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Snails in a Sussex Garden

A few years ago, I made a careful investigation of the snail fauna of our garden, in West Barnham, Sussex; and I found the results surprisingly interesting. The garden was of about $2\frac{1}{2}$ acres, situated a quarter of a mile north-west of Barnham railway station. I acquired the house in 1945, and I gathered that the neighbourhood had been open meadowland till developed about 50 years ago. Half our acreage consisted of neglected garden and orchard and the rest was still original meadowland, with Sweet Vernal Grass (Anthoxanthum odoratum L.) growing there. Several factors rendered our garden an unpromising terrain in which to find any large snail fauna. It was neither on nor near to the bare chalk beloved by so many species, and the soil was brick-earth with only a small lime content. There was no diversification of terrain, such as ditch, pond, bank or old ruinous wall which might favour extra species, and finally the area was dominated by pine trees, so that the ground beneath was strewn with the needles, the resinous content of which is, I believe, disliked by most snails. Yet, despite these apparently adverse factors, I found a fauna of 22 species (excluding the slugs) in the garden. In this article, I shall use the classification and nomenclature employed by A. E. Ellis, 'British Snails', 1926.

Vertigo pygmaea (Draparnaud) was found at two spots in the meadowland, and collected by shaking moss over paper and searching the residue with a hand lens. Lauria cylindrica (E.M. da Costa) may have been a recent introduction, as I only found it on a newly constructed rockery and on the spot where the rocks had been temporarily stored prior to the work. The rocks, irregular concretions of Eocene Bognor Rock, had come from an old rockery in front of a Georgian terrace in Bognor Regis, where, within reach of the sea spray, it had doubtless existed since Regency times. In deep earth-filled pot-holes in the rocks, I found bleached and crumbling shells of this species.

Vallonia costata (Müller), and V. pulchella (Müller) were both collected by searching under stones, bricks, etc., and by placing all unwanted shells of larger size in a box and shaking it, a trick which often yields the tiny species, which have been hiding inside the larger empty shells. Coecillioides acicula (Müller) was also present in the garden, and I have found it, above ground, by searching the fruiting heads of moss on the rockery stones on bright spring mornings. Cochlicopa lubrica (Müller) was common everywhere in damp spots. Ena obscura (Müller) is possibly another recent introduction, as I have only found it on some heaps of local road grit brought in to improve the soil, though, alternatively, it may be native to the garden and may have congregated on these favourable raised sites. Punctum pygmeum (Müller) occurs commonly amongst moss in the meadowland, with V. pygmaea, and is collected by the same method; its satin-like surface is characteristic.

Goniodiscus rotundatus (Müller), so widely and generally distributed, is uncommon in our garden, but I found a thriving colony under the staging in our conservatory, a brick structure with a concrete floor. Clausilia rugosa Draparnaud was very scarce with us; I have only found it on the heaps of road grit and on a heap of builders rubble from a very different source. This again suggests that both this species and Ena obscura are native to the garden, and have selected the most favourable sites in which to congregate. Helicella caperata (Montagu) was found plentifully in the meadowland, with one example of the variety ornata Pickard. Theba cantiana (Montagu) was common in the more open parts, amongst rough herbage; the punctate ornament of the pink lining of the aperture is a feature I have not seen mentioned.

Trichia hispida (Linne) was one of our most abundant species, occurring in damp spots. I found one example of its variety depressula Dumont & Mortillet. Our commonest species is unquestionably Trichia striolata (C. Pfeiffer), with its varieties alba Moquin-Tandon, rubens Moquin-Tandon and albocinctus Cockerell, sharply keeled around the periphery. Cepaea hortensis (Müller) was fairly frequent, despite the number of Song Thrushes in the garden. To the human collector, the typical banded form outnumbers the unbanded form of the variety lutea Pickard by ten to one, but around the thrushes' anvil stones the yellow shell predominates. Helix aspersa Müller is not common in the garden, though a colony wrought much havoc amongst our Crinums.

Retinella radiatula (Alder) occurs with V. pygmaea and Punctum pygmeum amongst moss in the meadowland, and was obtained by the same method of collecting. Retinella nididula (Draparnaud) was common throughout the garden, mainly in the damp spots. Oxychilus cellarius (Müller) is fairly common under stones in damp places. Judging by the surrounding district, I am fortunate to have my own particular favourite species, Oxychilus lucidus (Draparnaud), in our garden, for it seems scarce in this part of West Sussex. We found it under stones and similar hiding places. This snail evidently falls a frequent victim to mice, judging by the characteristic type of damage noted in dead shells. Vitrea crystallina (Müller) was fairly frequent, in damp spots under stones, and was also obtained from boxes of larger shells, shaken as already described. Vitrina pellucida (Müller) is more common, occurring in similar situations throughout the garden.

It has been suggested that a list of the non-marine Gastropoda which have been recognised as British since the publication of British Snails, with references to descriptions, would be useful to collectors. This does not include mere changes in nomenclature, most of which are in the last edition of the Census of the distribution of British non-marine Mollusca (J. Conch., 23; 171-244, 1951). Acicula Hartmann replaces Acme, and Viviparus contectus (Millet) replaces V. fasciatus (Müller), returning to the usage of the earlier authors. For slugs, reference should be made to two publications by Dr. H. E. Quick: 1. Linnean Society Synopses of the British Fauna, No. 8. Slugs (Testacellidae, Arionidae, Limacidae), 1949, sold by the Linnean Society, Burlington House, Piccadilly, London, W.1., price 2/6d. net. 2. Bulletin of the British Museum (Natural History), Zoology, vol. 6, No. 3. British Slugs. 1960, price 45/-. The freshwater species are briefly described and illustrated in Freshwater Biological Association Scientific Publication No. 13. A key to the British fresh- and brackish-water Gastropods, by T. T. Macan and R. D. Cooper, 1949, price 2/-, sold by the F.B.A., The Ferry House, Far Sawrey, Ambleside, Westmorland.

The following are the recently added species, exclusive of introduced aliens found chiefly in greenhouses, and species only known as fossil in the British Isles.

Carychium tridentatum (Risso): mentioned as a variety of C. minimum in British Snails. Watson, H., and Verdcourt, B., 1953, The two British species of Carychium, J. Conch. 23: 306-324, pls. 9, 10.

Catinella arenaria (Bouchard-Chantereaux): Quick, H. E., 1933, Anatomy of British Succineae, Proc. Malac. Soc. Lond., 20: 295-318, pl. 23-25.

Cochlicopa lubricella (Stabile): Quick, H. E., 1954, Cochlicopa in the British Isles, Proc. Malac. Soc. Lond., 30: 204-213, pl. 19.

Arion lusitanicus Mabille: Quick, H. E., 1952, Rediscovery of Arion lusitanicus Mabille in Britain. Proc. Malac. Soc. Lond., 29: 93-101.

Arion rufus (L.): mentioned as a variety of A. ater in British Snails, now regarded as a subspecies. Quick, H. E., 1947, Arion ater (L.) and A. rufus (L.) in Britain and their specific differences, J. Conch., 22: 249-261.

Vitrea contracta (Westerlund): Kuiper, J. G. J., 1948, Over het voor komen van Vitrea contracta Westerlund in het Haagse Bos. Basteria, 12: 28-33.

Figured in Taylor, J. W., 1908, Monograph of the land and freshwater Mollusca of the British Isles, 3: 113, fig. 153. Regarded as a variety of V. crystallina in British Snails.

Milax insularis (Lessona and Pollonera): Quick, 1960, 156.

Milax budapestensis (Hazay): Phillips, R. A., and Watson, H., 1930, Milax

gracilis (Leydig) in the British Isles, J. Conch., 19: 65-93, pls. 1, 2.
Agriolimax agrestis (L.), as distinct from A. reticulatus (Müller), and
A. caruanae Pollonera: Quick, 1949 and 1960.
Hygromia cinctella (Draparnaud): Comfort, A., 1950, Hygromia cinctella
(Draparnaud) in England, J. Conch., 23: 99-100.

A. E. Ellis

BRIEF NOTES

1. Dr. J. S. Jackson, of the National Museum of Ireland, Kildare Street, Dublin, is preparing a detailed distribution map of the spotted slug (Geomalacus Maculosus Allman) and would be glad to receive any records. Exact localities and dates are wanted, and any details as to numbers observed, geological formation, vegetation, etc. would be welcome.
2. 60 Members have not yet paid the subscription due on the 1st. January 1961. Will these members please remit to the Treasurer, C. A. Raffray, [REDACTED] Salisbury, Wiltshire, as soon as possible.
3. The need for prompt action to save some of the finest of British nature localities has been realised in the formation of the Gloucestershire Trust for Nature Conservation Ltd., which has its inaugural meeting on September 30th. under the chairmanship of Peter Scott. Ordinary membership costs £1 (under 18, 7/6d.). All details may be had from the Secretary, John F. Pontin, [REDACTED] Nr. Cheltenham, Gloucestershire.
4. Mr. Biggs and Mr. Heppell would like to examine specimens of Venus striatula (da Costa) and Venus gallina L. from as many British and European localities as possible in order to work out the geographical variation. Specimens should be sent to Mr. Heppell, c/o. Mollusca Section, Department of Zoology, British Museum (Natural History), London, S.W.7, and will be returned if required.
5. Wanted to exchange or purchase recent and tertiary mollusca (especially small ones) from any part of the world. Useless to apply without list of available species. John L. Staadt-Staid, [REDACTED] Rheims, Marne, France.
6. Wanted - shell-association material: shell ornaments, shell bygones, shell money, tools or amulets, freak and unusual shells. Buy or exchange for shells, British or exotic. Mrs. S. M. Turk, [REDACTED] Cornwall.

Littoral Collecting in the Scilly Isles

Scilly is composed of some three hundred islands and rocks, and lies 28 miles off Land's End in a westerly direction. Only five of the Islands are inhabited and the largest of these, St. Mary's, is no more than nine miles in circumference. These Islands are therefore ideal grounds for the Marine Biologist. For some years I have been fortunate in being able to join in a residential Field Course on these Islands. The number of students varies between 20 and 30 and their ages from 13 to 60; their interests range through Geology, Ornithology, Entomology, Botany, Marine Biology and Conchology; at home they may be housewives, engine-drivers, head-mistresses, professional biologists or senior pupils. All are encouraged to collect and report on specimens for one another whatever their interests. Twice a day they meet to identify and discuss specimens.

The Scillies lie exposed to winds from all quarters. The climate is mild as is witnessed by the sub-tropical gardens on the Isle of Tresco, but the sea is rarely calm and the waves constantly batter the granite shores. Most of the species of the Cornish coast are common to the Scilly Isles. In the Victoria County History of Cornwall (1906) Scilly had some 280 species compared with about 350 in the Cornish records. Many of the species not present in the Scillies (compared with Cornwall) are rarities, but there are some note-worthy absentees.

None of the rock-boring Piddocks occur as they are presumably unable to make niches in the famous Scilly granite which contains much quartz. Dwarfed specimens of the rock-borers Hiatella gallicana (Lamarck) and H. arctica

(Lamarck) occur in small numbers in the hold-fasts of sea weeds, though it may be noted that the inter-tidal brown fucoids are rare on these exposed shores. Two of the commonest species on Cornish rocky shores are absent from Scilly. One is the mussel of which only a few solitary specimens are to be found: they are very incurved forms, probably of the Mediterranean species, Mytilus galloprovincialis Lam., which is commoner than the Common Mussel, M. edulis L., in most parts of Cornwall. The other is the Edible Winkle, Littorina littorea (L.) of which only two specimens have ever been recorded.

The Scillonians eat Thick Top shells, Monodonta lineata (da Costa) which they call Winkles, and which are both abundant and of a great size on most of the shores. Small 'kitchen-middens' of these shells may be seen used as rut-fillings on some of the rough roads of St. Martins. Least Winkles, Littorina neritoides petraea (Mont. 1803), and Rough Winkles, Littorina saxatilis (Olivi), are found wherever there are suitable cracks and crevices, but nowhere are they common - the commonest subspecies of the Rough Winkle are Littorina saxatilis rudis (Maton) and Littorina saxatilis nigrolineata Gray, the latter reaching well over half an inch in length.

Patella depressa Pennant and Patella vulgata L., are equally common, but Patella athletica Bean, typical of exposed shores on S.W. coasts seems to be quite sparsely distributed in these islands. On the south shore of Tean which was notably more sheltered than other shores visited, P. depressa was not found, and P. vulgata was large and plentiful.

Purple Dog Whelks, Nassarius reticulatus (L.) are common, but nowhere abundant, perhaps because mussels, their main food elsewhere, are so rare.

Many of the mollusca which on sheltered shores would be found amongst the sea-weed fronds, seek shelter under the thousands of blocks and boulders, often of enormous size, which are strewn or banked up on most of the shore line. Flat Tops, Gibbula umbilicalis (da Costa) and Grey Tops, G. cineraria (L.) are abundant under many of these boulders. Some years enormous Plumed Sea Slugs, Aeolidia papillosa (L.) are to be found in the Spring, spawning prolifically.

Amongst the smaller shells Cingula semistriata (Mont.), Cingula cingillus (Mont.), Rissoa parva (da Costa) and its variety interrupta are very common. Lasaea rubra (Mont.) is fairly common and last year some specimens of Kellia suborbicularis (Mont.) were found. This year we had our first tentative attempt at dredging and took dozens of Small Spire shells, Rissoa parva (da Costa). These were bright pink with encrustations of the tiny coralline alga, Melobesia sp.: they looked very beautiful as the tiny snails moved along the leaves of the Eel grass on which they were found.

Mrs. S. M. Turk

INTRODUCTION TO MOLLUSCAN TAXONOMY

(2) The Significance of Types

It is very difficult to define or characterise a taxonomic entity solely by means of words. It is obvious that more secure 'standards' are required to tie scientific names firmly to their objectives. These standards are the types.

The modern type concept has developed slowly. The original draft of the International Rules of Zoological Nomenclature (1901) did not include any directives concerning types. Formal rules and recommendations regarding type specimens were adopted at the Paris Congress (1948).

The type of a species is a definite specimen, but the type of a genus is a designated species. It does not matter how many new taxonomic categories and characters are discovered, the verbal definitions may be continuously modified and improved by reference to the types. Whenever types are available, it is an easy matter to check them for newly discovered taxonomic characters.

The original type specimen is the last court of appeal in cases of doubt as to the applicability of a name. If a description and a type specimen seem to apply to different entities, the name should be assigned to the species to which the type specimen belongs, provided it is certain that it is the type selected by the original describer.

Types of subspecies are subject to the same rules as types of species. The type of a species is always simultaneously the type of its nominate subspecies.

Kinds of Type Specimen

The principle kinds of types may be classified and defined as follows:-

I. Primary types.

A. Holotype (or simply type). The single specimen designated or indicated as 'the type' by the original author at the time of publication of the original description.

B. Paratype. A specimen other than the holotype which is before the author at the time of original description and which is designated as such or is clearly indicated as being a specimen upon which the original description was based.

C. Syntype (= cotype). One of several specimens on which an author bases an original description when no single specimen is designated as the holotype.

D. Lectotype. One of a series of syntypes which is selected subsequent to the original description and thenceforth serves as the definite type of the species. In order to be effective, such selection must be made known through publication.

II. Supplementary types.

A. Neotype. A specimen selected as type, subsequent to the original description in cases where the primary types are definitely known to be destroyed.

B. Plesiotype. A specimen on which subsequent descriptions or figures are based.

III. Typical specimens.

A. Topotype. A specimen not of the original type series collected at the type locality.

B. Metatype. A specimen compared by the original author with the type and determined by him to be conspecific with it.

C. Homotype. A specimen compared by another than the author of a species with the type and determined by him to be conspecific with it.

The International Commission at its Paris meeting (1948) officially sanctioned the use of three kinds of types - holotypes, syntypes and lectotypes - as being "available to supplement the characters noted in the original description".

Actually most of this elaborate nomenclature of types is superfluous. As Williams (1940) has stated correctly, "There can be no possible reason for having any other type except a single one for each name". Only holotypes, syntypes, lectotypes and neotypes have nomenclatural significance, but some of the additional terms for types mentioned above have proved useful on zoological grounds.

Further Reading

- 1) Mayr, E., Linsley, E. G., and Usinger, R. L., 1953, *Methods and Principles of Systematic Zoology*. McGraw-Hill, New York.
- 2) Simpson, G. G., 1940, Types in Modern Taxonomy. *Amer. Journ. Sci.*, 238, 413-431.
- 15-3) Williams, C. B., 1940, On type specimens. *Ann. Ent. Soc. Amer.*, 33, 621-624.