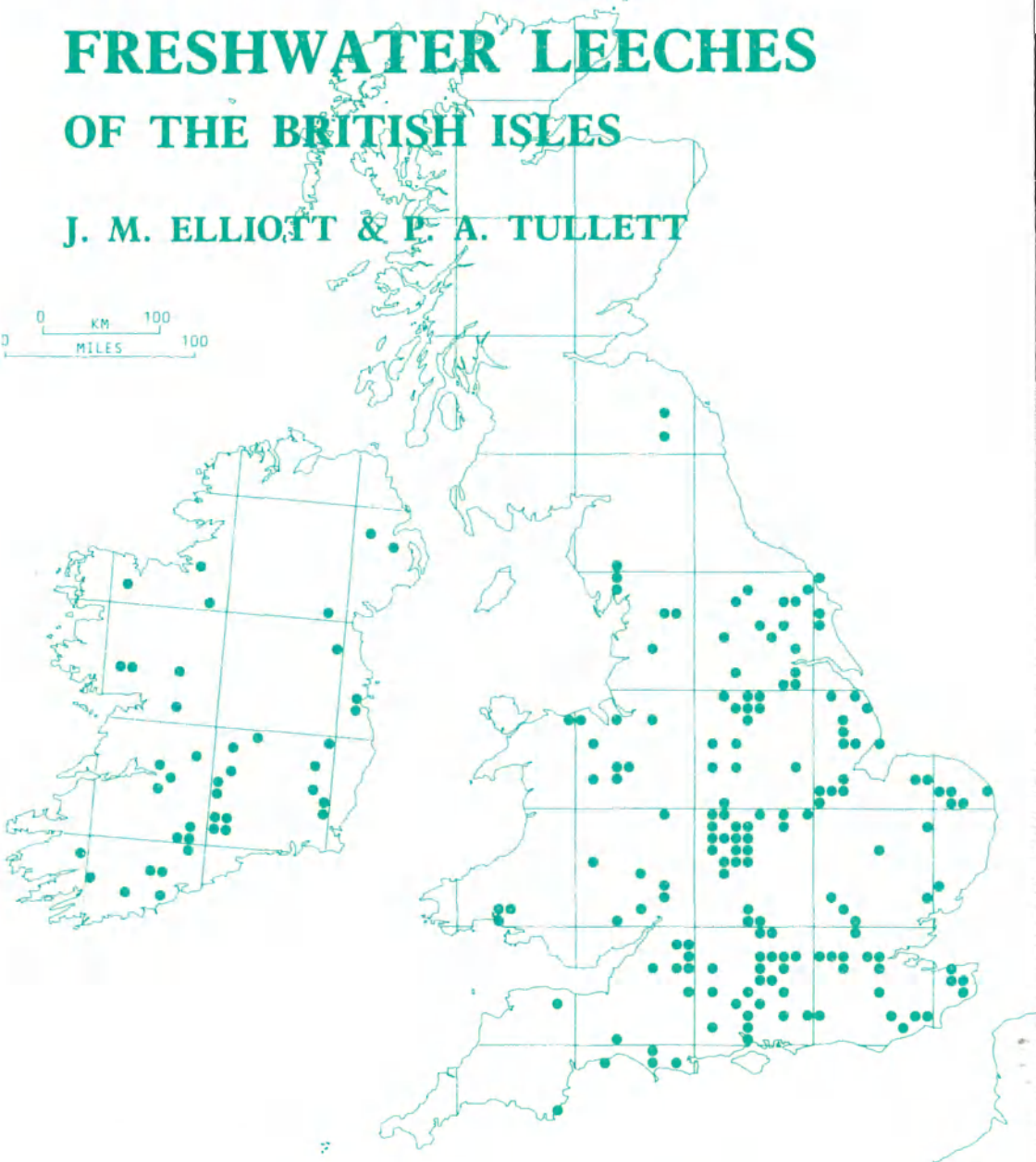


# PROVISIONAL ATLAS OF THE FRESHWATER LEECHES OF THE BRITISH ISLES

J. M. ELLIOTT & P. A. TULLETT



PROVISIONAL ATLAS OF THE FRESHWATER  
LEECHES OF THE BRITISH ISLES

compiled by

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## PREFACE

Many of the original editions of the *Scientific Publications* of the Freshwater Biological Association contained distribution maps. Experience showed that these were often misleading, as they tended to indicate the distribution of collectors and their collecting activities rather than that of the animals concerned. We have therefore discontinued publishing maps with our keys. However, we have continued to collect records of the distribution of many groups and the publication of a key (or a new edition of one) tends to stimulate collecting and enhance knowledge of distribution.

Such has been the case for the leeches. Dr Elliott and Dr Mann published a revised key in 1979. Dr Elliott and Mrs Tullett, with the help of many others, have now checked and collated all the records known to them. As an experiment, these records are now being published as one of the Association's *Occasional Publications*. We think that this rather cheaper and more ephemeral form of publication is more appropriate for distribution maps, as these may well become out-of-date quite soon.

The collection, checking and collation of distribution records is time-consuming and is worth doing only if the information such maps provide is scientifically meaningful and valuable. Certainly, these maps of leech records do seem to suggest a geographical pattern to the distribution of some species which might stimulate further collecting and the investigation of biogeographical or ecological causes. We should be grateful to the authors for this compilation and to the Biological Records Centre for their help in producing the actual maps.

The Ferry House,  
November 1981

E.D. Le Cren  
*Director*

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## INTRODUCTION

Distribution maps were included in the second edition of the F.B.A. *Scientific Publication* on British freshwater leeches (Mann 1964). When that publication was extensively revised and enlarged to include a review of the literature on the ecology of leeches (Elliott & Mann 1979), it was decided that new maps should be published separately. The original maps were based on 1097 records whereas 4198 records were used for the new maps.

Eleven species of British freshwater leeches were listed in the monograph of Harding (1910) and this number did not increase until three European species were recorded for the first time in the British Isles by Mann (1952, 1953, 1959). A fifteenth species, *Boreobdella verrucata*, was also included in the key of Mann (1964) but he considered the single record for Britain to be rather dubious. This species has since been recorded in England and Ireland (see Map 9), and therefore is now accepted as a member of the British Isles list. The most recent addition to this list is *Haementeria costata* (Elliott, Mugridge & Stallybrass 1979). This brings the total British Isles list to the following sixteen species, thirteen genera and four families:

### RHYNCHOBDELLAE

#### Family Piscicolidae

*Piscicola geometra* (Linnaeus, 1758)

#### Family Glossiphoniidae

*Haementeria* (= *Placobdella*) *costata* (Fr. Müller, 1846)

*Theromyzon tessulatum* (O.F. Müller, 1771)

*Hemiclepsis marginata* (O.F. Müller, 1774)

*Glossiphonia heteroclita* (Linnaeus, 1761)

*Glossiphonia complanata* (Linnaeus, 1758)

*Batrachobdella paludosa* (Carena, 1824)

*Boreobdella verrucata* (Fr. Müller, 1844)

*Helobdella stagnalis* (Linnaeus, 1758)

### GNATHOBDELLAE

#### Family Hirudinidae

*Haemopsis sanguisuga* (Linnaeus, 1758)

*Hirudo medicinalis* Linnaeus, 1758

### PHARYNGOBDELLAE

#### Family Erpobdellidae

*Erpobdella testacea* (Savigny, 1820)

*Erpobdella octoculata* (Linnaeus, 1758)

*Dina lineata* (O.F. Müller, 1774)

*Trocheta subviridis* Dutrochet, 1817

*Trocheta bykowskii* Cedroyé, 1913

Some notes on ecology and distribution are included under the map for each species, and more detailed information on the life cycles and ecology is summarized by Elliott & Mann (1979).

All records have been deposited in the archives of biological records held by the Biological Records Centre (N.E.R.C. Institute of Terrestrial Ecology, Monks Wood Experimental Station, Huntingdon PE17 2J.S).

## SOURCES OF RECORDS

Most records came from collectors who are listed in the acknowledgements. Some records were obtained from the literature and the sources are included in the references. Unreliable and very old records have been ignored, e.g. older records of the medicinal leech in Ireland where it is now probably absent (McCarthy 1975). A record was accepted only when the identification of the leech has been checked by us or some other expert. Most records for Ireland were obtained from McCarthy (1975) and Woods (1976).

## COVERAGE AND MAJOR DIFFERENCES IN DISTRIBUTION

The total number of records used for this atlas is 4198 and the number of 10-km squares covered by these records is 1048. As the total number of 10-km squares with some land is 3870 for the British Isles and the Channel Isles (P.T. Harding, personal communication), the coverage cannot be regarded as even approaching completeness. Total coverage will never be attained because some of the 10-km squares do not contain habitats suitable for leeches, e.g. small islands without water and some rocky outcrops on the coast. The records cover most of the British Isles,

but are rather sparse in south-west England, parts of East Anglia, south-west and northern Scotland, and northern Ireland (Map 1).

Table 1 lists the number of records for each of the sixteen species which are ranked according to their coverage of 10-km squares. The species can be divided into four major groups:

- 1) Very common (>50% coverage), *Glossiphonia complanata*, *Helobdella stagnalis*, *Erpobdella octoculata*;
- 2) Fairly common (>20% coverage), *Theromyzon tessulatum*, *Haemopsis sanguisuga*;
- 3) Widespread but not common or common in only some regions (>5% coverage), *Piscicola geometra*, *Hemiclepsis marginata*, *Dina lineata*, *Glossiphonia heteroclita*, *Trocheta bykowskii*, *T. subviridis*, *Erpobdella testacea*;
- 4) Rare (<5% coverage), *Batrocbdella paludosa*, *Hirudo medicinalis*, *Boreobdella verrucata*, *Haementeria costata*.

Table 2 lists the number of 10-km squares recorded for each species in the three major geographical areas of England/Wales, Scotland and Ireland. There are some major differences in coverage. *Glossiphonia complanata* and *Helobdella stagnalis* are most common in Ireland. *Erpobdella octoculata* is very common in England/Wales (>50%) but less common in Ireland and especially in Scotland. *Theromyzon tessulatum* is most common in Scotland, and *Piscicola geometra* is fairly common in England/Wales (>20%), common in Ireland and rare in Scotland. *Dina lineata* is rare in England/Wales and fairly common in Scotland and Ireland (>20%). *Trocheta bykowskii* is fairly common in Ireland (>20%) but rare in Scotland and England/Wales (<5%). The remaining rarer species are all present in England/Wales, but *Erpobdella testacea*, *Boreobdella verrucata* and *Haementeria costata* have not been recorded in Scotland, and *Hirudo medicinalis* and *Haementeria costata* are absent from Ireland. Therefore the number of freshwater species recorded in each region is 16 for England/Wales, 13 for Scotland and 14 for Ireland.

#### FUTURE RECORDING

It is obvious from Map 1 that there are some areas of the British Isles where the absence of records is simply due to the lack of

collectors. We would therefore welcome new records, especially if a record is accompanied by a specimen so that the identification can be checked. Elliott & Mann (1979) provide a key to species and describe methods of collection, examination and preservation.

Each record should include a grid reference (preferably to nearest 0.1-km square, e.g. 42/334653 or SP/334653), a vice-county number, the names of the collector and determiner, the name of the locality where the leech was found and the date on which collection occurred.

Table 1. Number of records (also expressed as percentage of total records) and number of 10-km squares (also expressed as percentage of total number of 10-km squares in which leeches have been recorded). Species are ranked according to their coverage of 10-km squares.

Species	Records		10-km squares	
	No.	(% total)	No.	(% total coverage)
<i>Glossiphonia complanata</i>	911	(22)	662	(63)
<i>Helobdella stagnalis</i>	807	(19)	614	(59)
<i>Erpobdella octoculata</i>	770	(18)	562	(54)
<i>Theromyzon tessulatum</i>	395	(9)	338	(32)
<i>Haemopsis sanguisuga</i>	256	(6)	230	(22)
<i>Piscicola geometra</i>	230	(5)	203	(19)
<i>Hemiclepsis marginata</i>	171	(4)	149	(14)
<i>Dina lineata</i>	152	(4)	133	(13)
<i>Glossiphonia heteroclita</i>	156	(4)	130	(12)
<i>Trocheta bykowskii</i>	111	(3)	84	(8)
<i>Trocheta subviridis</i>	86	(2)	73	(7)
<i>Erpobdella testacea</i>	78	(2)	53	(5)
<i>Batrachobdella paludosa</i>	51	(1)	46	(4)
<i>Hirudo medicinalis</i>	17	(<1)	14	(1)
<i>Boreobdella verrucata</i>	6	(<1)	6	(<1)
<i>Haementeria costata</i>	1	(<1)	1	(<1)
All species	4198		1048	

Table 2. Number of 10-km squares recorded (also expressed as percentage of total number of 10-km squares in which leeches have been recorded) for England/Wales, Scotland and Ireland. Species are ranked according to their order in Table 1.

Species	England/Wales		Scotland		Ireland	
	No.	%	No.	%	No.	%
<i>Glossiphonia complanata</i>	326	(59)	141	(63)	195	(72)
<i>Helobdella stagnalis</i>	302	(55)	125	(56)	187	(69)
<i>Erpobdella octoculata</i>	357	(65)	78	(35)	127	(47)
<i>Theromyzon tessulatum</i>	160	(29)	93	(42)	85	(31)
<i>Haemopsis sanguisuga</i>	102	(18)	50	(22)	78	(29)
<i>Piscicola geometra</i>	160	(29)	2	(>1)	41	(15)
<i>Hemiclepsis marginata</i>	75	(14)	23	(10)	51	(19)
<i>Dina lineata</i>	8	(1)	49	(22)	76	(28)
<i>Glossiphonia heteroclita</i>	63	(11)	21	(9)	46	(17)
<i>Trocheta bykowskii</i>	20	(4)	4	(2)	60	(22)
<i>Trocheta subviridis</i>	61	(11)	4	(2)	8	(3)
<i>Erpobdella testacea</i>	49	(9)	0	(0)	4	(1)
<i>Batrachobdella paludosa</i>	13	(2)	22	(10)	11	(4)
<i>Hirudo medicinalis</i>	10	(2)	4	(2)	0	(0)
<i>Boreobdella verrucata</i>	2	(>1)	0	(0)	4	(1)
<i>Haementeria costata</i>	1	(>1)	0	(0)	0	(0)
All species	553		224		271	

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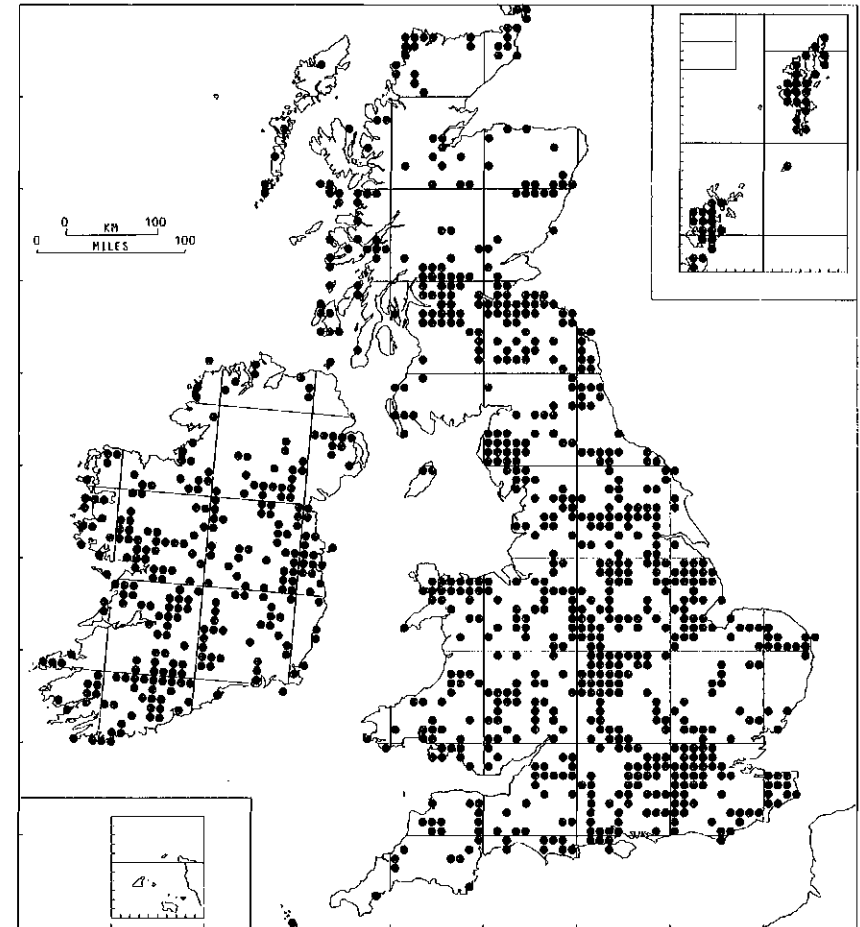
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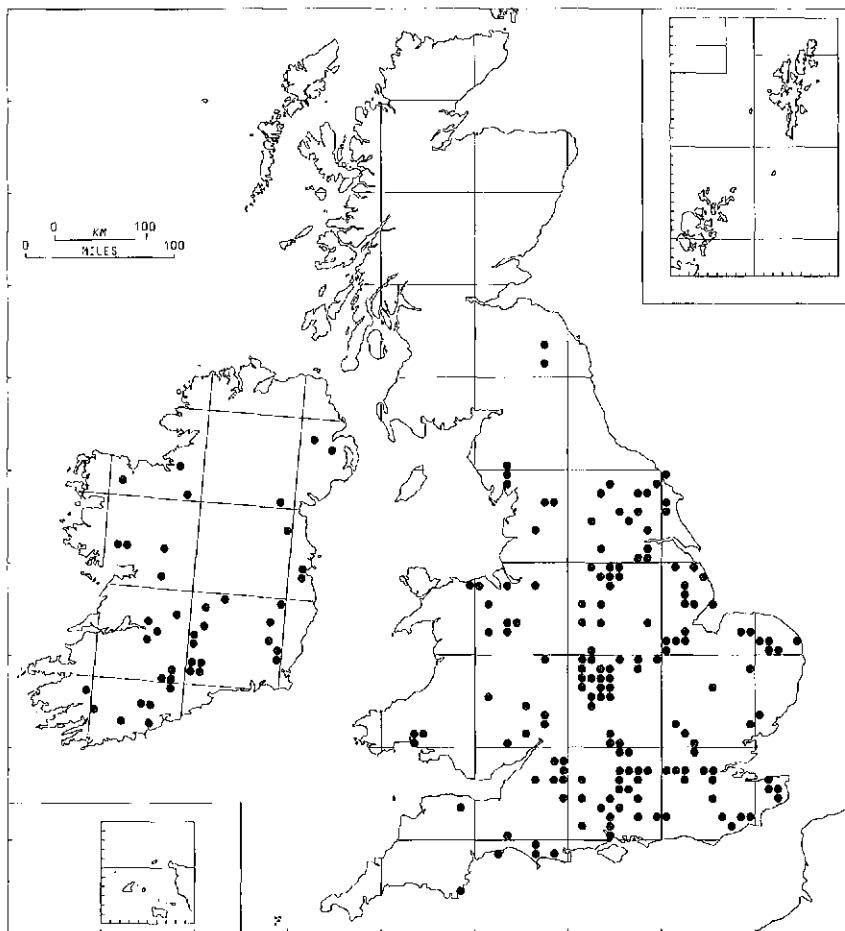
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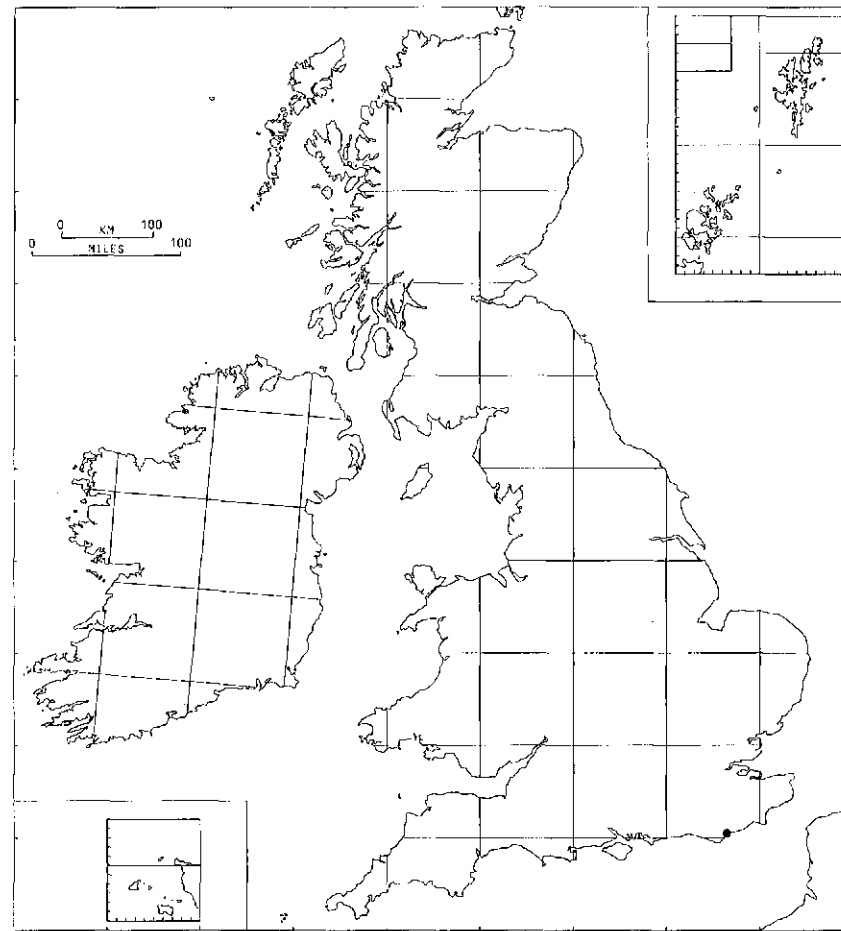
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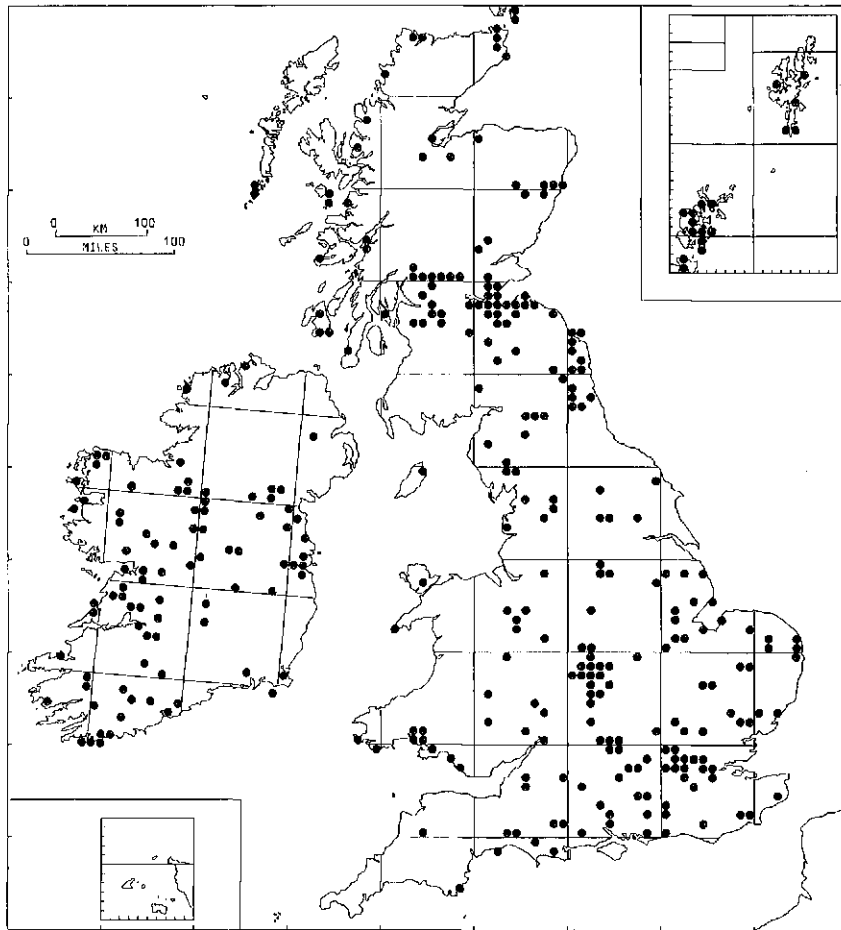
Map 1. 10-km squares in which leeches have been recorded.



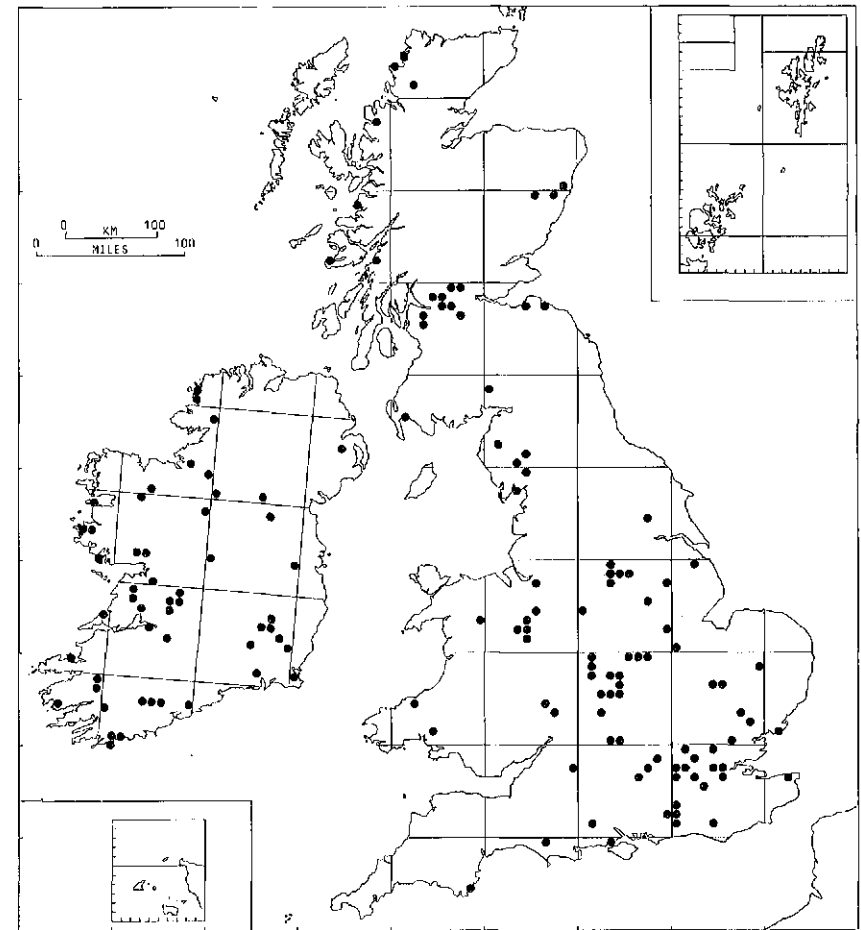
Map 2. *Piscicola geometra* (L.). Common in England, Wales and southern Ireland; rare in northern Ireland and Scotland. Ectoparasite of freshwater fish but free-living during the breeding season. Occurs in fish ponds, on the wave-washed shores of lakes and in fast-flowing streams and rivers. Originally found only in Palaearctic region, but now introduced into North America and also recorded from South America.



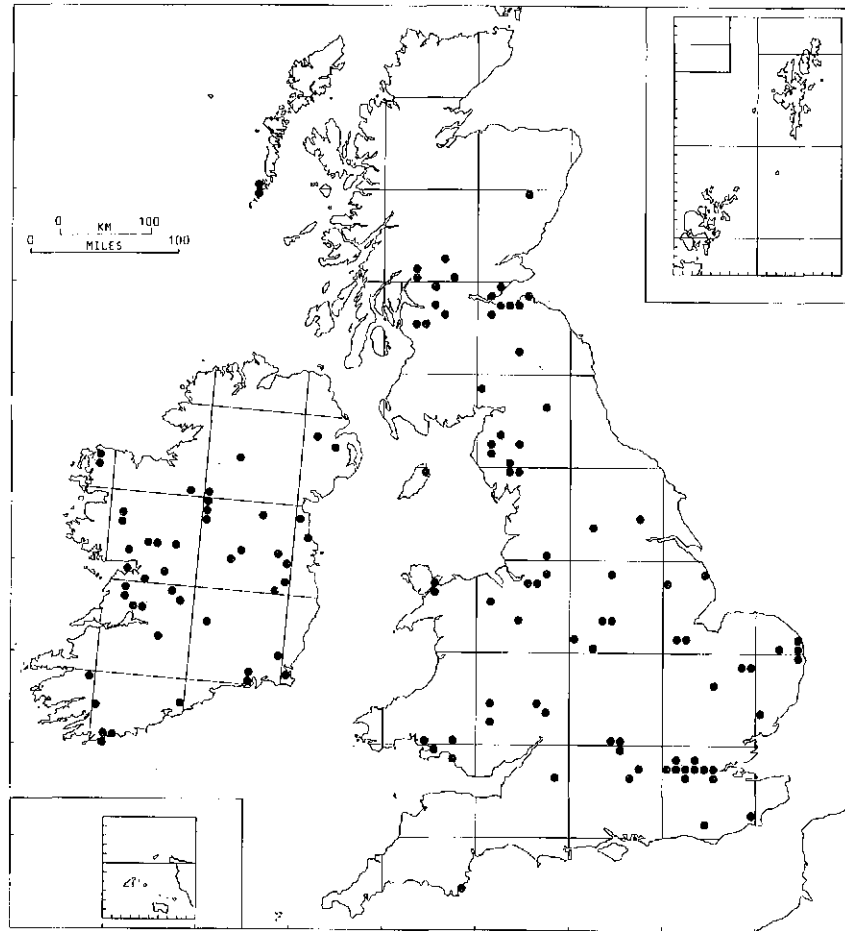
Map 3. *Haementeria costata* (Fr. Müller). First recorded in British Isles by Elliott et al. (1979); very rare. Ectoparasite of water birds, frogs and mammals. Occurs in almost all types of fresh water, usually where macrophytes present. Found in Western Europe and countries around the Caspian and Black seas.



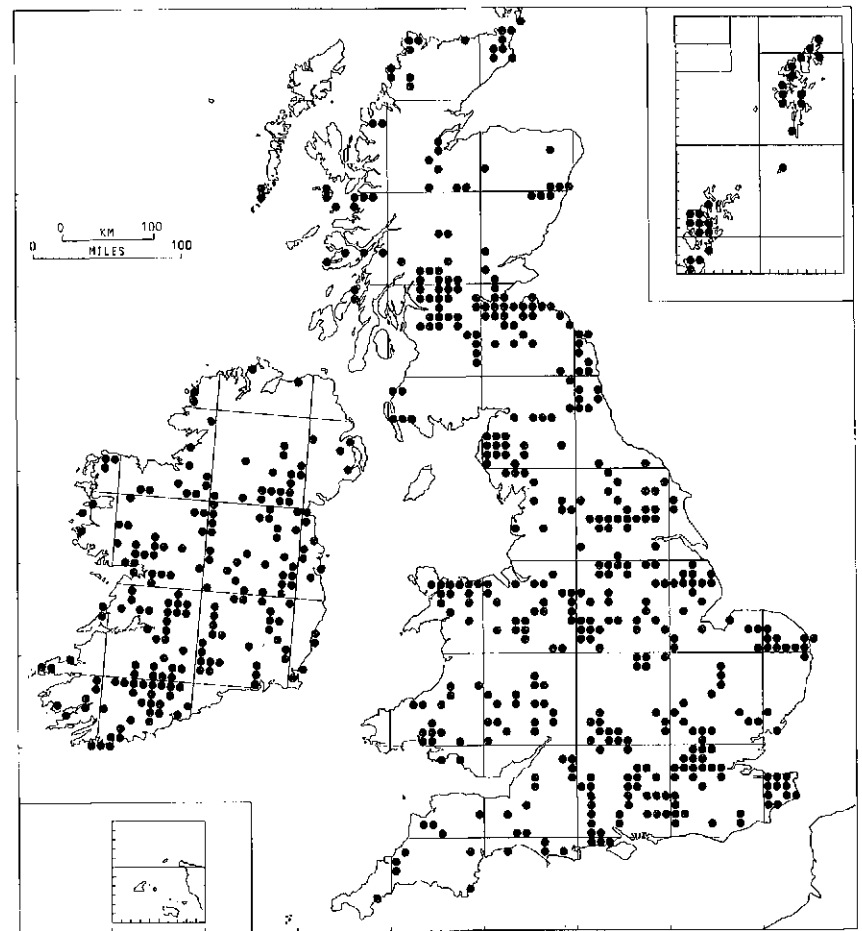
Map 4. *Theromyzon tessulatum* (O.F. Müller). Fairly common throughout the British Isles. Ectoparasite of water birds. Occurs in almost all types of fresh water, except fast streams. Found in Holarctic region and South America.



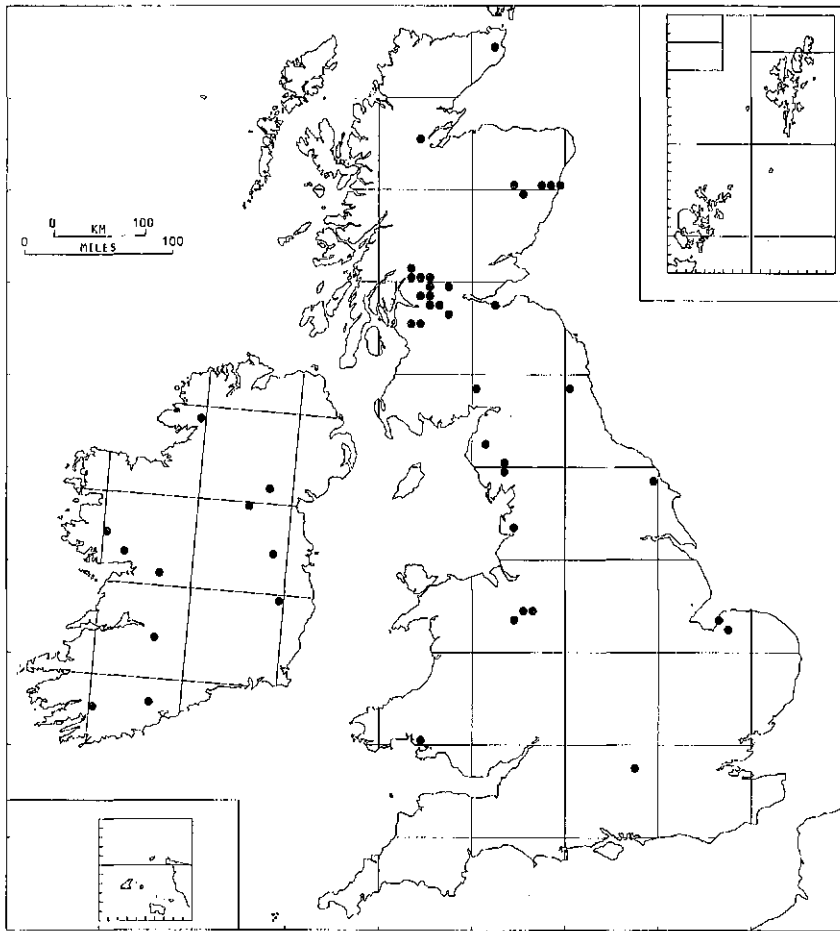
Map 5. *Hemiclepsis marginata* (O.F. Müller). Widespread but not common in the British Isles. Ectoparasite of freshwater fish and amphibian larvae but often free-living. Occurs in almost all types of water and often thrives in stagnant, weedy ponds where *Piscicola geometra* is seldom found. Found in Palaearctic region and Kashmir.



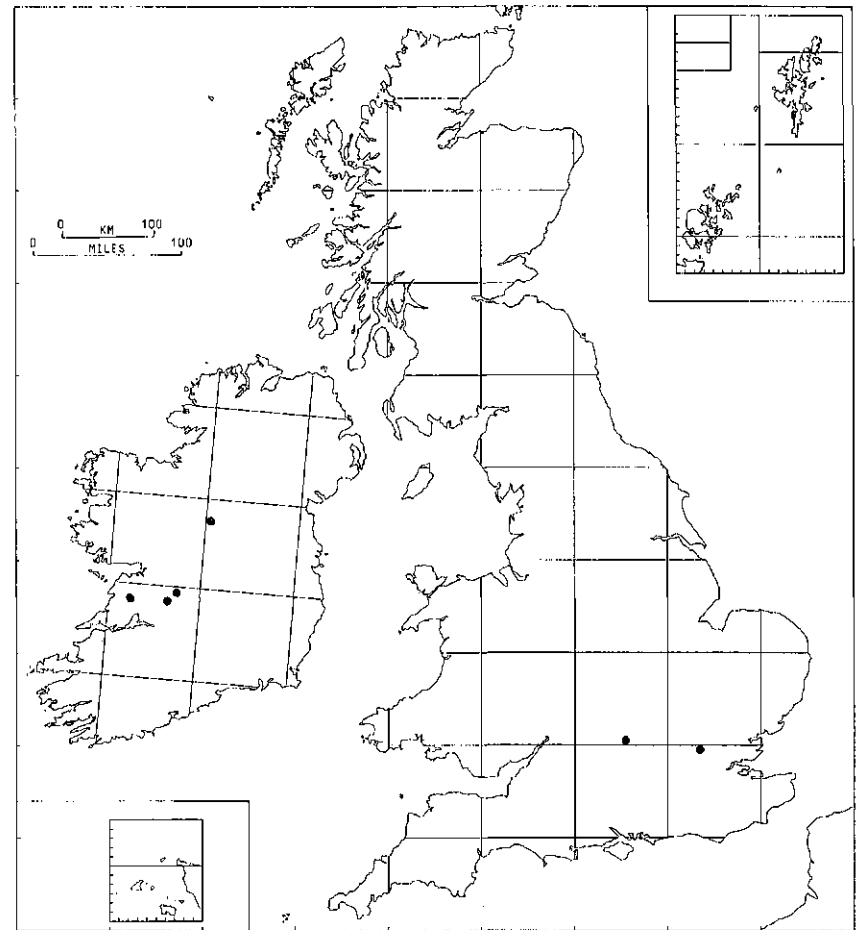
Map 6. *Glossiphonia heteroolita* (L.). Widespread but not common in the British Isles; apparently absent from northern Scotland. Sucks the body fluids of gastropod molluscs, oligochaetes and insect larvae. Occurs chiefly in lakes and ponds; sometimes found in marginal vegetation of slow-flowing rivers and streams. Found in Holarctic region, India, Central and East Africa.



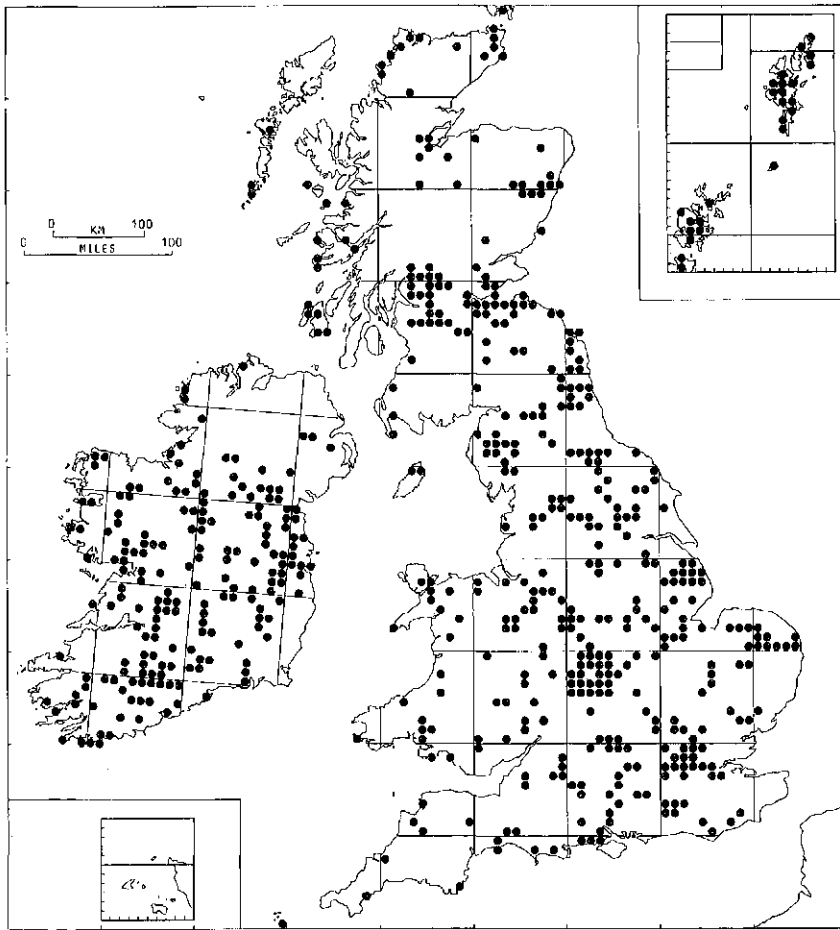
Map 7. *Glossiphonia complanata* (L.). One of the commonest leeches in the British Isles. Sucks the body fluids of molluscs, oligochaetes and insect larvae. Occurs in almost all types of fresh water. Found in Holarctic region, India, Africa (Congo) and perhaps Argentina.



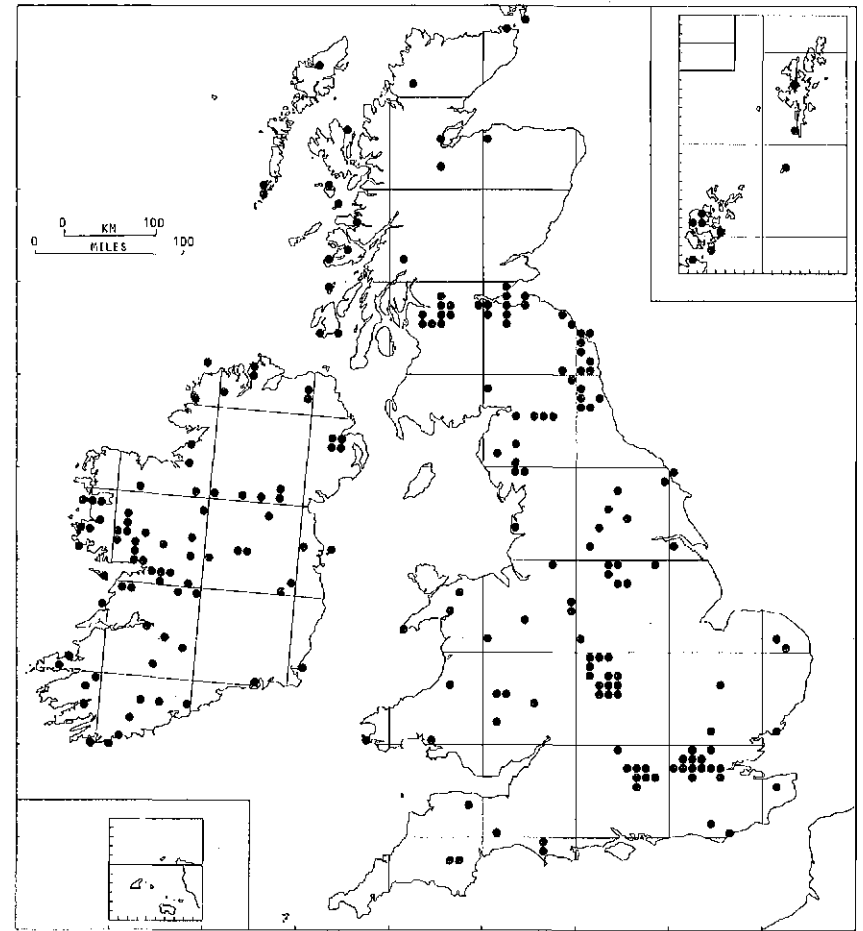
Map 8. *Batracobdella paludosa* (Carena). First recorded in British Isles by Mann (1953); appears to be widespread but rare. Sucks the body fluids of gastropod molluscs. Occurs in ponds, lakes, streams and rivers. Found in Palaearctic region, Afghanistan, China and Japan.



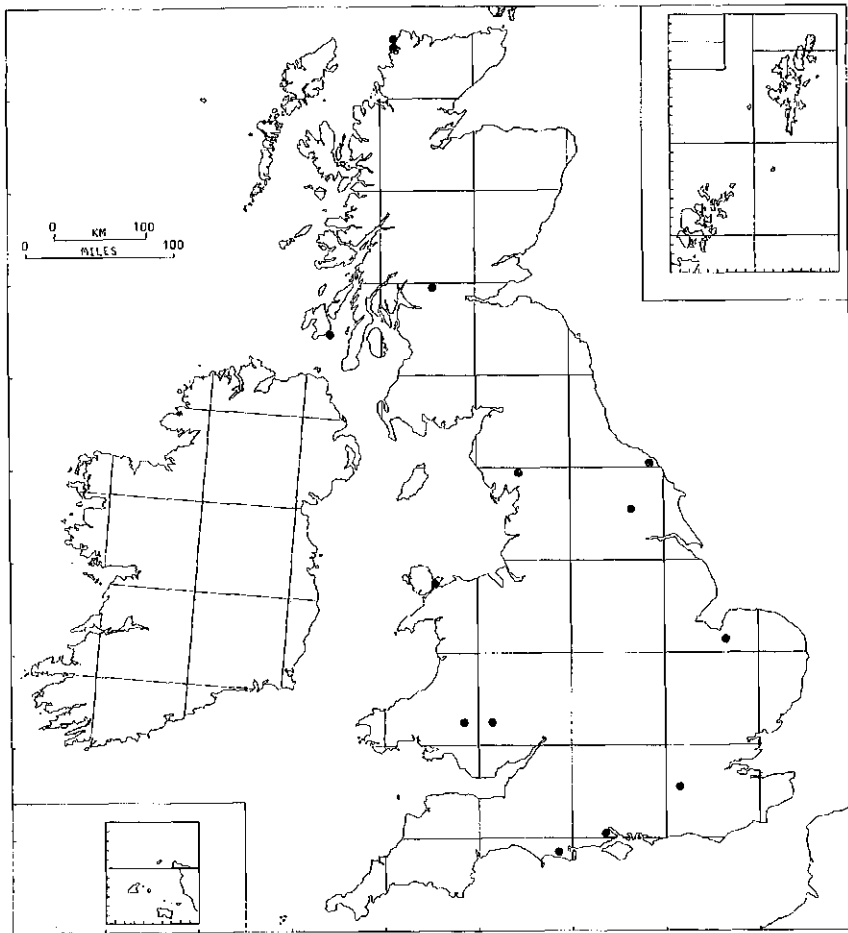
Map 9. *Boreobdella verrucata* (Fr. Müller). Very rare. Sucks the body fluids of molluscs. Occurs in lakes and slow-flowing streams and rivers. Found in North and Central Europe and Siberia.



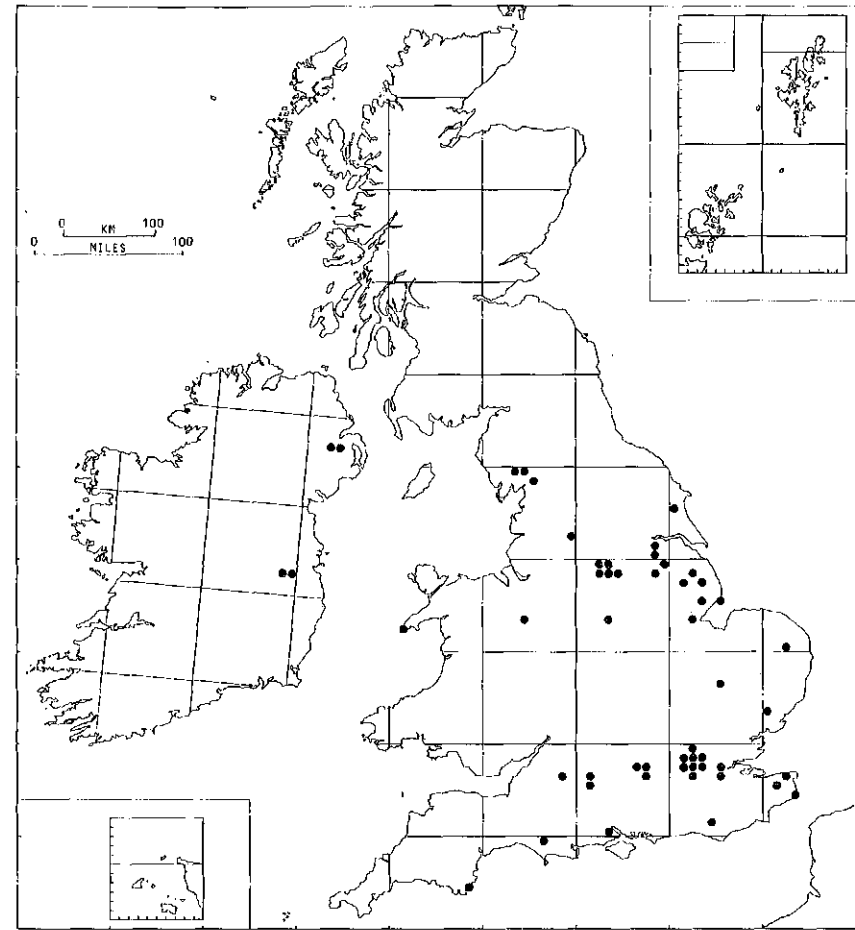
Map 10. *Helobdella stagnalis* (L.). One of the commonest leeches in the British Isles. Sucks the body fluids of aquatic invertebrates. Occurs in almost all types of fresh water. Found in every continent except Australia.



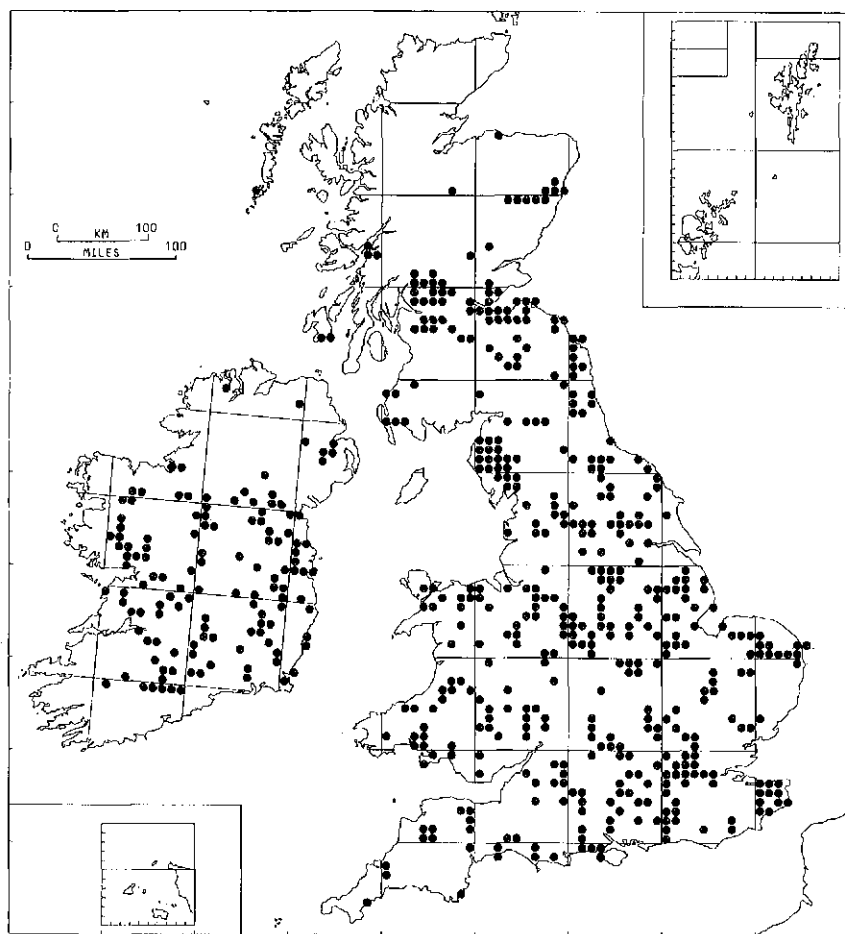
Map 11. *Haemopsis sanguisuga* (L.). Fairly common throughout the British Isles. Carnivore feeding on invertebrates, tadpoles, small or wounded fish and frogs, and almost any carrion. Occurs in almost all types of fresh water, especially shores of lakes and ponds, or near the banks of streams and rivers. Found in Western Palearctic region.



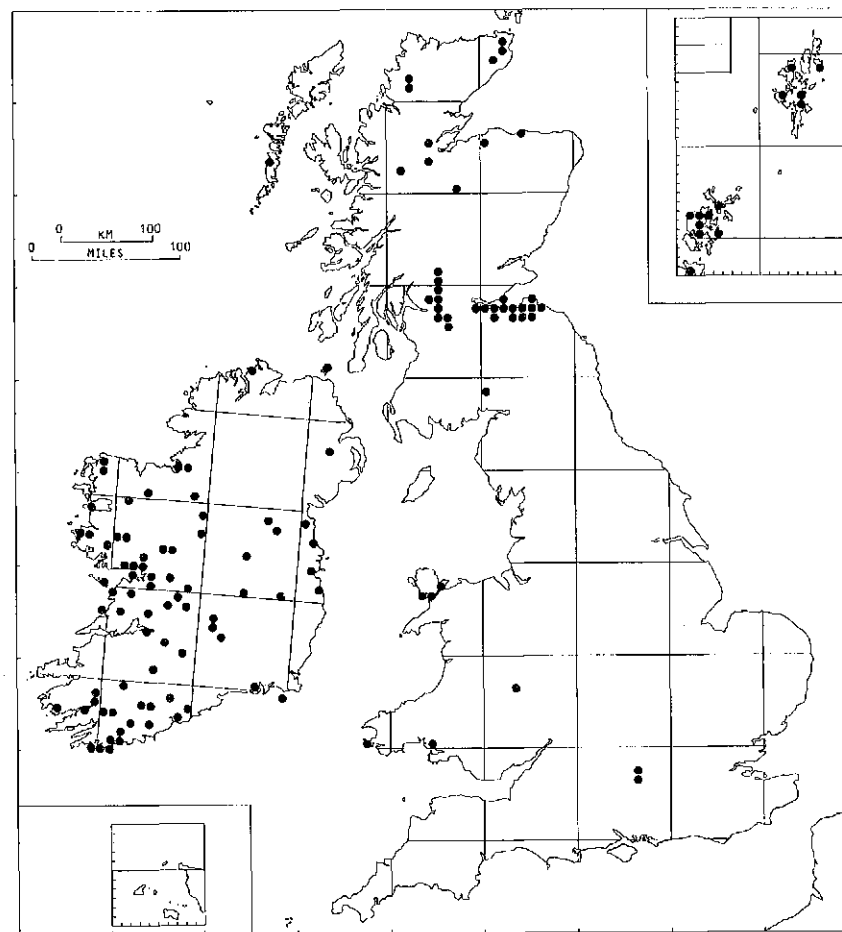
Map 12. *Hirudo medicinalis* L. Rare in Britain and absent from Ireland. Ectoparasite of amphibians, fish and especially mammals, but also free-living. Usually occurs in ponds and small lakes. Found in Europe and Western Asia.



Map 13. *Erpobdella testacea* (Savigny). Widespread but not common in England and Wales, very rare in Ireland and not recorded in Scotland. Carnivore feeding on aquatic invertebrates. Occurs in lakes, eutrophic ponds, rivers, streams and ditches. Found only in Europe.

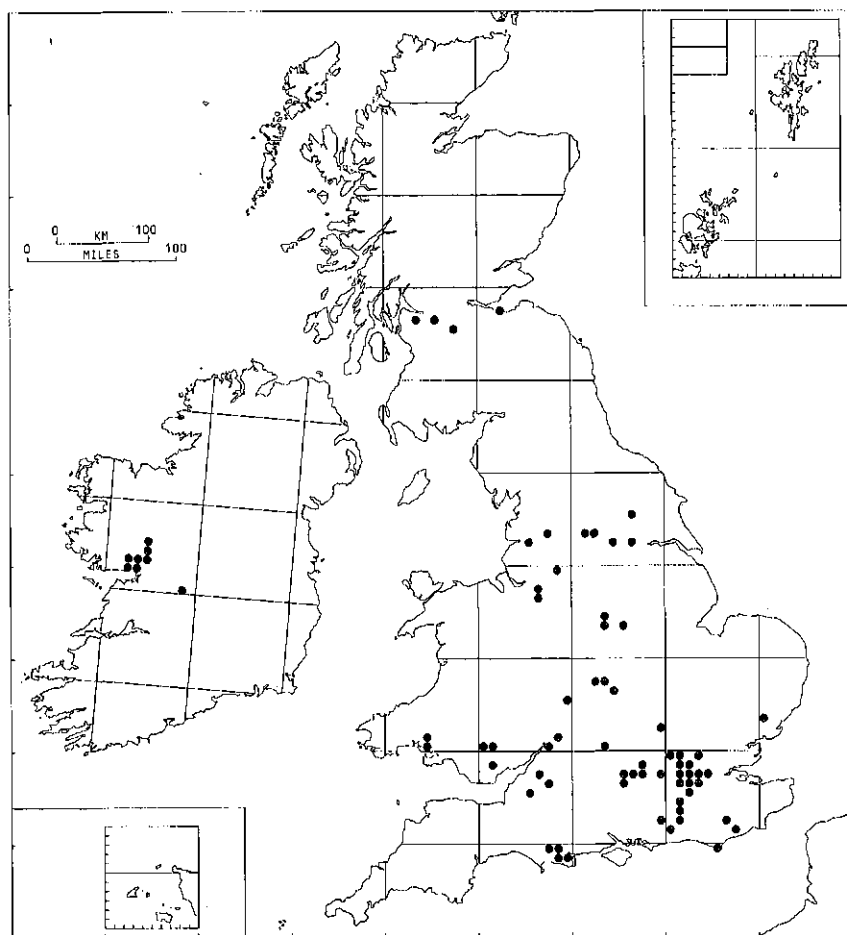


Map 14. *Erpobdella octoculata* (L.). One of the commonest leeches in the British Isles, but apparently absent from northern Scotland, including Orkney and Shetland. Carnivore feeding on aquatic invertebrates. Occurs in almost all types of fresh water. Found in Palaearctic region, Japan and possibly in Africa.

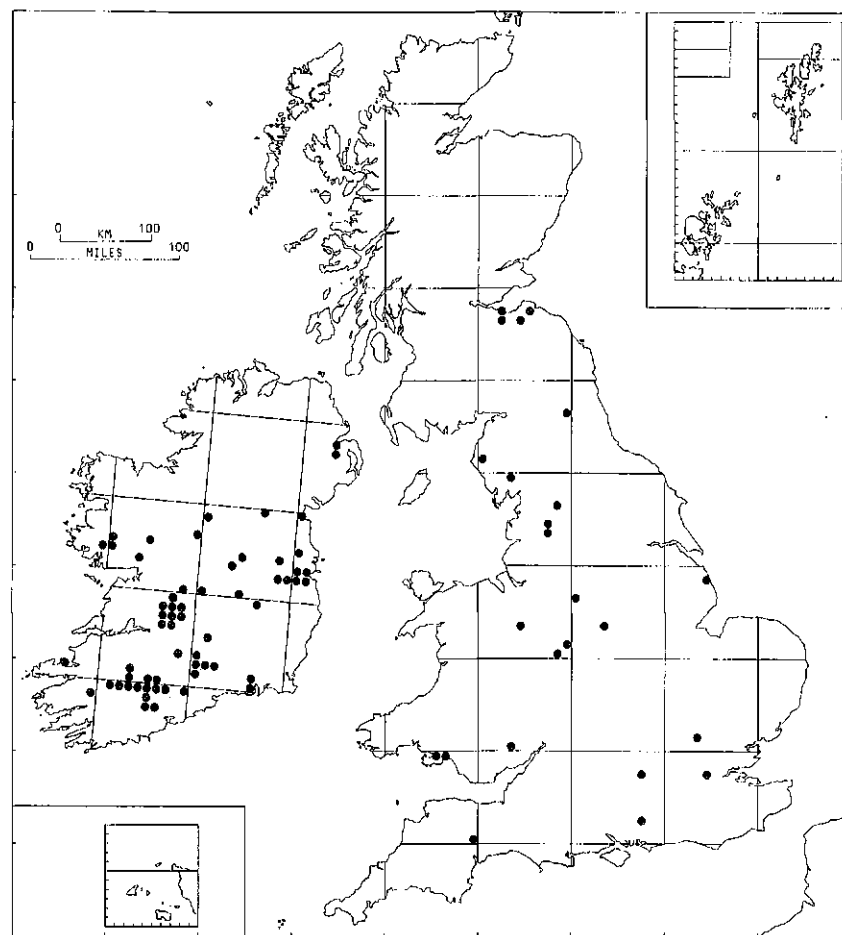


Map 15. *Dina lineata* (O.F. Müller). First recorded in British Isles by Mann (1952); appears to be fairly common in Ireland, Scotland, Orkney and Shetland, but rare in England and Wales. Carnivore feeding on aquatic invertebrates. Occurs in lakes, rivers, streams and especially weedy ponds and swamps. Found in Palaearctic region and possibly in Japan.





Map 16. *Trocheta subviridis* Dutrochet. Widespread but not common in England and Wales, rare in Scotland and Ireland. Carnivore feeding on aquatic and terrestrial invertebrates, and occasionally on carrion. Occurs on land and in ditches, drains, sewers, streams and rivers. Found in west, south and southeast Europe, North Africa, Turkey and Sakhalin.



Map 17. *Trocheta bykowskii* Gedroyć. First recorded in British Isles by Mann (1959); widespread but not common in England, Wales and Ireland, rare in Scotland. Carnivore feeding on aquatic and terrestrial invertebrates. Occurs on land near water and in streams, rivers and occasionally on lake shores. Found in Europe and Afghanistan.