Further observations on the entomological attractiveness of Wellingtonia *Sequoiadendron giganteum* (Lindl.) Buchholz in Worcestershire.

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Attention has previously been drawn (Whitehead, 2013) to the significance of Wellingtonia *Sequoiadendron giganteum* (Lindl.) Buchholz as a biological support system at Little Comberton, Worcestershire; otherwise the role of this tree in British entomology seems to have received little attention. Many species of both broadleaved and coniferous trees are utilised by non-breeding insects at specific times of the year. Amongst beetles, apionids in particular may utilise the foliage of broadleaved trees when their herbaceous host plants are abandoned in the autumn. At Overbury cricket field (VC 37 SO9537) 180 *Protapion fulvipes* (Fourcroy, 1785), a widespread species, were observed on the foliage of several lime trees *Tilia* x *europaea* L. on 4th September 2014 (Whitehead, *pers. obs*.).

Equally little is known about the specific merits of Wellingtonia as a winter refuge for British invertebrates. Recent evidence from the Little Comberton tree throws further light on this. On 18th December 2016 I undertook a modest crown-raising operation on this tree and from foliage removed from between five and seven metres above ground recorded a range of invertebrates including some which are rather recent additions to the British fauna and some which are presently expansive. Many very small immature spiders *Araniella cf. cucurbitina* (Clerck, 1757) (Araneidae) were also observed. A key feature of Wellingtonia foliage is that it may be densely massed in sprays through which circulating air limits the impact of pathogens on wintering insects. Whitehead (2011) demonstrated the relative merits of Wellingtonia for overwintering insects in three taxonomic orders following a period of sudden intense cold during December 2010 which lead to their considerable mortality. As an overwintering site for invertebrates it appears that Wellingtonia makes a significant contribution.

Other species noted on Wellingtonia foliage on 18 December 2016 were:

Viridicerus ustulatus (Mulsant & Rey, 1855) (Hemiptera, Cicadellidae). One example of a species established in the UK since 1991. Nearest breeding habitat distance is not determinable. Whitehead (2010) observed the related *Idiocerus stigmaticalis* Lewis, 1834 frozen out of Crack Willow *Salix fragilis* L. at Pershore, Worcestershire on 11 January 2010 following an overnight temperature of -15.7ºC on 6-7 January 2010.
Balclutha punctata (F., 1775) (Hemiptera, Cicadellidae). Two examples of the pink form. Nearest potential breeding habitat is 90 m distant.
Pentatoma rufipes (L., 1758) (Hemiptera, Pentatomidae). One stage two nymph, reconfirming Wellingtonia as a British host-tree, first cited by Whitehead (2011).
Heterogaster urticae (F., 1775) (Hemiptera, Lygaeidae). Two killed by air temperatures near the ground of -6ºC on 30 November 2016 remained in position on the foliage. Nearest breeding habitat is 40 m distant.
Gonocerus acuteangulatus (Goeze, 1778) (Hemiptera, Coreidae) (01, 02). (The Box bug). One example of a previously rare now expansive species (Hawkins, 2003) extending its range northwards (Curran, 2011) on a range of host plants to at least the north English midlands. Nearest breeding habitat distance is unknown.

01. *Gonocerus acuteangulatus* on Wellingtonia, Little Comberton, Worcestershire, 18 December 2016. Paul Whitehead.

02. *Gonocerus acuteangulatus*, distraction display, on Wellingtonia, Little Comberton, Worcestershire, 18 December 2016. Paul Whitehead.

Lygus rugulipennis Poppius, 1911 (Hemiptera, Miridae). One very active example.
Harmonia axyridis (Pallas, 1773) (Coleoptera, Coccinellidae). One very sluggish example; nearest breeding habitat is 40 m distant.
Aphthona euphorbiae (Schrank, 1781) (Coleoptera, Chrysomelidae). Several active examples of this widespread species.
Ischnopterapion (Chlorapion) virens (Herbst, 1797) (Coleoptera, Apionidae). Four examples of this Fabaceae-associated species not commonly overwintering on trees. Nearest breeding habitat is 8 m distant.

References

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Images
01. *Gonocerus acuteangulatus* on Wellingtonia. Paul Whitehead.
02. *Gonocerus acuteangulatus* distraction display on Wellingtonia. Paul Whitehead.