid. This grid is shown on the $\frac{1}{4}$ " to 1 mile, $\frac{1}{2}$ " to 1 mile, and 1" to 1 mile Ordnance Survey maps of Ireland as well as on the maps in such atlases as the "Readers Digest A.A. Book of the Road" and the "A.A. Road Book of Ireland".

Grid references are given in the same way as for the British National Grid. However, the Irish Grid uses a single letter alphabetic notation for each of the 100 km squares. These, with their numerical equivalents, are shown in Fig.12.

The BSBI Distribution Maps Scheme and some other schemes used an extension of the British National Grid (Biological Grid) for Ireland. To accommodate these data the BRC base map allows plotting on either grid. (Cf. Fig.1 – Irish Grid with Fig.2 – Biological Grid). All new records MUST use the Irish Grid.

Scilly Isles

Individual islands in the Scilly group can now be indicated, the 10 km square references being:-

Bryher 00/81, St. Agnes 00/80, St. Martins 00/91, St. Mary's 00/91,
Tresco 00/81

Where no differentiation between islands is needed records will be plotted in 10 km square 00/91.

Orkney & Shetland

Although not used for plotting, the following conventional grid references for Orkney and Shetland should continue to be used on all record cards:-

100 km square HY – 57, HZ – 67, HT – 58, HU – 68, HP – 69

Channel Islands

The Channel Islands use the UTM Grid and maps showing this are available for Jersey (2½" to 1 mile, published by the States of Jersey), Guernsey (3" to 1 mile, published by the Ordnance Survey), Alderney, Sark, Herm and Jethou (6" to 1 mile, Series M824 published by D Survey, Ministry of Defence). All these maps are available from Edward Stanford Ltd. 12-14 Long Acre, London, W.C.2E 9LP, and other map dealers.

The 10 km squares are:-

Alderney WA50 Guernsey WV27 Herm WV38 Jersey WV65 Jethou WV37
Les Ecréhous WV76 Sark WV47

Jersey can be plotted as three 10 km squares when more detail is required. The additional squares are WV64 and WV55.

For these only the alphabetic notation for the 100 km squares should be used.

Readers Digest A.A. Book of the Road Reference System

As we are able to convert from this system to the National Grid, references taken from these maps are acceptable. They should be given in the form "Truro 139Fd" – where 139 is the page number, F is the letter in the bottom margin and d the letter in the side margin of the map on which the square containing Truro appears. When using this form of reference please enter it in the **locality** box and NOT in the grid reference box.

VICE-COUNTY MAPS (Fig.6)

Detailed maps are available in the following publications:-

Great Britain – Dandy, J. E., 1969. Watsonian vice-counties of Great Britain. Ray Society. Price £1.50.

obtainable from – British Museum (Natural History), Cromwell Road, London, SW7 5BD.

Ireland – Scannell, M. J. P., and Synnott, D. M., 1972. Census Catalogue of the Flora of Ireland. Price 50p.

obtainable from – Government Publications Sale Office, G.P.O. Arcade, Dublin, 1, Republic of Ireland.

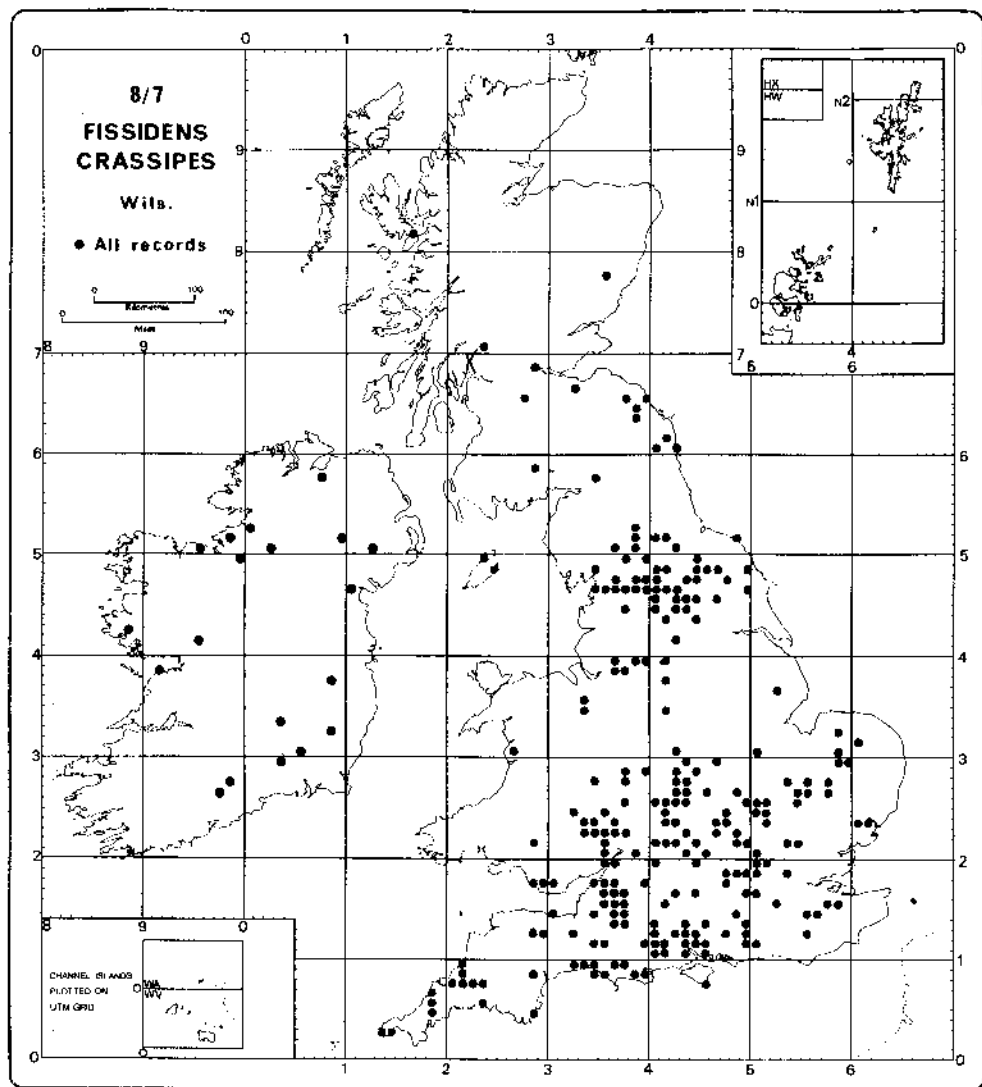


Fig.2. A 10 km square distribution map using the B.S.B.I. Biological Grid for Ireland

LOCALITY		WARBOYS, HUNTINGDON		
HABITAT		AGRICULTURAL LAND, DISUSED RAILWAY CUTTING, DECIDUOUS WOODLAND		
Grid Ref.	1	BUTTERFLIES and MOTHS 6446	Date	V.C. No.
	2		1967	31
	3		V.C.	
	4		HUNTINGDON	
	5		Alt.	Code No
6			L 34	

BUTTERFLIES

2 Aglais urticae	34 Colias croceus	73 Maculinea arion	102 Plebeius argus
4 Amth. cardamines	36 Cupido minimus	75 Melitaea jurtina	104 Polygonia c-al
6 Apatura iris	42 Erebia sethiops	76 Melitaea didyma	106 Polyommata icarus
8 Aphant. hypaena	43 Erebia epiphron	78 Melan galathea	110 Pyrgus naevius
12 Argynnis aglaja	46 Erynnis tages	80 Melitaea aithalia	112 Strymonidia pruni
13 cydippe	48 Eumenes semele	81 Melitaea cinxia	113 w-album
17 euphrosyne	50 Euphydry aurina	85 Melitaea polychlorus	115 Thecla betulae
17 paphia	54 Hamaxia lucina	88 Melitaea polyphanta	116 quercus
18 selene	56 Hamaxia lucina	89 Melitaea polyphanta	117 Thymel arcton
20 Aricia agestis	58 Hesperia comma	90 Papilio machaon	119 linola
23 Calliphrys rubi	62 Leptidea sinapis	93 Pararge aegeria	120 xystron
25 Carter palaeonon	64 Limenitis camilla	94 megera	122 Vanessa atalanta
27 Celastr argiolus	68 Lycena phlaeas	98 Phaen. brassicae	123 cardui
29 Cosme pomphilius	70 Lysan bellargus	99 Phaen. brassicae	
30 tulia	71 coridon	100 capas	

MOTHS

301 Alopius grossi	427 Apatele aceris	606 Clostera pigra	750 Ectypha glyphica
303 stylata	433 megacephala	614 Colocasia coryl	752 Ectroph coryl
305 Acacia viretata	434 menyanthidis	616 Colostydia dity	754 Chamaec. fasciata
309 Achlya Navicor	435 psi	617 multistriata	756 Ematurga atomar
312 Acontia luctuosa	436 psitticus	618 olivata	766 Ennomos quercin
324 Aegeria culici	439 Apeira syringaria	619 psitticus	768 Entephria caes
328 myopaeformis	443 Apocheima hispi	620 salicata	777 Epione repandar
331 tipuliformis	449 Aporphyla lut	622 Colotois pennar	780 Epione
334 Aethalura punct	450 nigra	626 Comibaena pust	781 galata
336 Agrochola circ	453 Archiareis par	629 Conistra ligula	782 tristata
337 lata	455 Asoteis	630 vaccinii	783 tristata
338 lucida	456 vilifica	636 Cosmia difinis	785 Epione
339 macilentata	468 Arenostola elymi	638 trapezina	787 Erannus auran
341 phaeocoma	465 phragmidis	640 Cossus cossus	788 defoliaria
343 denticulatus	466 pygmaea	644 Cosymbia albi	789 leucophaearia
344 phaeocoma	468 Asphalia diluta	645 annulata	790 marginaria
346 tipula	473 Asthena albulaia	646 linearia	792 Chamaec. costalis
347 para	475 Asphalia stramp	648 porata	794 Eriogaster lan
348 ripae	477 Atolmis rubria	649 punctaria	802 Eucloea nebul
349 tegeton	479 Axylia putris	652 Cranipphora lig	806 Euclidimera mi
352 vestigialia	483 Bupia bitincta	654 Cosmia	808 Eugnorisma dep
356 Alcis repandata	485 tomosata	660 Cryphia perla	810 Eumichia adus
358 Allophya asang	487 Bena fagana	666 Cucullis chamom	814 Euphyia bilin
360 Atrophina	489 Biston betularia	671 umbratica	815 cucullata
362 Amathes agathina	490 strataria	672 verbasci	817 picata
363 alpicola	490 Bombus agrorum	676 Cybosis mesomel	818 rubidata
365 baja	501 Brachion sphinx	676 Cynia mendica	819 unangulata
367 castanea	505 Bupalus piniaria	682 Dasychira fas	821 Eupithecia abb
368 castanea	509 Callimorpha jac	683 pudibunda	822 absinthiate
369 dissequens	517 Chalchymus ornata	687 Deilephila elp	824 varicornis
370 hexastrigata	519 Comptosia megar	688 porcellus	825 castigata
371 stigmatica	523 Caradrina alsin	692 Chamaec. costalis	826 castigata
372 triangulum	525 blanda	693 pusaria	828 distinctaria
373 montigrapha	526 clavipalpia	695 Deuteronom atn	829 dondonaria
375 Ammogrotis luc	527 morpheus	696 erosaria	839 exiguata
377 Amphipyra pyram	530 Carcia soronata	697 Cosmia	832 goossensata
378 trapezina	536 Cosmia	699 Diacrisia san	833 haworthata
380 Anagopa pulver	540 Celaena haworth	701 Diarzia brunnea	834 hirsuta
382 Anactis eform	541 leucostigma	703 dahliti	835 pida
383 plagiata	542 Celaena confusata	705 medea	836 immitata
385 Anaplect prasina	555 Cosmia	706 rubi	838 intricata
389 Anarta myrtilli	559 Cosmia	709 Diatraea	839 inturbata
391 Anchoscelis hel	561 Cerastis rubric	713 Dipsosiphia scop	841 lariciata
392 litura	563 Cerura vinula	719 Drepana binaria	842 lineariata
396 Angraena pruner	565 Chaonia ruficor	720 cultararia	844 nanata
398 Anticarsia deriv	571 Chesias leggetel	721 falcataria	846 pimpinellata
407 Pyrausta sticticalis	572 rufata	723 lecerintaria	848 plumbellata
408 epomidon	574 Chamaec. costalis	725 Drymonia dodon	849 pulchellata
410 furva	581 Chlorocystia miat	727 Dryobotodes ere	850 pygmaea
411 infesta	582 siterata	729 Dypterygia scab	851 satyrate
413 lithomelana	584 Chloroclystis cor	733 Dyscia fagaria	852 sobrinata
414 monoglypha	585 debilitata	735 Dystroma citra	853 subnotata
419 oblonga	586 rectangulata	739 Chamaec. costalis	854 subumbriata
416 ophiogremma	588 Chamaec. costalis	741 Chamaec. costalis	855 succenturiata
418 opulenta	590 Chamaec. costalis	743 Chamaec. costalis	857 tantularia
420 opulenta	592 Cirrha gilvego	743 Chamaec. costalis	858 tenuiata
421 opulenta	593 Chamaec. costalis	745 Ectropis biund	859 tripunctaria
422 sublustrata	597 Cirrha lutea	746 consonaria	861 valerianata
423 unanamis	600 Cleora rhomboid	747 crepuscularia	862 vanaata
424 ypsilon	602 Cleorodes lich	748 extarsaria	863 virgaureata

Fig.3. Species-list card showing completion

Grid Ref. 525-11-	LOCALITY	E. OF HARLOW		SOUTH EAST	
	HABITAT	ROADSIDE		Date	V.C. No.
				21.5.1987	19
				V.C. N. ESSEX	
		Alt.	Code No.		
				54	

3	Asper	207	Astra dan	361	Carex dem	538	Colch aut	771	Eupho exi	961	Hele pra
5	Asper	278	ely	363	dia	540	Onnu mac	772	hel	962	pub
6	Acera ant	211	Atbyr fil	366	distans	541	Onnu mac	777	popul	963	Marae
7	Asper	212	Atnp gla	367	disticha	544	Onnu mac	2243	Eupho agg	976	Hiera pil
9	Asper	214	Atbp has	368	divica	548	Onnu mac	783	ang	979	Hippo com
12	Acino arv	217	lit	369	divulsa	550	Cocon var	798	neu	980	Hippo rha
15	Acoru cal	218	pat	370	ech	551	Cocon did	801	pse	981	Hippo vul
19	Adoxa mos	216	sab	371	ela	552	squ	804	roa	982	Holcu
20	Asper	220	Avena fat	373	eri	553	Coryd cia			984	mol
2241	Aescu lup	221	lud	374	ext	556	lut			988	Honks pep
21	Aethu cyn			376	flacca	557	Coryd	810	Fagus syl	989	Horde eur
22	Asper	224	Balde ran	381	his	569	Grata moo	813	Festu aru	991	Horde mar
23	odo	225	Balde nig	382	hor	570	oxy	816	gig	992	Asper
26	Agrop can	229	Barba vul	385	lae	571	Crepi bis	821	*ovi	993	sec
28	jun	231	Belli pul	386	las	572		823	per	995	Hottu pal
32	pun	232	Berbe vul	387	lep	578		824	Zeah	996	Humul lup
33	Asper	234	Berul ere	387	387	578		824	Zeah	996	Humul lup
35	Agros can	235	Beta mar	386	nig	589	Cuscu spi	830	Filag ger	998	Hydro mor
36	gig	239	Betul pub	387	387	589	epith	831	min	999	Hydro vul
39	ten	241	Biden cer	399	pal	592	Cymba mur	833	Pin	1003	Hyper and
40	ten	242	Biden cer	399	pal	592	Cymba mur	833	Pin	1003	Hyper and
41	Aira car	243	Baldi tri	400	panicea	607	Baldi glo	838	ves	1010	Asper
42	pra	243	Black per	401	panicea	607	Baldi glo	838	ves	1010	Asper
46	Ajuga rep	244	Blech spi	404	pen	617	Daplin lau	839	Erang ain	1011	lum
57	Aicbe ves	245	Blysm com	403	pil	620	Daucu car	841	Asper	1014	per
60	xan	248	Eotry lun	406	pol	627	Desch cae	847	Fumar cap	1015	pai
62	Alism lan	249	Brach pin	407	pse	628	fl*	849	mic	1016	tet
63	Alism pla	250	Bras nap	412	rem	630	Descu sop	854	off	1018	Hypoc gla
64	Asper	251	Bras nap	412	rem	630	Descu sop	854	off	1018	Hypoc gla
75	Alliu urs	252	nig	413	rip	435	rig	858	vai	1022	Iberi ana
76	vin	253	ole	414	ros	640	Digit pur			1023	llex agu
77	Alnus glu	254	rap	419	acr	644	Diplo mur			1030	Inula con
79	Allope seq	256	Brixa med	421	syl	645	ter	862	Baleo lut	1030	Inula con
82	gen	258	Broun arv	424	ves	646	Dipsa ful	863	Galeo ang	1036	Iris foe

F O L D H E R E											
84	myo	262	com	427	Caris vul	647	Caris pil	867	spe	1038	Asper
85	Asper	268	lep	428	Carpi bet	657	Drose rot	868	*tet	1047	Isola set
87	Altha off	269	*mol	432	Casta sat	661	Dryop aus	871	Galin par		
97	Armopare arv	270	Asper	433	Catab aqu	664	*fl	872	Gallu ang	1048	Jasno mon
98	Anaca pyr	271	rac	440	Centu cya	666	spi	873	Asper	1050	Juncuncu acu
99	Anaga arv	273	sec	444	Asper			875	eru	1034	art
100	ten	275	tho	446	sec			877	ere	1037	*buf
105	Anemom nem	276	Asper	451	Centu min	670	Echui vul	878	ber	1038	*bul
106	pui	289	Bufoia umb	453	pul	673	Kleoc acu	879	*mol	1062	com
109	Angel syl	291	Bakal mar	456	Centu tum	674	mul	880	Asper	1063	con
113	Asper	292	Calain can	457	Cepha dan	675	pal	882	pal	1067	cer
117	Anthie arv	293	epi	461	Ceras arv	677	pau	886	lri	1069	ger
118	oot	296	Calam asc	468	468	678	uni	887	uli	1070	mf
121	Antho odo	298	nep	469	seni	679	Eleg fl*	888	ver	1072	mar
123	Anthr neg	299	agg	462	tet	681	Elode can	891	Genis ang	1073	agu
125	Asper	303	lri	467		682	Elymu are	893	tin	1076	sub
126	Anthy vul	304	obt	471	Cerat deu	687	Eudyn non	897	Genti col	1077	ten
128	Antir oro	307	sta	474	Clauon rin	688	Epilo ade	906	Gerat acu	1080	Junip com
131	Asper	305	ver	478	Chaez ten	689	adu	907	dis		
132	arv	309	Callu vul	477	Asper	692	Asper	909	luc	455	Kentr rub
133	mic	310	Calth pal	480	Obeli maj	694	lan	911	inol	1082	Kieck ala
134	Apium gra	2248	Calys *sep	481	Asper	695	mon	914	pra	1083	epi
135	inu	311	sep	484	bon	698	obs	918	pus	1084	Asper
137	nod	312	sol	487	lc	697	pal	917	Asper	1087	Koole gra
142	Arabi tha	313	agl	493	pol	698	par	918	rob		
146	Arabi hir	315	Campa glo	502	Asper	700	ros	919	rot	1094	Asper
150	Arcti agg	321	rap	503	par	705	Epipa hel	920	sun	1093	vir
151	lep	320	rapunculo	504	seg	706	706	923	Geum pil	1096	Asper
152	nu	322		509	Chrys opp	710	ses	924	Geum riv	1099	amp
153	vul	323	tra	509	Crcho lut	712	Asper	925	Asper	1100	hyb
163	Arena lep	325	Asper	513	Circa lut	713	flu	929	Glauc fla	1103	Asper
161	*ser	327	Caria ama	514	Cursi sca	717	pal	930	Glauc nar	1104	Asper
162	ser	328	de	515	Asper	721	tei	931	Asper	1107	Lathr agu
168	Armer mar	329	hir	516	dis	726	Erica can	932	Glyce dec	1109	Lathr aph
167	Asper	331	pra	517	eri	731	tet	933	flu	1112	mon
169	Asper	333	Carda dca	520	pal	733	Erige acr	934	max	1114	nie
170	Artem abs	335	Cardu cri	522	Asper	735	can	935	ped	1115	pal
172	mar	337	nut	523	Cladi mar	740	Eriop ang	936	pi	1118	Asper
175	Asper	341	Carex acu	525	Clayt per	745	Erodi *oc	940	Goaph spi	1117	set
176	Asper	340	acuta	528	Asper	753	Erophi *var	941	con	1125	Lemna gnb
182	Asper cyn	342	app	530	Clauo vul	759	Erysi cbe	948	Gymna con	1126	uas
185	odo	344	are	532	Cochl eng	762	Asper			1127	pol
188	Aspie edl	350	tin	533	dao	783	Eupat can	949	Malim por	1128	tri
189	rut	355	car	535	off	784	Eupho amy	952	Asper	1129	Leont aut
194	lri	357	con	537	Coelo vir	789	*esu	955	Halia cha	1130	bas
204	Aster tri	359	otr								

Fig.4. A regional plant species-list card.

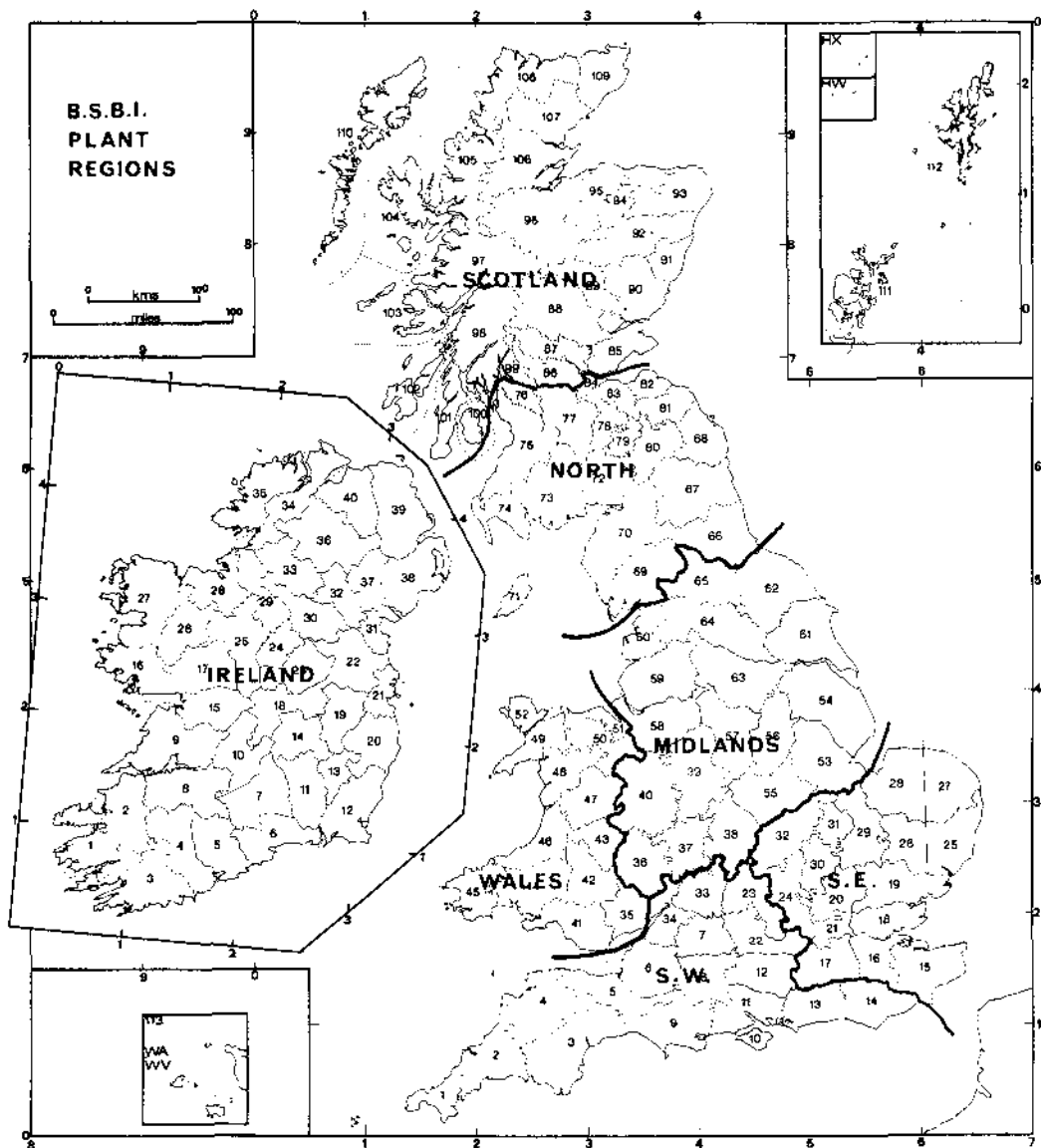


Fig.5. The B.S.B.I. Plant Regions

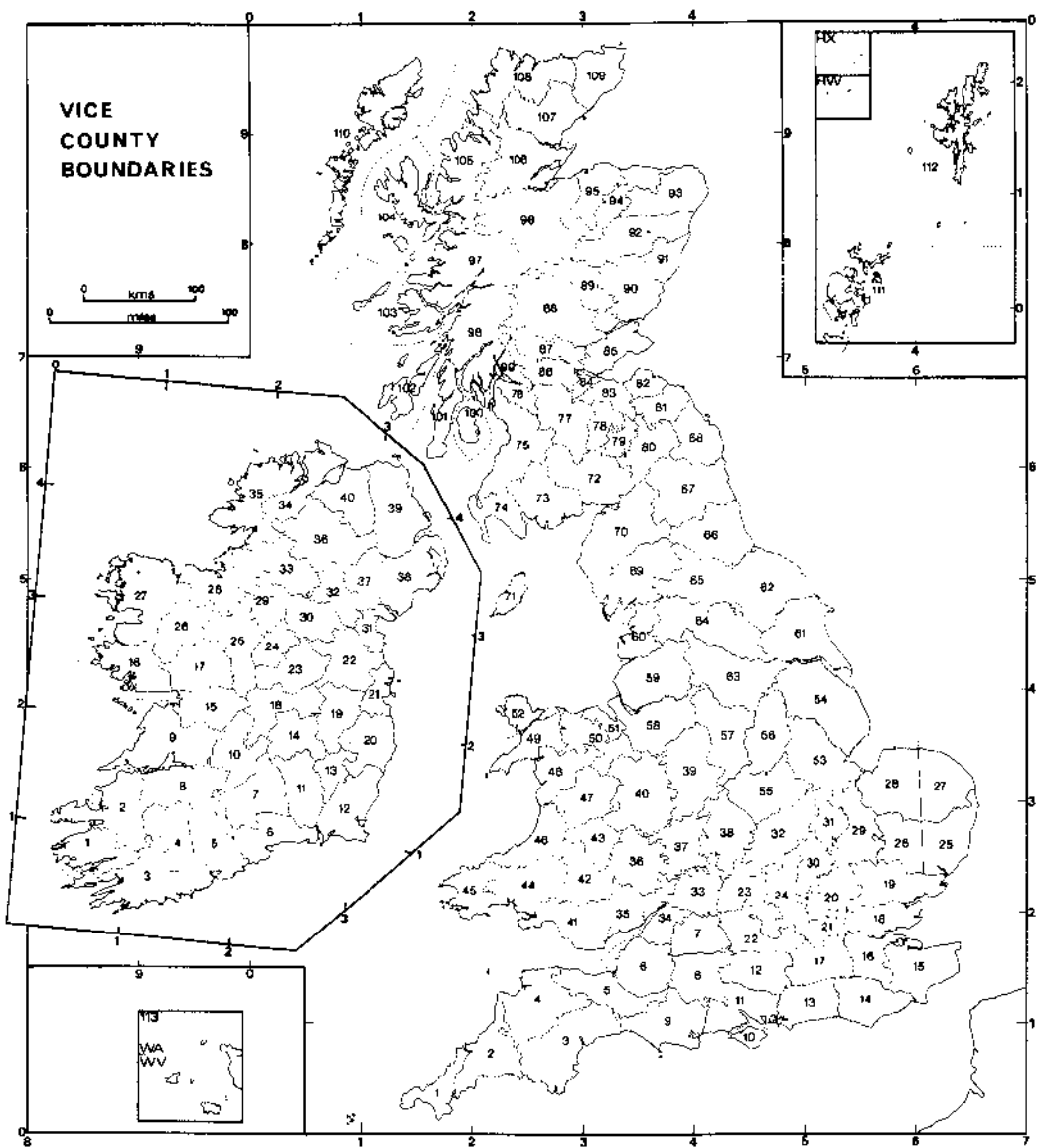


Fig.6. The Watsonian vice-counties

Table 1

**THE VICE-COUNTY NUMBERS
AND CORRESPONDING VICE-COUNTIES**

ENGLAND AND WALES

- | | |
|--------------------------------|------------------------------------|
| 1. West Cornwall (with Scilly) | 37. Worcestershire |
| 2. East Cornwall | 38. Warwickshire |
| 3. South Devon | 39. Staffordshire |
| 4. North Devon | 40. Shropshire (Salop) |
| 5. South Somerset | 41. Glamorgan |
| 6. North Somerset | 42. Breconshire |
| 7. North Wiltshire | 43. Radnorshire |
| 8. South Wiltshire | 44. Carmarthenshire |
| 9. Dorset | 45. Pembrokeshire |
| 10. Isle of Wight | 46. Cardiganshire |
| 11. South Hampshire | 47. Montgomeryshire |
| 12. North Hampshire | 48. Merionethshire |
| 13. West Sussex | 49. Caernarvonshire |
| 14. East Sussex | 50. Denbighshire |
| 15. East Kent | 51. Flintshire |
| 16. West Kent | 52. Anglesey |
| 17. Surrey | 53. South Lincolnshire |
| 18. South Essex | 54. North Lincolnshire |
| 19. North Essex | 55. Leicestershire (with Rutland) |
| 20. Hertfordshire | 56. Nottinghamshire |
| 21. Middlesex | 57. Derbyshire |
| 22. Berkshire | 58. Cheshire |
| 23. Oxfordshire | 59. South Lancashire |
| 24. Buckinghamshire | 60. West Lancashire |
| 25. East Suffolk | 61. South-east Yorkshire |
| 26. West Suffolk | 62. North-east Yorkshire |
| 27. East Norfolk | 63. South-west Yorkshire |
| 28. West Norfolk | 64. Mid-west Yorkshire |
| 29. Cambridgeshire | 65. North-west Yorkshire |
| 30. Bedfordshire | 66. Durham |
| 31. Huntingdonshire | 67. South Northumberland |
| 32. Northamptonshire | 68. North Northumberland (Cheviot) |
| 33. East Gloucestershire | 69. Westmorland with N. Lancashire |
| 34. West Gloucestershire | 70. Cumberland |
| 35. Monmouthshire | 71. Isle of Man |
| 36. Herefordshire | 113. Channel Isles |

SCOTLAND

72. Dumfriesshire
73. Kirkcudbrightshire
74. Wigtownshire
75. Ayrshire
76. Renfrewshire
77. Lanarkshire
78. Peeblesshire
79. Selkirkshire
80. Roxburghshire
81. Berwickshire
82. East Lothian (Haddington)
83. Midlothian (Edinburgh)
84. West Lothian (Linlithgow)
85. Fifeshire (with Kinross)
96. Stirlingshire
87. West Perthshire (with Clackmannan)
88. Mid Perthshire
89. East Perthshire
90. Angus (Forfar)
91. Kincardineshire
92. South Aberdeenshire
93. North Aberdeenshire
94. Banffshire
95. Moray (Elgin)
96. East Inverness-shire (with Nairn)
97. West Inverness-shire
98. Argyll Main
99. Dunbartonshire
100. Clyde Isles
101. Kintyre
102. South Ebudes
103. Mid Ebudes
104. North Ebudes
105. West Ross
106. East Ross
107. East Sutherland
108. West Sutherland
109. Caithness
110. Outer Hebrides
111. Orkney Islands
112. Shetland Islands (Zetland)

IRELAND

- H.1. South Kerry
- H.2. North Kerry
- H.3. West Cork
- H.4. Mid Cork
- H.5. East Cork
- H.6. Waterford
- H.7. South Tipperary
- H.8. Limerick
- H.9. Clare
- H.10. North Tipperary
- H.11. Kilkenny
- H.12. Wexford
- H.13. Carlow
- H.14. Leix (Queen's County)
- H.15. South-east Galway
- H.16. West Galway
- H.17. North-east Galway
- H.18. Offaly (King's County)
- H.19. Kildare
- H.20. Wicklow
- H.21. Dublin
- H.22. Meath
- H.23. West Meath
- H.24. Longford
- H.25. Roscommon
- H.26. East Mayo
- H.27. West Mayo
- H.28. Sligo
- H.29. Leitrim
- H.30. Cavan
- H.31. Louth
- H.32. Monaghan
- H.33. Fermanagh
- H.34. East Donegal
- H.35. West Donegal
- H.36. Tyrone
- H.37. Armagh
- H.38. Down
- H.39. Antrim
- H.40. Londonderry

3	1	2	-	-	-	Date
						1948
						Code No.
						L 33

OTHER SPECIES

Grid
Ref.

Clostera curtula
Lithosia quadra
Xylomges conspicillaris
Laphygma exigua
Hadena w-latinum
Polychrisia moneta
Apatele leporina
Apatele alni
Antitype flavicincta
Cirrhia ocellaris
Apatele tridens
Procus versicolor
Sterrhia trigeminata

BIOLOGICAL RECORDS CENTRE APRIL 1967 GEN 1

Fig.7. Other Species card - completed

BRC-5-71

ORDER NO. 1-4	SPECIES NO. 5-9	GENUS & SPECIES EUPHYDRYAS AURINIA	SUB-SPECIES etc. 10						
GRID REFERENCE 25-32		VICE COUNTY 1-0-W		LOCALITY CRANMORE, ISLE-OF-WIGHT		ALTITUDE 56-57		REC. NO. 65-86	
4039-90-		33-35		36-55		60-64		L34	
HABITAT 58-59				DATE 60-64		REORDER'S NAME J. WRIGHT		COMMENTS & COMPILER NOT SEEN SINCE 1956	
PARITY 69		STATUS 970		CAS. 571		SOURCE 571		MUS. 2	
STAGE 72		OVA 2		LARY. 4		PUPA 5		SKEL. 6	
DETAILS OF SOURCE 73-76		NAT. 1		INT. 2		ESC. 3		MIG. 4	
ENT. REC. J. VAR. 84:62		LARY. 4		PUPA 5		SKEL. 6		EXPERT 77-79	

IBM 655-22288

Fig.8. Individual Record card (Terrestrial) - completed

MARINE RECORD CARD

SPECIES NO.	ORDER NO.	SPECIES NO.	GENUS & SPECIES	SUB-SPECIES etc.	V.C. NO.
	1-4	5-9	SEPIA ELEGANS	10	
GRID REFERENCE	SEA AREA or VICF COUNTY		LOCALITY or LATITUDE & LONGITUDE		TIDE LEVEL
25-32	11-24		PETERS POINT, ST. IVES BAY		56-INTER-TIDAL
1 0 5 7 8 4 0 8	NORTH FORNWALLS 20		36-51		1
HABITAT			DATE		REC. NO.
OPEN COAST, STRANDED			60-54		85-68
217 ON SAND			27 06 19 71		1 23
ABUNDANCE	STAGE		SOURCE		RECORDER'S NAME J. SMITH
69-70	ONE ONLY		3		
			71 1 2 3		
STAGE	♂	♀	GVA	LARY REST.	COMMENTS & COMPILER N.W. GALE PREVIOUS DAY <i>[Signature]</i>
72	1	2	3	4	
	5	6	7	8	
DETAILS OF SOURCE			ADDITIONAL DATA		
73-76			9 80		
EXPERT					
77-79					

IBM 865 - 23551

BRC 2-72

Fig.9a Individual Record card (Marine) -- completed using National Grid reference

MARINE RECORD CARD									
SPECIES NO.		SPECIES NO.		GENUS & SPECIES		LOCALITY OF LATITUDE & LONGITUDE		SUB-SPECIES etc.	
1-4		5-9		11-24		36-51		52-55	
GRID REFERENCE		SEA AREA or RICE COUNTY		OCTOPUS VULGARIS		49°45.5'N 04°36.2'W		TIDE LEVEL	
25-32		PLYMOUTH		SWIMMING, OFFSHORE		12		56	
HABITAT		33-35		DATE		RECORDER'S NAME		REC. NO.	
57-59		S18		60-64		A. BROWN		65-68	
1110		3		30/01/96		COMMENTS & COMPLIER		46	
ABUNDANCE		ONE SPECIMEN		SOURCE F.L.D. M.V. L.T.					
69-70		3		71 1 2 3					
STAGE		LARY. REST. SHELL		ADDITIONAL DATA					
72		1 ♀ 2 ♂ 3		6 7 8 9 80					
DETAILS OF SOURCE		EXPERT		J. SMITH					
73-76		77-79							
BMNH (NAT.HIST.)		BRITISH MUSEUM							

16M 866 - 23361

MCA / NATURE CONSERVANCY

BRC 2-72

Fig.9b Individual Record card (Marine) – completed using Latitude/Longitude co-ordinates

Table 2

SEA AREAS

No.	Area	No.	Area
S 01	Shetland	S 29	Clyde and Argyll
S 02	Sutherland	S 30	Minch
S 03	Orkney	S 31	Lewis
S 04	Viking	S 32	Uist
S 05	Moray Firth	S 33	North Donegal
S 06	Aberdeen	S 34	Donegal Bay
S 07	Firth of Forth	S 35	Mayo
S 08	North Sea	S 36	Galway Bay
S 09	Northumberland	S 37	Fastnet
S 10	Dogger	S 38	Cork
S 11	Yorkshire	S 39	Nymphe Bank
S 12	Wash	S 40	Labadie (Sole)
S 13	Thames	S 41	Chapelle
S 14	East Channel	S 42	Lightning
S 15	Wight	S 43	Porcupine
S 16	Portland	S 44	Rockall
S 17	Channel Isles	S 45	Bailey
S 18	Plymouth (West Channel)	S 46	Rosemary
S 19	Scilly Isles	S 47	South-East Iceland
S 20	North Cornwall	S 48	Faroes
S 21	Bristol Channel	S 49	Trondheim
S 22	Cardigan Bay	S 50	Fisher
S 23	Anglesey	S 51	German Bight
S 24	Liverpool Bay	S 52	Texel
S 25	Solway	S 53	Rhine
S 26	Isle of Man	S 54	Seine
S 27	Dublin	S 55	Ushant
S 28	Belfast	S 56	Biscay

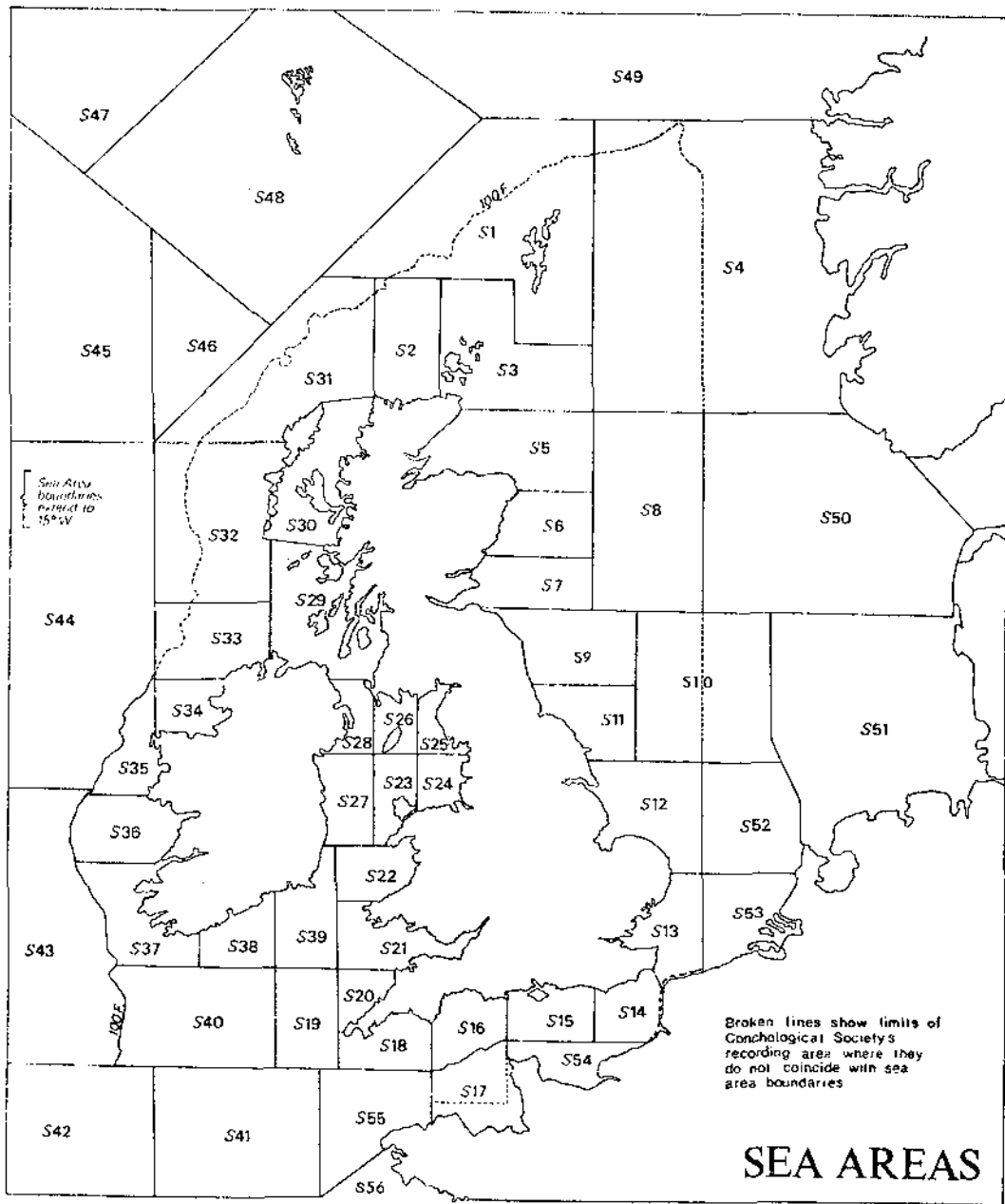


Fig.10. Sea Areas

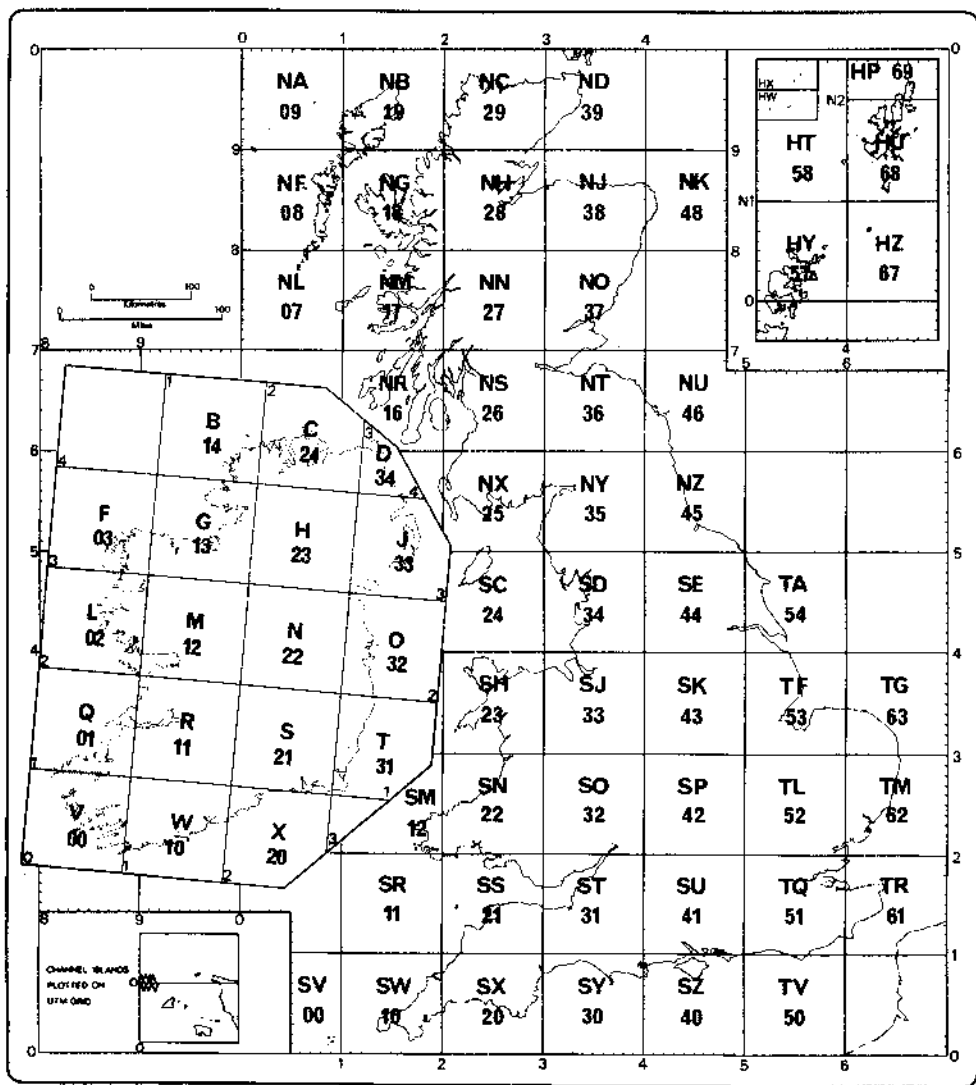


Fig.12. Numerical equivalents of the 100 km square reference letters of the National and Irish Grids

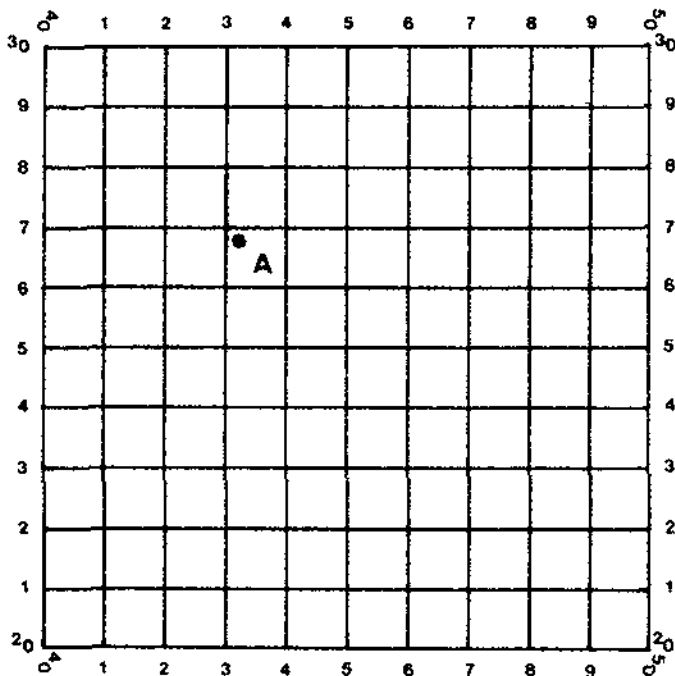


Fig.13.

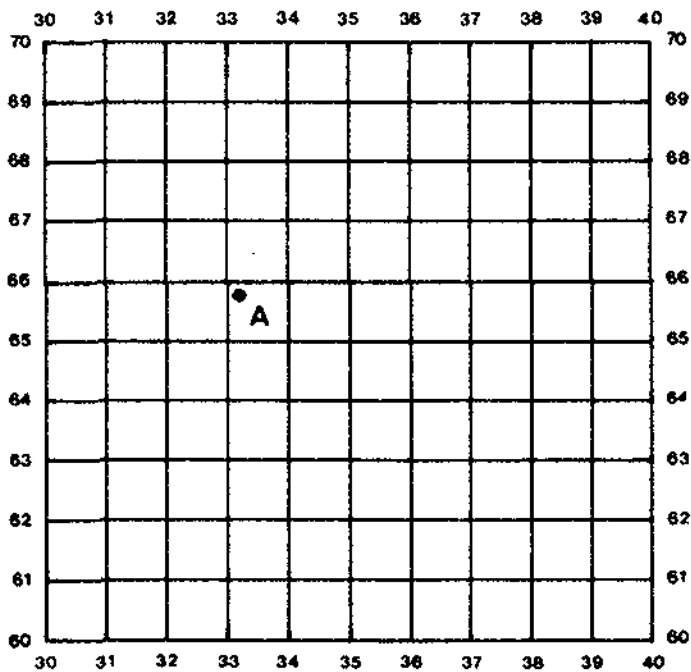


Fig.14.