Microlepidoptera found near the Estuary of the River Conway, North Wales, 1964/68

By H. N. Michaelis

The Conway flows northwards to enter the sea between the Great Orme's Head on the east and Penmaenbach headland on the west. Though the river is tidal for about ten miles, these notes relate to the valley between the estuary and Glan Conway on the east bank and a point about one mile south of Benarth on the west bank. Much of the river divides the Ordovician rocks of Snowdonia from the Silurian rock of Denbighshire though the formation differs on the Creuddyn peninsula, i.e., the Llandudno-Deganwy area. The latter is more complex being comprised of the carboniferous limestone of the Great Orme, another hilly limestone area comprising Marl, Gloddaeth, Pydew and Penrhyn-side and a hilly outcrop of Ordovician at Deganwy. There are coastal sandhills at the mouth of the estuary at Deganwy on the east and at Conway Morfa on the west. There is a fine saltmarsh stretching from Llandudno Junction to Glan Conway and a smaller one near Conway, these are often covered at high tide and have a rich flora though there is an increasing encroachment of *Spartina* grass. The rising ground on both banks south of Llandudno Junction and Conway is mainly agri-cultural with a few small mixed woods in which oak predominates. The major and minor roads are lined by mixed hedges, often grown on raised banks, of hazel, scrub, oak, sloe, hawthorn, spindle, elm, holly, rose, etc., which carry a varied flora on the hedge banks. Conway Mountain and Penmaenbach, which form a background to Conway Morfa, are foothills of the Carneddau range and have mainly a moorland flora and fauna so species from these upland areas are omitted. Instead of listing all species seen during 1964/1968, a few of the more interesting have been selected and short notes on varied habitats are included. Very little work has been done on the Welsh "Micros" in recent years and many more species will be found than I have so far observed.

Pterophorus spilodactylus Curt. This plume moth, which otherwise has a south of England distribution, has long been known to occur on the Creuddyn. The larva feeds on the leaves of *Marrubium vulgare* L. (White Horehound) and is full-fed by early July when it pupates on the upper side of a leaf, usually on the midrib. It occurs in four separate localities which have also historical and botanical interest. In "Weeds and Aliens", Sir Edward Salisbury suggests that the presence of White Horehound on the Great Orme was due to cultivation by the monks of the now ruined Gogarth Abbey as a remedy for bronchial afflictions. There are two stations for the plant on the inland limestone, namely at Gloddaeth Hall which was built in the 17th century and near Llanrhos Church, which can be traced back to the 6th century. The fourth locality is on the two Ordovician hills on which stand the ruined castle of Deganwy, one of the important strongpoints of mediaeval north Wales. The original castle dates from the 6th century and the site was used as a fortress until the 13th century when it was destroyed by Llewelyn the Great. The moth is established in each of these localities being more widespread on the Orme. It is interesting to speculate whether the moth was originally native or if it was brought with the plant from southern Britain. *Marrubium* also grows on the Little Orme's Head but so far I

have not seen the moth there. The only other North Wales record is a moth found in a friend's car in Anglesey and enquiry showed that it could have been transported from the Great Orme.

Cacoecimorpha pronbmana Hübn. A *Tortricid*, originally found on the coast of southern England in the early part of this century, which has spread northward to become established in the home counties. The larva feeds on a variety of shrubs and plants including *Euonymous*, Privet, Rose and a number of garden plants. In 1956, a single moth was found by the late C. M. Jones in a nursery garden on Wirral, Cheshire, and both he and I thought it might have been imported with plants from southern England. In September 1965, a female came to light in my garden at Glan Conway; in May 1967, several larvae were found in spun shoots of *Euonymus* in a Deganwy car park and later bred; in September 1967, two cocoons were found in my garden and several moths were seen flying among roses; recently, larvae were found and moths bred from carnations from a Llandudno garden. The appearance in different localities suggests the insect has been established for a number of years.

Clepsis rurinana L. This local *Tortricid* was included by Gresley-Jones in his list of lepidoptera from Creuddyn, 1910. When compiling a list of North Wales *Tortricoidea* in 1953, I had doubt as to the authenticity of the original record as all specimens produced as this species proved to be pale or worn *Pandemis cerasana* L. A specimen found on the Great Orme in 1964 and a few records from Glan Conway in 1965/68 confirm the original record. A few larvae were found on roses in my garden.

Clavigesta purdeyi Durr. This species on pine continues to spread. Though uninformed of its status in the Midlands and Yorkshire, I have authentic records from Lancashire and Cheshire, 1950/1963. Two worn specimens were taken at light at Glan Conway and presumably came from a nearby screen of *Pinus sylvestris* L. (Scots Pine).

Coleophora serpylletorum Hering. New to the British Isles, this moth was found by the late Robin Mere, E. C. Pelham-Clinton and myself on the Great Orme in 1964. In May 1966, a search by E. C. P.-C. and myself produced larval cases on *Thymus drucei* Ronn., (Common Wild Thyme). The erect dark brown case, built from leaves of Thyme, is usually found on the underside of a leaf towards the tip of a spray where a few brown leaves may indicate its presence. The larva, which ceases to feed about mid-June, is best reared on a potted plant kept out-of-doors. The first and last dates on which the moth has been seen were 3rd July and 15th August. The species is common on the Orme but, so far, has not been found on the inland limestone. It is not easily disturbed during the day and occasionally a few may be seen at sunset resting on grass or Thyme.

Other species will be discussed under localities or habitats and it seems proper to begin with the Great Orme which is the most prominent feature of the estuary. This cape of carboniferous limestone, 610 feet high, is about five miles in circumference and, though well cropped by sheep and a fine herd of feral goats, the flora and insect fauna is very rich. In addition to species already mentioned, the following are of interest. *Mecyna asinalis* Hübner has long been known to occur where *Rubia peregrina* L (Madder) grows and though local, the window feeding habit of the larva on the larger leaves is easily seen; it also occurs on the inland limestone at Pydew. *Pterophorus tetradactylus* L. is common

among Thyme growing on steep slopes and is also on the limestone at Pabo and Pydew. There is a strong flight at sunrise in July. *Ancylis comptana* Frol., is found in similar situations in May and is not easy to see as it flies just above the herbage. Seedheads of *Carlina vulgaris* L. (Carline Thistle) gathered in autumn and winter contained larvae of *Metzneria carlinella* Staint. The larva hibernates and later pupates in the seedhead and the centre of an infested head is slightly raised above the surrounding seeds. The seedheads must be kept out-of-doors until June to ensure the emergence of the moth. Heads from other parts of the Creuddyn so far examined contain larvae of a *Trypetid* only. *Elachista subocellea* Steph. occurs only on the Orme while the commoner *E. triatomea* Haw., occurs on limestone throughout. *Coleophora lixella* Zell., which feeds in the early larval stages on Thyme and later on grasses, is uncommon. The thin black cases of *Coleophora albitarsella* Zell., are local and a pale blotch mine in May on leaves of *Origanum vulgare* L. (Marjoram) usually indicates a larva on the underside. Large brown blotch mines on leaves of *Marrubium vulgare* L. (Horehound) in May and June indicate that the broad hairy flattish case of *C. lineolea* Staint., (*crocogramma* Zell.) will be on the underside. *Pyrausta cingulata* L., occurs sparingly here and on other local limestone formations. As *Salvia* (Sage) is infrequent, presumably it has other foodplants.

The inland limestone. The first of the two ridges which are divided by a broad valley, rises to about 250 feet and is comprised of a large area of cropped turf and the wooded hills of Gloddaeth and Bryn Maelgwyn. The more southerly ridge rising to 300 feet has uncropped slopes with scrub oak, hazel, whitebeam, sloe, juniper, ash, yew, etc., with an expanse of limestone pavement at Pydew, a fine wooded hill at Marl, disused quarries and a treeless hill with a most interesting flora at Pabo. Much the greater part of collecting has been done on the southerly ridge. *Hypochalcia ahenella* Schiff., is uncommon in the Pabo quarries. Larval cases of *Thiotricha subocellea* Steph., hidden among seedheads of *Origanum* (Marjoram) are local at Pabo though the plant is plentiful. The heads are best gathered in March and should be kept exposed to the weather until June to obtain good breeding results, emergence dates are from 29th June to 21st July. The plume moths *Oidaematophorous osteodactylus* Zell., and *Adaina microdactylus* Hübn., both occur at Marl and Pydew; the former among *Solidago* (Golden-rod) and larvae and pupae of the latter in a swelling in the upper part of the stem of *Eupatorium cannabium* L., (Hemp Agrimony). The stems of the *Eupatorium* should be gathered in April when the swelling and small exit hole are easily seen. The long mines of *Elachista cinereopunctella* Haw., are plentiful in the leaves of *Carex flacca* Schreb., from March to May and the reddish pupa is later found attached to the mid-vein on the upperside of a leaf of the *Carex*; mined leaves are more common where the *Carex* grows in the shade of trees or bushes. Among other *Elachista* are *freyerella* Hübn., (*nigrella* Haw.) and *subnigrella* Doug., the last, which is a typical limestone species is abundant. A sunrise visit in early July with E. C. Pelham-Clinton to Pydew produced large numbers of a species which I believe to be **E. dispunctella* Dup. A single specimen of *Scythris fletcherella* Durr., was taken among *Helianthemum* (Common Rockrose) on 14th

*A letter from E.C.P-C. indicates that this is a species other than *E. dispunctella*.

July 1965 and a few *Stomopteryx taeniolella* Zell., occurred among *Lotus* and *Anthyllis* in mid-July 1968. Larvae of *Zellaria hepariella* Staint., are fairly common in June spun in the upper leaves of stunted Ash bushes growing in a limestone pavement and, as is usual, the moths may be disturbed from Juniper and Yew later in the year. Birch is local throughout but two small areas on the limestone produced leaves mined by *Caloptilia betulicola* Hering, *Lithocolletis ulmifoliella* Hübn., and *Parornix betulae* Staint. Small areas of *Calluna vulgaris* L., (Ling) growing in leached ground supported *Neofaculta betulea* Haw. *Grapholita dorsana* F., is common where *Lathyrus* and *Vicia* grows and is also common on the sandhills and rough ground throughout.

Sandhills. On either side of the river is a narrow strip of sandhills each with golf links immediately behind. Except at West Shore, Llandudno, there is little high dune and the vegetation on the east bank is richer and more varied than on Conway Morfa owing to shelter from the north and east provided by the Great Orme and Deganwy hills. A few specimens of *Chionodes fumatella* Dougl., were seen in July 1964 on the Morfa but have not occurred again. *Notocelia incarnatana* Hübn., is common among *Rosa pimpinellifolia* L., (Burnet Rose) on both banks of the river. An unusual occurrence is *Blastobasis lignea* Wals., at Deganwy among Gorse and Sea Buckthorn; the larva feeds on fallen leaves and other decaying matter and I do not recall previous records from sandhills. *Acrolepia granitella* Treits., often rests on Ragwort flowers in August at Deganwy and as *Pulicaria dysenterica* L. (Fleabane) does not grow nearby, it is presumed there is an alternative unknown foodplant. A few blotch mines in leaves of *Atriplex hastata* L. (Hastate Atriplex) from Deganwy and Conway proved disappointing for only *Scrobipala seminella* Pierce were bred. While many of the common sandhill species are present, further collecting, especially on Conway Morfa, is desirable.

Saltmarshes. The main saltmarsh of the eastern bank is at its widest at Llandudno Junction becoming narrower up-river until it is almost marginal at Glan Conway. The railway to Betws-y-Coed which follows the east bank of the river, divides the littoral from the inland habitats. *Phalonidia affinitana* Dougl., and *P. griseana* Haw., are common among their respective foodplants, *Aster tripolium* L., (Sea Aster) and *Triglochin* (Sea Arrow-grass). In Autumn, seedheads of *Daucus carota* L., (Wild Carrot) contain many larvae of *Laspeyresia gallicana* Guen., and in June, a few *Depressaria* larvae were found in rolled leaves but unfortunately not bred. Stems and roots of *Artemesia vulgaris* L. (Mugwort) of the previous year's growth gathered in the spring were occasionally mined by larvae of *Epiblema foenella* L. Full grown larvae of *Microsetia stipella* Hübn., mine leaves of *Atriplex hastata* and *A. littoralis* L. (Grass-leaved Orache) in September. *Scrobipalpa plantaginella* is common from June to August and can be bred from roots of *Plantago maritima* L. (Sea Plantain). Larvae of *Scrobipalpa seminella* Pierce are abundant on seeds of *Beta maritima* L. (Sea Beet) and species of *Atriplex* and occasionally mine the leaves of the latter. In July and August, the moths fly abundantly at sunset and often settle on the flowers of Chamomile growing nearby. Several species of *Coleophora* have been noted which appear to have a wider distribution than has previously been recorded. *Coleophora adspersella* Ben., first recorded by Col. C. W. Mackworth-Praed at Burley, Hants., in 1957, is plentiful among *Atriplex littoralis* and *A. hastata*

from mid-June to mid-July and the cylindrical larval cases, typical of several *Atriplex Coleophora*, are common on the seeds of both plants in September and October. The plants grow just above the average high tide mark so it appears that immersion by higher than average tides and river flood does not affect the hibernating larvae to any great extent. The collected cases were wintered out of doors and examination indicates that pupation takes place in May. Occasional specimens of *C. sternipennella* Zett., and *C. versurella* Ben., were netted among *Artemisia vulgaris* L. (Mugwort) in 1965 but so far no cases have been found. Both species are recorded only from southern England. Larval cases of *C. obtusella* Staint., are easily obtained by gathering heads of *Juncus maritimus* Lam., in April and May though individual cases enclosed in a dead flower are very hard to find. It is also locally common in Anglesey and must have a much wider distribution than shown in Meyrick's Handbook, i.e., "Kent to Devon and Lincoln, local"; the late L. T. Ford found larvae in North Lancashire in 1940. *C. adjunctella* Hodg., is taken occasionally among a *Juncus*, possibly *gerardii* Lois. White silken cases of *C. glaucicolella* Wood are uncommon here on heads of *Juncus maritimus* but are fairly common on the west coast of Anglesey. The dark brown, almost cylindrical cases of *C. virgaureae* Staint., are common near Glan Conway in autumn on heads of *Aster tripolium* and prefer this plant to *Solidago virgaurea* L. (Golden Rod) which grows on the nearby railway bank. In fact, larvae are scarce on *Solidago* in the area. I have not taken *C. asteris* Hodgk, which also feeds on *A. tripolium* in either North Wales or Cheshire for specimens bred from Wirral, Cheshire, proved to be *C. virgaureae*. I am indebted to J. D. Bradley and R. W. Uffen for identifying or checking my identifications of the above mentioned Coleophora. In their early stages, larvae of *Bucculatrix maritima* Staint., mine the leaves of *Aster*, changing to "window feeding" in the last stage, during June, August and September. The white shuttle-shaped cocoons, which often produce a *Braconid* parasite, are attached to grasses adjacent to the food plant.

The rising ground south of Conway and Deganwy. The terrain in the neighbourhood of Glan Conway is close to my home and has been covered more than other parts of the district. A m.v. trap was used from time to time in my garden over the past four years. A long list of species has been recorded of which only a small sample is mentioned below. The following were recorded in the m.v. trap: *Scoparia cembrella* L., *Hypocholacia ahenella* Schiff., *Phycita roborella* Schiff., *Ephestia parasitella unicorella* Staud. (*woodiella* R. & T.), *Homoeosoma cretacella* Rossl., *Eurhodope marmorea* Haw., *E. advenella* Zinck., *Epagoge grotiana* F., *Laspeyresia aurana* F., *L. splendana* Hübn., *Grapholita dorsana* F., *Eucosma tripoliana* Barr., *E. fulvana* Steph., *Zeirapheria ratzeburgiana* Sax., *Lobesia littoralis* Westw., and *Apotomis semifasciana* Haw. The most interesting of the above are the two specimens of the *Ephestia* taken in July 1968, which feeds on dry vegetable refuse including dry berries and dead stems of ivy. The common *Stellaria holostea* L. (Stitchwort) is the food of the following: *Caryocolum tricolorellum* Haw., in mined leaves and later in spun shoots in March and April; *C. maculeum* Haw., feeds in spun flowers and seeds in May and June; *Coleophora olivaceella* Staint., is occasional on the underside of leaves from March to May indicated by a white blotch mine; in June 1968, a single *C. striati-*

pennella Tengst., (apicella Staint.) was taken. *Coleophora spissicornis* Haw., netted in a lane, caused a fruitless search later for the case on *Trifolium arvense* L. (Hare's-foot Clover). Likewise a search for the mine in leaves of *Circaea lutetiana* L. (Enchanter's Nightshade) following the capture of a single hibernated *Anybia epilobiella* Roem., was unsuccessful. Among the *Oecophoridae, Schiffermuelleria tripuncta* Haw., and *Borkhausenia tinctella* Hübn., both associated with dead wood, occur in old hedgerows. *Argyresthia glaucinella* Zell., is scarce in the oakwoods of the Caernarvonshire bank and only a few patches of reddish brown bark indicating larval infestation were found. The larva of *A. semifusca* Haw., is found in May in short drooping shoots of hawthorn as is *A. mendica* Haw., in shoots of *Prunus spinosa* L., (Sloe) in April and May. The genus *Lithocolletis* is well represented by L. *klemannella* F., and L. *froelichiella* Zell. in mined leaves of *Alnus; L. nicelli* Staint., in *Corylus; L. geniculella Rag.*, in sycamore; *L. heegeriella* Zell., and *L. lautella* Zell., in *Quercus.* A form of *L. lautella* having black ground colour on the forewings similar to one which occurs in Scotland, mines the leaves of the hedgerow oak but is uncommon. *Pseudoswammerdamia combinella* Hübn., is common among *Prunus spinosa* L., and *Yponomeuta cognatella* Hübn., is common where *Euonymus europaeus* L. (Spindle) grows in hedges. Of the *Tineidae*, the most noteworthy are: *Infurcitinea argentimaculella* Staint., on one mossy outcrop of rock; *Nemapogon arcella* L., from decayed wood from Hazel and Oak hedges; *Tinea trinotella* Thunb., probably from birds' nests. An unusual record for North Wales among the *Lamproniidae* is *Teichobia filicivora* Meyr., which feeds on the underside of fern fronds; one was taken in a damp lane and the other at light. Mines of *Nepticulidae*, usually vacated, have been noted in leaves of *Quercus, Ulmus, Prunus spinosa, Salix, Rubus, Crataegus, Rosa, Fagus* and *Corylus.* The species bred so far are: *Stigmella rosella* Schrank, *S. oxycanthella* Staint., *Nepticula aurella* Staint., *N. marginicolla* Staint., and possibly *N. plagicolella* Staint.

REFERENCES

E. Meyrick. Revised Handbook of British Lepidoptera, 1928.
I. R. P. Heslop. Revised Indexed Check-list of the British Lepidoptera.
L. T. Ford. A Guide to the Smaller British Lepidoptera, 1949.
H. N. Michaelis. Cheshire and North Wales Natural History, *Pyralidina* 1950 and Tortricoidea, 1951, 1952 and 1953.
R. G. Gresley-Jones. A List of Lepidoptera observed and recorded within the district of Creuddyn, Llandudno, 1910.
Sir Edward Salisbury. Weeds & Aliens (New Naturalist), 1961.

PLUSIA NI HÜBN. (LEP. PLUSIIDAE) BREEDING IN ENGLAND.—Whilst on holiday in Dawlish, Devon, I found a Plusiid larva sitting on sea rocket (*Cakile maritima* Scop.) on 25th August, 1968. Two days later the larva spun up and a fine male *Plusia ni* Hübn. emerged on 19th September.

I understand that Mr, Terry Dillon also found a larva a week earlier than mine, at Teignmouth, about three miles from the spot where I found mine. He also bred a moth about a month later.

These two records would seem to be the first of *P. ni* breeding in the wild in this country.—D. O'KEEFE, 29 Arcadian Avenue, Bexley, Kent. 13.xi.1968.