

Preparing text for GSL publications

This document sets out instructions for the preparation of text within Geological Society books and journals. It is designed to be used along with 'Information for Authors' for the relevant journal or book series. Information about page size, submission and APCs, which vary, can be found in those pages.

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Layout of manuscript

Prepare the text of your paper using Word, LaTeX or any word-processing package that allows you to save/export as rich-text format (rtf). For tables, use Word, LaTeX, Excel or a package that allows you to save/export as rtf or comma-delimited (csv). Please give the files names that identify them clearly for editorial staff, e.g. SmithFig1. You do not need to layout the paper as it will appear in print. It does not matter which font you use for the text. Our submission system now extracts some manuscript information to make the submission process easier.

Ensure the first page of your text file is presented as follows:

- the full title
- an abbreviated title (< 40 characters) for use as a running header at the top of right-hand pages (in the typescript, put it under the other information)
- names of authors with initials first then surname; one full forename may be given if wished
- full postal addresses of all authors including the institution where the work was carried out (please have each address on a separate line)
- ORCiDs of authors preceded by their initials (optional)
- the corresponding author should be indicated with an asterisk
- the following should be listed at the end of the addresses: *Correspondence (author@institution.co.uk)

Abstract

Ideally, the abstract will be on the first page of your paper and should be 100–200 words. It should comprise a brief and factual summary of the contents and conclusions of the paper, refer to any new information that it may contain and give an indication of its relevance. You must not include references in the abstract. Try to avoid the phrases ‘is discussed’ and ‘is described’. Its end should be indicated.

Keywords

Only *GEEA* publishes keywords. The purpose of keywords is to assist indexing services in choosing appropriate words and phrases.

Capitals should be used only for start of sentences, proper nouns and acronyms. Ensure that O (oh), 0 (zero), 1 (one) and l (ell) are correctly used, especially in chemical formulae. Also ensure that β (Greek beta) and ß (German esset) are not confused.

Use inclusive and gender-neutral phrases, for example ‘the human race’ rather than ‘mankind’.

Figures and tables should be referred to in numerical order; they will generally be positioned close to the first citation. You must cite each figure and table at least once.

Footnotes are not normally allowed, except in tables.

Headings and paragraphs

The first paragraph of the main text, following the abstract, should not have a heading, i.e. do not use ‘Introduction’ or other such headings. It can be taken for granted that such material is introductory.

There are only three levels of headings. Please ensure that you use a distinctive style for each. Avoid numbering headings.

Acknowledgements

Acknowledgements must be brief and confined to persons (and organizations) that have made significant scientific and financial contributions. Omit titles and ranks. Discussions with colleagues can be taken for granted.

Author contributions

The Society is now gathering information on the role of each author on submitted papers. We are using the CRediT taxonomy developed by CASRAI: <http://casrai.org/credit>. This information appears in our published articles and is sent to CrossRef. Please supply author initials with CRediT role, for example:

MS: conceptualization (lead), data curation (lead), formal analysis (lead), investigation (lead), methodology (equal), writing – original draft (lead), writing – review and editing (lead); **JA:** conceptualization (supporting), formal analysis (supporting), investigation (supporting), methodology (equal), project administration (lead), software (lead).

Funding information

All funding sources should be properly acknowledged. Funder agency names should be provided according to the list at <http://search.crossref.org/funding> along with the relevant grant numbers.

Data availability statements

What are data availability statements?

Data availability statements, also known as data access statements, are used in publications to describe where the data directly underpinning the publication can be found and under what conditions they can be accessed. They are required for all publications arising from publicly funded research, and are a requirement of many funders' data policies and the RCUK Common Principles on Data Policy.

Where to provide the data access statement

From April 2020, the Geological Society of London's publications have required a data availability statement. The statement will appear in each journal article or book chapter as a separate section near the end of the article.

A formal data citation should also be included within the main references section.

What to include in your Data Access Statement

At the submission stage we will give our authors the following choices of statements from which to choose:

1. The datasets generated during and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS].
2. The data that support the findings of this study are available from [THIRD PARTY NAME] but restrictions apply to the availability of these data, which were used under licence for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of [THIRD PARTY NAME].
3. The datasets generated during and/or analysed during the current study are not publicly available due to [REASON(S) WHY DATA ARE NOT PUBLIC] but are available from the corresponding author on reasonable request.
4. All data generated or analysed during this study are included in this published article (and its supplementary information files).
5. Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.
6. [Free text box].

Helpful tips!

1. With regard to data that have restrictions, example justification for the data being subject to access restrictions could be ethical, legal or commercial sensitivity.
2. If you have used secondary or third party data information the data source should be credited by a data citation within the References section.
3. You should submit a Data Access Statement with your manuscript even if the persistent identifiers to your dataset have not yet been issued.
4. Authors should complete the sections within square brackets.
5. Unless your datasets are very large or highly restricted GSL recommends that authors should consider submitting data to a research data archive/repository, which will provide a persistent identifier (Digital Object Identifier (DOI) or accession number) for the data.
6. If you prefer to write your own statement, the University of Bath have a good selection of examples at <https://library.bath.ac.uk/research-data/archiving-and-sharing/data-access-statements>

References

Avoid making long lists of references pertaining to well-documented phenomena.

PhD and Masters theses and their equivalents may be referred to.

Unpublished material, such as abstract volumes available only at the conference, should not be referenced. Readers need to be able to access cited material.

Manuscripts submitted to a journal, but not yet accepted cannot be considered part of the literature and should not be referred to. Likewise, papers 'in preparation' are not acceptable. This applies to journals with dynamic/public peer-review where the manuscript is 'published' online after only a preliminary check, for example, the 'Discussions' versions of EGU journals. Such papers can only be considered part of the literature once they have been accepted for the main version of the journal.

Reference list

- Our typesetters reformat references into the correct style, so the style that you use is not important.
- Please ensure that the references are complete and accurate as inaccuracies in references mean that they will not link properly in the online version.
- Incomplete and missing references lead to excessive proof corrections and delays.
- The list must include only references cited within the text.

References should be ordered alphabetically with papers with one and two authors coming before 'et als', which are ordered chronologically. Please include the names of all authors and editors unless there are eight or more. Journal and series titles should be given in full. Please include a doi if known.

GSL styles are available in EndNote, Mendeley, Papers, RefWorks and Zotero. Please note that if you download a book citation from the Lyell Collection, it will not include all the information required (unfortunately we cannot change the way it works). For authors not using one of these reference management systems, examples of presentation are given below:

Journal article with pagination

Cassar, J. and Vella, A.J. 2003. Methodology to identify badly weathering limestone using geochemistry: Case study on the Lower Globigerina Limestone of the Maltese Islands. *Quarterly Journal of Engineering Geology and Hydrogeology*, **36**, 85–96, <https://doi.org/10.1144/1470-923602-007>

Journal article without pagination

Vermeesch, P. 2006. Tectonic discrimination diagrams revisited. *Geochemistry, Geophysics, Geosystems*, **7**, Q06017, <https://doi.org/10.1029/2005GC001092>

Edited book (with volume number)

Corfu, F., Gasser, D. and Chew, D.M. (eds) 2014. *New Perspectives on the Caledonides of Scandinavia and Related Areas*. Geological Society, London, Special Publications, **390**, <https://doi.org/10.1144/SP390.0>

Please include a DOI if available.

Book (with institutional author)

Metal Economics Group 2013. *Worldwide Exploration Trends 2013: A Special Report from SNL Metal Economics Group for the PDAC International Convention*. SNL Metals Economics Group, Halifax, Nova Scotia, Canada.

Book section in edited book (Book chapter with pagination)

Hambrey, M.J., Christoffersen, P. *et al.* 2007. Neoproterozoic glaciated basins: A critical review of the Snowball Earth hypothesis by comparison with Phanerozoic glaciations. *In*: Hambrey, M.J., Christoffersen, P., Glasser, N.F. and Hubbard, B. (eds) *Glacial Sedimentary Processes and Products*. Blackwell, 343–399.

MacDonald, A. and Gibson, G. 2006. The rise of sustainability: changing public concerns and governance approaches toward exploration. *Society of Economic Geologists Special Publications*, **12**, 127–1148.

Book section (Book chapter without pagination)

Bromhead E.N. 2018. The landslide-damaged Roman fort at Lympe in SE England. *Geological Society, London, Special Publications*, **473**, <https://doi.org/10.1144/SP473.9>

Lundmark, A.M., Saether, T. and Sørlic, R. 2014. Ordovician to Silurian magmatism on the Utsira High, North Sea: implications for correlations between the onshore and offshore Caledonides. *Geological Society, London, Special Publications*, **390**, 513–523, <http://doi.org/10.1144/SP390.21>

Conference proceeding

Coleman, J.L., Browne, G.H. and King, P.R. 2000. The inter-relationships of scales of heterogeneity in subsurface, deep water E & P Projects – Lessons learned from the Mount Messenger Formation (Miocene), Taranaki Basin, New Zealand. *In*:

Weimar, P., Bouma, A.H. and Perkins, B.F. (eds) *Deep-Water Reservoirs of the World*. GCSSEPM Foundation 20th Annual Research Conference Proceedings, 3–6 December, Houston, USA, 263–283.

Conference paper

Williams, G.J.J., Mansfield, M., McDonald, D.G. and Bush, M.D. 2004. Top-down reservoir modelling. Paper SPE 89974, presented at the SPE Annual Technical Conference and Exhibition, 26–29 September, Houston.

PhD thesis

Gibson, S.A. 1988. *The geochemistry, mineralogy and petrology of the Trotternish Sill Complex, northern Skye, Scotland*. PhD thesis, Kingston Polytechnic.

Map

Brabb, E.E., Pampeyan, E.H. and Bonilla, M.G. 1972. *Landslide Susceptibility in San Mateo County, California*. United States Geological Survey Miscellaneous Field Studies Map **MF-310**.

Website

World Nuclear Association 2010. Geology of Uranium Deposits, www.world-nuclear.org/info/Nuclear-Fuel-Cycle/Uranium-Resources/Geology-of-Uranium-Deposits/

Data and software citations

Please cite the data and software that were used in preparing the article. Please also cite any data referred to in the text. Data are considered citable products of research and should be listed in the Reference list.

A reference to the data should include:

- author
- year
- dataset title
- data repository or archive
- version
- persistent identifier

Examples:

Institute for Social and Economic Research and National Centre for Social Research, University of Essex 2011. *Understanding Society: Wave 1, 2009-2010* [computer file]. 2nd edn. UK Data Archive, Colchester, Essex, <https://doi.org/10.5255/UKDA-SN-6614-2>.

Smith, J. and Brown, D. 2014. *Late Cretaceous extension and Palaeogene rotation-related contraction in Central Anatolia recorded in the Aghan-Büyükkaya basin*. Figshare, <https://doi.org/10.6084/m9.figshare.12345>

A reference to software should include:

- Name of software
- Names of software authors/contributors
- Location/repository
- Citable DOI of software

Examples:

Vermeech, P. 2018. IsoplotR, <https://github.com/pvermees/IsoplotRgui>, <https://doi.org/10.1016/j.gsf.2018.04.001>

Mayne, M.J. 2019. Rcrust, <https://doi.org/10.6084/m9.figshare.c.4388291>

Tables

Tables should be saved in either separate files or included at the end of the text file.

If you are preparing a paper for online submission and using Excel, each table should have only one worksheet. The submission system cannot process files with multiple worksheets.

Please ensure that geographical coordinates of sample locations are given.

If you have large tables of data, please include only summaries in the main paper and provide the full data as Supplementary Material. Please provide such data as csv (comma delimited) files (you can do that in Excel).

Vertical rules should not be used and normally there should be only three horizontal rules (top and bottom of table, and under column headings).

Footnotes in tables should be marked using the following symbols in this order of preference: * † ‡ § ¶. Where there are more than five footnotes, superscript numbers can be used.

Tables should be headed thus:

Table 1. *Brief title in italics*

Capitals should be used only for the first word and proper nouns. There is no full stop at the end.

Explanation of the contents of tables should be brief and given under the table. The information should not duplicate that given in the text.

Analytical data in tables

If sample lists are being tabulated, give each a petrographic name and locality (include grid reference or longitude/latitude).

If chemical analyses are being tabulated, give the oxides in standard order: SiO₂, TiO₂, Al₂O₃, Fe₂O₃, FeO, MnO, MgO, CaO, Na₂O, K₂O, P₂O₅, CO₂, H₂O⁺, H₂O⁻.

Use Fe₂O₃^T or FeO^T if total Fe is being quoted.

Use bd to indicate that a component is below detection and na for one not analysed. These should be explained in the footnote.

Chemical analyses of rocks and minerals should not be recalculated to 100%. Original analytical figures should be quoted (check the summation for rounding errors). Ensure that the number of decimal places given is appropriate to the level of accuracy.

Representative analyses are generally preferable to averages. Averages should carry standard deviations.

Detailed guidance on the reporting of geochronometric data can be downloaded [here](#).

If full analytical data are not to be published in the paper, you should make these available as a Supplementary Material or deposit them in a recognized repository. GSL encourages authors to deposit data, software and samples/sample descriptions in trusted FAIR-aligned repositories (e.g. those using CoreTrustSeal certification), including those listed at <https://www.re3data.org/> and <https://fairsharing.org/>

Figure captions

These should be provided separate from the figures at the end of the script. They should begin '**Fig. 1.**' etc. Captions to composite parts of figures should be referred to thus: **(a)**, **(b)**, etc. (note that brackets are not bold). Figure captions should be intelligible without reference to the text. Where abbreviations are explained in the caption use this format: fa, first abbreviation; sa, second abbreviation. Do not use the equals sign. Avoid using 'see text for details' and similar wording. Please ensure that appropriate acknowledgements are used for figures taken from elsewhere. Details of the permissions required can be found in the illustration instructions and under 'Quotations' below.

Textual citations

- Use the author's name (no initial unless two or more references to authors with the same name and year are cited in the paper) and the year of publication (e.g. Smith 1991).
- Do not use 'op. cit.' etc.
- For two authors use Smith and Jones (1991) and for three or more use Smith *et al.* (1991).
- Note that no commas are used between name and date.
- Place in chronological order, separated by a semi-colon.
- If there is more than one reference by the same author, separate these dates with a comma. (Smith 1988, 1991; Jones and Smith 1989; Smith *et al.* 1990, 1992*a, b*).
- Specific pages or illustrations should be referred to thus: (Smith 1990, p. 30, fig. 2).

For personal communications or personal observations, whether verbal or written, use 'pers. comm.' or 'pers. obs' (upright type), with year where appropriate. Initials are optional, e.g. J.S. Smith (pers. comm. 2009)

Personal communications

We do not allow reference to personal communications. Information obtained privately (e.g. in conversation, correspondence or discussion with third parties and included within your manuscript as a personal communication) must not be used or reported without explicit, written permission from the party from whom the information originated. This written evidence should be supplied with your manuscript on submission.

Spellings and word usage

English-preferred spellings should be used (except for stratigraphical nomenclature and mineral names), e.g. dyke (not dike), palaeo- prefixes. Check that the correct spellings are used in the illustrations as well as in the text.

Useful references are: The New Shorter Oxford English Dictionary, Fowler's Standard English Usage, The Oxford Dictionary for Writers and Editors and specialist publications such as AGI Glossary (but not US spellings).

The ending '-ize' is used whenever there is an option. The exceptions (likely to occur in a scientific context) are:
advertise, advise, apprise (inform), arise, chastise, comprise, compromise, concise, demise, devise, disguise,
emprise, enterprise, excise, expertise, franchise, guise, improvise, incise, merchandise, practise, precise, premise,
prise (open), reprise, revise, supervise, surmise, surprise, televise, treatise.

Use '-yse', e.g. analyse.

Use 'geological', 'petrological' and 'lithological' rather than 'geologic' etc. 'Stratigraphic' or 'stratigraphical' are acceptable.

Pers. comm., etc., i.e., e.g., cf., v. are in upright type (with points as shown).

In situ, et al., c., sensu stricto/lato in italic.

The word 'data' is plural.

Outcrop is a noun; the verb is 'to crop out'.

'Watershed' means a drainage divide not, as in American usage, a drainage basin.

'Terrane' is used to describe a fault-bounded tectonic unit of regional extent that possesses a history unlike that of adjacent terranes and is thought to be far-travelled: hence allochthonous, displaced, exotic or suspect terrane. 'Terrain' should be employed more generally to describe a region characterized by distinctive geomorphological or geological attributes without implication that it is far-travelled.

Where they form part of the name of a recognized feature or event, fault, complex, orogeny, etc. should be capitalized.

Adjectives should not be used in place of nouns, e.g. volcanic rocks not volcanics. Likewise for plutonics, clastics, intrusives, seismic, etc. It should also be noted that stratigraphic system and series names are adjectives: use 'the Cambrian System/Period' not just 'the Cambrian'. Do not add -ian to Lower Paleozoic series names (i.e. Caradoc not Caradocian etc.).

Avoid soda and potash, use sodium, potassium, sodic, potassic, Na- or K- as appropriate.

Use relict not relic.

For chemical compounds use IUPAC nomenclature. You may include common names in addition, e.g. trichloroethene (trichloroethylene).

In isotope geochemistry use solidus only for ratios (e.g. Rb/Sr) but en-rule (see below) for dating methods (e.g. K–Ar).

Use capital for Sun, Moon, Earth and other planets.

Grid references should always be enclosed by square brackets.

Abbreviations

The use of abbreviations can make an article difficult to follow for the non-specialist, e.g. an undergraduate or someone planning to visit the area for the first time. Therefore you should avoid the use of abbreviations for local features and phenomena, unless the name is exceptionally long (more than about 30 characters).

Abbreviations and acronyms for methods, equipment and such like should be explained in full for the first usage. Abbreviations in common use (would an undergraduate know what it meant?) need not be spelled out.

Hyphens and dashes

Hyphens should be used in compound adjectives appearing before the noun (e.g. island-arc volcanic rocks). They are not required when the first half of the compound adjective is unmistakably an adverb (e.g. strongly sheared gneiss) or when the modifier is a compound proper name (e.g. Upper Cretaceous sediments).

En-rules (–), which are longer than hyphens, should be used in ranges and when the first part of a compound does not modify the second part (e.g. Carboniferous–Triassic, garnet–mica schist, Morvan–Cabrach area, gas–liquid chromatography, time–depth curve). They should not be used to replace 'to' in 'from 30 to 40' or 'and' in 'between 30 and 40'. Permo-Triassic, Afro-Arabian Shield, etc. take hyphens. (In Word they are inserted by CTRL + number-pad hyphen.)

Points of the compass

Cardinal points (north, south, east, west) should always be in full. Ones in between should always be abbreviated, even in proper nouns, (e.g. SE, NW, SE Asia). However, use southeasterly, north-northwestwards; note hyphenation.

Country names and disputed territories

The Geological Society remains neutral with regard to jurisdictional claims in published maps and institutional affiliations. For articles published in GSL publications, it is our policy to use the information provided by our authors.

Lists

Lists take up more space than normal text and their use should be carefully considered. Where they offer great enhancement of the argument, they should be laid out thus:

- they should begin with a colon;
- each item in the list should be only one phrase;
- the items should use bullet point, numbers or letters;
- the number/letter should be enclosed in parentheses;
- the phrases should end with a semi-colon;
- the only full stop should be at the end of the list.

It should be clear whether or not text following the list starts a new paragraph. Where the listed items comprise more than one sentence, they should not start with a colon; numbered paragraphs may be more appropriate in such cases.

Quotations

- Quotations should be enclosed in single quotation marks.
- Long quotations (more than 30 words) should be avoided, but if essential they should form separate paragraphs, indented from the left margin.
- Extracts from other sources should follow the spelling, punctuation, etc. of the original, and include the page number from which the quotation was taken.
- Quotations of more than 100 words require permission of the copyright holder to use the material 'in this and all subsequent editions of this Geological Society of London work, its ancillaries, and other derivative works in any form or medium, whether now known or hereafter developed, in all languages, for distribution through the world.' If you are not given the opportunity to include such detailed wording, you must at least obtain permission for print and online publication in perpetuity.
- The Society cannot accept temporary licences.

Equations, symbols and numbers

- Mathematical and chemical expressions should be numbered sequentially with the number in parentheses flush with the right margin. Equations are normally centred.
- Use \times for multiplication (not * or .).
- Greater than ($>$) and less than ($<$) signs should be used only with a scaled measurement, e.g. > 250 Ma.
- Use \approx for approximately equals only in equations (\sim means asymptotically equal to). Mathematical symbols should not be used as abbreviations in the text. Wt% is acceptable.
- In the text, specific quantities (scaled measurements) should be in figures. Numbers one to ten in the text should be written as words, unless part of a scaled measurement, e.g. '3 km' but 'three samples'. Numbers greater than ten should be written as figures. No commas, but group in threes above 9999, e.g. 1760 and 10 000. For numbers above 9999 powers are to be preferred, e.g. 2.51×10^4 .
- Do not contract ranges, i.e. 6000–7000, not 6–7000.
- Figures should not normally be used to open a sentence.
- Write 'about ten', but 'c. 1000' in a scaled measurement.
- Use a decimal point, not a comma.

Units

- The Society uses the SI systems of units. This is a flexible system; in most cases international units and abbreviations should be used. The Society, in common with most English language publishers allows exceptions, e.g. cm may be used in descriptive text but should be avoided in diagrams and scales (m and mm are the recommended units). Pascals (Pa) are the recommended units for pressure, but there is no objection to the use of bar and kbar (1 kbar = 0.1 GPa). Unusual units should be explained the first time they appear, e.g. 24 Tg (= 24×10^9 kg).
- Units should be abbreviated only when preceded by a figure, e.g. '10 mm' but 'hundreds of metres'. Abbreviation should be made without stops and with no 's' for plurals.
- Use $^{\circ}\text{C}$ (e.g. 540°C) and K (not $^{\circ}\text{K}$).
- Radius, diameter, day and month should not be abbreviated.
- The product of two units should be represented, e.g. Pa s (small space) and the quotient, e.g. m s^{-1} .

Dates and intervals

The Society will accept either the IUPAC-IUGS recommended scheme or the one proposed by its Stratigraphy Commission. Authors may use whichever is their preference, but please be consistent. For books, the volume editors might insist on consistency of style throughout their volume: it is up to them to let you know which style to follow.

The GSL Stratigraphy Commission recommends that Ga, Ma, ka, be used for dates and that myr and kyr be used for intervals of a million and thousand years respectively. On the other hand, IUPAC-IUGS recommends that Ma and ka mean a million and a thousand years respectively and that 'ago' or 'before present' be added if necessary where a date cannot be inferred from context. Other abbreviations for year are not acceptable in that scheme.

In addition, uncalibrated ^{14}C dates can be presented in the form xx ^{14}C ka BP and calibrated ones in the form xx cal ka BP.

References for dates and intervals:

Aubry, M.-P., Van Couvering, J.A., Christie-Blick, N., Landing, E., Pratt, B.R., Owen, D.E. and Ferrusquía-Villafranca, I. 2009. Terminology of geological time: Establishment of a community standard. *Stratigraphy*, **6**, 100–105. http://www.ldeo.columbia.edu/~ncb/Selected_Articles_all_files/25_Stratigraphy.6.100.pdf [Note that this does not exactly match the recommendations of the GSL Stratigraphy Commission.]

Holden, N.E., Bonardi, M.L., De Biève, P., Renne, P.R. and Villa, I.M. 2011. IUPAC-IUGS common definition of and convention on the use of the year as a derived unit of time (IUPAC Recommendations 2011). *Pure and Applied Chemistry*, **83**, 1159–1162, <http://doi.org/10.1351/PAC-REC-09-01-22>

Stratigraphy

Authors should refer to 'A guide to stratigraphical procedure' (Geological Society Professional Handbook), paying particular attention to the following sections. Authors are also referred to the [ICS Stratigraphic Chart](#). The Society's policy is to use international spellings for stratigraphical terms, so Paleozoic, rather than Palaeozoic, etc. British English will continue to be used for other words, for example, palaeontology.

Lithostratigraphical units

Fossils forming part of a lithostratigraphical unit name have a capital initial letter and are not italicized (e.g. Plenus Marls, Boueti Bed).

Biostratigraphy

Be especially careful over the nomenclature of biozones and their distinction from chronozones (see below). Fossil names forming part of a biostratigraphical unit name are italicized (e.g. *Alsatites liasicus* Biozone, or *liasicus* Biozone).

Chronostratigraphy

Only divisions with internationally agreed and ratified boundary stratotypes qualify as formal chronostratigraphical divisions. Units recognized as formally defined are listed periodically by the International Subcommittee on Stratigraphy in *Episodes*. In chronozones, fossil species names have a capital initial letter and are not italicized (e.g. Herveyi Chronozone).

Formal and informal names and use of capital initial letters

- Capital initial letters are used for expression of time (Early, Mid- or Late) only where reference to formally defined time divisions is made or intended; in all other instances, lower case initial letters should be used. Expression of relative position within a chronostratigraphical unit (i.e. lower, middle, upper) may be formal or informal, depending on context. Formal usage requires capital initial letters. Usage of lower, middle and upper in relation to lithostratigraphical units is generally informal.
- Acceptable abbreviations are Gp (Group), Fm (Formation), Mbr (Member), Sst (Sandstone), Slst (Siltstone), Mdst (Mudstone), Sh (Shale), Congl (Conglomerate), Lst (Limestone), but these should be spelled out in full on first use. Use of such abbreviations should be kept to a minimum in the text but can be used to full advantage in tables and diagrams.
- Avoid the use of phrases such as 'end Carboniferous' and 'top Cretaceous'. It is better to use 'latest Carboniferous' and 'uppermost Cretaceous', etc.
- More information on stratigraphical terms and usage can be found on the [ICS website](#).

Palaeontology

The most recent editions of the international codes of Botanical Nomenclature (ICBN) and Zoological Nomenclature (ICZN) should be followed. All type, figured and cited specimens should be accompanied with a museum catalogue number, and their full geological horizon and locality given. Authorities should be cited with a date and included in the reference list. To avoid an excessively long list, omit the date in the text. Synonymy lists should be in the same style as those in *Palaeontology* (e.g. 1996, **39**, 1068). Open nomenclature should follow Matthews (1973, *Palaeontology*, **16**, 713–719) and Bengston (1988, *Palaeontology*, **31**, 223–227). Note that a group of half-tone prints is referred to as a Figure, not a Plate. Photographs of fossils should be lit from the upper left. All photographic figures should include a scale bar.

Type and figured material

Type material (holotype and paratypes or syntypes, etc.) and figured specimens must be deposited in an accessible permanent public collection and catalogue numbers should be provided in the figure captions. Any datasets used in the description of a species should also be deposited in a permanent publicly accessible repository.

Mineralogy

Mineral nomenclature should follow the recommendations of the International Mineralogical Association Commission on New Minerals Nomenclature and Classification, e.g. hematite, baryte, analcime and feldspar. Note the discreditation of sphene (now titanite), acmite (now aegirine), titanite, barkevikite, basaltic hornblende, chalcocite, idocrase and hypersthene. More information can be found on the [IMA-CNMNC website](#).

Standardization of names is absolute, but there is less agreement over standardization of abbreviations of mineral names. We recommend: Whitney, D. L. and Evans, B. W. 2010. Abbreviations for names of rock-forming minerals. *American Mineralogist*, **95**, 185–187, <https://doi.org/10.2138/am.2010.3371>

Igneous rock nomenclature

Follow the IUGS recommendations of Le Maitre *et al.* (eds) 2002. *Igneous Rocks: A Classification and Glossary of Terms*. 2nd edn. Cambridge University Press.