KEROPLATUS TESTACEUS DALMAN (DIPT., KEROPLATIDAE) NEW TO SCOTLAND AND OTHER NOTES

BY PETER CHANDLER

The British distribution of this species was discussed by Chandler (1977), who listed data then known, citing records from eight counties in southern England. Since then records from other southern and midland sites have accrued and Chandler (1987) published a record from Cumbria as a northerly extension to the distribution.

In 1991 *K. testaceus* was unexpectedly found at two sites in Scotland. Alan Stubbs collected a male on 7th July at Coille Thogabhaig (= Tokavaig Wood) N.N.R., an ancient mixed deciduous woodland on the Isle of Skye, when he also obtained a *Mycomya* species new to Britain (to be published elsewhere). Then, during the following week, when I joined the party (now relocated at Muir of Ord, Ross), we visited Amat Forest, a Caledonian forest remnant in Wester Ross, on 18th July, where I was able to find larvae of *K. testaceus* and a female fly was subsequently reared.

We arrived at midday in an area of pine and birch woodland near the Alladale River as rain began. The large grey bracket fungus *Fomes fomentarius* (L. ex Fr.) Kickx. was present on birch trunks and it was searched without success for larvae of the widespread Scottish gnat *Sciophila rufa* Meigen (Mycetophilidae) which inhabit webs under the brackets and whose papery cocoons can be found in clusters attached to nearby bark.

Then, under brackets growing on a fallen birch branch, two *Keroplatus* larvae were found; the larger one (length about 30 mm) was retained for rearing. These elongate larvae, tapered at both ends, also live in mucous webs (described by Plachter, 1979a), which they construct under the bracket and on adjacent bark, enabling them to move about freely on the surface of the fungus. The larvae of this genus are spore feeders like those of *S. rufa* and are often colonial, several larvae living together in the same web, but are not very active during the day and may retreat to the base of the bracket or under adjacent bark if they are not already in a situation close to the ground.

This fungus host has not been recorded previously for *K. testaceus* but is the regular food plant of the more robust species *K. tipuloides* Bosc, to which I was introduced in France by Loïc Matile in May 1989. *K. testaceus* is, however, evidently less specific; Chandler (1977) cited associations with *Stereum* and *Trametes* species and I have since reared it in 1986 from a larva found on *Phellinus igniarius* (L. ex Fr.) Quél. (or *trivialis* (Bres.) Kreisel, the form on *Salix* and *Alnus*, if this is a distinct species) at Leckford, Hants. Stammer (1933), who figured the larva and adult, obtained it from "*Polyporus ungulatus* Schff." (a synonym of *Fomitopsis pinicola* (Sw. ex Fr.) Karst. which grows on

conifers as well as hardwoods) and recorded luminosity of the larva; Edwards (1933) commented on this record but it has not been confirmed whether *testaceus* larvae are regularly luminous. Both the *Phellinus* and *Fomitopsis* species are hoof shaped brackets of very similar form to the *Fomes*. I also reared both *K. testaceus* and *K. reaumurii* Dufour from larvae found on undetermined encrusting fungi on fallen branches in woodland at St. Augustin, Seine-et-Marne, France (the neotype locality of *K. dispar* Dufour; Matile, 1986) when I visited the site with Loïc Matile in 1989.

The larvae in all my rearings were greyish white with paired dark markings dorsally on each segment and did not have the violaceous hue mentioned by Plachter (1979b) and Matile (1990) for larvae of *testaceus* and *reaumurii* and it may be that the fungus host and colour of its spores has some effect on the larval coloration.

The larva from Amat Forest was active for the remainder of my stay in Scotland and then spun a large papery cocoon (length 16 mm), suspended in its web, on 22nd July. The adult female (body length 13 mm, wing 8 mm) emerged on 30th July. The development period was similarly rapid to that I experienced with larvae of *K. tipuloides* collected at Fontainebleau in 1989. The larva is always strikingly larger than the adult in this genus and Plachter (1979b) noted that larvae of *K. testaceus* may reach 40 mm. Larger larvae can be expected to produce females which are more robust than the males. The wing length of specimens examined is 5.5–6.5 mm (males) and 6.5–8.5 mm (females).

Matile (1986) revised the European species of *Keroplatus*, recognising four species, all found in France and all occurring near Paris, but *K. testaceus* remains the only species known from Britain (the genus is absent from Ireland). Then (1990) he keyed all ten Holarctic species (including 2 in Japan and 4 in North America) and discussed their biology in more detail. Zaitzev (1991) found that there were 8 species in the territory of the Soviet Union, including 2 new species as well as the 4 European species and both Japanese species.

K. tipuloides is a striking wasp mimic but the other two French species resemble *testaceus, reaumurii* being distinguished most obviously by dark abdominal bands while *dispar* is separable from *testaceus* by genital and minor venational characters.

In view of the increased knowledge of British distribution, a map prepared by the Biological Records Centre is included (fig. 1), to indicate all 10 km grid squares from which records are known to me. It is expected that gaps in south east England will be filled and records near the Welsh border suggest that it may also occur in Wales. It remains to be discovered whether it inhabits other sites in western areas further north.

The Amat food plant *F. fomentarius* is local in the south, where it is found on beech as in northern France, but investigation of the fungus at

two sites (Knole Park, Kent; Ranmore Common, Surrey) have so far failed to disclose *Keroplatus* larvae.

The records on which the map is based are summarised below, data being given fully only for previously unpublished records and these in the order of Grid squares rather than counties:

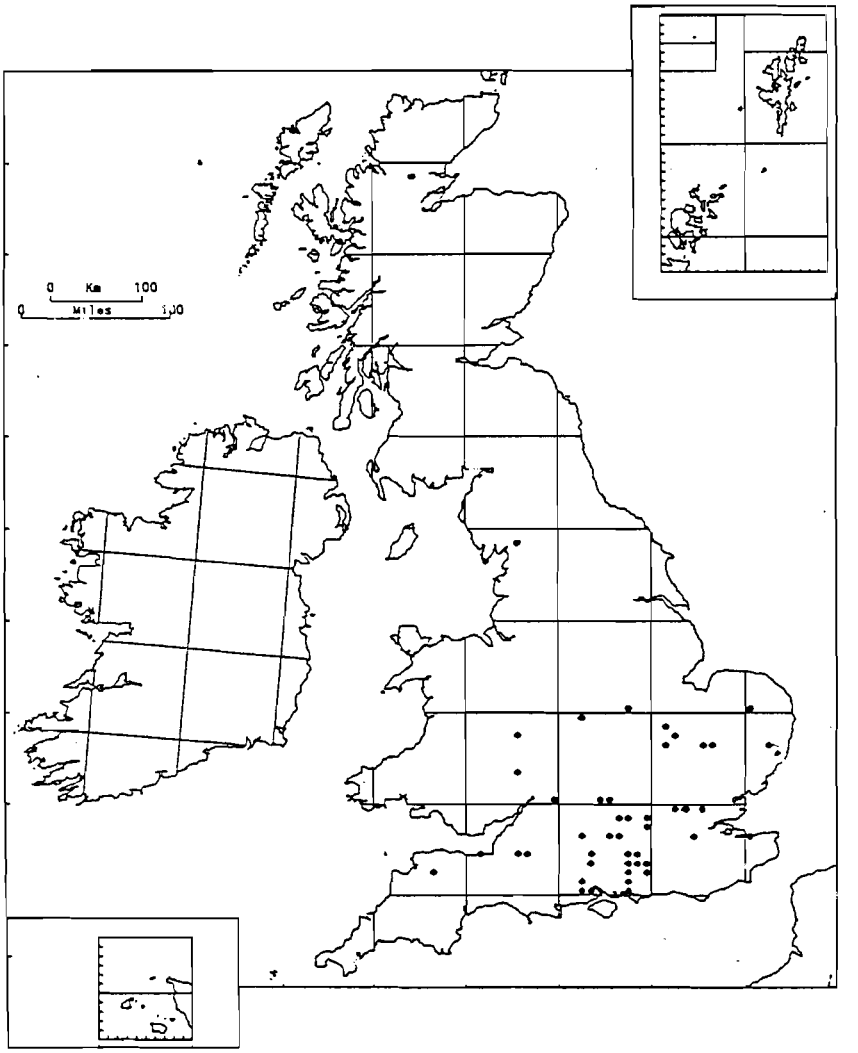

Fig. 1. — The British distribution of *Keroplatus testaceus* Dalman, showing all known records in 46 10 km grid squares.

SS20, DEVON: Hele Wood, 15.x.1988, ♂ (*I.F.G. McLean*). ST14, SOMERSET: Quantocks, wood east of Holford, 8.vii.1986, ♂ (*Chandler*). ST54, SOMERSET: Ebbor Gorge, 16.x.1986, ♂ (*Chandler*). ST64, SOMERSET: Shepton Mallet. SU20, HANTS. (New Forest): Great Huntly Bank, 5.vi.1988, ♀; Mark Ash Wood, 7.x.1982, ♂; 19.vi.1988, ♂; 17.vi.1990, ♂ (*Chandler*); Wood Crates, 8.vii.1990, ♂ (*D. Clements*); Rhinefield, 9.v.1990, ♂ (*J. Ismay*). SU21, HANTS.: Bramshaw, 21.vii.1977, ♂ (*C.H. Andrewes*). SU26, WILTS.: Savernake Forest, malaise trap, vii–x.1990, 3 ♂ (*K. Porter*). SU30, HANTS. (New Forest): Ramnor Inclosure, 1.vii.1962, ♂ (? collector, Liverpool Museum); Park Ground Inclosure, 27.vi.1988, ♀ (*I. Perry*). Brockenhurst Wood, 8.vii.1990, ♂ (*Chandler*). SU33, HANTS.: Leckford, wood by Atner's Tower, 5.x.1975, ♂; Leckford, larvae on *Phellinus* on stump in carr near River Test, 7.vi.1986, ♀ reared (*Chandler*). SU34, HANTS.: Harewood Forest, 6.vii.1990, ♂ (*M. Oates*). SU56, BERKS.: Bucklebury Common, Briff's Copse, 12.vii.1989, ♂ (*M. Drake & A.E. Stubbs*). SU66, HANTS.: Pamber Forest, malaise trap, 1990, ♂ (*M. Oates*). SU68, OXON: Goring-on-Thames. SU70, SUSSEX: Sindles Farm, 1985, ♂ (*M. Edwards*). SU71, SUSSEX: Harting Down. SU72, SUSSEX: Ashford Hill Spring, 13.x.1989, ♀ (*L. Gorman*). SU73, HANTS.: Wyck, 7.x.1988, 3 ♂ (*M. Oates*). SU74, HANTS.: Sparkfield Hanger, Binsted, 28.ix.1989, ♂ (*M. Oates*). SU78, OXON: Bix Bottom. SU83, HANTS: Whitmoor Vale, 12.vii.1990, ♂♀ (*A.E. Stubbs*). SU84, SURREY: near Farnham, garden, 12.x.1991, ♂ (*W.R.B. Hynd*). SU92, SUSSEX: Ebernoe, 12.x.1989, ♀ (*A.E. Stubbs*). SU93, SURREY: White Beech, 14.x.1989, ♀ (*J. Mousley*). SU97, BERKS.: Windsor Forest. SU98, BUCKS.: Cliveden, 3.vii.1984, ♂ (*Chandler*). TQ29, LONDON (MIDDLESEX): N12, in house, 25.viii.1991, ♂ (*K.G.V. Smith*). TQ46, LONDON (KENT): Farnborough, in house, ? date (*P.R. Bailey*). TQ59, ESSEX: Harold Hill, 13.vii.1991, ♀ (*D.A. Smith*). TR06, KENT: Blean Woods, Dunkirk, 26.vii.1983 (*L. Clemons*). SO53, HEREFORD: Haugh Wood, 23.viii.1973, ♂ (*A.M. Hutson*). SO57, SALOP: Caynham Dingle, 16.x.1987, ♂ (*A.E. Stubbs*). SO90, GLOS.: Cirencester Park, 30.ix.1989, ♀ (*Chandler*). SP29, WARWICKS.: Edge Hill. SP40, OXON: Wytham Hill Copse; OXON (formerly Berks): Dry Sandford, 18.viii.1988, in house, ♂; 10.vii.1989, window, ♀ (*J.W. Ismay*). SP50, OXON: Bagley Wood, 2.ix.1962, ♂ (*E.C.M. d'Assis Fonseca*); Oxford University Parks. TL16, CAMBS. (HUNTS.): Grafham Water. TL18, CAMBS. (HUNTS.): Monks Wood. TL27, CAMBS. (HUNTS.): Brampton. TL56, CAMBS.: Lode, 26.vi.1979, ♂; 29.vi.1979, ♀; 29.vii.1986, ♀ (*I. Perry*). TL66, CAMBS.: Chippenham Fen, 15.vii.1977, ♂ (*E.C.M. d'Assis Fonseca*); 1988 (*I.F.G. McLean*). TM26, SUFFOLK: Monk's Soham. TM35, SUFFOLK: Staverton Thicks. SK70, LEICS: Skeffington Wood, 25.vii.1989 (*A.E. Stubbs*). TG00, NORFOLK: Welborne, 8.x.1988, ex cocoon on rotten wood, ♀ (*R.E. Evans*). SD58, CUMBRIA: Larkrigg Spring Wood. NG61, SKYE, Tokavaig Wood (see above). NH48, ROSS: Amat Forest (see above).

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Weston Research Laboratories, Vanwall Road, Maidenhead, Berks. SL6 4UF.
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A host for Anteon tripartitum Kieffer (Hym., Dryinidae). — *Anteon tripartitum* is a rare or scarce dryinid which Perkins (1976, *Handbk Ident. Br. Insects* **6**(3a): 22) records (under the synonym *Neochelogynus kiefferi* (Chitty)), from Suffolk, Oxon, Hants, Berks, and Elgin. I have only taken three specimens in the last eleven years, and the data for the first two are as follows: S. Yorks: (VC 63 44/6104) Sandall Beat Wood, NR, (Pot hill area) Armthorpe, ♂ 12.v.1980; (VC 63 44/6105) Shaw Wood, Armthorpe, ♀ 15.v.1988.

All three specimens were collected by sweeping grasses, the male from Pot hill, an old sandpit, would have been swept from one of the large open areas. The Shaw Wood females were taken in clearings now being sueceeded by birch.

Nothing was known about its biology (though its expected host would be a cicadellid); consequently I regretted some time later not having kept the female alive and trying to find out what its host was. I searched the Shaw Wood site again in 1989 and 1990, without success. However, perseverance paid off on 19.v.1991 with the capture of another female. This was tubed and the immediate area searched for hoppers, these being kept separately, until I arrived home. The wasp was then introduced into the tubes containing the hoppers. Those that were attacked were separated into 3 x 1 inch tubes, but a delphacid nymph (possibly of the genus *Eurybregma*) a cixiid adult and a nymph of *Tachycixius pilosus* (Olivier) were ignored. I had also taken four nymphs of *Thamnotettix confinis* (Zett.) (Cicadellidae), two of which were attacked on the same day. Another *T. confinis*, with a noticeably swollen abdomen, was ignored. A pipunculid (Diptera) larva emerged from this specimen on 25.v.1991, the adult fly (with wings not developed) was noticed on 2.vii.1991. A further pipunculid larva emerged on 1.vi.1991 from one of the two hoppers attacked on 19.v.1991, but the abdomen of this nymph had not been noticeably swollen. The fourth *T. confinis* nymph was attacked on 20.v.1991.

No obvious sacs had developed on the two remaining nymphs by 7.vi.1991. The foodplant, an undetermined grass, was again changed on 9.vi.1991 and no sacs were noticed, although I do not recall closely examining the specimens. On 11.vi.1991 I saw quite noticeable sacs attached to the sides of the thoraces.

The foodplant was changed every other day, and on 19.vi.1991 both hoppers seemed alright. On 20.vi.1991 at 5.30 p.m. the sac on the nymph attacked on 19.v.1991 was found to be empty, the larva having burrowed into the sand and vermiculite on top of the plaster of Paris base in the tube.