



The Bryological Times



Volume 143



President's Message

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The idea of founding an international organization providing a forum enhancing communication and interaction among bryologists emerged 50 years ago, from a discussion among leading bryologists attending the Pacific Science Congress in Tokyo in 1966. The International Association of Bryologists was established at the following International Botanical Congress in Seattle. Since then the Society has held meetings biennially and on the occasion of all botanical Congresses, providing unique opportunities for bryologists from around the world to present the latest outcomes of their research, engage in informal discussions and develop new collaborations. In addition to fostering opportunities for intellectual interactions, the society also seeks to promote research, in particular by students, providing research grants on all aspects of bryology or more specifically toward the conservation biology of bryophytes.

As the end of the year approaches, it is time to once again renew your membership and encourage colleagues and collaborators to join the society. Membership is 16 US dollars a year; the fee is waived for students the first year. Bryology continues to be a highly dynamic field, with ongoing significant contributions in all aspects of

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the discipline, from discoveries of new species and ecological processes governing their distribution to discoveries of gene functions, and fundamentals of genome evolution. Share your exciting research at

our next meeting in Shenzhen, through the society's bryological journal (*Bryophyte Diversity and Evolution*) or informally through the *Bryological Times*. Match your dynamic scholarly work and passion for bryophytes with an active participation in the society. Join us in our efforts to maintain the original goals of the society, namely to promote discussion and collaboration to further our understanding of the biology of bryophytes. Please renew your membership by visiting www.bryology.org. I look forward to hearing from you in 2017.



Exploring the bryoflora of Samoa

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A six-week botanical expedition on Samoa was organized by the National Tropical Botanical Garden (NTBG) Kauai from June to early July 2016. As the recipient of NTBG's Young Investigator Fellowship, I had the privilege of working alongside NTBG's Tim Flynn in exploring and collecting bryophytes from various localities on Samoa's two largest islands, Upolu and Savai'i.

Other participants of the expedition included NTBG's Dr. David Lorence, and Ken Wood, as well as Dr. Art Whistler and Melissa Johnson. The expedition was of course not done in the absence of local counterparts from Samoa. We were assisted tirelessly by the staff from the Ministry of Natural Resources and Environment, particularly Talie Foliga, Moeumu Uili, Fialelei Enoka and Josef Pisi; and by staff members of the Samoa Conservation Society. The land-owning communities from Saletele Village on Upolu and A'opo Village on Savai'i were also very helpful providing field guides when the need arose.

The overall objective was to explore different habitats and localities on Upolu and Savai'i and to document their floral diversity. The six week expedition consisted of five weeks of field work, alternating between being out in the field on collection days and "days off" to process specimens. The final sixth week was devoted to preparing the specimens and necessary documents for shipment.

The weather held better than anticipated for the entire six weeks, coincidentally only raining on a handful of days when we were not out in the field, allowing us to enjoy some of the most breathtaking scenic views that Samoa has to offer while botanizing in the warm, humid Western Polynesian weather conditions.



Part of the group at the big banyan tree at A'opo Upland forest (Credit: James Atherton)

On Upolu we visited Lemafa Pass, Mt. Fao, Tavalagi Pass, Mt. Vaea, Mt. Sigaele and Mt. Fiamoe during the first two weeks. We then spent three weeks on beautiful Savai'i in the upland forests of A'opo, Asau, Mt. Matavanu, Letui, Mata o le Afi and Taga. Most field days were whole day hikes through the forests, including a coast to peak hike up Mt. Fao reaching an elevation of 754 m on a scorching hot day that saw us run short of water.

We also had the opportunity to camp at 1600 m elevation in Mata o le Afi where the terrain was a combination of montane forest and volcanic scrub and made for an interesting two-night stay despite the cold.

There has not been any recent work investigating bryophyte diversity in Samoa prior to this expedition. It was therefore an opportune time to build awareness amongst the Samoan scientific community, especially those working in the field of conservation, about this group of plants that are easily overlooked and mostly neglected during biodiversity assessments. It also served as an opportunity to further consolidate bryophyte specimen collections in the South Pacific, with more collections being done in Fiji lately and very recently in the Solomon Islands. This expedition was made possible with the support and funding from Mohammed bin Zayed Species Conservation Fund and National Geographic Society, as part of NTBG's Flora of Samoa project.



Mereia Tabua examining bryophytes on Mt. Matavanu (Credit: Melissa Johnson)



Tim Flynn photographing liverworts on a rock at Tavalagi Pass.



View of our camp site 1600m at Mata o le Afi

2017 IAB and IBC meeting: Shenzhen, China

IAB will meet jointly with the International Botanical Congress in Shenzhen, China on the **23–29 July 2017**. The submission deadline for oral presentation abstracts is **15 January 2017**; the deadline for poster abstracts is **15 February 2017**. Early bird conference registration is also now open. The IBC has established several award and stipend opportunities to encourage and assist scientists and students to be actively involved in IBC 2017. More information about these awards and stipends can be found at the conference website: www.ibc2017.cn.

A monument in honor of Sinske Hattori

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In 1993, a monument commemorating the bryological achievements of Dr. Sinske Hattori (1915–1992) was erected in Inohae valley, a rich bryophyte locality in southern Japan that has become famous through the bryological explorations of Dr. Hattori and his co-workers. The monument, consisting of a natural stone on a pedestal, was built by the mayor of Kitago town, Y. Takahashi, and measures about 3 m high. The inscription in Chinese characters on the natural stone reads “*Mosy forest of Inohae Valley*”. The rough translation of the commemorative plate on the pedestal is as follows:



Monument commemorating Dr. Sinske Hattori.

*“The forest of Inohae Valley in Oonita National Forest is well preserved in order to protect its rich bryophyte flora, which has developed here owing to the high rainfall and high humidity that characterize this region. Intensive bryophyte investigations have been carried out by Dr. S. Hattori and his co-workers from the Hattori Botanical Laboratory in this natural forest, which is made up of evergreen broad-leaved trees as represented by *Quercus gilva*, *Castanopsis* spp., *Ilex integra*, *Machilus japonica* and *Meliosma rigida*. The investigations showed the presence of many rare bryophyte species and drew the attention of specialists from all over the world. The moss *Garovaglia elegans* is of particular interest for its elegant habit and for the large-sized, golden-greenish plants growing on tree trunks at waterfalls. Many bryophyte specimens have been collected in this area and some were distributed to herbaria all over the world where they are being used for taxonomic research. It is our great pleasure to have such splendid ecotourist and research resources here in Kitago Town, which became known to the world through the research activities by Dr. Hattori.”*



Hiroshima University student fieldtrip to the Hattori Monument, 5 May 1998. Pictured are Dr. Tomio Yamaguchi (top left), Dr. Hiromi Tsubota (top right) and Professor Hironori Deguchi (bottom right).

Where are the types of liverwort and hornwort species?

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Study of type specimens, especially holotypes, is crucial in taxonomy. The type is the specimen to which the name of a species (or genus, or some other taxon within a family) is permanently attached, and the true identity of a species is determined by the characteristics of the type specimen. Since the location of the type or the original material used by authors to describe new species is usually not indicated in the older literature, it is essential to know where the author's own herbarium and types are kept. For plants in general the best source of information is *Taxonomic literature* ed. 2 or "TL-2" (Stafleu & Cowan 1976–1988). For bryophytes, we have the excellent list of Geneva Sayre: *Authors of bryophytes and present location of their herbaria* (Sayre 1977).

An update of this list was prepared by Dale Vitt, Zenoske Iwatsuki and myself in 1985 for the International Association of Bryologists (Vitt et al. 1985). Since these publications are now more than thirty years old and may not be readily available to everybody, I have made an updated compilation for liverworts and hornworts.

The present list contains the names of about two hundred authors of liverwort and hornwort species with location of their original herbarium. Only deceased authors, or authors still living but no longer working on liverwort or hornwort taxonomy, are included. For each author dates of birth and (when applicable) death, official author abbreviation (in brackets), and official acronym (in bold face) of herbaria where the original collections of the author are kept (Thiers 2016), are indicated. Herbaria cited are normally the locations of the holotypes or the syntypes, unless otherwise indicated in the original publication. Herbaria containing duplicates are not listed unless the original herbarium of the author was destroyed or unknown. For listings of herbaria containing duplicates the papers by Sayre and Vitt et al. should be consulted.

All authors of accepted species (Söderström et al. 2016) are considered with exception of those who described only one new species, or very few new species in co-authorship with senior authors. Authors of species that are now considered synonyms are not included exhaustively.

Acknowledgment: I thank L. Hedenäs, T. Katagiri, D.K. Singh, T. Pócs and R.L. Zhu for additions and corrections.

Literature cited:

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- Stafleu F.A. & R.S. Cowan 1976–1988. Taxonomic literature: A selective guide to botanical publications and collections with dates, commentaries and types, 2. ed. *Regnum Vegetabile* 94: 1–1136; 98: 1–991; 105: 1–980; 110: 1–1214; 112: 1–1066; 115: 1–926; 116: 1–653.
- Thiers B. 2016. Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. <http://sweetgum.nybg.org/ih/>
- Vitt D.H., S.R. Gradstein & Z. Iwatsuki 1985. Compendium of Bryology: A world listing of herbaria, collectors, bryologists, and current research. *Bryophytorum Bibliotheca* 30: 1–355.

Alphabetical list of authors

- Allison K.W. 1894–1976 (Allison) – **CHR**
- Allorge P. 1891–1944 (P.Allorge) – **PC**
- Allorge V. 1888–1977 (V.Allorge) – **PC**
- Amakawa T. 1917–2002 (Amakawa) – **NICH**
- Ångström J. 1813–1879 (Ångstr.) – **S**
- Arnell H.W. 1848–1932 (Arnell) – **S, UPS**
- Arnell S.W. 1895–1970 (S.W.Arnell) – **BOL** (S. African colls.), **UPS**
- Austin C.F. 1831–1880 (Austin) – **MANCH, NY**
- Bapna K.R. 1925– (Bapna) – **UDAIPUR**
- Beauverd G. 1867–1942 (Beauverd) – **G**
- Benedix E.H. 1914–1983 (Benedix) – **JE**
- Berggren S. 1837–1917 (Berggr.) – **LD**

- Berrie G.K. 1928– (Berrie) – **BM**
- Bescherelle E. 1828–1903 (Besch.) – **BM, PC**
- Bertoloni A. 1775–1869 (Bertol.) – **BOLO**
- Bhardwaj D.C. 1923–1995 (D.C.Bhardwaj) – **LWU**
- Bischler H. 1932–2005 (Bischl.) – **COL** (Colombian colls.), **PC**
- Bischoff G.W. 1797–1854 (Bisch.) – destroyed; dupl. in **M, H**
- Bory de Saint-Vincent J.B.G.M. 1778–1846 (Bory) – **PC**
- Brotero F. 1744–1828 (Brot.) – **LISU**
- Brown E.A. 1956–2013 (E.A.Brown) – **NSW**
- Bryhn N. 1854–1916 (Bryhn) – **C, GB, O**
- Buch H.R.V. 1883–1964 (H.Buch) – **H**
- Buchloh G. 1923–1989 (Buchloh) – **KR**
- Campbell D.H. 1859–1953 (Campb.) – **UBC**
- Campbell E.O. 1910–2003 (E.O.Campb.) – **MPN**
- Candolle A.P. de 1778–1841 (DC.) – **G**
- Carl H. 1908–1984 (Carl) – **JE**
- Carr D.J. 1915–2008 (D.J.Carr) – **CANB**
- Carrington B. 1827–1893 (Carringt.) – **MANCH**
- Carruthers W. 1830–1922 (Carruth.) – **BM**
- Castle H. 1894–? (Castle) – **YU**
- Chen P.C. 1907–1970 (P.C.Chen) – **PE**
- Clark L. 1884–1967 (L.Clark) – **WTU**
- Colenso W. 1811–1899 (Colenso) – **WELT, BM**
- Cooke C.M. 1874–1948 (C.M.Cooke) – **BISH**
- Corda A.K.J. 1809–1849 (Corda) – **PR**
- Culmann P.F. 1860–1936 (Culm.) – **Z**
- De Notaris G. 1805–1877 (De Not.) – **FI, RO**
- Del Rosario R.M. 1939– (Del Ros.) – **PNH**
- Dickson J. 1738–1822 (Dicks.) – **BM**
- Douin C.I. 1858–1944 (Douin) – **LY**
- Dugas M. (Dugas) – **PC**
- Dumortier B.C.J. 1797–1878 (Dumort.) – **BR**
- Ehrhardt J.F. 1742–1795 (Ehrh.) – **MW**
- Eifrig H. (Eifrig) – **JE**
- Evans A.W. 1868–1959 (A.Evans) – **YU**
- Falconer H. 1808–1865 (Falc.) – **BM**
- Fulford M.H. 1904–1997 (Fulford) – **CINC**
- Gao C. 1929– (C.Gao) – **IFP**
- Garside S. 1889–1961 (Garside) – **BOL**
- Gepp A. 1862–1955 (Gepp) – **BM**
- Gerola F.M. 1914–2006 (Gerola) – **MI**
- Goebel K.I. 1855–1932 (K.I.Goebel) – **M**
- Gola G. 1877–1956 (Gola) – **TOM, TO**
- Gottsche C.M. 1808–1892 (Gottsche) – destroyed; dupl. in **BM, C** (Mexican spp.), **G, H, NY, PC, S, W**
- Gray S.F. 1766–1828 (Gray) – unknown

- Greville R.K. 1794–1866 (Grev.) – **E**
 Griffith W. 1810–1845 (Griff.) – **BM**
 Grolle R. 1934–2003 (Grolle) – **JE**
 Hampe G.E.L. 1795–1880 (Hampe) – **BM**
 Hasegawa J. 1947– (J.Haseg.) – **KYO, NICH**
 Hässel de Menendez G.G. 1927–2009 (Hässel) –
BA
 Hatcher R.E. 1930–1967 (Hatcher) – **UWM**
 Hattori S. 1915–1992 (S.Hatt.) – **NICH, TNS**
 Haynes C.C. 1858–1951 (Haynes) – **FH, NYS**
 Heeg M. ?–1902 (Heeg) – **W**
 Hedwig J. 1730–1799 (Hedw.) – **G**
 Herzog T. 1880–1961 (Herzog) – **JE**
 Hewson H.J. 1938–2007 (Hewson) – **NSW**
 Hodgson E.A. 1888–1983 (E.A.Hodgs.) – **MPN**
 Hoffmann G.F. 1760–1826 (Hoffm.) – **MW**
 Hong W.S. 1919–2014 (W.S.Hong) – **UGF**
 Hooker J.D. 1817–1911 (Hook.f.) – **BM**
 Hooker W.J. 1785–1865 (Hook.) – **BM**
 Horikawa Y. 1902–1976 (Horik.) – **HIRO**
 Hornemann J.W. 1770–1841 (Hornem.) – **C**
 Howe M.A. 1867–1936 (M.Howe) – **NY**
 Hudson W. 1730–1793 (Huds.) – mostly
 destroyed; dupl. in **BM**
 Hübener J.W.P. 1807–1847 (Huebener) –
 destroyed; dupl. in **BM, HAL, PC, STR**
 Hürlimann H. 1921–2014 (Hürl.) – **Z**
 Inoue H. 1932–1989 (Inoue) – **TNS**
 Iisiba E. 1873–1936 (Iisiba) – **TNS**
 Jack J.B. 1818–1901 (J.B.Jack) – **G**
 Jensen C.E.O. 1859–1941 (C.E.O.Jensen) – **C**
 Jones E.W. 1909–1992 (E.W.Jones) – **BM, E**
 (private herb.)
 Jørgensen E.H. 1862–1938 (Jørg.) – **BG**
 Jovet-Ast S. 1914–2006 (Jovet-Ast) – **PC**
 Kaalaas B.B.L. 1851–1918 (Kaal.) – **BG**
 Kachroo P.N. 1924–2007 (Kachroo) – **GUH,**
KASH
 Kamimura M. 1909–1993 (Kamim.) – **NICH**
 Kashyap S.R. 1882–1934 (Kashyap) – **LAH**
 Kitagawa N. 1935– (N.Kitag.) – **KYO, NICH**
 Kodama T. 1928–1997 (T.Kodama) – **OSA**
 Kummer P. 1834–1912 (P.Kumm.) – unknown
 Kuwahara Y. 1927– (Kuwah.) – **NICH**
 Labillardière J.J.H. de 1755–1834 (Labill.) – **FI**
 Lamarck J.P.A.P.M. de 1744–1829 (Lam.) – **PC**
 Lehmann J.G.C. 1792–1860 (Lehm.) – **S**
 Leitgeb H. 1835–1888 (Leitg.) – **GZU**
 Levier E. 1839–1911 (Levier) – **FI**
 Libert M.A. 1782–1865 (Lib.) – **BR, LG**
 Lightfoot J. 1735–1788 (Lightf.) – **BM**
 Limpricht K.G. 1834–1902 (Limpr.) – **BP**
 Lindberg S.O. 1835–1889 (Lindb.) – **H**
 Lindenberg J.B. 1781–1851 (Lindenb.) – **W**
 Linnaeus C. 1707–1778 (L.) – **LINN**
 Loitlesberger K. 1857–1943 (Loitl.) – **W**
 Lorbeer G. 1899–1945 (Lorb.) – **S**
 Macvicar S.M. 1857–1932(Macvicar) – **BM**
 Mägdefrau K. 1907–1999 (Mägdefr.) – **M**
 Malmborg S. von (Malmb.) – **UPS**
 Martensson O. 1915–1995(Martens.) – **UPS**
 Martius K.F.P. von 1794–1868 (Mart.) – **BR**
 Massalongo C. 1852–1928 (C.Massal.) – **VER**
 McGregor R.L. 1919–2012 (McGregor) – **KANU**
 Meenks J.L.D. (Meenks) – **U** (now in **L**)
 Meijer W. 1923–2003 (Meijer) – **BO, L**
 Meissner C.F.W. 1800–1874 (Meissn.) – **NY**
 Mérat F.V. 1780–1851 (Mérat) – **PC**
 Meylan C. 1868–1941 (Meyl.) – **LAU**
 Michaux A. 1746–1802 (Michx.) – **PC**
 Miller H.A. 1928– (H.A.Mill.) – **BISH, JE**
 Mitten W. 1819–1906 (Mitt.) – **NY**
 Mizutani M. 1930– (Mizut.) – **NICH**
 Montagne C. 1784–1866 (Mont.) – **PC**
 Moris G.G. 1796–1869 (Moris) – **TO**
 Müller K. 1881–1955 (Müll.Frib.) – **KR**
 Na-Thalang O. (Na-Thalang) – **NSW**
 Nees von Esenbeck G.B.G. 1776–1858 (Nees) –
STR
 Nicholson W.E. 1866–1945 (W.E.Nicholson) –
CGE
 Okamura S. 1877–1947 (S.Okamura) – **NICH**
 Onraedt M. 1904–1998 (Onr.) – **NAM**
 Pagán F.M. 1896–1942 (Pagán) – **MICH, NY**
 Pande S.K. 1899–1960 (S.K.Pande) – **LWU**
 Paton J.A. 1929– (Paton) – **BM, E**
 Pearson W.H. 1849–1923 (Pearson) – **BM**
 (British colls.), **MANCH**
 Perold S. 1928–2011 (Perold) – **PRE**
 Persson N.P.H. 1893–1978 (Perss.) – **S**
 Proskauer J.M. 1923–1970 (Prosk.) – **UC**
 Raddi G. 1770–1829 (Raddi) – **PI**
 Radian S. S. 1871–1958 (Radian) – destroyed
 Reichardt H.W. 1835–1885 (Reichardt) – **W**
 Reimers H. 1893–1961 (Reimers) – **B**
 Reyes-Montoya D. 1941–2007 (Reyes Montoya) –
HAC
 Robinson H. 1932– (H.Rob.) – **US**
 Rodway L. 1853–1936 (Rodway) – **HO**
 Roumeguère C. 1828–1892 (Roum.) – **BR**
 Ryan E. 1849–1905 (Ryan) – **O**
 Salmon E.S. 1871–1959 (Salmon) – **BM**

Sande Lacoste van der 1815–1887 (Sande Lac.) – **L**
 Sauter A.E. 1800–1881 (Sauter) – **BM, RO**
 Schiffner V. 1862–1944 (Schiffn.) – **FH** (main herb.), **PRC** (European colls.), **W** (Brazilian and European colls.)
 Schljakov R.N. 1912–1999 (Schljak.) – **KPABG, LU**
 Schmidel C.C. 1718–1792 (Schmidel) – **M**
 Schrader H.A. 1767–1836 (Schrad.) – **LE**
 Schreber J.C.D. 1739–1810 (Schreb.) – **M**
 Schuster R.M. 1921–2012 (R.M.Schust.) – **F**
 Schwägrichen C.F. 1775–1853 (Schwägr.) – **G**
 Schweinitz L.D. von 1780–1834 (Schwein.) – **PH**
 Scopoli J.A. 1723–1788 (Scop.) – destroyed?
 Scott G.A.M. 1933–1998 (G.A.M.Scott) – **MELU**
 Shimizu D. 1915–1998 (Shimizu) – **NICH**
 Sim T.R. 1858–1938 (Sim) – **GRA, PRE**
 So M.L. (M.L.So) – **HSNU, IFP, JE**
 Solari S.S. 1944– (Solari) – **BA**
 Sprengel K.P.J. von 1766–1833 (Spreng.) – destroyed; dupl. in **G, W**
 Spruce R. 1817–1893 (Spruce) – **MANCH**
 Stephani F. 1842–1927 (Steph.) – **G**
 Stotler R. 1940–2013 (Stotler) – **SIU**
 Svihla R.I.D. 1897–1974 (Svihla) – **WTU**
 Swails L.F. 1932– (Swails) – **CINN**
 Swartz O. 1760–1818 (Sw.) – **S**
 Szweykowski J. 1925–2002 (Szweyk.) – **POZ**
 Taylor T. 1786–1848 (Taylor) – **FH**
 Thaithong O. (Thaithong) – **NICH**
 Thunberg C.P. 1743–1828 (Thunb.) – **UPS**
 Tixier P. 1918–1997 (Tixier) – **PC**
 Trabut L.C. 1853–1929 (Trabut) – **AL?**
 Trevisan di San León V.B.A. 1818–1897 (Trevis.) – **PAV**
 Udar R. 1926–1985 (Udar) – **LWU**
 Underwood L.M. 1853–1907 (Underw.) – **NY**
 Vanden Berghen C. 1914–2004 (Vanden Berghen) – **BR**
 Verdoorn F. 1906–1984 (Verd.) – **FH**
 Vianna E.C. (E.Vianna) – **ICN**
 Volk O.H. 1903–2000 (O.H.Volk) – **JE**
 Wahlenberg G. 1780–1851 (Wahlenb.) – **UPS**
 Wallroth C.F.W. 1792–1857 (Wallr.) – **PR**
 Warnstorf C.F. 1837–1921 (Warnst.) – **BP**
 Weber F. 1781–1823 (F.Weber) – **S**
 Wigglesworth G. 1877–1972 (Wigglesw.) – **MANCH**
 Willdenow C.L. 1765–1812 (Willd.) – **B**
 Wilson W. 1799–1871 (Wilson) – **BM**

Winkler S. 1968–1992 (S.Winkl.) – **ULM**
 Withering W. 1741–1799 (With.) – **LINN**
 Wu P.C. 1935 (P.C.Wu) – **PE**
 Yamada K. 1934 (K.Yamada) – **NICH**
 Yuzawa Y. 1934 (Yuzawa) – **NICH**
 Zwickel W. 1908–? (Zwickel) – destroyed; dupl. in **JE**



A tribute to a bryologist's wife: Sarolta (Saci) Laura Pócs, 1946–2016

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It is common knowledge that scientific work and achievement are extremely difficult without a stable background and supportive environment. I was blessed with a loving partner who not only provided these, but was also willing to assist and contribute to my scientific work: all gifts that cannot be appreciated enough.



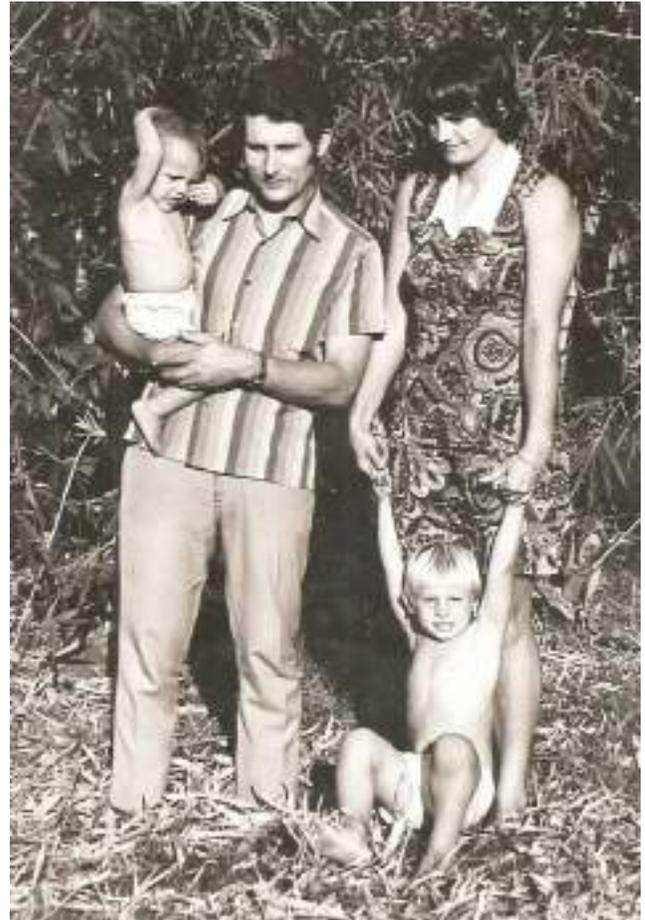
Sarolta (Saci) Laura Pócs, 16 March 2015

We met on a field-trip I lead for Biology graduates in 1966 where she presented a beautiful *Trichocolea tomentella* specimen collected from a forest spring, known from a single other location in Hungary at the time; both immediately attracted my attention.

Born in Lučenec (present day Slovakia) in 1946, she was raised in a small mining village in the mountains and educated by her widowed mother through great difficulties, having lost her father at the age of four. She graduated and later worked as a teacher of Biology and Physical Education, much loved by her students for her empathy, fairness, knowledge, and professional enthusiasm. Throughout her life and the illness that took it she showed great courage, strength, compassion, and a love and appreciation of life that inspired people around her.



Excursion to the Uluguru Mountains, 1970



Living in Tanzania, 1972

Whenever possible, she accompanied me on my collecting and research trips, scaling mountains and helping with the collection, preparation, sorting and labelling of specimens, often taking our children whom we carried around on our backs when they were little. On most trips she also acted as driver at times managing 800 km/day, often on rough country roads.

Our first child was born the day before I had to leave for our first shared great adventure, our stay in Morogoro, Tanzania at the campus of the Agricultural College of the East African University, which is situated at the foot of the magnificent Uluguru Mountains. She had bravely managed the journey alone, even though she had never travelled by air before. We later explored also the Usambara, Ukaguru, Rungwe, Kilimanjaro and other mountains approaching them in our VW Beetle (later a Toyota Land-Cruiser), collecting both phanerogams and cryptogams.



In Tanzania, 1986

After the 10 years spent in Tanzania we later returned as volunteers to identify and label specimens deposited in Morogoro and the East African Herbarium, Nairobi. We also made collecting trips, funded by various organisations or by ourselves, to Madagascar, Réunion, Mauritius, the Seychelles, Australia, the Fiji Islands, Venezuela, the Dominican Republic, Tunisia, Thailand, China and Malaysia.

She continued to work with and assist me as Herbarium Assistant after her official retirement even as her fatal illness (lung cancer) developed and its demanding treatment began. When her condition allowed, we continued to make collecting and recreational trips and travels to Spain, Montenegro, Malaysia, Romania, Albania, Turkey, India, and finally the Seychelles in 2015 with her driving great distances in her beloved 4x4s.

More than 80,000 specimens from our various trips and the places we stayed and lived at bear her name as co-collector (S. & T. Pócs) on their labels. Saci had a keen eye for peculiar bryophytes. She had even collected species new to science some of which are named after her: *Colura saroltae*, *Cololejeunea saroltae* and *Ceratolejeunea saroltae*. I am sure one can find more among the collected material yet unidentified.



Collecting epiphylls in Malaysia, 2010



Pressing epiphylls in Fiji, 2003

Apart from being a great companion she was also a loving mother of three children and grandmother of four. During our years together many colleagues, students and friends, bryologists and non-bryologists, who visited or stayed with us in Tanzania or Hungary had enjoyed her hospitality and cooking. Her kindness, optimism and cheer could liven up any company at any time. I am certain I owe much of my scientific achievements to her presence in my life.

Saci passed away peacefully on the 21st of October this year. Her passing has left a void in our hearts and lives.



Career profile: Catherine Reeb

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How did your bryological studies begin?

My bryological studies began in 1993, when I attended a course on lichens and bryophytes. As a child I wanted to work in the natural sciences, since I enjoyed collecting and learning about butterflies, fungi and plants. I was particularly interested in the miniature world of lichens and bryophytes. After a few years of teaching high school sports in Paris, I decided to pursue my childhood interests in natural history, and enrolled at the University Pierre et Marie Curie (UPMC) in 1992. The university offered evening classes for people who were changing professions. Several teachers from the university supported and helped me during this time. Among those wonderful teachers are Robert and Catherine Bajon, who organized botany fieldtrips, including my first formal bryology class. After graduation, I obtained a position at the University Pierre et Marie Curie as an instructor for students who wanted to become high schools teachers. In 2000, I joined a fieldtrip to Québec, Canada, with bryologists Pr Alain Gauthier, André and Odette Sotiaux from Belgium, and the French bryologist Jacques Bardat. It was the first time I saw the genus *Riccia*. I distinctly remember the regular rosettes growing on hard mud in a marsh in south Québec. It wasn't until 2010, when I began teaching part time, that I considered the possibility of pursuing a Ph.D in bryophyte systematics.

What is your current position?

I have a position at University Pierre et Marie Curie, but am trying to arrange time to pursue research projects at the Museum National d'Histoire Naturelle (MNHN). Since I am a teacher, I mentor master students, and this year I am co-advising the dissertation of Lucile Rabeau on the speciation of *Riccia* in Africa.



Catherine Reeb

Share your relevant fieldwork and collaborations.

I've always studied bryophytes in the field, but do not consider myself a specialist of European bryophytes, despite conducting numerous fieldtrips that initiate students to bryology, lichenology and generally botany. In 2003 I became interested in tropical ecosystems through a scientific project in French Guyana, where I mentored 16 students for the Association Timarcha Association (<http://timarcha.org>) that I created in 1997. Afterwards I worked in the Indian Ocean, specifically Madagascar, where I conducted an inventory of the ferns of the Vohimana Reserve. Since 2006, I've been working on inventories of thalloid liverworts in Madagascar, as well as general bryophyte collecting throughout the country in collaboration with Madagascar colleagues such as Roger Andriamariso, from the Missouri Botanical Garden. We recently made a four week fieldtrip in spring 2016, supported by a funding from MNHN (Labex BCDIV Program). The numerous undetermined Madagascar bryophyte specimens in different herbaria are great sources of data that we

are trying to enhance through a Malagasy Bryophyta flora project and phylogenetic diversity analyses.

Since I wanted to work on *Riccia*, I began building an information database using CAI (Computer Assisted Identification) for European *Riccia* in 2000. Jacques Bardat proposed that I work on *Riccardia* for my Ph.D., a poorly studied genus, especially in Africa. In working on *Riccardia*, I became very interested in modelling analysis of thalli growth in the genus. I collaborated with a Dutch team, led by Jaap Kandorp (<https://staff.fnwi.uva.nl/j.a.kaandorp/>), whose research focuses on sponges and corals. These organisms share some of the same structural problems with *Riccardia* thalli. Frederik Jansson, Pirom Klongerd, and I developed software to analyse branching; the resulting publications are currently in progress.

With Lucile Rabeau, master student in 2012, we began working on a phylogeny of the genus *Riccardia*, in collaboration with Dietmar Quandt who initiated Lucile to several analyses. Robbert Gradstein, associate to the MNHN, also helped us by sharing and mobilizing his contacts with world herbaria to receive specimen loans.

What professional advice do you have for students and aspiring bryologists?

This question is a critical one. Even though I conduct some research, I do not have an official position in bryology. My answer is therefore somewhat paradoxical. In one way, I encourage students to pursue studies in systematics as well as get training in bryology through fieldwork. But in French universities, most plant science programs no longer focus on systematics. Also, there are few available positions for bryologists in national institutions, although some positions are available for regional botanical surveys as well as in private consulting offices. I think students need to be aware on these difficulties, but should nevertheless follow their passion in deciding their future!



The 70th anniversary of the establishment of the Hattori Botanical Laboratory

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For the commemoration of the 70th anniversary of the establishment of the Hattori Botanical Laboratory, three bryological lectures and a fieldtrip were held on the evening of 27 November 2016, under the auspices of the Hattori Botanical Laboratory, and supported by the Board of Education of Nichinan City. The event attracted about 150 participants, mostly from Nichinan city and its neighbouring regions. Approximately 80 people joined the fieldtrip.

Hironori Deguchi, Professor of Special Appointment, Graduate School of Science, Hiroshima University, gave a lecture titled *Introduction to the world of mosses, full of fascination and research* that reviewed the 70-year history of the institution. The lecture also provided an introduction to the general morphology, classification, unique habitats, and use of bryophytes, as well as progress of recent research.

Yoshikazu Hoshi, Professor, Laboratory of Plant Environment Science Department of Plant Science, School of Agriculture, Tokai University, lectured on the *Cultivation technique of Sphagnum palustre and its utilization for Sphagnum farming in rice-fields*. The talk included an introduction to *Sphagnum* (peat moss) as an economically valuable plant group, and relayed new methods recently developed by the lecturer on the propagation and recolonization of *Sphagnum* in abandoned rice-fields using a natural water system and devices for regulating light intensity and water level.

Misao Itouga, Senior Research Scientist, Plant Productivity Systems Research Group, RIKEN Center for Sustainable Resource Science, spoke on *Green to gold technology using moss protonemata*. Here, a new method for recycling gold from electric wastewater solution using moss protonemata was



Group photograph with bryologists. Front row from left to right: Mrs. Takeba (daughter of M. Kamimura), G. Takeba, T. Seki, T. Nasu (President of the Hattori Botanical Laboratory), H. Deguchi, M. Mizutani, J. Hasegawa, K. Saito. Back row from left to right: Y. Inoue, T. Katagiri, Y. Hoshi, M. Itouga.

introduced showing a particular culture device, a column system, and a subcellular location of gold, together with quantitative analysis of gold to moss protonemata.

The fieldtrip was led by T. Kagagiri in the precinct of Obi-jo Castle, where common bryophytes in urban Nichinan City can be observed. The area offers a beautiful green ground cover of mosses under *Cryptomeria* trees.



Book Review: *Prionolejeunea*, Flora Neotropica

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Ilkiu-Borges, Anna Luiza. 25 April 2016. *Prionolejeunea* (Lejeuneaceae, Jungermanniopsida). Flora Neotropica Monograph 116, 126 pp., 63 figs., ISBN 978-0-89327-531-0 (hardcover), price 61.99 US dollar. Published for the Organization for Flora Neotropica by the New York Botanical Garden Press. To order, go to nybgpress.org or call +718.817.8721.

FLORA NEOTROPICA is a major series of monographs of neotropical plants and one of the few of its kind that includes bryophytes. About 650 bryophyte species have thus far been treated in this series, including members of Calymperaceae (W.R.Reese), *Ceratolejeunea* (G. Dauphin), Dicranaceae p.p. (J.P.Frahm), Fissidentaceae (R. Pursell), holostipous Lejeuneaceae (S.R. Gradstein), Leucophanaceae (N. Salazar Allen), Marchantiidae (H. Bischler, S.R. Gradstein, S. Jovet-Ast, D. Long & N. Salazar Allen), Metzgeriaceae (D. Pinheiro da Costa), Plagiotheciaceae (W.R.Buck) and Stereophyllaceae by W.R. Buck & R.R. Ireland). The monograph of *Prionolejeunea* announced here is a further volume on Lejeuneaceae and deals with an important, yet little-known member of this large tropical family. The work is based on the dissertation of the author defended at the University of Göttingen, Germany in 2005.

More than a hundred species have been attributed in the past to *Prionolejeunea* and its taxonomy has long been in a state of chaos. Based on study of more than a thousand collections the author has recognized 24 species in this genus, 22 in tropical America and 2 in Africa. They occur in rainforests from sea level to about 3000 m and grow on bark



Prionolejeunea, Flora Neotropica Monograph 116

and living leaves, occasionally on rotten wood or rock. Many of them are restricted to undisturbed forests and several species are rare, endemic taxa that are threatened with extinction due to the ongoing deforestation and destruction of the habitat.

Three species are described as new to science: *P. ciliata* (Trinidad), *P. cordifolia* (Puerto Rico) and *P. rotundifolia* (Cuba; Puerto Rico).

The species treatments are very precise and are a mine of information on morphological variation and differentiation as well as geographical distribution. Introductory chapters discuss the taxonomic history of genus, general morphological features, distribution patterns and classification. Noteworthy are the very detailed morphological observations, which contain several novel features such as "contrary branches," "interrupted-dentate margins," and new patterns of elaters and elateroids. They show the author's capabilities in microscopic preparation of these minute plants,

which frequently measure less than one millimeter in width. The introduction also contains a chapter on phylogenetic relationships of *Prionolejeunea* based on sequences of the plastid trnL-trnF and nuclear ITS regions as well as morphology. The results confirms the monophyly of the genus and reveals a sister relationships to *Cyclolejeunea*, an affinity that has subsequently been confirmed by other molecular studies. Species relationships within the genus remain largely unresolved in spite of the use of the variable ITS region. This lack of resolution is explained by the putative young age of the species even though fossil evidence is lacking.

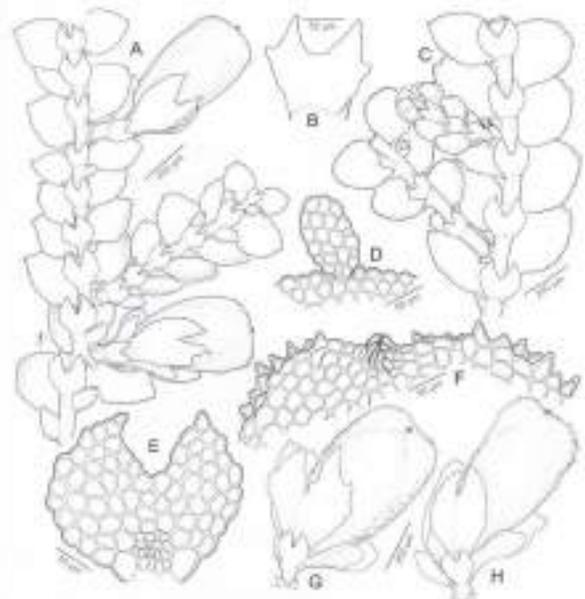


FIG. 88. *Prionolejeunea exauriculata*. A: Head of stem with 20 heads (x100). B: Pedicel. C: Head of stem with 20 heads. D: Detail of pedicel on leaf margin. E: Underleaf. F: Branch apex. G-H: *Prionolejeunea*. I: *Prionolejeunea*. J: *Prionolejeunea*. K: *Prionolejeunea*. L: *Prionolejeunea*. M: *Prionolejeunea*. N: *Prionolejeunea*. O: *Prionolejeunea*. P: *Prionolejeunea*. Q: *Prionolejeunea*. R: *Prionolejeunea*. S: *Prionolejeunea*. T: *Prionolejeunea*. U: *Prionolejeunea*. V: *Prionolejeunea*. W: *Prionolejeunea*. X: *Prionolejeunea*. Y: *Prionolejeunea*. Z: *Prionolejeunea*. AA: *Prionolejeunea*. AB: *Prionolejeunea*. AC: *Prionolejeunea*. AD: *Prionolejeunea*. AE: *Prionolejeunea*. AF: *Prionolejeunea*. AG: *Prionolejeunea*. AH: *Prionolejeunea*. AI: *Prionolejeunea*. AJ: *Prionolejeunea*. AK: *Prionolejeunea*. AL: *Prionolejeunea*. AM: *Prionolejeunea*. AN: *Prionolejeunea*. AO: *Prionolejeunea*. AP: *Prionolejeunea*. AQ: *Prionolejeunea*. AR: *Prionolejeunea*. 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Prionolejeunea exauriculata drawn by A.L. Ilkiu-Borges, Flora Neotropica Monograph 116

Undoubtedly the most captivating features of this monograph are the superb illustrations, which are among the best I have ever seen for liverworts! There are also distribution maps for every species. Monographs are the cornerstone of systematics and are the basis for our understanding of species and other taxa. This splendid work is no exception to this rule, and is a highly valuable and indispensable title on tropical bryophytes.



Nominations for IAB officers — deadline 13 January 2017

The IAB Elections Committee invites IAB members to nominate fellow IAB members for the following offices that are due to be vacated:

- * 2nd Vice President
- * 3rd Vice President
- * Six Councilors

We hope you will take advantage of this opportunity to participate in your international organization.

1. Nominations must be received by the Election Committee before the closing date **13 January 2017**.
2. Please send your nominations to either the president Bernard Goffinet (bernard.goffinet@uconn.edu) or any member of the elections committee Dietmar Quandt (quandt@uni-bonn.de), Matt von Konrat (mvonkonrat@fieldmuseum.org), Alison Downing (alison.downing@mq.edu.au), Denise Pinheiro da Costa (denisepinheirodacosta@gmail.com), or Lars Söderström (lars.soderstrom@ntnu.no).
3. Immediately after the closing date, nominees will be contacted, and asked for a brief CV and a summary of what they believe they can contribute to IAB.
4. Once all nominees have been consulted, we will distribute election ballots to IAB members. Juan Larraín will be the Judge of the elections.

We would like to encourage nominations from a broad geographical range, particularly Australasia, Africa, Southeast Asia and South America. Please also consider young members as well as senior members for nominations.

For your information, the following sitting officers or Councilors are already represented on the IAB and thus cannot be nominated: Jeffrey Duckett (UK, (the former president automatically become a

council member for one election period), First Vice President Lars Söderström (Norway), Dietmar Quandt (Germany, as Editor of *Bryophyte Diversity and Evolution*), Matt von Konrat (USA/NZ as Secretary/Treasurer), Juan Larraín (Chile), Denise Pinheiro da Costa (Brazil), Michael Stech (Netherlands), Itambo Malombe (Kenya), Yelitza León (Venezuela), Sanna Huttunen (Finland), and Alison Downing (Australia).

We would like to take this opportunity to especially thank outgoing members, Second Vice President Noris Salazar and Third Vice President Rui-Liang Zhu and Councilors Silvia Pressel, Itambo Malombe, Yelitza León, Sanna Huttunen, Alison Downing and Hiroyuki Akiyama for their valuable contributions during their terms of office.

If you have any questions about the election process or nominations, please do not hesitate to contact us. We will post instructions about how to vote and where to send ballot.

Thank you for continued interest and support in IAB.

On behalf of the president, Bernard Goffinet

Best wishes,

The Elections Committee - Dietmar Quandt, Matt von Konrat, Alison Downing, Denise Pinheiro da Costa, Lars Söderström





Upcoming meetings, fieldtrips, and workshops for 2017

American Bryological and Lichenological Society Meeting

The ABLS will hold its annual meeting on **24–28 June 2017** in Fort Worth, Texas, U.S.A. A call for abstracts as well as information about fieldtrips and social events will be announced at botany.org in January.



Nordic Bryological Society Meeting

The NBS Annual Meeting will be **3–7 July 2017**.

The meeting and excursion will be held in Faeroe Islands. The group will make several field trips to different parts of the Islands, which are known for many interesting bryophytes.

If you are interested in joining, please send a preliminary notification of your interest as soon as possible to Tomas Hallingbäck (tomas.hallingback@slu.se).



2017 Eagle Hill Institute Bryology Seminars on the coast of eastern Maine, east of Acadia National Park

Eagle Hill Bryology Courses Information

4–10 June 2017. Undergraduate Field Studies: Introduction to Bryophytes and Lichens. Instructor: Fred Olday.

11–17 June 2017. Mosses: Structure, Ecology, and Identification. Instructors: Jerry Jenkins and Susan

Williams. **18–24 June 2017.** Bogs and Fens: Maine Peatlands. Instructors: Nancy Slack and Frances Anderson.

25 June–1 July 2017. Liverworts and Liverwort Ecology. Instructor: Blanka Shaw.





**MOSSES, LIVERWORTS,
and HORNWORTS** RALPH POPE



MOSSES, LIVERWORTS, AND HORNWORTS
A Field Guide to Common Bryophytes of the Northeast
A COMSTOCK BOOK

RALPH POPE

DECEMBER 2016 | ISBN: 978-1-5017-0078-1 | 384 pages | \$24.95/£17.50 Paperback

Mosses, liverworts, and hornworts are found throughout the world in a variety of habitats. They flourish particularly well in moist, humid forests, filling many ecological roles. They provide seedbeds for the larger plants of the community and homes to countless arthropods, they capture and recycle nutrients that are washed with rainwater from the canopy, and they bind the soil to keep it from eroding. This photo-based field guide to the more common or distinctive bryophytes of northeastern North America gives beginners the tools they need to identify most specimens without using a compound microscope.

Ralph Pope's inviting text and helpful photographs cover not only the "true" mosses but also the Sphagnaceae (the peat mosses), liverworts, and hornworts.

The heart of any field guide is the ability to narrow down a large number of possibilities to a single species, and this book does that with a variety of keying strategies. Traditional dichotomous keys are included, and there are also "quick" keys based on habitat and special morphological characteristics. The organization of the species pages is by plant family, an arrangement likely to resonate with readers with some plant background or botanical interest. *Mosses, Liverworts, and Hornworts* also features information on collecting, preserving, and identifying specimens to help hikers, naturalists, botanists, and gardeners find their way into this beautiful miniature world. Sections on bryophyte biology and ecology provide taxonomic and ecological context.

Reviewer Comments

"This authoritative and user-friendly book consists of well-illustrated treatments of each species. The color photos are of a high order. I find the comparison to similar species hugely helpful. Mossing adventures will be all the more satisfying with this book along for company."—Alison C. Dibble, University of Maine

"This book is intended as a (much needed) field guide, a goal it reaches admirably. The keys and color images (for nearly every species) are very helpful, and where only microscopic examination can be definitive, it provides characteristics to look for. It also notes species that may be confused with each other and how to distinguish them. I strongly recommend it for the broad geographic area it is intended to cover."—Janice Glime, Michigan Tech

"This book is the most complete and the best illustrated field guide to mosses and liverworts in the Northeast. Naturalists in Eastern Canada and the Great Lakes region will use it, too. The photographs are excellent and the text both very useful and interesting. It contains the common and many uncommon mosses and even the rare hornworts, as well as good ecological pointers to help in finding them all."—Nancy Slack, The Sage Colleges, coeditor of *Bryophyte Ecology and Climate Change*

"*Mosses, Liverworts, and Hornworts* is scientifically accurate and accessible to an audience of amateur naturalists as well as to botanical professionals seeking to know and learn more about mosses. The scope and breadth are right on target. The species descriptions are accurate and vivid and draw on the experience of the author. The use of habitat types, color, scale, and texture in identifying species is very helpful."—Robin W. Kimmerer, Distinguished Teaching Professor and Director, Center for Native Peoples and the Environment, SUNY College of Environmental Science and Forestry, author of *Gathering Moss* and *Braiding Sweetgrass*

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Theses: William R. Buck, wbuck@nybg.org

Tropical Biology: Tamás Pócs, colura@chello.hu

Association Objectives

The objectives of the International Association of Bryologists (IAB) is to promote international co-operation and communication among persons interested in bryophytes.

Next Meeting

The next IAB meeting will be held jointly with the XIX International Botanical Congress meeting in Shenzhen, China on 23--29 July 2017.

Call for Submissions

The Bryological Times was founded in 1980 by S. W. Greene (1928--1989) as a newsletter published for the IAB.

The Bryological Times welcomes announcements and summaries of bryological conferences, workshops, and fieldtrips; book reviews and notices of publications; and original articles, artwork and photography. Please send submissions to the editor: john.atwood@mobot.org. All submissions will be acknowledged by email.

Contributors will be asked to review their submissions before publication.

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