Comments on First Papers

Project Design & Execution

Begin with a strong experimental design
Avoid confounding variables
Consider all angles - gather data on additional variables if necessary
Execute experiment carefully
Consider sample sizes

Keep Sections Distinct

Abstract
Introduction
Methods
Results
Discussion
Acknowledgements
Literature Cited

Abstract

Abbreviated account but make clear:
- Why the work was done
- How the work was done
- What was learned
- What conclusions can be made
Avoid vague statements

Introduction

Like a "funnel"
Provide the context then focus to the specific issue examined
Provide context for work
Citation of appropriate prior research
Explicitly present problem/hypothesis

Materials & Methods

Describe organism studied
Describe site used (geographic setting)
Describe protocol for data collection
Outline statistical treatment of data
Results
Record of findings
Present in logical sequence
Provide analyses
Means, standard errors, tests of significance
Lead reader
Good use of figures & tables

Table 1. Rates of visitation

<table>
<thead>
<tr>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>34 ± 4</td>
<td>45 ± 3</td>
<td>67 ± 4</td>
</tr>
</tbody>
</table>

Discussion
Interpret results using background developed in introduction
Critically evaluate results in context of prior research
Citation of published works
Organization according to logical flow
Order can differ from that of results

Use Existing Literature
Take advantage of published information to provide the context for your study
Be sure your reader understands what your study offers (why it is important)
When discussing your findings, use literature to show how your results fit

Literature Cited
Confined to citations in manuscript
Use format of Ecology
Citations

In Text:
- Johnson (2005)
- Johnson and Smith (2005)
- Johnson et al. (2005) [3 or more authors]

... flower color (Johnson and Smith 2005).

In Literature Cited:

Important Details

Don’t Include Unnecessary Information

Examples:
- Unnecessary background information in the introduction
- Tabulated data that you don’t mention in the results

Topic Sentences

Forty of the sixty visits were to group 1, while only 20 visits were to group 2. Figure 1 shows the results.

Insects visited blue flowers significantly more often than white flowers ($\chi^2 = 6.5$, df = 1, $p = 0.01$, Figure 1).

Binomial Names

Quercus alba
Q. alba

1. Always italicized or underlined
2. Genus is written out at first mention
3. Genus is written out to begin sentences
4. Never use *alba* alone

Statistics

Don’t allow statistical results to break up the flow of your text

"A chi-square test of the totals for the two treatments resulted in a value of 1.69 with 2 degrees of freedom, which is smaller than the 6.0 needed to produce a significance at the 95% level."

Versus
"($\chi^2 = 1.69$, df = 2, N.S.)"
**Hyphenation**

Hyphenate compound adjectives
- White-colored flowers
- Low-density population

But
- White flowers
- Low density

**Redundancy**

Blue-flowered plants averaged 20 ± 4 flowers per plant while white-flowered plants had only 15 ± 3 flowers per plant.

<table>
<thead>
<tr>
<th>Number of Flowers per Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue-flowered Plants</td>
</tr>
<tr>
<td>White-flowered Plants</td>
</tr>
<tr>
<td>20 ± 4</td>
</tr>
<tr>
<td>15 ± 3</td>
</tr>
</tbody>
</table>