1993 terrestrial invertebrate survey of Prawle Point-Start Point SSSI, South Devon

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by Alan E Stubbs

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Prepared under contract for English Nature, Taunton/Okehampton

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1. INTRODUCTION

The SSSI extends for about 3 miles either side of Prawle Point, on the southern-most part of the Devon coast. It is a high grade invertebrate SSSI, best known as a national top site for aculeates (mainly bees and wasps).

It has become increasingly clear in recent years that aculeates have declined over much of their inland distribution, with many species extinctions at county level. The importance of coastal habitats is that sites tend to have had continuity of natural/semi-natural environments, despite mans ravages. Prawle cliffs illustrates this, now being the sole site in Britain for the cuckoo-bee Nomada sexfasciata; for such a bee to survive it needs large populations of its host bee, the spectacular long-horned bee Eucera tuberculata, which itself has declined or died out over most of its former range and is reduced to Notable A status..

As is so often the case, even the highest grade sites have not been well recorded, especially where they are remote from resident entomologists. However, as a cross-check, the rarity of habitat gives a strong indication as to the special nature of sites.

Between Prawle Point and Start Point there is an almost continuous 3 mile stretch of sea cliffs in Head deposits, comprising solifluction deposits derived from the schists that make up the solid geology of this district. Such material is locally ideal for aculeates to make their nest burrows. For the most part the Head is situated on a raised rock platform above high tide, thus being somewhat protected from rapid wave erosion. .Moreover, these cliffs are south facing in a sunny southern climate, with sheltered coves, exactly the conditions required by warmth loving aculeates and many other insects.

There are only three other south facing coasts with significant Head deposits of roughly equivalent type; the Wembury Coast of South Devon and the South Gower Coast of Glamorganshire are the comparative sites. These also are important for aculeates. The Wembury site is not very extensive so is not in the same league. At Gower, there are several extensive sections of Head associated with Carboniferous Limestone hillsides, superficially very reminiscent of Prawle.

Of the two main sites, Prawle is by far the best mosaic site, including (as has emerged from this survey) important seepages. Prawle also has extensive hard rock coast of high value and additionally includes dunes rising up the cliff.

The Invertebrate Site Register already contains interesting species for Prawle in quite a wide spectrum invertebrate groups in a range of habitats, but there is little localised data and ecological associations are often vague. Indeed, there is remarkably little to refer to as an ecological description of either Head or hard rock coasts in the SW as a whole.

I visited this site on 6 July 1979 whilst leading a joint field meeting of the Diptera Recording Scheme/Bees Wasps and Ants Recording Scheme. This contract was of particular interest since it gives scope to get some more precise ecological information in a top grade site and because of the opportunity to address the potential for improving the management in such situations.

It will be helpful to quote the background and objectives from the project brief:-

Background

This stretch of coast supports 2 RDB1 species, 3 RDB2 species, 2 RDB3 species, 7 Na species and 19 Nb species. Aculeates make up the majority of these records and appear to have been studied more than other groups. Little is known of the relative importance of the SSSI for invertebrates in the national context

We do not know where these species occur. Countryside Stewardship has meant that some landowners along this stretch of coast are likely to be interested in managing their cliff top land. There is therefore a need to develop a more strategic approach to the management of the SSSI which has the following aims:

a) to ensure that existing areas important for invertebrates are not damaged.

b) to enhance conditions in these areas if necessary.

c) to identify other areas which could be made more attractive to invertebrates.

Objectives

This survey has the following aims:

a) To identify the areas most likely to support the rare aculeate species.

b) To provide appropriate management advice for these areas and any others that could be made more suitable.

c) To identify areas within the SSSI which may be important for other invertebrate groups.

d) To provide appropriate management advice for these areas and any others that could be made more suitable.

2. SCOPE OF FIELD WORK

The site was visited on 20(pm) - 24 June 1993. The contract budgeted for only two days in the field, allowing for inspection of the coast between Prawle Point and Start Point. I allocated more days as insurance against bad weather and to be less rushed. Charles Pultney joined me for part of the 22nd, during which time we re-visited some of the ground seen the previous day and he encouraged me to extend my exploration to include the part of the SSSI west of Prawle Point. I also had to re-visit sections of coast to gain access during low tide, which for instance revealed the importance of the largely inaccessible Woodcombe Sand. Whilst this broader input proved well worthwhile, the net result has been a more extensive and time consuming study. The only serious omission was not visiting Hines Hill Wood, whose potential I did not realise whilst passing. As it is, full days lasted well into the evenings.

Mid June is normally a peak period for insects. It was suitable for the RDB1 species and many other aculeates, though lying after the major peak in spring bees. An earlier visit would have been poor for solitary wasps and seepage fauna. Later than mid July would risk drought burn-out and tourist competition for limited car parking space. Though the timing achieved the objectives, the 1993 season proved a fraught one. After drought summers and a cool autumn in 1992, 1993 had a cold Spring, followed by wet weather. My experience in Eastern England and during the previous week on Exmoor was of terribly small returns for survey effort, with species numbers and population levels abysmal for mid June.

The survey week, remarkably, provided ideal weather; only gentle wind and about 70% sunshine (even dull periods only had light high cloud). However, the damage had already been done, with aculeates beaten down to low numbers and even seepage and woodland craneflies desperately sparse. Thus the species lists are not all that extensive.

3. OUTLINE SURVEY RESULTS

The ISR uses the species status term Local without firm definition. In this report I used the term 'La' for species that are likely to only occur in no more than 200 10km squares in GB. Local I would define as occurring in no more than 500 10km squares (out of a GB total of c.3000 10km squares). Until such time as the ISR has refined statuses in this fashion, I have only used La for species which I know to clearly qualify (including species which have only marginally been downgraded from Notable or where a good atlas map exists).

Over 200 species were recorded. The Appendices give full details, including Appendix C for a full list and Appendix H gives a consolidated list from all main sources, including aculeate data assembled by Spooner and Edwards. It should be noted that some species statuses need review, especially among the aculeates; Appendix H gives both ISR and potential new gradings. Hence the aculeate list of Local species list may be reduced, but this is partly counter balanced by the need for some upgrading. In particular one 'Local' aculeate probably now qualifies as PRDB3.

The advance in assembled data can be summarised thus:-

	RDB1	RDB2	RDB3	Na	Nb	Local
Prior ISR list	2	3	2	7	19	13
Spooner extras				2	3	(31)
Stubbs extras		1	2	1	10	49
New totals	2	4	4 (?+1)	10	32	93

4. OUTLINE OF HABITATS FOR INVERTEBRATES

These notes are designed to give a general flavour of the faunal associations using both common and rare species as examples. Where * is given against a species, the example is based on a reasonable interpretation of the habitat for species listed in the Invertebrate Site Register. Otherwise all species are those found during the present survey.

4.1 MARINE LITTORAL

Flies, beetles, centipedes and terrestrial groups of woodlice have specialised species adapted to the marine littoral. On this visit the following were noted (all flies unless otherwise stated):

4.1.1 Rocky Foreshore

Geranomyia unicolor (cranefly) A cranefly which breeds in the upper littoral zone; larvae eat lichens and possibly Enteromorpha algae. Adults assemble on rock faces and are locally common along this coast.

Thalassomyia frauenfeldi (Chironomid midge) Intertidal rocky shore, Great Mottiscombe Sand. (2 other related species may occur here.)

Aphrosylus celtiber (Dolichopodidae) Larvae are predators on barnacles. Adults are found on barnacle covered rocks. .Great Mottiscombe Sand; probably widespread where rocks not too exposed to storms. (Some of the other 3 British species may occur on this coast.)

Canace nasica (Canacidae) Swept from Enteromorpha on inter-tidal rocks, especially where there is some freshwater seepage influence. Great Mottiscombe Sand where there is a large patch of Enteromorpha in the middle of the bay.

4.1.2 Incipient Saltmarsh

(i) Incipient saltmarsh is locally present at the very base of cliffs, mainly seen as minor patches of Juncus gerardii. Some faunal elements ought to be present.

(ii) Towards the East end of Langerstone Bay there is a patch of incipient saltmarsh out on the intertidal rocks, with Juncus gerardii, Glaux maritima, Scirpus maritimus and some Phragmites. This is a remarkable situation for a saltmarsh community.

Nemotelus notatus (soldier fly) Larvae live on surface of substrate of under algal mats. Local species.

Thinophilus ruficornis (Dolichopodidae). Larvae are assumed to be in soil. Notable species.

4.1.3 Storm Beaches

(i) A high pebble beach with Armeria lies in the sheltered situation on the east side of Langerstone Point.

Bembecia muscaeformis (Thrift Clearwing moth). Common in this small area where it breeds in the crowns and roots of thrift. Notable/Na.

(ii) Pebbles and boulders high on the shore can support a special fauna.

* Euodynerus quadrifaciatus (mason wasp) At Sidmouth, and presumably here, it nests in holes in pebbles on the beach. It may not totally be dependant on the shore. RDB 2.

* Halophiloscia couchi (woodlouse) On ISR list (Langerstone Bay and just west of Lannacombe Beach), probably in this ecological unit but possibly from Head cliff. Notable.

*Trchoniscoides saeroeensis (woodlouse) On ISR list (grid refs = west end of Langerstone Bay and Great Mottiscombe Sand), probably in this ecological unit but possibly from Head cliff. Notable.

4.1.4 Rotting sea weed

Washed up strandlines of sea weed can support a large fauna. This coast does not seem to provide much of this habitat except on the south side of Woodcombe Sand where concentrations of thick smelly sae weed were stranded. Such excesses are not necessarily the best.

Eristalinus aeneus (hoverfly). Breeds in high shore pools with rotting sea weed. One seen in Langerstone Bay. Local species.

4.2 SEEPAGE CLIFFS

There are important seepage cliffs along this coast, especially between Prawle Point and Great Mottiscombe Sand, a fact not previously recognised. In particular there are outstanding examples in the largely inaccessible bay at Woodcombe Sand..

Three major ecological divisions are important, though they can occur in combination.

4.2.1 Vertical seepages in head deposits, sometimes stream-fed waterfalls

giving a similar effect (no ideal hard rock seepages were seen). Wet mineral substrate, algal veneers, moss, grass and dicotyledonous plants offer valuable micro habitats. There is a useful fauna, though much to my surprise no soldier fly larvae or adults were discovered.

The best examples are on the West side of Western Cove, by Torrs Pool, a major occurrence on the West side of Woodcombe Sand and at Great Mottiscombe Sand.

Tinodes maclachlani (caddis) At waterfalls. West of Lannacombe Beach. Local.

Tipula lateralis (cranefly) At seepages and waterfalls. Common

Tipula maxima (cranefly) At seepages and waterfalls. Local.

Dicranomyia chorea (cranefly) Very common where grassy. Common species.

D. goritiensis (cranefly) Local, wet grassy overhangs. RDB 3.

Pedicia claripennis (cranefly) An aquatic stream species, at waterfall streams. Local.

Pedicia littoralis (cranefly) An aquatic stream species, at waterfall streams. Local; La.

Pedicia straminea (cranefly) At seepages. Malcombe Sand. Local; La.

Molophilus bifidus (cranefly) At seepages. Local.

Thaumalea verrallii (Thaumalidae) Common, larvae on wet rock faces. Local species.

Liacanus virens (Dolichopodidae) A large species, adults frequent on wet rock faces. Local species.

Limnophora olympiae (Muscidae) An attractive grey and black species, common where a reasonable flow of water is present, especially around waterfalls..

4.2.2 **Slumped talus, often with grass or tall herbage, very wet at cliff base.** This is best represented by Torr Pool and in particular on the West side of Woodcombe Sand. As yet it is difficult to separate out faunal elements dependant on this habitat.

4.2.3 **Seepages and streamlets spreading out at the cliff foot**

(i)Where this occurs on a **hard rock platform,** Phragmites may form stands, and various streamlets and pools may also occur. On the rocky seepages there can to incipient saltmarsh plants such as Juncus gerardii (referred to previously). The best examples are on the West side of Western Cove (limited stretch), The West side of Woodcombe Sand and thence at intervals East to Lannacombe Beach: also at Great Mottiscombe Sand.

Tachytrechus notatus (Dolichopodidae) Wet hard rock. Local species

Lipara rufitarsis (Chloropidae) Forms slight cigar galls in Phragmites stems. Notable species, mainly coastal cliffs.

(ii) Where **seepages** come directly out of Head onto the beach, there is often an apron-like spread of wet silt with some herbage such as horse-tail. In some cases streams come out directly over shingle. Best examples are on the East side of Horsley Cove and about Torrs Pool.

Dolichopus signifer (Dolichopodidae) Found at nearly all good examples of habitat and clearly an important site for this RDB species.

Rhaphium brevicorne (Dolichopodidae) A nationally local species but frequent along the coast.

4.2.4 **Damp Head/talus** In many places the Head deposits are damp from very poorly develops seepage. Such conditions are, for instance, widespread in Langerstone Bay.

Bembidion harpaloides (ground beetle) Common under shade of dense overhanging herbage. Langerstone Bay. Common.

4.3 DRY CLIFFS IN HEAD DEPOSITS

This habitat was previously recognised as important for a national key site for solitary bees and wasps.

4.3.1 **Vertical exposures** occur almost continuously to the east of Prawle Point and largely finish at Great Mottiscombe Sand. There are a few examples west of Prawle Point. Much of this material contains abundant rock chips and is unsuitable for burrowing. Hence the main factor is the local presence of more sandy seams (nearly always near the base of the Head), being most suitable when exposed in a sheltered sunny position. The topmost part of a cliff, with weathered sub-soil, can also be locally suitable but less so and often inaccessible for observation. These cliffs are subject to storm wave erosion so cliff falls may remove the burrowed zone or bury the burrow entrances in thick talus. Hence survival of burrowing insects is hazardous; a long section of coast is necessary to ensure that some of the population gets by.

Nomada sexfasciata local about colonies of Eucera on which it is a cuckoo parasite. Mainly Sharpers Cove and below Woodcombe Point. RDB 1

Eucera longicornis local colonies in vertical cliffs of Head. Mainly Sharpers Cove to just W of Lannacombe Beach. Notable.

The above bees are representatives of a much larger fauna of bees and wasps.

* Bombylius discolor (bee fly) The Head cliffs are almost certainly - a major focus but it probably occurs at bee colonies along coastal paths. Notable.

Salticus scenicus (jumping spider) On bare surfaces. Common.

4.3.2 **Sandy bare talus** (= scree). Where vertical Head has sandy material at the foot of cliffs with bee and wasp colonies, there can be a community of bees and wasps nesting in fallen bare sand, often including different species. Shelter from waves is necessary in order that the talus is in place long enough for nesting insects to survive from one season to the next. Good examples are to be found between Rickam Sand and Seacombe Sand, in a small cove on the north side of Seacombe Sand and just East of Lannacombe Beach.

4.3.3 **Vegetated talus** (= scree) Much of the scree is only semi-vegetated and this supports fauna of open ground. With increased stability or depth of material a more continuous vegetation cover may be achieved, though on this coast it is rarely dense to the exclusion of bare patches.

The presence of Anthyllis (Kidney Vetch) is an important component as a nectar source for Eucera bees and other bees and wasps; this plant is widespread but patchy in distribution, Ballsaddle and Copstone Cove (latter inaccessible) supporting some of the best stands..

Platycleis albopunctata (bush cricket) Confined nationally to southern sea cliffs. Young nymphs at Ballsaddle, probably widespread on this SSSI. Notable.

Ectobius panzeri (cockroach) Young nymphs at Ballsaddle (also at Peartree rock knoll). Notable.

Corizus hyoscyami (bug) One on cliff by Brim Pool. Local species.

Cicindella campestris (tiger beetle) Seen on bare ground on semi-vegetated talus on Head cliff but ought also to occur along cliff top paths. Local.

Formica cucularia An ant of hot dry slopes. Local.

Tetramorium caespitum An ant of hot dry slopes. Local.

Bembecia muscaeformis (Thrift Clearwing moth). A good colony at the west end Langerstone Bay. (Copstone Cove - Western Cove). Notable A.

* Bembecia scopigera (Six-belted Clearwing moth) Larvae in roots of Kidney vetch and Lotus corniculatus. Head talus ideal, and perhaps in some places inland on cliffs. Notable B.

* Otiorhynchus ligustici (weevil) Mainly in roots of kidney vetch. RRB2.

* Hadena luteago barretii (Barret's Marbled Coronet moth) Larvae in roots of Silene maritima and Spergularia rupicola. Notable A.

4.4 CLIFF DUNES

At the east end of Moor Sands (including Venerick's Cove) there is a good example of blown sand deposits rising high up the cliffs. The lower part has extensive bare and partially vegetated sand; the higher parts have denser vegetation including Geranium sanguineum. In places semi-indurated cross-bedded sand is exposed, including surprisingly coarse sand (fine grit even), which seemingly represents dune formation of some antiquity on this site. Whilst there are bigger such examples elsewhere in the South-west, the Moor Sands dunes are the only such habitat on this particular coast and they are clearly an important faunal focus.

This is a rich spot for bees and wasps, but only one species of note for the SSSI is mentioned below (see Map 1 for full list of useful records)..

* Callilepis nocturna (spider) Frances Murphy says that her original report of this species was from Moor Sands, . Two other specimens are from cliff-top habitat rather than dunes. RDB 1.

Dicranocephalus agilis (bug) On sea spurge. Notable.

Corizus hyoscyami (rhopalid bug). A spectacular red and black bug of western dunes and other bare ground. Probably in other places with hot semi-bare ground as well. Notable.

Senotainia conica (miltogrammine fly) A parasite of aculeates (should also occur at other aculeate nesting areas.

Andrena fulago (bee) New to SSSI list. Notable.

Cochlicella acuta (snail) Venerick's dune but probably on Moor Sands dune as well. Local; La.

4.5 HARD ROCK SEA CLIFFS

These were not surveyed but will include specialised faunal elements.

4.6 MARITIME SHORT GRAZED GRASSLAND

This is best developed at Start Point and Prawle Point. Various specialist invertebrates, including ground beetles, will be found here, especially on bare paths where it can be relatively easy to find some of the ground beetles and nesting bees and wasps. Thyme is one of the more localised nectar plants for small bees.

I have defined this zone quite tightly. Section 4.9 includes some grassland species of intermediate light grazed turf and non-maritime types of turf. Very few Lepidoptera can cope with closely cropped sheep grazed turf, especially where salt spray contributes to stunted plant growth.

Eumerus sabulonum (hoverfly) This was mainly found about rocky knolls. Its foodplant is unknown but I am of the opinion that it breeds in the bulbs of Scilla verna. There was no sign of even the seed heads but the short grazed turf around the knolls seems a likely place for a population of this plant. Notable.

*Hipparchia semele (Grayling butterfly) A short turf species, probably in varied situations including the path in the maritime heath. Larvae on fine grasses, adults sit on bare ground. Local

*Harpalus tenebrosus (ground beetle) Assumed to be in this habitat. Notable A.

Harpalus rufitarsis (ground beetle) On bare path. Start Point. Local.

Amara tibalis (ground beetle) On bare path. Start Point. Local

4.7 MARITIME GRASSLAND ROCK KNOLLS.

The flora of such plants as stonecrop and thyme are useful nectar sources. The southern face of Start Point, and extending to near Peartree Cove, was the best example that I examined. The knolls west of Prawle Point, often in association with longer herbage, were not studied through lack of time. In wet weather, an interesting soil-dwelling fauna may yet be revealed by turning back the turf at rock interfaces. A useful place for spiders.

* Harpalus tenebrosus (ground beetle) On ISR list (for Prawle Point and Start Point). Localities suggest this ecological unit, probably on bare ground/shorter turf areas.. Notable A.

* Hadena luteago barretii (Barret's Marbled Coronet moth) Larvae in roots of Silene maritima (and Spergularia rupicola). Notable A.

*Eilema caniola (Hoary Footman) Larvae on lichen covered rocks> Presumably on rock knolls and other rock exposures. Notable A.

Leptothorax tuberum (ant) This tiny yellow ant nests in tiny cracks in bare rock. Start Point.

Dipogon variegatus (spider-hunting wasp) Nearly all sightings were on rock knolls, but not any other spider-hunting wasps. It preys on crab spiders and one was found carrying the common crab spider Xysticus cristatus which was likely to have been obtained from adjacent grassland.. Local.

Chrysis ruddii (ruby-tailed wasp). Larvae are parasitoids in the nests of the mason wasp Ancistrocerus oviventris which builds clay nests on walls or rocks.

Odynerus spinipes (mason wasp) An example of a wasp which nests in hollows and cracks in exposed rock. Common (not particularly so).

Chrysis sp. (ruby-tailed wasp) These wasps (difficult to identify) were frequent on rock knolls where they searched for mason wasp nests. to parasitise.

Salticus scenicus (jumping spider) On bare surfaces. Common.

4.8 MARITIME HEATH

The best example seen was north of Gammon Head, including a little heather on Gammon Head itself. This is likely to support specialist fauna.

Callilepis nocturna (spider) One was found walking over a stone at the path edge. RDB1

*Plebejus argus (Silver-studded Blue butterfly) This is on the ISR list, so here seems a likely location.

*Callophrys rubi (Green Hairstreak butterfly) Gorse is amoung its foodplants. Local.

4.9 LIGHT GRAZED GRASSLAND

It is quite difficult to make a clear division between various grassland communities. Whilst there is an overlap between 4.6, 4.7, 4.8, 4.9 and 4.10, there are species which need separating out from the very short turf and coarse grassland categories.

*Hipparchia semele (Grayling butterfly) A short turf species, probably in varied situations including the path in the maritime heath. Larvae on fine grasses, adults sit on bare ground. Local

*Aricia agestis (Brown Argus butterfly) Feeds on rock rose (also Erodium). Needs fairly short grassland with bits of bare ground. Local.

*Odezia atrata (Chimney Sweeper moth) Larvae on Conopodium majas of fairly weel grazed grassland. Local.

*Scotopteryx bipunctaria (Chalk Carpet) Larvae on Lotus and Trifolium. Its food plants require fairly short turf but probably not where grazing is intense. The Start Farm valley Lotus turf is probably ideal. Notable B.

*Gnophos annulatus (Annulet) Larvae on Lotus, Calluna and other low plants. A mosaic species: adults sit on rocks and bare ground. I am not sure whether this is here allocated to the most appropriate habitat division.

4.10 ROUGH COASTAL GRASSLAND AND SCRUB

In this zone I include neglected or largely ungrazed grassland which is still herb rich, nice examples being seen above Black Cove and at intervals west to Gara. However, in most cases there is a mosaic which includes coarser vegetation, with many transitions. At the present level of recording it is not practical to clearly demarcate distinct communities, especially the case with the ISR list of moths. This zone includes scrub and scrub edges, and hence has close ecological similarities with hedgerows.

Extensive areas of the back slopes have turned to scrub, with rocky knolls protruding in places. Such ground is rather impenetrable and may erroneously be thought of as useless habitat. In fact this scrubland is almost certainly rich in invertebrates and, for instance, likely to be a crucial habitat for various moth communities. In the spring the flowers of blackthorn and hawthorn are almost certainly of major importance to the spring nesting bees, as well as other insects. Bramble flowers must be important to the summer bees, wasps and other insects. Gorse is of some value for bumble bees.

Some of these scrub areas have varied herb floras which in turn are of value as foodplants for various invertebrates, as well as providing a further range of nectar and pollen sources. Bracken areas have some value, including the value of shelter and elements of a woodland flora. Many of the butterflies are in this zone, with paths, skeletal soils and local grazing providing shorter turf, so there is no sharp division from 6, and 8 above.

The area about Ballsaddle is exceptionally important, being in juxtaposition with high grade Head cliffs. The scrub flowers will be of high value to spring bees, and it is worth noting that small sycamores towards Woodcombe valley will have useful flowers. Also this area has honeysuckle exposed on scrub, potentially useful to broad-bordered bee hawk-moth should that be in the district.

The almost continuous stretch of this habitat along the higher hillside between Prawle and Great Mottiscombe was not explored. Rock knolls are visible and the general aspect of the ground looked rather similar to the Ballsaddle example. There may be some remnants of herb rich grazed grassland, as seen just east of the car park at Prawle Point.

Dioctria baumhaueri (robberfly) Hedges and scrub edges. Local

Chrysotoxum elegans (hoverfly) Just outside SSSI bounadary in Woodcombe Valley. Path throgh rank vegetation, close to wood edge. RBD3.

Sicus ferrugineus (conopid fly) Parasite ofsocial aculeates. Local

Melanargia galathea (Marbled White butterfly) A long turf species. Local.

Argynnis aglaja (Dark-green Fritillary butterfly) Feeds on violets, probably at scrub edges, bracken edges and along paths with long vegetation edges. (the pearl-bordered fritillaries on the ISR list are likely to be associated with scrub and bracken areas, cutting regimes in such vegetation may assist such species)

Lasiocampa trifolii Grass Eggar moth) Larvae eat grassses , herbs & bramble. Not scrub thickets. Notable A.

*Leucochlaena oditis (Beautiful Gothic moth) Larvae aet grasses. RDB3.

*Agrotis trux (Crescent Dart moth) Larvae on various low growing plants. Notable B.

*Lithophane socia (Pale Pinion moth) Larvae on shrubs and trees. Notable B.

*Mythimna putrescens (Devonshire Wainscot moth) Larvae eat grasses. Notable A.

*Mythimna l-album (L-album Wainscot moth) Larvae eat grasses. Notable B.

*Catarhoe rubidata (Ruddy Carpet moth) Larvae on Galium (G. mollugo & G. verum, presumably plus some other species). Notable B.

*Capsodes sulcatus (bug) On legumes. Local.

Cetonia aurata (rose chafer beetle) Larvae eat roots, adults at flowers. Local.

*Euophrys herbigrada (jumping spider) Probably fairy open grassland and heather. Notable A.

4.11 Streams and damp ground

There are small streams, often with associated damp ground at various points along the coast. Only small lengths lie within the SSSI and as viable ecological units they are pretty inadequate. However, they add extra elements to the overall habitat mosaic and contribute additional flower species for aculeates.

Perhaps the most valuable example lies NW of Great Mottiscombe Sand, where Oenanthe crocata flowers are available and there is a section of sallow carr (grazing pressure is unduly high on the west side. Above the NE corner of Great Mottiscombe Sand the stream has Mentha aquatica and above Elender Cove Eupatorium cannabinum. Where the coastal footpath crosses Woodcombe Valley, there is a fairly damp area that is partly shaded.

The stream fauna will include the Pedicia species listed under seepage cliffs/waterfalls.

Dioctria rufipes (robber fly) Local.

*Callimorpha dominula (Scarlet Tiger moth) Notable B.

*Xylena vetusta (Red Sward-grass moth) Local.

4.12 ARABLE LAND

The weed fauna is important for nectar sources and food plants. fields.

Cucullia chamomilae (Chamomile Shark moth) Three larvae found on Matricaria recutita at corner of field near Langerstone Point. Local; La.

*Cheilosia mutabilis (hoverfly) ISR records, presumably breeding in Carduus tenuiflorus

Cheilosia grossa (hoverfly) A larva in stem base/root of Carduus tenuiflorus in Harris's Beach fields. Local.

4.13 WOODLAND

This is a minor habitat within the SSSI.

Regrettably time ran out before surveying the wood on Hines Hill (just East of East Prawle village) where seepages are reported on the very steep slopes. There could be a useful fauna of craneflies in particular, the composition dependant in part on the pH. However it was a poor season for craneflies (should have been a peak period), the other wooded seepages being remarkably unproductive (hence my time was concentrated on the coast).

Minor seepages and streams occur by Malcombe House and where the coastal path crosses Woodcombe valley. The footpath up the west side of Woodcombe valley, a few hundred metres outside the SSSI, leads into a small wood with a base rich seepage.

Gonomyia lateralis (cranefly) Wooded seepage in upper Woodcombe valley. A base rich species that is scarce in Devon/Cornwall. Nationally local.

Beris morrissi (soldier fly) A terrestrial species. Local.

Tetanura pallidiventris (snail-killing fly). A terrestrial woodland species whose larvae are parasitoids of snails. Local.

5. SOME ECOLOGICAL PARAMETERS FOR MANAGEMENT

5.1 It is essential to see the cliffs and inland hinterland as an inter-related unit

The nationally important fauna of bees and wasps which nests in the sea cliff Head deposits are dependant on the quality of foraging areas on the land above.the cliffs

Whilst to an extent this fauna can be self-contained in cliff habitat, the foraging potential for flowers (bees and wasps) and prey (wasps) is limited on the cliffs themselves. The best potential nest sites do not always co-incide with the best cliff foraging areas. Many of the species are in low population levels so measures that assist their viability are a priority..

5.2 Both grazed and ungrazed areas have special characteristics.

Hence the formula between grazing and no grazing is important. The areas of semi-natural grassland and scrub are very varied in their vegetation and recent management history.

At present there is sheep-grazed grassland around the rocky outcrops at Start Point and Prawle Point. Grazing pressure is not uniform, being strongest on the more skeletal soils and less on the deeper soils with coarse vegetation; such a variation is useful in maintaining mosaic. The trampling by stock helps maintain bare ground along tracks and elsewhere, of advantage to some invertebrates such as various ground beetles and nesting bees and wasps. It is in short grazed grassland that squill grows, Scilla verna being the probable foodplant of the rare hoverfly Eumerus sabulonum.

The coarser ungrazed or poorly grazed grasslands are of value to different invertebrate assemblages including many of the coastal moths, including Lasiocampa trifolii (Grass Eggar). The attractive spider Neoscia adianta requires long herbage as structure for its orb web, and moreover it was only seen in abundance in the hot hollow above Black Cove, so one not only needs to allow for the needs of a species but also for the place that it occurs. The more varied grasslands with a reasonable mix of flora are best, these admittedly being in part at a transient advantage following a relaxation of grazing. In places the flora is herb dominant, such grasslands being of highest potential value. Because we still know so little about the location and particular requirements of species, the precautionary principle of avoiding drastic changes in management and maintaining mosacic are essential.

Grazed herb-rich grasslands include the low grazing intensity Lotus grassland south of Start Farm. This grassland ought to be important for invertebrates.

5.3 Bracken is not entirely useless.

Bracken has come to dominate large areas of former grazing land. On the whole there may be advantages in eliminating much of the bracken but one ought at least to ask whether restoring grazed grass is of greater value than the bracken communities.

There is increasing evidence that bracken is, under some circumstances, an underrated wildlife habitat. Not only does it support a fair range of invertebrates but it provides micro-habitat shelter in otherwise exposed situations and it can provide a semi-woodland flora under the frond canopy.

Above Venerick's Cove there is a small trial plot where bracken has been cut. This reveals that violets are abundant under bracken at this particular spot. To the west, along the path below Deckler's Cliff, was the few places that Dark-green Fritillary butterflies were seen, which feed on violet (perhaps along sunny edges provided by the path). Other fauna is likely to benefit in the same fashion.

6. HABITAT MANAGEMENT

6.1 HEDGES

These provide:-

- shelter (in a wind-swept landscape)
- corridors (which assist movement and navigation of flying insects)
- flower and foliage food resources

There are two situations where hedges are especially useful:

6.1.1 The cliff top edge above Head deposits (Prawle - Gt Mottiscombe Sand)

Bees and wasps nesting in the Head cliffs need to forage. The cliff edge hedges enable them to find shelter and to forage close at hand.

Parts of the coast already have a hedge, or in places a double hedge, either side of the cliff top path. The ideal is to complete the cliff top hedge where absent, notably between Horsley Cove and Malcombe Point and between Lannacombe Beach and Great Mottiscombe Sand. Since such hedges are already a natural landscape feature, this ought not to be a conflict of interest with walkers providing view points are allowed for and there is a benefit of shelter to man as well as insects (in any event the hedges need not be high and wind blast tends to stunt them; a height of 1 to 1.5m is quite sufficient. My preferred option is a double hedge with the cliff path running along a corridor 10-20m wide. The corridor not only gives extra shelter and hedge habitat, but allows for more sympathetic management of as grassland strip where flowers for insects (and man's appreciation) can be encouraged without the restraints of managed fields (also keeps dogs out of stock fields). In the winter one could allow sheep/cattle access for low intensity grazing to help maintain the turf, so there would not be complete loss of this strip land from farming.

6.1.2 Across fields to link cliff edge with upper scrub slopes (Prawle-Gt. Mottiscombe Sands).

There are some such hedges, but additional hedges will greatly enhance the sheltered link between the coastal cliffs and the upper scrub slopes (some field bondaries consist only of a fence or are virtually obsolete). This will, for instance, greatly increase the number of days on which bees and wasps have full mobility between nesting and foraging areas, which will be especially important to bumble bees.

6.2 **FARMED FIELDS** (Prawle to Great Mottiscombe Sands)

At present fields are either arable or improved grassland for grazing and hay. The farmed area within the SSSI largely corresponds with a sloping terrace above the main stretch of Head cliffs. Hence the fields are in immediate proximity to the main nesting areas of solitary bees and wasps, yet the fields are currently rather sterile as foraging areas.

From an entomological point of view, improved grassland is of virtually zero value. Its most important asset is the presence of stands of Carduus tenuiflorus, a foodplant of the Notable hoverfly Cheilosia mutabilis (which was not seen). However, this plant was being swiped even while I was on this coast so the hoverfly, and nectar seeking bees, don't stand much chance.

Arable land is mainly of potential for its weed flora with associated plant-feeding and flower seeking insects; also some bare ground beetles and other invertebrates. A crop of linseed was of minimal value.

The concept of having winter cereal stubble for birds can be easily accommodated with maintaining invertebrate interest.

6.2.1 **Headland strategy.** Wildlife strips round the edge of fields seem very appropriate here (see my remarks above on hedges). The objective would include maximising on flower resources by accepting the weed and wildflower response or supplementing with seed of local provenance if necessary. Periodic ploughing to rejuvenate the annual flora and to maintain the bare ground required by pioneer communities is fine. However, it is worth noting that many species stay in stems and seed heads until the following summer so some partial rotational treatment is advantageous. Chamomile Shark moth is one of the interesting species noted feeding on weeds (Chamomile) near Langerstone Point.

6.2.2 **Arable Crops.** The main present area is about Langerstone Point and below Hines Hill. Cereal crops are of no value entomologically, unless for any permitted weed flora with flowers. The linseed had three individual bumble bees (of the same species) along a 200m transect along the margin of the crop; better than nothing but not a resounding success. In general terms any crop with flowers is of potential benefit to bees; rape (spring), lucerne and other legumes (summer) are potentially of more use, providing they are not sprayed with insecticide. Surely one possibility would be to use some fields as a native weed reserve and to manage to that end (close to public footpaths in a tourist area).

6.2.3 **Grazing.** Many of the fields are improved grassland, of near zero interest entomologically. No butterflies, even the grass feeding ones, can cope with Italian rye grass etc. The only way of making these grasslands

more useful for wildlife is to re-establish a varied native flora. Even clover would be a start (of value to bees and improves the soil). Tolerance (within reason) of flowering weeds such as thistles would be helpful (note the value of Carduus tenuiflorus, which was swiped during may visit!). The pony paddock west of Lannacombe Beach has ragwort, a very useful nectar source; so stock that can co-exist with ragwort is helpful.

6.3 ROUGH GRAZING

Though much of the SSSI land above the sea cliffs must have been rough grazing in the past, today much of the ground is ungrazed.

6.3.1 Main Sheep grazed maritime grassland (Prawle Point & Start Point).

These areas with rocky knolls and steep slope grassland may best be managed as they are. Though grazing is very intense in places, this suits some ecological communities. There is a mosaic effect with longer grassland and even scrub in places which is ideal.

Start Point is by far the better mosaic site. The grassland includes short and long turf of good entomological value, and there is a fair amount of very rough herbage with scrub and bramble. The Warren has skeletal soils with stonecrop grading into varied mosaic grassland.

Prawle Point, by contrast, has much poorer grassland with an over-grazed appearance (exagerated by exposure). Much of the short turf is dominated by Plantago coronopus and there is little cover even around the rock knolls. Meanwhile, some of the deeper soils on the flattish higher grassland are uninteresting Holcus dominant. Only locally (see map for aculeate sample) is the flora better with Hypochoeris radicata flowers and some rough herbage about rock outcrops.

6.3.2 Other grazed grassland

The best example is on the upper slopes, back from the coast, below Start Farm. The present regime could perhaps take a little more stock but on the whole it is suitable. The mosaic of long and short turf is helpful, with rough herage and scrub in close proximity/. The problem is that increasing the pressure on the coarse grasses may put even greater pressure on the shorter and intermediate palatable grassland. In the spring-autumn period, undue grazing can be damaging to the intermediate ranking turf in particular; billiard board turf is of very restricted value.

6.3.3 Rank grassland

Much of the maritime and less maritime grassland (and semi-heath) lies to the east of Prawle Point. Many of these grasslands look fine as they are, though bracken and scrub can be a problem locally. It is probable that some stock may be of benefit but it is necessary to watch for the effects of selective grazing. Animals that concentrate on eating off all the flowers from short turf are not much help. It is essential to be aware that most of the moths, and on balance the majority of invertebrartes as a whole, require longish herbage.

6.4 BRACKEN CONTROL (mainly W of Prawle Point)

The concept of cutting, or stock that will trample bracken, is fine. It would be better to aim for a mosaic of open grassland and bracken rather than total clearance because of the shelter benefits of bracken. If stock is used this implies boundary control if adjacent areas are not to receive preference from the animal point of view.

The advantage of cutting is that it is controlled and does not put undue pressure on the herb layer. However, it is labour intensive.

Stock that will crash through will create enough light for the herb layer. Herb layer grazing may be locally intensive but overall the insects should do well. What we do not want, were it achievable, is barren hillsides of billiard board, cropped turf.

6.5 SCRUB CONTROL

As already explained, scrub is of positive value. However, by opening up corridors and glades, the flora and invertebrate richness would be considerably improved.

Cutting is certainly an option. In view of hidden boulders it may be difficult to do this mechanically. It will in any event be labour intensive. (Ideally cut material should be removed and burnt.)

Gorse could be burnt on rotation, but that implies control, including adequate fire lanes in extensive stands.

No doubt an ideal is stock that will crash its way in. In many respects one needs a scrub eater rather than a herb eater. The more impenetrable thickets may need some prior clearance, using animals to check regrowth. What we don't want is intensely grazed herb layer clearings and hard intensely browsed scrub edges. hence it is a question of reaching the right formula. The herb layer needs to flourish to full stature in the growing season and the scrub shoots along the edges need to develop properly.

6.6 GRAZING ANIMALS

Matthew Oates (National Trust Conservation Officer, Cirencester) should be asked to give his views since he has a lot of experience on the effects of various grazing animals at different stock density. Often the breed and age of sheep, cattle etc is of profound importance. Apparently Exmoor ponies are proving useful in some equivalent coastal sites. Part of the SSSI is owned by NT.

Tethered goats and ponies have come to mind but this may be impractical for controlled spot treatment. Whilst sheep are a good option at Prawle and Start Points, on the whole cattle have the advantage of opening up dense herbage and do not graze so ultra short.

6.7 PATHS

The coastal footpath passes through various areas of rough herbage and scrub as well as short grassland.

Bare ground is an essential habitat component for many types of invertebrates, including the nesting sites for harmless solitary bees and wasps. Trampling is a management tool not a total nuisance.

7. ADJACENT LAND

The SSSI boundary is on the whole suitable. However, there are advantages in some minor adjustments and in encouraging sympathetic management along a broader coastal zone.

7.1 Minor extension in SSSI boundary

The boundary is quite arbitrary across the Woodcombe and Start Farm Valleys. Some interesting species occur higher in the Woodcombe Valley (map 4) and some good quality grassland of potential for interesting invertebrates lies in Start Farm Valley (map 5). These areas might usefully be included in the SSSI.

7.2 Plateau tops

These lie outside the SSSI. They included ploughed land and grazing land, together with hedgerows. Potentially these areas are in range of some of the bees that nest within the SSSI and the hedgerows are also of value in a lusher and more sheltered setting. This zone is likely to contain a rich moth fauna. Ideally one would take a coastal environmental zone to extend inland from the SSSI by a distance of at least 500 to 1000m, incorporating sheltered lanes..

8. NATIONAL IMPORTANCE OF SSSI

Habitats

1. Mosaic
The SSSI is a mosaic of habitats, each with different invertebrate associations.

2. Head Cliffs
It is one of the 2 top sites in Britain, as made clear in the introduction. This site is, in my opinion, better than the South Gower Cliffs with regard to the range of sheltered situations and the presence of seepages (absent in the Gower).

3. Cliff seepages
This is the best GB site for seepages associated with Head, with regard to the extent and variety of ecological variables (cliff seepages, seepages at cliff foot, even into incipient saltmarsh, plus foreshore seepages, as well as a few small waterfalls). Red Data Book species are present.

As yet survey in the SW has not been comprehensive enough to express an absolute value for seepages overall (including hard rock coasts) but there is clearly no equivalent of this scale in soft rocks. Indeed, having evaluated much of the soft rock coast of England (and to a fair extent Wales and Scotland), this is clearly one of the best examples in GB for soft rock cliff seepages for the suite of features concerned. Landslips in Mesozoic sediments have many diferences.

4. Foreshore (below Head cliffs)

The incipient saltmarsh in Langerstone Bay seems highly unusual for an essentially rocky exposed coast. Upper shore beach/storm beach situations support interesting species.

5. Cliff-top grassland (soft rock, plus extensively on Hard Rock coast)

The great range of grasslands and scrub suggests that this is a particularly good site. The stretch from Prawl Point to Gammon Head looks quite impressive, and the rock knoll/grazed grasslands around Start Point are of good quality.

The fauna is good but I hesitate to make detailed comparisons with other hard rock coasts since these are extensive in the SW and not thoroughly surveyed.

6. Cliff dunes

The Moor Sands/Venerick's Cove example is very nice but there are better examples in the SW. Its geographic position is its main advantage, adding a valuable component to the overall mosaic on the site..

Fauna

1. Aculeates

The known fauna is not as large as the fabled name of this site would suggest. The fame of Nomada sexfasciata tends to loom so large that the quality of the rest of the fauna is taken for granted. However, it has been as eye-opener to realise that such a large and complex site has been very poorly worked for the most part. Every aculeate survey elsewhere has shown that a considerable survey effort is required to even start to get a comprehensive list. Aculeates are often in low populations and elusive. Arriving in the right place with the right weather at peak activity for the various species is very difficult. Hence, taking account of the extent and quality of habitat, it is certain that there are a large number of species still to be found.

2. Rest of fauna

In similar context, the rest of the fauna is still little surveyed, yet an encouraging number of special species has been found, including the only GB locality for a spider. How special the site will prove is difficult to say but there is no denying that it is a good invertebrate site with a range and combination of qualities of high potential.

3. Mosacic quality indicators

To emphasise the importance of habitat mosaic, it is noteworthy that there are 13 species of Bumble-bee recorded here, a high figure, these being par-excellance mosaic quality indicators.

Conclusion

1. With two RDB1 invertebrates, each only known at this site, and a good array of other RDB and Notable species on an as yet very partially recorded coast, this meets SSSI criteria at least at county level.

2. As one of the top 2 Head cliff sites in Britain, there are attributes which deserve regional and indeed national recognition. An important NVC or Habitats Directive (Corine based) ecotype that was in the top 2 in Britain would get strong prominence, but Head sea cliffs are not in official conservation classifications. That deficiency needs to be corrected. The other top site (by chance) lies an NNR (South Gower Coast).

3. The great range of mosaic, and the potential for enhancement to even greater faunal viability, are important attributes.

4 Thus SSSI grading on invertebrate grounds is fully met, and in respect of Head evaluation, could justifiably be seen as equivalent to NCR grade / candidate for further evaluation as a potential Natura 2000 site. Moreover, the potential for management improvement, especially on the hinterland for cliff-nesting aculeates, indicates that this is a priority site for implementing appropriate policies.

9. ACKNOWLEDGMENTS

My thanks go to Dr Mike Edwards for providing me his own aculeate survey results plus Malcolm Spooner's aculeate records for Devon. He has kindly identified 8 species of aculeates. Dr Roger Key (English Nature, Peterborough) has identified a weevil and four of the ground beetles. He has also assisted me with achieving the printout in Appendix D. Debora Procter (JNCC) printed out the copy of the ISR list given in this report. dr Charles Pultney kindly joined me for a session in the field which gave an opportunity to discuss some of the management concepts.

10. OVERALL CONCLUSIONS

1. The SSSI is considered to be one of the top two sites in GB for coastal cliffs in Head deposits, in combination with an extensive, varied mosaic of other coastal habitats including hard rock coast and cliff dunes.

2. This survey has revealed the presence of an extensive array of cliff seepages that are by far the best in GB in Head deposits, with an exceptional range of variants. They are important in a GB context as a suite.

3. The invertebrate fauna is still only partially recorded. Two species (a bee and a spider) are known only from this site (the bee is very likely to occur elsewhere). The SSSI is generally regarded as among the top national sites in GB for aculeates, even though the site is under-recorded. With a current list of 10 RDB (+ 1 PRDB), 42 Notable and c.93 Local species, the site can be reasonably be evaluated as SSSI quality for invertebrates.

4. In view of the special attributes, the site should receive NCR status (or modern equivalent). Moreover, the SSSI should be nominated for consideration as a potential Natura 2000 site.

5. The site would benefit from a management scheme that enhances the viability of the aculeates and various other elements of fauna. As far as invertebrates are concerned, this is a priority site to implement such measures. Among the ways of achieving the required objectives, the current Countryside Stewardship scheme has good potential.

6. The main recommendations for management include:

   a) The cliff side fields that are arable/improved grassland should be managed in a fashion which permits a much more plentiful supply of wild flowers (as arable weeds/flower-rich grassland).

   b) In such farmed areas, hedges should be increased. The cliff top edge needs a a low hedge virtually throughout, preferably as a double hedge either side of the coastal footpath. Hedge-less field boundaries running inland require hedges that connect the cliff edge with the rough hillside vegetation behind, indeed entirely new extra such boundaries could be added.

   c) The maritime grassland and scrub needs management where neglect of grazing is leading to immediate or long term decline in habitat quality. However, it must be emphasised that mosaic is important so one is looking for measures which maintain or promote mosaic of long and short turf, and other rough vegetation (including heather, gorse and bracken). Scrub is of vital importance for its own fauna, and in particular for flowers for Spring aculeates.

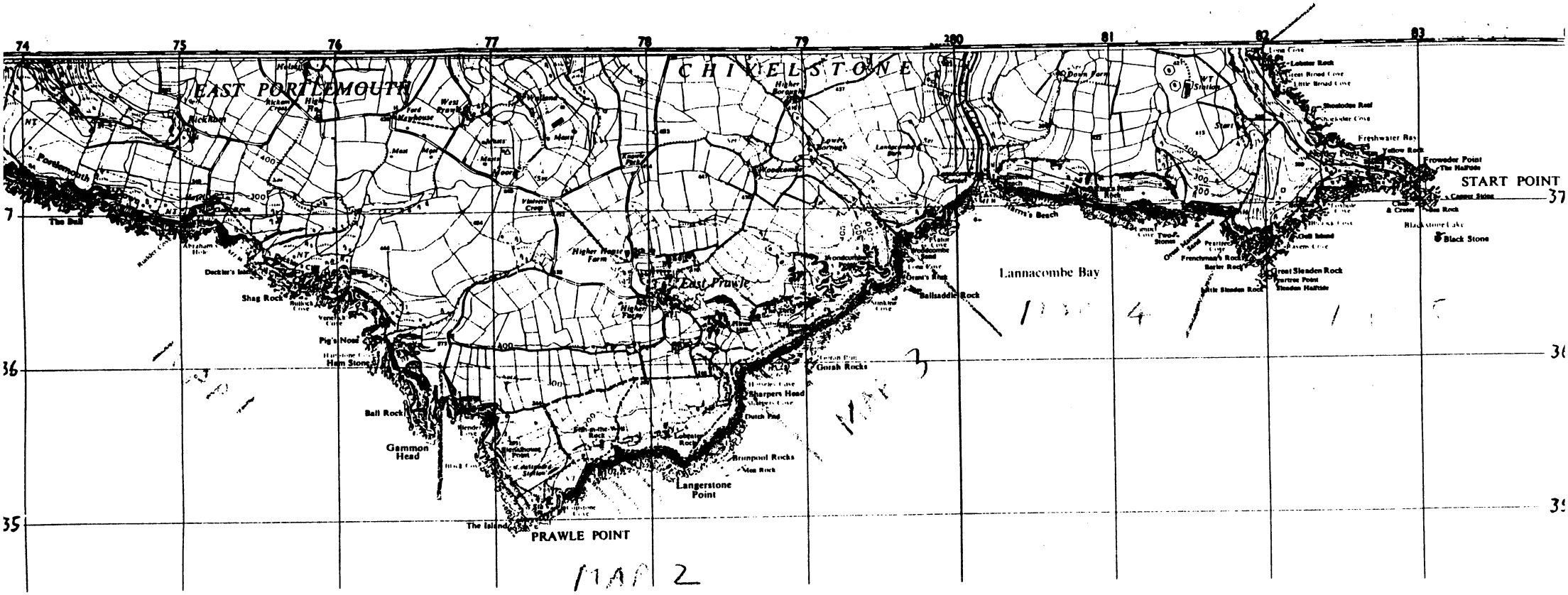
   d) Bare ground is very important. Even bare paths can be of great value so (within reason) trampling can prove to be a management tool rather than a threat.

7. The coastal ecological zone requiring sympathetic management should extend inland from the SSSI by at laest 500-1000m.

PRAWLE POINT – START POINT SSSI

10 km squares SX73 & 83

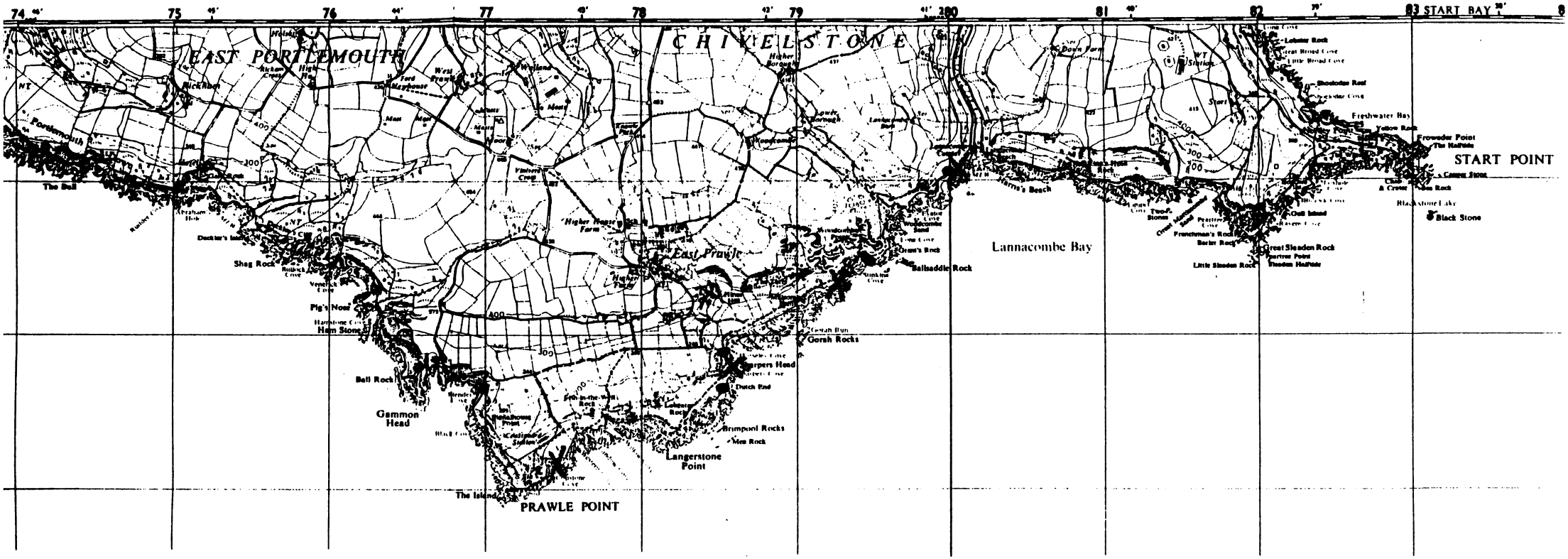
OVERVIEW MAP A : Index to Maps 1-5 + distribution of Head cliffs



main Head cliffs

- best stretches
- less suitable

OVERVIEW MAP B : the bee Eucera longicornis and its RDB1 cuckoo Nomada sexfasciata
+ RDB1 spider Callilepis nocturna



Eucera longicornis
● adults or sparse nest holes
✕ significant nest aggegations

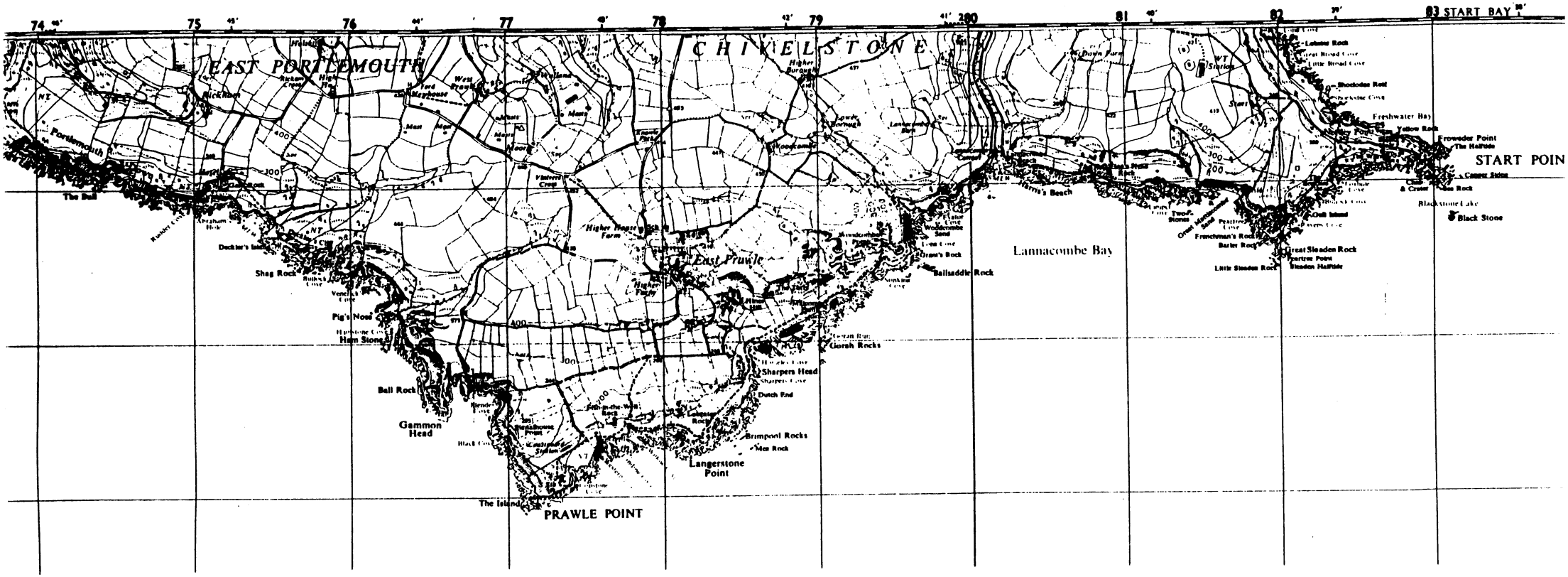
● Nomada sexfasciata

Callilepis nocturna

p 24

OVERVIEW MAP C: Special types of cliff and shore habitats

cliffs with seepages / waterfalls, cliff dunes, foreshore saltmarsh on rocks

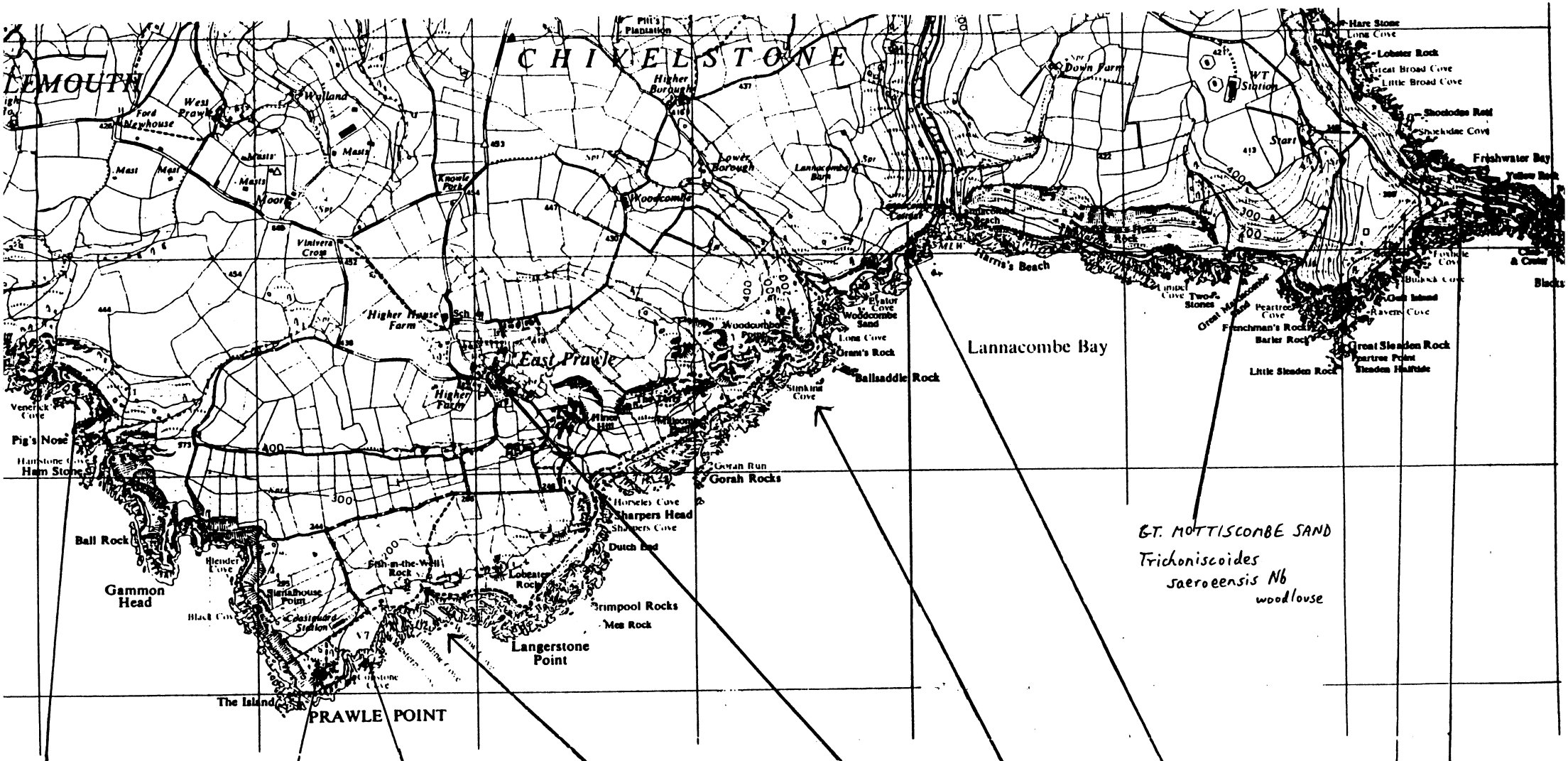


● main cliff seepages / waterfalls

cliff dunes

foreshore saltmarsh on rocks

OVERVIEW MAP D : ISR SPECIES (Pre-survey) THAT HAVE LOCATION DETAILS



MOOR SANDS
Callilepis nocturna RDB1 (spider)
[location not given in ISR]

PRAWLE POINT
Harpalus tenebrosus Nb (beetle)
Bombylius discolor Nb (bee fly)

East of COPSTONE COVE
Trichoniscoides saeroeensis Nb (woodlouse)

LANGERSTONE BAY
Cheilosia mutabilis Nb (hoverfly)
[presumably living in fields]

EAST PRAWLE village
Stylops aterrimus Nb (stylops)

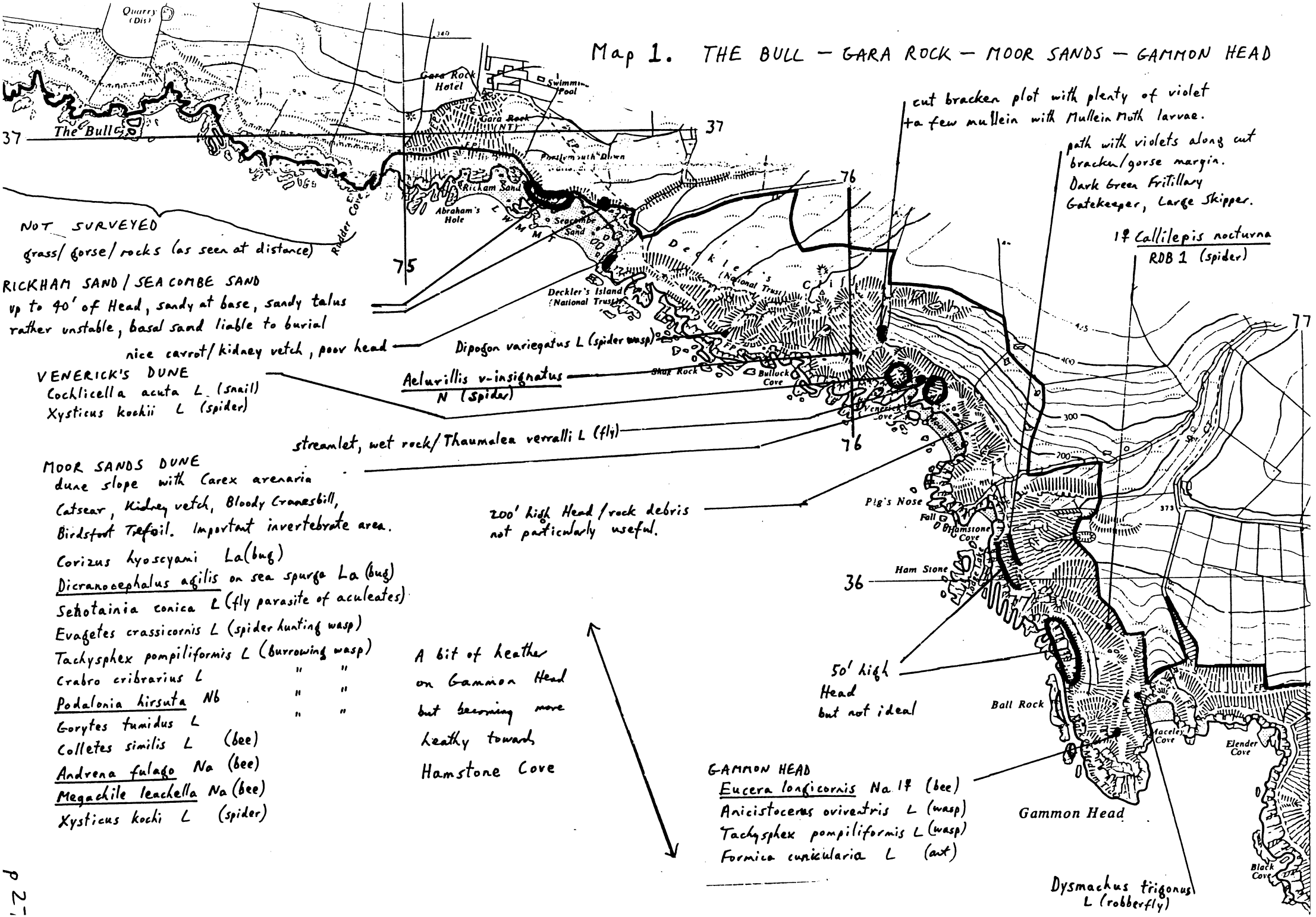
BALLSADDLE square SX 7936
Capsodes sulcatus Nb (bug)

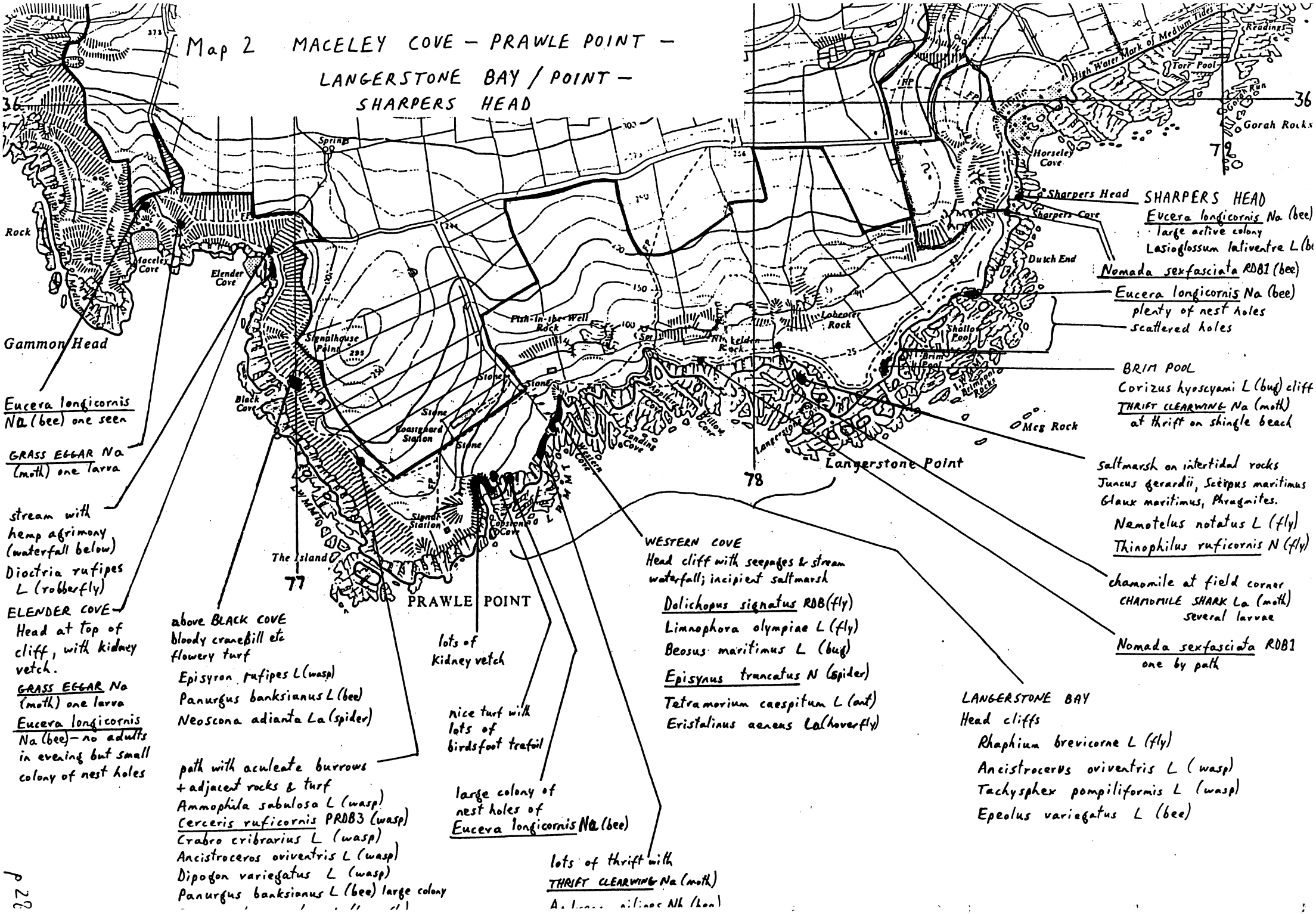
W of LANNACOMBE BEACH
Halophiloscia couchi Nb (woodlouse)

G.T. MOTTISCOMBE SAND
Trichoniscoides saeroeensis Nb woodlouse

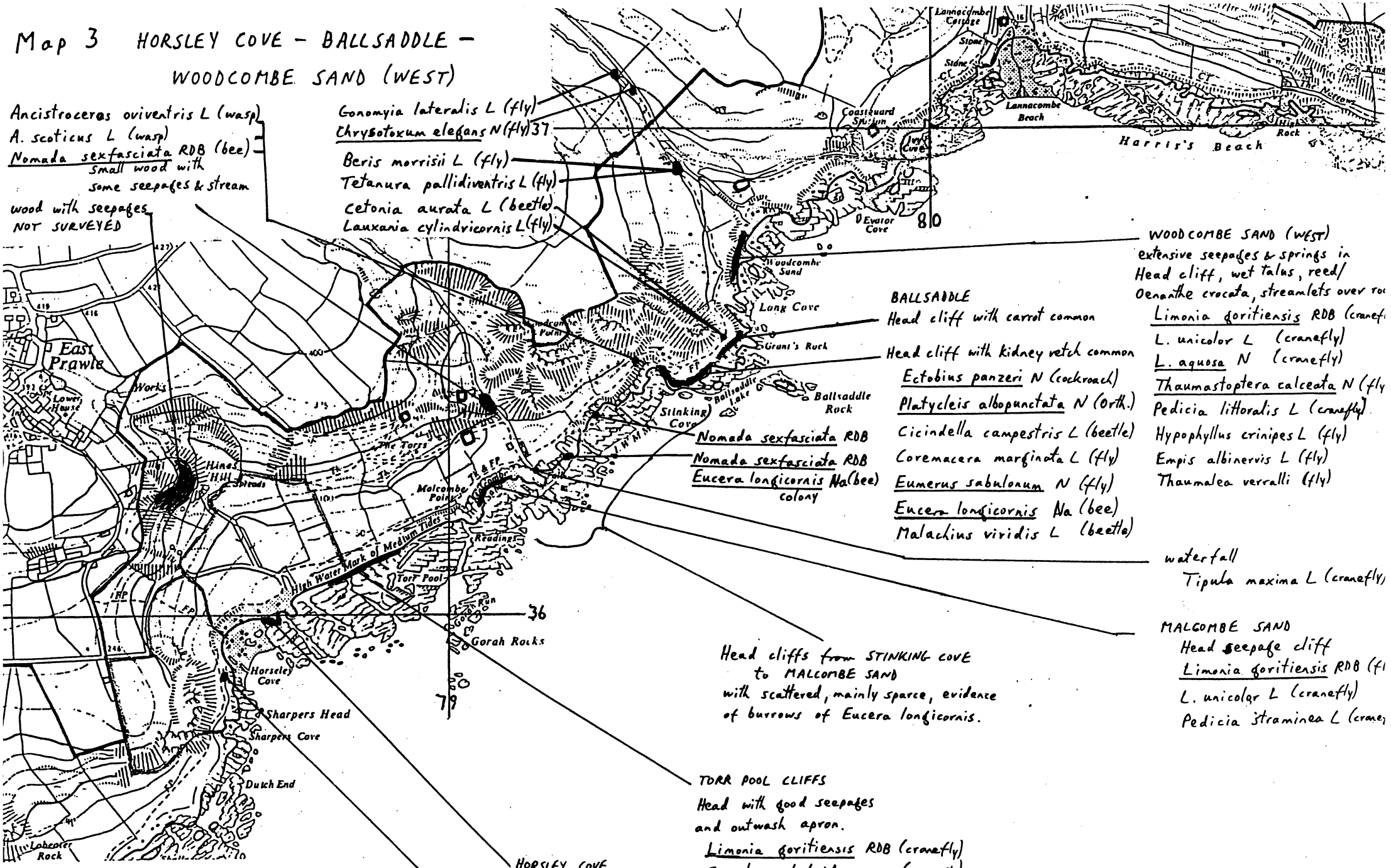
START POINT
Harpalus tenebrosu Na (beetle)
Lithobius tricuspi Nb (centipede)

Map 1. THE BULL — GARA ROCK — MOOR SANDS — GAMMON HEAD




Map 2 MACELEY COVE – PRAWLE POINT – LANGERSTONE BAY / POINT – SHARPERS HEAD
Gammon Head
Eucera longicornis Na (bee) one seen
GRASS EGGAR Na (moth) one larva
stream with hemp agrimony (waterfall below)
Dioctria rufipes L (robberfly)
ELENDER COVE
Head at top of cliff, with kidney vetch.
GRASS EGGAR Na (moth) one larva
Eucera longicornis Na (bee) – no adults in evening but small colony of nest holes
above BLACK COVE
bloody cranesbill etc flowery turf
Episyron rufipes L (wasp)
Panurgus banksianus L (bee)
Neoscona adianta La (spider)
path with aculeate burrows + adjacent rocks & turf
Ammophila sabulosa L (wasp)
Cerceris ruficornis PRDB3 (wasp)
Crabro cribrarius L (wasp)
Ancistroceros oviventris L (wasp)
Dipogon variegatus L (wasp)
Panurgus banksianus L (bee) large colony
lots of Kidney vetch
nice turf with lots of birdsfoot trefoil
large colony of nest holes of Eucera longicornis Na (bee)
lots of thrift with THRIFT CLEARWING Na (moth)
WESTERN COVE
Head cliff with seepages & stream waterfall; incipient saltmarsh
Dolichopus signatus RDB (fly)
Limnophora olympiae L (fly)
Beosus maritimus L (bug)
Episyrus truncatus N (spider)
Tetramorium caespitum L (ant)
Eristalinus aeneus La (hoverfly)
LANGERSTONE BAY
Head cliffs
Rhaphium brevicorne L (fly)
Ancistrocerus oviventris L (wasp)
Tachysphex pompiliformis L (wasp)
Epeolus variegatus L (bee)
SHARPERS HEAD
Eucera longicornis Na (bee)
large active colony
Lasioglossum lativentre L (bee)
Nomada sexfasciata RDB1 (bee)
Eucera longicornis Na (bee)
plenty of nest holes
scattered holes
BRIM POOL
Corizus hyoscyami L (bug) cliff
THRIFT CLEARWING Na (moth)
at thrift on shingle beach
saltmarsh on intertidal rocks
Juncus gerardii, Scirpus maritimus
Glaux maritimus, Phragmites.
Nemotelus notatus L (fly)
Thinophilus ruficornis N (fly)
chamomile at field corner
CHAMOMILE SHARK La (moth)
several larvae
Nomada sexfasciata RDB1
one by path
Langerstone Point
PRAWLE POINT
The Island
Gorah Rocks
Horseley Cove
Sharpers Head
Sharpers Cove
Dutch End
Meg Rock
Brim Pool
Shallow Pool
Lobscore Rock
Pish-In-the-Well Rock
Nickelden Rock
Elender Cove
Maceley Cove
Black Cove
Western Cove
Landing Cove
Coastguard Station
Signal Station
Steeple House Point
Torr Pool
High Water Mark of Medium Tides
Spring
78
77
79

Map 3 HORSLEY COVE – BALLSADDLE – WOODCOMBE SAND (WEST)



Ancistroceras oviventris L (wasp)
A. scoticus L (wasp)
Nomada sexfasciata RDB (bee)
Small wood with some seepages & stream

wood with seepages
NOT SURVEYED

Gonomyia lateralis L (fly)
Chrysotoxum elegans N (fly)

Beris morrisii L (fly)
Tetanura pallidiventris L (fly)
Cetonia aurata L (beetle)
Lauxania cylindricornis L (fly)

WOODCOMBE SAND (WEST)
extensive seepages & springs in Head cliff, wet talus, reed/ Oenanthe crocata, streamlets over ro
Limonia goritiensis RDB (cranefl
L. unicolor L (cranefly)
L. aquosa N (cranefly)
Thaumastoptera calceata N (fly
Pedicia littoralis L (cranefly)
Hypophyllus crinipes L (fly)
Empis albinervis L (fly)
Thaumalea verralli (fly)

BALLSADDLE
Head cliff with carrot common

Head cliff with kidney vetch common
Ectobius panzeri N (cockroach)
Platycleis albopunctata N (Orth.)
Cicindella campestris L (beetle)
Coremacera marginata L (fly)
Eumerus sabulonum N (fly)
Eucera longicornis Na (bee)
Malachius viridis L (beetle)

Nomada sexfasciata RDB

Nomada sexfasciata RDB
Eucera longicornis Na (bee)
colony

waterfall
Tipula maxima L (cranefly)

MALCOMBE SAND
Head seepage cliff
Limonia goritiensis RDB (fl
L. unicolor L (cranefly)
Pedicia straminea L (crane

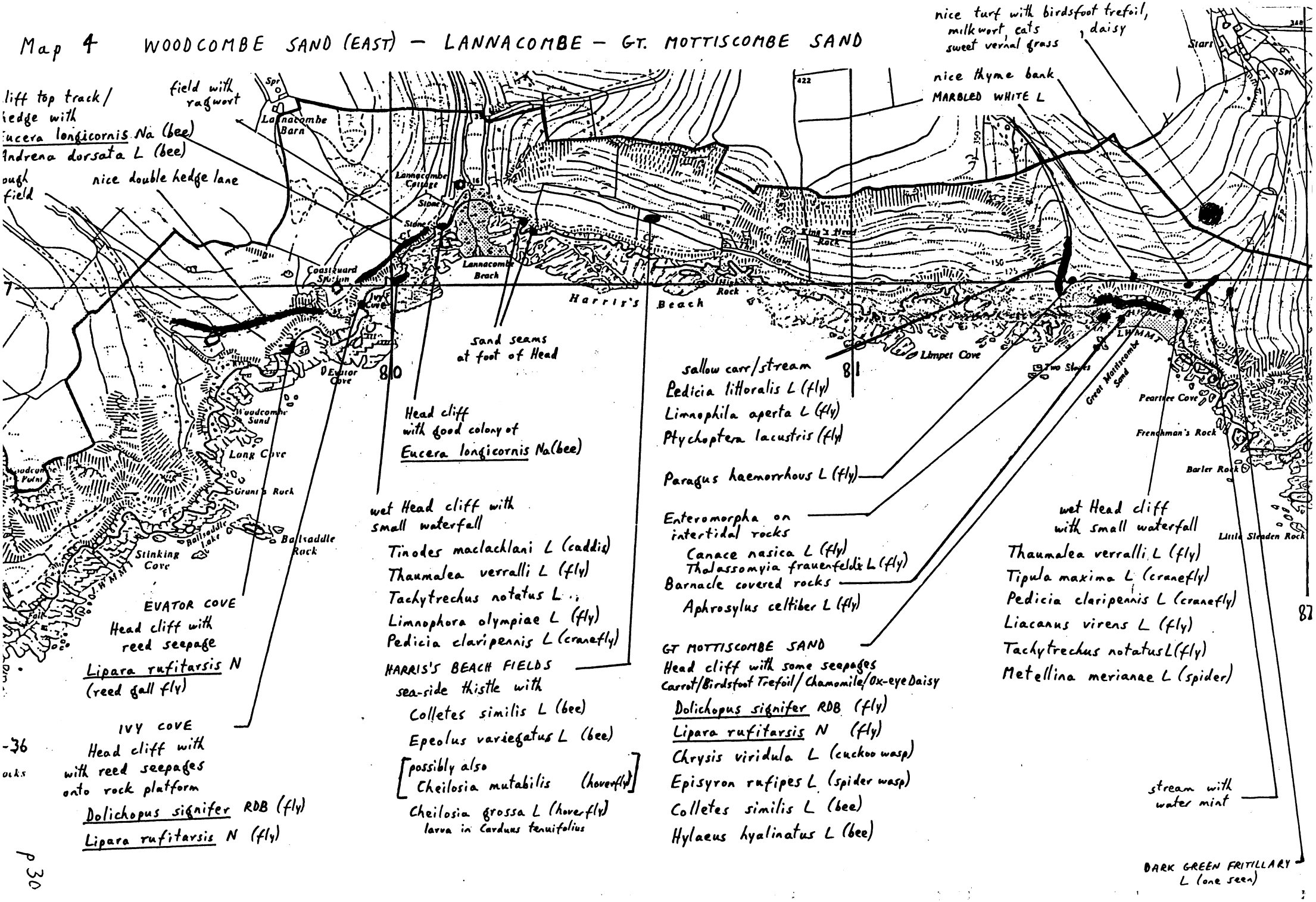
Head cliffs from STINKING COVE to MALCOMBE SAND with scattered, mainly sparce, evidence of burrows of Eucera longicornis.

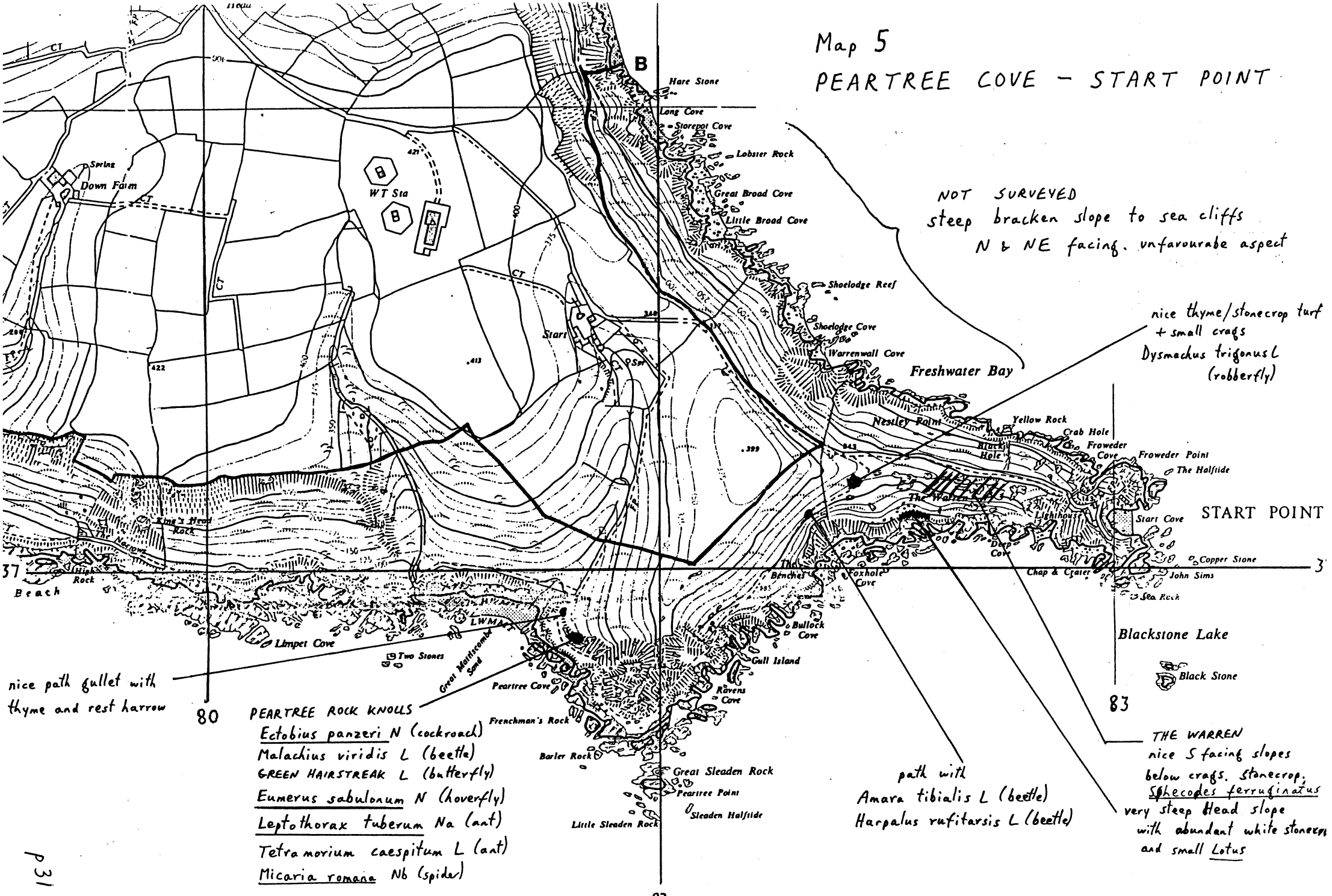
TORR POOL CLIFFS
Head with good seepages and outwash apron.
Limonia goritiensis RDB (cranefly)
Erioptera hybrida (cranefly)
Molophilus bifidus L (cranefly)
Rhaphium brevicorne L (fly)

cliff path with
Dioctria baumhaueri L (fly)
Eucera longicornis Na♂ (bee)

HORSLEY COVE
Head cliff seepages with outwash with horsetail.

Map 4 WOODCOMBE SAND (EAST) – LANNACOMBE – GT. MOTTISCOMBE SAND




Map 5
PEARTREE COVE – START POINT
NOT SURVEYED
steep bracken slope to sea cliffs
N & NE facing. unfavourabe aspect
nice thyme/stonecrop turf
+ small crags
Dysmachus trigonus L
(robberfly)
Spring
Down Farm
WT Sta
Hare Stone
Long Cove
Storepot Cove
Lobster Rock
Great Broad Cove
Little Broad Cove
Shoelodge Reef
Shoelodge Cove
Warrenwall Cove
Freshwater Bay
Start
Nestley Point
Yellow Rock
Crab Hole
Froweder Cove
Froweder Point
The Halfitide
Black Hole
The Warren
Lighthouse
Start Cove
START POINT
Deep Cove
Chap & Crater
Copper Stone
John Sims
Sea Rock
King's Head Rock
The Narrows
High Rock
Beach
Limpet Cove
Two Stones
Great Mattscombe Sand
Foxhole Cove
The Benches
Bullock Cove
Gull Island
Pearetree Cove
Ravens Cove
Frenchman's Rock
Barler Rock
Great Sleaden Rock
Pearetree Point
Sleaden Halfitide
Little Sleaden Rock
Blackstone Lake
Black Stone
nice path gullet with
thyme and rest harrow
PEARTREE ROCK KNOLLS
Ectobius panzeri N (cockroach)
Malachius viridis L (beetle)
GREEN HAIRSTREAK L (butterfly)
Eumerus sabulonum N (hoverfly)
Leptothorax tuberum Na (ant)
Tetramorium caespitum L (ant)
Micaria romana Nb (spider)
path with
Amara tibialis L (beetle)
Harpalus rufitarsis L (beetle)
THE WARREN
nice S facing slopes
below crags. Stonecrop.
Sphecodes ferruginatus
very steep Head slope
with abundant white stonecrop
and small Lotus
80
82
83
37
3
B
CT
LWMST
P31

APPENDIX C

FULL LIST OF SPECIES FOR THIS SURVEY

All data has been entered on RECORDER using the following sub-sites (with exact location details) running from west (Gara rock area) to east (Start Point). The predominant character of the units is indicated.

1. Rickam Sands to Seacombe Sands (Head cliffs)
2. Decklers Cliff to Prawle Point (minus dunes) (hard rock coast)
3. Moor Sands & Venericks Cove dunes
4. Langerstone Bay to Great Mottiscombe Sands (Head cliffs)
5. Peartree Cove to Start Point (hard rock coast)

Statuses in [ ] are suggested changes from the current ISR categories.

SNAIL		
Cochlicella acuta	Helicidae	Local/La
BUSH CRICKET		
Platycleis albopunctata	Tettigoniidae	Notable/Nb
COCKROACH		
Ectobius panzeri	Pseudomopidae	Notable/Nb
BUGS		
Troilus luridus	Pentatomidae	Common
Coriomeris denticulatus	Coreidae	Common
Corizus hyoscyami	Rhopalidae	Local
Dicranocephalus agilis	Stenocephalidae	Notable/Nb
Beosus maritimus	Lygaeidae	Local
Stygnocoris fuligineus	Lygaeidae	Common
Gampsocoris punctipes	Berytinidae	Common
Macrotylus paykulli	Miridae	Common
Capsus ater	Miridae	Common
Velia caprai	Veliidae	Common
BEETLES		
Cicindela campestris	Carabidae	Local
Bembidion tetracolum	Carabidae	Common
Bembidion harpaloides	Carabidae	Common
Agonum albipes	Carabidae	Common
Amara similata	Carabidae	Common
Amara tibialis	Carabidae	Local
Harpalus affinis	Carabidae	Common
Harpalus rufitarsis	Carabidae	Local
Dromius melanocephalus	Carabidae	Common
Cetonia aurata	Scarabaeidae	Local
Malachius viridis	Melyridae	Local
Lagria hirta	Tenebrionidae	Common
Clytus arietis	Cerambycidae	Common
Otiorhynchus sulcatus	Curculionidae	Common
CADDIS		
Tinodes maclachlani	Psychomyiidae	Local

BUTTERFLIES

Ochlodes venata	Hesperiidae	Common
Callophrys rubi	Lycaenidae	Local
Polyommatus icarus	Lycaenidae	Common
Vanessa atalanta	Nymphalidae	Migrant
Argynnis aglaja	Nymphalidae	Local
Parage aegeria	Satyridae	Common
Melanargia galathea	Satyridae	Local
Maniola jurtina	Satyridae	Common
Coenonympha pamphilus	Satyridae	Common

MOTHS

Bembecia muscaeformis	Sesiidae	Na
Lasiocampa trifolii	Lasiocampidae	Na
Cucullia chamomillae	Noctuidae	Local/La
Cucullia verbasci	Noctuidae	Common

FLIES

Craneflies		
Tipula lateralis	Tipulidae	Common
Tipula oleracea	Tipulidae	Common
Tipula maxima	Tipulidae	[Common]
Limonia aquosa	Tipulidae	Notable/Nb
Limonia chorea	Tipulidae	Common
Limonia goritiensis	Tipulidae	RDB3
Limonia unicolor	Tipulidae	Local
Thaumastoptera calceata	Tipulidae	Notable/Nb
Pedicia littoralis	Tipulidae	Local
Pedicia straminea	Tipulidae	Local
Pedicia claripennis	Tipulidae	[Common]
Paradelphomyia senilis	Tipulidae	Common
Austrolimnophila ochracea	Tipulidae	Common
Limnophila aperta	Tipulidae	[Common]
Limnophila nemoralis seg.	Tipulidae	[Common]
Pilaria discicollis	Tipulidae	Common
Lipsothrix remota	Tipulidae	Common
Erioptera hybrida	Tipulidae	Local
Erioptera stictica	Tipulidae	Common
Erioptera lutea f. taenionota	Tipulidae	Common
*Gonomyia lateralis	Tipulidae	Local
Molophilus appendiculatus	Tipulidae	Common
Molophilus bifidus	Tipulidae	Common
Molophilus obscurus	Tipulidae	Common
Ptychoptera lacustris	Ptychopteridae	[Common]
Meniscus midge		
Dixa nubilipennis	Dixidae	Common
Other Nematocera		
Thaumalea verralli	Thaumaleidae	[Local]
Thalassomya frauenfeldi	Chironomidae	[Local]
Sylvicola punctatus	Anisopodidae	Common
Soldier Flies		
Beris geniculata	Stratiomyidae	Common
Beris morrisii	Stratiomyidae	[Common]
Beris vallata	Stratiomyidae	Common
Nemotelus notatus	Stratiomyidae	Local
Chloromyia formosa	Stratiomyidae	Common
Snipe Flies		
Chrysopilus cristatus	Rhagionidae	Common

Rhagio lineola	Rhagionidae	Common
Robber Flies		
Dysmachus trigonus	Asilidae	Local
Dioctria baumhaueri	Asilidae	Local
Dioctria rufipes	Asilidae	Local
Stiletto Fly		
Thereva nobilitata	Therevidae	Common
Assasin Flies		
Empis albinervis	Empididae	Local
Clinocera stagnalis	Empididae	Common
Long-footed Flies		
Dolichopus griseipennis	Dolichopodidae	Common
Dolichopus signifer	Dolichopodidae	pRDB2
Dolichopus ungulatus	Dolichopodidae	Common
Hypophyllus crinipes	Dolichopodidae	Local
Tachytrechus notatus	Dolichopodidae	Local
Liancalus virens	Dolichopodidae	Local
Thinophilus ruficornis	Dolichopodidae	Notable/Nb
Aphrosylus celtiber	Dolichopodidae	Local
Rhaphium brevicorne	Dolichopodidae	Local
Syntormon pallipes	Dolichopodidae	Common
Big-headed Fly		
Pipunculus thomsoni	Pipunculidae	Common
Hoverflies		
Melanostoma scalare	Syrphidae	Common
Platycheirus cyaneus	Syrphidae	Common
Platycheirus scutatus	Syrphidae	Common
Paragus haemorrnous	Syrphidae	Local
Episyrphus balteatus	Syrphidae	Common
Metasyrphus corollae	Syrphidae	Common
Metasyrphus luniger	Syrphidae	Common
Scaeva pyrastri	Syrphidae	Common
Sphaerophoria scripta	Syrphidae	Common
Syrphus ribesii	Syrphidae	Common
Xanthogramma pedissequum	Syrphidae	Local
*Chrysotoxum elegans	Syrphidae	RDB3
Cheilosia grossa	Syrphidae	Local
Cheilosia illustrata	Syrphidae	Common
Eristalinus aeneus	Syrphidae	Local
Eristalis horticola	Syrphidae	Common
Eristalis pertinax	Syrphidae	Common
Eristalis tenax	Syrphidae	Common
Eumerus sabulonum	Syrphidae	Notable/Nb
Eumerus strigatus	Syrphidae	Local
Merodon equestris	Syrphidae	Common
Pipizella viduata	Syrphidae	Common
Volucella bombylans	Syrphidae	Common
Syritta pipiens	Syrphidae	Common
Xylota segnis	Syrphidae	Common
Other Flies		
Sicus ferrugineus	Conopidae	[Common]
Tephritis bardanae	Tephritidae	Common
Tephritis vespertina	Tephritidae	Common
Lauxania cylindricornis	Lauxaniidae	Local
Pherbellia cinerella	Sciomyzidae	Common
Tetanura pallidiventris	Sciomyzidae	Local
Coremacera marginata	Sciomyzidae	Local
Canace nasica	Canacidae	[Local]

Lipara rufitarsis	Chloropidae	Notable/Nb
Senotainia conica	Sarcophagidae	Local
Limnophora olympiae	Muscidae	Local

ACULEATES

Cuckoo wasps		
Chrysis angustula	Chrysididae	Local
Chrysis impressa	Chrysididae	Common
Chrysis ruddii	Chrysididae	Local
Chrysis rutiliventris	Chrysididae	Local
Chrysis viridula	Chrysididae	Local
Ants		
Tetramorium caespitum	Formicidae	Local
Leptothorax tuberum	Formicidae	Notable/Na
Formica cunicularia	Formicidae	Local
Spider-hunting Wasps		
Dipogon variegatus	Pompilidae	Local
Priocnemis pusilla	Pompilidae	Local
Evagetes crassicornis	Pompilidae	Local
Episyron rufipes	Pompilidae	Local
Mason wasps		
Odynerus spinipes	Eumenidae	Common
Ancistrocerus gazella	Eumenidae	Common
Ancistrocerus oviventris	Eumenidae	Local
Ancistrocerus scoticus	Eumenidae	Local
Burrowing Wasps		
Tachysphex pompiliformis	Sphecidae	Local
Trypoxylon attenuatum	Sphecidae	Common
Crabro cribrarius	Sphecidae	Local
Crossocerus elongatulus	Sphecidae	Common
Crossocerus cetratus	Sphecidae	Local
Crossocerus quadrimaculatus	Sphecidae	Common
Lindenius albilabris	Sphecidae	Common
Oxybelus uniglumis	Sphecidae	Common
Pemphredon lethifer	Sphecidae	Common
Ammophila sabulosa	Sphecidae	Local
Podalonia hirsuta	Sphecidae	Notable/Nb
Gorytes tumidus	Sphecidae	Local
Cerceris arenaria	Sphecidae	Common
Cerceris ruficornis	Sphecidae	[PRDB3]
BEES		
Colletes similis	Colletidae	Local
Hylaeus hyalinatus	Colletidae	Local
Andrena scotica	Andrenidae	Common
Andrena nigroaenea	Andrenidae	Common
Andrena fulvago	Andrenidae	Na
Andrena dorsata	Andrenidae	Local
Andrena ovatula	Andrenidae	Common
Andrena wilkella	Andrenidae	Common
Panurgus banksianus	Andrenidae	Local
Lasioglossum lativentris	Halictidae	[Local]
Lasioglossum leucozonium	Halictidae	Common
Lasioglossum morio	Halictidae	Common
Lasioglossum smeathmanellum	Halictidae	Unknown
Sphecodes fasciatus	Halictidae	Common
Sphecodes ferruginatus	Halictidae	Notable/Nb
Sphecodes gibbus	Halictidae	Common
Sphecodes rubicundus	Halictidae	Na

Megachile leachella	Megachilidae	Notable/Nb
Megachile maritima	Megachilidae	Unknown
Nomada sexfasciata	Anthophoridae	RDB1
Epeolus variegatus	Anthophoridae	Local
Eucera longicornis	Anthophoridae	Na
Eucera tuberculata	Anthophoridae	RDB1

SPIDERS

Callilepis nocturna	Gnaphosidae	RDB1
Micaria pulicaria	Gnaphosidae	Common
Micaria romana	Gnaphosidae	Notable/Nb
Xysticus kochi	Thomisidae	[Common]
Salticus scenicus	Salticidae	Common
Heliophanus cupreus	Salticidae	Common
Euophrys frontalis	Salticidae	Common
Aelurillus v-insignitus	Salticidae	Notable/Nb
Pardosa pullata	Lycosidae	Common
Episinus truncatus	Theridiidae	Notable/Nb
Theridion bimaculatum	Theridiidae	Common
Enoplognatha ovata	Theridiidae	Common
Metellina merianae	Metidae	[Common][
Neoscona adianta	Araneidae	Local

OTHER DATA

The ISR includes other data, incorporating some useful records derived from the field meeting of 1978 and 1979.

My field notes for my visit of 6 July 1979 include the following species or key data not otherwise given in this report.

Lannacombe Bay SX8037

Nomada sexfasciata This record is significant since my 1993 visit did not reveal the species in this area. The strong Eucera population just west of Lannacombe Beach seen in 1993 suggests that the Nomada ought to still be present here.

Prawle Point to Ivy Cove SX778354 - 779370

My notes do not separate out exact locations for what was a hurried visit.

LOCAL species
Thecophora atra (Conopidae) Fly that parasitises aculeates.
Rivellia syngenesiae (Platystomatidae) Picture-winged fly. At cliff seepages.

COMMON species
Sylvicola punctata (Anisopidae) fly, breeds in dung
Pachygaster atra (soldier fly; terrestrial)
Cheilosia illustrata (hoverfly) suspected of breeding in hogweed roots
Neoascia podagrica (hoverfly)
Peplomyza liturata (Lauxaniidae) fly of woodland
Chorthippus brunneus (grasshopper)
Leptophys punctatissima (bush cricket)
Pholidoptera griseoaptera (bush cricket)

APPENDIX D

SPECIES LIST WITH LOCALITIES: RDB, NOTABLE AND LOCAL SPECIES FOR THIS SURVEY

Print out off RECORDER, with statuses as given on that data base.

		SNAIL
Cochlicella acuta	Local	dunes at Venerick's Cove
		BUSH-CRICKET
Platycleis albopunctata	Notable/Nb	Ballsaddle, Head cliff, abundant
		COCKROACH
Ectobius panzeri	Notable/Nb	Head cliff W of Langerstone Point
Ectobius panzeri	Notable/Nb	rock knoll above Peartree Cove
		BUGS
Corizus hyoscyami	Local	Moor Sands dunes
Corizus hyoscyami	Local	Head cliff just E of Langerstone Point
Dicranocephalus agilis	Notable/Nb	Moor Sands dunes, on sea spurge
Berytus maritimus	Local	Head cliff between Copstone Cove and Western Cove
		BEETLES
Cicindela campestris	Local	Head cliff W of Langerstone Point
Amara tibialis	Local	path above Foxhole Cove, Start Point
Harpalus rufitarsis	Local	path above Foxhole Cove, Start Point
Cetonia aurata	Local	scrub grassland above Ballsaddle
Malachius viridis	Local	Head cliff, Ballsaddle
Malachius viridis	Local	about rock knoll above Peartree Cove
		CADDIS
Tinodes maclachlani	Local	stream over Head cliff W of Lannacombe Beach Langerstone Point
		BUTTERFLIES
Callophrys rubi	Local	around rock knoll above Peartree Cove
Argynnis aglaja	Local	one, botton of Start Farm valley
Melanargia galathea	Local	one above Gt Mottiscombe Sand
		MOTHS
Bembecia muscaeformis	Na	High shingle beach with thrit, E of
Lasiocampa trifolii	Na	one larva, rough grassland above Maceley Cove
Lasiocampa trifolii	Na	one larva, semi-bare Head slope with kidney vetch, just below cliff edge path above Elender Cove
Cucullia chamomillae	Local	4 larvae on Matricaria recutita, field corner above Lanngerstone Bay
		FLIES
Tipula marima	Local	seepages and stream fall in Head cliff at NE corner of Gt Mottiscombe Sand
Limonia aquosa	Notable/Nb	S of Woodcombe Sand, extensive seepages and springs in Head
Limonia goritiensis	RDB3	S of Woodcombe Sand, extensive seepages and springs in Head
Limonia goritiensis	RDB3	seepage Head cliffs at Malcombe Sand
Limonia goritiensis	RDB3	Head cliff seepages with seepage apron, by Torrs Pool
Limonia unicolor	Local	seepage Head cliffs at Malcombe Sand
Thaumastoptera calceata	Notable/Nb	S of Woodcombe Sand, extensive seepages and springs in Head
Pedicia littoralis	Local	S of Woodcombe Sand, extensive seepages and springs in Head
Pedicia littoralis	Local	stream with hemlock water dropwort and sallows in fields NW of GT Mottiscombe Sand

Pedicia straminea	Local	seepage Head cliffs at Malcombe Sand
Pedicia claripennis	Local	stream over Head cliff W of Lannacombe Beach
Pedicia claripennis	Local	seepages and stream fall in Head cliff at NE corner of Gt Mottiscombe Sand
Limnophila aperta	Local	stream with hemlock water dropwort and sallows in fields NW of GT Mottiscombe Sand
Erioptera hybrida	Local	Head cliff seepages with seepage apron, by Torrs Pool
Ptychoptera lacustris	Local	stream with hemlock water dropwort and sallows in fields NW of GT Mottiscombe Sand
Beris morrisii	Local	semi-shaded coastal path at bottom of Borough Valley
Nemotelus notatus	Local	incipient saltmarsh on rocky shore near E end of Langerstone Bay
Dysmachus trigonus	Local	one male on path on short turf naer Start Point
Dysmachus trigonus	Local	above Elender Cove, one on path
Dioctria baumhaueri	Local	cliff edge path above E side of Horsley Cove
Dioctria baumhaueri	Local	cliff top hedge, W of Lannacombe Sand
Dioctria baumhaueri	Local	cliff top hedge, W of Lannacombe Sand
Dioctria rufipes	Local	stream above Elender Cove with hemp agrimony
Empis albinervis	Local	seepages and springs in Head cliff on SW side of Woodcombe Sand
Dolichopus signifer	pRDB2	seepages at foot of Head just W of Western Cove
Dolichopus signifer	pRDB2	seepages at foot of Head cliff on SW side of Ivy Cove
Dolichopus signifer	pRDB2	seepages out of Head onto rock platform, mid GT Mottiscombe Sand
Hypophyllus crinipes	Local	S of Woodcombe Sand, extensive seepages and springs in Head
Tachytrechus notatus	Local	seepages on rocks at cliff foot, just W fo Lannacombe Beach
Tachytrechus notatus	Local	seepages and stream fall in Head cliff at NE corner of Gt Mottiscombe Sand
Liancalus virens	Local	seepages and stream fall in Head cliff at NE corner of Gt Mottiscombe Sand
Liancalus virens	Local	Venericks Cove, on seepage rocks
Thinophilus ruficornis	Notable/Nb	incipient saltmarsh on rocky shore near E end of Langerstone Bay
Aphrosylus celtiber	Local	Barnacle covered rock on beach at mid GT Mottiscombe Sand
Rhaphium brevicorne	Local	seepages in Head E of Western Cove
Rhaphium brevicorne	Local	seepages and springs in Head cliff on SW side of Woodcombe Sand
Rhaphium brevicorne	Local	Head cliff seepages with seepage apron, by Torrs Pool
Paragus haemorrhous	Local	rocks with stonecrop in rough part of field NW of Gt Mottiscombe Sand
Paragus haemorrhous	Local	coast path and adjacent rocks, NW of Prawle Point
Xanthogramma pedissequum	Local	in field by hedge N of Western Cove
Cheilosia grossa	Local	larva in Carduus tenuiflorus in fields E of Lannacombe Beach
Eristalinus aeneus	Local	Western Cove but no breeding habitat
Eumerus sabulonum	Notable/Nb	Ballsaddle, Head cliff, one, stray?

Eumerus sabulonum	Notable/Nb	frequent at foot of rock knoll above Peartree Cove
Sicus ferrugineus	Local	cliff edge path below Woodcombe Point
Sicus ferrugineus	Local	coastal path above Elander Cove
Sicus ferrugineus	Local	coastal path above Black Cove
Lauxania cylindricornis	Local	rough vegetation by coastal path by Ballsaddle
Lauxania cylindricornis	Local	Head cliff, Ballsaddle
Tetanura pallidiventris	Local	semi-shaded coastal path at bottom of Borough Valley
Coremacera marginata	Local	Ballsaddle, Head cliff
Lipara rufitarsis	Notable/Nb	seepage Phragmites beneath Head cliff, just W of Lannacombe Beach
Lipara rufitarsis	Notable/Nb	seepages with reed at foot of Head cliff on SW side of Ivy Cove
Lipara rufitarsis	Notable/Nb	seepages with reed at foot of Head cliff on W part of Evator Bay
Senotainia conica	Local	Moor Sands dunes
Limnophora olympiae	Local	seepages at foot of Head just W of Western Cove
Limnophora olympiae	Local	Western Cove streamlet and seepages
Limnophora olympiae	Local	at stream fall over Head cliff just W of Lannacombe Beach
Limnophora olympiae	Local	seepages and springs in Head cliff on SW side of Woodcombe Sand
		ACULEATES
Chrysis angustula	Local	crags above The Warren, Start Point
Chrysis ruddii	Local	Head cliff, Ballsaddle
Chrysis ruddii	Local	Head cliff, NE corner of Gt Mottiscombe Sand
Chrysis rutiliventris	Local	Gammon Head
Chrysis rutiliventris	Local	Prawle Point
Chrysis viridula	Local	Head cliff at NE corner of Gt Mottiscombe Sand
Chrysis viridula	Local	Head cliff, Gt Mottiscombe Bay
Chrysis viridula	Local	Head cliff, Gt Mottiscombe Sand
Leptothorax tuberum	Notable/Na	Rock knolls above Peartree Cove
Tetramorium caespitum	Local	Head cliff in Western Cove
Tetramorium caespitum	Local	under rest harrow on damp bare sand on Head cliff, E side Western Cove
Tetramorium caespitum	Local	Rock knolls above Peartree Cove
Formica cunicularia	Local	Head cliff in Western Cove
Formica cunicularia	Local	Gammon Head
Dipogon variegatus	Local	coast path and adjacent rocks, NW of Prawle Point
Dipogon variegatus	Local	Sharpers Cove, with Xysticus cristatus as prey
Dipogon variegatus	Local	low on rock face, above Shag Rock
Dipogon variegatus	Local	on rocks by path, above Shag Rock, Decklers Cliff
Priocnemis pusilla	Local	Head cliff, Ballsaddle
Evagetes crassicornis	Local	Moor Sands dunes
Episyron rufipes	Local	Head cliff, GT Mottiscombe Sand
Episyron rufipes	Local	above Black Cove
Ancistrocerus oviventris	Local	Head cliff W of Lanngerstone Point
Ancistrocerus oviventris	Local	Gammon Head
Ancistrocerus oviventris	Local	coast path and adjacent rocks, NW of Prawle Point
Ancistrocerus oviventris	Local	path above Ballsaddle cliff
Ancistrocerus scoticus	Local	Head cliff, Copstone Cove to Western Cove
Ancistrocerus scoticus	Local	path above Ballsaddle cliff
Tachysphex pompiliformis	Local	Gammon Head
Tachysphex pompiliformis	Local	Moor Sands dunes
Tachysphex pompiliformis	Local	Head cliff, Copstone Cove to Western Cove
Crabro cribrarius	Local	Moor Sands dunes
Crabro cribrarius	Local	coast path and adjacent rocks, NW

		of Prawle Point
Crossocerus cetratus	Local	cliff top path W of Lannacombe Beach
Ammophila sabulosa	Local	coast path and adjacent rocks, NW of Prawle Point
Podalonia hirsuta	Notable/Nb	Moor Sands dunes
Gorytes tumidus	Local	Moor Sands dunes
Cerceris ruficornis	Local	coast path and adjacent rocks, NW of Prawle Point
Colletes similis	Local	Moor Sands dunes
Colletes similis	Local	at thistles in field E of Lannacombe Beach
Colletes similis	Local	Head cliff, Gt Mottiscombe Sand
Colletes similis	Local	Venerick's Cove dunes
Hylaeus hyalinatus	Local	Head cliff, GT Mottiscombe Sand
Andrena fulvago	Na	Moor Sands dunes
Andrena dorsata	Local	cliff top Path W of Lannacombe Beach
Andrena dorsata	Local	cliff top path E of Lannacombe Beach
Panurgus banksianus	Local	coast path and adjacent rocks, NW of Prawle Point
Panurgus banksianus	Local	on Hypochaeris radicata above Black Cove
Sphecodes ferruginatus	Notable/Nb	The Warren, Start Point
Sphecodes rubicundus	Na	Head cliff, west of Langerstone Point
Megachile leachella	Notable/Nb	Moor Sands dunes
Nomada sexfasciata	RDB1	3 seen at eucera colony at corner of Sharpers Cove/Sharpers Head.
Nomada sexfasciata	RDB1	one on cliff edge path above Willow Cove
Nomada sexfasciata	RDB1	at Eucera colony in Head cliff west of Malcombe Sand
Nomada sexfasciata	RDB1	Head cliff west of Stinking Cove
Epeolus variegatus	Local	Head cliff E of Western Cove
Epeolus variegatus	Local	Head cliff, E of Western Cove
Epeolus variegatus	Local	at thistles in field E of Lannacombe Beach
Eucera longicornis	Na	cliff edge path above E side Horsley Cove, one male
Eucera longicornis	Na	good nesting colony in Head in small cove immediately W of Lannacombe Beach
Eucera longicornis	Na	frequent along cliff top hedgerow
Eucera longicornis	Na	frequent along cliff top hedgerow
Eucera longicornis	Na	Sharpers Cove, nest cells in Head with adults at corner with Sharpers Head and nest cell on E sde of cove
Eucera longicornis	Na	plenty of nest cells in Head cliff, but no adults seen, on N side of Shallow Pool
Eucera longicornis	Na	Ballsaddle, Head cliff, a few
Eucera longicornis	Na	aggregation of nest holes probably of this species, in Head at top of cliff above Elender Cove
Eucera longicornis	Na	one female on Gammon Head
Eucera longicornis	Na	one female above Maceley Cove
Eucera longicornis	Na	one female at holes of large colony, just E of Copstone Cove
Eucera longicornis	Na	colony in Head cliff east of Malcombe Sand
		SPIDERS
Callilepis nocturna	RDB1	one female walking over stone by path in incipient maritime heath just N of Gammon Head
Micaria romana	Notable/Nb	Rock knolls above Peartree Cove
Xysticus kochi	Local	dunes at Venerick's Cove
Aelurillus v-insignitus	Notable/Nb	coast path nera Moor Sands

A. pilipes →

← A. pilipes Nb West of Western Cove

Episinus truncatus	Notable/Nb	Head cliff between Copstone Cove and Western Cove
Episinus truncatus	Notable/Nb	under rest harrow on damp bare sand on Head cliff, E side Western Cove
Metellina merianae	Local	grassy overhangs on seepage Head cliff, Gt Mottiscombe Sand
Neoscona adianta	Local	common on ungrazed herb-rich grassland above Black Cove

APPENDIX E

ACULEATE LIST FROM MAIN SOURCES

PRAWLE POINT TO START POINT SSSI

WASPS & ANTS	Status	Spooner 1940-85	Edwards 1990	Stubbs 1993
CHRYSIDAE (cuckoo-wasps)				
angustula				x
[chrysis ignita s.l.]		[x]		
impressa				x
ruddii	La	x	x	x
rutiliventris		x	x	x
viridula		x		x
Trichrysis cyanea		x		
SAPYGIDAE				
Sapyga quinquepunctata	La	x		
FORMICIDAE (ants)				
Formica cunicularia				x
Leptothorax tuberum	Na			x
Tetramorium caespitum	L			x
POMPILIDAE (spider wasps)				
Agenioideus cinctellus		x		
Arachnospila anceps		x	x	
Anoplius nigerrimus		x		
Cryptocheilus notatus	RDB2	x	x	
Dipogon variegatus		x	x	x
Episyron rufipes	L	x	x	x
Evagetes crassicornis		x	x	x
Priocnemis pusillus		x	x	x
EUMENIDAE (mason wasps)				
Ancistocerus gazella		x	x	x
A. oviventris		x	x	x
A. parietinus		x		
A. scoticus		x		x
Euodynerus quadrifasciatus	RDB2	x		
Odynerus spinipes		x		x
VESPIDAE (social wasps)				
Dolichovespula sylvestris		x	x	
Vespula germanica		x		
V. vulgaris		x	x	
SPHECIDAE (burrowing wasps)				
Ammophila sabulosa		x	x	x
Astata boops		x	x	
Cerceris arenaria		x	x	x
C. ruficornis	{Nb}	x	x	x
Crabro cribrarius		x		x
Crossocerus cetratus				x

C. dimidiatus	{L in S}	x		
C. elongatulus		x		x
C. megacephalus		x		
c. quadrimaculatus				x
Ectemnius sexcinctus	Nb	x		
Entomognathus brevis		x		
Gorytes tumidus	L	x		x
Lindenius albilabris				x
Mellinus arvensis		x	x	
Nysson trimaculus	Nb	x		
Oxybelus uniglumis		x	x	x
Pemphredon lethifer		x	x	x
Podalonia hirsuta	Nb	x	x	x
Tachysphex pompiliformis		x	x	x
Trypoxylon antennuatum		x		x
T. medium		x	x	
BEES				
COLLETIDAE				
Colletes similis		x	x	x
Hylaeus brevicornis		x	x	
H. communis		x	x	
H. hyalinatus		x	x	x
ANDRENIDAE				
Andrena angustior	La	x		
A. dorsata				x
A. flavipes		x		
A. fulago	Na			x
A. haemorrhoa		x		
A. labiata	Na	x		
A. labialis	L	x		
A. nigroaenea		x		x
A. ovatula		x	x	x
A. pilipes (ex. carbonaria)	Nb	x	x	x
A. pubescens		x		
A. scotica		x		x
A. synadelpha	La	x		
A. thoracica		x		
A. trimmerana	Nb	x	x	
A. wilkella		x		x
Halictus rubicundus		x	x	
H. tumulorum		x	x	
Lasioglossum calcaratum		x		
L. lativentris	L			x
L. leucopum		x	x	
L. leucozonium		x	x	x
L. morio		x	x	x
L. nitidiusculum		x		
L. smeathmanellum		x	x	x
L. villosum		x	x	
L. xanthopum	Nb	x		
Panurgus banksianus	L	x		x
P. calcaratus		x	x	
Sphecodes crassus	Nb	x		x
S. fasciatus		x	x	x
S. ferruginatus	Nb	x	x	x

S. gibbus		x		
S. monilicornis	L	x		
S. rubicunda (ex.ruficrus)	Na	x		x
MELITTIDAE				
Melitta leporina	L	x		
MEGACHILIDAE (leaf-cutters)				
Coelioxys inermis		x	x	
Hoplitis claviventris		x		
Megachile centuncularis		x		
M. leachella	Nb			x
M. maritima		x	x	x
Osmia caerulescens		x		
O. leaiana		x		
Stelis punctulatissima	Nb	x		
ANTHOPHORIDAE				
Anthophora bimaculata		x		
A. plumipes		x		
Epeolus variegatus		x	x	x
Eucera longicornis	Na	x		x
Melecta albifrons	L	x		
Nomada flava		x		
N. goodeniana		x		
N. marshamella		x		
N. sexfasciata	RDBl	x		x
N. sheppardana	L	x		
N. striata	L	x		
APIDAE (bumble bees)				
Bombus hortorum		x		
B. humilis	La	x		
B. jonellus	L	x		
B. lapidarius		x	x	
B. lucorum		x	x	
[B. monticola]		[x stray]		
B. pascuorum		x	x	
B. pratorum		x		
B. terrestris		x	x	
Psithyrus barbutellus	L	x		
P. vestalis		x		
		108	45	53

In the above list Local status has been revised from the RECORDER listing on the advice of Mike Edwards, mostly comprising demotion to Common. A few species are upgraded, indicated by { }. Where the taxonomic status of Spooner's records is imprecise by current standards, or a species are best interpreted as a stray for the locality, records are indicated by [ ].

WASPS		BEES	
Ants	3	Solitary Bees	57
Social Wasps	3	Bumble Bees	11
Solitary Wasps	39		
	45		68

TOTAL ACULEATES 121

Additions by Edwards	0	(bit late in season)
Additions by Stubbs	11	(first June recording)

The additions by Stubbs comprise;-

2 Local ants (ants were not studied by Spooner or Edwards)
2 fairly Common cuckoo wasps
3 Common burrowing wasps
1 Na bee
1 Nb bee
1 Local bee
1 Common bee.

SPOONER DATES

1940's	1950's	1970's	1980's	Visits per month	
18.8.1940	30.8.1958	2.5.1971	14.8.1983 (J. Field)	April	2
27.9.1947		22.4.1975	3.7.1983	May	3
		30.4.1976	20.7.1985	June	0
		6.7.1976		July	5
		26.5.1977		August	2
		30.5.1978		Sept.	1
		6.7.1979			
		24.7.1979			

This table of dates needs to be qualified in that the only records for 6 July 1979 would appear to be those from other recorders and for 14 August 1981 by J Field. The records relate to special species, eg Nomada sexfasciata, or a new species for the site and do not represent a full list of records for those visits.

For a full presentation of Malcolm Spooner's Data see Appendix .

Comments on list.

1. Most of Spooner's data is for East Prawle, East Prawle Cliffs and Prawle Cliffs, plus references to Prawle Point and West Prawle cliffs., between 1971 and 1985. The definition of these sub-divisions is left to the imagination...Mike Edwards advises me of his belief that Spooner probably did not go far from the Prawle Point car park and that references to East Prawle may imply he did not even get down to the Head cliff in such cases. His furthest East location detail is for Langerstone Point but this is exceptional.

2. Spooner did little recording elsewhere on the site. Gammon Head is only mentioned once (1940). Gara Point/Rock cliff has few records from three visits, plus one visit to Gara Hotel only (outside the SSSI). There is no reason to believe that he recorded East of Langerstone Point. Had he used the Lannacombe Beach or Start Point car parks, his records would have used such names.

3. Spooner annotates records for 30 May 1978 variously as AES party/GMS party/named recorder. This refers to the week long field meeting that I led based at Bovey Tracy. Aculeate hymenopterists, led by Spooner were invited to join my dipterist's meeting. I have a note that 54 aculeates were recorded at Prawle o that occasion (I believe the Prawle Point car park was used) but Spooner never collated the records as was intended. Some dipterists joined that excursion, resulting in a few useful ISR records (I was leading a party on other sites at the time).

4. Another source of a few records result from a similar field meeting, this time led my me.on the SSSI on 6 July 1979. We used the Start Point car park and I got as far as Prawle Point. My observations of Nomada sexfasciata are in Spooner's records, plus a few other records by L Packer who was one of the few Hymenopterists on the meeting.

5. Mike Edwards' visit os 6 to 9 August 1990 is important because it put more effort into the coast between Gara and Prawle Point. He also looked at the National Trust Woodcombe Point area (approx = Ballsaddle).

6. My visit in June 1993 proves to be the only evidence of any aculeate recording in this month. Moreover, the visit covered virtually the whole coast (all be it that aculeate recording was largely limited to certain parts) and is the only source of located records East of Langerstone Bay (apart from Edwards' Woodcombe Point records). The visit produced approaching half the known fauna.

7. The bumble bee list is good by todays standards. The record of Bombus monticola is best interpreted as a stray since its normal habitat is moorland with bilberry, Dartmoor being a typical location.

8. Reference to BRC atlases reveals that 10km square SX73 has records of species not yet known for Prawle.

   These include the Cuckoo-bumble bees Psithyrus campestris, P. rupestris and P. sylvestris (all post 1960). P. bohemicus is recorded from nearby squares and it is possible that other Bombus could be found. Cuckoo-bumble bees only thrive where there are strong populations of host bumblebees.

   The ant atlas (1979) has some further interesting ants within SX73 including Solenopsis fugax RDB3, Strongylognathus testaceus RDB3, Ponera coarctata Nb and Stenamma westwoodi. Nearby squares have records of Anergetes atratulus RDB3 (SX63) and Myrmicina graminicola (SX84). It would be worth obtaining details of these records and giving the SSSI further survey for ants.

9. Given that recording is still so incomplete, and also noting that aculeates are mostly elusive and in low populations, it seems certain that the records still fall well short of the potential faunal list. I was able to add 11 species without devoting my full attention to this group

Prawle Point & Start Point

Alternative name(s): Deckler's Cliff
County(s): Devon
Vice county(s): South Devon
Grid reference: SX7936
Status: SSSI & National Trust.

Site description and habitats

A 12km stretch of coastline, predominantly south facing. Areas of short turf support maritime grassland species such as thrift, buckshorn plantain and kidney vetch. There are some areas of bramble, gorse and hawthorn scrub.

Recording and Invertebrate interest

This stretch of coast has an impressive and diverse invertebrate fauna making it of national importance. It includes what is probably the only site for the endangered cuckoo bee *Nomada sexfasciata* and the spider *Callilepis nocturna*. Several other Red Data Book species are reported. Many nationally notable moths are known, several of these are typical of coastal and calcareous habitats. This is probably the only Devon locality for the Grass Eggar (*Lasiocampa trifolii*). Two nationally notable woodlice are known as is the Grey Bush Cricket (*Platycleis denticulata*).

This site was number 7 in ISR County report number 84 printed on 27 APR 1987. The information about this site was last edited on 16 NOV 1988. The most recent species record for this site was added or edited on 13 JUN 1994.

Species list

Endangered

Nomada sexfasciata Panzer — HYM:Anthophoridae — 1993 — 17
Listed in the published Red Data Book as RDB 1
Three seen at Eucera colony at corner of Sharpers Cove/Sharpers Head.
-- additional record -- — 1993 — 17
At Eucera colony in Head cliff west of Malcombe Sand.
-- additional record -- — 1993 — 17
One on cliff edge path above Willow Cove.
-- additional record -- — 1989 — 11
Sixteen individuals seen both sexes, with the most numbers being at Sharpers Cove area and at the base of the cliff running from Sharpers Head to Horseley Cove.
-- additional record -- — 1978 — 20
Recorded by G.M.Spooner, possibly last surviving colony in Britain.
A cuckoo bee. This is a nest parasite of the mining bee *Eucera longicornis* (and possibly *E.tuberculata*). A rare and declining species, presently only known from South Devon though has previously been reported from Hampshire, Surrey, Sussex and Gloucestershire.

Callilepis nocturna (L., 1758) — ARA:Gnaphosidae — 1993 — 17
One female found walking over stone by path in incipient maritime heath just N. of Gammon Head.
-- additional record -- — 1970 — 8
According to information given by Frances Murphy to Alan Stubbs (L/STUB93B) the record was from Moor Sands (SX762364).
The only British site known to date (1986) for this spider is near East Prawle, Devon. The small but well-established colony is found on a steep sandy bank sparsely vegetated with *Carex* and broad-leaved herbs below sea cliffs. Adults have been found in May and June.

Vulnerable

Otiorhynchus ligustici (L.,1758) COL:Curculionidae 1975 19
Listed in the published Red Data Book as RDB 2
A ground-dwelling weevil. Larvae feed on the roots of various plants, but with a prefernce for kidney vetch, *Anthyllis vulneraria*. There are records from a wide area of Britain, but few of them are recent.

Cryptocheilus notatus (Rossius, 1792) HYM:Pompilidae 1983 10
Listed in the published Red Data Book as RDB 3
A.G.M.Spooner record.
A spider-hunting wasp, only known from about a dozen counties in southern England. Always considered rare. Nests in burrows of small mammals, especially those of moles. Prey includes spiders of the genera *Agelena*, *Trochusa*, *Tegenaria* and *Drassodes*.

Euodynerus quadrifasciatus (Fabricius) HYM:Eumenidae 1979 10
Listed in the published Red Data Book as RDB 3
Recorded by L.Packer.
-- additional record -- 1978 15
A mason wasp. Rare, Surrey, Dorset and South Devon. At Sidmouth the species breeds in holes in pebbles on the beach.

Rare

Anthicus scoticus Rye,1872 COL:Anthicidae 1993 17
2-2.5mm long reddish ant beetle living in strandline refuse, decaying seaweed etc. in saltmarshes. Adults on flowers. Until recently only known from W Scotland, Cumbria and the Isle of Man. A small population has recently been discovered in Kent.

Leucochlaena oditis LEP:Noctuidae 12
Beautiful Gothic
Listed in the published Red Data Book as RDB 3
Frequents grassy slopes and cliffs by the sea. Larva on grasses. Very local in south-west England, Isle of Wight, Dorset and South Devon.

Limonia goritiensis (Mik) DIP:Tipulidae 1993 17
Listed in the published Red Data Book as RDB 3
From three areas of springs and seepages.
A cranefly found on seepages on coastal cliffs and rock faces. Biology unknown, although larvae probably develop in damp soil or moss beside such seepages. Widely scattered but very local. Found mainly in the north and west, but the localities are very dispersed.

Myopa extricata Collin DIP:Conopidae 1976 10
Listed in the published Red Data Book as RDB 3
A G.M.Spooner record.
A reddish brown fly usually recorded from chalk grassland, especially in coastal locations. Larvae of this family are parasitoids on bees and wasps, though the host of this species is unknown. Chalk districts in southern England, very few recent records, mostly Isle of Wight.

Nationally scarce (Notable A)

Harpalus tenebrosus Dejean,1829 COL:Carabidae 1982 3
Recorded by D.E.Bolton at Prawle Pt. and Langerstone Pt.

-- additional record -- 1979 1

Noted at Portlemouth Down.

A largish (8-11mm) black omnivorous ground beetle. Frequents open dry, sandy, chalky or gravelly ground, not necessarily near the coast. Scattered localities in England and Wales, north to Durham, very uncommon.

Bembecia muscaeformis LEP:Sesiidae 1993 17

Thrift Clearwing

High shingle beach with thrift E of Copstone Cove.

-- additional record -- 1979 5

Favours rocky coastal areas with an abundance of the larval foodplant *Armeria maritima*. Coastal, south-west England to Cumbria, also north-east Scotland.

Lasiocampa trifolii LEP:Lasiocampidae 1993 17

Grass Eggar

2 Larvae. One in rough grassland above Maceley Cove, the other on head slope above Elender Cove.

-- additional record -- 1982 13

Record given as Prawle.

Subsp. *trifolii*; Inhabits sandhills in southern and south-west England, parts of Wales and Lancashire, also on the inland heaths of Dorset. Subsp. *flava*; Shingle beaches in Kent and formerly East Sussex. The larva feeds on a variety of grasses and plants including broom, creeping willow, heather and bramble.

Hadena luteago barrettii LEP:Noctuidae 1968 2

Barrett's Marbled Coronet

Recorded by A.H.Dobson.

Coastal cliffs and occasionally shingle beaches. The larva feeds in the roots of *Silene maritima* and *Spergularia rupicola*. Local, Devon, Cornwall and South Wales.

Mythimna putrescens LEP:Noctuidae 1968 2

Devonshire Wainscot

Recorded by A.H.Dobson.

Cliffs and grassy places by the sea, the larva feeding on coastal grasses. Very local in south-west Britain, rarely seen outside Devon, Cornwall and Pembrokeshire.

Leptothorax tuberum (Fabricius) HYM:Formicidae 1993 17

Listed in the published Red Data Book as RDB 3

Rock knolls above Peartree Cove.

-- additional record -- 1978 10

A G.M.Spooner record.

A small yellow species nesting in rock crevices in sheltered gulleys on or near the coast. Noted from Cornwall, Devon, Dorset ,Somerset, Isle of Wight, Hampshire, Sussex, Kent, Essex, Gloucestershire and Glamorgan.

Andrena fulvago (Christ) HYM:Andrenidae 1993 17

Listed in the published Red Data Book as RDB 3

Moor Sands dunes.

Widespread but extremely local solitary bee nesting in small but very dense colonies in sandy soil.

Andrena labiata Fabricius HYM:Andrenidae 1990 11

Girdled mining bee

Listed in the published Red Data Book as RDB 3

Single female caught on 27th May 1990 with a full pollen load at an umbel of Heracleum sphondylium in a lane at SX780369.

A mining bee, known from a wide variety of habitats including heathland, grasslands, open woodland, coastal landslips and soft rock cliffs. There is a close and possibly obligate association with germander speedwell, *Veronica chamaedrys*, which is the main pollen source. Nest burrows are dug in sandy banks and slopes in

sunny situations. Recorded widely in England north to Warwickshire but very local, and has apparently declined coonsiderably since the early years of this century when it was common in some areas.

Sphecodes rubicundus von Hagens, 1875 HYM:Halictidae 1993 17
Head cliff W. of Langerstone Point.
No species account available.

Eucera longicornis (Linnaeus) HYM:Anthophoridae 1993 17
Found at approx. 11 areas within the site.
-- additional record -- 1990 11
Numerous males recorded on 28th May 1989 and 27th May 1990. The most important nesting aggregation was in Sharpers Cove, also with many old brood cells in the crumbling cliff.
Bee with exceptionally long antennae in the male. Ground nesting. Uncommon.

Euophrys herbigrada (Simon, 1871) ARA:Salticidae 7
A jumping spider recorded from Cornwall, Devon and Dorset. Found under stones on coastal grassland and heather, mainly on cliff tops. Adults are found from April to September. There is a record from Lancashire of dubious validity.

Nationally scarce

Lithobius tricuspis Meinert, 1872 CHI:Lithobiidae 1983 2
Recorded by A.D.Barber at SX823372.
A centipede not discovered in Britain until 1965 and known only from south Devon, Isle of Wight and Dyfed. Woodland is the main habitat, where it occurs under stones or in the litter.

Platycleis albopunctata (Goeze) ORT:Tettigoniidae 1993 17
Grey Bush Cricket
Ballsaddle, head cliff, abundant.
-- additional record -- 1982 21
-- additional record -- 1979 10
National Trust survey record.
Bush cricket found mainly on hard or soft rock cliffs or shingle in dry places with rough herbage, especially on south facing slopes, but rarely more than a few hundred meters from the coast. Mainly on the south coast of England, but also a few localities on the west coast north to the Lleyn peninsula.

Ectobius panzeri Stephens DIC:Pseudomopidae 1993 17
Lesser Cockroach
Head cliff west of Langerstone Point & rock knoll above Peartree Cove.
A small cockroach, up to 9 mm. long, pale to dark brown. Largely southern and coastal, recorded from Anglesey round to Norfolk. Most frequent on sand dunes, but also found in woods, heaths and grassland. A ground-dwelling species.

Dicranocephalus agilis (Scopoli) HEM:Stenocephalidae 1993 17
Moor Sands dunes, on sea spurge.
A coastal species confined to the south and, particularly, the south-western counties of England and Wales. It feeds largely on Portland spurge, *Euphorbia portlandica* and sea spurge *E. paralias*, and in the extreme south-west can be found almost wherever there are good stands of either plant, both on cliffs and on dunes. Largely a ground insect.

Capsodes sulcatus (Fieber) HEM:Miridae 1979 6
Recorded at SX7936.
Confined to south-west coastal counties and found, generally near the coast, in rather discrete colonies. Associated with species of Leguminosae in open habitats, often in grassland.

Stylops aterrimus Newport,1851 STR:Stylopidae 1971 3
Recorded at SX781365.
A stylopid, closely related to the Coleoptera. Adult males free-living, females possibly remaining in the host. Host possibly a bee of the genus *Andrena* or *Halictus*.

Bembecia scopigera LEP:Sesiidae 1976 10
Six-belted Clearwing
A G.M.Spooner record.
Frequents downland, quarries, embankments and sea-cliffs, mostly found on chalky soils. Larva on the roots of *Anthyllis vulneraria* and *Lotus* spp. Southern England to Cambridgeshire, Herefordshire and also in south Wales.

Plebejus argus (L., 1758) LEP:Lycaenidae 1984 3
Silver-studded Blue
Recordedd by T.Sleep.
Once known locally throughout much of England and Wales, this species has declined greatly in the Sussex weald and East Anglia and is now mainly found in west Surrey, south Hampshire, south east Dorset and the South West. Very variable, with subspecific status of many forms uncertain. Certain subsp. are *masseyi* in the north, *caernensis* in parts of north-west Wales and *argus* elsewhere. The downland form, f. *cretaceus*, is now confined to the Isle of Portland, Dorset, having been lost from Kent, Sussex, and the rest of Dorset. The larva feeds on a range of plants including *Ulex* and *Erica*.

Scotopteryx bipunctaria LEP:Geometridae 1968 3
Chalk Carpet
Recorded by G.A.Cole.
Chalk downland, embankments and limestone hills, the larva on *Lotus* spp. and *Trifolium* spp. Widespread in southern England and parts of South Wales, also noted in the Midlands, North Wales and the coasts of Yorkshire and Co.Durham.

Catarhoe rubidata LEP:Geometridae 1970 2
Ruddy Carpet
Recorded by A.H.Dobson.
Downland, sea-cliffs,hedgerows and bushy places. The larva feeds on *Galium mollugo* and *G.verum*. Local, found mainly in the southern half of England and Wales.

Eilema caniola LEP:Arctiidae 1968 2
Hoary Footman
Recorded by A.H.Dobson.
Sea-cliffs and shingle beaches, the larva feeding on lichens covering rocks. Local, Devon, Cornwall, seaboard counties in west Wales, also noted from Kent and East Sussex though these could represent immigrants.

Callimorpha dominula LEP:Arctiidae 1968 2
Scarlet Tiger
Recorded by A.H.Dobson.
Water-meadows, river-banks, marshy hillsides, woodland and drier habitats including coastal undercliff. Larva on *Symphytum* spp. and many other low growing plants. Very local in southern and western England, though there are two colonies in Kent, also in southern and western Wales.

Agrotis trux LEP:Noctuidae 1968 2
Crescent Dart
Recorded by A.H.Dobson.
Inhabits coastal cliffs, the larva feeding on various low growing plants. Isle of Wight westwards to Cornwall, northwards to North Wales, also noted from Sussex and Morayshire.

Mythimna l-album LEP:Noctuidae 1968 2
L-album Wainscot
Recorded by A.H.Dobson.
Coastal, the larva feeding on unspecified grasses. Sussex to Cornwall, before the 1930's it was considered a rare immigrant and it is still occasionally noted elsewhere.

Lithophane socia LEP:Noctuidae 1968 2
Pale Pinion
Recorded by A.H.Dobson.
Woodland, the larva feeding on *Salix* and other trees and shrubs. South-west England and Wales, though also less frequently seen in south-east England, south-west Midlands and occasionally East Anglia and north-west England.

Limonia aquosa (Verrall) DIP:Tipulidae 1993 17
South of Woodcombe Sand, extensive seepages and springs in Head.
A cranefly found near waterfalls and seepages over vertical rock faces. Biology unknown, but larvae possibly develop in wet moss. Widely scattered but extremely local, northern and western Britain.

Thaumastoptera calceata Mik DIP:Tipulidae 1993 17
South of Woodcombe Sand, extensive seepages and springs in Head.
Cranefly, larvae develop in wet leaf litter in seepages in alder carr, where they are case-makers. Adults recorded from May to July. Recorded in England as far north as Yorks., also Wales.

Bombylius discolor Mikan DIP:Bombyliidae 1978 18
Recorded at Prawle Point.
-- additional record -- 1976 10
A G.M.Spooner record.
Large Bee fly found in a variety of habitats, deciduous woods seem to be preferred. Larvae are brood parasites of solitary bees, probably *Andrena* spp. Regular but local in southern counties of England, also noted in south Wales and England north to Worcestershire.

Dolichopus signifer Haliday DIP:Dolichopodidae 1993 17
Listed in the published Red Data Book as RDB 1
From three areas of springs or seepages.
A medium sized fly that is predominantly found near freshwater seepages on coastal dunes and sea shores, but there are also some inland localities. The majority of records are in the south-west. The larvae are probably semi-aquatic predators. The adults have been recorded from May to August.

Thinophilus ruficornis (Haliday) DIP:Dolichopodidae 1993 17
From incipient salt marsh on rocky shore near E. end of Langerstone Bay.
A salt marsh fly found mainly in the west. Locally abundant.

Cheilosia mutabilis (Fallen) DIP:Syrphidae 1979 18
Listed in the published Red Data Book as RDB 3
Recorded at Lannacombe Bay.
A black hoverfly, mainly of dunes and coastal habitats, now rarely inland. Larvae at roots of thistles. Old records are widely distributed but few recent records. Apparently declining.

Eumerus sabulonum (Fallen) DIP:Syrphidae 1993 17
Listed in the published Red Data Book as RDB 3
One from Ballsaddle on Head cliff & frequent at foot of rock knoll above Peartree Cove.
A small hoverfly belonging to a genus in which the larvae develop in the bulbs of plants although the host of this species is unknown. Usually found in sandy, coastal places such as dunes, also known from cliff-tops and

there is an inland record from a sandy river bank. South-western England and Wales with a single old record from south-west Scotland. Very rare with few recent records.

Volucella inflata (Fabricius) DIP:Syrphidae 1989 11

Single female caught on 28th May at flowers of Heracleum sphondylium in lane running from East Prawle southwards to the coast at SX779360.

A large and spectacular hoverfly of heavily wooded areas. Adults have been observed feeding at sap runs on tree trunks and this is possibly where the larvae will be found. Locally common in suitable localities in the south of England, recorded occasionally from Wales and the rest of England north to Cheshire and Derbyshire.

Lipara rufitarsis (Loew) DIP:Chloropidae 1993 17

From three areas with reed at foot of seepages.

A small fly found in wetlands where *Phragmites* beds occur. Larvae develop in the stems of *Phragmites* causing a narrow and inconspicuous gall. Very local in southern England.

Helina calceata (Rondani) DIP:Muscidae 1938 4

Record given as East Prawle.

Medium sized fly. Widespread but very local, favouring sandy soils. Frequent where it occurs.

Podalonia hirsuta (Scopoli) HYM:Sphecidae 1993 17

Hairy sand wasp.

Moor Sands dunes.

-- additional record -- 1978 10

Record given by G.M.Spooner.

A southern species burrowing into sand and provisioning its nest with caterpillars.

Andrena carbonaria (Fabricius, 1781) HYM:Andrenidae 1993 17

W. of Western Cove.

-- additional record -- 1990 11

Five females on 27th May 1990, nests burrows were found in the cliffs backing Shallow Pool and Brim Pool. Females were seen at flowers (white Asteraceae), and also found with full pollen loads.

A large purple-black bee with smoky-brown wings. On the wing in April and again in July and August. It nests in burrows in the soil. Associated mainly with coastal habitats such as landslips, rough clifftops and soft rock cliffs; less frequently inland on heathland or, occasionally, chalk grassland. Found mainly in southern England from W. Cornwall to Kent but north to S.E. Yorkshire. It has also been recorded from Caernarvonshire.

Sphecodes ferruginatus von Hagens HYM:Halictidae 1993 17

The Warren, Start Point.

No species account available.

Megachile leachella Curtis HYM:Megachilidae 1993 17

Silvery leaf-cutter bee

Moor Sands dunes.

A local species most frequent on the coast.

Trichoniscoides saeroeensis ISO:Trichoniscidae 1982 3

Recorded by D.E.Bolton at SX775352 and SX815369.

An exclusively coastal woodlouse, supralittoral living in soil or deep litter. Usually found under shingle and stones from the extreme high tide line to 5m above the high water mark.

Halophiloscia couchi ISO:Halophilosciidae 1982 3

Recorded by D.E.Bolton from Prawle Pt. to Langerstone Pt.

-- additional record -- 1977 2

Recorded at SX800370.

A 10 mm long pale pinkish woodlouse found in rock debris on boulder beaches, possibly with a preference for limestone. Found along the south coast from the Isle of Wight westwards, the north coast of Devon and South Wales.

Micaria romana L. Koch, 1866 ARA:Gnaphosidae 1993 17
Rock knolls above Peartree Cove.
An attractively marked spider, black with white markings, about 5mm long. It is restricted to warm sunny areas of short calcareous grassland near the south coast of England, often on cliff tops.

Aelurillus v-insignitus (Clerck, 1757) ARA:Salticidae 1993 17
Coast path near Moor Sands.
A jumping spider, mainly a southern and western species though there is a single record from Fife. Occurs mainly in dry sunny areas on heath and stony calcareous grassland.

Episinus truncatus Latreille, 1809 ARA:Theridiidae 1993 17
From two areas of head cliff.
A small dark tangle-web spider, up to 4mm in length, found mainly on mature heather and occasionally on coastal grassland. It spins a simple web low down under the overhanging branches of heather. It is confined to the south of England.

Local

Cochlicella acuta (Muller, 1774) MOL:Helicidae 1993 17
Dunes at Venerick's Cove.
A small snail, fawn coloured with red-brwon stripes. Found along the west and south coasts of Great Britain on dunes and rocky grassland. Common within this narrow habitat type.

Corizus hyoscyami (Linnaeus) HEM:Rhopalidae 1993 17
A brightly-coloured red and black bug of western and south-western coasts, from Sussex to Lancs. A polyphagous species, but storksbill (*Erodium cicutarium*) is certainly used as a foodplant.

Beosus maritimus (Scopoli) HEM:Lygaeidae 1993 17
A groundbug almost entirely confined to coastal dunes and cliffs in the southern counties of England and Wales, but with inland records in the south-west.

Cicindela campestris L., 1758 COL:Carabidae 1993 17
Common or Green Tiger Beetle
A large (15mm) tiger beetle, green with yellow speckles. It is found in areas with bare ground or sparse vegetation such as sandy heath, moorland, clay pits and quarry spoil heaps, always in sunny situations. Adults are active in early summer and will often take to the wing when disturbed. Both adults and larvae are predators on other invertebrates. The larvae form a burrow in the ground, often on or near paths. Widespread and common in some areas, very local in others.

Amara tibialis (Paykull,1798) COL:Carabidae 1993 17
4.5-5.5 mm long black oval ground beetle of dry sandy places with low vegetation such as sand dunes and heath. Phytophagous. Widespread but more local in the north.

Harpalus rufitarsis (Duftschmid,1812) COL:Carabidae 1993 17
8-11mm long black or steely-blue phytophagous ground beetle occurring on open sandy areas in England north to Norfolk and Lancs. Often abundant when found.

Cetonia aurata (L.,1758) COL:Scarabaeidae 1993 17
Rose beetle, Rose chafer

Large, metallic green chafer. Larvae in rotting vegetation.

Malachius viridis F.,1787 COL:Melyridae 1993 17
5mm long metallic green malachite beetle with red tips to the elytra. Predatory. Adults generally found on flowers, particularly of umbels - larvae probably living as predators in dead plant stems. Locally common in dry grasslands on sea cliffs and dunes in southern Britain. Mainly, but not exclusively coastal, particularly in the northern part of its range.

Tinodes maclachlani Kimmins, 1966 TRI:Psychomyiidae 1993 17
Throughout Britain, coastal and inland, but with large gaps in its distribution. Trickling rock faces by waterfalls and on cliffs, but also in small streams on a horizontal substratum of bedrock and stones. It seems to have no special water-type requirements. The National Recorder is not happy to give it special status anywhere, but it may be absent from many places in the lowlands. Note that the larval key on occasions incorrectly identifies this species as *T. assimilis*, and may do the reverse. The two may be captured as adults together, which compounds the problem.

Callophrys rubi LEP:Lycaenidae 1993 17
Green Hairstreak
-- additional record -- 1986 3
The larva usually feeds on *Vaccinium myrtillus* on moorlands, *Helianthemum nummularium* on calcareous grassland and any species of *Ulex* on southern acidic and neutral soils. Many other foodplants have been noted. Southern and western England, Wales and western Scotland, more local in eastern Britain.

Aricia agestis LEP:Lycaenidae 1985 3
Brown Argus
Recorded by D.J.Hopkins at Prawle Wood.
A butterfly of open grassland. The larva feeds on *Helianthemum* on chalky soils or *Erodium* on sandy soils. Southern and usually bivoltine.

Boloria selene LEP:Nymphalidae 1970 10
Small Pearl-bordered Fritillary
Widely distributed, though it has contracted westwards over the last century. Now mainly found in southern and western England, much of Wales and Scotland, and a few colonies still surviving in eastern and central England. The larva feeds on *Viola riviniana* in the south and *V. canina* in the north, though other *Viola* spp. are eaten. It frequents woodlands, damp meadows, coastal cliffs and moorland.

Boloria euphrosyne LEP:Nymphalidae 1985 3
Pearl Bordered Fritillary
Larvae feed on *Viola riviniana* in the south and on *V. palustris* in the north. Young violets growing in open sunny conditions are preferred. A woodland species that has undergone a marked decline during this century. Widespread, but mainly southwestern.

Argynnis aglaja LEP:Nymphalidae 1993 17
Dark Green Fritillary
-- additional record -- 1985 3
Recorded by D.J.Hopkins.
Frequents rough broken ground on fairly open unimproved grassland such as sea-cliffs, dunes, downland, heathland, moorland and large rides and clearings in woodlands. The larva feeds on *Viola* spp. Widely distributed especially in southwest England, Wales and Scotland.

Melanargia galathea LEP:Satyridae 1993 17
Marbled White

Frequents area of lightly cropped or ungrazed swards. Populations can occur on small areas of land. Larva on various grasses. Strongly south-western spreading as far north as the Yorkshire Wolds.

Hipparchia semele LEP:Satyridae 1984 3
Grayling
Recorded by T.Sleep.
Unimproved grassland on many soil types. Larva on several grasses including *Agrostis setacea*, *Festuca ovina* and *Ammophila arenaria*. Widespread on heathland and downland in southern England, largely confined to the coast in the north and in Scotland.

Odezia atrata LEP:Geometridae 1970 10
Chimney Sweeper
Recorded by A.H.Dobson.
A black moth which inhabits chalk downland, limestone hills and damp grassy meadows. The larva feeds on *Conopdium majus*. Very local in southern England and East Anglia, more widespread throughout the rest of mainland Britain.

Gnophos obscuratus LEP:Geometridae 1968 2
Annulet
Recorded by A.H.Dobson.
Heathland, moorland, downland and rocky places by the sea, the larva feeding on *Calluna*, *Lotus*, *Potentilla* and other low plants. Locally in coastal localities in the British Isles and on downland and heathland in southern England and Wales.

Lithosia quadra LEP:Arctiidae 1968 2
Four-spotted Footman
Recorded by A.H.Dobson.
The larva feeds on *Peltigera canina* and other lichens growing on the trunks and branches of *Quercus* and other trees. Resident populations exist from Hampshire to the Isles of Scilly. As an immigrant it has occurred in many parts of the British Isles.

Xylena vetusta LEP:Noctuidae 1968 3
Red Sword-grass
Inhabits mountain moorland, bogs, damp woodland, waste places, marshy areas etc. The larva feeds on a variety of low growing plants such as *Myrica gale*, *Rumex* spp. and *Iris pseudacorus*. South-west England, Wales, northern England, mainland Scotland, elsewhere in England it is rather local.

Tipula maxima Poda DIP:Tipulidae 1993 17
Britains largest cranefly. A spectacular species with whose wings are marked with dark brown and span 2 inches or more. Larvae are semi-aquatic in the margins of streams with shallow muddy edges, or in marshes. Adults are locally abundant, especially in woodland.

Limonia unicolor (Haliday) DIP:Tipulidae 1993 17
1979 9
-- additional record --
Recorded during a BENHS field meeting at Lannacombe Bay.
A cranefly, believed to breed in lichens on rocky coasts. Locally frequent on the coast around Britain.

Pedicia littoralis (Meigen) DIP:Tipulidae 1993 17
A fairly large yellow cranefly with aquatic larvae in streams, mainly where the bed is stony and semi-shaded. Mainly western.

Pedicia straminea (Meigen) DIP:Tipulidae 1993 17

A yellow cranefly with aquatic larvae in streams and seepages in woods. In some districts it has a strong affinity towards calcareous sites including tufa springs. Widespread but local.

Pedicia claripennis (Verrall) DIP:Tipulidae 1993 17
A cranefly found near small streams and boggy situations. Larvae are aquatic. Mainly northern and western in distribution.

Limnophila aperta Verrall DIP:Tipulidae 1993 17
A cranefly of acid, wet woodlands and carr. Larvae semi-aquatic.

Erioptera hybrida (Meigen) DIP:Tipulidae 1993 17
A cranefly of wet meadows with neutral or base-rich conditions. Larvae assumed to be in wet soil.

Ptychoptera lacustris Meigen DIP:Ptychopteridae 1993 17
A cranefly of streams and seepages in woodland and carr, larvae in saturated fine sediment at stream margins.

Beris morrisii Dale DIP:Stratiomyidae 1993 17
Small dark green Strationyid with pale legs found on woodland edges and around hedgerows in late May - June. Local in the south becoming scarce in the north.

Nemotelus notatus Zetterstedt DIP:Stratiomyidae 1993 17
Soldier fly of coastal saltmarshes where larvae live in brackish pools. Widespread but local.

Dysmachus trigonus (Mg) DIP:Asilidae 1993 17
A large hairy robber fly found locally in sandy localities throughout Britain - both on fixed dunes near the coast and on sandy heaths.

Dioctria baumhaueri Meigen DIP:Asilidae 1993 17
An assasin fly found in woodland edge and scrub. The larvae are believed to live in soil. A local species found mainly in southern Britain but with records as far north as Lancashire and Yorkshire.

Dioctria rufipes (Degeer) DIP:Asilidae 1993 17
A widespread but local robber fly, generally found in scrubland or woodland on light, sandy soils according to Skidmore. Larvae in soil; adults predatory. Cornwall north to Inverness; much more localised in the north of its range.

Empis albinervis Meigen DIP:Empididae 1993 17
Small empid fly. Larval biology unknown. Adults found around hedges and scrub where these border grassland. Local but fairly widespread in the southern half of Britain, becoming scarcer further north.

Hypophyllus crinipes (Staeger) DIP:Dolichopodidae 1993 17
Small metallic fly found in wet places. Widespread in Wales and England north to Yorks. Uncommon, but can be abundant locally.

Tachytrechus notatus (Stannius) DIP:Dolichopodidae 1993 17
Relatively large (for a Dolichopodid) metallic fly found in long vegetation. Widespread and not uncommon in the south. Local, but usually frequent where it occurs.

Liancalus virens (Scopoli) DIP:Dolichopodidae 1993 17
Lives on rocks with water running over them in fast flowing streams and around waterfalls.

Aphrosylus celtiber Haliday DIP:Dolichopodidae 1993 17

A local fly of rocky shores where the larvae are predatory on barnacles, and possibly limpets. May be very abundant in suitable localities.

Rhaphium brevicorne (Curtis) DIP:Dolichopodidae 1993 17
Medium sized metallic fly. Widespread and not uncommon.

Paragus haemorrhous Meigen DIP:Syrphidae 1993 17
An inconspicuous hoverfly which likes sparsely vegetated, sunny ground such as the margins of paths and landslips. The larvae are predatory on aphids. Widespread, and probably under-recorded.

Xanthogramma pedissequum (Harris) DIP:Syrphidae 1993 17
An attractive black and yellow hoverfly. Found in grassland and woodland rides, especiaaly where the turf is short or the soil exposed. Usually seen sitting on foliage or bare ground. Usually scarce. Southern Britain, with scattered records north to Lancs. The larvae are possibly predators of root aphids.

Cheilosia grossa (Fal.) DIP:Syrphidae 1993 17
A widespread but local hoverfly which mimics a furry bee. On the wing in early spring. It is associated with *Cirsium palustre C. vulgare* and *C. tenuifollius*, the larvae feeding in the stem bases. Probably under-recorded because it is active so early in the season.

Eristalinus aeneus (Scopoli) DIP:Syrphidae 1993 17
A hoverfly with most records from the coast of the southern half of Britain. Occurs on rocky shores as well as saltmarshes and larvae have been reared from rotting seaweed (almost certainly in pools, as the larvae are aquatic). Occasional specimens are found inland but these may be windblown strays. The adult insect is black with speckled eyes, similar to a bluebottle in size and shape and not immediately obvious as a hoverfly.

Conops ceriaeformis Meigen DIP:Conopidae 1939 14
Start Point, recorded K.G. Blair.
Yellow and black fly, the larvae are parasitic on aculeate Hymenoptera, though the exact host species are not known. A local species most frequently recorded in the south, though records extend north to Kincardine.

Myopa testacea (Linnaeus) DIP:Conopidae 1976 10
A G.M.Spooner record.
Parasitic fly. Host unknown. Scarce, but widely distributed.

Sicus ferrugineus (L) DIP:Conopidae 1993 17
Parasitic fly with larvae in the nests of various Bumblebees. Uncommon, but widely distributed. Very scarce in the north.

Lauxania cylindricornis (Fabricius) DIP:Lauxaniidae 1993 17
A small, shining black fly with conspicuously elongated antennae. Loaclly abundant in dry grassland and grass-heaths. Easily overlooked. Larvae of this family are saprophagous, often in rotting wood or vegetation and not infrequently reared from birds-nests. This species has apparently been reared from a witches broom on black spruce in Canada.

Tetanura pallidiventris Fallen DIP:Sciomyzidae 1993 17
Snail killing fly of damp woodlands. Found in wet, shady places where eggs are laid directly into the soft parts of living snails. Larvae have been found in *Discus rotundatus* and others. Pupates in the host's shell and is probably univoltine, overwintering in the pupal stage. Fairly frequent in the north, but scarce in the south.

Coremacera marginata (F.) DIP:Sciomyzidae 1993 17

A snail-killing fly noticeable through having wings darkened by a reticulate pattern. It occurs in dry habitats, especially on calcareous soils. Larvae are parasitoids of various snails, especially *Cochlicopa* and *Discus* spp. Each larva requires two or three snails to complete development.

Senotainia conica (Fallen) DIP:Sarcophagidae 1993 17
Flesh fly. The larvae live in the nests of sand wasps (Spheciidae). Adult females apparently oviposit on female wasps carrying prey. Widespread and can be abundant in sandy places where the hosts are common.

Limnophora olympiae DIP:Muscidae 1993 17
Fly found in wet places such as on the mud around ponds. Scotland, northern and western England. Local, but abundant where it occurs.

Chrysis angustula Schenck HYM:Chrysididae 1993 17
Blue green and red ruby-tail wasp. Parasitic on Ancistrocerus trifasciatus nesting in broken plant stems, and Crabro species, nesting in the soil. Widespread and common in southern England. Uncommon in the north.

Chrysis ruddii Shuckard HYM:Chrysididae 1993 17
A ruby-tailed wasp. Larvae are parasitoids and have been reared from the nests of the potter wasp *Ancistrocerus oviventris* which builds clay nests on walls or rocks. Adults found May to August, throughout Britain where its host is found.

Chrysis rutiliventris Linsenmaier HYM:Chrysididae 1993 17
-- additional record -- 1989 11
Three individuals recorded on 28th May 1989.
A beautiful metallic coloured cuckoo-wasp with a blue and green head and a red abdomen. A nest parasite of eumenid wasps of the genus *Ancistrocerus*. Locally moderately common, predominantly in coastal regions.

Chrysis viridula Linnaeus HYM:Chrysididae 1993 17
-- additional record -- 1990 11
Two adults recorded on 28th May 1989 and two more on 27th May 1990.
A brilliantly coloured cuckoo-wasp which is a nest parasite of the eumenid wasps *Odynerus spinipes* and *O.melanocephalus*; the adult oviposits during or just after the host larva has spun its cocoon; on emergence the larva consumes the host larva. Moderately common in England and Wales, most records coming from the south.

Tetramorium caespitum (Linnaeus) HYM:Formicidae 1993 17
Turf ant
A small, robust, black ant. Forms populous colonies on heaths, sand dunes and cliffs, nesting either under ground or under stones. Widespread but local.

Formica cunicularia Latreille HYM:Formicidae 1993 17
An ant related to the wood ants, though occurs on southern heaths and cliffs nesting under stones and in dry turf banks. Restricted to southern England from Cornwall to Lincolnshire.

Dipogon variegatus (L., 1758) HYM:Pompilidae 1993 17
A spider hunting wasp. Very local.

Priocnemis pusilla Schiodte, 1837 HYM:Pompilidae 1993 17
A spider-hunting wasp, usually found on lighter soils. Prey records have included Clubionid and Salticid spiders and, in France, there is a record of a nest in an "abandoned [aculeate?] burrow". This species is the most frequently encountered of a group of species which are very hard to distinguish. It has been found widely from southern England north to Cumbria.

Evagetes crassicornis (Shuckard, 1837) HYM:Pompilidae 1993 17

A spider-hunting wasp which is a brood parasite in the nest of other species in the same family. It is most often encountered in dry, sandy habitats where potential host species are plentiful. Suggested hosts are *Arachnospila anceps* and possibly *Anoplius nigerrimus*, although these have not been confirmed. Widespread but rarely numerous thoughout Britian.

Episyron rufipes (Linnaeus) HYM:Pompilidae 1993 17

Red legged spider wasp

A red and black or completely black spider-hunting wasp, 5.5-14mm in length. Associated with open sand, particularly sand dunes but also inland (e.g. the Brecks). Burrows are excavated in loose sand using specialised tarsal combs. They are usually stocked with orb-spiders, particularly *Meta* and *Araneus* spp. although *Lycosidae* can also be used. The prey are temporarily hung on a nearby plant whilst the burrow is dug. Widespread and locally common in coastal areas of southern Britain north to Yorks and Lancs. Less common in the north.

Ancistrocerus oviventris (Wesmael, 1836) HYM:Eumenidae 1993 17

1990 11

-- additional record --

Specimens recorded in the region of Langerstone Point on 28th May 1989 and 27th May 1990.

A potter wasp which builds nests on walls or rocks, the completed cells being plastered over and the nest then resembling a lump of mud. Prey usually tortricid moth caterpillars. Throughout Britain, including Ireland, apparently commoner in the north and west.

Astata boops (Schrank) HYM:Sphecidae 1990 11

Single male recorded on 27th May 1990.

Largish (9-13mm) solitary wasp which builds an underground nest with multiple cells stocked with the nymphs of Pentatomid bugs. Adults frquently seen on umbells. Southern England and Wales north to Pembroke and Norfolk.

Tachysphex pompiliformis (Panzer) HYM:Sphecidae 1993 17

Red and black solitary wasp nesting in light sandy soil. Predatory on grasshopper nymphs. Common in southern England, becoming more local in the north (Yorks and Lancs). Widespread north to Aberdeen.

Crabro cribrarius (Linnaeus) HYM:Sphecidae 1993 17

Slender bodied digger wasp

1990 11

-- additional record --

Single female recorded on 27th May 1990.

A large yellow and black solitary wasp which nests in sandy soil. Burrows are stocked with flies. Flies from a wide variety of families including Therevidae, Asilidae, Empididae, Syrphidae and Muscidae have been recorded as prey of this wasp. Widespread in open, sandy habitats in Britain north to Nairn and mid-Perthshire.

Crossocerus cetratus (Shuckard) HYM:Sphecidae 1993 17

1990 11

-- additional record --

Males recorded on 27th May 1990.

Small balck solitary wasp nesting in dead wood or sometimes in plant stems. Prey: small diptera & plant lice. Widespread throughout GB but very local.

Ammophila sabulosa (Linnaeus) HYM:Sphecidae 1993 17

Red banded sand wasp

1989 11

-- additional record --

Single male recorded on 28th May 1989.

Large (14-24mm), very elongate solitary wasp with a very slender gaster. The body is black apart from parts of the gaster which are red. Found on sandy heaths where they excavate a short burrow ending in a single cell

in sandy soil. An egg is laid and then the cell is stocked with paralised caterpillars, sometimes including sawfly caterpillars. Locally common in Wales and England north to Yorks and Cheshire.

Gorytes tumidus (Panzer) HYM:Sphecidae 1993 17
Black solitary wasp with red & white spots nesting in sandy places. Prey: cicadellid & cercopid hoppers. Southern species, N to Yorks, nowhere common.

Cerceris ruficornis (Fabricius) HYM:Sphecidae 1993 17
Large (10-13mm), black and yellow solitary wasp which makes a deep burrow in sand. Preys on weevils. Southern England north to Lincs. Local, but can be abundant where it occurs.

Colletes similis Schenck HYM:Colletidae 1993 17
-- additional record -- 1990 11
Single male recorded on 27th May 1990.
A mining bee perhaps most frequently found on calcareous grassland but also on heaths and in sandpits. Flowers visited include mayweeds (*Matricaria* sp.), wild carrot (*Daucus*) and yarrow (*Achillea*). Locally common.

Hylaeus hyalinatus Smith, F. HYM:Colletidae 1993 17
-- additional record -- 1990 11
Single male recorded on 28th May 1989 and both sexes recorded on 27th May 1990.
A small black solitary bee with a shining, almost hairless abdomen. Adults can be found visiting a wide range of flowers with a preference for bramble, Umbellifera and thistles. Nests in the hollow stem of plants such as bramble and docks.

Andrena labialis (Kirby) HYM:Andrenidae 1990 11
Single female recorded on 27th May 1990.
No species account available.

Andrena dorsata (Kirby) HYM:Andrenidae 1993 17
Solitary bee found both at the coast and inland where ist burrows are not aggregated and are difficult to find. Double brooded and visits a wide range of flowers. Widespread in southern England north to Lincs., but so far only recorded from Glamorgan in Wales.

Panurgus banksianus (Kirby) HYM:Andrenidae 1993 17
No species account available.

Sphecodes monilicornis (Kirby) HYM:Halictidae 1990 11
Two females recorded on 27th May 1990.
A solitary bee which is cleptoparasitic on other bees, laying its eggs in their nests. *Lasioglossum fulvicorne* and *L. fratellum* have been recorded as hosts. Widespread though uncommon.

Epeolus variegatus (Linnaeus) HYM:Anthophoridae 1993 17
No species account available.

Xysticus kochi Thorell, 1872 ARA:Thomisidae 1993 17
Crab spider. Reasonably common throughout Britain on bushes.

Metellina merianae (Scopoli, 1763) ARA:Metidae 1993 17
A well-patterned spider found in damp shaded places such as caves, cellars and rabbit holes and sometimes on trees. Adult in late spring and early summer. Common and widespread.

Neoscona adianta (Walckenaer, 1802) ARA:Araneidae 1993 17

An orb web spider which makes its web among heather and grasses in marshy places. Locally common in southern England but very rare in the north.

Common

Opilio saxatilis OPI:Phalangiidae 1980 3
Recorded by D.E.Bolton at Lannacombe.
Harvestman living in dry places such as heathland, downs, and particularly dunes.

Unknown

Culicoides cameroni Cambell & Pelha DIP:Ceratopogonidae 1993 17
No species account available.

Lasioglossum smeathmanellum (Kirby) HYM:Halictidae 1990 11
Single females recorded on 28th May 1989 and 27th May 1990.
No species account available.

Megachile maritima (Kirby) HYM:Megachilidae 1990 11
Coastal leaf-cutter bee
Single male recorded on 27th May 1990.
Solitary bee. Sandy places, mainly on dunes but occaisionally inland heaths. Local, N to Durham.

Habitat indicator species

The following are listed as indicators in Stubbs, A.E. (1982). 16

Volucella inflata (Fabricius) Diptera, Syrphidae Grade 1

Source of records

1 Alexander, K.N.A. (1982) Local and rare Coleoptera from Cornwall and Devon. Ent.mon.Mag. 118: 100.

2 BRC files *Address held by the ISR.*

3 Exeter Biological Records Centre *Address held by the ISR.*

4 Falk, S. (card index) () Card index of records of scarce British Diptera, compiled from many sources as part of a national review of British Diptera.

5 Heckford, Mr R.J. *Address held by the ISR.*

6 Kirby, Dr P. *Address held by the ISR.*

7 Merrett, P. (1983) Provisional account of British Red Data Book spiders. Unpublished report to the Nature Conservancy Council.

8 Murphy, F.M. (1971) *Callilepis nocturna* (Linnaeus) (Araneae, Gnaphosidae) newly found in Britain. *Entomologist's Gazette, 22*: 269-271.

9 NCC files, Taunton *Address held by the ISR.*

10 NCC files, Tavistock *Address held by the ISR.*

11 Roberts, Mr S.P.M. *Address held by the ISR.*

12 Skinner, B. (1984) Colour identification guide to moths of the British Isles. Viking Press, Harmondsworth. 267pp.

13 Skinner, Mr B. *Address held by the ISR.*

14 Smith, K.G.V. (1959) The distribution and habits of British Conopidae. *Transactions of the Society for British Entomology, 13*: 113-136.

15 Spooner, G.M. (1979) Presidential Address; A glimpse of the Devon environment. Rep. Trans. Devon Ass. Advmt. Sci. 111: 1-11.

16 Stubbs, A.E. (1982) Hoverflies as primary woodland indicators with reference to Wharncliffe Wood. *Sorby Record, 20*: 62-67. (Modified in 1986 by Stubbs & Falk, unpublished).

17 Stubbs, A.E. (1993) *1993 Terrestrial Invertebrate Survey of Prawle Point - Start Point SSSI, South Devon.* Unpublished report for EN South Devon. (Report with Martin Drake EN HQ).

18 Stubbs, Mr A.E. *Address held by the ISR.*

19 Turner, M. (1976) 28th report of the Entomological section. Rep. Trans. Devon Ass. Advmt. Sci. 108: 183-185.

20 Turner, M. (1979) 31st report of the Entomological section. Rep. Trans. Devon Ass. Advmt. Sci. 31: 182-188.

21 Williams, Mr R. *Address held by the ISR.*

The minimum status for a species to be included is:	Unknown
The maximum status for a species to be included is:	Indeterminate
Invertebrate index:	3320
Number of records listed:	165
Number of species listed:	137

APPENDIX G

ANNOTATED SPECIES ACCOUNTS FOR INTERESTING SPECIES TAKEN ON THIS SURVEY

The list below is based upon the annotated species accounts from RECORDER. Any modifications are in [ ]. In some cases the status is modified and I have omitted species that are doubtfully of Local status despite the ISR grading. Dr Mike Edwards has advised on the bees and wasps since the ISR list proved to be in need of revision.

SNAIL

Cochlicella acuta — Helicidae — Local

A small snail, fawn coloured with red-brwon stripes. Found along the west and south coasts of Great Britain on dunes and rocky grassland. Common within this narrow habitat type.

BUSH-CRICKET

Platycleis albopunctata — Tettigoniidae — Notable/Nb

Bush cricket found mainly on hard or soft rock cliffs or shingle in dry places with rough herbage, especially on south facing slopes, but rarely more than a few hundred meters from the coast. Mainly on the south coast of England, but also a few localities on the west coast north to the Lleyn peninsula.

COCKROACH

Ectobius panzeri — Pseudomopidae — Notable/Nb

A small cockroach, up to 9 mm. long, pale to dark brown. Largely southern and coastal, recorded from Anglesey round to
Norfolk. Most frequent on sand dunes, but also found in woods, heaths and grassland. A ground-dwelling species.

BUGS

Corizus hyoscyami — Rhopalidae — Local

A brightly-coloured red and black bug of western and south-western coasts, from Sussex to Lancs. A polyphagous species, but storksbill (Erodium cicutarium) is certainly used as a foodplant.

Dicranocephalus agilis — Stenocephalidae — Notable/Nb

A coastal species confined to the south and, particularly, the south-western counties of England and Wales. It feeds largely on Portland spurge, Euphorbia portlandica and sea spurge E. paralias, and in the extreme south-west can be found almost wherever there are good stands of either plant, both on cliffs and on dunes. Largely a ground insect.

Beosus maritimus — Lygaeidae — Local

A groundbug almost entirely confined to coastal dunes and cliffs in the southern counties of England and Wales, but with inland records in the south-west.

BEETLES

Cicindela campestris — Carabidae — Local

A large (15mm) tiger beetle, green with yellow speckles. It is found in areas with bare ground or sparse vegetation such as sandy heath, moorland, clay pits and quarry spoil heaps, always in sunny situations. Adults are active in early summer and will often take to the wing when disturbed. Both adults and larvae are predators on other invertebrates. The larvae form a burrow in the ground, often on or near paths. Widespread and common in some areas, very local in others.

Harpalus rufitarsis — Carabidae — Local

8-11mm long black or steely-blue phytophagous ground beetle occurring on open sandy areas in England north to Norfolk and Lancs. Often abundant when found.

Cetonia aurata — Scarabaeidae — Local

Large, metallic green chafer. Larvae in rotting vegetation.

Malachius viridis — Melyridae — Local

5mm long metallic green malachite beetle with red tips to the elytra. Predatory. Adults generally found on flowers, particularly of umbels - larvae probably living as predators in dead plant stems. Locally common in dry grasslands on sea cliffs and dunes in southern Britain. Mainly, but not exclusively coastal, particularly in the northern part of its range.

CADDIS

Tinodes maclachlani — Psychomyiidae — Local

Throughout Britain, coastal and inland, but with large gaps in its distribution. Trickling rock faces by waterfalls and on cliffs, but also in small streams on a horizontal substratum of bedrock and stones. It seems to have no special water-type requirements. The National Recorder is not happy to give it special status anywhere, but it may be absent from many places in the lowlands. Note that the larval key on occasions incorrectly identifies this species as T. assimilis, and may do the reverse. The two may be captured as adults together, which compounds the problem.

BUTTERFLIES

Callophrys rubi — Lycaenidae — Local

The larva usually feeds on Lotus and Helianthemum on moorlands, on calcareous grassland and any species of Ulex on southern acidic and neutral soils. Many other foodplants have been noted. Southern and western England, Wales and western Scotland, more local in eastern Britain.

Argynnis aglaja — Nymphalidae — Local

Frequents rough broken ground on fairly open unimproved grassland such as sea-cliffs, dunes, downland, heathland, moorland and large rides and clearings in woodlands. The larva feeds on Viola spp. Widely distributed especially in southwest England, Wales and Scotland.

Melanargia galathea Satyridae Local

Frequents area of lightly cropped or ungrazed swards. Populations can occur on small areas of land. Larva on various grasses. Strongly south-western spreading as far north as the Yorkshire Wolds.

MOTHS

Bembecia muscaeformis Sesiidae Na

Favours rocky coastal areas with an abundance of the larval foodplant Armeria maritima. Coastal, south-west England to Cumbria, also north-east Scotland.

Lasiocampa trifolii Lasiocampidae Na

Subsp. trifolii; Inhabits sandhills in southern and south-west England, parts of Wales and Lancashire, also on the inland heaths of Dorset. Subsp. flava; Shingle beaches in Kent and formerly East Sussex. The larva feeds on a variety of grasses and plants including broom, creeping willow, heather and bramble.

Cucullia chamomillae Noctuidae Local/La

Frequents roadside verges, waste ground, commons and cornfields, the larva feeding on Anthemis spp. and Matricaria spp. Throughout England, Wales and parts of southern Scotland, very local elsewhere in Scotland ranging nort to Inverness-shire.

Limonia aquosa Tipulidae Notable/Nb

A cranefly found near waterfalls and seepages over vertical rock faces. Biology unknown, but larvae possibly develop in wet moss. Widely scattered but extremely local, northern and western Britain.

Limonia goritiensis Tipulidae RDB3

A cranefly found on seepages on coastal cliffs and rock faces. Biology unknown, although larvae probably develop in damp soil or moss beside such seepages. Widely scattered but very local. Found mainly in the north and west, but the localities are very dispersed.

Limonia unicolor Tipulidae Local

A cranefly, believed to breed in lichens on rocky coasts. Locally frequent on the coast around Britain.

Thaumastoptera calceata Tipulidae Notable/Nb

Cranefly, larvae develop in wet leaf litter in seepages in alder carr, where they are case-makers. Adults recorded from May to July. Recorded in England as far north as Yorks., also Wales.

Pedicia littoralis Tipulidae Local

A fairly large yellow cranefly with aquatic larvae in streams, mainly where the bed is stony and semi-shaded. Mainly western.

Pedicia straminea Tipulidae Local

A yellow cranefly with aquatic larvae in streams and seepages in woods. In some districts it has a strong affinity towards calcareous sites including tufa springs. Widespread but local.

Erioptera hybrida Tipulidae Local

A cranefly of wet meadows with neutral or base-rich conditions. Larvae assumed to be in wet soil.

Thaumalea verralli Thaumaleidae Unknown (Local)

<No ISR species account available>

A species with larvae living in the water film on wet rock surfaces, as at seepages and in the splash zone of waterfalls.

Thalassomya frauenfeldi Chironomidae Unknown (?Local)

<No species account available>

An inter-tidal marine midges of rocky coasts, possibly with an association with Enteromorpha habitat but the ecology is poorly known.

Nemotelus notatus Stratiomyidae Local

Soldier fly of coastal saltmarshes where larvae live in brackish pools. Widespread but local. [GB has at least 50% of European population].

Dysmachus trigonus Asilidae Local

A large hairy robber fly found locally in sandy localities throughout Britain - both on fixed dunes near the coast and on sandy heaths.

Dioctria baumhaueri Asilidae Local

An assasin fly found in woodland edge and scrub. The larvae are believed to live in soil. A local species found mainly in southern Britain but with records as far north as Lancashire and Yorkshire.

Dioctria rufipes Asilidae Local

A widespread but local robber fly, generally found in scrubland or woodland on light, sandy soils according to Skidmore. Larvae in soil; adults predatory. Cornwall north to Inverness; much more localised in the north of its range.

Empis albinervis Empididae Local

Small empid fly. Larval biology unknown. Adults found around hedges and scrub where these border grassland. Local but fairly widespread in the southern half of Britain, becoming scarcer further north.

Dolichopus signifer Dolichopodidae pRDB2

<No ISR species account available>

Adults occur on pebbles where small streams run out onto beaches and where cliff seepages form streamlets over rocks or pebbles. Extremely finicky as to precise requirements.

Hypophyllus crinipes Dolichopodidae Local

Small metallic fly found in wet places. Widespread in Wales and England north to Yorks. Uncommon, but can be abundant locally.

Tachytrechus notatus Dolichopodidae Local

Relatively large (for a Dolichopodid) metallic fly found in long vegetation. Widespread and not uncommon in the south. Local, but usually frequent where it occurs.

Liancalus virens Dolichopodidae Local

Lives on rocks with water running over them in fast flowing streams and around waterfalls.

Thinophilus ruficornis Dolichopodidae Notable/Nb

A salt marsh fly found mainly in the west. Locally abundant.

Aphrosylus celtiber Dolichopodidae Local

A local fly of rocky shores where the larvae are predatory on barnacles, and possibly limpets. May be very abundant in suitable localities.

Rhaphium brevicorne Dolichopodidae Local

Medium sized metallic fly. Widespread and not uncommon.

Paragus haemorrhous Syrphidae Local

An inconspicuous hoverfly which likes sparsely vegetated, sunny ground such as the margins of paths and landslips. The larvae are predatory on aphids. Widespread, and probably under-recorded.

Xanthogramma pedissequum Syrphidae Local

An attractive black and yellow hoverfly. Found in grassland and woodland rides, especiaaly where the turf is short or the soil exposed. Usually seen sitting on foliage or bare ground. Usually scarce. Southern Britain, with scattered records north to Lancs. The larvae are possibly predators of root aphids.

Cheilosia grossa Syrphidae Local

A widespread but local hoverfly which mimics a furry bee. On the wing in early spring. It is associated with Cirsium palustre, C. vulgare and C. tenuifollius, the larvae feeding in the stem bases. Probably under-recorded because it is active so early in the season.

Eristalinus aeneus Syrphidae Local

A hoverfly with most records from the coast of the southern half of Britain. Occurs on rocky shores as well as saltmarshes and larvae have been reared from rotting seaweed (almost certainly in pools, as the larvae are aquatic). Occasional specimens are found inland but these may be windblown strays. The adult insect is black with speckled eyes, similar to a bluebottle in size and shape and not immediately obvious as a hoverfly.

Eumerus sabulonum Syrphidae Notable/Nb

A small hoverfly belonging to a genus in which the larvae develop in the bulbs of plants although the host of this species is unknown. Usually found in sandy, coastal places such as dunes, also known from cliff-tops and there is an inland record from a sandy river bank. South-western England and Wales with a single old record from south-west Scotland. Very rare with few recent records.

Eumerus strigatus Syrphidae Local

[A hoverfly that is mainly found in fens and other wet ares; may breed in Iris rhizomes.]

Lauxania cylindricornis Lauxaniidae Local

A small, shining black fly with conspicuously elongated antennae. Locally abundant in dry grassland and grass-heaths. Easily overlooked. Larvae of this family are saprophagous, often in rotting wood or vegetation and not infrequently reared from birds-nests. This species has apparently been reared from a witches broom on black spruce in Canada.

Tetanura pallidiventris Sciomyzidae Local

Snail killing fly of damp woodlands. Found in wet, shady places where eggs are laid directly into the soft parts of living snails. Larvae have been found in Discus rotundatus and others. Pupates in the host's shell and is probably univoltine, overwintering in the pupal stage. Fairly frequent in the north, but scarce in the south.

Coremacera marginata Sciomyzidae Local

A snail-killing fly noticeable through having wings darkened by a reticulate pattern. It occurs in dry habitats, especially on calcareous soils. Larvae are parasitoids of various snails, especially Cochlicopa and Discus. Each larva requires two or three snails to complete development.

Canace nasica Canacidae Unknown (Local)

<No species account available>

A small inter-tidal marine fly. Fully ecological range uncertain but found at spreads of Enteromorpha on rocks.

Lipara rufitarsis Chloropidae Notable/Nb

A small fly found in wetlands where Phragmites beds occur. Larvae develop in the stems of Phragmites causing a narrow and inconspicuous gall. Very local in southern England.

Senotainia conica Sarcophagidae Local

Flesh fly. The larvae live in the nests of sand wasps (Spheciidae). Adult females apparently oviposit on female wasps carrying prey. Widespread and can be abundant in sandy places where the hosts are common.

Limnophora olympiae Muscidae Local

Fly found in wet places such as on the mud around ponds. Scotland, northern and western England. Local, but abundant where it occurs.

ACULEATES (bees, wasps & ants)

Chrysis ruddii Chrysididae Local

A ruby-tailed wasp. Larvae are parasitoids and have been reared from the nests of the potter wasp Ancistrocerus oviventris which builds clay nests on walls or rocks. Adults found May to August, throughout Britain where its host is found.

Chrysis rutiliventris Chrysididae Local

A beautiful metallic coloured cuckoo-wasp with a blue and green head and a red abdomen. A nest parasite of eumenid wasps of the genus Ancistrocerus. Locally moderately common, predominantly in coastal regions.

Chrysis viridula Chrysididae Local

A brilliantly coloured cuckoo-wasp which is a nest parasite of the eumenid wasps Odynerus spinipes and O.melanocephalus; the adult oviposits during or just after the host larva has spun its cocoon; on emergence the larva consumes the host larva. Moderately common in England and Wales, most records coming from the south.

Tetramorium caespitum Formicidae Local

A small, robust, black ant. Forms populous colonies on heaths, sand dunes and cliffs, nesting either under ground or under stones. Widespread but local.

Formica cunicularia Formicidae Local

An ant related to the wood ants, though occurs on southern heaths and cliffs nesting under stones and in dry turf banks. Restricted to southern England from Cornwall to Lincolnshire.

Priocnemis pusilla Pompilidae Local

A spider-hunting wasp, usually found on lighter soils. Prey records have included Clubionid and Salticid spiders and, in France, there is a record of a nest in an "abandoned [aculeate?] burrow". This species is the most frequently encountered of a group of species which are very hard to distinguish. It has been found widely from southern England north to Cumbria.

Episyron rufipes Pompilidae Local

A red and black or completely black spider-hunting wasp, 5.5-14mm in length. Associated with open sand, particularly sand dunes but also inland (e.g. the Brecks). Burrows are excavated in loose sand using specialised tarsal combs. They are usually stocked with orb-spiders, particularly Meta and Araneus spp. although Lycosidae can also be used. The prey are temporarily hung on a nearby plant whilst the burrow is dug. Widespread and locally common in coastal areas of southern Britain north to Yorks and Lancs. Less common in the north.

Crossocerus cetratus Sphecidae Local

Small balck solitary wasp nesting in dead wood or sometimes in plant stems. Prey: small diptera & plant lice. Widespread throughout GB but very local.

Podalonia hirsuta Sphecidae Notable/Nb

A southern species burrowing into sand and provisioning its nest with caterpillars.

Gorytes tumidus Sphecidae Local

Black solitary wasp with red & white spots nesting in sandy places. Prey: cicadellid & cercopid hoppers. Southernspecies, N to Yorks, nowhere common.

Cerceris ruficornis Sphecidae Local [PRDB3]

Large (10-13mm), black and yellow solitary wasp which makes a deep burrow in sand. Preys on weevils. Southern England north to Lincs. Local, but can be abundant where it occurs.

Andrena fulvago Andrenidae Na

Widespread but extremely local solitary bee nesting in small but very dense colonies in sandy soil.

Panurgus banksianus Andrenidae Local

<No species account available>

Lasioglossum lativentris Halictidae Unknown [Local]

<No ISR species account available>

[A solitary bee currently regarded as Local]

Sphecodes ferruginatus Halictidae Notable/Nb

<No species account available>

[Widespread,even extending north to Elgin, but very scarce. A cuckoo parasite, probably of the bees Lasioglossum fulvicorne and L. fratellum.]

Sphecodes rubicundus Halictidae Na

<No species account available>

[A southern cuckoo bee, a parasite of the bee Andrena labialis.]

Megachile leachella Megachilidae Notable/Nb

A local species most frequent on the coast.

Nomada sexfasciata Anthophoridae RDB1

A cuckoo bee. This is a nest parasite of the mining bee Eucera longicornis (and possibly E.tuberculata). A rare and declining species, presently only known from South Devon though has previously been reported from Hampshire, Surrey, Sussex and Gloucestershire.

Eucera longicornis Anthophoridae Na

Bee with exceptionally long antennae in the male. Ground nesting. Uncommon.

Bombus humilis Apidae [Local A]

[A carder bumble bee that has greatly declided and is predominantly south-western]

Psithyrus barbutellus Apidae [Local]

[A cuckoo bumble bee that has declined to Local status]

SPIDERS

Callilepis nocturna Gnaphosidae RDB1

The only British site known to date (1986) for this spider is near East Prawle, Devon. The small but well-established colony is found on a steep sandy bank sparsely vegetated with Carex and broad-leaved herbs below sea cliffs. Adults have been found in May and June. [More locations in SSSI now known]

Micaria romana Gnaphosidae Notable/Nb

An attractively marked spider, black with white markings, about 5mm long. It is restricted to warm sunny areas of short calcareous grassland near the south coast of England, often on cliff tops.

Aelurillus v-insignitus Salticidae Notable/Nb

A jumping spider, mainly a southern and western species though there is a single record from Fife. Occurs mainly in dry sunny areas on heath and stony calcareous grassland.

Episinus truncatus Theridiidae Notable/Nb

A small dark tangle-web spider, up to 4mm in length, found mainly on mature heather and occasionally on coastal grassland. It spins a simple web low down under the overhanging branches of heather. It is confined to the south of England.

Neoscona adianta Araneidae Local

An orb web spider which makes its web among heather and grasses in marshy places. Locally common in southern England but very rare in the north.

APPENDIX H

CONSOLIDATED LIST OF RED DATA BOOK, NOTABLE & LOCAL SPECIES

This list draws together the three main data sets for the SSSI. The RDB and Notable species are underlined. I have introduced the status Local A for species which currently occur in no more than 200 10km squares in GB (Some other local species may yet qualify). The status categories in some cases need possible revision as indicated. Whilst it would be neat to take the ISR listings as they stand, in some cases species need to be upgraded in the light of the latest concern for rapidly declining status. Since such cases deserve attention, it is only fair to also flag those species whose status may need further assessment for down grading. For the aculeates the statuses reflect discussions with Dr Mike Edwards; some species clearly qualify for revision but in other cases this is not so or uncertain. Only the ISR team in Peterborough can formalise changes so here I am doing no more than indicating species that require review.

* indicates species that were just outside the SSSI boundary but could equally yet be found within the site.

	ISR Status	Change?	ISR	Spooner	Stubbs	
		SNAIL				
Cochlicella acuta	Local	Local A				x
		BUSH CRICKET				
Platycleis albopunctata	Nb		x		x	
		COCKROACH				
Ectobius panzeri	Nb				x	
		BUGS				
Corizus hyoscyami	Local				x	
Dicranocephalus	Local				x	
Beosus maritimus	Local				x	
Capsodes sulcatus	Nb		x			
		BEETLES				
Cicindela campestris	Local		x		x	
Amara tibialis	Local				x	
Harpalus tenebrosus	Na		x			
Harpalus rufitarsis	Local				x	
Cetonia aurata	Local		x		x	
Malachius viridis	Local				x	
Otiorhynchus ligustici	RDB2		x			
		STYLOPS				
Stylops atterimus	Nb		x			
		CADDIS				
Tinodes maclachlani	Local				x	
		BUTTERFLIES				
Plebejus argus	Nb		x			
Aricia agestis	Local		x			
Callophrys rubi	Local		x		x	

Boloria euphrosyne	Local	Nb?	x	
Boloria selene	Local		x	
Argynnis aglaja	Local		x	x
Hipparchia semele	Local	Local A?	x	
Melanargia galathea	Local			x
		MOTHS		
Bembecia muscaeformis	Na		x	x
Bembecia scopigera	Nb		x	
Lasiocampa trifolii	Na		x	x
Eilema caniola	Nb		x	
Lithosia quadra	Local		x	
Callimorpha dominula	Nb		x	
Agrostis trux	Nb		x	
Leucochlaena oditis	RDB3		x	
Hadena luteago barretti	Na		x	
Lithophane socia	Nb		x	
Mythimna l-album	Nb		x	
Mythimna putrescens	Na		x	
Xylena vetusta	Local		x	
Cucullia chamomillae	Local	Local A		x
Catarhoe rubidata	Nb		x	
Gnophos obscuratus	Local		x	
Odezia atrata	Local		x	
		FLIES		
CRANEFLIES				
Tipula maxima	Local	Common		x
Limonia aquosa	Nb			x
Limonia goritiensis	RDB3			x
Limonia unicolor	Local			x
Thaumastoptera calceata	Nb			x
Pedicia littoralis	Local			x
Pedicia straminea	Local			x
Pedicia claripennis	Local	Common		x
Limnophila aperta	Local	Common		x
Erioptera hybrida	Local			x
*Gonomyia lateralis	Local			x
Ptychoptera lacustris	Local	Common		x
OTHER NEMATOCERA				
Thaumalea verralli	Unknown	Local		x
Thalassomya frauenfeldi	Unknown	Local		x
SOLDIER FLIES				
Beris morrisii	Local	Common		x
Nemotelus notatus	Local			x
ROBBER FLIES				
Dysmachus trigonus	Local			x
Diocria baumhaueri	Local			x
Dioctria rufipes	Local			x
ASSASSIN FLY				
Empis albinervis	Local			x
LONG_FOOTED FLIES				
Dolichopus signifer	RDB2			x
Hypophyllus crinipes	Local			x
Tachytrechus notatus	Local			x
Liancalus virens	Local			x
Thinophilus ruficornis	Nb			x
Aphrosylus celtiber	Local			x

Rhaphium brevicorne	Local				x
HOVERFLIES					
Paragus haemorrhous	Local				x
Xanthogramma pedissequum	Local				x
*Chrysotoxum elegans	RDB3				x
Cheilosia grossa	Local				x
Eristalinus aeneus	Local				x
Eumerus sabulonum	Nb				x
Eumerus strigatus	Local				x
CONOPID FLIES (aculeate parasites)					
Conops ceraeiformis	Local		x		
Sicus ferrugineus	Local	Common			x
Myopa extricata	RDB3		x		
Myopa testacea	Local	Nb?	x		
OTHER FLIES					
Lauxania cylindricornis	Local				x
Tetanura pallidiventris	Local				x
Coremacera marginata	Local				x
Canace nasica	Unknown	Local			x
Lipara rufitarsis	Nb				x
Senotainia conica	Local				x
Limnophora olympiae	Local				x

ACULEATES

CHRYSIDAE (cuckoo-wasps)					
ruddii	Local	Local A		x	x
rutiliventris	Local			x	x
viridula	Local			x	x
SAPYGIDAE					
Sapyga quinquepunctata	Local			x	
FORMICIDAE (ants)					
Formica cunicularia	Local				x
Leptothorax tuberum	Na		x		x
Tetramorium caespitum	Local				x
POMPILIDAE (spider wasps)					
Agenioideus cinctellus	Local	Common		x	
Arachnospila anceps	Local	Common		x	
Anoplius nigerrimus	Local	Common		x	
Cryptocheilus notatus	RDB2		x	x	
Dipogon variegatus	Local	Common		x	x
Episyron rufipes	Local			x	x
Evagetes crassicornis	Local	Common		x	x
Priocnemis pusillus	Local			x	x
EUMENIDAE (mason wasps)					
Euodynerus quadrifasciatus	RDB2		x	x	
SPHECIDAE (burrowing wasps)					
Ammophila sabulosa	Local	Common		x	x
Astata boops	Local	Common		x	
Cerceris arenaria	Local	x		x	x
C. ruficornis	Local	PRDB3		x	x
Crabro cribrarius	Local	Common		x	x
Crossocerus cetratus	Local				x

C. dimidiatus	Common	Local in S		x	
Ectemnius sexcinctus	Nb			x	
Gorytes tumidus	Local			x	x
Nysson trimaculus	Nb			x	
Podalonia hirsuta	Nb			x	x
Tachysphex pompiliformis	Local	Common		x	x
BEES					
COLLETIDAE					
Colletes similis	Local	Common		x	x
Hylaeus brevicornis	Local	Common		x	
H. communis	Local	Common		x	
H. hyalinatus	Local	Common		x	x
ANDRENIDAE					
Andrena angustior	Local	Local A		x	
A. dorsata	Local	Common			x
A. fulago	Na				x
A. labiata	Na			x	
A. labialis	Local			x	
A. pilipes (ex. carbonaria)	Nb		x	x	x
A. synadelpha	Local	Local A		x	
A. trimmerana	Nb			x	
L. lativentris	Unknown	Local			x
L. xanthopum	Nb			x	
Panurgus banksianus	Local				x
Sphecodes crassus	Nb			x	
S. ferruginatus	Nb			x	x
S. monilicornis	Local	Common		x	
S. rubicunda (ex.ruficrus)	Na			x	x
MELITTIDAE					
Melitta leporina	Local			x	
MEGACHILIDAE (leaf-cutters)					
M. leachella	Nb				x
Stelis punctulatissima	Nb			x	
ANTHOPHORIDAE					
Eucera longicornis	Notable A			x	x
Melecta albifrons	Local			x	
N. sexfasciata	RDB1			x	x
N. sheppardana	Common	Local		x	
N. striata	Local			x	
APIDAE (bumble bees)					
B. humilis	Local	Local A		x	
B. jonellus	Local			x	
Psithyrus barbutellus	Common	Local		x	
		SPIDERS			
Callilepis nocturna	RDB1		x		x
Micaria romana	Nb				x
Xysticus kochi	Local	Common			x
Euphrys herbigrada	Na		x		
Aelurillus v-insignitus	Nb				x

Episinus truncatus	Nb			x
Metellina merianae	Local	Common		x
Neoscona adianta	Local			x

CENTIPEDE

Lithobius tricuspis	Nb		x

WOODLICE

Halophiloscia couchi	Nb		x
Trichoniscoides saeroensis	Nb		x

The following table gives an overview of species totals (using present ISR statuses).

	RDB1	RDB2	RDB3	Na	Nb	L	Stubbs Extras	RDB+N	Total
snail						1(La)	1 L		1
bush cricket					1			1	1
cockroach					1		1 Nb	1	1
bugs					1	3	3 L	1	4
beetles		1		1		5	5 L	2	7
stylops					1			1	1
caddis						1	1 L		1
butterflies					1	7		1	8
moths			1	3	7	4(1La)	1 (La)	11	15
flies		1	3		5	33	1 RDB2 2 RDB3 5 Nb 31 L	9	42
aculeates	1	2		5	9	36	1 Na 1 Nb 5 L	17	53
spiders	1			1	3	3	3 Nb 3 L	5	8
centipede					1			1	1
woodlice					2			2	2
	2	4	4	10	32	93	1 RDB2 2 RDB3 1 Na 10 Nb 49 L	53	146

APPENDIX I

PLANTS OF VALUE

This list is not comprehensive but it draws attention to various plants of significance to insects that were seen on the SSSI.

A major reason for including the list is to provide some guidance as to which plants to encourage in farmed fields, in coastal path corridors and in programmes to graze rougher ground.

It is essential to appreciate four fundamental points as regards flower resources on a major aculeate site.

a) A varied flora is needed since different species of aculeate have a preference for different flowers (flowers and their pollinators have evolved in this direction). Aculeates may even obtain pollen and nectar from different species of flowers.

b) Because the aculeate fauna has a long season (including a seasonal succession of species and long season bumble bees), the site needs to provide a long seasonal succession of flowers.

c) Even common plant species, including weeds, are of high value.

d) It is not the nominal length of plant list that matters, it is the quantity of flowers that has a strong bearing on the carrying capacity of the site for aculeates. In other words the more flowers, the more aculeates. Though the equation is more complicated than this, with factors such as nest site availability and micro climate coming into play, the basic principle remains. Shelter and micro-climate are very important, affecting the number of usable hours for foraging, so flowers in windy exposed conditions may be too energy demanding compared with those that can be efficiently reached and exploited in sheltered situations.

The wildlife quality of the SSSI, including the viability of aculeate populations, can be enhanced by:-

-- increasing the flower resources

-- increasing shelter by making more hedges

-- safeguarding aculeate nesting areas on cliffs, on foot paths and other bare ground, and along hedgerows and other situations.

TREES AND WOODY SHRUBS

Hawthorn Large phytophagous fauna, especially moths. Major nectar source for Spring bees, hoverflies and various other insects including flower visiting beetles.

Sloe Large phytophagous fauna, especially moths. Major nectar source for early Spring bees, hoverflies and various other insects.

Sycamore Good nectar source for Spring bees, also hoverflies. (Poor for foliage fauna though aphids support predatory hoverfly larvae)

OTHER SHRUBS

Gorse (all species) Flowers important to long-tongued bumble bees, with long flower period including peak demand. Few phytophagous insects but 3D architecture of high value to spiders.

Bramble A very important plant. Major mid summer flower resource for bees and many other insects. Dead stems used to construct nest burrows by various aculeates. Limited foliage fauna but important for shelter. Structure provides scaffold for spider webs.

Heather Calluna vulgaris and Erica cinerea have much in common as well as some differences, so both should be encouraged. Very important flower resource for bees. Good foliage fauna, especially on more mature plants but silver-studded blue butterfly needs youngish growth. Heather is one of the foodplants of the Local moth Gnophos annulatus. Good spider habitat.

HERBACEOUS PLANTS

Compositae

This group of plants is very important as a flower resource for aculeates and many other insects. It is a major plant family for picture-winged tephritid flies that breed in flower/seed heads, supporting a large specialist parasitic hymenoptera fauna (some species remain in the seed heads until the following summer, a constraint that requires rotational management..

The absence of coltsfoot, a major flower for early Spring bees on landslipped coasts, implies great importance on other flowers and this needs evaluating on the ground in March/April. Clearly sloe is of great importance in April. The visitors to most composites need long tongues (or are small so that they can squeeze in), including butterflies, moths and bumble bees.

All species of hawkweed, hawk-bit, dandelion and similar types of flower are of value.

Common Cats-ear (Hypochaeris radicata) Important flowers for bees. It was observed that the local bee Panurgus banksianus was strongly associated with these flowers. The common picture-winged fly Tephritis vespertina, recorded here,is known to breed in the flower heads.

Chamomile & Mayweed Tripleurosperum inodoratum is locally plentiful on Head cliffs. The flowers are good for aculeates and other insects such as hoverflies. A small patch of Matricaria recutita in an arable field corner had larvae of the Local A moth Cucullia chamomillae, a species which also utilises T. inodoratum. This group of plants should be encouraged as agricultural weeds.

Ragwort (Senecio species) The larger species such as S.jacobea are especially important as a mid summer flower resource. There should be some dependant fauna, including picture-winged flies breeding in flower heads of both large and small ragwort species

Saw-wort (Serratula tinctoria) I found a plant in the rough vegetation above Ballsaddle cliff so perhaps it is more widespread along this coast. Two RDB picture-winged tephritid flies breed in the seed heads so this is a faunal element to look out for.

Thistles (Carduus and Circium) Though so readily dismissed as weeds, the various species are of considerable value for flower visiting insects. There is also quite a varied fauna on the leaves, in flower/seed heads and, stems and roots (eg picture-winged flies and their special parasites). The seaside thistle Carduus tenuiflorus is important as the probable food plant of the rarely recorded Notable hoverfly Cheilosia mutabilis, and a larva of the local hoverfly C. grossa in the stem base/root (a new host record). This thistle was seen to be locally plentiful in Harris's Beach fields but was being swiped which was destined to eliminate the fauna.

Umbelliferae

The flowers tend to provide a broad easy platform, with nectar and pollen readily accessible. Hence even insects with little adapted mouthpart and cumbersome heavy beetles can utilise these flowers. They are important to aculeates, especially the smaller species and solitary wasps. Bumble bees also make extensive use of they more robust umbellifers. Butterflies are less important visitors but nocturnal moths can be attracted.

Carrot (Daucus carota) Used by many insects, especially bees. Locally common on some stretches of Head cliff but could also be encouraged as a weed in farmed areas.

Hogweed (Heracleum sphondylium) Very useful, especially in June/July, and if some is cut early, flowers also flourish latter. Bumble bees and other aculeates (including burrowing wasps), hoverflies and beetles.

Hemlock Water-dropwort (Oenanthe crocata) An excellent all-purpose umbellifer. Occurs abundantly by the stream NW of Great Mottiscombe Sand, but much of it is heavily grazed on the west side of the stream.

Pig-nut (Conopodium majas) The ISR includes the Local moth Odezia atrata which feeds on this plant.

Wild Parsnip (Pastinaca sativa) None was noted on the site but, if accepted as native to the area, it would be a valuable plant to encourage in the farmed.fields. It is very popular with a wide variety of insects and flowers in late July/August when the other main umbellifers are largely over.

Leguminosae

The flowers are designed for long-tongued insects. They are important for bees in particular and are visited by some of the butterflies.

There are many specialist phytophagous insects, especially beetles (eg weevils and bruchids) and various bugs and moths. The bug Capsodes sulcatus is on the ISR list, which uses various legumes.

Selected examples are given below:

Kidney Vetch (Anthyllis vulneraria) Very useful for Eucera bees. The RDB2 weevil Otiorhynchus ligustici breed in the roots. This plant is patchy but locally common on the Head cliffs. The ISR includes the Notable moth Bembecia scopigera which breeds in the roots. the plant is very susceptible to grazing (especially sheep) but could be encouraged in farmed fields where grazing was not intended.

Birds-foot Trefoil (Lotus spp.) Lotus corniculatus is present in various grassland locations on the site (a few are shown on the maps) and also in places on Head cliff talus. The Start Farm valley Lotus turf is probably ideal. The flowers are used by bees. The ISR includes the Notable moths Bembecia scopigera which breeds in the roots and Scotopteryx bipunctaria which feeds on the leaves. The Local moth Gnophos annulatus includes Lotus among its food plants. Presumably the common blue butterfly and burnet moths are foliage feeders on this site. It is a useful plant for enriching grassland in the farmed fields; the clearwing moth can cope with close grazing but the foliage feeders require less intense treatment.

Lotus pedunculatus was seen at the cliff seepages in Great Mottiscombe Bay. One of the dwarf species is abundant on a steep Head slope near Start Point (see map)

Clovers (Trifolium spp.) These are very useful for bees, especially the larger clovers for bumble bees. The improved grassland has Trifolium repens but there is clearly scope to increase the quantity and range of species.

Other Herbs

This list is highly selective. Note that Labiatae and Scrophulariaceae flowers especially adapted for long-tonged insects, primarily bees. Hence if there are weeds such as Lamium purpureum (important for bumble bees in early Spring) in the farmed fields and hedgerows, these should be encouraged.

Bedstraw (Galium spp.) The flowers can be quite useful to small bees and to some extent hoverflies. The phytophagous fauna can be of interest. The ISR list includes the Notable B bug Capsodes sulcatus and the Notable B moth Catarhoe rubidata (Ruddy Carpet moth) Larvae of the latter are said to use G. mollugo and G. verum, but presumably plus some other species).

Bladder Campion (Silene maritima) Larvae of the Notable A Hadena luteago barretii (Barret's Marbled Coronet moth) feed in roots.

Bloody Crane's-bill (Geranium sanguineum) This plant occurs locally and is especially prolific above Black Cove. It is a good bee flower and Spooner notes visits by Eucera bees.

Madder (Rubia peregrina) This plant was abundant along the cliff top hedge west of Lannacombe Beach and ought to prove equally common at various other hedge and scrub edge locations..The special moth of this plant, Mecyna asinalis (Notable) is not recorded but ought to occur here.

Mint (Mentha) M. aquatica was seen along the stream feeding into the NE corner of Great Mottiscombe Sand. The flowers are useful for late summer bees and long-tounged hoverflies.

Stonecrop (Sedum spp.) White stonecrop (one or two species?) is locally plentiful on rock knolls and on the cliffs. The flowers are useful for small bees and other insects. It is very likely the Notable hoverfly Eumerus sabulonum is using these flowers though I did not see any feeding activity.

Sheeps-bit (Jasione montana) Of use to some of the small bees. Mainly seen on rock knolls.

Squill (Scilla spp.) Though I could not find any surface evidence of the species I assume one or both species occur on short maritime turf, especially close to some the rock knolls. On circumstantial evidence, it is likely that the Notable hoverfly Eumerus sabulonum is breeding in the bulbs of Scilla verna, just possibly S autumnalis as well.

Rock Rose (Helianthemum) The ISR list includes Aricia agestis (Brown Argus butterfly) Feeds on rock rose (also Erodium). I did not see rock rose but if present, it is of value.

Thrift (Armeria maritima) Locally plentiful, seen mainly on Head cliffs and top beach shingle. Useful flowers for aculeates. The thrift clearwing, Bembecia scopigera (Notable A), breeds in the roots.

Violet (Viola spp.) The foodplant for Dark-green and both Pearl-bordered Fritillaries.

Grasses

Some of the ISR moths are grass feeders including Leucochaena oditis, Lasiocampa trifolii (which has a wider diet), Mythimna putrescens and M. w-album. The butterflies include Graying on fine grasses in shortish turf associated with bare ground and Marbled White on longer turf. There is no doubt a much larger fauna. On the whole, longer grassland is used.

Reed (Phragmites australis) This grows locally at Head cliff seepages where the Notable fly Lipara rufitarsis forms slender cigar galls on the stems. Other species of interest ought to also occur.

Fine grasses

*Hipparchia semele (Grayling butterfly) A short turf species, probably in varied situations including the path in the maritime heath. Larvae on fine grasses, adults sit on bare ground. Local

Grasses unspecified

The ISR includes the following, best interpreted as long and rough grassland species

Lasiocampa trifolii Grass Eggar moth) Larvae eat grassses (plus herbs and bramble).

*Leucochlaena oditis (Beautiful Gothic moth) Larvae eat grasses. RDB3.

*Mythimna putrescens (Devonshire Wainscot moth) Larvae eat grasses. Notable A.

*Mythimna l-album (L-album Wainscot moth) Larvae eat grasses. Notable B.

Ferns

Bracken (Pteridium aquilinum) This has a surprisingly large fauna, rich in sawflies and gall causing flies. However, as far as I can judge, the fauna is of most interest in wooded situations rather than exposed hillsides.

APPENDIX J

SUMMARY MANAGEMENT RECOMMENDATIONS

This summary reads along the coast from West to East.

Location	Present condition	Recommended condition	Priority
Decklers Cliff	rough grassland	some grazing for mosaic of long & shorter turf	Low
Moor Sands	bracken on high slopes	mosaic of bracken with grass glades/corridors	Medium
Pigs Nose to Gammon Head	Rocky heads with mosaic of long & short turf	maintain present regime	High
	Incipient maritime heath	encourage heathers	High
Black Cove	Herb-rich grassland, ungrazed.	In long term needs some grazing but OK now.	Low.
Prawle Point	Rocky knolls, short grazed slopes, poor tops.	Maintain as present	Low
Langerstone Bay -Sharpers Head	Arable fields (incl. flax) and improved grass (hay),	Encourage arable weeds, including headland edges. Put in N-S hedges.	High
	Erratic hedge/bank on cliff top.	Establish double hedge/ bank.	High
	Higher slopes with scrub.	scrub with corridors and glades.	Medium
N of Sharpers Head.	Short stretch of rough grassland	Retain	High
Horsley Cove to Malcombe Sand	Mainly arable fields	Encourage arable weeds. including headland edges.	High
	Cliff top with partial hedge.	Establish double hedge corridor.	High
	Some N-S hedges	Retain/increase	High
	Some scrubby upper slopes.	Scrub corridors & glades	Medium
	Hines Hill wood with seepages	Retain	High

Ballsaddle to Woodcombe Valley	Cliff-top edge without hedge	Path through rank vegetation gives shelter	---
	Rough grass & scrub, knolls.	Maintain mosaic. Scrub corridors & glades.	High
Woodcombe Valley	Some woodland with seepages + stream.	Retain	Medium
Woodcombe Valley to Lannacombe	Coastal path with single/double hedge	Double hedge	High
	Rough grassland SW of Coastguard station scrubbing up	Control scrub invasion & light graze.	Low
	Field NE of Coast-guard station with ponies & ragwort.	Maintain status quo	High
	Scrub hillside behind.	Rough hillside with corridors & glades.	High
Lannacombe - Gt Mottiscombe	Cliff edge mainly hedgeless	Establish double hedge	High
	Improved grassland, thistles swiped, sheep grazed.	Improve flower richness, permit thistles. Sheep grazing acceptable.	High
	Scrubby slopes.	Scrub corridors & glades	High
	Sallow carr + stream margins with Oenanthe. crocata	Retain carr, reduce grazing pressure at stream edge on W side.	Medium
	Herb-rich grassland at E end, light grazed. Mosaics of short & long turf. Stream with Mentha etc.	Maintain regime	Medium
Peartree Cove-Start Point(S face).	Rocky knolls & short turf, bare ground + areas of coarser herbage & scrub.	Maintain this nice mosaic, retain grazing regime	High
N side of Start Point	Bracken slope leading down to difficult rocky coast.	No recommendation	Low

APPENDIX K

ACCESS POINTS AND DIFFICULTIES

I used the Lannacombe Beach and Prawle Head car parks, walking the coast from there. The coastal footpath is good to adequate.

For future reference, it is worth noting access points and difficulties.

Access Points

From west to East:-

Gara Head Hotel or path from Prawle for access to Rickam Sand and Seacombe Sand.

East side of Moor Sands. Very steep path down cliff (for cliff dunes).

Maceley Cove. A very steep path leads into this very enclosed steep cove.

Prawle Point. Free National Trust car park off lane to coast guard station. Awkward access into Western Cove, easy at Langerstone Point.

Vehicle slipway between Horsley Cove and Malcombe Point. (road to Malcombe House private/ NB takes guests but I did not know this soon enough).

Ballsaddle. Half way along the SE facing cliff it is possible to drop down to terrace. With difficulty it was possible to climb up onto the steep SW facing flower rich slope but this is hazardous.

Woodcombe Sand. There is a private path from the garden of the residence but not available to public.

Ivy Cove. There is an obscure path (from the coastal path) which connects with a good slipway.

Lannacombe Beach. Free car parking area for c.10 cars but need to get there early.

Great Mottiscombe Sand. A rough path leads down to beach at the NE corner.

Start Point. There is a pay car park (which I did not use or see).

Access Problems.

In general it is necessary to have mid to low tide conditions. My visit co-incided with good day-time tide conditions and at low tide even the Laminaria zone was partly exposed.

Sharpers Cove area. There could be problems getting along here at high tide.

Malcombe Point to Ballsaddle. Pretty rough going in places and needs mid tide.

Ballsaddle to Woodcombe Sand. Very hazardous with precipitous gullies. Even at very low tide I only just got round, pretty slippery algae in places.

Woodcombe Sand to Ivy Cove. There is a daunting rock face on the east side of Woodcombe Sand, to climb up to go east; or at very low tide one can get round on lowest rocks but rather hazardous. Need mid tide to get along rest of stretch to Ivy Cove.

Ivy Cove to Lannacombe Beach. Need mid tide and rough going in places.

Lannacombe Beach to Great Mottiscombe Sand. OK at mid tide either end but I never got through the stretch just west of Gt Mottiscombe Sand even at mid tide. I did not see it at very low tide but suspect there would then be a sporting chance.

APPENDIX L SPOONER'S ACULEATE DATA

E. Prawle	Agenioideus cinctellus	local 6-7-79, hatch of several males (only 4 t) at corner of bend in path leading to shore.
E. Prawle	Andrena carbonaria	N 2-5-71, freely at burrows in cliff, males and females (photos)
		also 21-5-75
		26-5-77 females well dist., also males.
E. Prawle	Andrena haemorrhoa	Common 2-5-71, many males over Prunus.
E. Prawle	Andrena haemorrhoa	Common Path to coast, 30-5-78, worn specimens at hedge along path from E. Prawle village.
E. Prawle	Andrena pubescens	Common Cliff path, 30-5-78, female.
E. Prawle	Andrena scotica	Common 2-5-71, males - of 7 taken 4 were stylopised.
E. Prawle	Andrena synadelpha	N Cliff path, 30-5-78, worn male (P Williams, det GMS).
E. Prawle	Andrena wilkella	- Cliff path, 30-5-78, 4 males (one with a female Stylops) (GR Else, det GMS)
		6-7-79, 2 males, 2 females (L Packer)(1 female conf GMS). 20-7-85, worn female.
E. Prawle	Chrysis ruddii	N Female, undercliff, and one or two others seen.
E. Prawle	Chrysis rutiliventris	local 20-7-85, female on carrot, cliff path.
E. Prawle	Halictus rubicundus	Common 2-5-71, colonies with females at burrows, base of head.
E. Prawle	Lasioglossum calceatum	Common 2-5-71, 2 females (one with large Meloe larva). Cliffs, 30-5-78, female (S Miles, det GMS)
E. Prawle	Lasioglossum morio	- 2-5-71, many females. Cliffs, 6-7-79, females at burrows in cliff, well dist. 20-7-85, hat
		of males. 22-4-75, females numerous
		6-7-76, female
		26-5-77, many females visiting Geranium sanguineum
		30-5-78, females (GMS etc).
E. Prawle	Lasioglossum smeathmanellum	- 2-5-71, a few females.
E. Prawle	Nomada flava	- Path to cliffs, 30-5-78, large male, EG Philp, det GMS.
E. Prawle	Nomada flavipes	local 2-5-71, some males and females at one site.
E. Prawle	Osmia caerulescens	Common Cliffs and paths, 30-5-78, male (AES party).
E. Prawle	Osmia leaiana	Common 6-7-79, male at fence.
E. Prawle Cliff	Episyron rufipes	local 20-7-85, female at Daucus (quite worn)(first for SX73 since Bignell).
E. Prawle Cliffs	Ammophila sabulosa	local 3-7-83, singly, only 3 or 4 seen
		20-7-85, 3, singly.
E. Prawle Cliffs	Ammophila sabulosa	local 30-5-78, males single
		6-7-79, 3 males, one female, undercliff
		14-7-81, females, sparingly.
E. Prawle Cliffs	Ancistrocerus gazella	- 6-7-1979, 3 males, one female (L Packer).
E. Prawle Cliffs	Ancistrocerus oviventris	- 6-7-79, female, L Packer (conf GMS). 14-7-81, fresh female.
E. Prawle Cliffs	Andrena angustior	N 30-5-78, v worn male GMS.
E. Prawle Cliffs	Andrena flavipes	local 3-7-83, 3 Or 4 males (at 2 sites)
		20-7-85, males and females met with along most of the coast.

E. Prawle Cliffs	Andrena labialis	local	26-5-77, many males and females, chiefly E of Langerstone Pt, males flying over Anthyllis etc (first time I have met with this species in S or W Devon) 30-5-78, fresh males at one site.
E. Prawle Cliffs	Andrena nigroaenea	Common	6-7-79, male, L Packer 30-5-78, worn male and females along path by cliff.
E. Prawle Cliffs	Andrena scotica	Common	30-5-78, worn males and females along path, edge of cliff, female on edge of shore below cliff (GMS), also male by P Williams.
E. Prawle Cliffs	Andrena trimmerana	N	30-4-76, 2 females, one at burrow (GMS). 30-5-78, female (S Miles, det GMS).
E. Prawle Cliffs	Astata boops	local	3-7-83, male (W of Langerstone Pt.) 20-7-85, a few along cliff path, visiting Daucus.
E. Prawle Cliffs	Bombus hortorum	Common	6-7-79, female, path to shore 20-7-85, 1 (only).
E. Prawle Cliffs	Bombus humilis	local	30-5-78, female, P Williams.
E. Prawle Cliffs	Bombus lapidarius	Common	3-7-83, female and males, at musk thistles. 20-7-85, 1 only.
E. Prawle Cliffs	Bombus pascuorum	Common	30-5-78, females 6-7-79, faded female, path to shore. E. Prawle area, 3-7-83, at thistle. 20-7-85, 1 (only
E. Prawle Cliffs	Bombus pratorum	Common	6-7-79, 2.
E. Prawle Cliffs	Bombus terrestris	Common	3-7-83, 2 females at thistle.
E. Prawle Cliffs	Cerceris arenaria	Common	3-7-83, 1 female, hatches of males at 3 sites on sandy exposures. 20-7-85, males and femal burrowing in sand at base of cliff in 3 places, also by cliff path, females carrying weevils.
E. Prawle Cliffs	Cerceris arenaria	Common	5-7-76, males fequent, 2 females, one with Otiorrhynchus prey. 6-7-79, a few males and a fe females stocking burrows (GMS), 2 males (L Packer). 14-7-81, 2 males.
E. Prawle Cliffs	Chrysis ignita	Common	30-5-1978, fresh male, G Else (det GMS).
E. Prawle Cliffs	Chrysis ruddii	N	30-5-78, 3 females (G Else, M Edwards, GMS) and 2 males.
E. Prawle Cliffs	Chrysis rutiliventris	local	21-5-75, fresh male.
E. Prawle Cliffs	Chrysis rutiliventris	local	30-5-78, vanlithi, 6 males (GMS, P Williams, G Else) and 1 female (M Edwards).
E. Prawle Cliffs	Chrysis rutiliventris	local	E. Prawle path to shore, 6-7-79, male vanlithi 14-7-81, fresh male and female at Daucus, vanlithi.
E. Prawle Cliffs	Colletes similis	-	Male at Matricaria, and 1 female (only), 20-7-85 6-7-79, faded male - path along cliff top, also female by L Packer 14-7-81, 2 females at Ox-eye 3-7-83, 1 or 2, at Matricaria.
E. Prawle Cliffs	Crabro cribrarius	local	20-7-85, males and females, at burrows at base of cliff, and cliff path at Daucus.
E. Prawle Cliffs	Crossocerus dimidiatus	local	3-7-83, male, path W of Langerstone Pt., over bush.
E. Prawle Cliffs	Crossocerus elongatulus	Common	30-5-78, male 6-7-79, male at Daucus (GMS), male and female (L Packer) 14-7-81, 2 females at Daucus.
E. Prawle Cliffs	Cryptocheilus notatus	RDB3	6-7-76 (SX73) Female (GMS).

E. Prawle Cliffs	Dipogon variegatus	local	30-5-78, one by Mike Edwards 6-7-79, female on undercliff, male on telegraph pole near village. 14-7-81, 2 females seen
E. Prawle Cliffs	Ectemnius sexcinctus	N	14-7-81, male, flying over Daucus (SY73).
E. Prawle Cliffs	Eucera longicornis	N	(contd.) 3-7-83, worn males along cliff top, chiefly over Geranium sanguineum, some females at burrows in cliffs, outnumbered by its Nomada. 20-7-85, a few females at burrows also females visiting fl of tufted vetch, Lathyrus sylv etc by the cliff path.
E. Prawle Cliffs	Eucera longicornis	N	(contd.) 6-7-76, 1 female at Rubus flower. 30-5-78, males irregularly dist. 14-7-81, 2 females seen enter burrows, PM, then female from another burrow and other burrows.
E. Prawle Cliffs	Halictus tumulorum	-	30-5-78, female, GMS.
E. Prawle Cliffs	Hylaeus communis	local	6-7-79, female, bottom of path.
E. Prawle Cliffs	Hylaeus hyalinatus	local	6-7-79, hatches of a few males here and there 14-7-81, small female at Daucus 3-7-83, fairly freely at Daucus.
E. Prawle Cliffs	Lasioglossum smeathmanellum	-	6-7-79, 2 females t. and others at burrows 14-7-81, 2 females 3-7-83, female; 20-7-85, female; 30-5-78, female.
E. Prawle Cliffs	Megachile maritima	-	20-7-85, 3 females, one at burrow at base of cliff.
E. Prawle Cliffs	Nomada sheppardana	-	30-5-78, female, GMS.
E. Prawle Cliffs	Nomada striata	local	30-5-78, small female, GMS 6-7-79, female, undercliff.
E. Prawle Cliffs	Panurgus banksianus	local	3-7-83, at Langerstone Pt., a few males visiting yellow comps.
E. Prawle Cliffs	Pemphredon lethifer	Common	6-7-79, male on dock leaves, bottom of path.
E. Prawle Cliffs	Psithyrus barbutellus	Common	30-5-78, female (P Williams).
E. Prawle Cliffs	Psithyrus vestalis	Common	30-5-78, female (AES party), P Williams.
E. Prawle Cliffs	Sphecodes crassus	N	26-5-77, female.
E. Prawle Cliffs	Sphecodes ephippius	-	26-5-77, female. 30-5-78, female, (AG__, det GMS) 6-7-79, female, L Packer, det GMS, worn female, undercliff, GMS.
E. Prawle Cliffs	Sphecodes gibbus	Common	30-5-78, female, GMS.
E. Prawle Cliffs	Sphecodes monilicornis	locla	2-5-71, female (here Hal. rubic. and Hal. calc.) 22-4-75, female 6-7-76, 2 males etc.
E. Prawle Cliffs	Sphecodes ruficrus	N	30-5-78, 2 males, female (GMS), others also, with host Andrena labialis.
E. Prawle Cliffs	Tachysphex pompiliformis	local	6-7-79, female, L Packer 14-7-81, male at Daucus 20-7-85, female at Daucus 30-5-78, 2 males (AG, det GMS + GE) 6-7-79, 2 seen singly, probably males.
E. Prawle Cliffs	Trypoxylon attenuatum	Common	20-7-85, female at cliff bottom.
E. Prawle Cliffs	Trypoxylon figulus	Common	6-7-79, one on undercliff 14-7-81, 2 females, form media, vertical cliffs and bottom of cliff.

E. Prawle cliff	Nomada goodeniana	Common	2-5-71, one. 26-5-77, female at Geranium sanguineum, a few males near car park (no evidence here of host)
			30-5-78, several
			6-7-79, 2 females singly exploring cliff, also by L Packer.
E. Prawle cliffs	Bombus lucorum	Common	30-5-78, female.
E. Prawle cliffs	Crossocerus megacephalus	-	6-7-79, male, waste ground, bottom of path.
E. Prawle cliffs	Lasioglossum villosulum	Common	6-7-79, 2 females, undercliff
			3-7-83, female (nr. Langerstone Pt.).
E. Prawle shore	Ancistrocerus parietinus	-	20-7-85, female at HW level, on stones.
East Prawle	Andrena angustior	N	2-5-71, fresh female at foot of 'head' cliff
			30-4-76, 2 males cliff top by path
			26-5-77, male.
East Prawle	Andrena nigroaenea	Common	2-5-71, males singly.
East Prawle	Andrena ovatula	Common	2-5-71, males abundant and some females, at places on head cliff
			30-5-78, a few males and females. Cliffs, 20-7-85, female and males.
East Prawle	Melecta albifrons	local	2-5-71, some of both sexes at Anth acervorum burrows (GMS)
			22-5-75, fresh males.
East Prawle Cliffs	Lasioglossum nitidiusculum	local	30-5-1978, female.
East Prawle Cliffs	Lasioglossum xanthopum	N	30-5-78, female (GMS and party).
East Prawle Cliffs	Trichrysis cyanea	Common	30-5-78, 2 (1 by E Philp, female by P Williams).
Gammon Head	Ammophila sabulosa	local	10-8-40, one at Senecio.
Gammon Head	Anoplius nigerrimus	local	(GMS).
Gammon Head	Anoplius nigerrimus	local	Cliff, 10-8-40, female (on wall).
Gammon Head	Arachnospila anceps	local	Promontory, 10-8-40, female, rock crevice
			cliff near, 10-8-40, 2 females with spider prey.
Gammon Head	Bombus humilis	local	GMS.
Gammon Head	Chrysis ignita	Common	On stone wall.
Gammon Head	Evagetes crassicornis	local	Cliff, 10-8-40, one female.
Gammon Head Cliffs	Bombus humilis	local	10-8-40, female at Cirsium.
Gammon Head Cliffs	Bombus lapidarius	Common	10-8-40, males and females.
Gammon Head, Prawle	Gorytes tumidus	N	10-8-40, female (GMS).
Gammon Head, Prawle	Lasioglossum leucozonium	Common	-
Gammon Head, near Prawle	Arachnospila anceps	local	(GMS).
Gammon Head, near Prawle	Pemphredon lethifer	Common	10-8-40, male (GMS).
Gammon Head, near Prawle	Priocnemis pusilla	local	10-8-40, male.
Gammon Head, nr Prawle	Dipogon variegatus	local	Stone wall by cliff, 2 fresh females, 10-8-40 (GMS).
Gara Point	Andrena carbonaria	N	and cliffs Eastward, 24-7-79, 3 females (some might be first brood) (SX 54). Also, Gara Pt, 30-8-58, female.
Gara Point	Astata boops	local	Cliffs E. of, 24-7-79, male (SX54).
Gara Point	Bombus hortorum	Common	+ cliff paths, sparsely dist.

Gara Point (E of Yealm)	Andrena ovatula	Common	30-8-58, worn male, female on heather (GMS).
Gara Point (E of Yealm)	Cerceris arenaria	Common	30-8-58, large female with weevil prey, cliff + raised beach level (GMS).
Gara Pt	Cerceris arenaria	Common	24-7-79, small colony, a few males and 2 females pairing, males sparingly along cliff paths eastwards (SX54).
Gara Pt (E of Yealm)	Halictus rubicundus	Common	30-8-58, male.
Gara Pt (E of Yealm)	Halictus tumulorum	-	30-8-58, male.
Gara Pt.	Andrena flavipes	local	10-7-84, males flying fast over ground (SX54).
Gara Pt.	Andrena ovatula	Common	24-7-79, 2 males, singly. 10-7-84, a few males.
Gara Pt.	Cerceris ruficornis	local	+ along cliffs eastward, 24-7-79, 4 females (SX54), GMS.
Gara Pt. (E of Yealm)	Andrena flavipes	local	30-8-58, 2 females.
Gara Pt. and Warren Cliffs	Ammophila sabulosa	local	24-7-79, male and female singly.
Gara Pt. cliffs	Lasiolossum morio	-	24-7-79, female and 2 males.
Gara Pt. slope	Psithyrus vestalis	Common	10-7-84, 2 males.
Gara Rock	Hoplitis claviventris	-	Gully by the beach, 20-7-76, female (GMS).
Gara Rock Cliff, nr. Salcombe	Arachnospila anceps	local	(GMS).
Gara Rock Hotel	Andrena thoracica	Common	Near, 20-7-76, one seen (GMS).
Gara Rock Hotel	Trypoxylon figulus	Common	20-7-76, females at wall below hotel and in vertical head exposure in gully near beach.
Gara Rock Hotel, W.Prawle	Priocnemis pusilla	local	20-7-76, 1 seen at Daucus.
Gara Rock cliffs (nr Prawle)	Mellinus arvensis	Common	Females entering burrows, carrying flies, 27-9-47 (GMS).
Prawle	Ammophila sabulosa	local	10-8-40.
Prawle	Hedychridium ardens	Common	Moon Bay, 20-7-76, one (GMS).
Prawle	Hylaeus hyalinatus	local	At flowers of Scilla autumnalis, 3-8-1879 (Parfitt, 1880).
Prawle Cliff	Bombus terrestris	Common	6-7-76, females at Carduus nutans
			22-4-75, female.
Prawle Cliffs	Ammophla sabulosa	local	6-7-76, 2 at Rubus
			21-5-75, one.
Prawle Cliffs	Ancistrocerus scoticus	-	6-7-76, 1 smallish female, edge of tidal zone
			26-5-77, male
			30-5-78, male + female, teste GMS.
Prawle Cliffs	Andrena carbonaria	N	14-8-81 (from 774352)(Jeremy Field).
Prawle Cliffs	Andrena carbonaria	N	22-4-75, in abundance, males and fresh females
			30-4-76, males ab. along much of the stretch of cliffs E of the Point, many females at burrows
			6-7-76, males frequent at Rubus
			30-5-78, females nesting in some numbers along cliff.
Prawle Cliffs	Andrena labiata	RDB3	(E of Point), 21-5-75, 1 female at Langerstone Pt. (SX73).
Prawle Cliffs	Andrena nigroaenea	Common	30-4-76, fresh male E.Prawle and possibly 1 or 2 others, 2 worn males W end
			6-7-76, 1 female
			26-5-77, a few males.

Prawle Cliffs	Andrena ovatula	Common 22-4-75, fresh males in 2 or 3 places 30-4-76, males abs. 6-7-76, males ab. and some females, at Rubus and at burrows 21-5-75, males and females.
Prawle Cliffs	Andrena scotica	Common 21-5-75, worn female stylopised 26-5-77, males and female under E. Prawle.
Prawle Cliffs	Anthophora plumipes	Common 30-4-76, one male (only).
Prawle Cliffs	Astata boops	local 6-7-76, 2 females at burrows, with pentatomid prey.
Prawle Cliffs	Bombus hortorum	Common 30-4-76, female on bluebell 26-5-77.
Prawle Cliffs	Bombus lapidarius	Common 22-4-75, female 30-4-76, 3 females at bluebell, Ulex 6-7-76, female. 21-5-75, female 30-5-78, females, GMS.
Prawle Cliffs	Bombus lucorum	Common 22-4-75, female at Glechoma patch.
Prawle Cliffs	Bombus monticola	local 6-7-76, one female at Rubus fl1 Far off usual haunt.
Prawle Cliffs	Bombus pascuorum	Common 22-5-75, female at Endymion.
Prawle Cliffs	Bombus pratorum	Common 6-7-76, male 22-4-75, 2 females at Taraxacum.
Prawle Cliffs	Chrysis viridula	local 6-7-76, one at Daucus, GMS 6-7-78, at least 1 seen undercliff 3-7-83, 1.
Prawle Cliffs	Crabro cribrarius	local 6-7-76, 2 males at thistles, females at Daucus.
Prawle Cliffs	Entomognathus brevis	local 6-7-76, female, GMS.
Prawle Cliffs	Eucera longicornis	N E. of Point. 21-5-75, many males and a few fresh females, along considerable stretch of cliff. 26-5-77, males well dist if rather scarce along cliffs. Also males at Raphanus.
Prawle Cliffs	Euodynerus quadrifasciatus	RDB3 (SE of village, towards Lannacombe),30-5-1978 (by Colhayes party),male, with 115 triangulin larvae on it (GMS),male by George Else, male and female by M Edwards, male by P Williams, female by J Field (det GMS). 6-7-79, male and female (L Packer) conf GMS
Prawle Cliffs	Halictus rubicundus	Common 21-5-75, female.
Prawle Cliffs	Hylaeus brevicornis	local 6-7-76, female at Daucus 14-7-81, male at Daucus.
Prawle Cliffs	Hylaeus hyalinatus	local 6-7-76, commonly, females and males at Geranium sanguineum 30-5-78, 2 males.
Prawle Cliffs	Lasioglossum calceatum	Common 22-4-75, several females 30-4-76, female.
Prawle Cliffs	Lasioglossum smeathmanellum	- 22-4-75, females common 30-4-76, females 6-7-76, male at Geranium sanguineum 21-5-75, many females. 26-5-77, female.
Prawle Cliffs	Lasioglossum villosulum	Common 22-4-75, 2 females.

Prawle Cliffs	Melecta albifrons	local	30-4-76, very few, 1 male, very dark female
			30-5-78, 1 or 2 by AES party.
Prawle Cliffs	Melitta leporina	local	6-7-76, male at Rubus (GMS).
Prawle Cliffs	Nomada flavipes	local	22-4-75, males and females, patchy
			30-4-76, females at burrows, faded males
			21-5-75, worn female at Sonchus (first brood almost over)
			26-5-77, females at burrows, well dist.
Prawle Cliffs	Nomada goodeniana	Common	22-4-75, one small female (with Andrena carbonaria)
			30-4-76, one male, cliff top, W end
			21-5-75, female. 6-7-76, female, evidently second brood Andrena carbonaria parasite.
Prawle Cliffs	Nomada marshamella	Common	21-5-75, female
			26-5-77, females over Geranium sanguineum
			30-5-78, a few
			6-7-79, 3 females.
Prawle Cliffs	Nomada sexfasciata	RDB1	E of Point, 21-5-75, 2 fresh males at extensive Eucera longicornis colony (GMS). 26-5-77, fresh examples at least 4 males seen (2 taken), and one female (taken) under E Prawle.
			30-5-78, at least 2 males and 1 female (GMS and party).
Prawle Cliffs	Nomada striata	local	26-5-77, male at sea spurrey flower.
Prawle Cliffs	Nysson trimaculatus	N	6-7-76, one female at Rubus flower, near car park enclosure (SX73).
Prawle Cliffs	Odynerus spinipes	-	6-7-76, one chimney-nest with burrow (GMS)(also its ruby-cuckoo).
Prawle Cliffs	Oxybelus uniglumis	Common	6-7-76, 2 males on undercliff
			3-7-83, female.
Prawle Cliffs	Sapyga quinquepunctata	N	Gara Rock Hotel, 20-7-76, large female, wall by car park (SX73).
Prawle Cliffs	Sphecodes fasciatus	-	22-4-75, female
			30-4-76, female
			6-7-76, 5 males and 1 female
			21-5-75, female
			26-5-77, 2 females
			30-5-78, many females (GMS, GRE, EGP, JPF, RW).
Prawle Cliffs	Sphecodes gibbus	Common	6-7-76, male and female
			21-5-75, 2 females.
Prawle Cliffs	Sphecodes monilicornis	local	30-4-76, large females freely
			21-5-75, 2 females (one small)
			at least 2 females (prob several), 26-5-77
			6-7-79, female, undercliff, GMS.
Prawle Cliffs	Stelis punctulatissima	N	6-7-76, fresh female at Cirsium (SX73).
Prawle Cliffs	Tachysphex pompiliformis	local	6-7-76, one at Daucus
			21-5-75, male.
Prawle Cliffs	Trichrysis cyanea	Common	6-7-76, one.

Prawle Cliffs	Trypoxylon attenuatum	Common	6-7-76.
Prawle Cliffs	Trypoxylon figulus	Common	6-7-76, female form media.
Prawle Cliffs (contd.)	Nomada sexfasciata	RDB1	3-7-83, almost a glut of females at cliff exposures, outnumbering Eucera. Some males at Geranium sanguineum, with host, worn male at Langerstone Pt. 20-7-85, several females, esp. near Sharpers Pt around Eucera burrows.
Prawle Cliffs (contd.)	Nomada sexfasciata	RDB1	6-7-79, at least 6 females seen (2 t.), exploring at Eucera burrows, undercliff. Seen also by Alan Stubbs and L Packer. 14-7-81, Eastern part, 2 females at earth exps. with Eucera burrows W. cliff, skirt of, 3 females at Eucera burrows.
Prawle Point	Agenioideus cinctellus	local	(Parfitt).
Prawle Point	Andrena wilkella	-	14-8-81 (Jeremy Field).
Prawle Point	Bombus jonellus	local	The only place I have taken it is on Prawle Point, on the wild thyme, in July 1876 (Parfitt 1880).
Prawle Point	Cerceris arenaria	Common	(Parfitt).
Prawle Point	Cerceris arenaria	Common	14-8-81, Jeremy Field.
Prawle Point	Sphecodes monilicornis	local	14-8-81, Jeremy Field.
Prawle Point Cliffs	Colletes similis	-	6-7-76, males at Achillea and Matricaria.
Prawle Point area	Anthophora bimaculata	-	14-8-81 (Jeremy Field).
Prawle Point area	Tachysphex pompiliformis	local	14-8-81, Jeremy Field.
Prawle Pt area	Vespula germanica	Common	14-8-81, Jeremy Field.
Prawle Pt.	Andrena flavipes	local	14-8-81, Jeremy Field.
Prawle Pt.	Anthophora bimaculata	-	6-7-76, at Circium vulgare at one site.
Prawle Pt.	Priocnemis pusilla	local	14-8-81, Jeremy Field.
Prawle Pt. area	Cryptocheilus notatus	RDB3	14-8-81 (Jeremy Field)(SX 73) 3-7-83, 1 seen and 1 male taken (GMS).
Prawle Pt. area	Halictus tumulorum	-	14-8-81, Jeremy Field.
Prawle Pt. area	Lasioglossum calceatum	Common	14-8-81.
Prawle Pt. area	Lasioglossum leucozonium	Common	14-8-81 (Jeremy Field).
Prawle Pt. area	Lasioglossum morio	-	14-8-81 (J Field).
Prawle Pt. area	Lasioglossum smeathmanellum	-	14-8-81 (Jeremy Field).
Prawle Pt. area	Megachile cetuncularis	-	14-8-82 (Jeremy Field).
Prawle Pt. area	Megachile maritima	-	14-8-81 (Jeremy Field).
Prawle cliffs	Ancistrocerus oviventris	-	26-5-77, male 30-5-78, male (by M Edwards, etc) teste GMS.
Prawle cliffs	Eucera longicornis	N	E. of Point (contd.). 6-7-79, males well dist but all faded, moving not only along over nes site, but also above the cliff. Females dist, actively stocking burows, some females visiting flowers (see later).

W. Prawle Cliffs	Ammophila sabulosa	local	20-7-76, 3 females.
W. Prawle Cliffs	Andren ovatula	Common	20-7-76, males and a few females.
W. Prawle Cliffs	Andrena carbonaria	N	20-7-76, male and female and others singly, second brood
W. Prawle Cliffs	Bombus lapidarius	Common	20-7-76, male and 2 females.
W. Prawle Cliffs	Cerceris arenaria	Common	Moor Bay, 20-7-76, busy colony in sand of undercliff, females entering burrows with usual Otiorrhynchus prey, also female nearer Gara Rock above shore.
W. Prawle Cliffs	Colletes similis	-	Males and females at Achillea up cliff, at Matricaria close to the shore at Moon Bay, 20-7-76.
W. Prawle Cliffs	Lasioglossum morio	-	20-7-76, female.
W. Prawle Cliffs	Lasioglossum smeathmanellum	-	20-7-76, both sexes common, settling on rocks.
W. Prawle Cliffs	Oxybelus uniglumis	Common	20-7-76, Moor Bay, 2 females.
W. Prawle Cliffs	Sphecodes ephippius	-	20-7-76, female.
W. Prawle Cliffs	Tachysphex pompiliformis	local	20-7-76, male and 2 females.
W. Prawle cliffs	Lasioglossum villosulum	Common	20-7-76, 2 females.

APPENDIX M EWARDS' ACULEATE DATA

Aculeate survey of Salcome Estate, National Trust. August 6-9th inclusive, 1990.

Species	Bolt Head	Rickham Common to Gara Rock.	Gara Rock.	Gara Rock to Pig's Nose.	Pig's nose to Prawle Point.	Prawle Point.	Woodcombe Point.
CHRYSIDIDAE							
Chrysis ruddii			*				*
Chrysis rutiliventris			*		*		*
POMPILIDAE							
Dipogon variegatus				*			*
Cryptocheilus notatus							*
Priocnemis pusilla					*		*
Arachnospila spissa			*				
Arachnospila anceps					*		
Evagetes crassicornis						*	
Episyron rufipes			*				
EUMENIDAE							
Ancistrocerus gazella				*			*
VESPIDAE							
Dolichovespula sylvestris	*					*	
Vespula vulgaris			*		*		*
SPHECIDAE							
Astata boops			*		*		
Tachysphex pompiliformis							*
Trypoxylon medium			*				
Crossocerus elongatulus		*	*				*
Oxybelus uniglumis			*				
Pemphredon lethifer			*				*
Ammophila sabulosa	*	*	*	*	*	*	*
Podalonia hirsuta				*			
Mellinus arvensis			*				
Cerceris arenaria			*				
Cerceris ruficornis					*		

Aculeate survey of Salcome Estate, National Trust. August 6-9th inclusive, 1990.

Species	Bolt Head	Rickham Common to Gara Rock.	Gara Rock.	Gara Rock to Pig's Nose.	Pig's nose to Prawle Point.	Prawle Point.	Woodcombe Point.
APIDAE							
Colletes similis		*		*	*	*	*
Hylaeus brevicornis		*		*			
Hylaeus hyalinitus		*			*		*
Andrena minutula	*						
Andrena ovatula		*	*	*			*
Andrena pilipes		*	*			*	*
Andrena trimmerana							*
Panurgus calcaratus							*
Halictus rubicundus		*					
Halictus tumulorum		*		*	*	*	
Lasioglossum leucopum						*	
Lasioglossum leucozonium					*		
Lasioglossum morio	*	*	*	*	*	*	*
Lasioglossum smeathmanellum		*			*	*	*
Lasioglossum villosulum			*	*	*		*
Sphecodes ferruginatus						*	
Sphecodes geofrellus (fasciatus)		*	*	*			*
Sphecodes gibbus		*		*		*	*
Sphecodes monilicornis				*	*	*	*
Coelioxys inermis							*
Epeolus variegatus							*
Bombus lapidarius	*	*	*	*	*	*	*
Bombus lucorum	*	*	*	*	*	*	*
Bombus pascuorum	*	*	*	*	*	*	*
Bombus terrestris				*			
Total species recorded, 48.	7	16	21	17	18	15	28

Aculeate survey of Salcome Estate, National Trust. August 6-9th inclusive, 1990.

Species	Bolt Head	Rickham Common to Gara Rock.	Gara Rock.	Gara Rock to Pig's Nose.	Pig's nose to Prawle Point.	Prawle Point.	Woodcombe Point.
Additional species, not aculeates.							
CONOPIDAE							
Physocephala rufipes		*					
Sicus feruginatus					*		
Thecophora atra		*	*			*	*
SYRPHIDAE							
Eumerus ornatus						*	
Paragus haemorrhous	*	*					*
Xylota segnis							*
ASILIDAE							
Philonicus albiceps							*
Machimus atricapillus				*	*		
TACHINIDAE							
Echinomya grossa					*		*