

1985-06

A Checklist of the Byrophytes of The Edge of Appalachia Preserve System, Adams County, Ohio

Osterbrock, A. J.; Snider, Jerry A.

The Ohio Journal of Science. v85, n3 (June, 1985), 138-143

<http://hdl.handle.net/1811/23079>

Downloaded from the Knowledge Bank, The Ohio State University's institutional repository

Copyright © 1985 Ohio Acad. Sci.

0030-0950/85/0003-0138 \$1.00/0

BRIEF NOTE

**A CHECKLIST OF THE BRYOPHYTES OF THE EDGE OF
APPALACHIA PRESERVE SYSTEM, ADAMS COUNTY, OHIO¹**

AMY J. OSTERBROCK and JERRY A. SNIDER, Department of Biological Sciences, University of Cincinnati, Cincinnati OH 45221

OHIO J. SCI. 85 (3): 138-143, 1985

The Edge of Appalachia Preserve System is a series of nature preserves acquired by the Ohio Chapter of The Nature Conservancy and managed by it and the Cincinnati Museum of Natural History. They are located in south central Ohio and straddle the boundary between two physiographic

provinces—the Bluegrass section of the Interior Low Plateau and the Unglaciated Allegheny Plateau section of the Appalachian Plateaus (Fenneman 1938). The system covers roughly 900 ha and extends approximately from 83°23' to 83°28' west long. and 38°40' to 38°48' north lat. The preserves are bordered to the west by the Ohio Brush Creek, to the south by the Ohio River.

¹Manuscript received 30 November 1984 and in revised form 11 January 1985 (#84-54).

The topography is maturely dissected. Elevation ranges from 150 m at the level of the Ohio Brush Creek to almost 400 m. Downcutting by streams has exposed two bedrock types — calcareous Silurian shales, dolomites, and limestones, and noncalcareous Devonian shales. Some of the highest hills are capped by Mississippian siltstone. The soils belong to two series in the Gray Brown Podzolic great soil group — Bratton loams over the lower Silurian slopes and Coyer silt loam over the Devonian upper slopes and ridges (Taylor et al. 1938). The area falls within the humid temperature climatic zone. The mean annual temperature is 12.0°C and the mean annual precipitation is 102.6 cm (NOAA 1977-81), though the complexity of the topography results in a fair degree of spatial variability.

The Edge of Appalachia falls within the Knobs Border Area of Braun's (1950) Mixed Mesophytic Forest Region. Braun (1928) described more than 30 different plant communities in an area just north of the present preserve system. Most notable and/or extensive of these communities are a climax mixed deciduous forest association, oak-blueberry and pine-oak-blueberry associations, an arbor vitae-white oak-tuliptree forest, red cedar barrens, and relict prairie communities.

One hundred three taxa of mosses (Giesy 1957, Allen 1983) and 20 taxa of liverworts (Miller 1964) have previously been reported from Adams Co. Most of these were from incidental collecting, however, and no systematic study had been undertaken of the bryophytes in the preserves themselves. A recent study of the lichen flora of the area (Kaucher and Snider 1982) revealed a remarkably rich species diversity for the size of the area. This study was undertaken in five of the Adams Co. preserves in order to ascertain whether the bryophyte flora was equally diverse and to provide additional baseline species inventory data for use in managing and monitoring the preserves. Field work took place between the spring of 1981 and fall of 1983. The list of taxa is based upon collections of the senior author and herbarium specimens of E. Lucy Braun, Margaret Fulford, and J. A. Snider. Voucher specimens from this study are deposited in the University of Cincinnati Herbarium (CINC). Nomenclature follows Crum and Anderson (1981) for the mosses and Stotler and Crandall-Stotler (1977) for the liverworts.

Table 1 contains a listing of bryophytes collected in the preserves. One hundred nineteen taxa of mosses and 23 taxa of liverworts are reported. Fifty-two mosses and 15 liverworts are reported new to the

TABLE 1
Bryophyte species distribution by preserve.

Taxa	TW	BR/RR	AH	LP	Taxa	TW	BR/RR	AH	LP
Bryopsida (mosses)					<i>Fissidens subbasilaris</i>				
Archidiaceae					Hedw.	X		X	
* <i>Archidium ohioense</i>					<i>Fissidens taxifolius</i>				
Schimp. ex C.M.			X		Hedw.	X	X	X	
Fissidentaceae					Ditrichaceae				
* <i>Fissidens adianthoides</i>					* <i>Ceratodon purpureus</i>				
Hedw.	X				(Hedw.) Brid.	X		X	
<i>Fissidens bryoides</i>					<i>Ditrichum pallidum</i>				
Hedw.	X	X	X		(Hedw.) Hampe	X			
** <i>Fissidens bushii</i> (Card. & Ther.) Card. & Ther.	X	X	X		Dicranaceae				
<i>Fissidens cristatus</i>					* <i>Dicranella heteromalla</i>				
Wils. ex Mitt.	X	X	X	X	(Hedw.) Schimp.	X	X	X	
<i>Fissidens osmundoides</i>					<i>Dicranella varia</i>				
Hedw.	X	X			(Hedw.) Schimp.	X			

TABLE 1. (Continued)

Taxa	TW	BR/RR	AH	LP	Taxa	TW	BR/RR	AH	LP
<i>Dicranum flagellare</i> Hedw.	X	X		X	* <i>Bryum pseudotriquetrum</i> (Hedw.) Gaertn., Meyer, & Scherb.	X	X	X	X
* <i>Dicranum fuscescens</i> Turn.	X				* <i>Bryum pseudotriquetrum</i> var. <i>bimum</i> (Schreb. ex Brid.) Lilj.		X		
<i>Dicranum montanum</i> Hedw.	X	X		X	<i>Pohlia wahlenbergii</i> (Web. & Mohr) Andr.		X		
<i>Dicranum ontariense</i> Peters.				X	<i>Rhodobryum roseum</i> (Hedw.) Limpr.	X	X	X	
<i>Dicranum polysetum</i> Sw.		X			Mniaceae				
<i>Dicranum scoparium</i> Hedw.	X	X	X	X	<i>Mnium affine</i> var. <i>ciliare</i> C.M.	X	X	X	
* <i>Dicranum viride</i> (Sull. & Lesq.) Lindb.	X	X			** <i>Mnium affine</i> var. <i>rugicum</i> (Laur.) BSG			X	
Leucobryaceae					<i>Mnium cuspidatum</i> Hedw.	X	X	X	X
<i>Leucobryum glaucum</i> (Hedw.) Ångstr.					* <i>Mnium punctatum</i> Hedw.			X	
ex Fries	X	X	X	X	Aulacomniaceae				
Pottiaceae					<i>Aulacomnium heterostichum</i> (Hedw.) BSG	X		X	
* <i>Astomum mublenbergianum</i> (Sw.) Grout	X	X			Bartramiaceae				
* <i>Barbula cancellata</i> C.M.		X			<i>Bartramia pomiformis</i> Hedw.			X	
* <i>Barbula fallax</i> Hedw.			X		* <i>Philonotis marchica</i> (Hedw.) Brid.		X		
<i>Barbula unguiculata</i> Hedw.		X	X		Orthotrichaceae				
<i>Didymodon sopheraceus</i> (Brid.) Lisa		X	X		<i>Drummondia prorepens</i> (Hedw.) E.G. Britt.		X		
<i>Gymnostomum aeruginosum</i> Sm.	X	X	X		* <i>Orthotrichum anomalum</i> Hedw.	X	X		
<i>Gymnostomum recurvirostrum</i> Hedw.	X	X			<i>Orthotrichum ohioense</i> Sull. & Lesq. ex Aust.		X		
<i>Hyophila involuta</i> (Hook.) Jaeg. & Sauerb.	X	X	X		* <i>Orthotrichum pusillum</i> Mitt.			X	
<i>Tortella humilis</i> (Hedw.) Jenn.	X	X	X	X	Leucondontaceae				
<i>Tortula papillosa</i> Wils. ex Spruce	X	X		X	<i>Leucodon julaceus</i> (Hedw.) Sull.		X		
<i>Weissia controversa</i> Hedw.	X		X		Cryphaeaceae				
<i>Weissia sharpii</i> Anders. & Lemmon	X		X		<i>Forsstroemia trichomitria</i> (Hedw.) Lindb.			X	
Grimmiaceae					Fabroniaceae				
* <i>Grimmia alpicola</i> Hedw.	X	X	X	X	* <i>Anacamptodon splachnoides</i> (Froel. ex Brid.) Brid. X				
* <i>Grimmia alpicola</i> var. <i>rivularis</i> (Brid.) Wahl.	X				* <i>Clasmatodon parvulus</i> (Hampe) Hook. & Wils. ex Sull.		X		
Funariaceae					<i>Schwetschkeopsis fabronia</i> (Schwaegr.) Broth.			X	
<i>Funaria hygrometrica</i> Hedw.	X				Leskeaceae				
Ephemeraceae					<i>Anomodon attenuatus</i> (Hedw.) Hueb.	X	X	X	X
* <i>Ephemerum cohaerens</i> (Hedw.) Hampe		X			<i>Anomodon minor</i> (Hedw.) Fuernr.	X	X		
Bryaceae									
* <i>Bryum algovicum</i> Sendtn. ex C.M.	X								
<i>Bryum lisae</i> var. <i>cuspidatum</i> (BSG) Marg.		X							

TABLE 1. (Continued)

Taxa	TW	BR/RR	AH	LP	Taxa	TW	BR/RR	AH	LP
<i>Anomodon rostratus</i> (Hedw.) Schimp.	X	X	X	X	<i>Brachythecium oxycladon</i> (Brid.) Jaeg. & Sauerb.	X	X	X	
** <i>Anomodon viticulosus</i> (Hedw.) Hook. & Tayl.		X			* <i>Brachythecium salebrosum</i> (Web. & Mohr) BSG	X	X	X	
<i>Haplomenium triste</i> (Ces. ex DeNot.) Kindb.		X	X	X	<i>Bryhnia graminicolor</i> (Brid.) Grout	X			
<i>Leskea gracilescens</i> Hedw.	X	X	X	X	<i>Bryoandersonia illecebra</i> (Hedw.) Robins.	X	X	X	X
<i>Thelia asprella</i> Sull.	X	X		X	* <i>Conardia compacta</i> (C.M.) Robins.		X		
<i>Thelia birtella</i> (Hedw.) Sull.	X	X	X		* <i>Eurhynchium bians</i> (Hedw.) Sande-Lac.	X	X		
Thuidiaceae					* <i>Eurhynchium pulchellum</i> (Hedw.) Jenn.			X	
<i>Haplocladium virginianum</i> (Brid.) Broth.	X				* <i>Homalotheciella subcapillata</i> (Hedw.) Broth.		X		
** <i>Heterocladium dimorphum</i> (Brid.) BSG			X		* <i>Rhynchostegium serrulatum</i> (Hedw.) Jaeg. & Sauerb.	X	X	X	X
** <i>Thuidium abietinum</i> (Hedw.) BSG				X	Entodontaceae				
<i>Thuidium delicatulum</i> (Hedw.) BSG	X	X	X	X	<i>Entodon cladorrhizans</i> (Hedw.) C.M.	X			
* <i>Thuidium minutulum</i> (Hedw.) BSG		X			<i>Entodon seductrix</i> (Hedw.) C.M.	X	X	X	
<i>Thuidium recognitum</i> (Hedw.) Lindb.	X	X		X	Sematophyllaceae				
* <i>Thuidium scitum</i> (P.-Beauv.) Aust.	X				* <i>Brotherella tenuirostris</i> (Bruch & Schimp. ex Sull.) Fl.	X	X	X	
Amblystegiaceae					* <i>Sematophyllum adnatum</i> (Mx.) E.G. Britt.	X			
** <i>Amblystegium noterophilum</i> (Sull. & Lesq. ex Sull.) Holz.	X		X		* <i>Sematophyllum demissum</i> (Wils.) Mitt.		X	X	
<i>Amblystegium serpens</i> (Hedw.) BSG	X		X		Hypnaceae				
<i>Amblystegium serpens</i> var. <i>juratzkanum</i> (Schimp.) Rau. & Herv.	X		X		* <i>Callicladium baldanianum</i> (Grev.) Crum		X		X
<i>Amblystegium tenax</i> (Hedw.) C. Jens.	X	X	X	X	<i>Ctenidium molluscum</i> (Hedw.) Mitt.	X	X		X
** <i>Amblystegium tenax</i> var. <i>spinifolium</i> (Schimp.) Crum & Anders.	X	X		X	* <i>Homomallium adnatum</i> (Hedw.) Broth.	X	X	X	
<i>Amblystegium varium</i> (Hedw.) Lindb.	X	X	X		<i>Hypnum curvifolium</i> Hedw.	X	X	X	X
<i>Campylium chrysophyllum</i> (Brid.) J. Lange	X	X	X	X	<i>Hypnum imponens</i> Hedw.	X	X		
<i>Campylium hispidulum</i> (Brid.) Mitt.	X		X	X	<i>Hypnum lindbergii</i> Mitt.	X	X	X	
* <i>Campylium radiale</i> (P.-Beauv.) Grout	X	X			** <i>Isopterygium tenerum</i> (Sw.) Mitt.	X			
Brachytheciaceae					<i>Platydictya confervoides</i> (Brid.) Crum	X		X	
* <i>Brachythecium acuminatum</i> (Hedw.) Aust.	X	X			* <i>Platydictya subtile</i> (Hedw.) Crum			X	
* <i>Brachythecium curtum</i> (Lindb.) Limpr.	X		X		* <i>Platygyrium repens</i> (Brid.) BSG	X	X	X	X
					* <i>Pylaisiella intricata</i> (Hedw.) Grout		X		

TABLE 1. (Continued)

Taxa	TW	BR/RR	AH	LP	Taxa	TW	BR/RR	AH	LP
<i>Pylaisiella selwynii</i> (Kindb.) Crum, Steere & Anders.	X	X			Jungermanniaceae				
<i>Taxiphyllum deplanatum</i> (Bruch & Schimp. ex Sull.) Fl.	X	X	X	X	* <i>Jungermannia pumila</i> With.	X			
Hylocomiaceae					Scapaniaceae				
<i>Pleurozium schreberi</i> (Brid.) Mitt.		X			* <i>Diplophyllum apiculatum</i> (Evans) Steph.				X
<i>Rhytidium rugosum</i> (Hedw.) Kindb.	X	X	X		Radulaceae				
Climaciaceae					<i>Radula complanata</i> (L.) Dum.		X		
<i>Climacium americanum</i> (Brid.)		X			Porellaceae				
Diphysciaceae					* <i>Porella platyphylla</i> (L.) Pfeiff.	X	X		
<i>Diphyscium foliosum</i> (Hedw.) Mohr			X		* <i>Porella platyphylloidea</i> (Schwein.) Lindb.	X	X	X	
Polytrichaceae					Jubulaceae				
* <i>Atrichum angustatum</i> (Brid.) BSG	X	X	X	X	* <i>Frullania eboracensis</i> Gott.	X	X	X	X
* <i>Atrichum undulatum</i> (Hedw.) P.-Beauv.	X	X	X		** <i>Frullania inflata</i> Gott.		X		
* <i>Polytrichum commune</i> Hedw.	X				<i>Frullania riparia</i> Hampe ex Lehm.	X	X	X	
<i>Polytrichum ohioense</i> Ren. & Card.	X	X	X	X	Lejeuneaceae				
Hepaticopsida (liverworts)					<i>Cololejeunea biddleeomiae</i> (Aust.) Evans	X	X	X	X
Calypogejaceae					<i>Leucolejeunea clypeata</i> (Schwein.) Evans	X			
* <i>Calypogeja fissa</i> ssp. <i>neogaea</i> Schust.			X		Pelliaceae				
* <i>Calypogeja trichomanis</i> (L.) Corda	X				<i>Pellia epiphylla</i> (L.) Corda	X			
Cephaloziaceae					Aytoniaceae				
* <i>Cephalozia catenulata</i> (Hueb.) Lindb.		X			* <i>Mannia fragrans</i> (Balbis) Frye & Clark		X		
<i>Nowellia curvifolia</i> (Dicks.) Mitt.	X	X	X		* <i>Reboulia hemisphaerica</i> (L.) Raddi	X			
Geocalyceae					Conocephalaceae				
<i>Geocalyx graveolens</i> (Schrad.) Nees	X				<i>Conocephalum conicum</i> (L.) Lindb.	X	X	X	
Lophocoleaceae					Marchantiaceae				
* <i>Lophocolea bidentata</i> (L.) Dum.	X	X			<i>Preissia quadrata</i> (Scop.) Nees	X			
** <i>Lophocolea cuspidata</i> (Nees) Limpr.	X	X		X					
* <i>Lophocolea heterophylla</i> (Schrad.) Dum.	X	X	X						

TW = The Wilderness, BR/RR = Buzzardroost Rock/Red Rock
 AH = Abner's Hollow, LP = Lynx Prairie
 *county record
 **state record

county, and eight mosses and two liverworts are reported new to the state. The moss *Archidium ohioense* has been reported once before from Ohio, in a collection made by William Starling Sullivant in 1848. Snider (1982) listed it as an endangered species in Ohio.

ACKNOWLEDGMENTS. We gratefully acknowledge the funding provided for this project by the Cincinnati Museum of Natural History through the Charles A. Eulett Research Fund and by the University of Cincinnati Department of Biological Sciences.

LITERATURE CITED

- Allen, B. 1983 Mosses new to Ohio. *Castanea* 48: 56.
- Braun, E. L. 1928 The vegetation of the Mineral Springs region of Adams County, Ohio. *Ohio Biol. Surv. Bull.* 15: 383-517.
- 1950 *Deciduous forests of Eastern North America*. MacMillan Publ. Co., Inc., NY. 596 p.
- Crum, H. A. and L. E. Anderson 1981 *Mosses of Eastern North America*. Columbia Univ. Press, NY. 2 vols. 1328 p.
- Fenneman, N. M. 1938 *Physiography of Eastern United States*. McGraw Hill Book Co., Inc. 714 p.
- Giesy, R. M. 1957 Studies in Ohio bryophytes. *Ohio J. Sci.* 57: 290-312.
- Kaucher, P. R., Jr. and J. A. Snider 1982 The macrolichen flora of five Adams County nature preserves. *Ohio J. Sci.* 82: 302-305.
- Miller, H. A. 1964 Ohio liverworts. *Ohio J. Sci.* 64: 177-184.
- National Oceanic and Atmospheric Administration (NOAA), Environmental Data and Information Service, Department of Commerce 1977 *Climatological data for Ohio, annual summary*. 82(13): 1-13.
- 1978 *Climatological data for Ohio, annual summary*. 83(13): 1-13.
- 1979 *Climatological data for Ohio, annual summary*. 84(13): 1-13.
- 1980 *Climatological data for Ohio, annual summary*. 85(13): 1-13.
- 1981 *Climatological data for Ohio, annual summary*. 86(13): 1-13.
- Snider, J. A. 1982 Bryophytes. *In: T. S. Cooperrider, (ed.) Endangered and threatened plants of Ohio*. *Ohio Biol. Surv. Biol. Notes* No. 16. p. 14-25.
- Stotler, R. and B. Crandall-Stotler 1977 A checklist of the liverworts and hornworts of North America. *Bryologist.* 80: 405-528.
- Taylor, A. E., J. T. Miller, W. E. Tharp and E. D. Fowler 1938 *Soil survey of Adams County, Ohio*. U.S. Dept. Agri. Ser. 1932, No. 29, 64 p.