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### **Manuscript preparation**

## 1. General guidelines

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- *Grana* publishes research papers in two categories: ‘Original Articles’ and ‘Short Communications’ (preliminary reports of special interest that are given expedited publication). Occasionally ‘Book Reviews’ will also be printed, and editors will commission ‘Review Articles’. *Grana* also publishes contributions to the European Pollen Database (EPDB) at irregular intervals.
- Manuscripts are accepted in English. British English spelling and punctuation are preferred. Please use single quotation marks, except where ‘a quotation is “within” a quotation’. Long quotations of 40 words or more should be indented without quotation marks.
- Manuscripts should be compiled in the following order: title page; abstract; keywords; main text; acknowledgements; specimens investigated (if applicable); references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figure caption(s) (as a list).
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- Section headings should be concise.
- All authors of a manuscript should include their full names, affiliations, postal addresses, telephone numbers and email addresses on the cover page of the manuscript. One author should be identified as the corresponding author. Please give the affiliation where the research was conducted. If any of the named co-authors moves affiliation during the peer review process, the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after the manuscript is accepted. Please note that the email address of the corresponding author will normally be displayed in the article PDF (depending on the journal style) and the online article.
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- For all manuscripts non-discriminatory language is mandatory. Sexist or racist terms must not be used.
- Authors must adhere to [SI units](#). Units are not italicised.

- When using a word which is or is asserted to be a proprietary term or trade mark, authors must use the symbol ® or TM.

## 2. Style guidelines

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### *Main text*

**Organise the paper:** Introduction, Materials and methods, Results, Discussion, Conclusions, Acknowledgements, Specimens investigated, and References.

Papers should be consistently written in British English following the conventions of the Oxford English Dictionary. All text should be formatted as it is to appear in the journal (i.e., italicised text to be *italicised* and bold to be in **bold**). Note that in italicised headings words that would normally be in italics (e.g., names of genera and lower ranked taxa) should be in non-italic font.

**Please note:** While ‘Original Articles’ in *Grana* have no length and size limit, ‘European Pollen Data Base (EPDB)’ contributions are standardised reports and should fit on three pages including the pollen diagram. Therefore, EPDB contributions should not exceed 8000 characters including spaces. Please consider the latest issue of the journal to adopt the standardised style of EPDB contributions.

**Spell out:** all numbers from one to ten inclusively, any number that begins a sentence, generic names that begin sentences, generic names when mentioned the first time in a paragraph, and compass points (i.e., north-east not NE).

Use the en-dash (–) when giving ranges of e.g., size, measurements, pages, geological stages, years, figure references, etc. (i.e., 4–7 µm, p. 56–59, Triassic–Jurassic, 1959–1963, Figure 3A–B, etc.), but use a hyphen (-) in compound words (e.g., north-east, well-preserved, self-pollination, S-haplotype).

**Abbreviations and symbols** should conform to those in *Biological Abstracts*. SI units (Système International d’Unités) should be used throughout (see <http://physics.nist.gov/cuu/Units/index.html>).

**Authorities for species** should either be given the first time the name is mentioned in the text or alternatively ‘Specimens investigated’ lists can be used to cite the authorities of species.

**Scientific names** of genera and taxa of lower rank must be in *italics*. Scientific names of genera and species should follow the International Plant Names Index, IPNI (see <http://ipni.org/ipni/plantnamesearchpage.do>) for plants and the Index Fungorum (see <http://www.indexfungorum.org/names/Names.asp>) for fungi.

Contributors to *Grana* are recommended to use the **palynological terms** adopted by the International Federation of Palynological Societies (IFPS), ‘Glossary of Pollen and Spore Terminology’ (Punt et al., 2007; doi:10.1016/j.revpalbo.2006.06.008) or ‘Pollen Terminology – An illustrated handbook’ (Hesse et al. 2009).

Note the difference between **contractions and abbreviations!** Abbreviations are words that are shortened by deletion of letters including the last letter and should end in a full stop.

Contractions are words shortened by the deletion of letters excluding the last letter of the word and should not terminate in a full stop. For example, ‘figures’ is contracted to ‘figs’ but ‘figure’ is abbreviated to ‘fig’. This also should be observed in reference lists: please note the difference between one editor, (Ed.), and two or more, (Eds).

Please further note that the **first paragraph after any main heading is not indented** but all subsequent paragraphs in the section are indented.

### ***Headings***

Three orders of heading are available. Pay particular attention to the formatting given:

1. **Results**
2. *Description of pollen grains*
3. *Exine structure.* — This heading is followed by a period, an em-dash and text on the same line (as shown here).

### ***Title***

The title should be: 1) concise and informative (short subtitles are encouraged), 2) be in bold with no caps except after the colon in a compound title, 3) include a short running headline of no more than 40 characters incl. spaces.

### ***Author names and affiliations***

Complete author names should be given here in full capitals, author affiliations are indicated by superscript numbers if more than one. Author affiliations are given in the next line in an abbreviated format (Institute, City, Country, but no e-mail address here) in regular italic font. The full correspondence address (including the e-mail address) is given below the base line of the cover page, including full postal details. Please see recent issues for the correct format.

### ***Abstract & keywords***

A short abstract not exceeding 250 words should appear directly below the affiliations. The abstract must be clear and concise and should distil in brief the important findings of the study. It should not be a summary of the paper.

Where the paper describes new taxa these should also be included.

**Keywords** : Three to ten keywords are required for each submission. These should not include words mentioned in the title.

### ***Introduction***

Begin the introduction on a new page. This section should be concise but provide the reader with enough up to date background information to understand the problems raised and discussed in the paper. Do not include any results in this section. This section should have no heading.

### ***Materials and methods***

This section should outline in enough detail the nature of the material and the methods used so another researcher could repeat them. Do not include any results in this section.

### ***Results***

Primary data and observations that form the basis for the Discussion that follows should be included in this section. Avoid the use of statements such as “Table I shows ...” or “... as shown in Figure 1” or “In Table I ...”. Acceptable usage is a statement or sentence followed by the relevant reference in parentheses (Figure 1, Table I).

Note that Figure, Table and Appendix are spelt out in full and are neither abbreviated (i.e., fig. tab., app.) nor contracted (i.e. figs, tabs, apps).

### ***Discussion***

This section should provide an interpretation of the results and should not contain any additional primary results or data.

### ***Conclusions***

Please include a separate Conclusion outlining the importance of the work and the main findings.

### ***Acknowledgements***

Should be inserted after the Conclusions. When acknowledging individual persons, always give affiliation, city, country; avoid titles.

### ***Specimens investigated***

Where necessary a list of specimens examined can be included here. As a guide format them in the following manner:

Taxon, Authority(ies). Country: Province etc., Sampling site. Collector(s), Date. Collection: Name, No, Herbarium (Official acronym/No.).

New taxa should appear in bold. Please consult the latest issue of the journal for style.

### ***References in text***

The references should be cited in the text as, Kuprianova (1973a) or where referring to particular text or figures as “... with short colpi spirally arranged (Dessein et al. 1978, figures 55, 56)” or “... distant transport of grass inconsiderable (Hyde & Williams 1945, p. 95)”. When referring to a figure from another paper, do not capitalise the word ‘figure’; this will help distinguish between the figures you are referring to and the Figures in your own paper. References with three or more authors should be abbreviated to first author et al. (not italicised and with a period after the ‘al.’) in the text.

Note that the authors are **not** separated from the year by a comma, and that they should appear in chronological order. Where multiple papers are cited the papers should be separated by semicolons (e.g., Cantrill 1995, 1996; Friis et al. 2002a; Poole et al. 2005).

In the case of authors of plant taxa: *Sida ammophila* F. Muell. 1967. Authority names of plant taxa (genera and species) should follow The International Plant Names Index, IPNI ([www.ipni.org/](http://www.ipni.org/)). Standard abbreviation of author names may be used; in case of two or more authors, use the Latin 'et'.

In referring to personal communications please follow this style (C. Darwin, pers. comm., 13 January 2014).

Note the usage of 'and' versus the ampersand ('&') and Latin 'et' so that in a sentence Hyde **and** Williams (1945), in parentheses (Hyde **&** Williams 1945), but in a plant authority (Hyde **et** Williams 1945).

### ***Reference list***

Only printed publications cited in the text, tables, and figures should appear in the Reference list. Pay particular attention to ensure all cited references appear in the list and that all references in the list are cited. Please cross-check these before submitting your article. List references alphabetically under the author or editor name regardless of the number of authors. Where more than one publication by the same set of authors is listed these should be listed chronologically. Use **Arabic numerals for volume numbers, do not include part numbers** except where the journal paginates each part individually from page one. **Provide journal titles in full.**

**Pay particular attention to the format of the references;** please consult the latest issue of the journal for style. Where a title has been transliterated or translated, the original language should be stated in parentheses at the end of the reference. Please check for **correct spelling** in all titles, especially in non-English titles (i.e. in German titles initial capital letters should be used for proper nouns)!

You may download an [Endnote style for Grana](#) . On your computer, browse to "Local Disc (C:)/Program Files/Endnote #/" and copy or move the file sgra.ens into the "Styles" folder (NOTE: the symbol # should be replaced by the version of your Endnote, e.g. Endnote 9). In your Endnote application, you may then select the Grana style using the drop-down menu or by clicking "Select Another Style".

### *Examples*

#### *Research papers.*

Gabarayeva NI, Grigorjeva VV. 2013a. Experimental modelling of exine-like structures. *Grana* 52: 241–257.

#### *Papers published online ahead of print*

Almaguer M, Aira M-J, Rodríguez-Rajo F-J, Rojas T-I. 2013. Study of airborne fungus spores by viable and non-viable methods in Havana, Cuba. Grana, in press.  
doi:10.1080/00173134.2013.829869.

**Please note:** Include the doi number: A search for the doi will always be directed to the most recent version, so the reader will be able to find the final published paper as soon as it appears.

#### *Online-only journals*

Sivaguru M, Mander L, Fried G, Punyasena SW. 2012. Capturing the surface texture and shape of pollen: A comparison of microscopy techniques. PLoS ONE 7: e39129.  
doi:10.1371/journal.pone.0039129.

**Please note:** Include the doi number after the volume and article number.

#### *Book.*

Hesse M, Halbritter H, Weber M, Buchner R, Frosch-Radivo A, Ulrich S. 2009. Pollen terminology – An illustrated handbook. Wien, New York: Springer.

#### *Book chapter.*

Blackmore S. 1992. Scanning electron microscopy. In: Nilsson S, Praglowski J, eds. Erdtman's handbook of palynology, 403–431. Copenhagen: Munksgaard.

#### *Conference proceedings/abstracts.*

Polevova S. 2009. An attempt of ion etching processing for revealing surface structure of modern pollen grains. Abstracts of the 8th European Palaeobotany-Palynology Conference, Budapest, Hungary, 6–10 July 2009, 18–19.

**Please note:** Include title, locality and dates of the conference.

#### *Theses.*

Harley MM. 1996. Palm pollen and the fossil record. PhD Thesis, University of East London, London, UK.

#### *Software/Databases.*

Statsoft. 2011. Statistica, Version 7.1. Statsoft, Inc., Tulsa, OK, <http://www.statsoft.com>.

Weber M, Buchner R. 2013. PalDat – Palynological Database. <http://www.paldat.org>; accessed 24 March 2013.

#### **Tables**

Each table has to be uploaded as a separate file. They should be numbered with **Roman numerals (e.g., I, II, III, ...)** according to their sequence in the text, and have a short self-explanatory heading. Use SI units. Tables should not include vertical rules, but horizontal rules should separate column headings from the content. Authors should keep in mind **the page layout of the journal when designing tables**. Tables that fit onto one printed page are preferred. Detailed explanations of symbols, units, and abbreviations should follow below the table.

### *Illustrations*

Please pay particular attention to the guidelines below. The editorial office cannot undertake preparation of manuscripts and illustrations not conforming to journal style. **Manuscripts of insufficient quality will be returned immediately without refereeing**. A high standard of illustration (both line and photo) is an editorial priority.

All figures must be sent electronically and at adequate resolution, care and attention to these guidelines are essential as importing graphics packages can often be problematic.

- Figures must be saved **individually and separate to text** . Please do not embed figures in the manuscript file.
- All illustrations should be prepared for printing to fit 80 × 240 mm (column width) or 169 mm in width by up to 240 mm in length (full page). **It is preferred that the full-page length is not used and that authors keep in mind that the caption will be placed underneath the figure** . In the event that full-page length is necessary for plates, captions will have to appear on adjacent pages.
- Computer prepared photographic images must have a minimum resolution of **350 dpi** at the final publication size, colour figures minimum **600 dpi** . Lower resolutions are not acceptable.
- Figures should be numbered with **Arabic numerals (e.g., 1, 2, 3, ...)** according to their sequence in the text.
- All figures must be numbered in the order in which they appear in the paper (i.e., Figure 1, Figure 2). In multi-part figures, each part should be labelled (i.e., Figure 1A, Figure 1B).
- Avoid the use of colour and tints for purely aesthetic reasons.
- Avoid **SEM and light microscopy images on the same** multi-part figure.
- Figure captions must be saved **separately as part of the file containing the complete text of the paper** , and numbered correspondingly.
- The filename for the graphic should be descriptive of the graphic (e.g., Figure1.tiff, Figure2a.eps).
- Files should be saved and submitted as one of the following file formats: TIFF (Tagged Image File Format; **preferred!** ), PostScript or EPS (Encapsulated PostScript), and should contain all the necessary font information and the source file of the application (e.g., CorelDraw/Mac, CorelDraw/PC). For reducing file sizes, LZW compression while saving the file may be used.
- Please submit line art as CorelDraw, Adobe Illustrator, or EPS files. These must be at a minimum resolution of **800 dpi** at publication size. High resolution may be necessary where fine line detail is present. Graphical results (graphs, diagrams, etc.) from statistical software packages might be **printed from the original software directly into PDF files**, which then can be submitted.



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Compound figures with more than one micrograph or photo should be referred to by a single figure reference (e.g., Figure 1), and individual parts should be labelled with capitalised letters in the **lower left-hand corner**. Lettering should be of a **sans-serif type** (i.e., fonts without serifs such as Arial) with a minimum published size of 4.2 mm (12 pt). Lettering should run from left to right and illustrations should be separated from each other by a **uniform gutter of 2 mm**. Avoid mixing SEM, TEM and LM micrographs on the same compound figure, as the differences in contrast and tonal range between each type of micrograph make it impossible to adequately render the plate during printing. The principle of orientation of pollen grains/spores suggested by G. Erdtman (1952, p. 17) should be applied with polar axes oriented vertically. Descriptive labelling in the figures should be clearly readable, and all lettering should have a minimum published size of 6 pt (2.1 mm) for labelling items on photographs or in line art is recommended and a maximum size of 10 pt is suggested.

Use a **scale bar** to indicate magnifications and place in the lower right corner if possible.

Note electronic scale bars and lettering produced by SEM graphics packages are inadequate and must be **removed**.

Computer drawn figures are accepted provided they are of high quality. **Please note that graphs produced by many statistic packages are rarely adequate.** In particular, letter quality on axes and captions are often poor. Such figures should **be printed from the original software into PDF files** or exported into an accepted graphics package and lettering rendered using a text function. Authors should note that .dot, .bmp, and .pat fillings should be avoided. Do not use postscript filling patterns as these are often based on bitmap patterns that result in screening patterns during final reproduction. When filling illustrations, use fills such as lines, tints or solids. A minimum of 4% tint can be reproduced. Line width minimum is 0.25 pt (0.09 mm). Also avoid the use of bitmap scans to render text and detail. Text should be saved as text at a minimum text size of 6 pt (2.1 mm).

Microsoft Excel graphs are also acceptable. Note that vertical axes must all be at the same scale especially where the paper compares between them. Otherwise they should be produced as separate figures. Avoid 3d plots when presenting 2d data.

### ***Table and figure captions***

Figure captions should include a statement at the end of each caption about reproduction size (e.g., at full page width, at column width). They should be typed in the journal format. Explanations should be brief and authors should keep in mind that captions will be placed below figures.

*Example*

**Figure 1.** **A.** Pollen grain of *Helianthus annuus*, equatorial view; specimen NRM S140358. **B.** Pollen grain of *Helianthus annuus*, polar view; specimen NRM S140359. **C.** Pollen grain of *Helianthus annuus*, cross-section through pollen grain wall; specimen NRM S140360. **D.** Pollen of *Helianthus annuus*, overview, note the particular surface; specimen NRM S140358. Abbreviations: c, colpi; e, exine; pw, pollen wall. Scale bars: 100  $\mu\text{m}$  (A–C), 50  $\mu\text{m}$  (D).

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- [Guide to using mathematical scripts and equations.](#)

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Manuscripts may be submitted in any standard editable format, including Word and EndNote. These files will be automatically converted into a PDF file for the review process. LaTeX files should be converted to PDF prior to submission because ScholarOne Manuscripts is not able to convert LaTeX files into PDFs directly. All LaTeX source files should be uploaded alongside the PDF.

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