Atalanta **47** (1/2): 115-116, Marktleuthen (Juli 2016), ISSN 0171-0079

On the increase and range expansion of *Xylocopa violacea* (Linnaeus, 1758) and *Xylocopa iris* (Christ, 1791) in north-west Baden, Germany, 1992-2015

(Hymenoptera, Apidae)

by

John F. Burton

received 15.II.2016

Zusammenfassung: Es wird über die stetige Zunahme von Beobachtungen der Holzbienenarten *Xylocopa violacea* (Linnaeus, 1758) und *X. iris* (Christ, 1791) des Autors im Bezirk Heidelberg/Baden seit 1992 berichtet. Beide Arten verbreiten sich in Europa nordwärts - offensichtlich eine Reaktion auf die Klimaerwärmung.

Abstract: A record of the author's observations of the steady increase of the carpenter bees *Xylocopa violacea* (Linnaeus, 1758) und *X. iris* (Christ, 1791) in the Heidelberg area of Baden since 1992. Both species are expanding their ranges northwards in Europe, apparently in response to the warming climate.

The large carpenter bee *Xylocopa violacea* (Linnaeus, 1758) is a species that I became familiar with on visits to southern France and Spain from 1966 onwards. On coming to live, on my retirement, in the Heidelberg area in 1989, I was intrigued and rather surprised to encounter it for the first time in Germany at Mauer, near Heidelberg, on 14 May 1992 - a ♀ which was nesting in an old wooden fence post at the top of a steep slope on the north-eastern edge of the Grafenrein sandstone pit. The following month, on 14 June 1992, I saw another individual visiting the flowers of an ornamental shrub, which I was unable to identify, at the edge of the car park opposite the post office in Eppelheim. Since then I have kept a record in my natural history journal of all those I have seen, the vast majority of them on the balcony of the flat in Eppelheim where I lived from 1989 to 1996 and on the balcony and in the garden of the house where I have lived in Leimen-St. Ilgen (Probsterwald) since June 1996. Among the plants I have recorded them visiting are cultivated Garten- Stiefmütterrchen (*Viola tricolor*), *Buddleia davidii*, *Rudbeckia birta*, KlatschMohn (*Papaver rhoeas*), Garten-Salbei (*Salvia officinalis*), Schirm-Habichtskraut (*Hieracium umbellatum*), Breitblättrige Platterbse (*Lathyrus latifolius*), Garten-Löwenmaul (*Antirrhinum majus*) and *Lantana camara* (fig. 1).

Fig. 1: *Xylocopa violacea* (Linnaeus, 1758) nectaring on *Lantana camara.*

Fig. 2: *Xylocopa iris* (Christ, 1791) nectaring on *Tagetes erectus*.

Over the period 1992 to 2015 I have recorded a more or less steady increase in my sightings from one to 22 each year (see extreme right hand totals column in Table 1. It may also be seen from this table that the total number of sightings in each month over this period have varied from four in February and five in October to 40 in September and 47 in July. Table 1 also shows the annual totals recorded in each month and therefore their seasonal spread. The earliest date I have is of one on 15 February 2007, a very mild day with a maximum temperature of 19°C; the latest was one on 29 September 2002, a very sunny day with a maximum temperature of 21°C. These totals might well have been greater in the spring months and in the autumn, when I was absent from Germany for long periods each year, as indicated in the table, on visits to the United Kingdom, my native country where I lived until 1989.The only years when I failed to record *X. violacea* (L.) in north-west Baden were 1993, 1999 and 2001.

At my St. Ilgen home on 30 July 2003 I observed a ♀ of *X. violacea* (L.) investigating a possible nesting site in a plastic hollow pipe on the balcony. On 21 February 2007 I found one asleep in our letter box, which I released. On 4 September 2008 I found an apparently moribund individual lying on our balcony in the rain. I kept it warm overnight. Next day it revived in the afternoon sun and when I released it, it flew away strongly.

Although *X. violacea* (L.) has apparently been known to occur in south-west Germany for many years, as far north as the Ruhr, it is clearly increasing in numbers and expanding its range northwards in Europe. It has even reached south-east England in recent years, presumably in response to the present warming of the climate. This also seems to be the case with *X. iris* (Christ). Described by Westrich (1989) as having been recorded only in Baden-Württemberg, he mentioned a voucher ♀ specimen collected from the northern Kaiserstuhl on 18 July 1957 and another ♀ caught by Herrn Dr. Schröder on 3 June 1923 that was seeking to nest in a hollow stem of a shrub at Isteiner Klotz, near Istein (Lauterborn, 1924). I saw my first one visiting flowers on our balcony at Leimen-St. Ilgen (Probsterwald) on 20 August 2002. Subsequently single individuals appeared on our balcony flower boxes on 26 September 2003, 17 September 2004, 15 September and 6 October 2005, 1 and 5 August 2009 (see photograph in fig. 2) nectaring at *Tagetes erectus*, and 24 September 2010. Also in 2009, I watched one visiting the blossoms on the large *Buddleia davidii* in our garden and another, a definite ♀, also doing so on 4 August 2010. In 2011 I recorded individuals visiting the flowers on our balcony on 12 and 15 June, 1 and 2 October. My most recent sighting is of one on our balcony on 9 July 2012. It seems, therefore, that *X. iris* (Christ) has now become established in Baden.

Table 1. *Xylocopa violacea* (Linnaeus, 1758): summary of records in north-west Baden. (Periods when I was away from Baden-Württemberg and unable to make observations are indicated by the dates in brackets.)

	February	March	April	May	June	July	August	September	October	
Weeks:	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	Total
1992	(27/2 – 10/3)			1	1	(19/7 – 8/8)			(9-30/10)	2
1993										0
1994			1			(14/6 – 6/7)		(5-16/8)	(19/9)	1
1995		(1/3 – 3/4)		1	1	(21/6–6/7) 1		(16-30/8)	(13/10-27/11)	3
1996		(14/3-25/4)	1	(2-11/5)	1			(22-25/8)	(1/9-1/11)	2
1997			1	(19/4-24/5)	2	1			(25/9-24/10)	4
1998			(22/3-6/5)		2	(18-29/6) 1		(13/7-13/8)	3	(27/9-2/12) 6
1999				(3/4-16/6)	1				(4-8/11)	1
2000			(29/3-21/5)			1			1 1	(4/10-8/11) 3
2001			(28/3-24/5)			(28/6-8/7)			(7/10-14/11)	0
2002				(24/4-7/6)	1	2(14-17/6)1		(2-9/9)	3 2	1 10
2003			1 1	(6-13/4)	(14/5-8/7)			2	(24/10-30/11)	4
2004				(1/5-4/7)		1 4 4	1	2	(18-24/9)	(10/10-29/11) 12
2005				(28/4 – 22/5)	(5 - 6)	(11 – 30/7)		3 2	2	1 1 (9/10 - 28/11) 9
2006		2			(4/4 – 3/7)			(7–21/8) 1	1 3	(29/10-16/12) 7
2007		3 1	(4-16/3)	1 1 1		(29/5-27/7)			2 1	(19-28/11) 10
2008		(28/2-2/3)	(7/3) 1	(12/5-18/6)			5	1	1 1	9
2009			1 2 1			(28/4-3/7)	1	4 1	1	(19/10-1/12) 11
2010		(19/3)			(15/5)	1 2 3 2	2	1	1 1 2	3 4 (1/10-13/11) 22
2011				(2/4-16/5)	(23/5-1/6)	2 1 1 1	1 2 2 5	1	2	(22/10-5/12) 18
2012			1 2		(4/5-18/6)		1 3 1	1 1	1	3 1 1 (3/10>) 16
2013			2	(24/3-1/5)	2	2	3	(16/8)	(4/9)	2 2 (3/10-1/11) 13
2014		(4-15/3)	1 2		(26/4-9/6)		1 6 3 1	1	1	(19-24/9) (19/10-23/11) 16
2015			1	2	1	(6/6-18/7)	1 1 1		3	(3/10-16/11) 10
Totals:	3 1	2 4 4 5	2 6 1 2	1 2 2 6	4 8 3 6	6 7 1	123 9 7	6 12	11 8 9	12 3 0 1 1 188

Acknowledgements: I am grateful to Dr. Hans Horn for checking this note and for loaning me his copy of Paul Westrich's 1989 book.

References

Lauterborn, R. (1924): Faunistische Beobachtungen aus dem Gebiete des Oberrheins und des Bodensees. 3 Reihe. - Mitt. bad. Landesver. Naturk.Naturschutz N.F. **1**: 284-290.

Westrich, P. (1989): Die Wildbienen Baden-Württembergs. - Verlag Eugen Ulmer, Stuttgart.

Author's address

John F. Burton
In der Etzwiese 2
D-69181 Leimen-St. Ilgen