The Journal of Bacteriology Is 100

Thomas J. Silhavy, Editor in Chief, Journal of Bacteriology
Department of Molecular Biology, Princeton University, Princeton, New Jersey, USA

A
fter discussions that date to the founding of the Society of American Bacteriologists (SAB) in 1899 and despite predic-
tions of financial failure and objections that there were already more than enough scientific journals, it was officially decided to start the Journal of Bacteriology (JB) at the SAB meeting in Urbana, IL, in December 1915. After that decision was finally made, things moved rapidly. Volume 1 of the journal, dated January 1916, which appeared in press several months later, contained a fore-
word about the new science of bacteriology by W. T. Sedgwick (Massachusetts Institute of Technology), a Presidential Address by D. H. Bergey (University of Pennsylvania), the abstracts of the papers presented at the Urbana meeting, and four scientific papers. The editor in chief (EIC) of the new journal was C.-E. A. Winslow (Yale University), and he served in this capacity for an extraordinary 28 years. Sedgwick was one of 22 advisory editors, and Bergey was one of 32 abstract editors listed on the original masthead.

The third EIC of JB, J. R. Porter, wrote a detailed history of the founding of the journal that appeared in ASM News in 1974 (1). (The SAB became the American Society for Microbiology [ASM] in 1960.) G. C. Walker, the eighth EIC of JB, wrote a beautifully crafted summary of the illustrious history and growth of the journal into the highly respected scientific publication that so effectively serves the microbiology community today (2). Indeed, it is currently the second most highly cited journal in this field. These references should be consulted for a detailed discussion of the history and growth of the journal. There are, however, a couple of historical facts that I would revisit.

JB was a financial success right from the start, and the agreement worked out between the society and the publisher, Williams and Wilkins Company, is remarkable in that regard. The society agreed to provide high-quality manuscripts to the publisher, who in turn would publish them at no cost to the society. However, if there were profits, the society would get 60%! According to Porter, this was apparently done by gentleman’s agreement, and it is hard to imagine this happening today. Indeed, the scientific publishing industry has changed dramatically since then.

Here I reprint the first sentence of the Announcement that justifies publishing JB that appeared in volume 1:

“Although there are numerous journals in the United States that deal with various special phases of bacteriology (as applied to Medicine, Sanitary Science, Agriculture and the like), there has been no journal in the English language to represent the science as a whole.”

This justification turns out to be ironic, because today ASM publishes 15 academic journals covering all aspects of the field of microbiology, most of which have been spun off JB.

Challenges. The most critical issue facing JB is the decreasing number of submissions. The reasons for this are multifaceted, and here I will describe what I think are the major causes.

First on the list is impact factor (IF). I can understand why administrators want a quantitative measure of high-quality re-

search. What I do not understand is why scientists allow and accept the use of such a terribly inappropriate number as the IF. Many have written about the serious limitations of the IF, and I have never seen anyone of any consequence defend it, yet it remains, many journals flaunt it, and many administrators ignore any journal below an arbitrary IF number. It is especially unfor-
tunate for JB because of Genome Announcements. As a commu-
nity service we published an increasingly large number of these before the new Genome Announcements journal was spun off. As the old saying goes, no good deed goes unpunished. Despite our rigorous objections, these were counted as peer-reviewed research articles (they are not), thus increasing the denominator and re-
ducing the IF alarmingly. It will take several years for these an-
ouncements to wash out of the calculation completely. In many ways the IF is a self-fulfilling prophecy. When it goes down, scientists send their best work elsewhere, so we must work especially hard to reverse the drop caused by the announcements.

The number of new microbiology journals is increasing rap-
idly. Publishers have learned that there is money to be made not by selling journals, the way it used to be, but by charging authors. For most of these new journals the scope includes the science of microbiology as a whole, much like the original intention for JB. However, as noted above, JB has spun off many new ASM jour-
nals, and each time this happened, the scope statement was rewrit-
ten. Until recently the JB scope statement was really a rather lengthy list of topics that JB would not consider because they were more appropriate for other ASM journals. Our chief competitors do not suffer this limitation.

Many young scientists regard the Journal of Bacteriology as stodgy and old-fashioned, and they choose to submit their papers to journals with more cachet. Despite the high regard with which JB is held in the field, in far too many cases, the mentors of these young scientists agree.

Meeting the challenges. Last year we rewrote the scope state-
ment to demonstrate the breadth of our interests: Journal of Bacteriology publishes research articles that probe fundamental processes in bacteria, archaea and their viruses, and the molecular mechanisms by which they interact with each other and with their hosts and their environments.

The principal guiding the decisions of the JB editors is to pub-
lish papers reporting the highest-quality research and to not bias

Accepted manuscript posted online 26 October 2015
Address correspondence to tsilhavy@princeton.edu.
Copyright © 2015, American Society for Microbiology. All Rights Reserved.
The views expressed in this Editorial do not necessarily reflect the views of the journal or of ASM.
our decisions based on subjective criteria such as perceived popularity.

The greatest strength of JB lies in the quality of its editors. I am very proud of the JB editors, and I think that in terms of accomplishments and standing in the field, we are the best in the business. Mark Johnson, my friend and the EIC of Genetics, another important society journal, published an editorial this year in which he bemoaned the fact that so many of us send our best papers to journals whose editors are not as accomplished as the editors of society journals like ours (3). Rather than IF, he argues for a metric that reflects the scientific standing of the editors when trying to rank journals. The metric that he devised is called the journal authority factor (JAF), and it is the average h-index of the journal’s editors. JB has a JAF of 46.7, which is quite similar to the JAF of Genetics. I think that compares favorably with Proceedings of the National Academy of Science (59.9), where all of the editors are National Academy members. In striking contrast, some of the journals with greater cachet, like Cell or Nature, have single-digit JAFs.

To replace “Sandy” Parkinson and Judith Armitage, who both retired after 10 years of service, two new editors were appointed last June, Conrad Mullineaux (University of London, London, United Kingdom) and Anke Becker (Philips University, Marburg, Germany). Short biosketches of all of the JB editors can be found at the JB website (http://jb.asm.org/).

You can be sure that if you send a paper to JB, it will be handled by one of those accomplished editors, and I encourage you to suggest reviewers for our Editorial Board or appropriate outside experts. The members of our Editorial Board are published on the masthead, and they represent the range of topics covered by the journal. I encourage that you also suggest reviewers whom you think appropriate, whether they are on the Editorial Board or not. As noted in the last issue of 2015, more than 700 ad hoc reviewers participated in the review process last year. When the reviews come in, the editor will make a decision. It is worth noting that we have worked hard to expedite the review process, and the average time to first decision is currently 27 days from submission. A list of top-performing JB Editorial Board members is below:

Sarah Ades, Penn State University
Birgit E. Alber, The Ohio State University
Lori L. Burrows, McMaster University
Ciaran Condon, Institut de Biologie Physico-Chimique
Sean Crosson, University of Chicago
Andrew Darwin, New York University School of Medicine
David Dubnau, Rutgers University
Michael J. Federle, University of Illinois at Chicago
Alain Filloux, Imperial College London
Mark Gomelsky, University of Wyoming
Daniel B. Kearns, Indiana University
Beth Lazazerra, University of California, Los Angeles
Michael D. Manson, Texas A&M University
Michiko M. Nakano, Oregon Health & Science University
Stephen Spiro, University of Texas at Dallas
Jörg Stülke, University of Göttingen
Karen L. Visick, Loyola University Chicago
Christopher M. Waters, Michigan State University
David S. Weiss, University of Iowa
Roy D. Welch, Syracuse University
Daniel J. Wozniak, The Ohio State University
Timothy L. Yahr, University of Iowa
Cheng-Cai Zhang, CNRS
Peter Zuber, Oregon Health & Science University

These Board members reviewed at least 7 and as many as 14 manuscripts at less than average turnaround time, and none of them declined more than one review request.

This year 11 new scientists were appointed to the Editorial Board to replace retiring members:

Harujiuki Atomi, Kyoto University
Nancy Freitag, University of Illinois
Michael Glickman, Memorial Sloan Kettering Cancer Center
Michael Koomey, University of Oslo
Jyl Matson, The University of Toledo
Shonna McBride, Emory University School of Medicine
M. D. Motaleb, East Carolina University School of Medicine
Eric Stabb, University of Georgia
Nicola Stanley-Wall, University of Dundee
Daniel M. Wall, University of Wyoming
Jue D. Wang, University of Wisconsin—Madison

Each of them brings noted expertise to the journal, and speaking for all of the editors, I welcome them.

As editors, we try hard to provide authors with thoughtful, helpful reviews. On rare occasions when reviewers disagree, the editor will decide which recommendation is most appropriate and explain why. If a reviewer requests a lot of additional experiments, the editor will explain which are needed and which are not critical. If a paper is rejected, the editor will provide a clear explanation for why that decision was made.

There are always those who claim they were treated unfairly. But actually, as EIC, I get few complaints. A survey done by ASM recently showed that in general, authors were satisfied with the quality of their reviews. There are also cases where authors acknowledge that reviews were helpful. One of my favorite stories is from an author group who profited so enormously from a JB review that they revised the paper as suggested and then sent it to another journal with a higher IF.

The bottom line is that those of us who work directly for the journal are trying our best to make the journal as successful as possible. However, it is clear that we cannot raise the IF without your help. If you value JB and think it important for our field, then convince your students and postdocs to support JB by sending us good papers.

Upcoming events. To help demonstrate the impact that JB has had on the field of microbiology, last summer I asked the editors and Editorial Board members to identify papers published in the journal that have had significant impact on their work. They responded with a list of about 120 papers. Now, clearly this list is not complete, and there is bound to be some bias in the choice of papers because not everyone responded and some recommended more papers than others. Nonetheless, I think this list provides excellent examples of what JB has done for the profession.

What is immediately clear is that the papers on the list are not the most highly cited JB papers. We have a list of highly cited papers as well, but I think that list is less impressive. That list contains papers describing a medium, a new vector, a technique, etc. These are important contributions to be sure, but the first list contains papers that opened new fields. Herein lies yet another problem with IF; IF is based on citations made in the last 2 years.
only. The papers that opened new fields, the papers on our list, did not generate citations immediately; these papers were too far ahead of their time to generate much immediate interest. That interest came later, along with an appreciation for the groundbreaking nature of the work described. This is why JB remains such a highly cited journal.

Beginning with this issue, one or two of these influential papers will be highlighted with what we call a Classic Spotlight written by an editor. These brief articles will explain why these papers were so important in ways we think will be immediately apparent even to nonexperts. I think it is true today that younger scientists do not read journals. What they rely on is electronic searches that notify subscribers of papers published in their areas of interest by e-mail. I think young people will learn much from these Classic Spotlights, and I urge you to call them to their attention. Looking at the JB table of contents will be rewarding. I promise!

This summer the ASM will integrate its two most popular events, the General Meeting and ICAAC. The new ASM Microbe 2016 meeting, which will be held in Boston, MA, on 16 to 20 June, promises to be an exceptionally broad meeting that will cover basic science, translational science, and application. At this exciting meeting there will be an early evening reception to celebrate JB’s anniversary on 17 June. Invitations will be sent to many of those who have published, reviewed, and contributed to the success of the journal. It promises to be a gala affair. In addition, various sessions at the upcoming meeting will feature speakers that will highlight the contributions made by JB authors, and these will reflect the Classic Spotlights published in the journal.

It is my hope that this important anniversary will emphasize all that has been done to preserve and protect the reputation of JB. It is also my hope that the community will respond in positive fashion so as to maintain its influence on microbiology for years to come.

REFERENCES