

## A Decade of Publication of the First Peer-reviewed Scientific Journal in Mongolia – Mongolian Journal of Biological Sciences

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### Abstract

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Mongolian Journal of Biological Sciences was founded in 2003 and has been continuously published, with main mission to promote the development of biology, and communication among biologists in Mongolia and around the world. MJBS is the only single peer-reviewed, regularly published English language scientific journal existing in the history of modern science in Mongolia. With the support and participation of biologists around the world, MJBS has since become a major scientific journal in Mongolia. This is evident in the quantity, quality and wide subject range of papers published in MJBS during the last ten years. Below you will find a detailed explanation of my motivation for starting the new journal and some details of the journal as well. Compiling bibliographic analysis I summarize the number and type of papers published, the number and distributions of authors published with MJBS over the last ten years. During its 10 years of existence, the journal published 158 papers of different categories by 414 authors from 16 countries of the world, in 15 issues with a total of 1,140 pages. Among the research articles, most deal with ecology, behavior and conservation (64%), systematics and evolution (19%), physiology and biochemistry (13%), but only four articles (1.4%) were related to genetics, molecular biology, cellular and developmental biology. The journal has the potential to change the way we share information in our discipline. Finally, I discussed the future policy and development of MJBS.

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### Introduction

I am pleased to inform you that today the first peer-reviewed scientific journal in Mongolia, *Mongolian Journal of Biological Sciences* (MJBS) publishes its 10th jubilee volume in both electronic and printed versions. This jubilee volume is devoted to the diversity, ecology

and genetics of various mammals such as chiropterans, insectivores, rodents, ungulates and carnivores from different regions of Mongolia. Part of this volume is covered by papers on plant communities in the Mongolian Gobi, and bacterial diversity in the Arctic sea water. As

a chief editor, I hope that you find this issue of MJBS beneficial and that we in some small part, can contribute to the existing body of knowledge pertinent to understanding wildlife ecology, plant community and bacterial diversity in various environments of Mongolia and other regions.

MJBS was founded in 2003 and has been continuously published, with main mission to promote the development of biological sciences and communication among biologists in Mongolia and around the world. The journal continues to experience steady growth ever since its inception.

In science, the prestige of a given researcher is usually measured by the number of articles published in the peer-reviewed journals of a high standing, and how many citations these papers receive. The latter index measures the impact factor on the scientific community (Garfield, 1971). These data can easily be obtained from online international indexes, such as the Science Citation Index, Social Sciences Citation Index, and Arts and Humanities Citation Index. The Institute for Scientific Information of the Thomson Reuters Corporation maintains the largest current database on international publications from all areas of science, which can be accessed from the internet (<http://apps.isiknowledge.com>; <http://webofknowledge.com>; [http://thomsonreuters.com/products\\_services/science](http://thomsonreuters.com/products_services/science)). Far from representing all that is published in science, the references indexed by the Thomson Reuters only represent the production from a selected pool of international journals upon which the status of respectability has already been conferred by the international scientific community according to the criteria of visibility, periodicity, regularity, language, extent of indexing by international reference vehicles (master journals), circulation range and place of publication.

Until recently, however, no peer-reviewed scientific journal existed in Mongolia during more than 60 years of activities of the research institutions there. One of the main aberrations of the development of science in Mongolia, which should be highlighted here is the simplified approach of understanding of the real scientific standard as there was no criteria for evaluation of research outcomes of scientists. Instead of making a contribution to the global science, all research institutions in Mongolia

established nonessential local periodicals, such as proceedings at the academic institutes or scientific transactions at the universities. Those periodicals were irregularly published over many years in Mongolian with low quality in both scientific and publishing merits, accepting whatever submitted, without broader audience and circulation. Unfortunately, the majority of research fellows adapted and restricted their publications to produce such needless papers rather than creating internationally recognized outcome with valuable results. This situation is still tenaciously existing in the scientific society of Mongolia, except few individuals who follow the modern tendency of scientific development.

Below you will find a detailed explanation of my motivation for starting the new journal and some details of the journal contents as well.

### **Why we needed MJBS?**

As mentioned above that until recent years, most biologists in Mongolia had been publishing their research results in a few local periodicals, which published irregularly with very low quality in both scientific and printing standards. Papers have usually been submitted and published in Mongolian language with few exceptions in Russian, without scientific judgment. Most of those local periodicals were difficult to access due to lack of regular circulation, library holdings, subscription system and dissemination of reprints.

Over the many years, most scientists of Mongolia, particularly young researchers faced difficulties in publishing their works in the peer-reviewed international journals due to lack of experience, insufficient knowledge and improper ideas. Thus, we needed to encourage the biologists to mobilize and describe their data. Much needed was a high standard, peer-reviewed journal for publication of papers not only in biology, but also in other fields of science. I considered that the old concept of the scientific judgment and outworn notion in Mongolia should be changed immediately. We have reached the end of the “lost decades of science and technology” in Mongolia since it opened its door to the modern science. These were the main motivations for me to establish MJBS a decade ago. The initial aim of MJBS was quite modest, to encourage Mongolian biologists to publish in English, although it was designed to be an

international journal as it has no restriction to author or geographical region.

I decided to found a broad journal that would cover essentially all areas of biological sciences as it would be more likely to be successful than a more narrowly defined journal. Such a journal goes against the current trend for journals to be increasingly specialized. In case of Mongolia, which has very little science community in terms of the human capacity, such specialization is moot. In my opinion, high quality peer reviewing is the key to the success of such a journal, not the title or subject area. I have therefore, created MJBS, which has an international scope with no restrictions on author and geographic region.

MJBS is the only single peer-reviewed, regularly published English language scientific journal existing in the history of modern science in Mongolia. The journal has the potential to change the way we share information in our discipline, and it has met the needs of authors and sustained an early phase of rapid growth. The journal publishes articles concerned with fundamental and applied aspects of all fields of biology, and it continues to be a leader in these scientific fields in Mongolia.

### The nature of MJBS

The global science publishing became radically different from what it was when I started to found MJBS. Published concurrently in print and online, MJBS was established

to publish articles by the Mongolian and foreign researchers dealing with a wide range of biological sciences. It has received overwhelming support from researchers around the world through their submitted paper contributions and manuscript reviews.

With the support and participation of biologists in Mongolia and around the world, MJBS has since become a major scientific journal in Mongolia. This is evident in the quantity, quality and wide subject range of papers published in MJBS during the last ten years. In the next few pages, compiling bibliographic analysis, I will summarize the number and type of papers published, the number and distributions of authors in MJBS over the last ten years.

Looking back at the total papers published in MJBS during its 10 years of existence, we noticed that the journal published 158 papers of different categories, including original articles, notes from the field, editorial notes, short communications, anniversary notes, book reviews and chronologies (Table 1). Among these categories, the original research articles (101) compose roughly two thirds of total papers followed by relatively few numbers of short communications (23), book reviews (14), notes from the field (10), anniversary notes and chronologies (4 in each) and editorial notes (2). Looking at the essential papers (excluding such minor contributions like book reviews,

Table 1. A summary of differently categorized paper types published in ten-year volumes of MJBS

Years/ volumes	Research articles	Short communications	Notes from field	Editorials & Book reviews	Anniversary notes & Chronologies
2003/1	16	3	2	1	0
2004/2	10	5	6	3	2
2005/3	13	2	0	3	0
2006/4	14	4	2	4	0
2007/5	6	1	0	1	1
2008/6	6	1	0	1	1
2009/7	9	4	0	0	0
2010/8	12	3	0	1	4
2011/9	7	0	0	1	0
2012/10	8	0	0	1	0
Total	101	23	10	16	8
Average	10.1	2.3	1	1.6	0.8
Std. error	1.11	0.56	0.61	0.40	0.42

chronologies etc.), we noticed their numbers varied between 7 and 21 with highest values for the volumes 1, 2 and 4, but lowest values for the volumes 5, 6 and 9.

A total of 118 comprehensive papers (research articles, notes from the field, short communications, anniversary notes) and 23 other non-essential papers (editorial items, book reviews, chronologies) have been published over the past ten years. Among the research articles, most deal with ecology, behavior and conservation (64%), systematics and evolution (19%), physiology and biochemistry (13%), but only four articles (1.4%) were related to genetics, molecular biology, cellular and developmental biology (Table 2). The proportions of papers on different subjects varied over the years. Articles on ecology, behavior and conservation reached high levels during 2003-2006 (e.g. in 2003 there were 11 papers on ecology etc.; 13 papers in 2004; 10 papers in both 2005 and 2006) and then decreased. Article numbers on both systematics/evolution and physiology/biochemistry were also relatively high in the beginning years of MJBS, but decreased since 2007. However, there is no noticeable difference in numbers of articles on genetics/molecular biology and cellular/developmental biology as published papers were very few over ten years.

Some of the MJBS papers reported biodiversity discoveries and a number of new taxa have been described, along with several

new findings in Mongolia. Additionally, a number of papers have been devoted to the investigations dealing with various group of organisms or ecosystems of the foreign countries (Bayartogtokh & Smelyansky, 2003, 2004; Namsraev *et al.*, 2003; Petraitis, 2003; Goroshko *et al.*, 2004; Tsaregorodtseva, 2006; Ospanova, 2006; Toleuzhanova, 2008; Volf *et al.*, 2009; Choidash, 2012). We would appreciate submissions related to the research in foreign countries, and may we remind our authors and readers that submissions are certainly not limited to research in Mongolia.

From its establishment in 2003 to the end of 2012, in total 157 papers (including book reviews, chronologies, editorial notes) were published in MJBS by 414 authors from 16 countries of the world. The major contributions were made by the authors from such countries as Mongolia (196 authors), USA (85), UK (28), Germany (28) and Russia (27). The other countries, such as Japan (9), China (9), Austria (7), Kazakhstan (7), Australia (6), France (3), Korea (3), Italy (2), India (2), Switzerland (1) and Spain (1) have comparatively little account to the author's contribution in MJBS (Fig. 1). Because of many foreign colleagues are working in Mongolia on the wide range studies of its biodiversity, and also as MJBS do not require page charges for publication, authors from various countries are very well represented in our journal.

The number of authors each year varied

Table 2. A summary of papers on various fields of biology, published in ten-year volumes of MJBS

Years/vol.	Number of research articles on different fields				
	Syst. & Evol.	Ecol. & Conserv.	Physiol. & Biochem.	Cell. & Devel. Biol.	Genet. & Mol. Biol.
2003/1	4	11	4	0	0
2004/2	3	13	2	0	0
2005/3	4	10	0	1	0
2006/4	5	10	3	0	1
2007/5	0	6	0	0	0
2008/6	1	5	1	0	0
2009/7	3	5	1	0	0
2010/8	3	6	3	0	0
2011/9	0	5	1	0	0
2012/10	0	5	0	0	2
Total	23	76	15	1	3
Average	2.3	7.6	1.5	0.1	0.3
Std. error	0.59	0.96	0.45	0.1	0.21

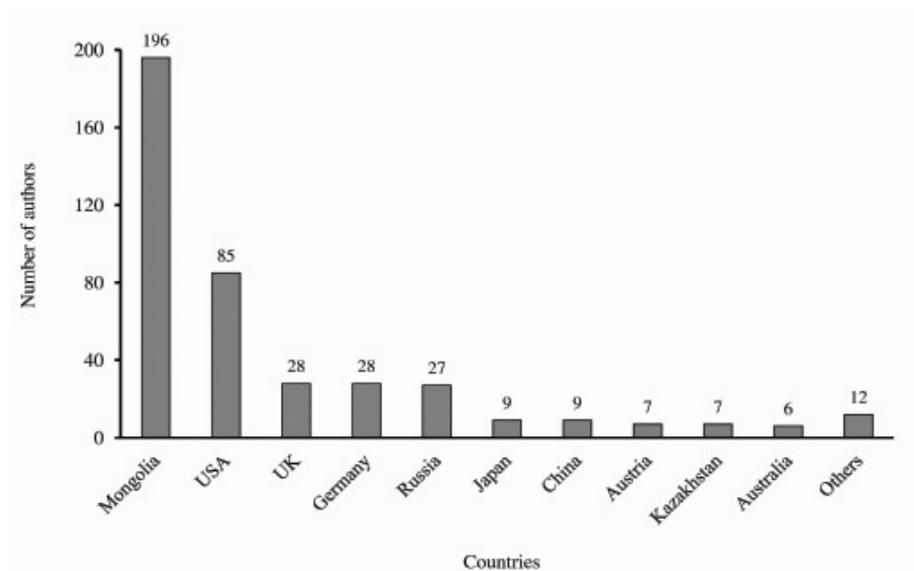


Figure 1. A summary of the authors' contributions to MJBS from various countries

considerably over the years (21-70), with an average of 42. Most of the papers published in MJBS have more than one author. Collaborations of authors in MJBS are numerous, i.e. 75% of the publications have at least two authors. Only 25.4% of total papers published had single authorship, and two-authored works compose 17.4%, whereas multi-authored papers – 57.2%. Thus, most papers have been collaborative efforts, among these almost half of total papers (48%) were the results of international collaboration written by authors from different countries. The 138 published papers had an average of 3.04 authors (Table 3). So, the last

ten years we have seen considerable increases in international collaboration by MJBS authors. Quantity of publications by Mongolian first authors and only Mongolian authors were significantly lower than collaborative ones. Among the 103 collaborative papers with two or more authors, the Mongolian senior-authored papers are less than half (46%) of total works, and our foreign colleagues compiled major part of collaborative outcomes. Although most of them still enrolling as junior authors, we have seen fairly large numbers of the Mongolian biologists published in MJBS. I hope that Mongolian researchers will author more articles

Table 3. A summary of authors in MJBS during ten-years of its publication

Years/ volumes	Single author	Two authors	Multiple authors	Mongolian senior authors	Foreign senior authors	Intern. collabor. works	# authors per paper
2003/1	6	3	12	8	7	12	3.2
2004/2	6	3	12	6	9	8	3.3
2005/3	2	1	12	3	10	7	3.3
2006/4	4	4	12	8	8	9	3.05
2007/5	3	1	4	2	3	4	3
2008/6	2	1	5	4	2	5	3
2009/7	4	5	4	6	3	2	2.5
2010/8	5	2	9	5	6	8	2.6
2011/9	1	3	3	2	4	5	3
2012/10	2	1	6	3	4	7	3.5
Total	35	24	79	47	56	67	-
Average	3.5	2.4	7.9	4.7	5.6	6.7	3.04
Std. error	0.56	0.45	1.22	0.71	0.88	0.89	0.97

in our journal than they do today.

MJBS published 158 papers in 15 issues with a total of 1,140 pages. Because of uneven supply of submitted manuscripts and irregular number of accepted papers, yearly volumes of MJBS have been bound in two separate or rarely in combined issues. Different volumes of MJBS consisted of 9-26 items in 60-174 pages. Thus, the page numbers were significantly different for volumes published in various years ( $df = 1$ ,  $F = 5.73$ ,  $p = 0.04$ ). There was also a significant difference found in numbers of papers (8-26;  $SE \pm 2.21$ ) published in ten-year volumes ( $df = 1$ ,  $F = 7.61$ ,  $p = 0.02$ ).

The number of authors in ten-year volumes

of MJBS had strongly positive and significant impact on the total number of publications, and the authors' number varies 2.5-3.5 per paper (Fig. 2; see also Table 3).

Among the Mongolian authors in ten-year volumes of MJBS, there is no equal split between authors with different affiliated institutes. The majority of authors have been published their works while affiliated with the National University of Mongolia (52%) and the Mongolian Academy of Sciences (23%). Researchers from other institutions in Mongolia, such as the University of Education, Agricultural University and other research institutes or NGO's are poorly represented, and they constitute

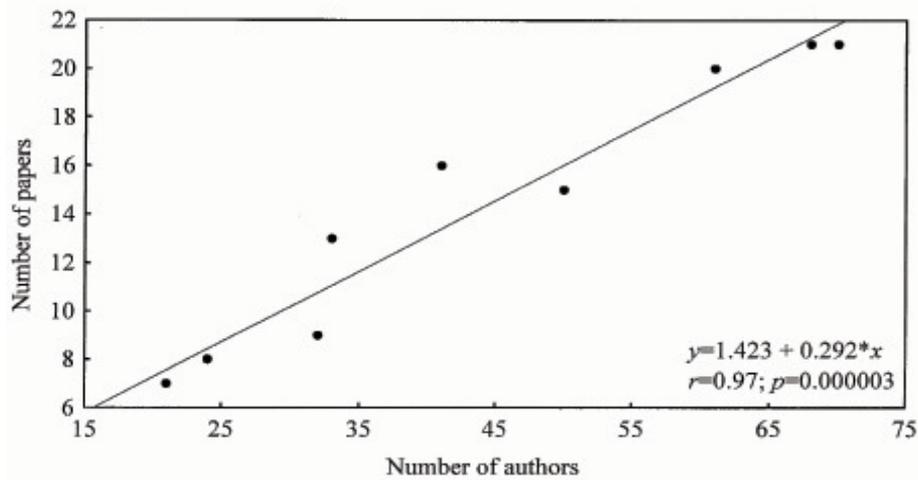


Figure 2. Relationships between the number of authors and number of publications in ten-year volumes of MJBS.

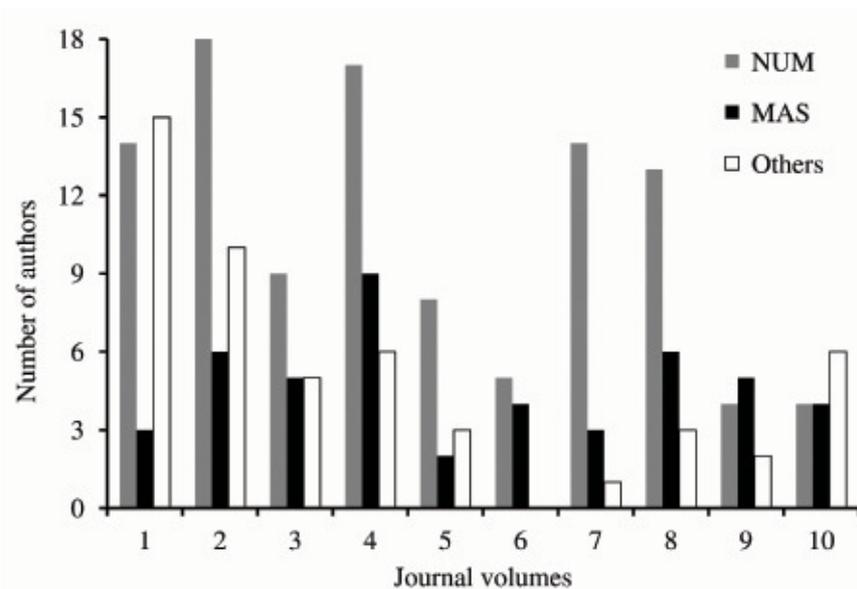


Figure 3. Proportion of the Mongolian authors from different institutes, published in ten-year volumes of MJBS. NUM – National University of Mongolia; MAS – Mongolian Academy of Sciences.

together relatively small part (25%) of total authors from Mongolia (Fig. 3).

The number of submissions from other countries to MJBS has been relatively stable during past years in tandem with its growing international recognition. We hope that publication by our foreign colleagues will help MJBS to attract more international attention and high quality papers. Additionally, MJBS continues to evolve its editorial workflow, constantly implementing new and improved publishing and dissemination technologies, always striving to be on point for digital biological science.

In addition to its regular publication during past 10 years, MJBS also developed steadily in its impact. The journal is included in the Thomson Reuters' Web of Knowledge database, with two master journals (Zoological Record and BIOSIS Previews). With time-limited subscription of the Thomson Reuters' Web of Knowledge database (subscribed by the National University of Mongolia), we found that 67 papers published in MJBS with a number of citations to MJBS by other journals, have been included in above database (<http://apps.webofknowledge.com>; accessed on 12 January 2012). This service provides an access to peer-reviewed publications indexed there. We are looking forward to earn MJBS's first impact factor from the Journal Citation Report of Thomson Reuters. Also, there are more than 330 citations to MJBS by other journals, in Google Scholar database (<http://scholar.google.com>; accessed on 10 December 2012).

This is a real achievement for the launch of a new journal, and one of which our authors and editorial board members can be justifiably proud. Not only does this emphasize the high quality of our contributors, but also demonstrates the importance of our subject area. Our papers are being cited far and wide, and our research areas are of broad relevance and have an impact across all fields of biology.

There was a plan to increase the frequency of MJBS in the past years, but this was not possible due to a lack of sufficient submission of the high quality manuscripts. During these years we received a number of submissions, but due to insufficient quality of some of the submitted manuscripts the decision-making process was very difficult. To those authors

that have suffered disappointment, we offer our condolences, but hope they understand that one rejection does not mean that we will not welcome your future submissions. Our goal is both to maintain the highest standards of excellence in published papers, and to keep the time to publication as short as possible. We are, however, looking forward to increased page numbers for coming years in order to ensure that we can accommodate the increasing number of high quality submissions.

### **Why publish in MJBS?**

There are a number of advantages for authors in publishing papers in MJBS, namely:

- High quality of both hard and electronic publications
- Open-access, archiving and re-using your data
- Publication without page charge
- Dissemination of high quality electronic and print reprints free of charge
- Citation record for data through peer-reviewed publications
- Easy electronic authoring/editorial process for authors, reviewers and editorial board members
- Innovative dissemination of atomized content

You may aware that open access offers wider circulation than only print journal; it offers higher visibility; open access journal has a larger readership of researchers; open access journals are cited more frequently than print journals; open access journals have faster publication times than print journals; open access will be the main driver behind change in the present environment of scholarly research communication.

### **Problems of online publishing**

There are some problems with the electronic publication approach. Although an online journal is more accessible to the academic audience and it allows distribution to a worldwide audience, but there are some that are out of the loop. Scientists in some countries would not have easy access, in fact, might be denied access. My guess is that over time this problem will solve itself as online access becomes more widely available. In the meantime a printed copy can be created for those out of the loop.

Another question is, will people or libraries

continue to subscribe to the print journal? In recent years, the printing cost is getting higher and higher than before. I am wondering that this might become a real problem for us if readers do not subscribe to the print journal. This is an important issue to note that the papers published in hard copies of journal by topography have much higher quality and nice visibility than ordinary printed ones.

### Future of MJBS

The editor of the journal has decided to publish MJBS in both print and online from 2012 to reach a wider audience, and to make it easier to submit papers and to access from other countries as an international journal. Online open access model means that your articles will obtain more citations, and all interested readers are able to freely access your articles without the need for a subscription. An electronic journal costs much less to publish than print journal, reprints can be made available free by providing PDF files, and archiving can be achieved electronically at low cost. It also provides options such as full text searchability unavailable in print formats. We are convinced that quick publication is essential to achieve this aim.

The editor is pleased to announce a new service for our authors and readers: Online First, the quick online publication of articles shortly after receipt of the corrected proofs. Online First publishes accepted articles in electronic form prior to their appearance in the print version of the journal, eliminating the delay necessary for the completion of an entire issue, printed or electronic. The electronic version of MJBS used to appear at the same time as the print journal, but from 2013 on the electronic version of all articles will be available to authors and subscribers via the internet weeks before the printed version appears. This means a significant reduction in publication time. Once a manuscript has been accepted for publication, it will undergo language copyediting, typesetting, and reference validation in order to provide the highest publication quality possible. It will no longer be necessary for manuscripts to wait until the next available printed issue. However, going electronic will not necessarily allow us to break the printing of hard copies.

So, MJBS is now under free license, and the open-access articles are distributed under

the terms of the Creative Common Attribution License 3.0, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original author and source are credited.

Finally, I hope that publication with MJBS will help the Mongolian and foreign researchers to produce high quality papers and attract more international attention. Compared to many other journals in various fields of biology, MJBS is still in its infancy, yet it has made a remarkable impact. It is a tribute to all the editorial board members, authors and reviewers who have made MJBS a success. It is hoped it can be a prelude to the global renaissance of biology.

Once again, I welcome you to this jubilee volume of MJBS, and hope that you will continue to read, submit articles and encourage us in the future.

### Acknowledgements

I would like to express my sincere gratitude to our editorial board members, our referees and our authors, without whom MJBS would never have achieved this initial success. I am grateful to Drs. Nigel Barton of the University of Glasgow, UK, Sarah R. B. King of the University of Colorado at Boulder, USA and Bazartseren Boldgiv of the National University of Mongolia for their assistance and support in publishing some issues of the journal. The efforts of Dr. Uudus Bayarsaikhan and Davaa Lkhagvasuren of the National University of Mongolia for typesetting and page designing of the journal are highly appreciated.

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