

A LIST OF RECORDED ODONATA OF BAYS MOUNTAIN PARK, SULLIVAN COUNTY, TENNESSEE, UNITED STATES

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Abstract — An annotated list is given of 58 spp., 11 of which are recorded here from this nature reserve for the first time.

Introduction

Bays Mountain Park is a nature reserve owned and operated by the city of Kingsport in Sullivan County, eastern Tennessee. The adult odonate fauna has been studied by JOHNSON et al. (1980), while a long term larvae research project in Bays Mountain Lake and Ecology Pond is in progress since 1977 (cf. JOHNSON & CROWLEY, 1989). Before the Tenth International Symposium of Odonatology at Johnson City I had the opportunity to stay at a cabin in the reserve. During this visit (July 21 - August 4, 1989) I gathered evidence on the odonate fauna of the park. Additional information was provided by the Symposium participants who have collected there on August 9, 1989.

The Bays Mountain Park list of JOHNSON et al. (1980) includes 45 identified species to which two were added by JOHNSON (1989). The increase of odonatologic activity preceding and during the Symposium resulted in 11 new species, bringing the total number of recorded species in the reserve to 58.

The main localities mentioned in this article are: the lake (which refers to the large Bays Mountain Lake), Beaverpond (a shallow small pond, a short distance NW of the lake), Ecology Pond (a medium sized pond, 100 m W of the lake), Dolan Branch (outflow of the lake) and the westernmost part of the park (a dry area with some small brooks). The lake seems to support a larger fish population than the other two standing waters. Dolan Branch seems to have a "more unnatural" waterflow compared with the other brooks in the park. Times are all

given in local mean time.

List of species

Taxa new to the list of JOHNSON et al., (1980) are asterisked (*). Most of the species that were not observed between July 21 and August 9, 1989 are listed without comments.

Calopterygidae

Calopteryx maculata (P. de Beauv.): common on most brooks (except Dolan Branch) at the end of July; only very few individuals still noticed on 9-VIII.

Lestidae

Archilestes grandis (Ramb.)

Lestes eurinus Say: JOHNSON (1989) noticed its dramatic decline at Ecology Pond after the invasion of fish a few years ago.

L. rectangularis Say: 1 ♂ in the forest near Ecology Pond, 9-VIII.

L. vigilax Hag.: frequent at all standing waters; mainly found at *Eleocharis* vegetation where it can be seen from dawn till after sunset.

Coenagrionidae

Amphiagrion saucium (Burm.)

Anomalagrion hastatum (Say)

Argia fumipennis violacea Hag.: common at the lake (mainly at the water edge and in the surrounding forest), rarely observed on streams.

A. moesta (Hag.): few records at the lake and on a brook.

**A. sedula* (Hag.): 1 ♂ collected sitting on *Sphagnum* on the lake shore, 25-VII.

Chromagrion conditum (Hag.)

Enallagma asperum (Hag.): JOHNSON (1989) noticed the dramatic decline of this species at Ecology Pond after fish invasion a few years ago.

E. basidens Calv.: 2 ♂ at the lake, 30-VII.

E. civile (Hag.): 3 ♂ collected at one lake

Table I — Abundance of four *Enallagma* species at Bays Mountain Lake at half hour intervals at the end of July, 1989. — [R = rare; — O = occasional; — F = frequent; — = species not seen]

Species	Time (hours)																					
	9	10	11	12	13	14	15	16	17	18	19	20	21									
<i>triviatum</i>	-	F	F	-	F	F	F	O	O	R	R	-	R	-	R	-	-	-	-	-		
<i>exsulans</i>	-	R	R	R	-	R	R	R	-	-	-	R	-	R	R	-	-	-	-	-		
<i>signatum</i>	-	-	-	-	-	-	R	R	-	R	O	O	F	F	O	F	-	-	O	-		
<i>vesperum</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	F	F	O

locality, 9-VIII.

E. divagans Sel.

E. exsulans (Hag.): only seen at the lake, always in low numbers: up to 5 individuals a day. The species does not show a diurnal activity peak (see Tab. I).

E. signatum (Hag.): rather common at the lake. The first ♂ seen at 13.30 near a shaded area; the species is most common during late afternoon (16.30-18.30)

E. triviatum Sel.: the most common damselfly at the lake in this season. Sometimes I observed rather large gatherings of ovipositing tandem pairs and solitary ♂♂, but generally, no large numbers of individuals were present on any one spot. The first ♂ was noticed at 9.45 and numbers strongly declined towards 14.00. The last tandem pair was seen about 15.30, and no individuals were on wing by late afternoon, except for 2 ♀, which were ovipositing under water.

**E. vesperum* Calv.: rather common at the lake between 20.20 and 21.50. Most individuals were seen near floating leaves of waterlily and bullshhead plants. The ♂♂ arrived before the ♀♀. Copulation lasted 15-20 min. My flash light certainly disturbed the returning postcopular tandem pairs in their behaviour.

Ischnura posita (Hag.): occasionally sighted among the shores of the lake and Ecology Pond; some individuals were noticed in the forest up to 100 m from the water.

I. verticalis (Say): frequently seen at lake and Beaverpond; it seems somewhat more common than *I. posita*.

Petaluridae

**Tachopteryx thoreyi* (Sel.): not uncommon; on 31-VII, 4 individuals in the westernmost part of the park, on 9-VIII about 20 individuals counted around the lake.

Gomphidae

Dromogomphus spinosus Sel.: not uncommon; recorded at the lake, Dolan Branch and in the westernmost area of the park.

**Erpetogomphus designatus* Sel.: 1 ♂ at Dolan Branch right under the dam, in late afternoon, 9-VIII.

**Gomphus exilis* Sel.: added to the list by JOHNSON, (1989). On 24-VII an additional ♂ was captured on a bullshhead plant in the NE section of the lake.

Hagenius brevistylus Sel.

Progomphus obscurus (Ramb.)

Stylogomphus albistylus (Hag.): not uncommon at Dolan Branch; on 9-VIII, between 14.00 and 14.30, 7 individuals were seen on this brook 2 ♂ of which were collected in the close vicinity of a ♀.

Aeshnidae

Aeshna umbrosa Walker

Anax junius (Dru.): regularly seen at Ecology Pond, but scarce at the lake.

A. longipes Hag.: 24-VII and 9-VIII, a ♂ seen in the eastern section of the lake.

Basiaeschna janata (Say)

**Boyeria graefiana* Wilmsn: a ♂ taken at Dolan Branch, 29-VII.

**B. vinosa* (Say): a ♂ captured at Dolan Branch, 9-VIII. Both *Boyeria* species seem to co-occur at Dolan Branch. In late afternoon, from 16.30 onwards, on 29-VII, several unidentified *Boyeria* individuals were present at Dolan Branch.

Cordulegastridae

**Cordulegaster erronea* Sel.: not uncommon at Dolan Branch. Observations on 9-VIII indicate its abundance could change considerably over the day at this locality: in early afternoon only 2 individuals were seen, while 12 were evidenced on the same stretch between

16.00 and 16.30.

C. maculata Sel.

Corduliidae

**Didymops transversa* (Say): added to the list by JOHNSON (1989).

Macromia alleghaniensis Willmsn: at the end of July patrolling ♂♂ were regularly seen above the lake from 8.00 to 17.00. A few times ovipositing ♀♀ were seen, but only so in shaded areas, or when it was clouded. A foraging ♂ had been caught at 18.00 in the cabin garden. In the westernmost part of the park 4 *Macromia* sp. individuals were sighted in an open forest.

Epiheca (Epicordulia) princeps (Hag.): common at the lake, present between 7.15 and 20.00, with a maximum of 5 patrolling ♂ per 100 m shore length.

E. (Tetragoneura) cynosura (Say)

Somatochlora linearis (Hag.): a ♂ captured at a brook at the E end of the lake, 9-VIII. *Somatochlora* sp. were not uncommon along the brooks save for Dolan Branch. On 31-VII, in late afternoon, 10 ♂ of a *Somatochlora* sp. had been seen above pools on a one-kilometer stretch of road in the centre of the park.

Libellulidae

Celithemis elisa (Hag.): common at the lake.

C. fasciata Kirby: common at the lake.

C. verna Pritchard: only in numbers at two lake localities with luxuriant shore vegetation; it seems to be rare elsewhere, e.g. at Beaverpond, 9-VIII.

Erythemis simplicicollis (Say): common at the lake and Beaverpond: most abundant at places with much *Eleocharis*.

Libellula cyanea Fabr.: frequent at Ecology Pond and Beaverpond, occasionally at the lake.

Libellula (Ladona) deplanata Ramb.

**L. flavida* Ramb.: an adult ♂ captured at the lake, 9-VIII.

L. incesta Hag.: common at the lake, less common at Ecology Pond and Beaverpond.

L. luctuosa Burm.: common at the lake, less common at Ecology Pond and Beaverpond.

Pachydiplax longipennis (Burm.): at the end of July it was first seen in numbers on the two spots where *Celithemis verna* was common. In August it could be seen everywhere, incl. Dolan Branch, and it was frequent at the lake and Beaverpond.

Perithemis tenera (Say): common at the lake, less so on Ecology Pond and no individuals were seen at Beaverpond. This distribution might support the observations of Dr Ken Tennessen, who suggested the preference of *P. tenera* for fish predation over odonate predation. On two days, late in July, 6 fresh exuviae were collected on a five meter stretch of the lake shore.

Plathemis lydia (Dru.): common near Ecology Pond, frequent at Beaverpond and uncommon at the lake.

**Sympetrum ambiguum* (Ramb.): an adult ♂ taken in the forest, 9-VIII.

**S. rubicundulum* (Say): an adult ♂ captured at the W end of Ecology Pond, 9-VIII.

S. vicinum (Hag.): freshly emerged teneral seen occasionally on the lake shore and at Beaverpond.

Tramea carolina (L.)

T. lacerata Hag.: a single record, 31-VII, in the western portion of the park.

References — JOHNSON, D.M., 1989. Mid-Symposium collecting trip, in: The field trip handbook of the Tenth International Symposium of Odonatology p. 4; — JOHNSON, D.M. & P.H. CROWLEY, 1989. *Adv. Odonatol.* 4: 27-43; — JOHNSON, D.M., C.C. CONEY & M.J. WESTFALL, 1980. *J. Tenn. Acad. Sci.* 55(3): 73-76.

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