

The 30th anniversary of Ecological Research: past, present, and future

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The 30th anniversary of *Ecological Research*: past, present, and future

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Abstract In 2016, *Ecological Research* (*ER*) celebrated its 30th anniversary. *ER*'s goal is to be the leading ecological, evolutionary, and biodiversity journal in Asia. This article introduces the development of *ER*, improvements to its editorial system and their outcomes, and the strategies designed to achieve this goal. *ER* has already become a leading comprehensive and international publication as shown by statistical evidence and its strong editorial foundation. However, some members of the Ecological Society of Japan (ESJ) retain impressions of an old stereotype about *ER*. The discrepancy between the current status of the journal and its stereotype may

explain why submissions from Japan remain static. A new article category for *ER*, Biodiversity in Asia, was created to encourage Asian studies. In addition, the Forum category is dedicated to promoting a broad understanding of the ESJ's various activities. To promote open science, the proportion of open access articles in the journal is increasing. The publication of Data papers has been accelerated to improve the public availability of excellent open data sets. *ER* symposia and seminars provide good opportunities for members to participate. *ER* financially supports the invitation of scientists internationally to facilitate research exchanges with other countries and consequently promotes the internationalization of the ESJ. The ESJ is open to the world's ecologists, and your participation in developing *ER* is welcome.

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Keywords Editorial system · International research · Editorial strategies · Journal · The Ecological Society of Japan

Introduction

Ecological Research (*ER*) is the official English-language peer-reviewed journal of the Ecological Society of Japan (ESJ) and celebrated its 30th anniversary in 2016. Submissions have greatly increased over that time and moved from print to electronic media. Along with changes by *ER*'s peers, i.e., other international ecological journals, *ER* has seen changes in its international position and in its expected role in the ESJ.

Asia includes a wide variety of climate zones, from tropical Indonesia to the Siberian tundra, which contain several heterogeneous ecosystems. However, despite the inclusion of China and India, which are, respectively, the most and second-most populous countries worldwide, the number of ecologists working in Asia has been limited and there are more opportunities for Asian studies. Thus, *ER*'s goal is to be the leading Asian ecological, evolutionary, and biodiversity journal to pro-

mote ecological research and outreach in Asia. To achieve this goal, the editorial office and board have improved *ER*'s editorial system, improved open access publication opportunities, and begun collaborations with other journals such as the *Journal of Plant Research* and *Journal of Forest Research*.

In looking to the future of *ER* on its 30th anniversary, we summarize a long-term direction of *ER* in supporting one of the objectives of the ESJ, i.e., "contributing to modern society via the progress and spread of ecology." To assess the current status of *ER* worldwide and its recognition by ESJ members, we analyzed the journal's publication records and conducted a web-based questionnaire from December 9, 2015 to January 15, 2016 (Supporting Information ESM 1, ESM 2), which we reported at the 63rd Annual Conference of the ESJ. The questionnaire was available only in Japanese and the respondents included non-ESJ members. The questionnaire results revealed that the efforts and strategies of the editorial office and board were not widely recognized. To share this information with more people in this Forum article, we introduce the development of *ER* to the present day, improvements to its editorial system and their outcomes, and strategies designed to achieve the goal. We need the involvement of all ESJ members to achieve *ER*'s goal. We hope that this article will encourage the participation of ESJ members in *ER* and thus promote ecology in Japan and Asia.

Development of *ER* to the present day

Until 1985, only one official journal was published by the ESJ, the *Japanese Journal of Ecology*, which presented articles in both Japanese and English. Authors who published in English may have hoped to improve the global dissemination of their research because English publications are read widely and promote valuable information exchanges. However, mixed-language journals would be less attractive than English-only journals for scientists internationally. Therefore, *ER* was launched in 1986 as the official English-language journal of the ESJ to improve the worldwide dissemination of ecological knowledge from Japan. Submissions and publications to *ER* have increased since 1986 and continue to increase (Fig. 1).

Most studies published in the early issues of *ER* were conducted in Japan by Japanese researchers (Fig. 2). Since then, the authorship and research fields have diversified and globalized dramatically. The proportion of Japanese first authors in published papers has decreased from about 80% in 1998 to about 50 and 30% in 2006 and 2015, respectively. This transition has been driven by increasing numbers of foreign authors (Fig. 3) and shows that *ER* has become an international journal recognized broadly by researchers internationally. In addition, the distribution of study sites has shifted from mainly Japanese sites in the 1980s to a more even global

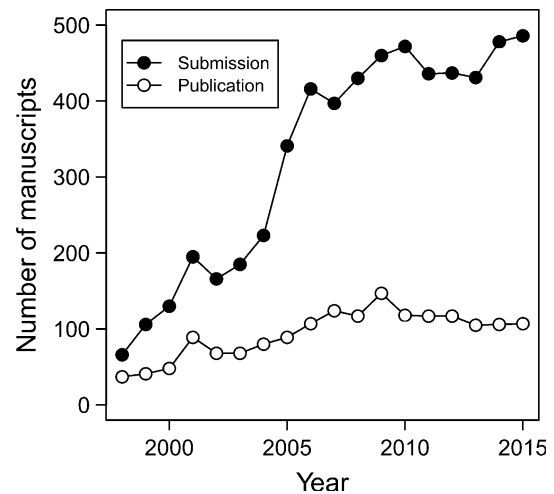


Fig. 1 Submissions and publication from 1998 to 2015. The data until 2006 reflect the Japanese fiscal year (i.e., from April of the focal year to March of the next year) and thereafter reflect the calendar year

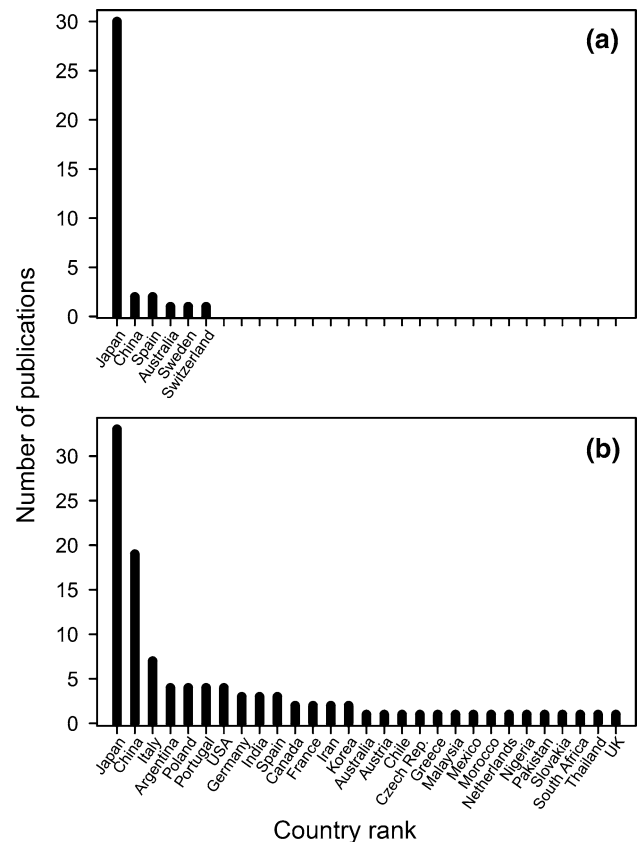


Fig. 2 Compositional changes in nationalities of first authors **a** in 1998 and **b** in 2006. The nation refers to the nation of the first author's address

spread (Fig. 4). However, as the number of submissions has increased, the number of submissions that deviate from *ER*'s aim and scope has also increased, which increases the editorial burden.

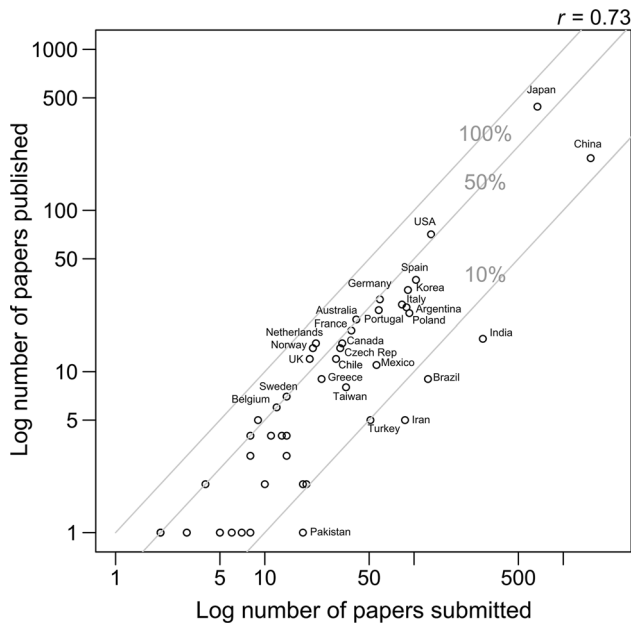


Fig. 3 Relationship between submissions and publication per country from 2006 to 2015. The gray lines represent the percentages of publications to submissions. Nation name was not described when numbers of both submissions and publications were small (23 nations). Nations where no article was accepted were not included

Focal organisms have also changed. Initially, studies of plants and nutrient cycling were dominant. Studies focusing on plants accounted for more than half of published papers from 1986 to 1990 (Fig. 5). This high proportion of articles focusing on plants may be explained by the history of the ESJ, which was established in 1953 by the Plant Ecological Society (*Bulletin of the Society of Plant Ecology*) and the Phytoecological Society of Japan (*Annals of Phytoecology*) (The Ecological Society of Japan 2003). In addition, when *ER* was launched, population ecology was a big research focus in Japan. The Society of Population Ecology published *Population Ecology* (formerly *Researches on Population Ecology*, an English-only journal). By providing opportunities for studies of other ecological disciplines, such as production and physiological ecologies, *ER* allowed a differentiation in content between journals and the diversification of study materials in *ER*. Thus, the percentage of plant studies gradually decreased to about 40% in 2010–2015.

Such diversification and internationalization indicates that *ER* has developed into a comprehensive international ecological journal. However, some members of the ESJ retain impressions of an old stereotype of *ER*. For example, our questionnaire demonstrated that most people still see *ER* as a journal about plants (Fig. 6). This discrepancy between the current status of the journal and its stereotype may explain why submissions from Japan remain static. Indeed, the main reason for Japanese ecologists not to submit to *ER* is “no related articles” (Fig. 7). Thus, the journal’s new status

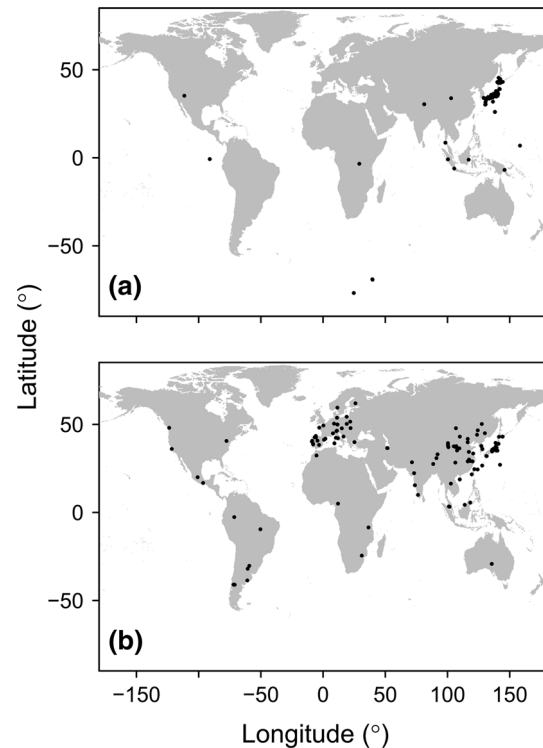


Fig. 4 Global distribution of study sites during **a** 1986–1990, and **b** 2011–2015

must be promoted more broadly to encourage submissions from Japanese ecologists.

Improvements to *ER*'s editorial system and their outcomes

ER's editorial system has been improved greatly in recent years (Fig. 8). Managing editors identify inappropriate submissions, which succeeded in reducing editorial costs. The managing editors rapidly assign each submitted manuscript to an appropriate Associate Editor-in-Chief (AEiC), whose expertise is close to the subject of the manuscript. The AEiC checks the manuscript contents and assigns suitable reviewers, either directly or indirectly through a handling editor. After review, the Editor-in-Chief makes the final decision. This process places a burden on the Editor-in-Chief; therefore, further improvement will be required in future, although the role of Editor-in-Chief is still needed to integrate the journal for ESJ. To improve the rapid handling of manuscripts and expand the expertise of the editorial board, the number of AEiCs, who are most closely involved with the manuscript submissions, increased from three in 2010 to 18 in 2016. The AEiCs can assign a handling editor to a manuscript when they already have several manuscripts to manage or when the expertise of the handling editor is more closely aligned with the manuscript than their own. These improvements have significantly improved the editorial process,

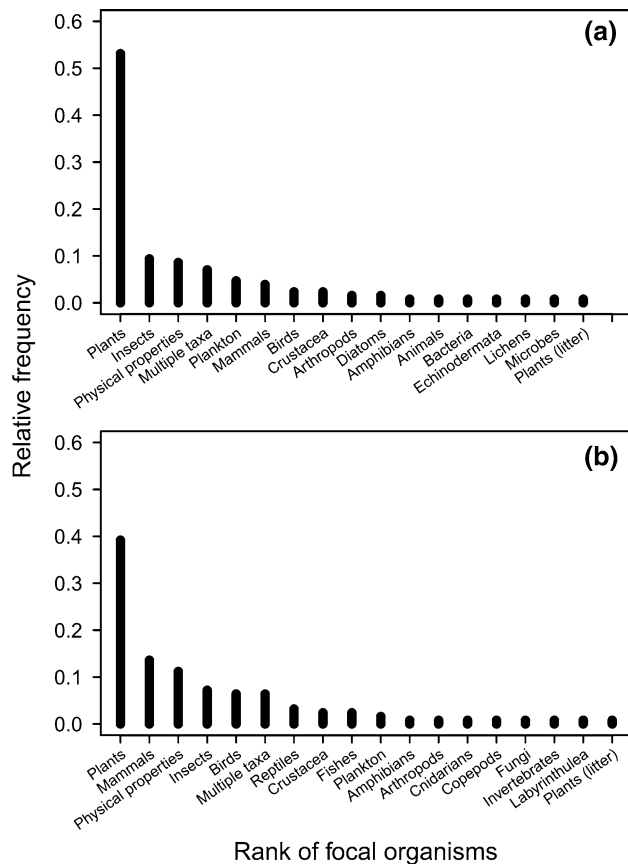


Fig. 5 Compositional change in study materials between **a** 1986–1990 and **b** 2010–2015. We compiled the data from 130 articles, which were randomly chosen at a 5-year interval. There are no categories such as “Others” and “Miscellaneous.”

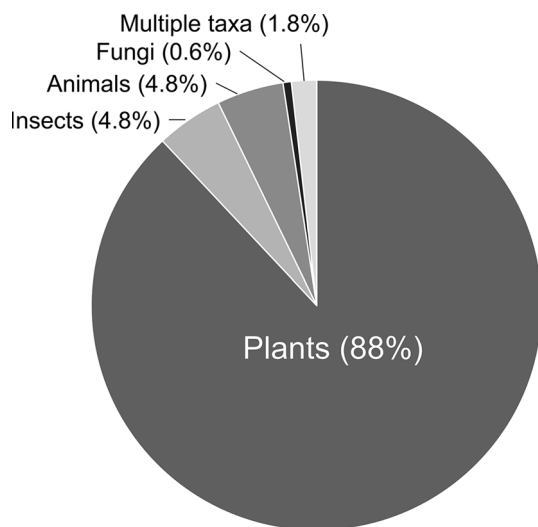


Fig. 6 Results of questionnaire about focal organisms

especially the time from submission to peer review (Fig. 9). The editorial committee has appointed several members with expertise in new fields in ecology to increase the journal's scope. In addition, in March 2016,

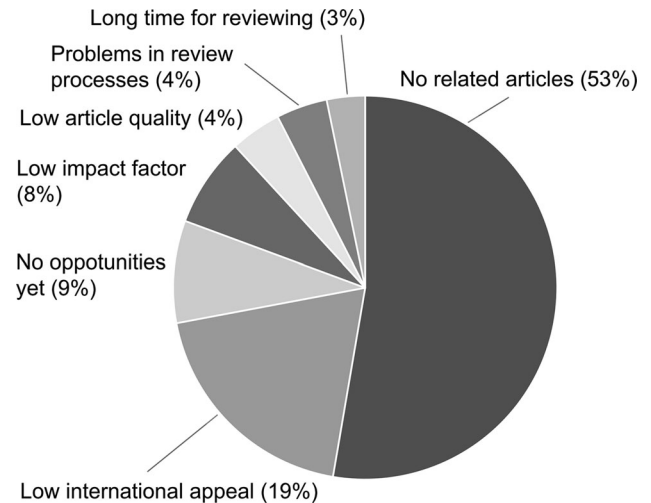


Fig. 7 Results of questionnaire about why respondents do not submit to *ER*

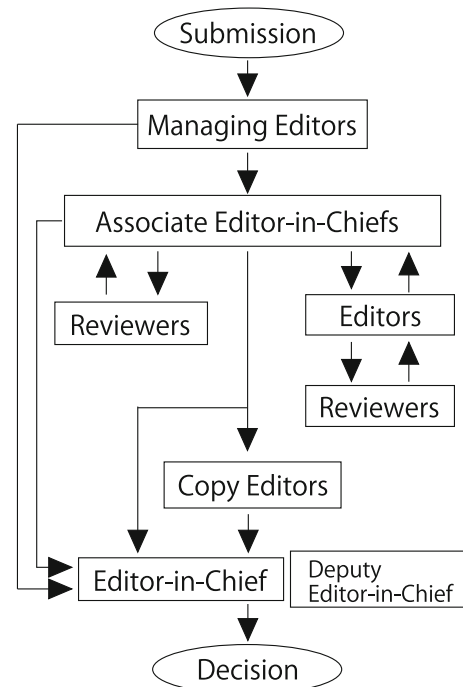


Fig. 8 *Ecological Research's* current editorial system

the position of the Deputy Editor-in-Chief was created with a term of office that overlaps that of the Editor-in-Chief for 2 years (half of the total term), which allows a smooth transition of knowledge between incoming and departing Editors-in-Chief.

These improvements have contributed to shortening the time from submission to acceptance (and publication), even as the number of submissions increased (Fig. 9). Many Japanese editorial board members are aged in their 30 s or 40 s; therefore, they have great potential to contribute to the further development of *ER*. It is also notable that the editorial board includes

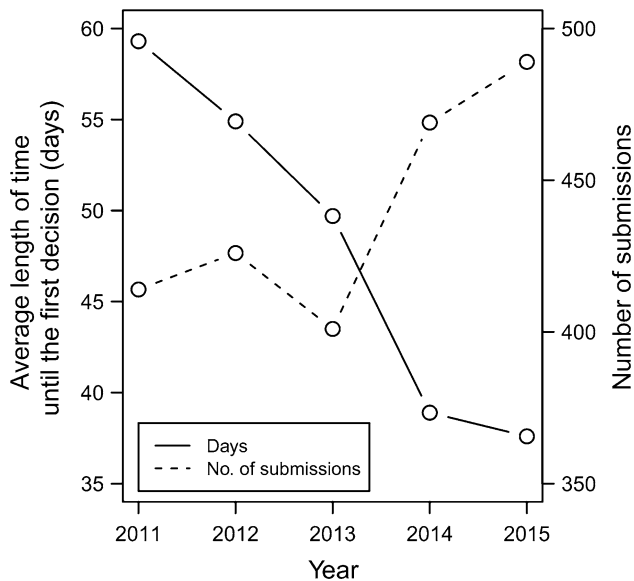


Fig. 9 Trends in the number of submissions and the average length of time until the first decision from 2011 to 2015

many foreign scientists (37 people, 43% of total), who can promote *ER* in their own countries (Iwasa 2005). These editorial improvements provide *ER* with a good foundation for being a leading ecological, evolutionary, and biodiversity journal in Asia.

Copy editing by young ESJ members (promotion of future editor development) has also begun to improve the quality of accepted papers. Previously, submissions that did not follow the required format made the work of the editors and reviewers difficult. The copy editors now confirm the manuscript format, the integrity of the citations, and the accuracy of tables, figures, and captions. To help authors improve their figures, and tables, the copy editors created an online guide (see ESM 3) [The Ecological Society of Japan (n.d.)]. Nonnative English speakers are often supported by a qualified native-English-speaking editing service at the final stage of publication.

Strategies to achieve *ER*'s goal

The involvement of ESJ members is essential for the future development of *ER*. ESJ provided some awards, including the ESJ Award, Denzaburo Miyadi Award, Yasuyuki Oshima Award, and Nobuhiko Suzuki Award, to improve and encourage members. ESJ has long encouraged prizewinners to submit their manuscript to *ER* and some winners were published; therefore, the scope for papers published on *ER* was widened. This effort also contributed to attract young scientists, who widened their research interests after being inspired by *ER* articles. *ER* symposia and seminars provide good opportunities for members to collaborate in developing research. *ER* financially supports the participation of foreign scientists at the annual conference of the ESJ to

facilitate research exchanges with other countries and consequently promote the internationalization of the ESJ. *ER* seminars are held as needed; e.g., seminars have been conducted on how to prevent research fraud or to explain the editorial process of scientific journals (Fig. 10) and seminars will be planned to promote contributions to *ER* and improve perceptions of the importance of ecology. Thus, your active participation is welcome. Historically, ESJ members might have viewed *ER* as being separate from the annual conference. However, if *ER* and the conference work together successfully, the development of ecological studies in Japan and Asia could be more successful. *ER* can also play a key role in the East Asian Federation of Ecological Societies (EAFES), because the journal has been recognized as an official publication of EAFES.

In becoming a leading journal in Asia, it is important to establish *ER*'s position among scientific journals worldwide. To achieve this goal, *ER* created a new article category, Biodiversity in Asia, which caters to distinctive issues in Asia and accepts descriptive work related to the fundamental information of characteristic Asian biodiversity. As of November 2016, three papers had been already published in the Biodiversity in Asia category (Li et al. 2015; Choi 2016; Zhang et al. 2016). Furthermore, joint special issues with the *Journal of Plant Research*, "Long-term and multidisciplinary research of the forest carbon cycle at the Takayama site, Japan," and the *Journal of Forest Research*, "Ecological aspects of management of overabundant deer populations," have been published under a plan to publish distinctive content in *ER* and ensure its status as a comprehensive ecological journal. An *ER*-specific web page has been created to allow timely spread of information (<http://www.esj.ne.jp/er/>; Fig. 11).



Fig. 10 A talk at an *Ecological Research* seminar at the University of Tokyo in January 2016. Professor Marc Cadotte, the Executive Editor of the *Journal of Applied Ecology*, explained the trends and processes in ecological journal publishing. *ER* supports opportunities for interpersonal communications, which is very important in the context of collaborations between *ER* and conferences to develop ecological studies in Asia

Ecological Research

Ecological Research has been published in English by the Ecological Society of Japan since 1986. Ecological Research publishes original research papers, reviews, technical reports, notes and comments, and data papers covering all aspects of ecology and ecological sciences.

Related subjects: Animal Sciences; Behavioral Sciences; Ecology; Evolutionary & Developmental Biology; Forestry; Plant Sciences

ORIGINAL ARTICLES (Open access)

Ewa Błońska, Magdalena Kacprzyk, Anna Spólnik
Effect of deadwood of different tree species in various stages of decomposition on biochemical soil properties and carbon storage

The primary objective of this paper was to estimate how the mass of Silver fir (*Abies alba* Mill.) and Scots pine (*Pinus sylvestris* L.) deadwood in two decay classes affected biochemical processes and the accumulation of soil organic matter, as well as the extent of this impact. We evaluated deadwood mass, as well as the biological activity and influence of the distance from deadwood on biological activity and carbon (C) storage. The investigation was carried out in Mągurski National Park, southern Poland, in four randomly selected study plots.....[more](#)

Violetta Hawro, Piotr Ceryngier, Anna Kowalska, Werner Ulrich
Landscape structure and agricultural intensification are weak predictors of host range and parasitism rate of cereal aphids

Proportions of specialist and generalist primary parasitoids have been described by the resource breadth and the trade-off hypothesis. These alternative hypotheses predict either decreased or increased, respectively, parasitism rate of shared aphid species by specialist parasitoids. We tested both hypotheses and the confounding effects of landscape structure and agricultural intensification (AI) using extensive samplings of aphids and their parasitoids in Polish agricultural landscapes.....[more](#)

Galini V. Papadopoulou, Nicole M. van Dam
Mechanisms and ecological implications of plant-mediated interactions between belowground and aboveground insect herbivores

Plant-mediated interactions between belowground (BG) and aboveground (AG) herbivores have received increasing interest recently. However, the molecular mechanisms underlying ecological consequences of BG-AG interactions are not fully clear yet. Herbivore-induced plant defenses are complex and comprise phytohormonal signaling, gene expression and production of defensive compounds (defined here as response levels), each with their own temporal dynamics. Initially they



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STATISTICS

Statistics in 2015
 Submitted: 478
 Accepted: 87

Statistics in the 6 months (Jul. 1 to Dec. 31, 2016)
 Average for first decision: 27.3 (days)

Statistics in the current issue (vol. 32, issue 1)
 Days for acceptance: 153 (64–303)
 Days for online-first: 167 (78–314)
 Days for publication: 218 (129–352)

SPECIAL VIRTUAL ISSUE

Joint contents from the "Journal of Plant Research" and "Ecological Research"
Long-term and multidisciplinary research of the forest carbon cycle at the Takayama site, Japan

BIODIVERSITY IN ASIA

Meng Zhang, Shuichiro Tagane, Hironori Toyama, Tsuyoshi Kajisa, Phourin Chhang, Tetsukazu Yahara
Constant tree species richness along an elevational gradient of Mt. Bokor, a table-shaped mountain in southwestern Cambodia

Some previous studies along an elevational gradient on a tropical mountain documented that plant species richness decreases with increasing elevation. However, most of studies did not attempt to standardize the amount of sampling effort. In this paper, we employed a standardized sampling effort to study tree species richness along an elevational gradient on Mt. Bokor, a table-shaped mountain in southwestern Cambodia, and examined relationships between tree species richness and environmental factors.....[more](#)

SW Choi
Patterns of an elevational gradient affecting moths across the South Korean mountains: effects of geometric constraints, plants, and climate

We investigated elevational richness patterns of three moth groups (Erebidae, Geometridae, and Noctuidae) along four elevational gradients located on one northern and three southern mountains in South Korea, as well as the effects of plants and climatic factors on the diversity patterns of moths.....[more](#)

AWARD ARTICLES

Individual interaction data are required in community ecology: a conceptual review of the predator-prey mass ratio and more

Takefumi Nakazawa [OA](#)

20th Miyadi Award!!

FORUM

Citizen science: a new approach to advance ecology, education, and conservation

Kobori H, Dickinson JL, Washtani I, Sakurai R, Amano T, Komatsu N, Kitamura W, Takagawa S, Koyama K, Ogawara T & Miller-Rushing AJ

[OA](#)

Citizen science: a new approach to advance ecology, education, and conservation

Keywords: Citizen science; History; Human-natural system; Web-based approach; Worldwide case studies

Abstract Citizen science has a long history in the ecological sciences and has made substantial contributions to science, education, and society. Developments in information technology during the last few decades have

Fig. 11 A web image of the ESJ's official *Ecological Research* web page (<http://www.esj.ne.jp/er/>) on January 15, 2017

As a means of exchanging information among members and world colleagues, *ER* encourages the publication of Forum articles such as this article. The Forum category is devoted to discussions of the future of ecology by ESJ-nominated authors. One Forum article (Kobori et al. 2016) is already highly downloaded and widely cited (5500 downloads and 10 citations, viewed April 6, 2017). The Forum category provides a key setting to promote ecology in Japan and Asia. In addition, to enhance the public availability of excellent ecological data sets through electronic archives, a special article type, Data paper, was launched in 2011 with the cooperation of the Japan Long-Term Ecological Research Network (<http://www.jalter.org/>). Many data descriptors of various data sets, mainly from Japan, have already been published. *ER* provides free access to basic information, abstracts, keywords, and data set URLs as an initiative to facilitate open science.

It is also worth noting how *ER* has adapted to the rapid changes in the publication of scientific journals. In the past decade, open access journals (e.g., *PLoS ONE*, *Scientific Reports*) have grown and are challenging the status of traditional journals. To remain competitive,

ER has increased the proportion of open access articles published in the journal, which accounted for 16.8% of papers published in 2016. The ESJ has so far borne the open access costs for its *ER* award articles (e.g., Nakazawa 2016; Suzuki 2016) and for *ER* symposium papers (e.g., Papadopoulou and van Dam 2017). Further promotion of open access is under discussion with the journal's publisher. The Editorial Committee also decided to increase the number of *ER*-awarded papers for *ER* in 2015 to recognize excellence in papers from various fields (Fujita and Koda 2015; Maldonado-López et al. 2015; Matsuura and Matsunaga 2015; Senga et al. 2015; Urakawa et al. 2015). Five or so papers are now selected annually for open access publication to reach a wider audience.

Submissions from ESJ members should be encouraged to balance the cost burden for the journal (i.e., editors, reviewers, and ESJ) and the beneficiaries (authors). In addition, fierce competition among scientific journals, especially North American and European journals, necessitates continuous efforts to hold or increase *ER*'s position. *ER*'s 2-year impact factor was generally unchanged during 2009–2015 (1.279–1.565).

To improve its impact factor, *ER* should attract global audiences by inviting papers from leading researchers or publishing special issues focusing on timely and fascinating topics. The abovementioned strategies related to the journal's broadening of authorship and its focus on Asia will help to strengthen its impact.

Such fierce competition among general ecological journals highlights the need for journals that publish research focusing on local issues. One possible explanation for *ER*'s steady impact factor is the high proportion of papers focused on locally important matters. Another explanation could be because of the high percentage of fundamental descriptive or case study researches in Asia, where the population of scientists is smaller and its history is shorter than that in North America and Europe (therefore, ecological knowledge is relatively scarce). Thus, it is also necessary to maintain *ER* as a reliable scientific journal that emphasizes the diversity of ecological research.

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Compliance with ethical standards

Conflict of interest All authors are members of *ER*'s editorial team.

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