

NOTES ON SOME HEMIPTERA-HETEROPTERA  
FROM WITLEY COMMON, SURREY

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WITLEY COMMON is a National Trust property lying about 3 miles south-west of Godalming, Surrey (Map Ref. 930410). It is bounded on the west by A.3 (Milford to Hindhead) and on the east by A.286 (Milford to Haslemere). To the north its limits are defined by a road, on the outskirts of the village of Milford, which connects A.3 with A.286 and a similar cross-connection, running along the northern boundary of Witley Park, marks the limit of its extension southwards. A third cross-connection, situated half-way between the other two, divides the common into a northern and a southern section. If one proceeds south-westwards on A.3 there is a small concrete road on the left, about half-way along the western side of the southern section of the common, which leads into a small enclosure used as a car park. The main open area of the southern section of the common lies immediately east of this car park. It thus forms a central arena, surrounded on all sides by conifer plantations, self-sown pines (*Pinus sylvestris* L.), scrub, and mixed woodland. This arena will be referred to as the eastern heath. The stretch of A.3 which forms the western edge of the southern section of Witley Common is bordered on its western side by conifer plantations, which form a narrow belt along the road. Beyond them is another open arena which will be referred to as the western heath. This is not National Trust property and westwards it grades into Thursley Common but, for convenience, it will be regarded here as part of Witley Common. These notes are concerned only with these two open areas, the eastern heath and the western heath, separated by A.3, and with the scrub and woodland on their fringes.

Witley Common lies in an area of pine-heather (*Pinus-Calluna*) heathland but the two areas described above are virtually devoid of heather and form patches of grass-heath which resemble, in many respects, the few remaining fragments of the Breckland heaths. This is an artificial situation, brought about by the use to which the land has been put. Mr. R. J. Garland, of the Hambledon Rural District Council, has kindly supplied me with details of the recent history of the area. He believes that, prior to the first world war,

Witley Common was a pine-heather heath. During that war it was a large military camp and the heath was destroyed. After removal of the camp it was first colonized by Rosebay Willow-herb (*Chaemaenerion angustifolium* (L.) Scop.) but later the heather returned. The heather-heath was again destroyed by a military camp during the second world war and the present grass-heath is the result of the subsequent recolonization. The soil of the eastern heath is still, in many places, highly artificial, patches of cinders and brickdust remaining only partly colonized by plants, but the western heath is mainly sandy. The most striking floristic feature, apart from the absence of heather, is the abundance of prostrate leguminous plants such as Hare's-foot Trefoil (*Trifolium arvense* L.) and Black Medick (*Medicago lupulina* L.) which are seldom an important element of the flora of acidic heather-heath. Meadow plants such as Ox-eye Daisy (*Chrysanthemum leucanthemum* L.) and Vetches (*Vicia* spp.) are of common occurrence, while the plants of waste places are represented by Tansy (*Tanacetum vulgare* L.), Yarrow (*Achillea millefolium* L.), Mugworts (*Artemisia* spp.), Rosebay Willow-herb, Yellow Horned-poppy (*Glaucium flavum* Crantz) etc. Also, the similarity to the Breckland grass-heaths and to consolidated coastal dunes is indicated by the presence of Common Storksbill (*Erodium cicutarium* agg.), a plant which is not common inland.

Visits were paid to Witley Common at intervals during the summers of 1957 and 1958. Some interesting captures were made and these are dealt with in some detail in List 1. List 2, which follows, includes all other species captured, with brief notes where appropriate. Collecting was largely confined to the two areas of grass-heath described above but a few species were taken by beating trees in woodland or scrub on the fringes of the heaths.

#### LIST 1

*Odontoscelis dorsalis* (F.) (Pentatomidae).—This insect was first recorded as British by Bedwell in 1909 on the basis of specimens taken near Lowestoft, Suffolk, and Butler (1923) adds Surrey, Sussex, Hampshire and Devon to its known distribution. More recently it has been taken in Kent (see Masseur, 1955, entry No. 7) and Cornwall (Woodroffe, 1956b). Its food plants are the species of *Erodium* and as these are usually common only near the sea, *O. dorsalis* is largely a coastal insect. However, it has been taken in numbers on the inland heaths of Suffolk, though its presence on

the Surrey list appears to rest on a single old specimen in the Power Collection, labelled "Weybridge" (Butler, 1923). On May 3, 1958, at Witley Common, nymphs and adults occurred in numbers on the western heath, where sandy patches, thinly covered with fine grass, were studded with minute rosettes of *Trifolium arvense* and *Erodium cicutarium* agg.

*Catoplatus fabricii* (Stal.) (Tingidae).—This is not a common species. It has been taken most frequently in moss, sometimes abundantly (see, e.g. Thomas, 1938), but has also been associated by several authors with Ox-eye Daisy, *Chrysanthemum leucanthemum*. This plant occurred in patches on both heaths and I obtained four adults of *C. fabricii* by sweeping one particular patch on the eastern heath on June 21, 1958. The ground upon which the *Chrysanthemum* was growing consisted of moss-covered cinders but no examples of the Tingid could be found in the moss.

*Deraeocoris olivaceus* (F.) (Miridae).—I beat one example of this conspicuous species from a fruiting hawthorn (*Crataegus*) on the southern fringe of the western heath on July 8, 1958. This capture represents a significant extension of its known range (see Allen, 1958), for Witley Common lies about 17 miles south of Ascot, Berks, and the same distance south-west of Bookham Common, Surrey, the nearest known localities.

*Systellonotus triguttatus* L. (Miridae).—Colonies of this myrmecophilous Mirid were widely distributed on both heaths. The few specimens taken were noteworthy in that three examples, two adult females and one nymph, possessed oligomerous antennae. This abnormality is rarely reported in Mirids, though I recently captured a nymph of the very similar *Hallodapus rufescens* (Burm.) on Chobham Common, Surrey, in which both antennae were affected. It is possibly significant that the habitat of both these species is closely similar to that of many Lygaeids in which the abnormality is common, though I also have an oligomerous example of the arboreal *Megacoelum infusum* (Herr.-Sch.).

*Globiceps salicicola* Reut. (Miridae).—This species was first taken in Britain in 1956, when I found it in numbers on and under *Erica* and *Calluna* on Blackdown, Sussex, near Haslemere, Surrey (Woodroffe, in press). At Witley Common I took it in moderate numbers from the same plants growing in a scrub of young birches (*Betula*) on the southern fringe of the western heath on July 8, 1958. These are the only two localities so far known in Britain.

*Orthocephalus mutabilis* Fall. (Miridae).—There seem to be no very conclusive records associating this rather local species with any

particular host-plant. Saunders (1892) quotes *Tanacetum* and Butler (1923) adds *Ononis*, giving also Reuter's records, *Centaurea scabiosa*, *Carduus* spp., *Spartium scoparium*, etc. Wagner (1952) says that it lives on *Tanacetum*, *Achillea* and *Centaurea*. Hitherto my own experience has been to sweep the odd specimen or two from flower-covered slopes on chalk downs, especially where there was an abundance of *Galium*. However, at Witley Common, in spite of an abundance of *Tanacetum* and *Achillea*, the species was specifically associated with the Ox-eye Daisy. Isolated colonies of nymphs and adults occurred on both heaths at the roots of clumps of *Chrysanthemum* and a few were obtained by sweeping the flowers. Some nymphs were reared on the flower-heads on which they fed. *Chrysanthemum leucanthemum* seems a more likely host-plant than any of those so far recorded. Wagner gives this same plant as the host-plant of the non-British *Orthocephalus vittipennis* (Herr.-Sch.) and our other species of *Orthocephalus*, *O. saltator* (Hahn) sometimes occurs on it as well as on *Hieracium* and allied Compositae. I have never found either of our species on *Tanacetum* or *Achillea*. Two of the females taken were macropterous; I can find no other records of this form in Britain.

*Conostethus roseus* Fall. (Miridae).—Although very local, *C. roseus* is often very abundant where it occurs. Butler (1923, quoting Morley) gives *Trifolium arvense* as a host-plant though other associations have been suggested by other authors. Wagner (1952) says it lives on *Trifolium montanum* L. In my experience it may sometimes be taken in small numbers by sweeping seeding grasses in dry areas of sparse vegetation (Woodroffe, 1955) but large colonies, including nymphs, are invariably associated with areas where *Trifolium arvense* forms stunted rosettes on dry, usually sandy, soil (Woodroffe, 1956). On Witley Common, at the end of May and beginning of June 1958, *Conostethus roseus* was one of the commonest insects on parts of the western heath. Vast swarms of nymphs and adults occurred on the considerable patches of ground covered only by a thin growth of short, fine grass, *T. arvense* and *Erodium cicutarium*. The species was abundant also in the absence of *Erodium* and its association with the Hare's-foot Trefoil is no longer in doubt. In early June 1958, I found it abundantly under precisely similar conditions at half-a-dozen localities in the vicinity of Thetford and Brandon in the Breckland.

*Amblytylus delicatus* Perr. (Miridae).—Saunders took the first British examples of this species at Woking, Surrey, in 1888 on *Gnaphalium germanicum* (*Filago germanica* (L.) L.). Butler (1923)

was able to add no further records and regarded the chance of its recurrence as remote. However, Masseur (1955, entry No. 377) gives Suffolk, Bedford and Dorset in addition to Surrey, so the species must be fairly widely distributed, though extremely local. On a visit to Witley Common late in 1957 I discovered several small patches of moss-covered cinders on the eastern heath upon which *Filago germanica* grew in some quantity. In late June 1958, I revisited these areas and found, in addition to large numbers of the dark green nymphs of *Plagiognathus chrysanthemi* Wolff, a few silvery-green Mirid nymphs which I supposed to be *Amblytylus delicatus*. I reared several indoors, thus confirming their identity and collected a small number of adults in the same place on July 8.

The three British species of *Amblytylus*—*delicatus* Perr., *brevicollis* Fieb. and *nasutus* (Kb.) (= *affinis* Fieb.)—are usually distinguished on colour of pubescence and membrane; these appear to have been inadequately described. *A. nasutus* is usually described as having a dusky, unspotted membrane and black or black-brown pubescence but I have seen many examples in which there was a considerable admixture of pale hairs among the black. The hairs of *brevicollis* are, as is usually stated, entirely pale but the same description, applied to *delicatus*, is incorrect. The latter species possesses a complex pattern of pale and dark hairs and its membrane cannot be simply described as milky-white with a brown streak across the apex of the cells; this also has a conspicuous and characteristic pattern. The pubescence of *A. delicatus* is as follows. Head—hairs mostly silver, adpressed, slightly curled, somewhat scale-like; a few dark, erect hairs. Pronotum—silver, adpressed hairs with a moderate admixture of longer, erect, pale hairs and a few dark, erect, bristle-like hairs. Scutellum—pubescence entirely pale but many hairs long and suberect. Clavus—as scutellum but with a broad patch of dark hairs straddling the commissural suture. Corium—hairs dark except for a band of pale hairs, both erect and adpressed, along the margins and the median nervure. Cuneus—all hairs dark. It should be noted that the areas of dark pubescence on the hemelytra contain no pale hairs and the pale bands include no dark ones. The membrane shows, in addition to the streak across the apex of the cells, a dark band from the apex of the cuneus to a point just caudal of the apex of the cells and a broad, dark marginal band. Thus only two patches in the mid-line are milky-white, one in the basal angle and the other just within the marginal band. The nymphs match their host-plant (as indeed do the adults), being silvery, grey-green, clothed with strong, erect, black,

blunt-ended bristles, arising from black spots. The head and lateral margins of pronotum and wing-pads bear, in addition, similar but pale bristles and there are some silver, scale-like hairs.

## LIST 2

Throughout the following list the absence of any notes indicates that the species was found under normal circumstances, that is, in usual numbers in its recognized habitat at the normal time of year.

## PENTATOMIDAE

*Podops inuncta* (Fab.); *Aelia acuminata* (L.); *Neottiglossa pusilla* (Gmel.); *Palomena prasina* (L.)—one on birch on the fringe of the western heath; *Dolycoris baccarum* (L.)—numerous colonies on a variety of plants, but particularly abundant on the *Erodium* on the western heath; *Piezodorus lituratus* (Fab.).

## COREIDAE

*Coreus marginatus* (L.)—a few on *Polygonum aviculare* agg.; *Syromastus rhombeus* (L.)—several colonies under *Cerastium* spp.; *Ceraleptus lividus* Stein—one under *Trifolium arvense*; *Coriomeris denticulatus* (Scop.)—widely distributed and common under Black Medick, Hare's-foot Trefoil and other prostrate legumes; *Alydus calcaratus* (L.)—one adult and a few nymphs among *Erica* and *Calluna* on the western side of the west heath; *Rhopalus subrufus* (Gmel.)—several colonies under *Geranium* spp. on the east heath and under *Erodium* on the west heath. In my experience this species is usually associated with these plants. Other authors (e.g. Butler, 1923) state that it occurs on *Hypericum* but I have searched for it in vain on this plant, and it was not present on the very abundant *H. perforatum* L. on the eastern heath at Witley, though it occurred on *Geranium* nearby; *R. parumpunctatus* Schill.—colonies under *Cerastium* spp. and a few on *Erodium*; *Myrmus miriformis* (Fall.)—common and generally distributed, the captures including one macropterous female. On July 23, 1957, on a grassy hillside with scattered trees near Guildford, Surrey, I found a large colony of this species in which every example taken was macropterous.

## NEIDIDAE

*Neides tipularius* (L.)—under *Geranium* on the eastern heath and *Erodium* on the western; also occasional individuals elsewhere;

*Berytinus minor* (Herr.-Sch.)—many colonies under various prostrate legumes; *B. montivagus* (Mey.-Duer)—one colony under Black Medick on the east heath; *B. signoreti* (Fieb.)—several colonies under *Lotus corniculatus* (L.) and scattered individuals in moss; *B. crassipes* (Herr.-Sch.)—two colonies under *Cerastium* on the east heath.

## LYGAEIDAE

*Megalonotus chiragra* (Fab.); *Stygnocoris rusticus* (Fall.); *S. pedestris* (Fall.); *S. fuligineus* (Geoff.); *Peritrechus sylvestris* (Fab.); *P. geniculatus* (Hahn); *Trapezonotus arenarius* (L.)—at Witley Common this is the sandhill-grassheath form as opposed to the heather-heath form which occurs on Thursley Common nearby (Leston and Woodroffe, in prep.); *Rhyparochromus pini* (L.)—one example, probably a stray from nearby Thursley Common, where it is abundant; *Drymus sylvaticus* (Fab.); *D. brunneus* (Sahl.).

## TINGIDAE

*Dictyonota strichnocera* Fieb.; *D. tricornis* (Schr.); *Tingus cardui* (L.).

## REDUVIDAE

*Coranus subapterus* Deg.—a pair under *Erica* on the western edge of the west heath; the male was macropterous.

## NABIDAE

*Nabis ferus* (L.); *N. ericetorum* Sch.

## ANTHOCORIDAE

*Acompocoris pygmaeus* (Fall.); *Orius niger* (Wolff); *Xylocoris galactinus* (Fieb.)—one adult on cindery ground on the east heath in June. This species is usually found in fermenting vegetable rubbish but it flies freely and this was probably an accidental occurrence.

## MIRIDAE

*Pithanus maerkeli* (Herr.-Sch.); *Phytocoris varipes* Boh.; *Adelphocoris lineolatus* (Goeze)—extremely abundant on leguminous plants throughout the latter half of the summer; *Calocoris roseomaculatus* (Deg.)—extremely abundant on *Lotus corniculatus* and other Papilionaceae throughout the summer; *C. norvegicus* (Gmel.); *Lygus rugilipennis* Popp.; *Plesiocoris rugicollis* (Fall.); *Poecilo-*

*scytus unifasciatus* (Fab.); *Deraeocoris ruber* (L.); *Alloeotomus gothicus* (Fall.); *Notostira elongata* Geoff.; *Trigonotylus ruficornis* (Geoff.); *Leptopterna ferrugata* (Fall.); *L. dolabrata* (L.); *Orthocephalus saltator* (Hahn); *Lopus decolor* (Fall.); *Megalocoleus molliculus* (Fall.); *Amblytulus nasutus* (Kb.); *Plagiognathus chrysanthemii* (Wolff); *Chlamydatus pullus* (Reut.); *C. saltitans* (Fall.).

## SALDIDAE

*Saldula orthochila* (Fieb.).

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BREEDING PAPILIO DARDANUS IN ENGLAND.—Dr. P. M. Sheppard of the Department of Zoology, Liverpool University, and I are breeding *Papilio dardanus* on a large scale partly to elucidate the genetics of the various forms of mimetic and non-mimetic females and partly, by means of race crosses, to throw light on the evolution of the mimetic patterns. Until this year, we were dependent on citrus leaves for food-plant of the caterpillar, but we have now discovered that it can be fed with much lower mortality on *Choisya ternata* (the Mexican orange plant). This is a hardy evergreen and is not uncommon in big gardens in this country. We are already using all the local supplies that we know of and we should be most grateful if anyone in any other part of the country who has a bush could send us regular supplies of the leaves, once every week or fortnight for the next few months. The leaves travel and keep extremely well in polythene bags. We should be willing to pay postage and supply the bags.—Dr. C. A. CLARKE; High Close, Thorsway, Caldy, Cheshire.