



A Tribute to Janice Glime—A Stalwart Contributor to Bryology

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We are very happy to dedicate this book to Janice M. Glime, Professor Emerita at Michigan Technological University. Her name is probably familiar to more bryologists around the world than any other. This is largely a result of her management (since 1996) of Bryonet (bryonet-L@mtu.edu), a wonderful bryophyte email discussion and news blog. Under Janice's management, Bryonet subscribers grew from about 170 in 1996 to 1,379 members as of March 2017 (<http://iab-bryologists-website.blogspot.com/p/past.html>). Bryonet was originally established by Swedish bryologist Gillis Een in 1991 and then managed by Jan-Peter Frahm from 1991–1996. Under Janice's management, Bryonet has flourished and provides a key resource to graduate students and biologists from many continents, allowing persons to find sources, identify specimens, have questions answered, and have serious conversations on a variety of questions and methods related to bryophytes. She was also a long-time IAB Council member and its president from 2005–2009. In addition, Janice (pronounced Janeece) has been and continues to compose a comprehensive treatise on Bryophyte Ecology, (digitalcommons.mtu.edu/bryophyte-ecology/). Details are updated regularly with new information that anyone can download. This is the only textbook-style treatment that is available for beginning classes in bryology and thanks to Janice is available free on the internet.

Jeffrey Duckett, another former IAB president, wrote 'Through her on-line book Janice Glime is probably the most well known bryologist in the world today. Any on-line search on just about any bryophyte subject almost invariably comes up with the very latest information as set out in her book, it is simply wonderful and magical.' Irene Bisang, one of many contributors to Janice's book, wrote 'She never gets tired of checking a further source or adding an additional image to illustrate species, and through that, bryological diversity. She often comes up with interesting interpretations of bryological phenomena and keeps a focus on stimulating interest with the reader. I am impressed by the wealth of literature she is able to incorporate in her textbook.' Janice received the IAB Hattori Award for her book at the IAB meeting in London in 2013 and continues to revise it with input from many bryologists around the world.

Janice is a bryophyte ecologist. She has long been interested in the ecological relationships between bryophytes and other organisms, especially insects, from the start of her career. She received her M.S. at the University of West Virginia in 1964 and her Ph.D. at Michigan State University in Botany in 1968, working with Dr. William Drew. The title of her Ph.D. dissertation was 'Aquatic Insect Communities Among Appalachian Stream Bryophytes'. In an early paper (Glime 1968), a part of her Ph.D. dissertation, she also acknowledged an entomologist, Dr. Gordon Guyer. This study involved twenty-eight Appalachian mountain streams in three states—Pennsylvania, Maryland, and Virginia. She wrote that it was the first study determining the 'relationships existing in the bryophyte-insect communities of flowing water in middle Appalachian streams.' She especially noted the type of substrates that bryophytes, both mosses and liverworts, provide for the aquatic insects, adaptation of insects to bryophyte habitats, and possible uses of bryophytes by insects. She was also the first to identify all the bryophytes in these communities (with some help from Howard Crum, Ron Pursell, and Winona Welch). Welch helped Janice with her identifications of *Fontinalis*, which became the most important genus for Janice's future experimental research. Janice also carried out similar stream research in New Hampshire, and later published research on bryophyte stream communities with Nancy Slack on mountain stream communities in the Adirondacks of New York State (Slack & Glime 1985, Glime *et al.* 1987).

In 1984, Janice spent a sabbatical leave with Dale Vitt at the University of Alberta. While there she continued her work investigating stream ecology, joining Catherine LaFarge and Dale with trips to the Canadian Rockies and from these field trips they produced two papers on montane stream bryophytes (Vitt *et al.* 1986, Glime & Vitt 1987). While in Alberta, she and Dale wrote two papers reviewing 1) structural (Vitt & Glime 1984), and 2) physiological adaptations (Glime & Vitt 1984) of aquatic bryophytes. These early reviews currently both have well over 50 citations and still serve as basic resources of information on aquatic bryophytes. While in Alberta, Janice also was interested in the bryophyte flora of hot springs and over the years visited many of these in North America as well as Japan (Glime & Iwatsuki 1997). Unfortunately

for Janice, she complained that hot springs (that is sitting in them) gave her severe headaches so she could never enjoy these side benefits. Janice's research also included a great deal of experimental work on stream bryophytes and especially on species of *Fontinalis*. She engineered artificial streams in which she could measure aspects such as temperature and flow rate and related these to actual ecological conditions. Her more recent publications include a wide array of bryophyte topics including bryophyte responses to silviculture, methods in stream ecology, bryophytes and herbivory, metabolic effects in detoxification of copper and cadmium in *Sphagnum*, and the discovery of new mosses. In 2011, she added a new topic, writing a paper about the effects of climate change on aquatic bryophytes (Glime 2011).

Another important aspect of Janice's contributions to bryology is her teaching, especially at the graduate level. Many students came to northern Michigan to study with her at Michigan Technological University. Many of them have stayed at her house while completing their studies. One of them, Noris Salazar Allen, a noted bryologist at the University of Panama and the Smithsonian Institute in Panama City, had a Fulbright Postdoctoral Fellowship to study with Janice Glime. She wrote that she was staying in the attic of Janice's house- 'At that time there were students of Janice's from China and the Philippines also staying at the house. They helped with the cooking and in this way everyone had the opportunity to try foods from different countries' and 'I enjoyed the many topics, scientific and cultural.' Janice was working on her book and asked Noris to read some chapters. 'I enjoyed reading it and gave her my comments from my experiences in the tropics. I have used her book on the web; it has been of great help to my students and my classes at the University of Panama.'

Robbert Gradstein, secretary-treasurer of IAB from its beginning in 1969 to 1987 provides his perspective of Janice's contributions as follows:

'Janice has done innumerable services to the international bryological community! They range from first column editorship of The Bryological Times (the 'Techniques Notebook') up to the presidency of the IAB. And not to forget the "Bryonet", which has been running successfully for more than thirty years thanks to Janice. Among her important achievements, there is one that may be less well known and that I would like to recall. It concerns her pioneer contribution to a branch of bryology that might be called 'comparative field bryology'. I refer to her paper in The Bryological Times nr. 17, 1982 under the title 'Bryological Excursions: a comparison'. The paper appeared shortly after her departure to Heidelberg for the study of bryophyte hormones with the late Professor Martin Bopp during a couple of months. I am not sure how much time she actually spent in the lab as she seems have been keen to attend almost every possible bryological fieldtrip held in Europe during that year. Her account in The Bryological Times on these trips is a delightful narrative of her experiences, full of interesting insight and humor. I may quote from her account: 'The British emphasize teaching and satisfied the requirements The Dutch were the most casual The Germans were somewhat formal The Czechoslovakian field trip was of course quite different.... The most unusual fieldtrip was with the Nordic Bryological Society' Her observations during these trips led to several interesting conclusions that may be still valid today (see also Bischler & Gradstein 1985, British Bryological Society Special Volume 1, p. 12):

-In some societies, participants on fieldtrips collect frenetically whereas in others they scarcely look at plants and hardly gather a tiny piece....

-Some transform excursions into marathons, other just walk slowly and take much time for conversation....

-In some trips drinking of alcohol is much welcomed while in others participants behave like to Blue Ribbon Army....

-In North America one could benefit a lot from the European model....

Thanks a lot, Janice, for a wonderful job done! Paris, June 1, 2017, Robbert Gradstein.'

Barbara Crandall-Stotler provided the following comments.

'My earliest recollections of Janice were of her intense interest in the diversity and ecology of mountain stream bryophytes, and her early studies of *Fontinalis*. In addition to her published works on bryophyte community structure, which date from her 1966 study of the bryophytes of Camp Whippoorwill, Maryland (Glime 1966), Janice has also given generously of her time to further interest in bryology by students worldwide. Paramount to her contributions has been the management of Bryonet, an internet discussion group, sponsored by the International Association of Bryologists. Open to anyone who wants to learn about bryophytes, Bryonet has been an important tool for communicating ideas and fostering collaborations among professionals and amateurs interested in bryophytes since 1991. Through the years, she has also served IAB in other capacities; for example, in 1987 she organized a conference on 'Methods in Bryology' in Mainz, Germany and edited its publication by the Hattori Botanical Laboratory in 1988, and from 2005-2009 she served as President of IAB. Her commitment to teaching and expanding the opportunities for non-bryologists to become involved in bryology is further evidenced by her handbook, 'The Elfin World of Mosses and Liverworts of Michigan's Upper Peninsula and Isle Royale' (Glime 1993), and her IAB sponsored, on-going development of an E-book on Bryophyte Ecology. This web-based textbook is encyclopedic in scope, and takes bryology into the new frontier of electronic education. For all her many accomplishments, Janice is to be congratulated.—Barbara Crandall-Stotler, June 8, 2017 Carbondale, IL.'

Other colleagues have noted Janice's generosity with her knowledge and time to both students, colleagues, and unknown correspondents. Jeffery Duckett wrote, in addition, 'Janice is deeply loved and admired across the world for her unseen and largely unacknowledged activities over many decades as a constructive reviewer of countless articles, and as a tireless helper and teacher of beginners in bryology.'

We all congratulate Janice on truly being a stalwart contributor to IAB and to all of bryology.

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