

Five Northern Lacewings New to the Virginia Fauna,
Including Significant Southern Range Extensions for
Eremochrysa canadensis and *Hemerobius costalis*
(Neuroptera: Chrysopidae, Hemerobiidae)

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The Order Neuroptera is a relatively small group of soft-bodied, primitive holometabolous insects that includes the antlions (Myrmeleontidae), owlflies (Ascalaphidae), green lacewings (Chrysopidae), brown lacewings (Hemerobiidae), mantisflies (Mantispidae), and spongillaflies (Sisyridae). The neuropteran fauna of Virginia is poorly documented, as evidenced by the lack of a published checklist for the state. Published records citing Virginia specimens or localities are widely scattered in the literature, primarily in species descriptions or generic and family revisions (e.g., Carpenter, 1940). Penny et al. (1997) summarized available knowledge concerning the taxonomy and distribution of the North American (north of Mexico) neuropteran fauna and cited Virginia records for 43 species in 24 genera (Table 1). Considering species known from adjacent or other nearby states that may be found in Virginia with more intensive survey efforts, we predict the state's actual fauna includes about 25 additional species.

We are currently aware of several new state and numerous new county records for Neuroptera in Virginia, including two reported below that represent significant extensions of the known ranges of the respective species. The purpose of this paper is to report the occurrence in Virginia (plus West Virginia for one) of five species of lacewings with primarily

boreal distributions. All specimens were identified by OSF and are deposited in the National Museum of Natural History (USNM) or the Virginia Museum of Natural History (VMNH).

Table 1. Summary of known Neuroptera fauna of Virginia as compared to the North American (United States and Canada) fauna (data from Penny et al., 1997).

Family	Virginia		North America	
	Genera	Species	Genera	Species
Ascalaphidae	2	2	3	8
Berothidae	1	2	1	10
Chrysopidae	4	11	15	82
Coniopterygidae	4	7	8	55
Dilaridae	1	1	1	2
Hemerobiidae	5	10	6	61
Ithonidae	0	0	1	1
Mantispidae	1	2	4	15
Myrmeleontidae	4	6	17	94
Polystoechotidae	0	0	2	2
Sisyridae	2	2	2	6
Total	24	43	60	336

***Eremochrysa canadensis* (Banks)**

Eremochrysa canadensis (Banks) is one of 16 Nearctic members of the genus *Eremochrysa* (Chrysopidae), only two species of which are found east of Texas (Penny et al., 1997). It was described in 1911 from material collected at Go Home Bay, Lake Huron, Ontario, Canada (Banks, 1911). Nearly a half-century later, this species had been additionally recorded only from Maine, Massachusetts, and New Hampshire (Banks, 1950; Bickley & MacLeod, 1956). Throne (1971) added Wisconsin to the known distribution of *E. canadensis*. The most recent summary of its distribution does not identify any additional state or provincial records (Penny et al., 1997), although Garland (1985) reported *E. canadensis* from British Columbia and Quebec (as well as Ontario). Collectively, these records suggest that *E. canadensis* has a boreal distribution.

We can now report *E. canadensis* for the first time from Virginia and West Virginia, constituting a significant southern extension of the known range of this species and the first record of the genus *Eremochrysa* for both states. Our records (Fig. 1) are as follows: VA: *Rockbridge Co.*, Blue Ridge Parkway, milepost 45, 1 mi (1.6 km) N jct. U.S. Route 60. 17 August 1993. S. M. Roble. UV light. 2 ♀♀ (USNM, VMNH); WV: *Hampshire Co.*, 8 km NW Capon Bridge (Buffalo Gap Camp), 12-14 September 1986. W. E. Steiner and J. M. Swearingen. UV light. 1 ♂ (USNM). Edge of mixed forest, sandy soil slope. The Virginia site is a xeric slope dominated by pitch pine (*Pinus rigida*), with an understory of mountain laurel (*Kalmia latifolia*) and *Vaccinium* sp.; the elevation is approximately 738 m (2420 ft). This is the southernmost known record for *E. canadensis* as it lies approximately 190 km SSW of the West Virginia locality and at least 700 km southwest of the nearest record in Massachusetts.

***Hemerobius costalis* Carpenter**

The brown lacewing *Hemerobius costalis* Carpenter (Hemerobiidae) also has a distinctly boreal distribution, having been reported only from Canada (Nova Scotia to Alberta and the Yukon), Alaska, Colorado, and New England (Carpenter, 1940; Penny et al., 1997). Therefore, its recent discovery at two sites in Virginia was unexpected. The Virginia records (Fig. 1) are: VA: *Giles Co.*, Mountain Lake, Bald Knob. 1325 m. 37°20' N, 80°32' W. 27 June 1992. W. E. Steiner, J. M. Swearingen, and C. Davis, 1 ♀ (USNM); VA: *Nelson Co.*, The Priest [George Washington National

Forest]. Drift fence at 3900 ft (1189 m). [19 June-] 7 July 1994. VMNH survey [R. L. Hoffman et al.]. 1 ♂, 2 ♀♀ (VMNH). The Priest is one of the highest peaks in the central portion of the Blue Ridge Mountains in Virginia. The nearest reported locality for *H. costalis* is in Massachusetts (Carpenter, 1940; Penny et al., 1997).

***Hemerobius conjunctus* Fitch**

The known range of *Hemerobius conjunctus* Fitch (Hemerobiidae) extends across Canada south to Colorado and New Mexico in the West and New England, New York, North Carolina, and Tennessee in the East (Penny et al., 1997). Published records include Black Mountain, North Carolina (Brimley, 1938) and Newfound Gap, Great Smoky Mountains, Tennessee (Carpenter, 1940), but the species has not been previously recorded for Virginia (Penny et al., 1997).

We have records of *H. conjunctus* from three Virginia localities (Fig. 1) as follows: VA: *Clarke Co.*, University of Virginia Blandly Experimental Farm, 2 mi (3 km) S Boyce, 39°05' N, 78°10' W. 20 April - 4 May 1995. D. R. Smith. Malaise trap. 1 ♂ (USNM); VA: *Highland Co.*, Buck Run ponds [Locust Spring picnic area, George Washington National Forest, 38°35' N, 79°38' W; elevation ca. 1115 m (3657 ft)]. 6 September 1994. S. M. Roble. UV light. 1 ♀ (VMNH); VA: *Wise Co.*, cabin [36°53' N, 82°33' W, elevation 975 m (3200 ft)] near Robinson Knob, 5 km SW Tacoma [= 1 km SW jct. county routes 699 and 706, Jefferson National Forest]. 7 - 9 June 1993. S. M. Roble. UV light. 1 ♀ (VMNH).

***Wesmaelius nervosus* (Fabricius)**

Wesmaelius nervosus (Fabricius) is another boreal hemerobiid, having been reported from Alaska and throughout Canada, south to Colorado and Utah in the West, and in the eastern United States from New England, New York, Indiana, Michigan, Wisconsin, and North Carolina (Penny et al., 1997). Carpenter (1940) cited a September record for this species (reported as *Kimminsia disjuncta*) from Mount Mitchell, North Carolina. The following collection record (Fig. 1) is the first known to us for the genus and species in Virginia: VA: [*Madison Co.*], Shenandoah National Park, Hogcamp Brook. 22-23 May 1970. O. S. Flint, Jr. 1 ♀ (USNM). Hogcamp Brook drains the Big Meadows area of the park. The specimen was collected along Dark Hollow Falls Trail at about 3400 ft (1037 m).

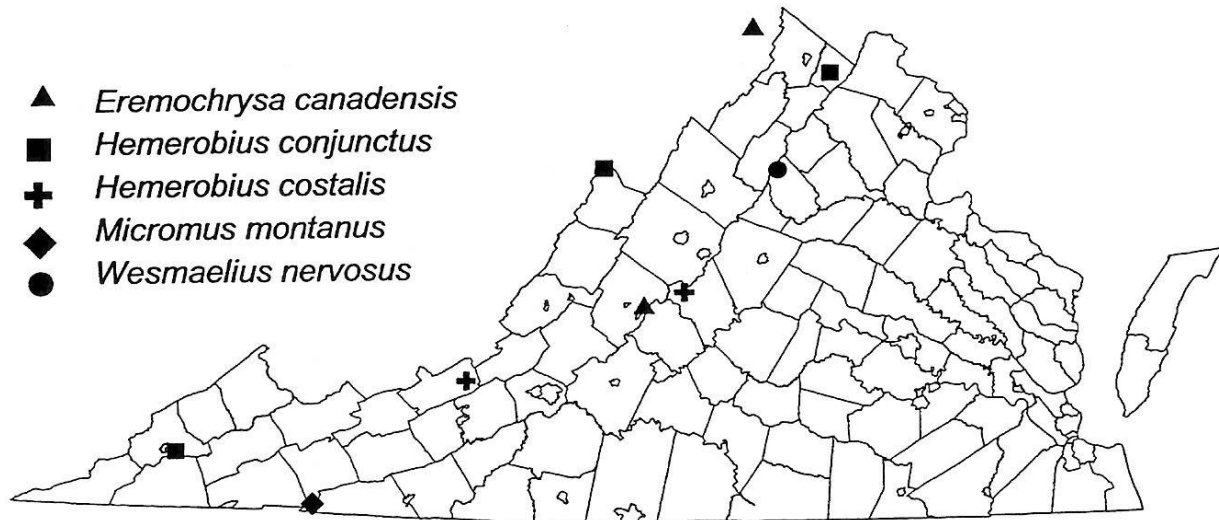


Fig. 1. Distribution of five species of lacewings in Virginia; the West Virginia record for *Eremochrysa canadensis* is also shown in relation to the Virginia border.

Micromus montanus Hagen

We can also report the first Virginia specimen of another hemerobiid, *Micromus montanus* Hagen, which ranges across Canada south to California and Arizona in the West and New England, New York, North Carolina, and Tennessee in the East (Penny et al., 1997). Published records include Raleigh, North Carolina (Brimley, 1938) and Newfound Gap, Great Smoky Mountains, Tennessee (Carpenter, 1940). The Virginia record (Fig. 1) is: VA: *Grayson Co.*, Whitetop Mountain, drift fence site off Forest Service 89 [Mount Rogers National Recreation Area, Jefferson National Forest]. 5000 ft (1524 m). [Beech woods near open fields (grassy bald)]. 23 June 1994. VMNH survey [R. L. Hoffman et al.]. 1 ♂ (VMNH). This site, along the south face of the second highest peak in Virginia, previously yielded *Xysticus emertoni* Keyserling, a boreal crab spider at its southernmost confirmed locality (Hoffman, 1996).

Considering the pervasively boreal distribution of *M. montanus*, and its restriction to ever-higher elevations southward in the Appalachians, Brimley's (1938) record of a specimen from Raleigh, North Carolina, seems improbable and might be held in abeyance pending confirmation of the identification. Carpenter (1940) did not include this record in his range statement for *M. montanus*, but Penny et al. (1997) did.

SUMMARY

The new records reported above increase the number of chrysopids known from Virginia to 12 species in five genera, and the number of hemerobiids to 14 species in six genera. The documented neuropteran fauna of the state now totals 48 species in 26 genera.

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