1. Good quality research

2. Publishing your results
As well as publishing over 70 papers in international refereed journals and 100 other scientific publications, I have a lot of experience reviewing other people’s work.

I was on the editorial advisory board of the Journal of Experimental Botany for over 10 years. [I now work for Botanica Serbica.]

I was a regular reviewer of manuscripts submitted to Journal of Experimental Botany, and still get occasional review requests from plant journals. My last review request was for Environmental and Experimental Botany last September, though I declined the request because of lack of time - preparing another course.

Over the years I have also reviewed manuscripts regularly for Molecular Breeding
Plant Physiology
Plant Growth Regulation
Plant, Cell and Environment
Journal of Agricultural Sciences, and so on ....
Different kinds of scientific writing:

Theses (Masters, PhD)

Scientific journal articles
Books and chapters in books
Review articles
Popular articles for non-specialists
Web site information of various kinds
Scientific social media (blogs, Twitter, LinkedIn, ...)
Abstracts for various scientific documents
Speeches or slide presentations
Poster presentations
Project proposals to get funding
Reports (mobilities, project meetings, ...)

These all require skills in writing - *passing on information to others in an understandable form.*
What would be your biggest challenges in publishing your research in an international journal?

Has anyone here ever had a manuscript rejected?
What’s in this module:

- Marketing strategy
- Is your research interesting enough?
- Impact factors
- Different types of papers
- Choosing a journal
- Instructions for authors
- Discussing a manuscript review
- Writing the text
- Exercises on tables and figures
- Improving the text
- The review process
Here’s a list of documents on scientific writing that I shall make available for you.
There are several reasons for manuscripts being rejected by journal editors:

- **Bad quality research** badly described
- **Bad quality research** well described
- **Good quality research** **badly described**
- **Good research but not substantial enough**
- **Research out of the journal scope**

Today I shall focus on:

- **Good quality research** **badly described**
Publishing your research is rather like a salesman’s marketing campaign!

It needs two essential components:
1. A good quality product to sell - Your research
2. Someone who wants to buy it - A journal editor (and referees).

Your target -
Your exciting/novel/innovative research has to be this year’s “must have” Christmas present!

Here’s your marketing strategy:
Hello biologists! We are Bitesize Bio. Let us tell you why you are going to love our website.

Bitesize Bio is your always available, patient and willing "post-doc who knows stuff", that every researcher needs to get on in their career. It will help you become a happier, more knowledgeable and skillful, more rounded scientist and also provide you with a few bellylaughs along the way to help you on the days when your experiments are not behaving.

These are bold claims indeed, we hear you say. Here’s how we deliver:

- Bitesize Bio’s article archive contains hundreds of articles that will help you with all aspects of your career. Examples include understanding how SDS-PAGE works, how to write your first paper to how to handle an awkward boss. Several new articles are added to the website each week, and we welcome submissions from new writers (contact us here if you are interested in this option).
- Our live online webinars bring experts from all over the globe right to your desk to coach you on technical and vocational topics from getting the most out of PCR to project management to improving your networking skills.
- You can ask a question, whether it’s on the latest problems you are having with your career or how to get your next job, to the whole Bitesize Bio community. Or you can help out others by giving your answers.
- Our product focus section brings you the latest news on the products that can help you get on in the lab.
- And did we mention bellylaughs? Check out the “fun stuff” section of our article archive whenever you need cheered up.

All of our content is designed to be short, and information-packed so that you get the knowledge you need with minimal impact on your busy schedule. Thanks to our sponsors, Bitesize Bio is completely free of charge, so it won’t hurt your pocket either!

Bitesize Bio is made by Science Squared Ltd, at Bush House, just outside Edinburgh, Scotland, which is a great place to live and do science. The website was founded in 2007 by Nick Oswald.

You can contact Bitesize Bio by clicking here.
You can find our more about our staff by clicking here.
And you can learn more about our opportunities for advertisers here.
“Think in terms of figures” is my advice to keep young scientists from falling into [the “Oh, I forgot to do this!”] trap. Instead of heading straight to the bench with your burning question, stop and ask yourself what elements would need to be in this experiment for it to be a figure in a paper (positive controls, negative controls, gel markers, etc).

Imagine your hypothesis is correct, and you’re going to use the results of this experiment to convince a critical viewer – what lanes need to be on the gel to make your point? Would you convince (or at least frustrate) an opponent of your hypothesis?
Another excerpt from the article:

“Generating compelling, polished figures is the first step in communicating your results to the world. They will not only become the basis of your paper, but will be the starting point for any posters and talks that you give on this project.”

Jode Plank
So, first you need to know whether what you actually did is worth a paper in an international journal.

Therefore, your starting point was the research itself.
The first time your science is critically reviewed is not by a journal referee but *by you before you start it!* So ..

Remember -

The tale of the lost traveller and the Irish cowherd.

You can’t write good quality scientific papers if you’re not already doing -
  • good quality research, with
  • good quality research design, to achieve
  • good quality data to analyse and interpret!
Let us assume you are starting from the right place!
Research suitable for a good journal:

Your research has to be good enough quality or *your manuscript is unlikely to be accepted.*

i.e. all the **factors** identified to get to the **truth**.

But it needs more than this -
It needs **international** interest and appeal
- part of your **marketing strategy**!

**International journals give you more **impact**!**

First, what type of manuscript are you going to write?
Scientific publications:

There are basically four types of paper:

1. A hypothesis-testing paper which will set up a hypothesis and then test it.

2. A purely descriptive paper that is describing something new.


4. A review paper describing and discussing what other people have done.
### Scientific publications (1)

To be suitable for publishing in an international journal -

1) a hypothesis-testing paper needs:

- one or more hypotheses to be tested,
- clearly-defined aims, justifying why the research needs to be done,
- sufficient replication/size of datasets
- results that match the aims
- interpretation to test the hypotheses.

- short communications (easier to write and quicker to publish)
Scientific publications (2)

To be suitable for publishing in an international journal -

2) A purely descriptive paper needs:

- A clearly-defined reason explaining why the research needed to be done,
- A reason why it is of international importance to know about this,
- Interpretation of the findings to put them into the context of similar work done elsewhere,
- Implications of the findings (policy, etc).
Scientific publications (3)

To be suitable for publishing in an international journal -

3) a techniques/research methods paper needs:

- a clearly-defined reason saying why the new technique/method was necessary,
- a sufficiently detailed description of the technique (including validation) for others to use it as a protocol,
- detailed comparison with existing methods to show how the new method is better/differs.
Scientific publications (4)

To be suitable for publishing in an international journal -

4) a review paper needs:

• a clearly-defined subject area that hasn’t been reviewed recently,
• a comparison of findings of others, usually including your own work,
• including the latest research findings, plus where possible papers in press,
• an opportunity for you to publish data otherwise not suitable for publication!
### Scientific review publications:

Note that review papers in review journals will usually give you a **high impact factor!**

<table>
<thead>
<tr>
<th>Journal</th>
<th>Impact Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature Reviews: Cancer</td>
<td>35.0</td>
</tr>
<tr>
<td>Annual Review of Biochemistry</td>
<td>27.7</td>
</tr>
<tr>
<td>Annual Review of Plant Biology</td>
<td>23.7</td>
</tr>
<tr>
<td>Annual Review of Physiology</td>
<td>19.5</td>
</tr>
<tr>
<td>Annual Review of Microbiology</td>
<td>12.9</td>
</tr>
<tr>
<td>Critical Reviews in Microbiology</td>
<td>5.1</td>
</tr>
<tr>
<td>Advances in Agronomy</td>
<td>3.8</td>
</tr>
<tr>
<td>Review of Economic Studies</td>
<td>2.6</td>
</tr>
</tbody>
</table>
Choosing the right journal:

Once you have decided that -

a) your research was good enough quality to publish, and
b) you have decided what type of a paper to write, then you can choose which is the right journal.

How do you do that?
First - Impact Factors (IF) of journals:

Journal Impact Factor is calculated over a three-year period, and is the mean number of times published papers are cited up to two years after publication.

Impact Factors are typically a year behind the calendar year. Thus, Impact Factors for 2013 were published in June 2014.

Impact Factor determines whether the journal ranks highly or is unranked on your Ministry lists.
The higher you aim with impact factors, the more difficult it is generally to publish (but not always).

Two journals with very high impact factors are Nature (IF ~39) and Science (IF ~31).

Therefore be realistic in choosing the journal for publishing your research manuscripts!
Source Normalized Impact per Paper (SNIP)

SNIP measures contextual citation impact by weighting citations based on the total number of citations in a subject field. The impact of a single citation is given higher value in subject areas where citations are less likely, and vice versa.
This website explains various journal metrics:

About Source Normalized Impact per Paper (SNIP)

Created by Professor Henk Moed at CTWS, University of Leiden, Source Normalized Impact per Paper (SNIP) measures contextual citation impact by weighting citations based on the total number of citations in a subject field. The impact of a single citation is given higher value in subject areas where citations are less likely, and vice versa.

As explained by Moed in Measuring contextual citation impact of scientific journals, Journal of Informetrics, 4 (2010), pp 255-277:

"It further develops Eugene Garfield’s notions of a field’s ‘citation potential’ defined as the average length of references lists in a field and determining the probability of being cited, and the need in fair performance assessments to correct for differences between subject fields."

It is defined as the ratio of a journal’s citation count per paper and the citation potential in its subject field. It aims to allow direct comparison of sources in different subject fields. Citation potential is shown to vary not only between journal subject categories – groupings of journals sharing a research field – or disciplines (e.g., journals in Mathematics, Engineering and Social Sciences tend to have lower values than titles in Life Sciences), but also between journals within the same subject category. For instance, basic journals tend to show higher citation potentials than applied or clinical journals, and journals covering emerging topics higher than periodicals in classical subjects or more general journals.

SNIP corrects for such differences. Its strengths and limitations are open to critical debate. All empirical results are derived from the Scopus abstract and indexing database. SNIP values are updated once a year, providing an up-to-date view of the research landscape.

SNIP provides alternative values that bibliometricians can use to create more refined and objective analyses.

It helps editors evaluate their journal and understand how it is performing compared to its competition. SNIP provides more contextual information, and can give a better picture of specific fields, such as Engineering, Computer Science, and/or Social Sciences. It can also help all academics identify which journals are performing best within their subject field so they know where to publish.
**Journal impact factors & acceptance rates:**

<table>
<thead>
<tr>
<th>Journal</th>
<th>IF(2013)</th>
<th>SNIP</th>
<th>%accepted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature</td>
<td>38.597</td>
<td>8.822</td>
<td>8%</td>
</tr>
<tr>
<td>Nutrition</td>
<td>2.859</td>
<td>1.375</td>
<td>15%</td>
</tr>
<tr>
<td>New Phytologist</td>
<td>6.736</td>
<td>1.914</td>
<td>20%</td>
</tr>
<tr>
<td>J Biotechnology</td>
<td>3.183</td>
<td>1.169</td>
<td>20%</td>
</tr>
<tr>
<td>J Experimental Botany</td>
<td>5.242</td>
<td>1.918</td>
<td>31%</td>
</tr>
<tr>
<td>Anticancer Research</td>
<td>1.713</td>
<td>0.723</td>
<td>35%</td>
</tr>
<tr>
<td>BMC Plant Biology</td>
<td>4.354</td>
<td>1.418</td>
<td>62%</td>
</tr>
<tr>
<td>J Rural Studies</td>
<td>2.817</td>
<td>2.017</td>
<td>31%</td>
</tr>
</tbody>
</table>
Impact factors for a few biological journals:

**Biological sciences journals -**

2010 data for journals

Journal of Immunology - 5.75 (*Rank in subject area - 20/134*)
Journal of Applied Physiology - 4.23 (*11/78*)
Physiological and Biochemical Zoology - 2.39 (*34/78, 16/145*)

Plant Cell - 9.40 (*22/286, 22/178, 5/188*)
New Phytologist - 6.52 (*7/188*)
Plant Molecular Biology - 4.15 (*80/286, 16/188*)
Phytochemistry - 3.15 (*24/188*)

Clinical Infectious Diseases - 8.19 (*11/134, 2/58, 9/107*)
Journal of Bacteriology - 3.73 (*25/107*)
Journal of Evolutionary Biology - 3.66 (*27/130, 16/45, 50/156*)
Now that you have some information on various journal metrics, as a measure of the quality of a journal, next you search for a suitable journal for your exciting manuscript.

So, starting with the SCI lists of journals, published by Thomson Reuters ....
Here you can search journals in specific categories.
As shown here.....
Scope notes explain what each subject category contains:

**Category Name:**
Acoustics
**Category Description:**
Acoustics covers resources on the study of the generation, control, transmission, reception, and effects of sounds. Relevant subjects include linear and nonlinear acoustics; atmospheric sound; underwater sound; the effects of mechanical vibrations; architectural acoustics; audio engineering; audiology; and ultrasound applications.

**Category Name:**
Agricultural Economics & Policy
**Category Description:**
Agricultural Economics & Policy covers resources concerning the production, distribution, and consumption of agricultural commodities as well as the managerial and policy decisions concerning these commodities.

**Category Name:**
Agricultural Engineering
**Category Description:**
Agricultural Engineering covers resources concerning many engineering applications in agriculture, including the design of machines, equipment, and buildings; soil and water engineering; irrigation and drainage engineering; crop harvesting, processing, and storage; animal production technology, housing, and equipment; precision agriculture; post-harvest processing and technology; rural development; agricultural mechanization; horticultural engineering; greenhouse structures and engineering, bioenergy and aquacultural engineering.

**Category Name:**
Agriculture, Dairy & Animal Science
**Category Description:**
Here is the SCI list for Entomology:
Science Citation Index can be accessed by subscription:

Science Citation Index Expanded

Overcome information overload and focus on essential data from the world's leading journals

HIGHLIGHTS
- Find high-impact articles
- Uncover relevant results
- Discover emerging trends
- Identify potential collaborators

INTENDED FOR
- Academic Administrator
- Academic Researcher
- Librarian

DESCRIPTION
Science Citation Index Expanded™, accessed via Web of Science™ Core Collection, provides researchers, administrators, faculty, and students with quick, powerful access to the bibliographic and citation information they need to find research data, analyze trends, journals and researchers, and share their findings.

Overcome information overload and focus on essential data from over 8,500 of the world's leading scientific and technical journals across 150 disciplines.
Science Citation Index is part of the Web of Science Core Collection
Science Citation Index Expanded (SCI-E)  
Over 8,500 major journals across 150 disciplines - 1900 to the present.

Science Citation Index Expanded provides access to the bibliographic and citation information they need to find research data, analyze trends, journals and researchers, and share their findings. Overcome information overload and focus on essential data from over 8,500 of the world’s leading scientific and technical journals across 150 disciplines.

Now another website for finding the best journal for your manuscript ....
www.journalguide.com allows you to identify suitable journals:

Find the best journal for your research.

Advanced search and trusted data

Find and compare journals using tools developed by our network of experts.

1. Search
We offer four different ways to search, with filter and sort options to help you find the best journal for your paper in any field.

2. Compare
Select up to three journals to compare side-by-side on key factors like impact, publication speed, cost, and open access options.

3. Follow
Follow your favorite journals for easy reference. Stay up-to-date on recent Editor announcements and updated journal data.

Data update: Journal Impact Factor is not currently displayed on JournalGuide. Read more here.
Journals matching those key words are listed as shown here:

<table>
<thead>
<tr>
<th>Compare</th>
<th>Score</th>
<th>Journal name</th>
<th>Matches</th>
<th>Publisher</th>
<th>Impact</th>
<th>Speed</th>
<th>Open access</th>
<th>Follow</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Journal of the American Mosquito Control Association</td>
<td>9</td>
<td>American Mosquito Control Association</td>
<td>0.49</td>
<td>Unknown</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.481</td>
<td>Parasites &amp; Vectors</td>
<td>4</td>
<td>BioMed Central</td>
<td>1.446</td>
<td>4 weeks</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.452</td>
<td>BMC Genomics</td>
<td>4</td>
<td>BioMed Central</td>
<td>1.146</td>
<td>Unknown</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.438</td>
<td>PLOS ONE</td>
<td>4</td>
<td>PLOS (Public Library of Science)</td>
<td>1.1</td>
<td>15 weeks</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.412</td>
<td>PLOS Neglected Tropical Diseases</td>
<td>4</td>
<td>PLOS (Public Library of Science)</td>
<td>1.675</td>
<td>6 weeks</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.343</td>
<td>Zhongguo Ji Sheng Cheng Xue Yu Ji Sheng Cheng Bing Za Zhi = Chinese Journal of Parasitology &amp; Parasitic Diseases</td>
<td>3</td>
<td>Zhongguo Yufang Yikue Kexuexuan Jishengchongbiou Yanjusu</td>
<td>0</td>
<td>Unknown</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.338</td>
<td>Proceedings of the National Academy of Sciences (PNAS)</td>
<td>3</td>
<td>National Academy of Sciences of the United States of America</td>
<td>2.696</td>
<td>7 weeks</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.312</td>
<td>Journal of Medical Entomology</td>
<td>3</td>
<td>Entomological Society of America</td>
<td>1.029</td>
<td>Unknown</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.308</td>
<td>Journal of Vector Borne Diseases</td>
<td>3</td>
<td>M.A. Ansari</td>
<td>0.64</td>
<td>Unknown</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.301</td>
<td>Trends in Parasitology</td>
<td>3</td>
<td>Ehlke</td>
<td>0.34</td>
<td>Unknown</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
Summary information is available for journals you then select:

Parasites & Vectors

Aims and scope
Parasites & Vectors is an open access, peer-reviewed online journal dealing with the biology of parasites, parasitic diseases, intermediate hosts, vectors and vector-borne pathogens. Manuscripts published in this journal will be available to all worldwide, with no barriers to access, immediately following acceptance. However, authors retain the copyright of their material and may use it, or distribute it, as they wish. Manuscripts on all aspects of the basic and applied biology of parasites, intermediate hosts, vectors and vector-borne pathogens will be considered. In addition to the traditional and well-established areas of science in these fields, we also aim to provide a vehicle for publication of the rapidly developing resources and technology in parasite, intermediate host and vector genomics and their impacts on biological research. We are able to publish large datasets and extensive results, frequently associated with genomic and post-genomic technologies, which are not readily accommodated in traditional journals. Manuscripts addressing broader issues, for example economics, social sciences and global climate change in relation to parasites, vectors and disease control, are also welcomed.

Speed

<table>
<thead>
<tr>
<th>Responsiveness — Average</th>
<th>Time from submission to first decision after peer review: 6 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to immediate reject</td>
<td>Not Provided</td>
</tr>
</tbody>
</table>

Publication speed — Fast

<table>
<thead>
<tr>
<th>Time from acceptance to print: Not Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total time to publication: Not Provided</td>
</tr>
<tr>
<td>Time from submission to acceptance: Not Provided</td>
</tr>
<tr>
<td>Time from acceptance to online: 4 weeks</td>
</tr>
</tbody>
</table>

Cost

<table>
<thead>
<tr>
<th>Publication fees — Not Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>None listed</td>
</tr>
<tr>
<td>Publication or page charges — Not Provided</td>
</tr>
<tr>
<td>None listed</td>
</tr>
<tr>
<td>Color charges — Not Provided</td>
</tr>
<tr>
<td>None listed</td>
</tr>
</tbody>
</table>
For unfamiliar journals you can check to see whether it should be legitimate or not:
Elsevier has a similar journal search feature for its own journals: [http://journalfinder.elsevier.com](http://journalfinder.elsevier.com)
Here are suggested Elsevier journals for the LOVCEN project:

<table>
<thead>
<tr>
<th>Journal title</th>
<th>Impact Factor</th>
<th>Open Access</th>
<th>Editorial Time</th>
<th>Acceptance</th>
<th>Production Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ticks and Tick-borne Diseases</td>
<td>2.817</td>
<td>Available</td>
<td>7 weeks</td>
<td>47%</td>
<td>19 weeks</td>
</tr>
<tr>
<td>Virus Research</td>
<td>2.827</td>
<td>Available</td>
<td>5 weeks</td>
<td>45%</td>
<td>12 weeks</td>
</tr>
<tr>
<td>Journal of Virological Methods</td>
<td>1.883</td>
<td>Available</td>
<td>12 weeks</td>
<td>60%</td>
<td>7 weeks</td>
</tr>
<tr>
<td>Current Opinion in Virology</td>
<td>6.298</td>
<td>Available</td>
<td>5 weeks</td>
<td>100%</td>
<td>11 weeks</td>
</tr>
<tr>
<td>Antiviral Research</td>
<td>3.434</td>
<td>Available</td>
<td>5 weeks</td>
<td>50%</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Virology Reports</td>
<td>Yes</td>
<td>Open Access</td>
<td>Editorial Time</td>
<td>Acceptance</td>
<td>Production Time</td>
</tr>
<tr>
<td>Virology</td>
<td>3.278</td>
<td>Available</td>
<td>4 weeks</td>
<td>62%</td>
<td>8 weeks</td>
</tr>
</tbody>
</table>

Were these results useful?  
[YES] [NO]
Time for a break around here
Note - Open Access journals will tend to have higher *Impact Factors* (easily accessed!).

However, be aware of “predator” journals that ask for lots of money to publish and publish without a proper peer review process.

Here is part of an email exchange between a concerned manuscript author and the editor of (at that time) a predatory journal published by my Faculty!

The Serbian Biological Society in Belgrade informs all scientists, university personnel, associates and the entire scientific community of the following:

1. At 13:43 on 10 June 2013, Mr Jaime A. Teixeira da Silva sent the following communication to the Editor-in-Chief of the international multidisciplinary journal "Archives of Biological Sciences, Belgrade" regarding the notification that his article entitled "Improved regeneration protocol from Cycas revoluta Thunb. mature zygotic embryos" had been accepted for publication:

Prof. Dr. Božidar Ćurčić, Editor of ABS

I am extremely concerned.

Thank you for the immediate acceptance of our paper and "peer review" within less than 24 hours. You are an extremely efficient and professional organization. I can see why DOAJ has selected your journal for inclusion and why Thomson Reuters has assigned a quality impact factor score of 0.791. I am surprised that Thomson Reuters lists journals that do not conduct any peer review.

We are unable to and unwilling to pay your fees amounting to 1785 EUR. In fact, can you please indicate which of your websites states that authors must pay 1785 EUR to publish their papers, especially when DOAJ indicates that there are no publishing costs: [http://doaj.org/search?source=\{ "query":{ "filtered": { "query":{ "query_string":{ "query":"Archives of Biological Sciences","default_operator":"AND" }},"filter":{ "bool":{ "must":{ "term": { "_type":"journal" } } } } } } } #.U5bRlqCjIU]

Archives of Biological Sciences [http://doaj.org/toc/2325cffeab0a1b45a98aacc5f626844dd6]

Subjects: Biology (General), Science
Publisher: Serbian Biological Society
Platform, Host, Aggregator: doiSerbia
Publication charges?: No charges [see http://www.doiserbia.nb.rs/journal.aspx?issn=0354-4664]

Started publishing Open Access content in: 2002

Journal Country: Serbia
Journal Language: English
ISSN(s): 0354-4664, 1821-4339
Keywords: flora, fauna, Serbia
Date added to DOAJ: 2010-09-27


Please explain.

Please confirm that a full fee waiver will be provided and kindly provide a full explanation of the predatory publication charges.
Open Access “predatory” journals

The journal Science submitted false articles in 2013, in a comprehensive way (http://scicomm.scimagdev.org/#):

The full article is at www.sciencemag.org/content/342/6154/60.full

Note - I couldn’t find any dots in Montenegro!
The complete email exchange between author and editor is included.
The invented articles were always withdrawn at the last moment:

Dear Professor Ul Hassan,

Unfortunately, while revising our manuscript we discover an embarrassing mistake. We see now that there is a serious flaw in our experiment which invalidates the conclusions. The control in experiment 1 is incorrect.

I'm afraid we must withdraw our paper at this time, and we must repeat the experiments. Then we can resubmit the paper.

Sincerely,
Barmejar T. O. Mohoe

On 1 May 2013, at 14:27, Segment Journals <segmentjournals@gmail.com> wrote:

Dear Barmejar T. O.,

We are pleased to inform you that after review, your article BS/1600 has been accepted for publication in our Online Segment Journals. Please find attached the invoice of your article for publication fee. The payment method has been advised on the invoice. You are requested to send us the payment details for the publication of your article.

We are looking forward for an immediate response from your end.

Thanks and Regards,

Ul Hassan, Iftikhar
Editor
Segment Journals
<1600.pdf>
Assuming you have not chosen a predatory journal (!) -

Ask yourself “Is my research interesting or innovative enough to publish in this journal?”

- A frequent reason for rejecting a manuscript is that the results/conclusions of your research are thought to be not sufficiently novel or not substantial enough or of local interest only.

- for example just repeating someone else’s work with different datasets/varieties [a PhD student in Newcastle].

- Will your paper increase the journal’s Impact factor?
Your research should create new knowledge

Poorly-justified research
Poorly-designed research
Poorly-described research
Little evidence of progress

Well-justified research
Well-designed research
Well-described research
Clearly significant progress

Start  
Your research  
Finish

“new” knowledge

Circle of knowledge

New knowledge

Circle of knowledge
So, you identify the most suitable journal and *submit your manuscript to that journal only and to no other!*

The editor of the journal I work for (Botanica Serbica) has found problems of M/S duplication.
Example of Editorial policies on duplicate submission:
Biodiversity & Environmental Sciences Studies Series -
Instructions for Authors:

Any manuscript submitted to the journal must not already have been published in another journal or be under consideration by any other journal. Manuscripts that are derived from papers presented at conferences can be submitted unless they have been published as part of the conference proceedings in a peer reviewed journal. Authors are required to ensure that no material submitted as part of a manuscript infringes existing copyrights, or the rights of a third party. Submission of a manuscript to Biodiversity and Environmental Studies Series implies that all authors have read and agreed to its content.
So you believe you have something worth writing, to submit to your journal of choice!

Journal information for authors

Always start by reading the journal’s scope and information for authors - either inside the journal cover or on the journal web-site.

First, to confirm whether it is the right journal for your paper or not.
Journal information for authors (2)

Comments from journal information for authors:

Descriptive reports, in which no specific hypothesis is tested are unlikely to be accepted.

Field-study results are more likely to be accepted if they use more than a single technique of data collection and analysis.

Papers must be original research and must not have already been published or be under consideration for publication elsewhere.

Work published in abstract form or presented orally is not considered previously published.

Papers containing a poor standard of English language are less likely to be considered for review.
Journal of General Physiology (good M21):
No substantial part of an article may have been, or may be, published elsewhere.

Except in special circumstances, manuscripts that fall within the following categories are unlikely to be accepted:
- Purely methodological or theoretical developments (except as noted in Scope of Publication).
- Descriptive reports, in which no specific hypothesis is tested.
- Manuscripts that primarily confirm results already established for other species, ….
- Manuscripts which merely amplify a previous brief publication and contain no substantial new information.

The journal gives Open Access after 6 months.
Once you have decided which journal you will submit the paper to, make sure you read carefully all the journal’s Instructions to Authors for writing the text!
These will tell you how to format the manuscript correctly. Here’s an example:

**Journal of Biological Chemistry**

**Instructions for Authors:**

**Manuscript preparation**

- All of the text should be single spaced with one-inch [2.54 cm] margins on the left and right sides. *Note - imperial units are used.*
- Once the text of the manuscript is completed in Word, convert the Summary through Discussion sections from a single column format to double column format.
- Select these sections of the text, click on “Format” heading, then “Columns” from the drop-down menu. Select two columns and equal column width and then change spacing to 0.25 inches [0.63 cm].
- Title and running title sections as well as references, footnotes, figure legends and tables should remain in single column format.
- **Use Times New Roman font** and select size and bolding to mimic the appearance shown above for the title section; **use 11 point** for the remaining text.
Annals of Botany

Instructions for Authors:

**Manuscript preparation**

- (Always consult a recent issue of *Annals of Botany* for layout and style)
- Text should be typed using size 12 Times New Roman or Courier, double-spaced throughout and with an approx. 25 mm margin.
- All pages should be numbered sequentially.
- Each line of the text should also be numbered, with the top line of each page being line 1 [Format→Document→Layout].
- The article file should be in PC-compatible Microsoft Word - file type DOC.
- Please make sure the "Language" is "English (U.K)" via Tools → Language → Set Language.
Not bothering to follow all the journal’s instructions (style, format, etc) creates a bad impression at the start, even before any referee has read what you have written!
Let’s see how you got on with the manuscript I sent you all to review.

Discussion of the apple manuscript

I shall put my review in the Dropbox this evening.
Now some comments of my own:

The manuscript in general was not carefully written.

There were many unnecessary simple spelling mistakes, and the formatting was very poor.

*First impressions have an impact on reviewers!*

A manuscript that has simple spelling mistakes suggests lack of care.

*That suggests lack of care with the research!!*
Difficult to understand and a poor representation of the whole paper.

**ABSTRACT:** Apple is known as an available natural source of phenolic compounds that have a great effect [That is probably an exaggeration!] on human health. Quantitative analyses of phenolic compounds in apple varieties ‘Zonouz’ and ‘Gala’ were carried out by HPLC and colorimetric methods during commercial harvest time. For this, the best harvest time of fruits, was decided [That is not stated anywhere in the body of the text as an objective of research.] by measurement of pH, total soluble solids (TSS) and total acidity [TA] - the abbreviation TA is not used again in the Abstract, so there is no need for it to be defined here.] during the season [The English is not clear here. In the previous sentence they say commercial harvest time. Here they refer to measurements during the season!]. The results showed no differences between the two apple cultivars regarding pulp pH, ‘Gala’ had a higher TSS content than ‘Zonouz’. Also, colorimetric methods revealed that the highest amounts of total phenolics, anthocyanins, proanthocyanidins and flavonoid compounds were recorded in ‘Gala’ and ‘Zonouz’ apple peel, respectively [What does “respectively” refer to here? Highest amounts compared with what?]. In contrast, ‘Zonouz’ pulp contained higher amounts of these phenolic compounds than ‘Gala’ pulp [The data in Fig 1 show no difference!]. HPLC analysis showed that the higher quantities of flavonols were in ‘Zonouz’ fruit (peel and pulp) due to much higher amounts of epicatachalin was the main reason for the raised content of flavanol in ‘Zonouz’, compared with ‘Gala’.
Introduction

In the recent decades, orchards of ‘Zonouz’ have gradually been replaced with ‘Gala’, which has received the special attention of apple fruit growers in the main producing areas of the world and Pontevedro (ROKHAFROUZ [Check spelling. Reference list says Rokhafrouz.] 1997). However, to our knowledge no comparative phytochemical study has been carried out on this shift of cultivars. Therefore, in the present study we investigated the quality characteristics of ‘Gala’ and ‘Zonouz’ apple fruit with emphasis on some phenolic compounds. [The objective of the research could be strengthened by clearly linking the shift in apple cultivation with a possible change in the phenolic content and composition of the apples and their impacts on human health.] [Note for students: a hypothesis for the research could be set up as follows – the hypothesis is that the shift in apple cultivation from ‘Zonouz’ to ‘Gala’ could potentially reduce the health benefits from eating apples if phenolics of ‘Gala’ are of lower quality and quantity than in the traditional variety ‘Zonouz’.]
Materials and Methods

There was not enough detail to know exactly what was done.

The description of methods, sampling procedures and degrees of replication was difficult to follow and confusing.

The experimental design did not appear to be particularly good - what effect will air-drying have on the substances to be measured?

Did their statistics measure biological variation or only analysis variation?
Here’s an example of lack of clarity in the Materials and Methods:

<table>
<thead>
<tr>
<th>The fruits were peeled with a sharp knife and then peel and pulp were separately dried in a dark place with ambient ventilation. Afterward, the air-dried plant materials were grinded to obtain a fine grade powder.</th>
</tr>
</thead>
</table>

Compare that text with this, from one of their cited references (Vieira et al. 2009):

<table>
<thead>
<tr>
<th>Immediately after harvest the fruits were washed with deionized water, towel dried and frozen at -20°C until preparation of the samples. They were peeled, when necessary, with a legume knife. The flesh, whole fruit (flesh + peel), or peels were obtained from five randomly selected apples in each trial to minimize variation. The flesh was the edible portion of the apple without the peel. The whole fruit was the edible portion of the fruit with the amount of flesh and peel maintained in the same proportions as in the whole apple. The peels were the parts of the apple removed by the legume knife, as a thin layer of apple flesh remained adhered to the peel, the peel can be considered as the epidermic zone of the apples.</th>
</tr>
</thead>
</table>
Here's another example of lack of detail and information in the Materials and Methods:

Afterwards, the air-dried plant materials were ground to obtain a fine grade powder. It is not clear whether the pulp contained all the seeds or whether pulp was separated from the core of the apple which, presumably, is not normally eaten. Also, it is not clear what biological replication was used. Was it just a single bulked sample of apples from each variety that was analysed, or were several bulks analysed independently? Lipids and waxy compounds of samples (1g of air-dried plant material) were extracted using n-hexane (10 ml) for 20 min in an ultrasonic (Power Sonic 505, Korea) bath. Solvent was evaporated utilizing a rotary-evaporator (Heidolph, Germany) until dryness. Aqueous methanol (1:1, 100 ml) was added to the extracted solids and then sonicated for 20 min. The subsequent extracts were sequentially filtered and centrifuged (10 min) at 13000 rpm. Finally, extracts were assayed for phenolic compounds by analytical HPLC. [From the Results section it is clear that fruits were harvested at different times during development, but there is no description of this here. Were fruits separated into peel and pulp on each harvest occasion?]
What are your thoughts on their Figure 4, here?

“Different letters on columns show significant difference based on Duncan’s multiple range test at P≤0.05.”

Put bars for the most important comparison closest together.
CONCLUSION

Identification and quantification of apple phenolic and flavonoid compounds have gained great importance in horticulture and fruit production due to the unique role of those compounds in visual and organoleptic characteristics of fruits, storage life of fruit and also in human health. Various methodologies have been employed for the identification and quantification of these compounds. Methods used in the present experiment (HPLC and colorimetric method) showed their efficiency [No information was presented on efficiency - speed, accuracy, reliability, repeatability, etc.] for the quantification of phenolics and flavonoid compounds in different parts of the apple fruit. The main difference between the two apple cultivars (‘Zonouz’ and ‘Gala’) was due to the high occurrence of quercetin-3-D-galactoside in ‘Gala’ peel [What about the large differences shown in Fig. 4 in the other direction?]. Overall, it seemed that ‘Zonouz’ may be a good native alternative to well-known apple cultivars considering phenolic and flavonoid compounds.

[No Acknowledgements?]
Aknowledgements

There weren’t any - unusual!

References

Probably the best section of their manuscript!

Capital letters included in one of the reference titles (obviously copied from the original).

Publication years were not consistent between the Reference list and text citations.
Scientific publications:

This is your starting point:

Once upon a time ...

... and they all lived happily ever after.

and this is your target end point.
Let’s assume you have a good story to tell.

The secrets to writing and submitting a good quality paper (indeed any document!) are to be logical, clear, concise, unambiguous, consistent, without factual errors, without technical errors.

If not, reviewers won’t be able to follow what is going on and you risk comments that the work is not focused or badly put together.
Logical: points go naturally from one to another.

Clear: easy to read, simple language, easy to understand.

Concise: no unnecessary words, easy to read.

Unambiguous: only one way to interpret what you write.

Consistent: the same information every time you mention it, table and figure data correctly reported in the text, all references cited, etc.

Without factual errors: checked for consistency, correctly referring to your and other work.

Without technical errors: checked with journal style, formatting consistent, reference details correct, no spelling mistakes.
First impressions have an impact on reviewers!

So, not being consistent in following the journal’s style or format, etc creates a bad impression at the start!

As stated earlier - a manuscript that has simple spelling mistakes suggests lack of care. That suggests lack of care with the research!!

Lack of care implies they may not find the truth!
Here’s an example from one of my PhD students of poor quality control of their text:

Regarding the *complementarity* of the research that I *preform* at the Institute of oncology and *radiology* of Serbia

Regarding the *complementarity* of the research that I *perform* at the Institute of *Oncology* and *Radiology* [Use a spell-checker!!] of Serbia
Making a start on the manuscript:

Start by creating a folder on your computer for the manuscript.

This will contain:
- journal instructions for authors
- the text (various versions - *each dated*)
- publications (pdf files) to support the manuscript (a separate folder for those you use)
- tables and figures as you prepare them
- maybe key email discussions with co-authors
- eventually, proofs and supplementary documents
I’ll describe here a typical research paper.

**The first page (1)**

- Choose a title that gives clear information about the content of the research.

"Effectiveness of the organic food supply chain in the Republic of Pontevedro" is a suitable title but "Supplying organic food in Pontevedro" is not.

The title may be a question: "How effective is the organic food supply chain in the Republic of Pontevedro?" but not: "Can Pontevedrins get organic food?".

The title can also be a statement of the results: "Organic food supply chains in Pontevedro are poorly established".
Time for lunch
The first page (2)

• Think carefully about the author list and their order of presentation -
  • The one doing the research usually comes first.
  • Authors should have contributed in some way to the science or the manuscript, or getting the money for the research!

• Should you include your technicians as authors?
Abstract

• Write this at the start to organise your thoughts.

If the journal does not require a structured abstract:

The abstract is a summary of your paper, so must be a brief description of the whole paper, capturing the essence of your research. [Do not say “results are presented for ...”]

• Remember that most of the readers of your paper will never get beyond the abstract.
• So, ensure the abstract says in 250 (or ?) words all the reasons for doing the research and the main conclusions.

It should have an immediate impact on the reader, so needs to be written in as concise (short) a sentence construction as possible and must give readers a ‘take-home’ message.

• Complete this once the paper is written
Abstract (2)

- Give a little background (one sentence) describing the subject area of the research (this is often optional).
- Give a brief description of the rationale behind the research and clearly state research objectives (why it was needed).

- Describe briefly the research methods (experimental design), what was measured.

- Identify which of your results/findings are most important.
- Identify the most important interpretation of your results.
- Maybe, say what this means for the future, policy implication.
Try to save words wherever possible, for example as follows:
Short sentences save words.
Replace “and” with a full stop whenever possible.

Do not use redundant words:
‘To do this, …..’ and not ‘In order to do this, …’

Rearrange or change words when possible. Instead of:
“…, and calculation of the annual means to identify …” use
this shorter version:
“… Calculating annual means to identify …” (3 words less)

Never waste words by repeating information.
Writing the body of the text

I’ll use the format usual for the sciences:
  • Introduction and objectives
  • Research materials and methods
    • Results/Observations
    • Discussion/Implications

to say a few words about putting together what is needed for a good quality paper - whatever the subject of the research.
**Introduction and objectives (1)**

Your Introduction *must convince* the journal editor and referees of the *need* for your research and *their need* to accept it! [The ‘salesman’s pitch’!]

There should be a question to answer or problem to solve, with a clear increase in *understanding*.

It is much easier to create a good story if you did research to test one or more hypotheses.

Think of your Introduction in terms of the blue bars:
Introduction and Objectives (2)

Your Introduction is where you give definition to the first blue bar in the histogram -

- to convert this:

- into this:

This is how the reader will interpret your Introduction.
Introduction and objectives (2)

The ‘salesman’s pitch’!
Some journals actually ask you to identify the **highlights** of your research. Here's an example:

**[Manuscript recently submitted] Highlights:**
1. Highly developed biofouling was documented on artefact surfaces **[BORING - they did some work!]**
2. Biodeterioration symptoms on the surface of monuments were clearly visible **[BORING - their eyesight is good!]**
3. Conservation intervention was successful for eradication of the phototrophic microorganisms **[BORING - the technique is already known to work!]**

**This is trying to sell me a product I don't want!**
Introduction and objectives (3)

On the next slide are comments I wrote on the Introduction of a manuscript by Serbian researchers that I was asked to look at in October, 2011 (writing up a PhD student’s thesis work) ....
“There is little justification here for an editor to publish your paper. There are, say, already 20 papers on the subject and you just want to add one more, which will, no doubt, just contribute to the complexity of the problem! Where is the increase in understanding that this research aims to achieve? Where is the novelty? You have got to sell this to the journal editor and referees. So, start conceptually by identifying a good story to tell that will lead to something interesting for the [international] reader. Then, build up the background to your story as you present the Introduction, focusing towards the end of this on what is already known in the literature that is relevant to your specific research story and the questions still remaining to be answered. In that way, you are providing justification for your research to be carried out.”
Introduction and objectives (4)

• subject area background information
• research area background information
• clear justification for this research - what makes it interesting (including your previous work)
• clear statement of objectives and hypotheses to be tested
• sometimes objectives change during the paper!

By the end of this the reader should have a clear impression of why the research was needed and what sort of conclusions will be reached at the end.

Typical length no more than 2-3 double-spaced pages, depending on the research complexity.
Research Materials and Methods

- Sufficient detail *to allow the reader to repeat your work*
- Include *only* parameters/measurements (and comparisons) that you will present later on
- State clearly the research/experimental design and methods and, where relevant, sample numbers analysed (*this needs very careful thought to be unambiguous*)
- Give details of statistical methods that have been used.
Research Materials and Methods

These need to be described very carefully, with enough detail -

- to convert this:

- into this:

Materials & methods

“State-of-the-art”

Knowledge

start

finish

Your experiment

This is how the reader will interpret your Materials & methods.
Time for an exercise, working in groups of 2-3

Table 1. Make a table with the following information and give it a title:

HPLC analysis of *Cuminus cyminum* (cumin) essential oil (4.0 µg/g) identified cuminol at 2.0 µg/g (50%), cymene at 1.8 µg/g (45%) and pinene at 0.2 µg/g (5%). The related species *Bunium persicum* gave 8.0 µg/g essential oil, of which the principle component was cuminic aldehyde at 4.0 µg/g (50%), as well as cymene at 3.6 µg/g (45%) and terpineol at 0.4 µg/g (5%).
Results/Observations

- Present results in logical order - priority order, or sequence order: this leads to this, leads to this …
- If you measured it, present results for it
- Design tables and graphs to have the most visual impact (they must make points clearly, logically and unambiguously)
- Say something in the text about all the points made in tables and/or graphs
- Do not interpret results in the Results section.
When showing results graphically, always put the most important comparisons nearest to each other.

Here’s the sugar experiment example from the Good Research part of the course.

So, in the case of the sugar experiment, to test the (primary) hypothesis that sugar types dissolve at different rates:

Key: 1 = large crystals, 2 = cubes, 3 = raw sugar, 4 = ordinary, 5 = icing, H = hot water, C = cold water

Not this ...

... but this
Present your data in graphs in a **logical** order. For example, many of my PhD students showed data like this:

![Graph of sugar dissolving rates](image)

**Figure 1. The dissolving rate of different types of sugar**

Why are 50% hot/50% cold samples on the right hand side? Why are icing sugar data next to the large crystal data? This order may be in real time, but is not **logical** to a reader.
There is always more than one way of showing results, so think about the best way.

Here are two of the graphs from my PhD students in 2011.

Which method of presenting the data gives a clearer picture of the results?
Give me your comments on these:
Using lines to connect data points indicates some sort of trend (in time, temperature, crystal size, etc.). Therefore do, not do this:

![Graph showing dissolving time for different sugar types]

What does a line between Large Decorative Crystals and Icing sugar mean? **If samples indicate crystal size, then this is OK.**
Here is an example of this with graphs presented in an actual manuscript:

The authors wanted to compare and contrast two groups of crop varieties differing in drought resistance and they presented two graphs - one for 4 resistant varieties, and the next for 4 susceptible varieties.

**RESISTANT**

- **Relative water content (%)**
  - Variety A
  - Variety B
  - Variety C
  - Variety D

- **Water Loss (g\text{-1} g\text{-1} DW)**
  - Variety A
  - Variety B
  - Variety C
  - Variety D

- **Proline (µmoles/g FW)**
  - Variety A
  - Variety B
  - Variety C
  - Variety D

**Hours of stress**
How easy is it for you to compare differences in drought responses between the resistant and susceptible varieties?
So, in this example it would be much better to compare resistant and susceptible varieties in the same graph, using a separate set of graphs for each trait/parameter.

Therefore, remember to put the most important comparisons you want the reader to see or appreciate close to each other in figures.
Points to note on tables:

- Don’t make a table too dense with numbers.
- Don’t use more decimal points than are justified by the precision needed (3 significant figures?).
- Remember to include all the units (cm, h, mmol).
- Don’t repeat data shown in figures.

Table 1: Phenotypic analysis of shoot number and plant height in the population.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Zhenshan</th>
<th>Minghui</th>
<th>shoot number</th>
<th>the population Mean ± s.d.</th>
<th>Range</th>
<th>Skew.</th>
<th>Kurt.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RIL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>number</td>
<td>shoot</td>
<td>plant</td>
<td></td>
<td>range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 1</td>
<td>1.30</td>
<td>2.25</td>
<td>1.716 ± 0.425</td>
<td>1.00-2.90</td>
<td>0.560</td>
<td>-0.076</td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>9.47</td>
<td>12.57</td>
<td>9.776 ± 1.582</td>
<td>6.20-14.10</td>
<td>0.273</td>
<td>-0.036</td>
<td></td>
</tr>
<tr>
<td>Stage 3</td>
<td>17.88</td>
<td>22.85</td>
<td>19.041 ± 3.692</td>
<td>10.50-29.90</td>
<td>0.266</td>
<td>-0.230</td>
<td></td>
</tr>
<tr>
<td>Stage 4</td>
<td>17.43</td>
<td>20.35</td>
<td>18.085 ± 3.323</td>
<td>11.10-29.10</td>
<td>0.472</td>
<td>0.235</td>
<td></td>
</tr>
<tr>
<td>Stage 5</td>
<td>15.88</td>
<td>16.50</td>
<td>15.546 ± 2.792</td>
<td>10.10-24.05</td>
<td>0.592</td>
<td>0.265</td>
<td></td>
</tr>
</tbody>
</table>

No units for height

Far too many decimal places! Judging by the size of s.ds., only 1 is justified.
How easy is it to assimilate and understand the data in this table?!!!

Here's an example of a table from a manuscript:

Table 2. Top 10 best performing genotypes with respect to different in vitro traits under normal (0 bar) and stress (-7 bars).

<table>
<thead>
<tr>
<th>Rank</th>
<th>Germanium concentration (mg)</th>
<th>Shoot length (cm)</th>
<th>Root length (cm)</th>
<th>Coleoptile length (cm)</th>
<th>Root number</th>
<th>Seedling vigour</th>
<th>Overall basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>D15</td>
<td>0.9</td>
<td>7.3</td>
<td>1.5</td>
<td>25</td>
<td>7.5</td>
<td>7.3</td>
</tr>
<tr>
<td>2</td>
<td>D16</td>
<td>0.8</td>
<td>7.2</td>
<td>1.4</td>
<td>24</td>
<td>7.4</td>
<td>7.2</td>
</tr>
<tr>
<td>3</td>
<td>D17</td>
<td>0.7</td>
<td>7.1</td>
<td>1.3</td>
<td>23</td>
<td>7.3</td>
<td>7.1</td>
</tr>
<tr>
<td>4</td>
<td>D18</td>
<td>0.6</td>
<td>7.0</td>
<td>1.2</td>
<td>22</td>
<td>7.2</td>
<td>7.0</td>
</tr>
<tr>
<td>5</td>
<td>D19</td>
<td>0.5</td>
<td>6.9</td>
<td>1.1</td>
<td>21</td>
<td>7.1</td>
<td>6.9</td>
</tr>
<tr>
<td>6</td>
<td>D20</td>
<td>0.4</td>
<td>6.8</td>
<td>1.0</td>
<td>20</td>
<td>7.0</td>
<td>6.8</td>
</tr>
<tr>
<td>7</td>
<td>D21</td>
<td>0.3</td>
<td>6.7</td>
<td>0.9</td>
<td>19</td>
<td>6.9</td>
<td>6.7</td>
</tr>
<tr>
<td>8</td>
<td>D22</td>
<td>0.2</td>
<td>6.6</td>
<td>0.8</td>
<td>18</td>
<td>6.8</td>
<td>6.6</td>
</tr>
<tr>
<td>9</td>
<td>D23</td>
<td>0.1</td>
<td>6.5</td>
<td>0.7</td>
<td>17</td>
<td>6.7</td>
<td>6.5</td>
</tr>
<tr>
<td>10</td>
<td>D24</td>
<td>0.0</td>
<td>6.4</td>
<td>0.6</td>
<td>16</td>
<td>6.6</td>
<td>6.4</td>
</tr>
</tbody>
</table>
Presenting Fraudulent Results

Fraud involves deliberate deception, including the *invention (fabrication)* or *falsification of data*, and the omission from analysis and publication of *inconvenient data*.

Researchers are sometimes under *huge pressure* to “prove” a positive result (e.g. new drug trials).

Scientific ethics must always be respected, so great care must be exercised when deciding that data may be ignored or changed for some reason.

Ask yourself the question “If I change or ignore any of the data shall I get closer to or further from the *truth*?”
Data fabrication/data falsification

*Data fabrication*: This concerns the making up of research findings.

*Data falsification*: Manipulating research data with the intention of giving a false impression. This includes *manipulating images* (e.g. micrographs, gels, radiological images), removing outliers or “inconvenient” results, changing, adding or omitting data points, etc.
Image adjustment

‘For every adjustment that you make to a digital image, it is important to ask yourself “Is the image that results from this adjustment still an accurate representation of the original data?” If the answer to this question is “no”, your actions may be construed as misconduct.’
Discussion/Implications (1)

• Do not repeat the results in the Discussion!!
• Discuss results in the order in which they were presented
• **This is where you interpret your findings**
• Interpret how your results fit in with your stated objectives/hypotheses
• Interpret how your results fit in with other published work
• [Consider any limitations of your methods and suggest possible improvements]
• Future research/policy implications/next step
• Give a ‘take-home’ message at the end.
"In this experiment, it was possible to show, that different level of osmotic stress after PEG treatment can reveal the sensitivity of tested sensitive and resistant wheat genotypes and allows to choose the proper concentration of PEG to investigate further supplementations of media to explain the mechanisms of drought tolerance. Plant morphology and water status at seedling stage, gas exchange, lipid peroxidation, accumulation of some osmolytes, like soluble carbohydrates, proline and polyamines were sensitive in three tested concentrations of PEG treatment (D1, D2 and D3). Generally, after osmotic adjustment at the seedling stage, the growth of plants observed as of seedling height and roots length is decreased. Also RWC is lowered for sensitive genotypes. In this experiment lower water potential in CS genotype resulted from reduction of water content in leaves of seedlings. Under osmotic stress its impact on changes of photosynthesis between drought-resistant and drought sensitive genotypes was not always significant. Probably in these conditions the effect of non-stomatal mechanism regulation of photosynthesis occurred."
Here are section headings in my latest paper:

**Results**
- *Environments and phenotypes*
  - Environmental variation
  - Phenotypic variation
  - Trait associations
- *Genetic map and QTL analyses*
  - DArT-extended genetic map
  - Marker and gene deletion bin assignments
  - QTL analyses
  - Coincidence of QTLs

**Discussion**
- *Phenotypic characteristics*
  - The extended genetic map of Chinese Spring x SQ1 and bin assignments
  - Locations of QTLs and their coincidences
  - Future developments

**Conclusions**
Acknowledgements

Don’t forget to acknowledge the help from others that allowed you to do the research: technicians, students, materials provided by others, analyses done by others, advice and text corrections, etc.

Always acknowledge the funding sources that paid for the research.
Add all text reference citations to your Reference list as you write the manuscript to avoid forgetting any when you type all reference details.

Make sure you follow the style and format for reference details required by the journal. I find inconsistencies in formatting references very often.

If you copy and paste reference details directly from the journal website or a pdf file of the article, make sure you change the title from ‘Title’ case to ‘Sentence’ case.

Use Reference Manager or EndNote software for reference lists if you have access to it.
Improving your writing style and use of English
At the end, put aside your draft and come back to it later. You’ll be surprised how much you want to change!

This is the time to tighten up the text and remove unnecessary words - scientists from here like to use unnecessary words!

Such phrases as 'It is worth pointing out in this context that' may be deleted without affecting the meaning.

So may 'It is significant to note the fact that', 'It should be borne in mind in this connection that', and other phrases that correspond to no more than spoken 'errrs, ummms and ovajs'.

For 'It is plainly demonstrable from the data presented in Table 2' write 'Table 2 shows'.
Don’t write unnecessary words!

“It seems to the present writer that it is not inconceivable to suggest that the result of this maritime enterprise may indicate a possible discovery of a probably new continent.”

“I think I discovered America”

(Redrawn, with permission, from Majewski 1994.)
# How to Write & Publish a Scientific Paper

5th Edition  
Robert A. Day - ORYX PRESS 1998  
ISBN 1-57356-164-9 Hardback 1-57356-165-7 Paper

## Appendix 4: Words and expressions to avoid

<table>
<thead>
<tr>
<th>Replace</th>
<th>with</th>
</tr>
</thead>
<tbody>
<tr>
<td>a considerable amount of</td>
<td>much</td>
</tr>
<tr>
<td>a considerable number of</td>
<td>many</td>
</tr>
<tr>
<td>a decreased amount of</td>
<td>less</td>
</tr>
<tr>
<td>a decreased number of</td>
<td>fewer</td>
</tr>
<tr>
<td>a majority of</td>
<td>most</td>
</tr>
<tr>
<td>a number of</td>
<td>many</td>
</tr>
<tr>
<td>a small number of</td>
<td>a few</td>
</tr>
<tr>
<td>absolutely essential</td>
<td>essential</td>
</tr>
<tr>
<td>accounted for by the fact</td>
<td>because</td>
</tr>
<tr>
<td>adjacent to</td>
<td>near</td>
</tr>
<tr>
<td>along the lines of</td>
<td>like</td>
</tr>
</tbody>
</table>
Here are typical Slavic examples (red):

- subsequent to
- sufficient
- take into consideration
- terminate
- the aforementioned/abovementioned
  values for weight varied
- the data for height showed
- the findings in this section imply that
- the great majority of
  the measured values for time showed
  the measured values of time to
    equilibrate showed a range from
- the opinion is advanced that
- the predominant number of
- the question as to whether
- the reason is because
- the studied varieties showed
- the values for height showed
- the vast majority of
- there is reason to believe
- they are the investigators who
- this result would seem to indicate
- after
- enough
- consider
- end
- weight varied
- height showed
- this implies that
- most
- time showed
- time to equilibrate ranged from
- I think
- most
- whether
- because
- the varieties showed
- height showed
- most
- I (we) think/believe
- they
- this result indicates
“Diversity in the evaluated/studied/tested traits amongst the ....” becomes “Diversity in traits amongst the ....”

“A comparison of 95% CI values of evaluated traits showed ...” becomes “A comparison of 95% CIs for traits showed ....”

“The collected data were statistically analyzed using SPSS software ...” becomes “The data were analysed by SPSS ...”

Note - the words “in order (to)” are never needed, ever, at all, anywhere, for any reason! Many English scientists use them!

becomes “… were recorded in these indigenous varieties”

“Statistically significant trend toward an association ....” becomes “A significant trend toward an association ....”

“Fig 1. .... each sugar tested in 4 different temperatures” becomes “Fig 1. .... each sugar tested in 4 temperatures”
<table>
<thead>
<tr>
<th>Original</th>
<th>SQ version</th>
</tr>
</thead>
</table>
| For all data of measurements standard error of mean was calculated. | Standard errors of means were calculated for all parameters.  
[Start with what was done, then ....] |
| The results of measurements of gas exchange parameters and chlorophyll content in control plants are presented in figure 1. | Gas exchange parameters and chlorophyll content in control plants are presented in figure 1. |
Which tense of the verb do you use?

Generally speaking, if you are describing what you did in your experiment and its findings, then you use the simple past tense. The active form is OK!

Materials and Methods

“We sent a spaceship to the moon to examine its composition and found that it was made of sugar!”

Results

If the results of your research are likely to be generally true then you can use the present tense.

“As the moon is made of sugar it is very likely to be able to support simple forms of life.”

Discussion
Here’s an example on the use of tenses given in Botanica Serbica (published by my faculty):

“Introduction and Discussion sections may contain present tense to convey generally accepted information.

“Materials and Methods and Results are normally written in the past tense. Results and discussion can be combined.”
Here’s some advice on the use of articles *(a, the)* - particularly difficult for Slavic language speakers.

**Tomato** [used as a descriptor] juice is usually sweet.

**A** tomato [just one - any one] was harvested …

**The** tomato [that specific one] was then …

**Tomatoes** [in general] are regarded as sweet.

**Tomatoes** [assuming they have been previously described] were harvested …

**The** tomatoes [used in this experiment - **specific ones** (typically followed by an adjectival clause)] were of the variety ‘Sonata’.
Some closing remarks (1)

A frequent reason for rejecting a manuscript is that the results/conclusions of your research are not thought to be sufficiently novel or not substantial enough or of local interest only.

- for example just repeating someone else’s work with different datasets/methods.

Will your manuscript help to increase the journal’s impact factor?!

If the referees say your manuscript is too long and needs reducing, combining the Results and Discussion sections helps, so you say everything only once!
Some closing remarks (2)

- Your written English needs to be sufficiently good for it to be unambiguous/obvious what you are trying to say. If in doubt, when possible get a native English speaker to check your manuscript before you send it.

- Referees will not bother to struggle reading very bad English! However, if the English is acceptable, they will often be willing to correct for you any subtleties in the use of words (eg prepositions, and when to use ‘a’ and ‘the’).
Some closing remarks (3)

- Don’t assume referees are always right!
  - Just like us, they sometimes make mistakes, not reading text carefully enough or jumping to the wrong conclusions.

- So, you don’t have to accept everything a referee says!
  - If you can provide a good counter-argument to a referee’s comment in your reply to the journal’s editor, then do so.

- Even if you can’t see a reason why, accept any changes of words/style required by a referee!
  - It looks better to the editor if it is clear you are responding to the referee’s comments where possible.
Some closing remarks (4)

- Remember to do your quality control of the manuscript before submission.
- Have you checked all the references in the text and Reference list for consistency?
- Have you followed all the journal instructions for authors?

- Have you completed all your Table and Figure legends, with enough detail for the reader to know what they show without referring to the text?
- Have you completed any conflict of interest statement where needed?
- Have you completed any ethics statement where needed?
The review process

This example for Journal of Experimental Botany is typical: the Editor makes the initial evaluation of the manuscript. If he/she thinks the topic is important and relevant to the journal readership, he/she assigns the manuscript to an Associate Editor, who oversees the review process.

Manuscripts are reviewed by two [5 asked?] independent experts in the particular area. The reviewers will make a scientific assessment and send a recommendation to Editors.

If reviewers’ reports are contradictory, the Editor will either send the manuscript for a third opinion and accept the majority view, or decide to reject the manuscript.
The review process (2)

Referee Assessment
Please complete the following assessment and use these criteria in writing your report.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>See comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>The reported results are novel</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The experiments are well designed and executed</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The manuscript is well written, clear, concise and in the <strong>third person</strong></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The subject area is important and relevant to experimental botany</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Figures and tables are clear, non-repetitive and necessary</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Titles and abstracts are representative and concise</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>References are adequate without being excessive</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Colour plates are essential to understanding the science</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tbody>
</table>

Please score the paper on a scale of 1 to 5 with 5 the highest quality or most important:

<p>| | |</p>
<table>
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<tbody>
<tr>
<td>Importance of the topic</td>
<td>......</td>
</tr>
<tr>
<td><strong>Quality of the science</strong></td>
<td>......</td>
</tr>
<tr>
<td>Overall Recommendation</td>
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</tr>
<tr>
<td>Please tick the appropriate box</td>
<td></td>
</tr>
<tr>
<td>Acceptable with minor revision</td>
<td>☐</td>
</tr>
<tr>
<td>Acceptable with revision</td>
<td>☐</td>
</tr>
<tr>
<td>Unacceptable as major revision required</td>
<td>☐</td>
</tr>
<tr>
<td>Unacceptable</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Note:** J. Exp. Bot. rejects nearly 70% of manuscripts submitted!

Quality of science has to be 4 or 5 for manuscripts to succeed.
Example of reviewer’s comments:

**Review of MS 010643 by M.... and R....**

At first sight this looks a carefully carried out and written up piece of research to study aspects of the mechanism of Cd uptake and complexing in durum wheat. There is some very good science in this; it's just a shame that the hydroponics experiment didn't work!

The authors need to repeat this aspect of the work with much lower levels of Cd in the hydroponics to be able to test the association between Cd uptake and sequestering in relation to seed levels of Cd. This may reveal differential expression of Cd-complexing polypeptides.

Nevertheless, much of the biochemistry presented here is probably publishable in its own right, though not in relation to any genetic variation in seed Cd contents. The authors should be encouraged to consider this, while at the same time repeating the hydroponics experiment with more realistic Cd treatments to test for genetic variation in Cd complexes.

If it is any consolation, it is nice to see a manuscript so well presented with so few unnecessary errors.
Conclusion

So, if you’ve carried out carefully-designed research, accounting for all the factors, then the advice given here should allow you to prepare a good quality manuscript describing your research for a top-ranking international journal.

Remember:
• your research should be looking for the truth
• the reader of your paper needs to see clearly that you are presenting the truth!

So, if your marketing strategy was effective, you should now be able to get your manuscript accepted for publication!
Electronic Supplementary Material

Most, if not all, good quality journals now allow Electronic Supplementary Material to be added to a paper, accessible through the journal’s website.

• These are a bit like Appendices for a PhD thesis - such as individual replicate or analytical data.
• You can add extra graphics using colour, as these should not add much to publication costs.
• You can add animations and movies here.
Here’s an example of instructions on ESM:
These are for Journal of Biological Chemistry.

JBC On-line provides the opportunity for authors to include data impossible or impractical to include in the printed JOURNAL.

These data will be reviewed as a part of the normal manuscript review process and will be judged by the same criteria.

Data files can be prepared in Plain Text, MS Word, HTML Page, MS Excel, TIFF, JPEG or GIF. When practical supplemental data files should be converted and submitted as PDF files.

Movies and large excel files should be submitted in their native formats.

Only data that substantially contribute to the manuscript will be accepted. We encourage authors to include data such as videos, 3-D structures/images, sequence alignments, and data sets that are very large such as those obtained with microarray hybridization experiments.