BIOLOGY LETTERS

Editorial

Author for correspondence:
Rick Battarbee
e-mail: r.battarbee@ucl.ac.uk

THE ROYAL SOCIETY
PUBLISHING

Research papers, gender bias and peer-review

Rick Battarbee

Environmental Change Research Centre, University College London, Gower Street, London, UK

Following our 2017 Editorial Board meeting in April and with the first half of 2017 now passed, I am delighted to provide our readers with an update on how *Biology Letters* is progressing.

At the time of writing, we have so far this year published 92 papers and completed two Special Features all overseen by our excellent editorial team headed by Surayya Johar and Raminder Shergill, supported by Handling Editors Nigel Bennett, Rodney Honeycutt, Susanne Foitzik and Mark Briffa, Reviews Editor Bob Elwood, and our 90-strong Editorial Board. I take this opportunity to thank them all for their hard work and commitment to our Journal.

I also thank the guest editors of our Special Features. Barry Brook and John Alroy brought our 14 paper Special Feature on the 'Biology of Extinction' to completion with their summary paper on 'Pattern, process, inference and prediction in extinction biology' [1]. In this paper, they affirmed 'extinction biology' as a distinctive field of biological science concerned with the understanding of mechanisms and processes that underpin extinctions and the related need to derive general rules for protecting biodiversity.

We have also finalized our Special Feature on 'Putting fossils in trees: combining morphology, time and molecules to estimate phylogenies and divergence times'. David Bapst, Graeme Lloyd, Nick Matzke and April Wright assembled and guest-edited nine papers to make up the Feature. They brought together neontologists and palaeontologists working on the common goal of building phylogenetic trees. The collection illustrates the benefits of incorporating all approaches in the ultimate objective of understanding evolution.

We are happy to consider ideas for Special Features (http://rsbl.royalsociety publishing.org/content/special-features) at any time. Please contact myself or any member of the editorial team in the first instance.

Science publishing is awash with metrics. One striking metric for *Biology Letters* is the number of articles downloaded from our website—more than 2 500 000 downloads were recorded in 2016. This is an extraordinary number indicating the importance of our output not only to research biologists, but also to a wider readership.

The most downloaded paper in 2016 was 'Functionally relevant responses to human facial expressions of emotion in the domestic horse (*Equus caballus*)' by Smith *et al.* [2], an article that so far has had over 32 000 views and has an Altmetric Attention score of over 1000. This article presented the results of an experiment that showed the ability of horses to distinguish between positive (happy) and negative (angry) human facial expressions from photographs.

According to Scopus, our most recent highly cited paper from 2015 is 'A call for full annual cycle research in animal ecology' by Marra *et al.* [3], and has been cited 36 times. In this paper, the authors issue a rallying call for research to move beyond single seasons, thereby hopefully avoiding breeding season research bias as reported previously.

Of course, a highly cited paper may not be a highly downloaded one. Perhaps that is of little importance as academic authors almost certainly prefer to be highly cited rather than highly downloaded; but in *Biology Letters*, we try to achieve both outcomes by attempting to ensure that the scientific quality of papers is enhanced by high-quality writing and by reminding authors of the need to present their key findings clearly to a non-specialist audience.

Our editorial Board Meetings are not only concerned with journal content, but also, in line with Royal Society policy, with the need to improve continually the process of academic publishing. In that regard, we attempt to provide the best possible service to science and scientists alike, we appreciate and acknowledge fully all those who contribute to the journal in different ways and we try to set the highest ethical standards in terms of fairness and the elimination of bias.

Bias, including bias manifested unconsciously, is an issue that requires constant vigilance. Indeed, we are reminded of its importance as we are asked by the Royal Society to consider a paper on unconscious bias (https://royalsociety. org/~/media/policy/Publications/2015/unconscious-bias-briefing-2015.pdf) at our Board meetings, where it is the first item on our agenda. To guard against gender bias, we are striving to improve the balance of our Editorial Board. Currently, 31% of our members are female. Much remains to be done in this and other areas of diversity, but as our Board membership evolves, our aim is to move towards gender equality as swiftly as possible.

We also need to be aware of unconscious gender bias in our peer-review process. Initial results of two recent studies from *Chemistry World* [4] and *Nature* [5] indicate that female reviewers are under-represented and that the editors of scientific papers may be biased in choosing reviewers, with a tendency of male editors favouring male reviewers and female editors favouring female reviewers. Once our editorial team has reached gender equality, these biases, if they exist, should in theory cancel each other out. But it would be far better if they were avoided in the first place. We are planning to explore whether our own reviewer selections show gender bias.

Finally, I want to thank the work done by our reviewers, whatever their gender. As a learned journal the most important decisions we make are which papers to publish, a process critical both for the progress of science and the career and reputation of scientists. That process depends essentially on the care taken to provide thorough, thoughtful and helpful advice to authors by reviewers. From the papers that I personally see, I can vouch for the very high standards of reviews we receive.

The problem, however, is how best to recognize the work of reviewers in a world where reviewing activity may be less highly regarded by higher education institutions than publishing, research grant success and research supervision. At *Biology Letters*, our approach is to encourage all our reviewers to sign up to Publons (https://publons.com/home/), a website launched in 2012 designed to record reviewers' contributions to the peer-review process and thereby generate a personal objective and verifiable history of academic review performance, one that can be used in CVs and in career progression assessments. We also show our appreciation by publishing the names of our reviewers over the course of the year [6], and our top 10 reviewers in terms of number of papers reviewed were recognized in a recent blog post (http://blogs.royalsociety.org/publishing/biology-letters-top-reviewers-from-2016/).

We, in the editorial team, would be very interested to hear the views of readers about any extra measures that could be taken to reward reviewers, raise their profile and indeed avoid biases.

References

1. Brook BW, Alroy J. 2017 Pattern, process, inference and prediction in extinction biology. *Biol. Lett.* **13**, 20160828. (doi:10.1098/rsbl.2016.0828)

2. Smith AV, Proops L, Grounds K, Wathan J, McComb K. 2016 Functionally relevant responses to human facial expressions of emotion in the domestic horse (*Equus caballus*). *Biol. Lett.* **12**, 20150907. (doi:10.1098/rsbl.2015.0907)

3. Marra PP, Cohen EB, Loss SR, Rutter JE, Tonra CM. 2015 A call for full annual cycle research in animal ecology. *Biol. Lett.* **11**, 20150552. (doi:10.1098/rsbl.2015.0552)

4. Stoye E. 2017 Studies flag signs of gender bias in peer review. *Chem. World*. See https://www.chemistryworld.com/news/studies-flag-signs-of-gender-bias-in-peer-review/3007593.article.

5. Lerbac J, Hanson B. 2017 Journals invite too few women to referee. *Nature*. See http://www.nature.com/news/journals-invite-too-few-women-to-referee-1.21337#/correction1.

6. Battarbee RW. 2017 Reviewers in 2016. *Biol. Lett.* **13**, 20170018. (doi:10.1098/rsbl.2017.0018)