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Editorial

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Proceedings B 2020: the year in review

Spencer C. H. Barrett

Editor-in-Chief

SCHB, 0000-0002-7762-3455

Twenty twenty is a year that few will forget—and hopefully not experience again! The COVID-19 pandemic continues to influence numerous aspects of our daily lives and is forcing us to rethink the way we do things. It is taking a huge toll on the public health of nations with various restrictions and periodic lockdowns negatively affecting economic activity and the mental health of citizens. We might, therefore, ask how the pandemic is affecting *Proceedings B*? Scientific publishing depends on original research conducted at universities and in diverse settings, from hospitals to field stations. Not surprisingly, these have been negatively influenced by the pandemic. Beginning last March–April, the activities of many thousands of biologists worldwide were dramatically changed by restrictions on fieldwork, the closure of university laboratories, research institutes and museums, and also the cancellation of scientific meetings and workshops. In-person lectures at universities were halted as faculties scrambled to transfer their courses online, thus diverting huge amounts of time away from research. Throw into the mix home daycare and schooling, technical glitches with video-conferencing and the impending winter months, and it is not surprising that many are frustrated and feeling COVID-19 fatigue. At the time of writing this editorial, these disruptions show no signs of abating and most of us look forward with guarded optimism to a time in 2021 when things will return to what is likely to be a 'new normal', although what shape that will take is not easy to predict.

Despite the negative consequences of the COVID-19 pandemic, every two weeks, *Proceedings B* has continued to publish exciting new research in organismal biology and our activities are surviving largely unscathed. This was despite the fact that our editorial staff were dispersed to their homes last Spring because of the need to vacate their editorial office at 6 Carlton House Terrace in London. Sincere thanks are due to the dedication of our authors, reviewers, editors and staff who have worked hard to 'keep calm and carry on' despite the relentless stream of bad news from the nightly broadcasts. We have allowed extra time for peer review this year and our reviewer invitation e-mail asks referees to get in touch if they require more time. We have also allowed authors and editorial board members extensions throughout the year as many have struggled with meeting our tight deadlines. I am pleased to report that notwithstanding all the problems and delays created by the pandemic, our publication metrics for 2020, detailed below, indicate that we have actually experienced an increase in submissions over 2019. Perhaps less time in the laboratory and field has encouraged some to clear their desks and get earlier work written up? We have also been able to shave a few days off our time from submission to final acceptance of papers compared with last year.

From 1 January to 31 October 2020, we received 2615 submissions, an increase of 171 articles (7%) in comparison with the same period in 2019. Of these submissions, 75% were rejected, a 3% decline from 2019. Articles took on average 27 days from the date of submission to first decision and 67 days to final acceptance, a reduction of 2 days from 2019, despite some requests for extra time from authors, reviewers and editorial board members. From submission, an article took on average 92 days to online publication. Our current projections are approximately 3100 submissions by the end of the year. The number of open access articles published so far this year is 132 of 517 total articles accepted, an increase of 28 compared with the last year, and making up 26% of all accepted manuscripts. We received submissions from numerous geographical regions, with the largest numbers to date this year coming from the USA (664), UK (313), China (272), Canada

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(154), Germany (153), Australia (147), Japan (106), France (89), Spain (53) and Switzerland (49). In future, we would like to expand our geographical reach and are especially eager to receive more submissions from South America, Africa and India. Ecology, evolution and behaviour remain the most popular subject areas for submissions. Citation metrics for *Proceedings B* remain similar to last year with an impact factor of 4.637 and the journal is ranked 11th out of 93 journals in the Journal Citation Reports category for 'Biology'.

Our reviews editor Innes Cuthill has continued to diversify the range of topics that are the subject of reviews in *Proceedings B*, and in 2020, there has been an impressive increase in the number of proposals submitted, with 112 received so far compared with 67 for the same period last year. Another COVID-19 blip perhaps? Of these, 88 have been agreed upon and 61 submitted. Review articles are published in every issue, are generally well cited and can cover any area within the biological sciences. Because we require them to be relatively short (6000–7000 words) and to be written for a general audience, they provide outstanding primers for those interested in learning about the latest developments on a particular topic.

Our annual review from the *Canadian Society for Ecology and Evolution* (CSEE), 'Racing against change: understanding dispersal and persistence to improve species' conservation prospects' [1], by past CSEE President Jeremy Kerr (University of Ottawa), concerns ways to improve prospects for species conservation through an understanding of their dispersal dynamics, particularly in the context of range expansions owing to climate change. The article discusses how species movements to new locations and the influence of population growth rates in novel environments can be investigated through models, which can improve predictions on species' distributions under climate change. As Kerr points out in his article, the major challenge for future research in this area is to be able to successfully predict whether, where and when species will decline (or benefit) from global environmental change. Models of the kind reviewed in his article will provide valuable insights on this problem.

This year the annual Darwin review in *Proceedings B*, 'When everything changes at once—finding a new normal after genome duplication' [2] by Kirsten Bomblies (Swiss Federal Institute of Technology in Zurich (ETH)) is concerned with the fascinating topic of whole-genome duplication (WGD) resulting in polyploidy. This dramatic change to the genetic system of organisms has long fascinated evolutionary biologists as it can result in evolutionary novelty with consequences for adaptation and speciation. Bomblies reviews the immediate and longer-term phenotypic changes that are most commonly observed with WGD events, with a particular focus on physiological traits that are central to the cell biology of plants, a group in which polyploidy is widespread. She demonstrates that commonly observed cell size changes that accompany WGD can have substantial influences on a range of biological functions associated with stomata, pollen tubes and xylem architecture, and is also frequently associated with the increased stress resilience of polyploids. The article provides a novel perspective by highlighting the mechanistic basis of the profound genetic and phenotypic changes that WGD causes to the biology of plants.

Special Features in *Proceedings B* are collections of articles on a single theme that has been chosen by the editors because there is considerable current research activity. This year we feature the 'Application of ecological and evolutionary theory to microbiome community dynamics across systems', guest edited by James McDonald (Bangor University), Julian Marchesi (Imperial College, London & Cardiff University) and Britt Koskella (University of California, Berkley). This Special Feature comprises 11 articles plus an introduction [3]. There is now growing appreciation that host-associated microbiomes play a critical role in ecology and evolution, and recent research on the factors governing their assembly, diversity and stability has provided novel perspectives on a range of topics including: horizontal gene transfer, rapid evolution and the production of antimicrobial compounds. The Special Feature includes new findings and review articles providing a cross-disciplinary picture of the ecology of plant, animal and human microbiomes. The contributions involve diverse theoretical and experimental approaches in addressing key questions concerned with host microbiomes and the diverse influences they have on host ecology, evolution, health and disease. A particular strength of this collection is that it comprises articles from an array of different model biomes allowing cross-fertilization and synthesis to the benefit of future progress on the topic.

One of my goals since becoming Editor-in-Chief of *Proceedings B* in 2014 has been to broaden the scope of articles that we publish and diversify our portfolio of article categories within the biological sciences. Two new categories that we recently introduced exemplify this effort. Evidence Synthesis papers, with Editor Gary Carvalho handling submissions, involve syntheses and analyses of published information relevant to particular policy questions, and are aimed at being comprehensible to non-specialists and policymakers, thus enabling them to make informed decisions based on unbiased assessment of the relevant literature. Since the launch of the Evidence Synthesis article type in May 2018, we have received 22 submissions and published eight articles covering diverse topics including: urban ecology, endocrine disruptors, global ocean policies, healthy eating and modelling the COVID-19 pandemic. An online collection of Evidence Synthesis articles that we have published is now available at: https://royalsocietypublishing.org/topic/special-collections/evidence-synthesis.

Last year, we introduced a second article type—Biological Science Practices—with Associate Editor Stephanie Meirmans (University of Amsterdam) handling submissions. This initiative is a response to the burgeoning number of articles being published which critically evaluate scientific practices, including their benefits but also their unintended consequences. Submissions address specific questions and hypotheses about biological science practices, and should contain original data analyses and novel syntheses. An editorial by Stephanie provides more details on the motivation for introducing Biological Science Practices [4] as well as guidelines for submission. So far, we have received 22 submissions and published three articles of this type.

In the summer of 2018, we appointed Maurine Neiman (University of Iowa) as the Preprint Editor for the journal so that we could take advantage of the submission of unpublished articles to the preprint server bioRxiv, evaluate potentially interesting articles and diversify our content. This initiative, the first among Royal Society journals, has proven to be highly successful. Maurine has expanded her Preprint editorial team to include around 30 members from many different countries—ranging from the USA and UK to New Zealand, Canada, Portugal and more—with a particular focus on early-career scientists. Together, these team members suggest 150 or so manuscripts newly posted on bioRxiv per

month for potential solicitation. This list is winnowed down by Maurine to 30–50 papers per month for which authors are contacted about possible submission to *Proceedings B*. So far in 2020, 25 papers have been submitted to the journal via this route, and 28 solicited papers have been accepted or published since Maurine was appointed. A positive outcome of this initiative is that it contributed to our decision to introduce the article type Biological Sciences Practice, discussed above. The identification by Maurine and her team of interesting manuscripts in bioRxiv that did not fit comfortably with any of our existing article types was influential. The Royal Society journal—*Open Biology*—has now adopted a similar approach with the appointment of a designated Preprint Editor. Our initiative has been featured positively in multiple media outlets and was highlighted by the non-profit ASAPbio (Accelerating Science and Publishing in Biology—https://asapbio.org/) during their recent Peer Review week.

The COVID-19 pandemic has provided an opportunity for *Proceedings B*, along with other Royal Society journals, to be part of an initiative made up of a group of Publishers, including PLoS, eLife, Hindawi, PeerJ and Royal Society Publishing, to rapidly review COVID-19 research: https://oaspa.org/covid-19-publishers-open-letter-of-intent-rapid-review/. Reviewing of papers uses a central pool of reviewers and allows the transfer of papers and reviews between journals from participating publishers to allow for rapid publication. Another aim is to encourage the research community to triage COVID-19 preprints and recommend those suitable for full peer review to journal editors. To date, *Proceedings B* has received 45 submissions and has transferred two papers to *Royal Society Open Science*; however, as yet we have not received any transfers from other journals. The majority of submissions to *Proceedings B* have been rejected and we currently have five papers in review. So far, the journal has published three COVID-19 papers—one review [5], one evidence synthesis [6] and one research paper [7].

From time to time, it is necessary for us to investigate whether the main findings of articles that we have published in *Proceedings B* are reliable, and that the primary conclusions can be sustained and are robust. These investigations commonly arise when we are contacted by individuals who find anomalies in the data on which the paper is based. Depending on the severity of the problem, this can result in various actions taken by the journal, including publishing Expressions-of-Concern, Corrections and Retractions. The process involved to rigorously and objectively evaluate these enquiries in an unbiased way is extraordinarily time-consuming, requiring enormous amounts of diligent and careful reanalysis of data by editors and board members familiar with the subject area. Communication with authors and co-authors of papers we are investigating can also be a particular source of stress because of the potential disagreements among parties involved and the fact that reputations can be damaged. With this in mind, I would like to offer my sincere thanks this year to Editors Innes Cuthill, Sasha Dall and Locke Rowe who, in addition to their normal duties deciding the fate of numerous submissions, have spent most of this year involved in a large scale and challenging ongoing investigation. I also thank Stuart Taylor (Director of Publishing, Royal Society) for his wise counsel on this investigation, as well as Phil Hurst (Publisher responsible for journals) and Shalene Singh-Shepherd (Publishing Editor, *Proceedings B*) who have provided invaluable support and advice.

To conclude, I would like to thank all members of the editorial board for their hard work in making *Proceedings B* the world's leading journal in organismal biology. A special thank you is in order to all board members (Associate Editors) who will retire at the end of this year. I hope that your time with *Proceedings B* has been rewarding and has exposed you to exciting new research both inside and outside your immediate area of specialization, and has also provided opportunities to network and develop friendships with other board members and staff. I would also like to thank our editorial team at the Royal Society in London, consisting of Editorial Coordinators Jennifer Kren, Callum Shoosmith and Production Editor Simon Clackson, for their conscientious work in making sure that *Proceedings B* runs smoothly and efficiently, even during a pandemic! I am especially grateful to Shalene Singh-Shepherd for her dedication and attention to detail. One of the many annual tasks that Shalene has is the recruitment of new board members based on advice and suggestions from the editors. This year we recruited 24 new Associate Editors (64% female) and it is gratifying that in the majority of cases individuals responded enthusiastically to her invitation to join the *Proceedings B* board. I know that Shalene's efforts are not only appreciated by me, but also by the editors, board members and office staff.

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