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A NOTE ON THE SYMPATRIC COLLECTION OF *CHYMOMYZA* (DIPTERA: DROSOPHILIDAE) IN VIRGINIA'S ALLEGHENY MOUNTAINS

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ABSTRACT

The attraction of two *Chymomyza* species, *C. procnemoides* and *C. aldrichii*, to the same damaged tree over 19 days in summer 1987 near Mt. Lake Hotel, Giles Co., Virginia is documented, confirming a previous report that *Chymomyza* species may be sympatric on the same fresh damaged tree/cut wood. A total of 17 males and 7 females were captured. An excess of males to females captured has been reported in Japan and Hungary.

Sturtevant (1916), Steyskal (1949), Wheeler (1952), Spieth (1957), Watabe (1985) and Bächli and Burla (1986) have all reported *Chymomyza* are attracted to bleeding trees, tree trunks, cut wood, or freshly damaged trees. Wheeler (1952) also stated that *C. aldrichii* Sturtevant was collected at the same sites with *C. coxata* Wheeler on trees and peeled logs in Colorado and Wyoming. Watabe (1985), Band (1988, 1989, 1993) and Papp (1992) have subsequently confirmed the sympatric capture of *Chymomyza* species on damaged trees, logs or freshly cut wood. Papp (1992) included times of capture, numbers and sex, and species for *Chymomyza* collected on poplar (logs, trunks) in a Budapest forest over a 5-day interval in May and 2 days in June, 1990. For the collections in timberyards at Hokkaido (Watabe 1985) and the poplar forest near Budapest, Hungary (Papp 1992), it is not stated whether the different species occupied the same or different logs at the time of capture.

Collections at the 1200 m elevation, Giles Co., Virginia in the vicinity of Mt. Lake Hotel have paralleled Wheeler's (1952) findings that two or more *Chymomyza* species are attracted to exactly the same damaged tree. Band (1988) collected on a wild cherry *Prunus* sp. in 1986 and a striped maple *Acer pensylvanicum* in 1987. Both trees are pictured in that paper. In 1986 the capture of a mating pair of *C. aldrichii* at 1640h on 22 July and a mating pair of *C. procnemoides* Wheeler at approximately the same time (1630h) on 25 July on the wild cherry where both species were sympatric over an extended period (Band 1988) demonstrated that both species used the same surface for mating. In 1987 species, sex and times of collection were noted for *Chymomyza* collected on the striped maple. Here I report the sympatric collection of *C. procnemoides* and *C. aldrichii* in 1987 between 18 July and 5 August, 1987 on the single damaged tree.

In Virginia all flies were trapped in shell vials and transported to the laboratory at the Biological Station within a half-hour of capture. In 1987 they were etherized, sexed, identified to species, and most specimens were affixed

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to points on insect pins to establish a reference collection. Wheeler's (1952) key was used for species identification.

Table 1 shows that males and females of both species were collected on the same damaged tree trunk for almost 3 weeks. This sympatric occurrence is reinforced in Table 2 where the numbers of males and females of each species are grouped according to morning, afternoon or early evening captures. The low numbers also may reflect the small population sizes in nature. While not all attempted captures were successful, 1987 was the last year in which *C. aldrichii* outnumbered the numbers of *C. procnemoides* captured in that region.

Table 3 is constructed from the information supplied by Papp (1992) on the dates and location of new drosophilid species captured in Hungary in recent years. In 1986 males and females of *C. amoena* (Loew) and a pair of *C. caudatula* Oldenberg were captured sympatrically in an oak forest. *Chymomyza caudatula* later was the most prevelant species among the sympatrically occurring *Chymomyza* in a poplar forest in 1990, as shown. *Chymomyza caudatula* is the only Holarctic species of the group (Wheeler 1981), *C. amoena* and the one specimen of *C. procnemoides* are introduced species of Nearctic origin; *C. distincta* (Egger) and *C. fuscimana* (Zetterstedt) have been

Table 1. Time of collections of *Chymomyza procnemoides* and *C. aldrichii* on damaged *Acer pensylvanicum* from mid-July into early August, 1987, Mt. Lake, VA.

		C. procnemoides		*C. aldrichii*		
Month/date	Time (hr)	♂♂	♀♀	♂♂	♀♀	unknowns
VII 18	1100	2			2	1♀
	1600	3	1	3	1	
VII 19	1100			1		
	1500			1		
VII 22	1900	1				
VII 27	1700	1		2	1	
VII 28	1730			2		
VIII 2	1730		1			
VIII 3	?			1		
VIII 5	2000				1	
Totals		**7**	**2**	**10**	**5**	

Table 2. Comparisons of collections at different times of the day on *Acer pensylvanicum*.

	C. procnemoides		*C. aldrichii*	
Period	♂♂	♀♀	♂♂	♀♀
morning	2		1	2
afternoon	4	1	6	2
evening	1	1	2	1
Totals	**7**	**2**	**9**	**5**

Table 3. *Chymomyza* collections in a Budapest, Hungary poplar forest in 1990, compiled from Papp (1992).

Month	May				June		
day	20a	22[a]	26[b]	28[c]	30[c]	3	11
time in hours	9-10	19-20	10	19-20	19-20	18-19	19-20
C. amoena	1♀, 1♂	1♂	1♂				
C. caudatula	1♀, 1♂	4♂	13♀,♂	2♂	25♂	9♂	1♂
C. distincta		2♀,♂	2♂		1♀	1♂	
C. fuscimana	4♂	6♂	1♂		4♀,♂	1♂	
C. procnemoides		1♂					

[a]fresh cut poplar trunks
[b]poplar trunks
[c]piles of poplar trunks

found in Europe and Japan (Watabe 1985). Steykal (1949) captured *C. amoena* in Michigan on poplar *Populus deltiodes* and black locust *Robinia pseudoacacia* in June. On the latter, they were among the Diptera feeding at frass.

The excess numbers of males to females is typical. Hence, despite the small size of the collections, Virginia and Hungarian data agree with Watabe's (1985) findings in 4 Japanese timberyards where he collected a total of 693 males and 157 females representing 4 *Chymomyza* species.

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