#### INSTRUCTIONS TO AUTHORS

The Lichenologist is an international journal and welcomes papers and short communications from contributors anywhere in the world on any aspect of lichenology.

#### **Manuscript Submission**

Manuscripts must be original, clearly and precisely presented in English and electronic versions submitted to The Lichenologist ScholarOne website <a href="http://mc.manuscriptcentral.com/lich">http://mc.manuscriptcentral.com/lich</a> following the on-screen instructions. Please note that submission must be done from *The Lichenologist* ScholarOne account belonging to the Corresponding Author. Authors submitting a manuscript do so on the understanding that, if it is accepted, copyright of the paper will be assigned exclusively to the British Lichen Society (see Copyright below).

Author recommendations for referees. When uploading a manuscript to ScholarOne, authors will be invited to name "Author Recommended Referees" and "Author Opposed Referees". While recommending one or more referees can be very helpful to editors, they are under no obligation to use them. Equally, editors are under no obligation to avoid using opposed referees but if they do use one they are required to bear in mind the author's request when assessing the report from an opposed individual.

#### Scope

Papers are accepted in all areas of lichen biology. However, we do not publish the following: (1) species lists or new records unless they are of exceptional interest; (2) descriptions of new species unaccompanied by additional information placing these in a wider context (e.g. detailed comparisons with similar species, phylogenetic analysis, key to the genus or group, biogeographical analysis); (3) descriptions of new chemical entities that lack a biological context (i.e. of a purely phytochemical nature); (4) reports of biological activity of lichen extracts or specific metabolites that lack a lichen biology context (e.g. that relate only to drug discovery).

**Book Reviews.** Books dealing with any aspect of lichenology will be reviewed. Publishers wishing to have works reviewed in *The Lichenologist* should send them to Dr D.J. Hill, Yew Tree Cottage, Yew Tree Lane, Compton Martin, Bristol, BS40 6JS (d.j.hill@bristol.ac.uk), in the first instance.

#### **Manuscript Format**

**Abstract.** This should contain a short summary of the work reported in the paper sufficient to inform a reader who does not have sight of the full paper. If the paper describes one or more new taxa then the Abstract should report their principal distinguishing characteristics (e.g. "Bryonora granulata Fryday, with a finely granular thallus containing perlatolic acid"). If the paper reports experimental or survey data then, if appropriate, include headline values.

**Key words.** Supply 3–6 key words or phrases in addition to those in the title.

**Text**. This must be word processed on A4 (210  $\times$  297 mm) or letter  $(8.5 \times 11 \text{ inch})$  in double spacing with 2.5 cm margins all round. On all points of style concerning text and tables consult recent copies of the journal. Complete scientific names (genus, species and authority) must be cited at first mention. Thereafter the generic name may be abbreviated to the initial except at the beginning of a sentence or where the abbreviation might result in confusion with other genera. Recent issues should be consulted for layout of new species, new combinations, synonymy and lists of specimens examined. Examples of style are given below. All nomenclatural novelties must be deposited in a designated data repository (e.g. MycoBank <a href="http://www.mycobank.org">http://www.mycobank.org</a>, Index Fungorum <a href="http://www.indexfungorum.org">http://www.indexfungorum.org</a>, Fungal Names <a href="http://fungalinfo.im.ac.cn">http://fungalinfo.im.ac.cn</a>) and the accession number included after the taxon name; this is intended to minimize future confusion and make taxonomic data more widely available. A short diagnosis, in either Latin or English, should follow the repository number. This should be a statement of that which in the opinion of the author distinguishes the new taxon from other taxa. A full and accurate description of the species should follow the diagnosis. The spelling of locality names in the British Isles and abroad must follow the most recent editions of maps published by the Ordnance Survey and The Times Atlas of the World, respectively.

Please see examples below regarding description and citation of species/specimens:

(a) description of new species:

#### Fissurina immersa B. O. Sharma, Khadilkar & Makhija sp. nov.

MycoBank No.: MB561855

Similis F. *inabensis* sed differt ascosporis minoribus et acido norstictico continente.

Typus: India, Karnataka, Mudigiri, 26 January 1980, *P. G. Patwardhan* 80.92 (AMH—holotypus).

#### (b) citation of described species or new combinations:

Pyrenopsis furfurea (Nyl.) Th. Fr.

Bot. Notiser 1866: 58 (1866); type: Scotland, Ben Lawers, 1864, Jones (H-NYL 42916—lectotype; BM—isolectotype).

Pyrenopsidium terrigenum (Th. Fr.) Forss., Nova Acta R. Soc. Scient. Upsal. ser. 3, 13(6): 81 (1985).—Pyrenopsis haematopsis (Sommerf.) β. terrigena Th. Fr. in Hellbom, Öfvers K. Vetens. Akad. Förh. 22(6): 478 (1865); type: Sweden, Lule Lappmark, Skarfi, 1864, Hellbom (UPS—holotype).

#### (c) citation of specimens examined:

Long lists of citations are discouraged. Data should be reproduced as either maps or lists containing only data essential for locating specimens and collecting sites. Complete lists, with the below format, can be deposited with appropriate Institutions, and their location noted in the text, or could be provided in Supplementary Information.

Selected specimens examined. British Isles: Scotland: V.C.96, Easterness: Abernethy Forest, near Forest Lodge, 38/01.16, on Pinus lignum, 1975, Coppins [2199]

& Rose (BM, E).—Germany: Bayern: Allgauer Alpen, 1957, Schoppel & Poelt [Poelt, Lichenes Alpinum no. 56] (H).—Australia: Tasmania: Weindorfers Forest, 41° 38'S, 145°56'E, 920 m, 1988, Kantvilas 68/88 (E); Cox Bight, behind west beach, sea-level,1985, J. A. Elix 20945 (ANUC). Victoria: Bellel Creek, c. 1800 m, 5 vi 1983, M. E. Hale (HO).

**Tables**. These must be self-explanatory and each presented on separate pages outside the main text. A short title should be provided with any additional information contained in footnotes. Vertical columns should be separated by spacing; vertical lines must be avoided.

**Figures**. Refer to all *drawings*, *diagrams*, *graphs* and *photographs* as figures. These should be of the highest quality and suitable for direct reproduction after reduction where appropriate. Each figure should be presented as a separate file. Plan figures to appear within a single column (67 mm) or for reproduction across two columns (139 mm).

Drawings, diagrams and graphs. Graphs should ideally be prepared using specialist graphics packages such as Sigma Plot or Prism. Graphs can either have x and y axes only or can have both top and bottom and left and right hand axes (i.e. boxed). Axes and tick marks should be 1mm thick with tick marks 2-3 mm long and inward pointing. Axis and tick mark labels should be in Times New Roman (not bold). Preferred symbols for graphs are  $\bigcirc$ ;  $\blacksquare$ ;  $\square$ ;  $\blacksquare$ ;  $\triangle$ ; keys to symbols, etc, should be given in figure captions. Where multiple graphs are grouped into a single figure, any axes with common labelling (including tick labels where relevant) need only be labelled once (e.g. the lowermost x axis if those of all graphs in a column have the same units and descriptions) and the figure should be consolidated by positioning the individual graphs closer together; consult a recent copy of The Lichenologist for examples. Colour should not be used in graphics unless the figure is intended to be printed in colour.

Photographs (colour or black and white) should be submitted at the size they will appear. Note that there is a charge for colour printing (see **Charges** below). At the Senior Editor's discretion, images can be published in colour online free of charge while the hard copy appears in black and white, provided that colour is not essential for their interpretation. In such cases the colour and black and white reproductions must be from the same image file. This facility will be largely restricted to morphological and anatomical images since greyscale graphics are discouraged.

Subdivisions of figures should be labelled with capital letters, e.g. A, B, C, etc, and separated by white lines no more than 1–1.5 mm wide. All *legends* for figures should be provided on a separate page to be included with the text of the paper after the references.

Format for supplying electronic artwork. To ensure that your figures are reproduced to the highest possible

standards and your article is published as quickly and efficiently as possible, we recommend the following formats and resolutions for supplying electronic figures.

Please ensure that your figures are saved at final publication size and are in our recommended file formats.

Line artwork (e.g. graphs, drawings histograms, diagrams) Format: tif or eps

Colour mode: black and white (also known as 1-bit)

Resolution: 1200 dpi Size: please size to final publication size

Combination artwork (line/tone)

Format: tif or eps

Colour mode: greyscale (also known as 8-bit) Resolution:

800 dpi

Size: please size to final publication size

Black and white halftone artwork (e.g. photographs) Format: tif

Colour mode: greyscale (also known as 8-bit) Resolution: 300 dpi

Size: please size to final publication size

Colour halftone artwork (e.g. photographs) Format: tif Colour mode: CMYK colour

Resolution: 300 dpi

Size: please size to final publication size

**References**. Citations in the text should take the form: Green & White (2014) or (Brown 1999*a*, *b*, 2009; Smith & Jones 2015). Multiple citations should be ordered chronologically. When papers are by three or more authors, give only the name of the first author followed by *et al.* (e.g. Halonen *et al.* 1998) throughout the text. At the end of the text, list the references alphabetically using the following standard forms:

Gauslaa, Y., Coxson, D. & Solhaug, K. A. (2012) The paradox of higher light tolerance during desiccation in rare old forest cyanolichens than in more widespread co-occurring chloro- and cephalolichens. *New Phytologist* **195:** 812–822.

Øvstedal, D. O. & Smith, R. I. L. (2001) Lichens of Antarctica and South Georgia. A Guide to their Identification and Ecology. Cambridge: Cambridge University Press.

Wetmore, C.M. (2007) Caloplaca. In: Lichen Flora of the Greater Sonoran Desert Region Vol. III (T.H. Nash, III, C. Gries & F. Bungartz, eds): 179–220. Tempe, Arizona: Lichens Unlimited, Arizona state University.

Sohrabi, M. & Leavitt, S. (2012) Current status of the phylogeny of the family Megasporaceae. In Abstracts of the 7th International Association for Lichenology Symposium, 9–13 January, 2012, Bangkok, Thailand, p. 151.

Hogan, E.J. (2009) Nitrogen-phosphorus relationships in lichens. Ph.D. thesis, University of Nottingham.

References should be listed in alphabetic sequence with: single authors, by date; two authors, alphabetically, then by date; three or more authors by date only. When papers are by more than ten authors, give the names of only the first ten followed by "et al.".

**Abbreviations, etc.** For guidance on units, symbols, chemical nomenclature and abbreviations consult author guidelines for *The New Phytologist*.

#### **Data Archiving**

Nomenclatural novelties must be deposited in a designated repository (see above) and new gene sequences must be deposited in a recognized data base such as GenBank or the European Nucleotide Archive. Molecular data sets should be archived in repositories such as Dryad or TreeBase. We encourage authors of physiological and ecological papers to archive their raw data in an appropriate repository; alternatively they can provide these as Supplementary Information.

#### Copyright

Authors submitting a manuscript do so on the understanding that if it is accepted for publication, copyright in the article, including the right to reproduce the article in all forms and media, shall be assigned exclusively to the British Lichen Society. The Copyright Transfer Agreement, a copy of which is sent with the proofs or can be found on the journal home page listed on the back cover, should be signed by the appropriate person(s) and should accompany the original submission of a manuscript to this journal. The transfer of copyright does not take effect until the manuscript is accepted for publication. Copyright in the paper for the United States of America shall be assigned to the Society. It is the policy of the publisher that authors need not obtain permission in the following cases only: (1) to use their original figures or tables in their future works; (2) to make copies of their papers for use in their classroom teaching; and (3) to include their papers as part of their dissertations.

#### **Offprints**

In consideration for the assignment of copy-right, the Society will supply 25 offprints and a pdf file of each paper or Short Communication but not of Book Reviews. Further reprints can be ordered at extra cost directly from Cambridge University Press when the author returns the proofs of their article.

#### Colour Figures

Authors are responsible for the cost of coloured illustrations. However, the Senior Editor is often able to offer a subsidy from British Lichen Society funds to its members who find that they have insufficient money to meet the full cost of colour printing. Authors should consult the Senior Editor regarding current charges and possible subsidies.

#### **Open Access**

The Lichenologist offers authors the option to publish their work under a Gold Open Access model. For details of our policy and pricing, please visit http://journals.cambridge.org/action/stream?pageId=9128 &level=2

#### Cambridge Journals Language Editing Service

Cambridge recommends that authors have their manuscripts checked by an English language native speaker before submission; this will ensure that submissions are judged at peer review exclusively on academic merit. We list a number of third-party services specialising in language editing and/or translation, and suggest that authors contact as appropriate. Use of any of these services is voluntary, and at the author's own expense. http://journals.cambridge.org/action/stream?pageId=87 28&level=2&menu=Authors&pageId=3608

#### Notice

While the Senior Editor and Editors endeavour to check the accuracy of statements in contributions in as far as they are able, it should be emphasized that views expressed in papers in *The Lichenologist* are those of their authors and do not necessarily represent those of the British Lichen Society, Cambridge University Press, the Senior Editor, or the members of the Editorial Board.

#### **JOURNALS**

# The Journal of Agricultural Science

**Senior Editor (Animal papers)** 

Julian Wiseman, University of Nottingham, UK

Senior Editor (Crops & Soils papers)

Paul Bilsborrow, Newcastle University, UK

The Journal of Agricultural Science publishes papers concerned with the advance of agriculture and the use of land resources throughout the world. It publishes original scientific work related to strategic and applied studies in all aspects of agricultural science, including: crop and animal physiology, modelling of crop and animal systems, the scientific underpinning of agronomy and husbandry, engineering solutions, decision support systems, land use, environmental impacts of agriculture and forestry, impacts of climate change, rural biodiversity, experimental design and statistical analysis, the application of new analytical and study methods (including molecular studies). The journal also publishes book reviews and letters.



The Journal of Agricultural Science is available online at: http://journals.cambridge.org/ags

#### To subscribe contact Customer Services

#### Americas:

Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions\_newyork@cambridge.org

#### Rest of world:

Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

#### Submit your research online

http://mc.manuscriptcentral.com/jagrisci

For free online content visit: http://journals.cambridge.org/ags

#### Free email alerts

Keep up-to-date with new material – sign up at

journals.cambridge.org/ags-alerts



#### **JOURNALS**

## Experimental Agriculture

#### **Editor**

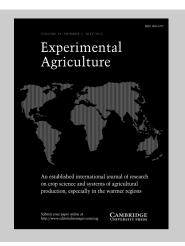
Dave Harris, ICRISAT, Kenya

Experimental Agriculture publishes the results of original research from any source on the agronomy of field, plantation and herbage crops grown for human or animal food; for industrial purposes; and on systems of agricultural production, particularly in the warmer regions of the world. It is especially concerned with experimental work designed to explain agronomic results in biological and environmental terms. The journal publishes accounts of new experimental techniques, new methods of crop production and discusses problems in countries where production is developing rapidly. There are regular book reviews and occasional, often invited, reviews of research.

### For free online content visit: http://journals.cambridge.org/eagsample

#### Free email alerts

Keep up-to-date with new content http://journals.cambridge.org/eag-alerts



#### Experimental Agriculture

is available online at: http://journals.cambridge.org/eag

#### To subscribe contact Customer Services

#### Americas:

Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions\_newyork@cambridge.org

#### Rest of world:

Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

#### **Price Information**

is available at: http://journals.cambridge.org/eag



#### **JOURNALS**

## Edinburgh Journal of Botany

An International Journal of Plant Systematics and Biodiversity

Published on behalf of the Royal Botanic Garden Edinburgh

#### **Senior Editor**

Mark Newman, Royal Botanic Garden Edinburgh, UK

Edinburgh Journal of Botany is an international journal of plant systematics and related aspects of bio-diversity, conservation science and phytogeography. It covers all groups of plants and fungi and publishes contributions on all geographic areas, although it is particularly valued for its articles on South East and South West Asian, Sino-Himalayan and Brazilian biodiversity. Papers linking traditional and modern taxonomic techniques are especially encouraged, and commissioned book reviews and review articles are also included. There is an international editorial board of wide-ranging expertise delivering a high quality, fully illustrated journal.

#### Price information

is available at: http://journals.cambridge.org/ejb

#### Free email alerts

Keep up-to-date with new material – sign up at http://journals.cambridge.org/ejb-alerts



Edinburgh Journal of Botany is available online at: http://journals.cambridge.org/ejb

#### To subscribe contact Customer Services

#### in Cambridge:

Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

#### in New York:

Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions\_newyork@cambridge.org

For free online content visit: http://journals.cambridge.org/ejb



### BRITISH LICHEN SOCIETY OFFICERS AND CONTACTS 2016

#### President

A. Pentecost, D. Sc., The Old House, Storth Road, Storth, Cumbria LA7 7NS

#### Vice President

P. F. Cannon, Ph. D., CABI and Royal Botanic Gardens Kew; postal address: Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB

#### Secretary

P. A. Wolseley, M. A., Department of Botany, The Natural History Museum, Cromwell Road, London Sw7 5BD (email: p.wolseley@nhm.ac.uk)

#### Treasurer

J. F. Skinner, 28 Parkanaur Avenue, Southend-on-Sea, Essex SS1 3HY

Assistant Treasurer and Membership Secretary

H. Döring, Ph.D., British Lichen Society, Charles Darwin House, 12 Roger Street, London WC1N 2JU (email: membership@britishlichensociety.org.uk)

#### Regional Treasurers

J. W. Hinds, Ph.D., 254 Forest Avenue, Orono, Maine 04473-3202, USA (Americas)

Senior Editor (Lichenologist)

P. D. Crittenden, Ph.D., School of Life Sciences, The University of Nottingham, University Park, Nottingham NG7 2RD

#### Editor (Bulletin)

P. F. Cannon, Ph.D., CABI and Royal Botanic Gardens Kew; postal address Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB

#### Conservation Officer

B. W. Edwards, Dorset Environmental Record Centre, Library Headquarters, Colliton Park,
Dorchester, Dorset DT1 1XJ

Mapping Recorder and Archivist

M. R. D. Seaward, D.Sc., F.L.S., FRSB, School of Archaeological Sciences The University, Bradford, West Yorkshire BD7 1DP

#### Librarian

R. G. Woods, B.Sc., Ty Mawr Mill, Llanfihangel Brynpabuan, Builth Wells, Powys LD2 3SH

#### Curator

R. K. Brinklow, B.Sc., c/o Dundee Museums and Art Galleries, Albert Square, Dundee DD1 1DA, www.herbarium@britishlichensociety.org.uk

#### Field Meetings Secretary

S. G. Price, Woodlands, Combs Road, Combs, High Peak, Derbyshire SK23 9UP

#### Members of Council

I. Blatchley R. K. Brinklow J. R. Douglass N. F. Higgins T. Lovering M. M. Putnam N. Sanderson C. Tregaskes T. C. Wilkins

Membership of the British Lichen Society is open to all individuals (not institutions) anywhere in the world interested in any aspect of lichenology. Subscriptions, due on joining and afterwards on 1 January each year, are: Regular membership without *The Lichenologist* £30; Regular membership with *e-Lichenologist* £45; Discounted (student and senior) membership without *The Lichenologist* £15; Discounted membership with *e-Lichenologist* £25; Discounted membership with print *The Lichenologist* £30. (for US dollar rates, contact the US Regional Treasurer). All members receive the Society's twice-yearly Bulletin. Details of the Society, including membership, may be found on the Society's website www.britishlichensociety.org.uk or obtained from the Membership Secretary (address above).

This journal issue has been printed on FSC<sup>TM</sup>-certified paper and cover board. FSC is an independent, nongovernmental, not-for-profit organization established to promote the responsible management of the world's forests. Please see www.fsc.org for information.

Printed in the UK by Bell & Bain Limited, Glasgow.

## The Lichenologist

#### Volume 48 Part 5 September 2016

McMULLIN, R. T., LENDEMER, J. C. and LUTZONI, F.	A Liber Amicorum: Irwin Brodo	343
Articles		
KNUDSEN, K., KOCOURKOVÁ, J., WESTBERG, M. and WHEELER, T.	Two new species of $A carosporace ae {\rm\ from\ North\ America}$ with carbonized epihymenial accretions	347
$\label{eq:myllys} \mbox{MYLLYS, L., VELMALA, S., PINO-BODAS, R.} \\ \mbox{and GOWARD, T.} \\$	New species in $\it Bryoria$ (Parmeliaceae, Lecanoromy cetes) from north-west North America	355
McCUNE, B., TIMDAL, E. and BENDIKSBY, M.	${\it Rhizocarpon\ quinonum}, a\ {\rm new\ anthraquinone\text{-}containing\ species}$ from the Alaska Peninsula	367
MORSE, C. A. and LADD, D.	lem:lemma	377
STONE, D. F., HINDS, J. W., ANDERSON, F. L. and LENDEMER, J. C.	A revision of the $Leptogium\ saturninum\ group\ in\ North\ America$	387
ALTERMANN, S., LEAVITT, S. D. and GOWARD, T.	Tidying up the genus $Letharia$ : introducing $L.\ lupina$ sp. nov. and a new circumscription for $L.\ columbiana$	423
LENDEMER, J. C., BUCK, W. R. and HARRIS, R. C.	Two new host-specific hepaticolous species of <i>Catinaria</i> ( <i>Ramalinaceae</i> )	441
MANOHARAN-BASIL, S. S., MIADLIKOWSKA, J., GOWARD, T., ANDRÉSSON, Ó. S. and MIAO, V. P. W.	Peltigera islandica, a new cyanolichen species in section Peltigera ('P. canina group')	451
RESL, P., MAYRHOFER, H., CLAYDEN, S. R., SPRIBILLE, T., THOR, G., TØNSBERG, T. and SHEARD, J. W.	Morphological, chemical and species delimitation analyses provide new taxonomic insights into two groups of $\it Rinodina$	469
BUNGARTZ, F., ELIX, J. A., KALB, K. and GIRALT, M.	New and overlooked species from the Galapagos Islands: the generic concept of $\it Diploicia$ reassessed	489
AHTI, T., PINO-BODAS, R., FLAKUS, A. and STENROOS, S.	Additions to the global diversity of <i>Cladonia</i>	517
BOLUDA, C. G., HAWKSWORTH, D. L., DIVAKAR, P. K., CRESPO, A. and RICO, V. J.	Microchemical and molecular investigations reveal <i>Pseudephebe</i> species as cryptic with an environmentally modified morphology	527
HESTMARK, G., LUTZONI, F. and MIADLIKOWSKA, J.	Photobiont associations in co-occurring umbilicate lichens with contrasting modes of reproduction in coastal Norway	545
TRIPP, E. A.	Is asexual reproduction an evolutionary dead end in lichens?	559
PIERCEY-NORMORE, M. D., BRODO, I. M. and DEDUKE, C.	Lichens on the Hudson Bay Lowlands: a long-term survey in Wapusk National Park, Manitoba	581
McMULLIN, R. T., BENNETT, L. L., BJORGAN, O. J., BOURQUE, D. A., BURKE, C. J., CLARKE, M. A., GUTGESELL, M. K., KRAWIEC, P. L., MALYON, R., MANTIONE, A., PIOTROWSKI, A. T., TAM, N. Y., VAN NATTO, A. C., WIERSMA Y. F. and NEWMASTER, S. G.	Relationships between air pollution, population density, and lichen biodiversity in the Niagara Escarpment World Biosphere Reserve	593

The Lichenologist, Vol. 48, Part 5 was published on 27 September 2016

#### **Cambridge Journals Online**

For further information about this journal and our **Open Access option** please go to the journal website at: **journals.cambridge.org/lic** 



MIX
Paper from
responsible sources
FSC® C007785

