biblatex-bath: Harvard referencing style as recommended by the University of Bath Library

Maintainer: Alex Ball*

Package v5.0 – 4 March 2022

1 Introduction

This package provides a biblatex style to format reference lists in the Harvard style recommended by the University of Bath Library.

1.1 Installation

The files you need are included in the zip archive available from GitHub. If you use the zip archive from CTAN, you will need to run `luatex biblatex-bath.dtx` to generate them.

You can use this style simply by copying all the `.bbx`, `.cbx`, `.dbx` and `.lbx` files into your working directory, that is, the directory holding the main `.tex` file for your document. If you want the style to be available for all your documents without having to copy the files over each time, you can install them using the instructions below.

1.1.1 Managed way

The latest stable release of biblatex-bath has been packaged for TeX Live and MiKTeX. If you are running TeX Live and have `tlmgr` installed, you can install the package simply by running `tlmgr install biblatex-bath`. If you are running MiKTeX, you can install the package by running `mpm --install=biblatex-bath`. Both `tlmgr` and `mpm` have GUI versions that you might find friendlier.

1.1.2 Automated way

A makefile is provided which you can use with the Make utility on UNIX-like systems:

- Running `make source` generates the derived files

    - `README.md`
    - `bath.bbx`, `bath.cbx`, `bath.dbx`
    - `english-bath.lbx`, `british-bath.lbx`
    - `biblatex-bath.bib`
    - `biblatex-bath.ins`

- Running `make` generates the above files and also `biblatex-bath.pdf`. Ensure you have (at least) the luatexja, adobemapping and [ipaex] packages installed first.

- Running `make inst` installs the files in the user's TeX tree. You can undo this with `make uninst`.

- Running `make install` installs the files in the local TeX tree. You can undo this with `make uninstall`.

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*To contact the maintainer about this package, please visit the repository where the code is hosted: https://github.com/alex-ball/bathbib.

1.1.3 Manual way

You do not need to follow the first step if you downloaded the zip archive from GitHub. You do not need to follow the second step if you already have the PDF documentation.

1. Run `luatex biblatex-bath.dtx` to generate the source files.

2. Compile `biblatex-bath.dtx` with LuaLaTeX and Biber to generate the documentation. You will need, among other things, the luatexja, adobemapping and haranoaji packages installed; this is just for the documentation, not for the biblatex style itself.

3. If you are using TeX Live, find your home TeX tree using the following command at the command prompt/terminal:

   ```
   kpsewhich -var-value=TEXMFHOME
   ```

   If you are using MikTeX, consult the MikTeX manual entry for integrating local additions. You can use one of the roots (TeX trees) already defined – preferably one of the User roots – or set up a new one.

4. Move the files to your TeX tree as follows:

   - `source/latex/biblatex-bath`: `biblatex-bath.dtx`, (`biblatex-bath.ins`)
   - `tex/latex/biblatex-bath`: `bath.bbx`, `bath.cbx`, `bath.dbx`, `english-bath.lbx`, `british-bath.lbx`
   - `doc/latex/biblatex-bath`: `biblatex-bath.pdf`, `README.md`

5. You may then have to update your installation's file name database before TeX and friends can see the files.

2 Using the style

This style has been tested with biblatex versions 3.12 and 3.14.

To use the style, specify it when you load biblatex. To get the sorting order of your *citations* right, specify the `ynt` sorting scheme. To avoid possible inconsistencies (e.g. in how disambiguation letters are assigned), force all entries to use the global reference context:

```
\usepackage[style=bath,sorting=ynt]{biblatex}
\assignrefcontextentries[]{*}
```

Remember also to specify your `.bib` file in the preamble:

```
\addbibresource{file.bib}
```

To get the sorting order of your *references* right, create a new reference context just before you print your bibliography, using the `nyt` sorting scheme:

```
\newrefcontext[sorting=nyt]
\printbibliography
```

If you forget these extra steps, the `nyt` sorting scheme will be used throughout.

To make a citation in the text, use the key that corresponds to the entry in your `.bib` file:

```
While collections can be supplemented by other means \autocite{devlin.etal2021ipp},
the absence of an invisible collection amongst historians is noted by
\textcite[556]{stieg1981inh}. It may be, as \textcite{burchard1965hhl} points
out, that they have no assistants or are reluctant to delegate, or it may be
down to economic factors \autocite{adams2009tc1, adams2014tc2, adams2017tc3,
gb.pa2014}\dots
```

While collections can be supplemented by other means (Devlin, Martin and Ostrovnaya, 2021), the absence of an invisible collection amongst historians is noted by Stieg (1981b, p.556). It may be, as Burchard (1965) points out, that they have no assistants or are reluctant to delegate, or it may be down to economic factors (Adams, 2009; 2014; *Pensions Act 2014*; Adams, 2017)...

Please refer to the documentation for biblatex for the full range of commands available for in-text citations.

It is strongly recommended to use Biber in place of BibTeX to process your references, as the style relies on Biber functionality to deal with some of the more exotic types of entry.

3   Breaking changes between versions

The following sections list implementation changes that might affect the way in which you write your bibliography database files.

In addition to the changes listed, when upgrading between major versions, you should expect some changes in formatting relating to the evolution of the Harvard (Bath) style itself. Some of the style's internal settings and structures may also change without warning.

3.1   Version 2

- The code for styling legal references has been completely overhauled, so you can represent them more semantically in your bibliography file. The examples below show the fields you should now use. As far as possible they have been made consistent with the biblatex-oscola style, a specialist style implementing the *Oxford Standard for the Citation of Legal Authorities*, to enable the same entries to be used with both styles.

  For the sake of backwards compatibility, the version 1 semantics still work, but should be considered deprecated; support may be withdrawn in future (major) versions of this style.

- In version 1, the `titleaddon` field was printed unadorned, so you had to supply your own brackets. This was to allow greater freedom to 'hack' entries.

  With version 2, you should not need to resort to such dirty tricks, so the style now applies the brackets for you, in common with styles such as biblatex-apa. Again, for the sake of backwards compatibility, before it does this it strips off any brackets you may have added by hand around your field value.

There is now a companion BibTeX style available (`bathx` in version 2+ of the `bath-bst` package) which is compatible with this style in the sense that it will render the same `.bib` file the same way, so long as some adjustments are made that won't affect the biblatex rendering (mainly concerning the handling of dates).

3.2   Version 3

- Journal titles are now coerced to sentence case, so any capital letters you want to keep need to be protected with braces.

- Entries of type `unpublished` are now explicitly marked as unpublished.

- With entry types that usually expect an `institution` or `organization` instead of a `publisher`, if you gave a `publisher` in earlier versions the `institution`/`organization` would be ignored. Now they are printed before the publication block.

- Some changes to the Harvard (Bath) style cannot be applied automatically (e.g. the update to how standards are referenced), so you may need to update your .bib file accordingly.

3.3 Version 5

- Series names (except those in `legislation` and `jurisdiction` entries) are now coerced to sentence case, so any capital letters you want to keep need to be protected with braces.

- The '[Online]' tag is now also triggered by `urldate`/`urlyear`.

- The style now sets `\bibhang` to 0pt instead of `\parindent` (or 1em).

4 Examples

The examples below are shown in three parts. The first, marked with ▤, shows an extract from the *Referencing guide: Harvard Bath* or *Referencing images*. The second, marked with ✿, shows the reference as formatted by `biblatex`. The last shows how the reference was entered in the `.bib` file. The bottom right corner shows the source of the example: 'RX' indicates the 'Reference examples (A-Z)' section of the Guide; 'RL' indicates the 'Organise a reference list' section of the Guide; 'RI' indicates *Referencing images*.

You may notice that the examples tend to use BibTeX aliases and conventions for fields (e.g. `address`, `journal`, `year`) rather than the native `biblatex` fields. This is simply to ease transitions to and from BibTeX, and not a symptom of recalcitrance on the part of the author.

4.1 Books and book chapters

Book with author(s)

> ▤ Rang, H.P., Dale, M.M., Ritter, J.M., Flower, R.J. and Henderson, G., 2012. *Rang and Dale's pharmacology.* 7th ed. Edinburgh: Elsevier Churchill Livingstone.
> ✿ Rang, H.P., Dale, M.M., Ritter, J.M., Flower, R.J. and Henderson, G., 2012. *Rang and Dale's pharmacology.* 7th ed. Edinburgh: Elsevier Churchill Livingstone.

```
@book{rang.etal2012rdp,
  author = {Rang, H. P. and Dale, M. M. and Ritter, J. M. and Flower, R. J. and Henderson, G.},
  year = {2012},
  title = {Rang and {Dale's} Pharmacology},
  edition = {7},
  address = {Edinburgh},
  publisher = {Elsevier Churchill Livingstone}}
```
RX

> ▤ Open University, 1972. *Electricity and magnetism.* Bletchley: Open University Press.
> ✿ Open University, 1972. *Electricity and magnetism.* Bletchley: Open University Press.

```
@book{ou1972em,
  author = {{Open University}},
  year = {1972},
  title = {Electricity and Magnetism},
  address = {Bletchley},
  publisher = {Open University Press}}
```
RX

📖 Solomon, M.R., Askegaard, S., Hogg, M. and Bamossy, G.J., 2019. *Consumer behaviour: a European perspective.* 7th ed. Harlow: Pearson.

⚙ Solomon, M.R., Askegaard, S., Hogg, M. and Bamossy, G.J., 2019. *Consumer behaviour: a European perspective.* 7th ed. Harlow: Pearson.

```
@book{solomon.etal2019cbe,
  author = {Solomon, M. R. and Askegaard, S. and Hogg, M. and Bamossy, G. J.},
  year = {2019},
  title = {Consumer Behaviour: a {European} Perspective},
  edition = {7},
  address = {Harlow},
  publisher = {Pearson}}
```
RX

Book with editor(s) instead of author(s)

📖 Rothman, K.J., Greenland, S. and Lash, T.L., eds, 2008. *Modern epidemiology.* 3rd ed. Philadelphia, Pa.: Lippincott Williams & Wilkins.

⚙ Rothman, K.J., Greenland, S. and Lash, T.L., eds, 2008. *Modern epidemiology.* 3rd ed. Philadelphia, Pa.: Lippincott Williams & Wilkins.

```
@book{rothman.etal2008me,
  editor = {Kenneth J. Rothman and Sander Greenland and Timothy L. Lash},
  year = {2008},
  title = {Modern Epidemiology},
  edition = {3},
  address = {Philadelphia, Pa.},
  publisher = {Lippincott Williams \& Wilkins}}
```
RX

Electronic book

📖 Haynes, W.M., ed., 2014. *CRC handbook of chemistry and physics* [Online]. 94th ed. Boca Raton, Fla.: CRC Press/Taylor and Francis. Available from: http://www.hbcpnetbase.com [Accessed 16 June 2016].

⚙ Haynes, W.M., ed., 2014. *CRC handbook of chemistry and physics* [Online]. 94th ed. Boca Raton, Fla.: CRC Press/Taylor and Francis. Available from: http://www.hbcpnetbase.com [Accessed 16 June 2016].

```
@book{haynes2014crc,
  editor = {Haynes, W. M.},
  year = {2014},
  title = {{CRC} Handbook of Chemistry and Physics},
  edition = {94},
  address = {Boca Raton, Fla.},
  publisher = {CRC Press/{Taylor and Francis}},
  url = {http://www.hbcpnetbase.com},
  urldate = {2016-06-16}}
```
RX

⊟ Blockley, D., 2021. *Engineering: a very short introduction* [Online]. Oxford: Oxford University Press. Available from: <https://www.amazon.co.uk/kindle> [Accessed 30 June 2021].

✿ Blockley, D., 2021. *Engineering: a very short introduction* [Online]. Oxford: Oxford University Press. Available from: <https://www.amazon.co.uk/kindle> [Accessed 30 June 2021].

```
@book{blockley2021evs,
  author = {Blockley, D.},
  year = {2021},
  title = {Engineering: a Very Short Introduction},
  address = {Oxford},
  publisher = {Oxford University Press},
  url = {https://www.amazon.co.uk/kindle},
  urldate = {2021-06-30}}
```
RX

Book known by its title

♀ Use the most appropriate `reference` entry type instead of, say, `book` or `collection`.

⊟ British National Formulary, 2020. 79th ed. London: Pharmaceutical Press.

✿ British National Formulary, 2020a. 79th ed. London: Pharmaceutical Press.

```
@reference{bnf2020,
  year = {2020},
  title = {{British National Formulary}},
  edition = {79},
  address = {London},
  publisher = {Pharmaceutical Press}}
```
RX

⊟ British National Formulary, 2020. 79th ed. *Aspirin.* London: Pharmaceutical Press.

✿ British National Formulary, 2020b. 79th ed. *Aspirin.* London: Pharmaceutical Press.

```
@inreference{aspirin2020bnf,
  title = {Aspirin},
  year = {2020},
  booktitle = {{British National Formulary}},
  edition = {79},
  address = {London},
  publisher = {Pharmaceutical Press}}
```
RX

ⓘ If you use the BibTEX backend, you will have to repeat the contents of the `booktitle` field in the `sorttitle` field yourself to ensure the entry is placed correctly in the reference list. If you use Biber, this is done automatically for you.

British National Formulary, 2019. *Aspirin* [Online]. London: Pharmaceutical Press. Available from: https://www.medicinescomplete.com/#/content/bnf/_456850132 [Accessed 26 November 2019].

British National Formulary, 2019. *Aspirin* [Online]. London: Pharmaceutical Press. Available from: https://www.medicinescomplete.com/#/content/bnf/_456850132 [Accessed 26 November 2019].

```
@inreference{aspirin2019bnf,
  title = {Aspirin},
  year = {2019},
  booktitle = {{British National Formulary}},
  address = {London},
  publisher = {Pharmaceutical Press},
  url = {https://www.medicinescomplete.com/#/content/bnf/_456850132},
  urldate = {2019-11-26}}
```

RX

Chapter/paper from a collection (by different authors) in an edited book

Burchard, J.E., 1965. How humanists use a library. In: C.F.J. Overhage and J.R. Harman, eds. *Intrex: report on a planning conference and information transfer experiments.* Cambridge, Mass.: MIT Press, pp.41–87.

Burchard, J.E., 1965. How humanists use a library. In: C.F.J. Overhage and J.R. Harman, eds. *Intrex: report on a planning conference and information transfer experiments.* Cambridge, Mass.: MIT Press, pp.41–87.

```
@incollection{burchard1965hhl,
  author = {Burchard, J. E.},
  year = {1965},
  title = {How Humanists use a Library},
  editor = {C. F. J. Overhage and J. R. Harman},
  booktitle = {Intrex},
  booksubtitle = {Report on a Planning Conference and Information Transfer Experiments},
  address = {Cambridge, Mass.},
  publisher = {MIT Press},
  pages = {41-87}}
```

RL

Reid, D.R., 1967. Physical testing of polymer films. In: S.H. Pinner, ed. *Modern packaging films.* London: Butterworths, pp.143–183.

Reid, D.R., 1967. Physical testing of polymer films. In: S.H. Pinner, ed. *Modern packaging films.* London: Butterworths, pp.143–183.

```
@incollection{reid1967ptp,
  author = {D. R. Reid},
  year = {1967},
  title = {Physical Testing of Polymer Films},
  editor = {S. H. Pinner},
  booktitle = {Modern Packaging Films},
  address = {London},
  publisher = {Butterworths},
  pages = {143-183}}
```

RX

4.2 Articles and periodicals

Journal article

> ⧉ Stieg, M.F., 1981a. Continuing education and the reference librarian in the academic and research library. *Library journal*, 105(22), pp.2547–2551.
> ✿ Stieg, M.F., 1981a. Continuing education and the reference librarian in the academic and research library. *Library journal*, 105(22), pp.2547–2551.
>
> ```
> @article{stieg1981cer,
>   author = {Stieg, M. F.},
>   year = {1981},
>   title = {Continuing Education and the Reference Librarian in the Academic and Research Library},
>   journal = {Library Journal},
>   volume = {105},
>   number ={22},
>   pages = {2547-2551}}
> ```
> RL

> ⧉ Stieg, M.F., 1981b. The information needs of historians. *College and research libraries*, 42(6), pp.549–560.
> ✿ Stieg, M.F., 1981b. The information needs of historians. *College and research libraries*, 42(6), pp.549–560.
>
> ```
> @article{stieg1981inh,
>   author = {Stieg, M. F.},
>   year = {1981},
>   title = {The Information Needs of Historians},
>   journal = {College and Research Libraries},
>   volume = {42},
>   number ={6},
>   pages = {549-560}}
> ```
> RL

> ⧉ Newman, R., 2010. Malaria control beyond 2010. *Brit. Med. J.*, 341(7765), pp.157–208.
> ✿ Newman, R., 2010. Malaria control beyond 2010. *Brit. Med. J.*, 341(7765), pp.157–208.
>
> ```
> @article{newman2010mcb,
>   author = {Newman, R.},
>   year = {2010},
>   title = {Malaria control beyond 2010},
>   journal = {{Brit.\@ Med.\@ J.\isdot}},
>   volume = {341},
>   number = {7765},
>   pages = {157-208}}
> ```
> RX

> ⧉ Wetzstein, G., Ozcan, A., Gigan, S., Fan, S., Englund, D., Soljacic, M., Denz, C., Miller, D.A.B. and Psaltis, D., 2020. Inference in artificial intelligence with deep optics and photonics. *Nature*, 588(7836), pp.39–47.
> ✿ Wetzstein, G., Ozcan, A., Gigan, S., Fan, S., Englund, D., Soljacic, M., Denz, C., Miller, D.A.B. and Psaltis, D., 2020. Inference in artificial intelligence with deep optics and photonics. *Nature*, 588(7836), pp.39–47.
>
> ```
> @article{wetzstein.etal2020iai,
>   author = {Wetzstein, G. and Ozcan, A. and Gigan, S. and Fan, S. and
>     Englund, D. and Soljacic, M. and Denz, C. and Miller, D. A. B. and
>     Psaltis, D.},
>   year = {2020},
>   title = {Inference in Artificial Intelligence with Deep Optics and Photonics},
>   journal = {Nature},
>   volume = {588},
>   number = {7836},
>   pages = {39-47}}
> ```
> RX

Electronic journal article

> Devlin, S.M., Martin, A. and Ostrovnaya, I., 2021. Identifying prognostic pairwise relationships among bacterial species in microbiome studies. *PLOS Computational Biology* [Online], 17(11). Available from: https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1009501 [Accessed 9 December 2021].
>
> Devlin, S.M., Martin, A. and Ostrovnaya, I., 2021. Identifying prognostic pairwise relationships among bacterial species in microbiome studies. *PLOS Computational Biology* [Online], 17(11). Available from: https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1009501 [Accessed 9 December 2021].

```
@article{devlin.etal2021ipp,
  author = {Devlin, S. M. and Martin, A. and Ostrovnaya, I.},
  year = {2021},
  title = {Identifying Prognostic Pairwise Relationships Among Bacterial
    Species in Microbiome Studies},
  journal = {{PLOS Computational Biology}},
  volume = {17},
  number = {11},
  url = {https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1009501},
  urldate = {2021-12-09}}
```
RX

> Steward, S., Connelly, D. and Robinson, J., 2020. Everything you should know about the coronavirus outbreak. *The pharmaceutical journal* [Online]. Available from: https://www.pharmaceutical-journal.com/news-and-analysis/features/everything-you-should-know-about-the-coronavirus-outbreak/20207629.article [Accessed 30 April 2020].
>
> Steward, S., Connelly, D. and Robinson, J., 2020. Everything you should know about the coronavirus outbreak. *The pharmaceutical journal* [Online]. Available from: https://www.pharmaceutical-journal.com/news-and-analysis/features/everything-you-should-know-about-the-coronavirus-outbreak/20207629.article [Accessed 30 April 2020].

```
@article{steward.etal2020eys,
  author = {Steward, S. and Connelly, D. and Robinson, J.},
  year = {2020},
  title = {Everything You Should Know About the Coronavirus Outbreak},
  journal = {The Pharmaceutical Journal},
  url = {https://www.pharmaceutical-journal.com/news-and-analysis/features/everything-you-should-know-about-the-coron
  urldate = {2020-04-30}}
```
RX

♀ If citing an article yet to be officially published, use the `pubstate` field with the keyword `inpress` for 'in press' and `inpreparation` or `submitted` (whichever is more accurate) for 'preprint'.

Liontou, C., Kontopodis, E., Oikonomidis, N., Maniotis, C., Tassopoulos, A., Tsiafoutis, I., Lazaris, E. and Koutouzis, M., 2019. Distal radial access: a review article. *Cardiovascular revascularization medicine* [Online], in press. Available from: https://www.sciencedirect.com/science/article/pii/S1553838919303367 [Accessed 19 June 2019].

Liontou, C., Kontopodis, E., Oikonomidis, N., Maniotis, C., Tassopoulos, A., Tsiafoutis, I., Lazaris, E. and Koutouzis, M., 2019. Distal radial access: a review article. *Cardiovascular revascularization medicine* [Online], in press. Available from: https://www.sciencedirect.com/science/article/pii/S1553838919303367 [Accessed 19 June 2019].

```
@article{liontou.etal2019dra,
  author = {Liontou, C. and Kontopodis, E. and Oikonomidis, N. and Maniotis, C. and
    Tassopoulos, A. and Tsiafoutis, I. and Lazaris, E. and Koutouzis, M.},
  year = {2019},
  title = {Distal Radial Access: a Review Article},
  journal = {Cardiovascular Revascularization Medicine},
  pubstate = {inpress},
  url = {https://www.sciencedirect.com/science/article/pii/S1553838919303367},
  urldate = {2019-06-19}}
```
RX

Preprint or trial study in a digital repository

Shah, I. and Corrick, I., 2016. *How should central banks respond to non-neutral inflation expectations?* Bath: University of Bath. *OPUS* [Online]. Available from: http://opus.bath.ac.uk [Accessed 4 May 2016].

Shah, I. and Corrick, I., 2016. *How should central banks respond to non-neutral inflation expectations?* Bath: University of Bath. *OPUS* [Online]. Available from: http://opus.bath.ac.uk [Accessed 4 May 2016].

```
@report{shah.corrick2016hsc,
  author = {Shah, I. and Corrick, I.},
  year = {2016},
  title = {How should central banks respond to non-neutral inflation expectations?},
  address = {Bath},
  institution = {University of Bath},
  library = {OPUS},
  url = {http://opus.bath.ac.uk},
  urldate = {2016-05-04}}
```
RX

📰 Ganju, V., 2021. *A study of EnGeneIC Dream Vectors (EDV's) packaged with the chemotherapy, E-EDV-D682 given simultaneously as non-targeted EDVs carrying an immune enhancer called EDV-GC, in participants with advanced pancreatic and other cancers whose disease has progressed after one or two treatment regimes, or where other standard therapies are not appropriate.* Sydney: University of Sydney. *Australian and New Zealand Clinical Trials Registry* [Online]. Available from: http://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?id=365258 [Accessed 29 April 2021].

⚙ Ganju, V., 2021. *A study of EnGeneIC Dream Vectors (EDV's) packaged with the chemotherapy, E-EDV-D682 given simultaneously as non-targeted EDVs carrying an immune enhancer called EDV-GC, in participants with advanced pancreatic and other cancers whose disease has progressed after one or two treatment regimes, or where other standard therapies are not appropriate.* Sydney: University of Sydney. *Australian and New Zealand Clinical Trials Registry* [Online]. Available from: http://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?id=365258 [Accessed 29 April 2021].

```
@report{ganju2021sed,
  author = {Ganju, V.},
  year = {2021},
  title = {A study of {EnGeneIC} {Dream} {Vectors} {(EDV's)} packaged with the chemotherapy,
    {E-EDV-D682} given simultaneously as non-targeted {EDVs} carrying an immune enhancer
    called {EDV-GC}, in participants with advanced pancreatic and other cancers whose disease
    has progressed after one or two treatment regimes, or where other standard therapies are
    not appropriate},
  address = {Sydney},
  institution = {University of Sydney},
  library = {Australian and New Zealand Clinical Trials Registry},
  url = {http://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?id=365258},
  urldate = {2021-04-29}}
```
[RX]

💡 The Harvard (Bath) style treats preprints as grey literature, and so the `report` entry type is the best match semantically. Use `library` to specify the name of the preprint repository.

In standard `biblatex`, you would typically use the natural entry type for the work and provide preprint details using the `eprinttype`, `eprintclass` and `eprint` fields.

Newspaper article

📰 Haurant, S., 2004. Britain's borrowing hits £1 trillion. *The Guardian*, 29 July, p.16c.
⚙ Haurant, S., 2004. Britain's borrowing hits £1 trillion. *The Guardian*, 29 July, p.16c.

```
@article{haurant2004bbh,
  author = {Haurant, S.},
  date = {2004-07-29},
  title = {Britain's Borrowing Hits \pounds 1 Trillion},
  journal = {{The Guardian}},
  pages = {16c}}
```
[RX]

📰 The Independent, 1992. Picking up the bills. *The Independent*, 4 June, p.28a.
⚙ The Independent, 1992. Picking up the bills. *The Independent*, 4 June, p.28a.

```
@article{independent1992pub,
  author = {{The Independent}},
  date = {1992-06-04},
  title = {Picking Up the Bills},
  journal = {{The Independent}},
  pages = {28a}}
```
[RX]

⬛ Cogley, M., 2020. Corporate confidence slumps to record low. *The Telegraph* [Online],
4 May. Available from: https://www.telegraph.co.uk/business/2020/05/03/corporate-confidence-slumps-all-time-low/ [Accessed 5 May 2020].

⚙ Cogley, M., 2020. Corporate confidence slumps to record low. *The Telegraph* [Online],
4 May. Available from: https://www.telegraph.co.uk/business/2020/05/03/corporate-confidence-slumps-all-time-low/ [Accessed 5 May 2020].

```
@article{cogley2020ccs,
  author = {Cogley, M.},
  date = {2020-05-04},
  title = {Corporate Confidence Slumps to Record Low},
  journal = {{The Telegraph}},
  url = {https://www.telegraph.co.uk/business/2020/05/03/corporate-confidence-slumps-all-time-low/},
  urldate = {2020-05-05}}
```
RX

4.3 Conference papers

Conference paper (when proceedings have a named editor)

⬛ Crawford, G.I., 1965. Oxygen in metals. In: J.M.A. Lenihan and S.J. Thompson, eds.
Activation analysis: proceedings of a NATO Advanced Study Institute, 2–4 August 1964,
Glasgow. London: Academic Press, pp.113–118.

⚙ Crawford, G.I., 1965. Oxygen in metals. In: J.M.A. Lenihan and S.J. Thompson, eds.
Activation analysis: proceedings of a NATO Advanced Study Institute, 2–4 August 1964,
Glasgow. London: Academic Press, pp.113–118.

```
@inproceedings{crawford1965oim,
  author = {Crawford, G. I.},
  year = {1965},
  title = {Oxygen in Metals},
  editor = {J. M. A. Lenihan and S. J. Thompson},
  booktitle = {Activation Analysis},
  booksubtitle = {Proceedings of a {NATO} {Advanced} {Study} {Institute}},
  eventdate = {1964-08-02/1964-08-04},
  venue = {Glasgow},
  address = {London},
  publisher = {Academic Press},
  pages = {113-118}}
```
RX

Conference paper (when proceedings have no named editor or are part of a major series)

⬛ Soper, D., 1972. Review of bracken control experiments with asulam. *Proceedings of
the 11th British Weed Control Conference*, 15–17 November 1972, Brighton. Brighton:
University of Sussex, pp.24–31.

⚙ Soper, D., 1972. Review of bracken control experiments with asulam. *Proceedings of
the 11th British Weed Control Conference*, 15–17 November 1972, Brighton. Brighton:
University of Sussex, pp.24–31.

```
@inproceedings{soper1972rbc,
  author = {Soper, D.},
  year = {1972},
  title = {Review of Bracken Control Experiments with Asulam},
  booktitle = {Proceedings of the 11th {British} {Weed} {Control} {Conference}},
  eventdate = {1972-11-15/1972-11-17},
  venue = {Brighton},
  address = {Brighton},
  publisher = {University of Sussex},
  pages = {24-31}}
```
RX

4.4 Grey literature

Thesis/dissertation

▣ Burrell, J.G., 1973. *The importance of school tours in education.* Thesis (M.A.). Queen's University, Belfast.

✿ Burrell, J.G., 1973. *The importance of school tours in education.* Thesis (M.A.). Queen's University, Belfast.

```
@thesis{burrell1973ist,
  author = {Burrell, J. G.},
  year = {1973},
  title = {The Importance of School Tours in Education},
  type = {Thesis \parentext{M.A.}},
  school = {Queen's University, Belfast}}
```
RX

Report, working paper, or research briefing

▣ UNESCO, 1993. *General information programme and UNISIST.* (PGI-93/WS/22). Paris: UNESCO.

✿ UNESCO, 1993. *General information programme and UNISIST.* (PGI-93/WS/22). Paris: UNESCO.

```
@report{unesco1993gip,
  author = {{UNESCO}},
  year = {1993},
  title = {General Information Programme and {UNISIST}},
  address = {Paris},
  institution = {UNESCO},
  number = {PGI-93/WS/22}}
```
RX

▣ BRE, 2007. *Designing quality buildings: a BRE guide.* (Report 497). Bracknell: BRE.

✿ BRE, 2007. *Designing quality buildings: a BRE guide.* (Report 497). Bracknell: BRE.

```
@techreport{bre2007dqb,
  author = {{BRE}},
  year = {2007},
  title = {Designing Quality Buildings: a {BRE} Guide},
  address = {Bracknell},
  institution = {BRE},
  type = {Report},
  number = {497}}
```
RX

▣ Deneulin, S. and Dinerstein, A.C., 2010. *Hope movements: social movements in the pursuit of human development.* (Bath papers in international development and wellbeing, no. 8). Bath: University of Bath.

✿ Deneulin, S. and Dinerstein, A.C., 2010. *Hope movements: social movements in the pursuit of human development.* (Bath papers in international development and wellbeing, no. 8). Bath: University of Bath.

```
@report{deneulin.dinerstein2010hms,
  author = {Deneulin, S. and Dinerstein, A. C.},
  year = {2010},
  title = {Hope Movements: Social Movements in the Pursuit of Human Development},
  address = {Bath},
  institution = {University of Bath},
  series = {Bath Papers in International Development and Wellbeing},
  number = {no.~8}}
```
RX

ⓘ The style inserts a comma between the `series` and `number` fields, but does not insert one between `type` and `number`.

Standard

> 🗎 BSI, 1990. *BS 5605:1990 Recommendations for citing and referencing published material.* London: BSI.
> ⚙ BSI, 1990. *BS 5605:1990 Recommendations for citing and referencing published material.* London: BSI.
>
> ```
> @standard{bs5605:1990,
>   author = {{BSI}},
>   year = {1990},
>   title = {{BS}~5605:1990 {Recommendations} for Citing and Referencing Published Material},
>   address = {London},
>   organization = {BSI}}
> ```
> RX

> 🗎 ASTM, 2019. *ASTM D1655 - 19 Standard specification for aviation turbine fuels.* West Conshohocken, Pa.: ASTM.
> ⚙ ASTM, 2019. *ASTM D1655 - 19 Standard specification for aviation turbine fuels.* West Conshohocken, Pa.: ASTM.
>
> ```
> @standard{astm.d1655,
>   author = {{ASTM}},
>   year = {2019},
>   title = {{ASTM~D1655} - 19 {Standard} Specification for Aviation Turbine Fuels},
>   address = {West Conshohocken, Pa.},
>   organization = {ASTM}}
> ```
> RX

Patent

> 🗎 Phillipp Morris Inc., 1981. *Optical perforating apparatus and system.* European patent application 0021165A1. 1981-01-07.
> ⚙ Phillipp Morris Inc., 1981. *Optical perforating apparatus and system.* European patent application 0021165A1. 1981-01-07.
>
> ```
> @patent{pm1981opa,
>   author = {{Phillipp Morris Inc.}},
>   year = {1981},
>   title = {Optical perforating apparatus and system},
>   type = {European patent application},
>   number = {0021165A1. 1981-01-07}}
> ```
> RX

ⓘ Note that biblatex has special localisation keys for full patents and patent requests/ applications.

Unpublished written material and personal communications

> 🗎 Harris, G., 2013. *Focus group recommendations: internal task group report.* Unpublished.
> ⚙ Harris, G., 2013. *Focus group recommendations: internal task group report.* Unpublished.
>
> ```
> @unpublished{harris2013fgr,
>   author = {Harris, G.},
>   year = {2013},
>   title = {Focus group recommendations: internal task group report}}
> ```
> RX

◧ Hadley, S., 2015. *Biomechanics: introductory reading, BM289: sport biomechanics.* University of Bath. Unpublished.

✿ Hadley, S., 2015. *Biomechanics: introductory reading, BM289: sport biomechanics.* University of Bath. Unpublished.

```
@unpublished{hadley2015bir,
  author = {Hadley, S.},
  year = {2015},
  title = {Biomechanics: introductory reading, {BM289}: sport biomechanics},
  howpublished = {University of Bath}}
```

RX

◧ Thomas, D., 2015. Word count and referencing style. *Frequently asked questions discussion board: PHYS 2011: housing studies.* University of Bath. Unpublished.

✿ Thomas, D., 2015. Word count and referencing style. *Frequently asked questions discussion board: PHYS 2011: housing studies.* University of Bath. Unpublished.

```
@unpublished{thomas2015wcr,
  author = {Thomas, D.},
  year = {2015},
  title = {Word count and referencing style},
  booktitle = {Frequently asked questions discussion board: {PHYS} 2011: housing studies},
  howpublished = {University of Bath}}
```

RX

4.5 Audiovisual materials

Image

◧ NASA, 2015. *NASA astronaut Tim Kopra on Dec. 21 spacewalk* [Online]. Washington: NASA. Available from: http://www.nasa.gov/image-feature/nasa-astronaut-tim-kopra-on-dec-21-spacewalk [Accessed 7 January 2015].

✿ NASA, 2015. *NASA astronaut Tim Kopra on Dec. 21 spacewalk* [Online]. Washington: NASA. Available from: http://www.nasa.gov/image-feature/nasa-astronaut-tim-kopra-on-dec-21-spacewalk [Accessed 7 January 2015].

```
@image{nasa2015nat,
  author = {{NASA}},
  year = {2015},
  title = {{NASA} Astronaut {Tim} {Kopra} on {Dec.\@} 21 Spacewalk},
  address = {Washington},
  publisher = {NASA},
  url = {http://www.nasa.gov/image-feature/nasa-astronaut-tim-kopra-on-dec-21-spacewalk},
  urldate = {2015-01-07}}
```

RI

♡ You can use either the `publisher` or the `organization` field to record the source of the image.

📓 Iliff, D., 2006. *Royal Crescent in Bath, England - July 2006* [Online]. San Francisco: Wikimedia Foundation. Available from: https://commons.wikimedia.org/wiki/File:Royal_Crescent_in_Bath,_England_-_July_2006.jpg [Accessed 7 January 2016].

✿ Iliff, D., 2006. *Royal Crescent in Bath, England - July 2006* [Online]. San Francisco: Wikimedia Foundation. Available from: https://commons.wikimedia.org/wiki/File:Royal_Crescent_in_Bath,_England_-_July_2006.jpg [Accessed 7 January 2016].

```
@image{iliff2006rcb,
  author = {D. Iliff},
  year = {2006},
  title = {{Royal} {Crescent} in {Bath,} {England} - {July} 2006},
  address = {San Francisco},
  organization = {Wikimedia Foundation},
  url = {https://commons.wikimedia.org/wiki/File:Royal_Crescent_in_Bath,_England_-_July_2006.jpg},
  urldate = {2016-01-07}}
```
RI

📓 Anon., 1946. *Prototype electric bicycle displayed at the 'Britain Can Make It' exhibition organised by the Council of Industrial Design and held at the Victoria and Albert Museum, London, 1946. Designed by B. G. Bowden* [Photograph]. At: London. Design Council Slide Collection.

✿ Anon., 1946. *Prototype electric bicycle displayed at the 'Britain Can Make It' exhibition organised by the Council of Industrial Design and held at the Victoria and Albert Museum, London, 1946. Designed by B. G. Bowden* [Photograph]. At: London. Design Council Slide Collection.

```
@image{anon1946peb,
  author = {Anon\adddot},
  year = {1946},
  title = {Prototype electric bicycle displayed at the \enquote{Britain Can Make It} exhibition
    organised by the {Council} of {Industrial} {Design} and held at the {Victoria} and {Albert}
    {Museum}, {London}, 1946. {Designed} by {B.~G.} {Bowden}},
  titleaddon = {Photograph},
  address = {London},
  library = {Design Council Slide Collection}}
```
RI

♡ Use the `library` field to record the archive and register number. If the image is on display rather than archived, use `institution` instead for the museum, gallery or building. If you also wish to provide the name of the organisation that published the image, use the `publisher` field if the location you provide relates to the publisher, but the `organization` field if the location relates to the archive.

Map

📓 Andrews, J. and Dury, A., 1773. *Map of Wiltshire*, 1 inch to 2 miles. Devizes: Wiltshire Record Society.

✿ Andrews, J. and Dury, A., 1773. *Map of Wiltshire*, 1 inch to 2 miles. Devizes: Wiltshire Record Society.

```
@manual{andrews.dury1773wilts,
  author = {Andrews, J. and Dury, A.},
  year = {1773},
  title = {Map of {Wiltshire}},
  series = {1 inch to 2 miles},
  address = {Devizes},
  publisher = {Wiltshire Record Society}}
```
RX

ⓘ The `book` entry type would also work for this reference.

▤ Ordnance Survey, 2020. *Street view map of University of Bath* [Online], 1:5000, OS VectorMap® Local. Available from: https://digimap.edina.ac.uk/roam/map/os [Accessed 30 April 2020].

✿ Ordnance Survey, 2020. *Street view map of University of Bath* [Online], 1:5000, OS VectorMap® Local. Available from: https://digimap.edina.ac.uk/roam/map/os [Accessed 30 April 2020].

```
@manual{os2020bath,
  author = {{Ordnance Survey}},
  year = {2020},
  title = {Street view map of {University of Bath}},
  series = {1:5000, {OS VectorMap® Local}},
  url = {https://digimap.edina.ac.uk/roam/map/os},
  urldate = {2020-04-30}}
```
RX

▤ Google, 2020. *Harbourside, Bristol* [Online], Google Maps. Available from: https://www.google.co.uk/maps/place/Harbourside,+Bristol/ [Accessed 30 April 2020].

✿ Google, 2020. *Harbourside, Bristol* [Online], Google Maps. Available from: https://www.google.co.uk/maps/place/Harbourside,+Bristol/ [Accessed 30 April 2020].

```
@manual{google2020harbourside,
  author = {{Google}},
  year = {2020},
  title = {{Harbourside, Bristol}},
  series = {{Google Maps}},
  url = {https://www.google.co.uk/maps/place/Harbourside,+Bristol/},
  urldate = {2020-04-30}}
```
RX

Film, video or DVD

▤ *Macbeth*, 1948. Film. Directed by Orson Welles. USA: Republic Pictures.

✿ *Macbeth*, 1948. Film. Directed by Orson Welles. USA: Republic Pictures.

```
@video{macbeth1948,
  year = {1948},
  title = {Macbeth},
  type = {Film},
  note = {Directed by Orson Welles},
  address = {USA},
  publisher = {Republic Pictures}}
```
RX

❶ In the above entry, the following would also work instead of using `note`:

```
    editor = {Orson Welles},
    editortype = {director},
```

❶ You can also use `movie` as an alias for `video`.

◨ *The elephant man* [Online], 1980. Film. Directed by David Lynch. USA: Brooksfilms. Available from: BBC iPlayer [Accessed 4 May 2021].

✿ *The elephant man* [Online], 1980. Film. Directed by David Lynch. USA: Brooksfilms. Available from: BBC iPlayer [Accessed 4 May 2021].

```
@video{elephant-man1980,
  year = {1980},
  title = {The elephant man},
  type = {Film},
  note = {Directed by David Lynch},
  address = {USA},
  publisher = {Brooksfilms},
  library = {BBC iPlayer},
  urldate = {2021-05-04}}
```
RX

Online video/audio

◨ Moran, C., 2016. *Save our libraries* [Online]. Available from: https://www.youtube.com/watch?v=gKTfCz4JtVE&feature=youtu.be [Accessed 29 April 2016].

✿ Moran, C., 2016. *Save our libraries* [Online]. Available from: https://www.youtube.com/watch?v=gKTfCz4JtVE&feature=youtu.be [Accessed 29 April 2016].

```
@video{moran2016sol,
  author = {Moran, C.},
  year = {2016},
  title = {Save Our Libraries},
  url = {https://www.youtube.com/watch?v=gKTfCz4JtVE&feature=youtu.be},
  urldate = {2016-04-29}}
```
RX

◨ Chakrabarti, V., 2016. *How architecture and city planning can combat social inequality* [Online]. Available from: https://www.curbed.com/2016/5/5/11593058/vishaan-chakrabarti-pau-curbed-appeal-podcast [Accessed 28 March 2019].

✿ Chakrabarti, V., 2016. *How architecture and city planning can combat social inequality* [Online]. Available from: https://www.curbed.com/2016/5/5/11593058/vishaan-chakrabarti-pau-curbed-appeal-podcast [Accessed 28 March 2019].

```
@audio{chakrabarti2016hac,
  author = {Chakrabarti, V.},
  year = {2016},
  title = {How Architecture and City Planning Can Combat Social Inequality},
  url = {https://www.curbed.com/2016/5/5/11593058/vishaan-chakrabarti-pau-curbed-appeal-podcast},
  urldate = {2019-03-28}}
```
RX

Television or radio broadcast

♀ Use `type` for the medium and `publisher` for the channel.

♀ If the episode has an individual title, use `series` for the series and `number` for the episode number. Otherwise, give both series and episode number as the `title`.

◪ Hurry up and wait, 2021. *Inside no.9*, *Episode 6:4*. TV. BBC2, 31 May. 21.30 hrs.
✿ Hurry up and wait, 2021. *Inside no.9*, *Episode 6:4*. TV. BBC2, 31 May. 21.30 hrs.

```
@video{inn2021huw,
  date = {2021-05-31T21:30:00},
  title = {Hurry up and wait},
  series = {Inside No.9},
  number = {{Episode} 6:4},
  type = {TV},
  publisher = {BBC2}}
```
RX

◪ Rick Stein's French odyssey: Episode 5, 2006. TV. BBC2, 23 August. 20.30 hrs.
✿ Rick Stein's French odyssey: Episode 5, 2006. TV. BBC2, 23 August. 20.30 hrs.

```
@video{rsfo2006ep5,
  date = {2006-08-23T20:30:00},
  title = {Rick {Stein's} {French} Odyssey},
  subtitle = {{Episode} 5},
  type = {TV},
  publisher = {BBC2}}
```
RX

◪ The Archers, 2006. Radio. BBC Radio 4, 23 August. 19.02 hrs.
✿ The Archers, 2006. Radio. BBC Radio 4, 23 August. 19.02 hrs.

```
@audio{archers20060823,
  date = {2006-08-23T19:02:00},
  title = {The {Archers}},
  type = {Radio},
  publisher = {BBC Radio 4}}
```
RX

❶ You can also use `music` as an alias for `audio`.

◪ The secret, 2020. *Tiger king: murder, mayhem and madness*, *Episode 3* [Online]. TV. Available from: Netflix [Accessed 4 May 2021].
✿ The secret, 2020. *Tiger king: murder, mayhem and madness*, *Episode 3* [Online]. TV. Available from: Netflix [Accessed 4 May 2021].

```
@video{tkmmm2020ts,
  year = {2020},
  title = {The Secret},
  series = {Tiger King: Murder, Mayhem and Madness},
  number = {{Episode} 3},
  type = {TV},
  library = {Netflix},
  urldate = {2021-05-04}}
```
RX

Music score

◪ Beethoven, L. van, 1950. *Symphony no.1 in C, Op.21*. Harmondsworth: Penguin.
✿ Beethoven, L. van, 1950. *Symphony no.1 in C, Op.21*. Harmondsworth: Penguin.

```
@book{beethoven1950symph1,
  author = {Ludwig van Beethoven},
  year = {1950},
  title = {Symphony no.1 in {C,} {Op.21}},
  address = {Harmondsworth},
  publisher = {Penguin}}
```
RX

4.6 Digital media

Website or webpage

> ▤ World Health Organization, 2018. *The top 10 causes of death* [Online]. Geneva: World Health Organization. Available from: https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death [Accessed 29 June 2020].
>
> ✿ World Health Organization, 2018. *The top 10 causes of death* [Online]. Geneva: World Health Organization. Available from: https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death [Accessed 29 June 2020].

```
@online{who2018ttc,
  author = {{World Health Organization}},
  year = {2018},
  title = {The Top 10 Causes of Death},
  address = {Geneva},
  organization = {World Health Organization},
  url = {https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death},
  urldate = {2020-06-29}}
```
RX

> ▤ Manco, J., 2013. *Vernacular architecture* [Online]. Available from: https://www.buildinghistory.org/style/vernacular.shtml [Accessed 20 February 2020].
>
> ✿ Manco, J., 2013. *Vernacular architecture* [Online]. Available from: https://www.buildinghistory.org/style/vernacular.shtml [Accessed 20 February 2020].

```
@online{manco2013va,
  author = {Manco, J.},
  year = {2013},
  title = {Vernacular Architecture},
  url = {https://www.buildinghistory.org/style/vernacular.shtml},
  urldate = {2020-02-20}}
```
RX

Social media

> ▤ Gaiman, N., 2021. *Facebook post* [Online], 21 April. Available from: https://www.facebook.com/neilgaiman/posts/305187897642814 [Accessed 13 May 2021].
>
> ✿ Gaiman, N., 2021. *Facebook post* [Online], 21 April. Available from: https://www.facebook.com/neilgaiman/posts/305187897642814 [Accessed 13 May 2021].

```
@online{gaiman2021fbp,
  author = {Gaiman, N.},
  date = {2021-04-21},
  title = {Facebook post},
  url = {https://www.facebook.com/neilgaiman/posts/305187897642814},
  urldate = {2021-05-13}}
```
RX

⬛ Library at University of Bath [@bathunilibrary], 2021. *Twitter post* [Online], 10 May. Available from: https : / / twitter . com / BathUniLibrary / status / 1391774402618998795?s=20 [Accessed 12 May 2021].

✿ Library at University of Bath [@bathunilibrary], 2021. *Twitter post* [Online], 10 May. Available from: https : / / twitter . com / BathUniLibrary / status / 1391774402618998795?s=20 [Accessed 12 May 2021].

```
@online{ublib2021tp,
  author = {{Library at University of Bath}},
  nameaddon = {@bathunilibrary},
  date = {2021-05-10},
  title = {Twitter post},
  url = {https://twitter.com/BathUniLibrary/status/1391774402618998795?s=20},
  urldate = {2021-05-12}}
```
RX

⬛ University of Bath Library [@unibathlib], 2021. *Instagram post* [Online], 15 March. Available from: https://www.instagram.com/p/CMb5GHjFv9A/?utm_source=ig_web_copy_link [Accessed 7 May 2021].

✿ University of Bath Library [@unibathlib], 2021. *Instagram post* [Online], 15 March. Available from: https://www.instagram.com/p/CMb5GHjFv9A/?utm_source=ig_web_copy_link [Accessed 7 May 2021].

```
@online{ublib2021ip,
  author = {{University of Bath Library}},
  nameaddon = {@unibathlib},
  date = {2021-03-15},
  title = {Instagram post},
  url = {https://www.instagram.com/p/CMb5GHjFv9A/?utm_source=ig_web_copy_link},
  urldate = {2021-05-07}}
```
RX

Email discussion list

⬛ Clark, T., 5 July 2004. A European UK Libraries Plus? *Lis-link* [Online]. Available from: lis-link@jiscmail.ac.uk [Accessed 30 July 2004].

✿ Clark, T., 5 July 2004. A European UK Libraries Plus? *Lis-link* [Online]. Available from: lis-link@jiscmail.ac.uk [Accessed 30 July 2004].

```
@letter{clark2004euk,
  author = {Clark, T.},
  date = {2004-07-05},
  title = {A {European} {UK} {Libraries} {Plus}?},
  journal = {Lis-link},
  url = {lis-link@jiscmail.ac.uk},
  urldate = {2004-07-30}}
```
RX

♀ Use the `journal` field to specify the mailing list. If you omit the `journal` field, the entry will be formatted as an unpublished work.

Database

- Bureau van Dijk, 2008. *BT Group plc company report. FAME* [Online]. London: Bureau van Dijk. Available from: http://www.portal.euromonitor.com [Accessed 6 November 2014].
- Bureau van Dijk, 2008. *BT Group plc company report. FAME* [Online]. London: Bureau van Dijk. Available from: http://www.portal.euromonitor.com [Accessed 6 November 2014].

```
@dataset{bvd2008bt,
  author = {{Bureau van Dijk}},
  year = {2008},
  title = {{BT} {Group} PLC Company Report},
  library = {FAME},
  address = {London},
  publisher = {Bureau van Dijk},
  url = {http://www.portal.euromonitor.com},
  urldate = {2014-11-06}}
```
RX

Use the `title` field for the entry title, and the `library` field for the name of the database itself.

Dataset

- Wilson, D., 2013. *Real geometry and connectedness via triangular description: CAD example bank* [Online]. Bath: University of Bath. Available from: https://doi.org/10.15125/BATH-00069 [Accessed 20 April 2016].
- Wilson, D., 2013. *Real geometry and connectedness via triangular description: CAD example bank* [Online]. Bath: University of Bath. Available from: https://doi.org/10.15125/BATH-00069 [Accessed 20 April 2016].

```
@dataset{wilson2013rgc,
  author = {Wilson, D.},
  year = {2013},
  title = {Real Geometry and Connectedness via Triangular Description},
  subtitle = {{CAD} Example Bank},
  address = {Bath},
  publisher = {University of Bath},
  doi = {10.15125/BATH-00069},
  urldate = {2016-04-20}}
```
RX

Computer program

- @screencasto, n.d. *Screencast-O-Matic* (v.2) [computer program]. Available from: https://screencast-o-matic.com/ [Accessed 16 May 2016].
- @screencasto, n.d. *Screencast-O-Matic* (v.2) [computer program]. Available from: https://screencast-o-matic.com/ [Accessed 16 May 2016].

```
@software{screencasto,
  author = {@screencasto},
  title = {{Screencast-O-Matic}},
  version = {2},
  titleaddon = {computer program},
  url = {https://screencast-o-matic.com/},
  urldate = {2016-05-16}}
```
RX

4.7 Works in languages other than English

Work in translation

> 📕 Aristotle, 2007. *Nicomachean ethics* (W.D. Ross, Trans.). South Dakota: NuVisions.
> ✿ Aristotle, 2007. *Nicomachean ethics* (W.D. Ross, Trans.). South Dakota: NuVisions.
>
> ```
> @book{aristotle2007ne,
>   author = {Aristotle},
>   year = {2007},
>   title = {Nicomachean Ethics},
>   translator = {W. D. Ross},
>   address = {South Dakota},
>   publisher = {NuVisions}}
> ```
> RX

Work in the Roman alphabet

> 📕 Esquivel, L., 2003. *Como agua para chocolate* [Like water for chocolate]. Barcelona: Debolsillo.
> ✿ Esquivel, L., 2003. *Como agua para chocolate* [Like water for chocolate]. Barcelona: Debolsillo.
>
> ```
> @book{esquivel2003cap,
>   author = {Esquivel, L.},
>   year = {2003},
>   title = {Como Agua para Chocolate},
>   titleaddon = {Like water for chocolate},
>   address = {Barcelona},
>   publisher = {Debolsillo}}
> ```
> RX

> 💡 Use the `titleaddon` field to supply the English translation of the title.

> 📕 Thurfjell, W., 1975. Vart har våran doktor tagit vägen? [Where has our doctor gone?]. *Läkartidningen*, 72, p.789.
> ✿ Thurfjell, W., 1975. Vart har våran doktor tagit vägen? [Where has our doctor gone?]. *Läkartidningen*, 72, p.789.
>
> ```
> @article{thurfjell1975vhv,
>   author = {Thurfjell, W.},
>   year = {1975},
>   title = {Vart har våran doktor tagit vägen?},
>   titleaddon = {Where has our doctor gone?},
>   journal = {Läkartidningen},
>   volume = {72},
>   pages = {789}}
> ```
> RX

Work in a non-Roman alphabet

- 📑 Hua, L. 華林甫, 1999. Qingdai yilai Sanxia diqu shuihan zaihai de chubu yanjiu 清代以來三峽地區水旱災害的初步研 [A preliminary study of floods and droughts in the Three Gorges region since the Qing dynasty]. *Zhongguo shehui kexue* 中國社會科學, 1, pp.168–79.
- ⚙ Hua, L. 華林甫, 1999b. Qingdai yilai Sanxia diqu shuihan zaihai de chubu yanjiu 清代以來三峽地區水旱災害的初步研 [A preliminary study of floods and droughts in the Three Gorges region since the Qing dynasty]. *Zhongguo shehui kexue* 中國社會科學, 1, pp.168–79.

```
@article{hua1999qys1,
  author = {given=Linfu, family=Hua, cjk=華林甫},
  year = {1999},
  title = {Qingdai yilai {Sanxia} diqu shuihan zaihai de chubu yanjiu
    {清代以來三峽地區水旱災害的初步研}},
  titleaddon = {A preliminary study of floods and droughts in the {Three} {Gorges} region since
    the {Qing} dynasty},
  journal = {Zhongguo shehui kexue \textup{中國社會科學}},
  volume = {1},
  pages = {168-79}}
```

RX

💡 To supply a transliterated version of an author name, specify the name using the name parts `family`, `given` and `cjk`. Please note that if you do supply a `cjk` component, any `prefix` or `suffix` component you may supply will be ignored.

- 📑 Hua, L., 1999. Qingdai yilai Sanxia diqu shuihan zaihai de chubu yanjiu [A preliminary study of floods and droughts in the Three Gorges region since the Qing dynasty]. *Zhongguo shehui kexue*, 1, pp.168–79.
- ⚙ Hua, L., 1999a. Qingdai yilai Sanxia diqu shuihan zaihai de chubu yanjiu [A preliminary study of floods and droughts in the Three Gorges region since the Qing dynasty]. *Zhongguo shehui kexue*, 1, pp.168–79.

```
@article{hua1999qys2,
  author = {Hua, Linfu},
  year = {1999},
  title = {Qingdai yilai {Sanxia} diqu shuihan zaihai de chubu yanjiu},
  titleaddon = {A preliminary study of floods and droughts in the {Three} {Gorges} region since
    the {Qing} dynasty},
  journal = {Zhongguo shehui kexue},
  volume = {1},
  pages = {168-79}}
```

RX

💡 Although not a feature of the Harvard (Bath) Style, if you want to suppress the punctuation between the family name and the initial (and thereby be more faithful to the original orthography), you can specify this using biblatex's data annotations feature, using the keyword `cjk`:

- 📑 Hua L. 華林甫, 2001. *Lorem ipsum.*
- ⚙ Hua L. 華林甫, 2001. *Lorem ipsum.*

```
@book{hua2001foo,
  author = {given=Linfu, family=Hua, cjk=華林甫},
  author+an = {1=cjk},
  year = {2001},
  title = {Lorem ipsum}}
```

📓 Pamporov, A., 2006. *Romskoto vsekidnevie v Balgariya* [Roma everyday life in Bulgaria]. Veliko Tarnovo: Faber.

⚙ Pamporov, A., 2006. *Romskoto vsekidnevie v Balgariya* [Roma everyday life in Bulgaria]. Veliko Tarnovo: Faber.

```
@book{pamporov2006rvb,
  author = {Pamporov, A.},
  year = {2006},
  title = {Romskoto vsekidnevie v {Balgariya}},
  titleaddon = {Roma everyday life in Bulgaria},
  address = {Veliko Tarnovo},
  publisher = {Faber}}
```
RX

4.8 Legal or government document: UK parliamentary reports/legislation

House of Commons paper

♀ Use this form for reports of House of Commons select committees.

📓 Great Britain. Parliament. House of Commons, 2004. *National Savings investment deposits: account 2002–2003.* (HC 2003/04, 30). London: National Audit Office.

⚙ Great Britain. Parliament. House of Commons, 2004. *National Savings investment deposits: account 2002–2003.* (HC 2003/04, 30). London: National Audit Office.

```
@report{gb.hc2003/04-30,
  author = {{Great Britain. Parliament. House of Commons}},
  year = {2004},
  title = {National {Savings} Investment Deposits},
  subtitle = {Account 2002--2003},
  address = {London},
  publisher = {National Audit Office},
  series = {{HC} 2003/04},
  number = {30}}
```
RX

House of Lords paper

♀ Use this form for reports of House of Lords select committees.

📓 Great Britain. Parliament. House of Lords, 1987. *Social fund (maternity and funeral expenses) bill.* (HL 1986/87, (66)). London: HMSO.

⚙ Great Britain. Parliament. House of Lords, 1987. *Social fund (maternity and funeral expenses) bill.* (HL 1986/87, (66)). London: HMSO.

```
@report{gb.hl1986/87-66,
  author = {{Great Britain. Parliament. House of Lords}},
  year = {1987},
  title = {Social Fund (Maternity and Funeral Expenses) Bill},
  address = {London},
  publisher = {HMSO},
  series = {{HL} 1986/87},
  number = {66}}
```
RX

🔧 For joint committees, you will have to hack this slightly, putting the session years in `series` and the HL and HC numbers in `number`.

Command paper

🗏 Great Britain. Ministry of Defence, 2004. *Delivering security in a changing world: defence white paper.* (Cm. 6041). London: TSO.

✿ Great Britain. Ministry of Defence, 2004. *Delivering security in a changing world: defence white paper.* (Cm. 6041). London: TSO.

```
@report{gb.cm6041,
  author = {{Great Britain. Ministry of Defence}},
  year = {2004},
  title = {Delivering Security in a Changing World},
  subtitle = {Defence White Paper},
  address = {London},
  publisher = {TSO},
  series = {Cm},
  number = {6041}}
```
RX

House of Commons/House of Lords bill

🗏 Great Britain. Parliament. House of Commons, 1988. *Local government finance bill.* (Bills | 1987/88, 66). London: HMSO.

✿ Great Britain. Parliament. House of Commons, 1988. *Local government finance bill.* (Bills | 1987/88, 66). London: HMSO.

```
@legislation{gb.bill1987/88-66,
  author = {{Great Britain. Parliament. House of Commons}},
  year = {1988},
  title = {Local Government Finance Bill},
  address = {London},
  publisher = {HMSO},
  series = {{Bills | 1987/88}},
  number = {66}}
```
RX

Act of Parliament (UK Statutes) before 1963

🗏 *Witchcraft Act 1735* (9 Geo.2, c.5).

✿ *Witchcraft Act 1735* (9 Geo.2, c.5).

```
@legislation{gb.wa1735,
  title = {Witchcraft {Act}},
  year = {1735},
  series = {9 Geo.2},
  chapter = {5}}
```
RX

❶ You could instead combine the series and chapter in the `number` field:

```
number = {9 Geo.2, c.5}
```

Act of Parliament (UK Statutes) 1963 onwards

> 📑 *Pensions Act 2014*, c.19. London: TSO.
> ⚙ *Pensions Act 2014*, c.19. London: TSO.
>
> ```
> @legislation{gb.pa2014,
>   title = {Pensions {Act}},
>   year = {2014},
>   chapter = {19},
>   address = {London},
>   publisher = {TSO}}
> ```
> RX

Statutory instrument

> 📑 *The Human Medicines Regulations 2012* [Online], No.1916, United Kingdom: HMSO. Available from: http://www.legislation.gov.uk/uksi/2012/1916/pdfs/uksi_20121916_en.pdf [Accessed 17 April 2016].
> ⚙ *The Human Medicines Regulations 2012* [Online], No.1916, United Kingdom: HMSO. Available from: http://www.legislation.gov.uk/uksi/2012/1916/pdfs/uksi_20121916_en.pdf [Accessed 17 April 2016].
>
> ```
> @legislation{gb.hmr2012,
>   entrysubtype = {secondary},
>   title = {The {Human} {Medicines} {Regulations}},
>   year = {2012},
>   number = {No.1916},
>   address = {United Kingdom},
>   publisher = {HMSO},
>   url = {http://www.legislation.gov.uk/uksi/2012/1916/pdfs/uksi_20121916_en.pdf},
>   urldate = {2016-04-17}}
> ```
> RX

💡 Use the `entrysubtype` 'secondary' to put the number in the right place.

4.9   Legal or government document: EU reports/legislation

EU publication

> 📑 European Commission, 2015. *General report on the activities of the European Union 2014.* Luxembourg: Publications Office of the European Union.
> ⚙ European Commission, 2015. *General report on the activities of the European Union 2014.* Luxembourg: Publications Office of the European Union.
>
> ```
> @report{ec2015gra,
>   author = {{European Commission}},
>   year = {2015},
>   title = {General Report on the Activities of the {European} {Union} 2014},
>   address = {Luxembourg},
>   publisher = {Publications Office of the European Union}}
> ```
> RX

EU regulation or directive, decision, recommendation or opinion

> 📖 Council Regulation (EC) 1984/2003 of 8 April 2003 introducing a system for the statistical monitoring of trade in bluefin tuna, swordfish and big eye tuna within the Community [2003] *OJ* L295.
> ⚙ Council Regulation (EC) 1984/2003 of 8 April 2003 introducing a system for the statistical monitoring of trade in bluefin tuna, swordfish and big eye tuna within the Community [2003] *OJ* L295.
>
> ```
> @legislation{eu.dir1984/2003,
>   title = {Council {Regulation} ({EC}) 1984/2003 of 8 {April} 2003 Introducing a System for
>     the Statistical Monitoring of Trade in Bluefin Tuna, Swordfish and Big Eye Tuna within
>     the {Community}},
>   shorttitle = {Council {Regulation} \parentext{EC} 1984/2003},
>   year = {2003},
>   journal = {OJ},
>   series = {L},
>   volume = {295}}
> ```
> RX

ℹ The `shorttitle` will be used in citations instead of the full title.

4.10 Legal or government document: case reports

Legal case study

> 📕 *Seldon v. Clarkson Wright & Jakes.* [2012]. UKSC 16.
> ⚙ *Seldon v. Clarkson Wright & Jakes.* [2012]. UKSC 16.
>
> ```
> @jurisdiction{seldon-v-c.w.j2012,
>   title = {Seldon v.~{Clarkson} {Wright} \& {Jakes}},
>   year = {2012},
>   journal = {UKSC},
>   pages = {16}}
> ```
> RX

ℹ Generally speaking, the year should be in square brackets if it is essential to the citation (unless it is a Scottish case, in which case it is printed bare), and in parentheses if it is not.

💡 By default, the style assumes the year is essential if and only if a volume number is *not* provided; to override this, you can use the `year-essential` option:

> ```
> options = {year-essential=true},
> ```

To use Scottish style for a case, you can either use the `scottish-style` option or the keyword `sc`:

> ```
> options = {scottish-style},
> keywords = {sc},
> ```

🔧 This should cover most cases, but legal references tend to enforce their own conventions no matter what the rest of the reference list is doing, and it is out of scope for this style to cater for every variation. Therefore if you need a different format (e.g. for an American case), you may prefer to format the reference more-or-less by hand:

> ```
> title = {Seldon v.~{Clarkson} {Wright} \& {Jakes}},
> sortyear = {2012},
> note = {[2012]. UKSC 16}
> ```

Judgment of the European Court of Justice

> 📖 *Alessandrini Srl and others v. Commission* (C-295/03 P) [2005] ECR I–5700.
> ⚙ *Alessandrini Srl and others v. Commission* (C-295/03 P) [2005] ECR I–5700.

```
@jurisdiction{srl.etal-v-comm2005,
  title = {Alessandrini {Srl} and others v. {Commission}},
  number = {C-295/03 P},
  year = {2005},
  journal = {ECR},
  volume = {I},
  pages = {5700}}
```
RX

> 💡 Use the `number` field (or the non-standard `casenmuber` field) for the case number. For Commission Decisions, use the (non-standard) `casenumber` or (biblatex-oscola) `userb` field for the Commission case number, `number` for the formal decision number, and give 'Commission' as the `institution`.

5   References

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6 Licence

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This work consists of the documented LaTeX file biblatex-bath.dtx and a Makefile.

The text files contained in this work may be distributed and/or modified under the conditions of the LaTeX Project Public License (LPPL), either version 1.3c of this license or (at your option) any later version.

This work is 'maintained' (as per LPPL maintenance status) by Alex Ball.

7 Implementation: bibliography style

7.1 Preliminaries

For ease of maintenance, we will patch some definitions with xpatch instead of writing out our own in full.

```
20  \RequirePackage{xpatch}
```

Some string analysis is required.

```
21  \RequirePackage{xstring}
```

Language support may be widened in future, but for now we support British and American English. Adapted language files have the following suffix:

```
22  \RequirePackage{etoolbox}
23  \ifcsdef{DeclareLanguageMappingSuffix}{%
24    \DeclareLanguageMappingSuffix{-bath}
25  }{%
26    \DeclareLanguageMapping{english}{english-bath}
27    \DeclareLanguageMapping{british}{british-bath}
28  }
```

We begin by loading the default author–year style.

```
30  \RequireBibliographyStyle{authoryear}
31  \ExecuteBibliographyOptions{%
32    maxcitenames=3,maxbibnames=9999,isbn=false,giveninits=true,dashed=false,
33    alldates=comp,labeldate=year,labelalpha=true}
34  \ExecuteBibliographyOptions[reference,audio,video,music,movie]{%
35    useeditor=false}
```

We provide some additional bibliography strings.

```
36  \NewBibliographyString{%
37    online, hours, at, unpublished, legalchapter,
38    director, performer, reader, conductor,
39    directors, performers, readers, conductors,
40    bydirector, byperformer, byreader, byconductor,
41  }
```

We allow the bibliography look more like the BibTeX default.

```
42  \setlength{\bibhang}{0pt}
43  \setlength{\bibitemsep}{1em plus 0.2em minus 0.2em}
44  \renewcommand*{\bibfont}{\normalfont\normalsize}
```

To maintain compatibility with older versions of biblatex, we backport some newer features if necessary.

```
45  \ifcsdef{letbibmacro}{}{%
46    \def\letbibmacro#1#2{%
47      \ifcsundef{abx@macro@#2}
48        {\blx@error
49          {Bibliography macro '#2' undefined}
50          {Use '\string\newbibmacro' to define this macro}}
51        {\csletcs{abx@macro@#1}{abx@macro@#2}}}
52  }
53  \ifcsdef{iflabeldateisdate}{}{%
54    \def\iflabeldateisdate{%
55      \ifboolexpr{%
56        togl {blx@labeldateparts}
57        and not test {\iffieldundef{labeldatesource}}
58        and
59        (test {\iffieldequalstr{labeldatesource}{}}
60        or test {\iffieldequalstr{labeldatesource}{year}})}}%
```

```
61   }
```

This makes biblatex take notice of parentheses, brackets and angle brackets when deciding whether to suppress double punctuation.

```
62   \def\blx@setsfcodes{%
63     \let\blx@setsfcodes\relax
64     \let\frenchspacing\blx@setfrcodes
65     \let\nonfrenchspacing\blx@setencodes
66     \ifnum\sfcode`\.>2000
67       \blx@setencodes
68     \else
69       \blx@setfrcodes
70     \fi
71     \@setquotesfcodes
72     \sfcode`\(=\@m
73     \sfcode`\)=\@m
74     \sfcode`\[=\@m
75     \sfcode`\]=\@m
76     \sfcode`\<=\@m
77     \sfcode`\>=\@m}
```

7.2 Name handling

Names are usually reversed. There are no spaces between initials.

```
79   \DeclareNameAlias{author}{family-given}
80   \DeclareNameAlias{editor}{family-given}
81   \DeclareNameAlias{bookeditor}{given-family}
82   \renewcommand*{\bibinitdelim}{}
```

The handling of CJK names is based on code supplied to TeX.sx by user Moewe in answer to question 320738.

The CJK part is printed after the anglicized name. If the name is also annotated as 'cjk' (see 'Data Annotations' in the biblatex manual), it is always printed in family-given order with no intermediate punctuation.

```
83    \newbibmacro*{name:cjk-given-family}[3]{%
84      \ifitemannotation{cjk}{%
85        \usebibmacro{name:delim}{#2#1#3}%
86        \usebibmacro{name:hook}{#2#1#3}%
87        \mkbibnamefamily{#1}\isdot
88        \ifdefvoid{#2}{}{\bibnamedelimd\mkbibnamegiven{#2}}%
89        \ifdefvoid{#3}{}{\bibnamedelimd\mkbibnamecjk{#3}}%
90      }{%
91        \usebibmacro{name:delim}{#2#1#3}%
92        \usebibmacro{name:hook}{#2#1#3}%
93        \ifdefvoid{#2}{}{\mkbibnamegiven{#2}\isdot\bibnamedelimd}%
94        \mkbibnamefamily{#1}\isdot
95        \ifdefvoid{#3}{}{\bibnamedelimd\mkbibnamecjk{#3}}%
96      }%
97    }
98    \newbibmacro*{name:cjk-family-given}[3]{%
99      \ifitemannotation{cjk}{%
100       \usebibmacro{name:delim}{#2#1#3}%
101       \usebibmacro{name:hook}{#2#1#3}%
102       \mkbibnamefamily{#1}\isdot
103       \ifdefvoid{#2}{}{\bibnamedelimd\mkbibnamegiven{#2}}%
104       \ifdefvoid{#3}{}{\bibnamedelimd\mkbibnamecjk{#3}}%
105     }{%
106       \usebibmacro{name:delim}{#1}%
107       \usebibmacro{name:hook}{#1}%
108       \mkbibnamefamily{#1}\isdot
```

```
109    \ifboolexpe{%
110      test {\ifdefvoid{#2}}
111      and
112      test {\ifdefvoid{#3}}}
113      {}
114      {\revsdnamepunct}%
115    \ifdefvoid{#2}{}{\bibnamedelimd\mkbibnamegiven{#2}\isdot}%
116    \ifdefvoid{#3}{}{\bibnamedelimd\mkbibnamecjk{#3}}%
117  }%
118 }
119
120 \DeclareNameFormat{given-family}{%
121   \ifdefvoid{\namepartcjk}{%
122     \ifgiveninits{%
123       \usebibmacro{name:given-family}
124         {\namepartfamily}
125         {\namepartgiveni}
126         {\namepartprefix}
127         {\namepartsuffix}%
128     }{%
129       \usebibmacro{name:given-family}
130         {\namepartfamily}
131         {\namepartgiven}
132         {\namepartprefix}
133         {\namepartsuffix}%
134     }%
135   }{%
136     \ifgiveninits{%
137       \usebibmacro{name:cjk-given-family}
138         {\namepartfamily}
139         {\namepartgiveni}
140         {\namepartcjk}%
141     }{%
142       \usebibmacro{name:cjk-given-family}
143         {\namepartfamily}
144         {\namepartgiven}
145         {\namepartcjk}%
146     }%
147   }%
148   \usebibmacro{name:andothers}%
149 }
150
151 \DeclareNameFormat{family-given}{%
152   \ifdefvoid{\namepartcjk}{%
153     \ifgiveninits{%
154       \usebibmacro{name:family-given}
155         {\namepartfamily}
156         {\namepartgiveni}
157         {\namepartprefix}
158         {\namepartsuffix}%
159     }{%
160       \usebibmacro{name:family-given}
161         {\namepartfamily}
162         {\namepartgiven}
163         {\namepartprefix}
164         {\namepartsuffix}%
165     }%
166   }{%
167     \ifgiveninits{%
168       \usebibmacro{name:cjk-family-given}
169         {\namepartfamily}
170         {\namepartgiveni}
171         {\namepartcjk}%
```

```
172     }{%
173        \usebibmacro{name:cjk-family-given}
174          {\namepartfamily}
175          {\namepartgiven}
176          {\namepartcjk}%
177      }%
178    }
179    \usebibmacro{name:andothers}%
180  }
```

We support the `nameaddon` field.

```
182  \DeclareFieldFormat{nameaddon}{\mkbibbrackets{#1}}
183  \renewbibmacro*{author}{%
184    \ifboolexpr{
185      test \ifuseauthor
186      and
187      not test {\ifnameundef{author}}
188    }
189      {\usebibmacro{bbx:dashcheck}
190          {\bibnamedash}
191          {\usebibmacro{bbx:savehash}%
192           \printnames{author}%
193           \iffieldundef{nameaddon}
194             {}
195             {\setunit{\addspace}%
196               \printfield{nameaddon}}%
197           \iffieldundef{authortype}
198             {\setunit{\printdelim{nameyeardelim}}}
199             {\setunit{\printdelim{authortypedelim}}}}%
200       \iffieldundef{authortype}
201         {}
202         {\usebibmacro{authorstrg}%
203          \setunit{\printdelim{nameyeardelim}}}}%
204      {\global\undef\bbx@lasthash
205       \usebibmacro{labeltitle}%
206       \setunit*{\printdelim{nonameyeardelim}}}%
207    \usebibmacro{date+extradate}%
208    \usebibmacro{labeltitleaddon}}
```

With videos, names in credits are printed in full.

```
209  \DeclareNameFormat{given-family:full}{%
210    \usebibmacro{name:given-family}
211      {\namepartfamily}
212      {\namepartgiven}
213      {\namepartprefix}
214      {\namepartsuffix}%
215    \usebibmacro{name:andothers}}
216
217  \renewbibmacro*{byauthor}[1][byauthor]{%
218    \ifboolexpr{
219      test \ifuseauthor
220      or
221      test {\ifnameundef{author}}
222    }{}
223    {\usebibmacro{bytypestrg}{author}{author}%
224      \setunit{\addspace}%
225      \printnames[#1]{author}}}
226
227  \renewbibmacro*{byeditor}[1][byeditor]{%
228    \ifnameundef{editor}
229    {}
230    {\usebibmacro{bytypestrg}{editor}{editor}%
```

```latex
      \setunit{\addspace}%
      \printnames[#1]{editor}%
      \newunit}%
    \ifstrequal{#1}{byeditor}{%
      \usebibmacro{byeditora}%
      \usebibmacro{byeditorb}%
      \usebibmacro{byeditorc}
    }{%
      \usebibmacro{byeditora}[#1]%
      \usebibmacro{byeditorb}[#1]%
      \usebibmacro{byeditorc}[#1]}}

\newbibmacro*{byeditora}[1][byeditora]{%
  \ifnameundef{editora}
  {}
  {\usebibmacro{bytypestrg}{editora}{editor}%
    \setunit{\addspace}%
    \printnames[#1]{editora}%
    \newunit}}
\newbibmacro*{byeditorb}[1][byeditorb]{%
  \ifnameundef{editorb}
  {}
  {\usebibmacro{bytypestrg}{editorb}{editor}%
    \setunit{\addspace}%
    \printnames[#1]{editorb}%
    \newunit}}
\newbibmacro*{byeditorc}[1][byeditorc]{%
  \ifnameundef{editorc}
  {}
  {\usebibmacro{bytypestrg}{editorc}{editor}%
    \setunit{\addspace}%
    \printnames[#1]{editorc}%
    \newunit}}

\renewbibmacro*{bytranslator}[1][bytranslator]{%
  \ifnameundef{translator}
  {}
  {\setunit{\addspace}%
    \printtext[parens]{%
    \printnames[#1]{translator}%
    \setunit{\addcomma\space}%
    \bibcpstring{translator}%
    \clearname{translator}}}}

\renewbibmacro*{byeditor+others}[1][byeditor]{%
  \ifnameundef{editor}
  {}
  {\usebibmacro{byeditor+othersstrg}%
    \setunit{\addspace}%
    \printnames[#1]{editor}%
    \clearname{editor}%
    \newunit}%
  \ifstrequal{#1}{byeditor}{%
    \usebibmacro{byeditorx}%
    \usebibmacro{bytranslator+others}%
  }{%
    \usebibmacro{byeditora}[#1]%
    \usebibmacro{byeditorb}[#1]%
    \usebibmacro{byeditorc}[#1]%
    \usebibmacro{bytranslator+others}[#1]}}

\renewbibmacro*{bytranslator+others}[1][bytranslator]{%
  \ifnameundef{translator}
```

```
294    {\usebibmacro{withothers}}
295    {\setunit{\addspace}%
296      \printtext[parens]{%
297      \printnames[bytranslator]{translator}%
298      \setunit{\addcomma\space}%
299      \bibcpstring{translator}%
300      \clearname{translator}%
301      \newunit
302      \usebibmacro{withothers}}}}
```

With collections, editors appear in natural order between 'In' and the title, followed by 'ed.'

```
304    \newbibmacro*{bookeditor}{%
305      \ifnameundef{editor}{}{%
306      \printnames[bookeditor]{editor}%
307      \setunit*{\addcomma\space}%
308      \usebibmacro{editor+othersstrg}%
309      \clearname{editor}%
310    }}
```

7.3 Titles

Most titles are set in italics, but some are set roman and unquoted.

```
312    \DeclareFieldFormat{sentencecase}{\MakeSentenceCase*{#1}}
313    \DeclareFieldFormat{midsentencecase}{\MakeSentenceCase*{{}#1}}
314    \DeclareFieldFormat{title}{\mkbibemph{#1}}
315    \DeclareFieldFormat
316      [article,inbook,incollection,inproceedings]%
317      {title}{#1}
318    \DeclareFieldFormat
319      [reference,mvreference]%
320      {title}{\ifnameundef{author}{#1}{\mkbibemph{#1}}}
321    \DeclareFieldFormat
322      [inreference]%
323      {title}{\ifnameundef{author}{\mkbibemph{#1}}{#1}}
324    \DeclareFieldFormat
325      [inreference]%
326      {booktitle}{\ifnameundef{author}{#1}{\mkbibemph{#1}}}
327    \DeclareFieldFormat
328      [patent,thesis]%
329      {title}{\mkbibemph{#1}}
330    \DeclareFieldFormat
331      [audio,video,music,video]%
332      {title}{\ifboolexpr{
333        test {\iffieldequalstr{type}{TV}}
334        or
335        test {\iffieldequalstr{type}{Radio}}
336      }{#1}{\mkbibemph{#1}}}
337    \DeclareFieldFormat
338      [unpublished]%
339      {title}{\iffieldundef{booktitle}{\mkbibemph{#1}}{#1}}
```

Online resources are clearly tarred and feathered with an '[Online]' label. The `isonline` macro prints this label if the resource has a URL and does nothing otherwise. We add a safeguard to stop it being used repeatedly.

```
341    \newtoggle{bbx:onlineshown}
342    \newbibmacro*{isonline}{%
343      \ifboolexpr{(
344        test {\iffieldundef{doi}}
345        and
346        test {\iffieldundef{url}}
```

```
347        and
348        test {\iffieldundef{urlyear}}
349        and
350        not test {\ifentrytype{online}}
351      ) or
352      togl {bbx:onlineshown}
353    }{}{%
354      \bibstring[\mkbibbrackets]{online}%
355      \toggletrue{bbx:onlineshown}}}
```

The `titleaddon` field follows the title after a space and wrapped in brackets. Version 1 of this style encouraged people to supply the brackets manually, so we strip them off if they have been supplied.

```
357  \DeclareFieldFormat{titleaddon}{\mkbibbrackets{%
358    \IfBeginWith{#1}{[}{%
359      \IfEndWith{#1}{]}{%
360        \StrBetween{#1}{[}{]}%
361      }{#1}%
362    }{#1}%
363  }}
```

We need to supply a new `title` macro. The standard version puts default unit punctuation between the `title` and `titleaddon` fields, but we need a space. We also need to add conditional code for printing the automatic '[Online]' label.

```
365  \renewbibmacro*{title}{%
366    \ifboolexpr{
367      test {\iffieldundef{title}}
368      and
369      test {\iffieldundef{subtitle}}
370    }{}{%
371      \printtext[title]{%
372        \printfield[sentencecase]{title}%
373        \setunit{\subtitlepunct}%
374        \printfield[midsentencecase]{subtitle}%
375        \setunit{\addspace}%
376      }%
377      \printfield{version}%
378      \clearfield{version}%
379      \setunit*{\addspace}%
380      \printfield{titleaddon}%
381      \ifboolexpr{
382        test {\iffieldundef{journaltitle}}
383        and
384        test {\iffieldundef{booktitle}}
385        and (
386          test {\iffieldundef{library}}
387          or
388          test {\ifentrytype{image}}
389          or
390          test {\ifentrytype{audio}}
391          or
392          test {\ifentrytype{video}}
393          or
394          test {\ifentrytype{music}}
395          or
396          test {\ifentrytype{movie}}
397        ) and
398        not test {\ifentrytype{software}}
399        and (
400          not (
401            test {\iffieldequalstr{type}{TV}}
402            or
```

```
403            test {\iffieldequalstr{type}{Radio}}
404          )
405          or
406          test {\iffieldundef{series}}
407        )
408      }{%
409        \setunit*{\addspace}%
410        \usebibmacro{isonline}%
411      }{}%
412    }%
413  }
```

Similar changes are needed for the `booktitle` and `maintitle` macros.

```
415  \renewbibmacro*{booktitle}{%
416    \ifboolexpr{
417      test {\iffieldundef{booktitle}}
418      and
419      test {\iffieldundef{booksubtitle}}
420    }{}{%
421      \printtext[booktitle]{%
422        \printfield[sentencecase]{booktitle}%
423        \setunit{\subtitlepunct}%
424        \printfield[midsentencecase]{booksubtitle}%
425        \setunit{\addspace}%
426      }%
427      \printfield{booktitleaddon}
428      \setunit*{\addspace}%
429      \usebibmacro{isonline}%
430    }%
431  }
432
433  \renewbibmacro*{maintitle}{%
434    \ifboolexpr{
435      test {\iffieldundef{maintitle}}
436      and
437      test {\iffieldundef{mainsubtitle}}
438    }{}{
439      \printtext[maintitle]{%
440        \printfield[sentencecase]{maintitle}%
441        \setunit{\subtitlepunct}%
442        \printfield[midsentencecase]{mainsubtitle}%
443        \setunit{\addspace}%
444      }%
445      \printfield{maintitleaddon}%
446    }%
447  }
```

Subtitles are set off with a colon

```
449  \renewcommand*{\subtitlepunct}{\addcolon\space}
```

In the standard author–year styles, if a title is promoted to the head of a reference (due to missing authors/editors), the subtitle and titleaddon fields are discarded. We want to show the subtitle directly after the title, and show titleaddon after the `date+extradate` macro.

```
451  \DeclareLabeltitle[inreference]{%
452    \field{shorttitle}
453    \field{booktitle}
454    \field{title}
455  }
456  \providetoggle{bbx:labelistitle}
457  \renewbibmacro*{labeltitle}{%
458    \iffieldundef{label}{%
```

```
459    \ifboolexpr{
460      test {\ifentrytype{inreference}}
461      and
462      not test {\iffieldundef{booktitle}}
463    }{%
464      \printtext[booktitle]{%
465        \printfield[sentencecase]{booktitle}%
466        \setunit{\booksubtitlepunct}%
467        \printfield[midsentencecase]{booksubtitle}}%
468      \clearfield{booktitle}\clearfield{booksubtitle}%
469    }{%
470      \ifboolexpr{
471        test {\iffieldundef{title}}
472        and
473        test {\iffieldundef{subtitle}}
474      }{}{%
475        \printtext[title]{%
476          \printfield[sentencecase]{title}%
477          \setunit{\subtitlepunct}%
478          \printfield[midsentencecase]{subtitle}}%
479        \clearfield{title}\clearfield{subtitle}%
480        \toggletrue{bbx:labelistitle}}%
481      \ifboolexpr{
482        test {\iffieldundef{journaltitle}}
483        and
484        test {\iffieldundef{booktitle}}
485        and (
486          test {\iffieldundef{library}}
487          or
488          test {\ifentrytype{image}}
489          or
490          test {\ifentrytype{audio}}
491          or
492          test {\ifentrytype{video}}
493          or
494          test {\ifentrytype{music}}
495          or
496          test {\ifentrytype{movie}}
497        ) and
498        not test {\ifentrytype{software}}
499        and
500        not test {\ifentrytype{legislation}}
501        and
502        not test {\ifentrytype{jurisdiction}}
503        and (
504          not (
505            test {\iffieldequalstr{type}{TV}}
506            or
507            test {\iffieldequalstr{type}{Radio}}
508          )
509          or
510          test {\iffieldundef{series}}
511        )
512      }{%
513        \setunit*{\addspace}%
514        \usebibmacro{isonline}%
515      }{}%
516    }%
517  }{%
518    \printfield{label}%
519  }%
520 }
521 \DeclareDelimFormat{yearlabeltitleaddondelim}{\addspace}
```

```
522   \newbibmacro*{labeltitleaddon}{%
523     \iftoggle{bbx:labelistitle}{%
524       \setunit{\printdelim{yearlabeltitleaddondelim}}%
525       \printfield{version}%
526       \clearfield{version}%
527       \setunit*{\addspace}%
528       \printfield{titleaddon}%
529       \clearfield{titleaddon}%
530       \ifboolexpr{(
531           test {\ifentrytype{legislation}}
532           or
533           test {\ifentrytype{jurisdiction}}
534         )
535         and
536         test {\iffieldundef{journaltitle}}
537         and
538         test {\iffieldundef{booktitle}}
539       }{%
540         \setunit*{\addspace}%
541         \usebibmacro{isonline}%
542       }{}%
543     }{}%
544   }
545   \xapptobibmacro{bbx:editor}{\usebibmacro{labeltitleaddon}}{}{}
546   \xapptobibmacro{bbx:translator}{\usebibmacro{labeltitleaddon}}{}{}
```

7.4   Dates

If the main publication date is missing, we fall back immediately to 'n.d.' rather than use URL date or anything like that. However, for some resources (ISO standards, Acts of Parliament), the date is part of the label and should not be repeated, so we declare an option for removing the 'n.d.' Unless already set, the option is inserted if `sortyear` is used.

```
548   \DeclareLabeldate{%
549     \field{date}
550     \field{year}
551     \literal{nodate}
552   }
553   \newtoggle{bbx:nonodate}
554   \DeclareBibliographyOption[boolean]{nonodate}[true]{%
555     \settoggle{bbx:nonodate}{#1}}
556   \DeclareTypeOption[boolean]{nonodate}[true]{%
557     \settoggle{bbx:nonodate}{#1}}
558   \DeclareEntryOption[boolean]{nonodate}[true]{%
559     \settoggle{bbx:nonodate}{#1}}
```

Unless already set, the `nonodate` option is inserted if `sortyear` is used. We accomplish this with source maps; the first one works where options (not including `nonodate`) have been set, the second where no options have been set.

```
560   \DeclareStyleSourcemap{
561     \maps[datatype=bibtex]{
562       \map[overwrite=true]{
563         \step[notmatch=\regexp{nonodate}, fieldsource=options, final]
564         \step[fieldsource=sortyear, final]
565         \step[fieldset=options, append, fieldvalue={,nonodate}]
566       }
567       \map[overwrite=true]{
568         \step[notfield=options, final]
569         \step[fieldsource=sortyear, final]
570         \step[fieldset=options, fieldvalue={nonodate}]
571       }
```

```
572      }
573  }
```

The punctuation before the label year is controlled by the following commands, and should be
a comma. The exceptions to this are `legislation` entries, where there should just be a space, and
English/Welsh legal case reports, where there should be a period.

```
575  \DeclareDelimFormat{nameyeardelim}{\addcomma\space}
576  \DeclareDelimFormat[parencite,bib,biblist]{nameyeardelim}{\addcomma\space}
577  \newcommand{\dononameyeardelim}{%
578      \ifentrytype{legislation}{%
579          \addspace
580      }{%
581          \ifentrytype{jurisdiction}{%
582              \ifboolexpr{
583                  togl {bbx:eu-oj}
584                  or
585                  test {\iffieldequalstr{journaltitle}{ECR}}
586                  or
587                  test {\iffieldequalstr{type}{ECR}}
588              }{%
589                  \addspace
590              }{%
591                  \ifboolexpr{
592                      test {\ifkeyword{sc}}
593                      or
594                      togl {bbx:scotstyle}
595                  }{%
596                      \addcomma\space
597                  }{%
598                      \addperiod\space}}%
599          }{%
600              \addcomma\space}}}
601  \DeclareDelimFormat{nonameyeardelim}{\dononameyeardelim}
602  \DeclareDelimFormat*[bib,biblist]{nonameyeardelim}{\dononameyeardelim}
603  \DeclareDelimFormat[parencite]{nonameyeardelim}{%
604      \ifboolexpr{
605          test {\ifentrytype{jurisdiction}}
606          or
607          test {\ifentrytype{legislation}}
608      }{\addspace}{\addcomma\space}}
```

The punctuation after the label year is controlled by the following commands, and should be
a comma. The exceptions to this are `legislation` and `jurisdiction` entries, where there should
just be a space if the label is the title.

```
610  \DeclareDelimFormat{nametitledelim}{%
611      \ifboolexpr{
612          (
613              test {\ifentrytype{jurisdiction}}
614              or
615              test {\ifentrytype{legislation}}
616          ) and
617          togl {bbx:labelistitle}
618      }{\addspace}{\addcomma\space}}
619  \DeclareDelimFormat[bib,biblist]{nametitledelim}{%
620      \ifboolexpr{
621          (
622              test {\ifentrytype{jurisdiction}}
623              or
624              test {\ifentrytype{legislation}}
625          ) and
626          togl {bbx:labelistitle}
627      }{\addspace}{\labelnamepunct}}
```

We allow the date macro to print the time as well.

```
630  \renewbibmacro*{date}{%
631    \printdate
632    \setunit*{\bibdatetimesep}
633    \printtime
634  }
635  \DeclareFieldFormat{time}{#1~\bibstring{hours}}
```

We provide a new date merging option that moves the year but leaves the month and day in place, and set this as the default. Note that dates are preceded by a comma, and are given bare rather than in parentheses.

We start by patching the error message of the existing option code, then add a per-type version of the option.

```
637  \xpatchcmd{\KV@blx@opt@pre@mergedate}{%
638    'true' (=compact)%
639  }{%
640    'year', 'true' (=year)%
641  }{}{\wlog{WARNING: biblatex-bath failed to patch KV@blx@opt@pre@datemerge}}
642  \ifdefined\KV@blx@opt@typ@mergedate
643    \xpatchcmd{\KV@blx@opt@typ@mergedate}{%
644      'true' (=compact)%
645    }{%
646      'year', 'true' (=year)%
647    }{}{\wlog{WARNING: biblatex-bath failed to patch KV@blx@opt@typ@datemerge}}
648  \else
649    \DeclareTypeOption[boolean]{mergedate}[true]{%
650      \ifcsdef{bbx@opt@mergedate@#1}{%
651        \csuse{bbx@opt@mergedate@#1}%
652      }{%
653        \PackageError{biblatex}
654          {Invalid option 'mergedate=#1'}
655          {Valid values are 'maximum', 'compact', 'basic', 'minimum',\MessageBreak
656            'year', 'true' (=year), and 'false'.}}}
657  \fi
658  \xpatchcmd{\KV@blx@opt@ent@mergedate}{%
659    'true' (=compact)%
660  }{%
661    'year', 'true' (=year)%
662  }{}{\wlog{WARNING: biblatex-bath failed to patch KV@blx@opt@ent@datemerge}}
```

We define a configurable field format for date labels to replace the hard-coded parentheses in the options from the standard author–year style. We also amend the logic for printing the label date so the nonodate option is respected.

```
664  \DeclareFieldFormat{datelabel}{#1}
665  \xpatchcmd{\bbx@opt@mergedate@maximum}{%
666    \iffieldundef{labelyear}%
667  }{%
668    \ifboolexpr{
669      togl {bbx:nonodate}
670      and
671      not test {\iflabeldateisdate}}%
672  }{}{\wlog{WARNING: biblatex-bath failed to patch bbx@opt@mergedate@maximum}}
673  \xpatchcmd{\bbx@opt@mergedate@maximum}{%
674    \printtext[parens]%
675  }{%
676    \printtext[datelabel]%
677  }{}{\wlog{WARNING: biblatex-bath failed to patch bbx@opt@mergedate@maximum}}
678  \xpatchcmd{\bbx@opt@mergedate@compact}{%
679    \iffieldundef{labelyear}%
680  }{%
681    \ifboolexpr{
```

```
682    togl {bbx:nonodate}
683    and
684    not test {\iflabeldateisdate}}%
685 }{}{\wlog{WARNING: biblatex-bath failed to patch bbx@opt@mergedate@compact}}
686 \xpatchcmd{\bbx@opt@mergedate@compact}{%
687    \printtext[parens]%
688 }{%
689    \printtext[datelabel]%
690 }{}{\wlog{WARNING: biblatex-bath failed to patch bbx@opt@mergedate@compact}}
691 \xpatchcmd{\bbx@opt@mergedate@basic}{%
692    \iffieldundef{labelyear}%
693 }{%
694    \ifboolexpr{
695      togl {bbx:nonodate}
696      and
697      not test {\iflabeldateisdate}}%
698 }{}{\wlog{WARNING: biblatex-bath failed to patch bbx@opt@mergedate@basic}}
699 \xpatchcmd{\bbx@opt@mergedate@basic}{%
700    \printtext[parens]%
701 }{%
702    \printtext[datelabel]%
703 }{}{\wlog{WARNING: biblatex-bath failed to patch bbx@opt@mergedate@basic}}
704 \xpatchcmd{\bbx@opt@mergedate@minimum}{%
705    \iffieldundef{labelyear}%
706 }{%
707    \ifboolexpr{
708      togl {bbx:nonodate}
709      and
710      not test {\iflabeldateisdate}}%
711 }{}{\wlog{WARNING: biblatex-bath failed to patch bbx@opt@mergedate@minimum}}
712 \xpatchcmd{\bbx@opt@mergedate@minimum}{%
713    \printtext[parens]%
714 }{%
715    \printtext[datelabel]%
716 }{}{\wlog{WARNING: biblatex-bath failed to patch bbx@opt@mergedate@minimum}}
717 \xpatchcmd{\bbx@opt@mergedate@false}{%
718    \iffieldundef{labelyear}%
719 }{%
720    \ifboolexpr{
721      togl {bbx:nonodate}
722      and
723      not test {\iflabeldateisdate}}%
724 }{}{\wlog{WARNING: biblatex-bath failed to patch bbx@opt@mergedate@false}}
725 \xpatchcmd{\bbx@opt@mergedate@false}{%
726    \printtext[parens]%
727 }{%
728    \printtext[datelabel]%
729 }{}{\wlog{WARNING: biblatex-bath failed to patch bbx@opt@mergedate@false}}
```

If an older version of biblatex is used, we update the logic for `\bbx@opt@mergedate@maximum`, which is used by the `letter` driver.

```
730 \xpatchcmd{\bbx@opt@mergedate@maximum}{%
731    \iffieldsequal{year}{labelyear}
732      {\printlabeldateextra}%
733      {\printfield{labelyear}%
734      \printfield{extrayear}}%
735 }{%
736    \iflabeldateisdate
737      {\printfield{issue}%
738      \setunit*{\addspace}%
739      \printdateextra
740      {\printlabeldateextra}%
```

```
741  }{}{}
```

Lastly, here is our new (default) option, which always merges the year, and only the year, with the label date. Other date and time componenents are displayed later in the reference. Therefore we clear the year from the date used for the label, but leave the month and day alone.

```
743  \def\bbx@opt@mergedate@year{%
744    \renewbibmacro*{date+extradate}{%
745      \iffieldundef{labelyear}{}{%
746        \ifboolexpr{
747          togl {bbx:nonodate}
748          and
749          not test {\iflabeldateisdate}
750        }{}{%
751          \printtext[datelabel]{\printlabeldateextra}%
752        }%
753        \iflabeldateisdate{%
754          \clearfield{year}%
755        }{}}}
756    \ifcsundef{abx@macro@date+extrayear}{}{%
757      \renewbibmacro*{date+extrayear}{\usebibmacro{date+extradate}}}%
758    }
759    \renewbibmacro*{issue+date}{%
760      \iffieldundef{issue}{}{%
761        \ifboolexpr{(
762          test {\iffieldundef{volume}}
763          and
764          test {\iffieldundef{number}}
765          ) and
766          test {\iffieldundef{eid}}
767        }{%
768          \newunit
769          \printfield{issue}%
770        }{%
771          \printtext[parens]{%
772            \printfield{issue}%
773          }%
774        }
775      }%
776      \setunit{\addcomma\space}%
777      \printdate
778      \newunit
779    }%
780  }%
781
782  \def\bbx@opt@mergedate@true{\bbx@opt@mergedate@year}
783  \ExecuteBibliographyOptions{mergedate}
```

The problem with moving years but leaving months and days behind is that the regular date range macros in `biblatex.sty` do nothing at all if no year is printed. We therefore need to patch the macros with extra routines for printing year-free date ranges: the rather extravagently named `\mknoyeardaterangefull` and `\mknoyeardaterangetrunc`.

```
785  \newrobustcmd*{\mknoyeardaterangefull}[2]{%
786    \iffieldundef{#2month}{}{%
787      \printtext[#2date]{%
788        \datecircaprint
789        \iffieldundef{#2yeardivision}{%
790          \csuse{mkbibdate#1}{}{#2month}{#2day}%
791          \blx@printtime{#2}{}%
792        }{%
793          \csuse{mkbibyeardivisiondate#1}{}{#2yeardivision}}%
794        \dateuncertainprint
```

```
795        \iffieldundef{#2endmonth}{}{%
796          \iffieldequalstr{#2endmonth}{}{%
797            \mbox{\bibdaterangesep}%
798          }{%
799            \bibdaterangesep
800            \enddatecircaprint
801            \iffieldundef{#2yeardivision}{%
802              \csuse{mkbibdate#1}{}{#2endmonth}{#2endday}%
803              \blx@printtime{#2}{end}%
804            }{%
805              \csuse{mkbibyeardivisiondate#1}{}{#2endyeardivision}}%
806            \enddateuncertainprint}}}}
```

There is a potential problem for `\mknoyeardaterangetrunc`, in that if the year and endyear are missing, it cannot tell if they are the same, so if the months are the same but the years are different, the range would be erroneously compressed. However, the only reason the year should be missing is that it is in the label, so we test `labelyear` instead.

```
807  \newrobustcmd*{\mknoyeardaterangetrunc}[2]{%
808    \iffieldundef{#2month}{}{%
809      \printtext[{#2date}]{%
810        \datecircaprint
811        \iffieldundef{#2yeardivision}{%
812          \ifboolexpr{
813            test {\ifdateyearsequal{label}{labelend}}
814            and
815            test {\iffieldsequal{#2month}{#2endmonth}}
816          }{%
817            \csuse{mkbibdate#1}{}{}{#2day}%
818          }{%
819            \csuse{mkbibdate#1}{}{#2month}{#2day}}%
820        }{%
821          \csuse{mkbibyeardivisiondate#1}{}{#2yeardivision}}%
822        \dateuncertainprint
823        \iffieldundef{#2endmonth}{}{%
824          \iffieldequalstr{#2endmonth}{}{%
825            \mbox{\bibdaterangesep}%
826          }{%
827            \bibdaterangesep
828            \enddatecircaprint
829            \iffieldundef{#2yeardivision}{%
830              \csuse{mkbibdate#1}{}{#2endmonth}{#2endday}%
831            }{%
832              \csuse{mkbibyeardivisiondate#1}{}{#2endyeardivision}}%
833            \enddateuncertainprint}}}}
```

Now we patch the four date range commands. The `extra` commands, which print disambiguating labels as well, should only print those labels if the year is present, so they can use the same non-year date range functions as the non-`extra` commands.

```
834  \xpatchcmd{\mkdaterangefull}{%
835    \iffieldundef{#2year} {\blx@nounit}%
836  }{%
837    \iffieldundef{#2year} {\mknoyeardaterangefull{#1}{#2}}%
838  }{\@tempswafalse}{\@tempswatrue}%
839  \if@tempswa
840    \xpatchcmd{\mkdaterangefull}{%
841      \iffieldundef{#2year} {}%
842    }{%
843      \iffieldundef{#2year} {\mknoyeardaterangefull{#1}{#2}}%
844    }{}{\wlog{WARNING: biblatex-bath failed to patch mkdaterangefull}}%
845  \fi
846  \xpatchcmd{\mkdaterangetrunc@i}{%
```

```
847    \iffieldundef{#2year} {\blx@nounit}%
848  }{%
849    \iffieldundef{#2year} {\mknoyeardaterangetrunc{#1}{#2}}%
850  }{\@tempswafalse}{\@tempswatrue}%
851  \if@tempswa
852    \xpatchcmd{\mkdaterangetrunc}{%
853      \iffieldundef{#2year} {}%
854    }{%
855      \iffieldundef{#2year} {\mknoyeardaterangetrunc{#1}{#2}}%
856    }{}{\wlog{WARNING: biblatex-bath failed to patch mkdaterangetrunc@i}}%
857  \fi
858  \xpatchcmd{\mkdaterangefullextra}{%
859    \iffieldundef{#2year} {\blx@nounit}%
860  }{%
861    \iffieldundef{#2year} {\mknoyeardaterangefull{#1}{#2}}%
862  }{\@tempswafalse}{\@tempswatrue}%
863  \if@tempswa
864    \xpatchcmd{\mkdaterangefullextra}{%
865      \iffieldundef{#2year} {}%
866    }{%
867      \iffieldundef{#2year} {\mknoyeardaterangefull{#1}{#2}}%
868    }{}{\wlog{WARNING: biblatex-bath failed to patch mkdaterangefullextra}}%
869  \fi
870  \xpatchcmd{\mkdaterangetruncextra@i}{%
871    \iffieldundef{#2year} {\blx@nounit}%
872  }{%
873    \iffieldundef{#2year} {\mknoyeardaterangetrunc{#1}{#2}}%
874  }{\@tempswafalse}{\@tempswatrue}%
875  \if@tempswa
876    \xpatchcmd{\mkdaterangetruncextra}{%
877      \iffieldundef{#2year} {}%
878    }{%
879      \iffieldundef{#2year} {\mknoyeardaterangetrunc{#1}{#2}}%
880    }{}{\wlog{WARNING: biblatex-bath failed to patch mkdaterangetruncextra@i}}%
881  \fi
882  %
883  % By default, Title--year combinations are not disambiguated, so we fix that
884  % too.
885  \DeclareFieldFormat{extraalpha}{%
886    \iffieldnums{labelyear}
887      {\mknumalph{#1}}
888      {\mkbibparens{\mknumalph{#1}}}}
889  \DeclareLabelalphaTemplate{
890    \labelelement{
891      \field{label}
892      \field{labelname}
893      \field{labeltitle}
894    }
895    \labelelement{
896      \field{labelyear}
897    }
898  }
899  \xpatchcmd{\mkdaterangefullextra}{%
900    \printfield{extradate}%
901  }{%
902    \printfield{extraalpha}%
903  }{}{\wlog{WARNING: biblatex-bath failed to patch mkdaterangefullextra once}}%
904  \xpatchcmd{\mkdaterangefullextra}{%
905    \printfield{extradate}%
906  }{%
907    \printfield{extraalpha}%
908  }{}{\wlog{WARNING: biblatex-bath failed to patch mkdaterangefullextra twice}}%
909  \xpatchcmd{\mkdaterangefullextra}{%
```

```
910    \printfield{extradate}%
911  }{%
912    \printfield{extraalpha}%
913  }{}{\wlog{WARNING: biblatex-bath failed to patch mkdaterangefullextra thrice}}%
914  \xpatchcmd{\mkdaterangetruncextra@i}{%
915    \printfield{extradate}%
916  }{%
917    \printfield{extraalpha}%
918  }{}{\wlog{WARNING: biblatex-bath failed to patch mkdaterangetruncextra@i once}}%
919  \xpatchcmd{\mkdaterangetruncextra@i}{%
920    \printfield{extradate}%
921  }{%
922    \printfield{extraalpha}%
923  }{}{\wlog{WARNING: biblatex-bath failed to patch mkdaterangetruncextra@i twice}}%
924  \xpatchcmd{\mkdaterangetruncextra@i}{%
925    \printfield{extradate}%
926  }{%
927    \printfield{extraalpha}%
928  }{}{\wlog{WARNING: biblatex-bath failed to patch mkdaterangetruncextra@i thrice}}%
```

7.5   Versions

Versions are printed with 'v.' in parentheses.

```
930  \DeclareFieldFormat{version}{\mkbibparens{\biblcsstring{version}#1}}
```

7.6   Types

Types are always printed longhand.

```
931  \DeclareFieldFormat{type}{\ifbibstring{#1}{\biblstring{#1}}{#1}}
932  \DeclareFieldFormat{series}{\MakeSentenceCase*{#1}}
933  \DeclareFieldFormat
934    [audio,video,music,video]%
935    {series}{\ifboolexpr{
936      test {\iffieldequalstr{type}{TV}}
937      or
938      test {\iffieldequalstr{type}{Radio}}
939    }{\mkbibemph{\MakeSentenceCase*{#1}}}{\MakeSentenceCase*{#1}}}
940  \DeclareFieldFormat
941    [audio,video,music,video]%
942    {number}{\ifboolexpr{
943      test {\iffieldequalstr{type}{TV}}
944      or
945      test {\iffieldequalstr{type}{Radio}}
946    }{\mkbibemph{#1}}{#1}}
947  \DeclareFieldFormat[legislation,jurisdiction]{series}{#1}
948  \renewbibmacro*{series+number}{%
949    \printfield{series}%
950    \setunit*{\addcomma\space}%
951    \printfield{number}%
952    \newunit}
```

7.7   Events

Events are printed as date then venue with no intermediate punctuation.

```
953  \renewbibmacro*{event+venue+date}{%
954    \printfield{eventtitle}%
955    \setunit*{\addspace}%
956    \printfield{eventtitleaddon}%
```

```
957    \ifboolexpr{
958      test {\iffieldundef{venue}}
959      and
960      test {\iffieldundef{eventyear}}
961    }
962      {}
963      {\setunit{\addcomma\space}%
964       \printeventdate
965       \setunit*{\addcomma\space}%
966       \printfield{venue}%
967       \newunit}}
```

7.8   Publishers

We patch the secondary publication macros so they will use the publisher list instead, if provided.

```
969    \letbibmacro{plain:institution+location+date}{institution+location+date}
970    \renewbibmacro*{institution+location+date}{%
971      \iflistundef{publisher}{%
972        \usebibmacro{plain:institution+location+date}%
973      }{%
974        \printlist{institution}%
975        \newunit
976        \usebibmacro{publisher+location+date}}}
```

As an additional hack for social media entries where the date is preceded by a comma, we tweak the punctuation logic for `organization+location+date`.

```
977    \renewbibmacro*{organization+location+date}{%
978      \iflistundef{publisher}{%
979        \printlist{location}%
980        \iflistundef{organization}
981          {\setunit*{\addcomma\space}}
982          {\setunit*{\addcolon\space}}%
983        \printlist{organization}%
984        \iflistundef{location}
985          {\setunit{\addcomma\space}}%
986          {\setunit*{\addcomma\space}}%
987        \usebibmacro{date}%
988        \newunit
989      }{%
990        \printlist{organization}%
991        \newunit
992        \usebibmacro{publisher+location+date}}}
```

We use the `library` field for databases and preprint repositories.

```
994     \DeclareFieldFormat{library}{\mkbibemph{#1}}
995     \newbibmacro*{library}{%
996       \iffieldundef{library}{}{%
997         \printfield{library}\clearfield{library}%
998         \setunit*{\addspace}%
999         \usebibmacro{isonline}%
1000      }%
1001    }
```

7.9   Page numbers

```
1003    \renewcommand*{\ppspace}{}
1004    \DeclareNumChars{ab}
```

7.10 URLs

URLs are prefaced by a 'from' statement, and the URL date is enclosed in brackets rather than parentheses.

```
1005  \DeclareFieldFormat{url}{\bibsentence\bibstring{urlfrom}\addcolon\space\url{#1}}
1006  \DeclareFieldFormat{doi}{\bibsentence\bibstring{urlfrom}\addcolon\space\url{https://doi.org/#1}}
1007  \DeclareFieldFormat{pseudourl}{\bibsentence\bibstring{urlfrom}\addcolon\space#1}
1008  \DeclareFieldFormat{urldate}{\mkbibbrackets{\bibstring{urlseen}\space#1}}
```

Since URLs and DOIs are presented in exactly the same way, we combine them such that the DOI overrides the URL. We also allow the `library` field to be used as a fallback URL.

```
1009  \renewbibmacro*{url}{%
1010    \iffieldundef{doi}{%
1011      \ifboolexpr{
1012        test {\iffieldundef{url}}
1013        and not
1014        test {\iffieldundef{urlyear}}
1015      }{\printfield[pseudourl]{library}}{\printfield{url}}%
1016    }{%
1017      \printfield{doi}%
1018    }}
1019  \renewbibmacro*{doi+eprint+url}{%
1020    \iftoggle{bbx:eprint}
1021      {\usebibmacro{eprint}}
1022      {}%
1023    \newunit\newblock
1024    \iftoggle{bbx:url}
1025      {\usebibmacro{url+urldate}}
1026      {}}
```

This backports changes to the `online` driver in biblatex v3.15 to earlier versions, so the above works as intended.

```
1027  \xpatchbibdriver{online}{%
1028    \iftoggle{bbx:doi}
1029      {\printfield{doi}}
1030      {}%
1031    \newunit\newblock
1032    \iftoggle{bbx:eprint}
1033      {\usebibmacro{eprint}}
1034      {}%
1035    \newunit\newblock
1036    \usebibmacro{url+urldate}%
1037  }{%
1038    \toggletrue{bbx:url}%
1039    \usebibmacro{doi+eprint+url}%
1040  }{}{}
```

7.11 Articles

Compared with the standard styles, the main differences in the driver are the omission of 'in' and the position of the publication state.

```
1042  \xpatchbibdriver{article}{%
1043    \usebibmacro{in:}\usebibmacro{journal+issuetitle}%
1044  }{%
1045    \usebibmacro{journal+issuetitle}%
1046  }{}{\wlog{WARNING: biblatex-bath failed to patch article driver}}
1047  \xpatchbibdriver{article}{%
1048    \usebibmacro{addendum+pubstate}%
1049  }{%
1050    \printfield{addendum}%
```

```
1051  }{}{\wlog{WARNING: biblatex-bath failed to patch article driver}}
```

The journal title is in sentence case rather than title case.

```
1052  \xpatchbibmacro{journal}{%
1053    \printfield[titlecase]{journaltitle}%
1054  }{%
1055    \printfield[sentencecase]{journaltitle}%
1056  }{}{\wlog{WARNING: biblatex-bath failed to patch journal macro}}
1057  \xpatchbibmacro{journal}{%
1058    \printfield[titlecase]{journalsubtitle}%
1059  }{%
1060    \printfield[sentencecase]{journalsubtitle}%
1061  }{}{\wlog{WARNING: biblatex-bath failed to patch journal macro}}
```

The journal title is followed by a comma. The issue number is separated from the volume by parentheses rather than a dot. The pubstate is in the volume position.

```
1062  \renewbibmacro*{journal+issuetitle}{%
1063    \usebibmacro{journal}%
1064    \setunit*{\addspace}%
1065    \usebibmacro{isonline}%
1066    \setunit*{\addcomma\space}%
1067    \iffieldundef{series}
1068      {}
1069      {\newunit
1070       \printfield{series}%
1071       \setunit{\addcomma\space}}%
1072    \usebibmacro{volume+number+eid}%
1073    \setunit{\addspace}%
1074    \usebibmacro{issue+date}%
1075    \setunit{\addcolon\space}%
1076    \usebibmacro{issue}%
1077    \setunit{\addcomma\space}%
1078    \printfield{pubstate}%
1079    \newunit}
1080  \renewbibmacro*{volume+number+eid}{%
1081    \printfield{volume}%
1082    \printfield[parens]{number}%
1083    \setunit{\addcomma\space}%
1084    \printfield{eid}}
```

7.12 Books

Compared with the standard styles, the main difference is that the series is separated by a comma rather than a period. This also affects proceedings and certain forms of grey literature.

```
1086  \xpatchbibdriver{book}{%
1087    \newunit\newblock
1088    \usebibmacro{series+number}%
1089  }{%
1090    \setunit{\addcomma\space}%
1091    \usebibmacro{series+number}%
1092  }{}{\wlog{WARNING: biblatex-bath failed to patch book driver (series+number)}}
1093
1094  \xpatchbibdriver{collection}{%
1095    \newunit\newblock
1096    \usebibmacro{series+number}%
1097  }{%
1098    \setunit{\addcomma\space}%
1099    \usebibmacro{series+number}%
1100  }{}{\wlog{WARNING: biblatex-bath failed to patch collection driver (series+number)}}
1101
```

```
1102  \xpatchbibdriver{inbook}{%
1103    \newunit\newblock
1104    \usebibmacro{series+number}%
1105  }{%
1106    \setunit{\addcomma\space}%
1107    \usebibmacro{series+number}%
1108  }{}{\wlog{WARNING: biblatex-bath failed to patch inbook driver (series+number)}}
1109
1110  \xpatchbibdriver{incollection}{%
1111    \newunit\newblock
1112    \usebibmacro{series+number}%
1113  }{%
1114    \setunit{\addcomma\space}%
1115    \usebibmacro{series+number}%
1116  }{}{\wlog{WARNING: biblatex-bath failed to patch incollection driver (series+number)}}
1117
1118  \xpatchbibdriver{inproceedings}{%
1119    \newunit\newblock
1120    \usebibmacro{series+number}%
1121  }{%
1122    \setunit{\addcomma\space}%
1123    \usebibmacro{series+number}%
1124  }{}{\wlog{WARNING: biblatex-bath failed to patch inproceedings driver (series+number)}}
1125
1126  \xpatchbibdriver{proceedings}{%
1127    \newunit\newblock
1128    \usebibmacro{series+number}%
1129  }{%
1130    \setunit{\addcomma\space}%
1131    \usebibmacro{series+number}%
1132  }{}{\wlog{WARNING: biblatex-bath failed to patch proceedings driver (series+number)}}
```

7.13 Works in collections

Compared with the standard styles, the main difference is that the editors precede the booktitle.

```
1134  \xpatchbibdriver{incollection}{%
1135    \usebibmacro{in:}%
1136    \usebibmacro{maintitle+booktitle}%
1137    \newunit\newblock
1138    \usebibmacro{byeditor+others}%
1139  }{%
1140    \ifnameundef{editor}{}{\usebibmacro{in:}}%
1141    \usebibmacro{bookeditor}%
1142    \newunit\newblock
1143    \usebibmacro{maintitle+booktitle}%
1144    \usebibmacro{byeditor+others}%
1145  }{}{\wlog{WARNING: biblatex-bath failed to patch incollection driver (bookeditor)}}
1146
1147  \xpatchbibdriver{inproceedings}{%
1148    \usebibmacro{in:}%
1149    \usebibmacro{maintitle+booktitle}%
1150    \newunit\newblock
1151    \usebibmacro{event+venue+date}%
1152    \newunit\newblock
1153    \usebibmacro{byeditor+others}%
1154  }{%
1155    \ifnameundef{editor}{}{\usebibmacro{in:}}%
1156    \usebibmacro{bookeditor}%
1157    \newunit\newblock
1158    \usebibmacro{maintitle+booktitle}%
1159    \usebibmacro{byeditor+others}%
```

```
1160      \newunit
1161      \usebibmacro{event+venue+date}%
1162  }{}{\wlog{WARNING: biblatex-bath failed to patch inproceedings driver (bookeditor)}}
```

7.14 Works in books known by their title

In these cases, the title is moved after the edition information.

```
1164  \DeclareBibliographyDriver{inreference}{%
1165      \usebibmacro{bibindex}%
1166      \usebibmacro{begentry}%
1167      \usebibmacro{author/translator+others}%
1168      \setunit{\printdelim{nametitledelim}}\newblock
1169      \ifnameundef{author}{}{\usebibmacro{title}%
1170      \newunit}%
1171      \printlist{language}%
1172      \newunit\newblock
1173      \usebibmacro{byauthor}%
1174      \newunit\newblock
1175      \ifboolexpr{
1176        test {\iffieldundef{maintitle}}
1177        and
1178        test {\iffieldundef{booktitle}}
1179      }{}{%
1180        \ifnameundef{editor}{}{\usebibmacro{in:}}%
1181        \usebibmacro{bookeditor}%
1182        \newunit\newblock
1183        \usebibmacro{maintitle+booktitle}}%
1184      \usebibmacro{byeditor+others}%
1185      \newunit\newblock
1186      \printfield{edition}%
1187      \newunit
1188      \iffieldundef{maintitle}
1189        {\printfield{volume}%
1190         \printfield{part}}
1191        {}%
1192      \newunit
1193      \ifnameundef{author}{\usebibmacro{title}%
1194      \newunit}{}%
1195      \printfield{volumes}%
1196      \newunit\newblock
1197      \usebibmacro{series+number}%
1198      \newunit\newblock
1199      \printfield{note}%
1200      \newunit\newblock
1201      \usebibmacro{publisher+location+date}%
1202      \newunit\newblock
1203      \usebibmacro{chapter+pages}%
1204      \newunit\newblock
1205      \iftoggle{bbx:isbn}
1206        {\printfield{isbn}}
1207        {}%
1208      \newunit\newblock
1209      \usebibmacro{doi+eprint+url}%
1210      \newunit\newblock
1211      \usebibmacro{addendum+pubstate}%
1212      \setunit{\bibpagerefpunct}\newblock
1213      \usebibmacro{pageref}%
1214      \newunit\newblock
1215      \iftoggle{bbx:related}
1216        {\usebibmacro{related:init}%
1217         \usebibmacro{related}}
```

```
1218        {}%
1219     \usebibmacro{finentry}}
```

7.15 Datasets

We patch the new datasets driver from biblatex v3.13 so it can emulate what we had previously
done with the online driver.

```
1221  \xpatchbibdriver{dataset}{%
1222     \printlist{organization}%
1223     \newunit
1224     \usebibmacro{publisher+location+date}%
1225  }{%
1226     \usebibmacro{library}%
1227     \newunit\newblock
1228     \usebibmacro{organization+location+date}%
1229  }{}{\wlog{WARNING: biblatex-bath failed to patch dataset driver (publisher)}}
```

7.16 Online works

Compared with the standard styles, the main difference is that the organization's address is printed.

```
1231  \xpatchbibdriver{online}{%
1232     \printlist{organization}%
1233     \newunit\newblock
1234     \usebibmacro{date}%
1235  }{%
1236     \usebibmacro{library}%
1237     \newunit\newblock
1238     \usebibmacro{organization+location+date}%
1239  }{}{\wlog{WARNING: biblatex-bath failed to patch online driver (publisher)}}
```

7.17 Reports

Compared with the standard styles, the main differences are that we use a special macro for printing
the type, series and number in parentheses, and we support the library field.

```
1241  \DeclareFieldFormat{forceparens}{(#1)}
1242  \newbibmacro{series+type+number}{%
1243     \ifboolexpr{
1244       test {\iffieldundef{series}}
1245       and
1246       test {\iffieldundef{type}}
1247       and
1248       test {\iffieldundef{number}}
1249     }{}{%
1250       \printtext[parens]{%
1251         \printfield{series}%
1252         \IfStrEqCase{\thefield{series}}{%
1253           {C}{\printunit*{\adddot\space}}%
1254           {Cd}{\printunit*{\adddot\space}}%
1255           {Cmd}{\printunit*{\adddot\space}}%
1256           {Cmnd}{\printunit*{\adddot\space}}%
1257           {Cm}{\printunit*{\adddot\space}}%
1258         }{%
1259           \setunit*{\addcomma\space}}%
1260         \printfield{type}%
1261         \setunit*{\addspace}%
1262         \IfBeginWith{\thefield{series}}{{HL}}{%
1263           \printfield[forceparens]{number}%
1264         }{%
```

```
1265        \printfield{number}%
1266      }}}}
1267
1268 \DeclareBibliographyDriver{report}{%
1269   \usebibmacro{bibindex}%
1270   \usebibmacro{begentry}%
1271   \usebibmacro{author}%
1272   \setunit{\printdelim{nametitledelim}}\newblock
1273   \usebibmacro{title}%
1274   \newunit
1275   \printlist{language}%
1276   \newunit\newblock
1277   \usebibmacro{byauthor}%
1278   \newunit\newblock
1279   \usebibmacro{series+type+number}%
1280   \newunit\newblock
1281   \printfield{note}%
1282   \newunit\newblock
1283   \usebibmacro{institution+location+date}%
1284   \newunit\newblock
1285   \usebibmacro{chapter+pages}%
1286   \newunit
1287   \printfield{pagetotal}%
1288   \newunit\newblock
1289   \iftoggle{bbx:isbn}
1290     {\printfield{isrn}}
1291     {}%
1292   \newunit\newblock
1293   \usebibmacro{library}%
1294   \newunit\newblock
1295   \usebibmacro{doi+eprint+url}%
1296   \newunit\newblock
1297   \usebibmacro{addendum+pubstate}%
1298   \setunit{\bibpagerefpunct}\newblock
1299   \usebibmacro{pageref}%
1300   \newunit\newblock
1301   \iftoggle{bbx:related}
1302     {\usebibmacro{related:init}%
1303      \usebibmacro{related}}
1304     {}%
1305   \usebibmacro{finentry}}
```

7.18 Manuals

The `manual` driver is useful for a variety of technical publications, such as standards, patents and maps. (Patents have their own driver, in fact, but we set things up so the `manual` driver can be used instead if needed for compatibility.)

```
1307 \newbibmacro{manual:series+type+number}{%
1308   \iffieldundef{series}{%
1309     \newunit\newblock
1310     \printfield{type}%
1311     \setunit{\addspace}%
1312     \printfield{number}%
1313   }{%
1314     \setunit{\addcomma\space}%
1315     \usebibmacro{series+number}%
1316     \newunit\newblock
1317     \printfield{type}%
1318   }%
1319 }
1320 \xpatchbibdriver{manual}{%
```

```
1321    \newunit\newblock
1322    \usebibmacro{series+number}%
1323    \newunit\newblock
1324    \printfield{type}%
1325  }{%
1326    \usebibmacro{manual:series+type+number}%
1327  }{}{\wlog{WARNING: biblatex-bath failed to patch manual driver}}
1328  \xpatchbibdriver{manual}{%
1329    \printlist{organization}%
1330    \newunit
1331    \usebibmacro{publisher+location+date}%
1332  }{%
1333    \usebibmacro{organization+location+date}%
1334  }{}{\wlog{WARNING: biblatex-bath failed to patch manual driver}}
```

7.19 Standards

A special quirk with standards is that they are often best known by their number, so it comes at the head of the reference if no authors are specified.

To achieve this cleanly with correct sorting, we copy the number into `sortkey` as a simple fix (providing neither `author` nor `sortkey` are already specified). We then move the number to `label` so that citations come out correctly and the date (if given) is put in the right place.

```
1336  \DeclareStyleSourcemap{%
1337    \maps[datatype=bibtex]{%
1338      \map[overwrite=false]{
1339        \pertype{standard}
1340        \step[notfield=author,
1341          fieldsource=number,
1342          final]
1343        \step[fieldset=sortkey,
1344          origfieldval]
1345      }
1346      \map[overwrite=false]{
1347        \pertype{standard}
1348        \step[notfield=author,
1349        fieldsource=number,
1350        fieldtarget=label]
1351      }
1352    }}
1353  \ExecuteBibliographyOptions[standard]{useeditor=false}
```

7.20 Audiovisual materials

The `audio` and `video` drivers are based on `misc`.

```
1355  \DeclareBibliographyDriver{audio}{%
1356    \usebibmacro{bibindex}%
1357    \usebibmacro{begentry}%
1358    \usebibmacro{author/editor+others/translator+others}%
1359    \setunit{\printdelim{nametitledelim}}\newblock
1360    \usebibmacro{title}%
1361    \newunit\newblock
1362    \usebibmacro{series+number}%
1363    \ifboolexpr{
1364      test {\iffieldequalstr{type}{TV}}
1365      or
1366      test {\iffieldequalstr{type}{Radio}}
1367    }{%
1368      \setunit{\addspace}%
1369      \usebibmacro{isonline}}{}%
1370    \newunit
```

```
1371    \printlist{language}%
1372    \newunit\newblock
1373    \printfield{type}%
1374    \newunit\newblock
1375    \usebibmacro{byauthor}[given-family:full]%
1376    \newunit\newblock
1377    \usebibmacro{byeditor+others}[given-family:full]%
1378    \newunit\newblock
1379    \printfield{howpublished}%
1380    \newunit\newblock
1381    \printfield{note}%
1382    \newunit\newblock
1383    \usebibmacro{publisher+location+date}%
1384    \newunit\newblock
1385    \usebibmacro{doi+eprint+url}%
1386    \newunit\newblock
1387    \usebibmacro{addendum+pubstate}%
1388    \setunit{\bibpagerefpunct}\newblock
1389    \usebibmacro{pageref}%
1390    \newunit\newblock
1391    \iftoggle{bbx:related}
1392      {\usebibmacro{related:init}%
1393       \usebibmacro{related}}
1394      {}%
1395    \usebibmacro{finentry}}
1396  \DeclareBibliographyAlias{movie}{audio}
1397  \DeclareBibliographyAlias{music}{audio}
1398  \DeclareBibliographyAlias{video}{audio}
```

7.21 Case reports

We provide a test to see if a work was published in the Official Journal of the EU; if so, the title is not italic (unless reporting a decision of the European Commission).

```
1399  \newtoggle{bbx:eu-oj}
1400  \newbibmacro*{eucheck}{%
1401    \IfBeginWith{\thefield{journaltitle}}{OJ}{%
1402      \toggletrue{bbx:eu-oj}%
1403    }{}}
1404  \DeclareFieldFormat[jurisdiction,legislation]{title}{%
1405    \ifboolexpr{
1406      togl{bbx:eu-oj}
1407      and
1408      not test {\iffieldequalstr{type}{Commission Decision}}
1409    }{#1}{\mkbibemph{#1}}}
```

The year is printed in square brackets, unless the case is Scottish, in which case the year is printed bare, or a volume number is present, in which case the year is printed in parentheses. With ECR and OJ cases, however, the year is always printed in square brackets despite the presence of a volume number. We provide a year-essential option for forcing the brackets/parentheses choice, and scottish-style for activating Scottish style.

```
1411  \newtoggle{bbx:scotstyle}
1412  \DeclareEntryOption[boolean]{scottish-style}[true]{%
1413    \settoggle{bbx:scotstyle}{#1}}
1414  \newtoggle{bbx:year-essential}
1415  \DeclareEntryOption[boolean]{year-essential}[true]{%
1416    \settoggle{bbx:year-essential}{#1}}
1417  \DeclareFieldFormat[jurisdiction]{datelabel}{%
1418    \ifboolexpr{
1419      test {\iffieldundef{volume}}
1420      or
```

```
1421    togl {bbx:year-essential}
1422    or
1423    togl {bbx:eu-oj}
1424    or
1425    test {\iffieldequalstr{journaltitle}{ECR}}
1426  }{%
1427    \ifboolexpr{
1428      test {\ifkeyword{sc}}
1429      or
1430      togl {bbx:scotstyle}
1431    }{%
1432      #1%
1433    }{%
1434      \mkbibbrackets{#1}}%
1435  }{%
1436    \mkbibparens{#1}}}
```

A case number should normally go after the title and before the year, but Version 1 of this style used `number` with `type` at the end of the reference. (It relied on the case number being given in the `issue` field.) To maintain backwards compatibility, we rely on a 'trick' that case numbers are usually only present in EU cases where a page number is always provided. (And we support the `oscola` semantics for numbering European Commission cases.) We have to be a bit careful to ensure the last print command prints something otherwise `(no)nameyeardelim` will not be triggered.

```
1438  \DeclareFieldFormat[jurisdiction]{issue}{\mkbibparens{#1}}
1439  \newbibmacro*{casenumber}{%
1440    \iffieldundef{issue}{%
1441      \ifboolexpr{
1442        test {\iffieldundef{pages}}
1443        or
1444        test {\iffieldundef{number}}
1445      }{}{%
1446        \iffieldundef{userb}{%
1447          \printfield[parens]{number}%
1448          \clearfield{number}%
1449        }{%
1450          \printfield[parens]{userb}%
1451          \setunit{\addspace}%
1452          \printfield{type}%
1453          \setunit*{\addspace}%
1454          \printfield{number}%
1455          \clearfield{type}\clearfield{number}}}%
1456    }{%
1457      \printfield{issue}}}
```

For ease, if 'Commission' is given as the `institution`, this is deleted but the `type` is set to 'Commission Decision'.

```
1458  \DeclareStyleSourcemap{
1459    \maps[datatype=bibtex]{
1460      \map[overwrite=false]{
1461        \step[match=\regexp{Commission}, fieldsource=institution, final]
1462        \step[fieldset=type, fieldvalue={Commission Decision}]
1463        \step[fieldset=institution, null]
1464      }
1465      \map[overwrite=false]{
1466        \step[fieldsource=casenumber, final]
1467        \step[notfield=number, fieldsource=casenumber, fieldtarget=number]
1468        \step[fieldsource=casenumber, fieldtarget=userb]
1469      }
1470    }
1471  }
```

Law reports have a special way of printing journals, volume and page numbers. Here are sev-

eral macros implementing this: a deprecated one using `type`/`number` and three proper ones using `journaltitle`, for UK journals, ECR and OJ respectively. The `reporter` macro chooses between them (again, this is a little messy for backwards compatibility).

```
1473  \newbibmacro{jurisdiction:type+number}{%
1474    \usebibmacro{journal}%
1475    \setunit*{\addspace}%
1476    \ifboolexpr{
1477      test {\iffieldundef{type}}
1478      and
1479      test {\iffieldundef{number}}
1480    }{}{%
1481      \printfield{volume}%
1482      \setunit*{\addperiod\space}%
1483      \printfield{type}%
1484      \setunit*{\addspace}%
1485      \printfield{number}}}
1486  \DeclareFieldFormat[jurisdiction]{journaltitle}{%
1487    \iftoggle{bbx:eu-oj}{\mkbibemph{#1}}{#1}}
1488  \DeclareFieldFormat[jurisdiction,legislation]{volume}{#1}
1489  \DeclareFieldFormat[jurisdiction,legislation]{pages}{#1}
1490  \newbibmacro{journal+volume+pages}{%
1491    \printfield{volume}%
1492    \setunit{\addperiod\space}%
1493    \printfield{journaltitle}%
1494    \setunit*{\addspace}%
1495    \printfield{pages}%
1496  }
1497  \newbibmacro{eu:journal+volume+pages}{%
1498    \printfield{journaltitle}%
1499    \setunit{\addspace}%
1500    \printfield{volume}%
1501    \setunit*{\printtext{--\allowbreak}}%
1502    \printfield{pages}%
1503  }
1504  \newbibmacro{eu:journal+series+volume+pages}{%
1505    \printfield{journaltitle}%
1506    \setunit{\addspace}%
1507    \printfield{series}%
1508    \clearfield{series}%
1509    \printfield{volume}%
1510    \setunit*{\printtext{/}}%
1511    \printfield{pages}%
1512  }
1513  \newbibmacro{reporter}{%
1514    \iffieldundef{journaltitle}{%
1515      \usebibmacro{jurisdiction:type+number}%
1516    }{%
1517      \iffieldequalstr{journaltitle}{ECR}{%
1518        \usebibmacro{eu:journal+volume+pages}%
1519      }{%
1520        \iffieldequalstr{journaltitle}{OJ}{%
1521          \iffieldundef{series}{%
1522            \usebibmacro{jurisdiction:type+number}%
1523          }{%
1524            \usebibmacro{eu:journal+series+volume+pages}%
1525          }%
1526        }{%
1527          \usebibmacro{journal+volume+pages}%
1528        }}}}
```

It's not a feature of Harvard (Bath), but OSCOLA puts the institution in parentheses at the end.

```
1530   \DeclareFieldFormat[jurisdiction]{institution}{\mkbibparens{#1}}
1531
1532   \DeclareBibliographyDriver{jurisdiction}{%
1533     \savebibmacro{title}%
1534     \xapptobibmacro{labeltitle}{%
1535       \setunit*{\addspace}%
1536       \usebibmacro{casenumber}%
1537     }{}{}%
1538     \usebibmacro{bibindex}%
1539     \usebibmacro{begentry}%
1540     \usebibmacro{eucheck}%
1541     \usebibmacro{author}%
1542     \setunit{\printdelim{nametitledelim}}\newblock
1543     \usebibmacro{title}%
1544     \newunit
1545     \printlist{language}%
1546     \newunit\newblock
1547     \usebibmacro{byauthor}%
1548     \newunit\newblock
1549     \printfield{note}%
1550     \setunit{\addspace}%
1551     \usebibmacro{reporter}%
1552     \newunit
1553     \printfield{pagetotal}%
1554     \newunit\newblock
1555     \printfield{institution}%
1556     \newunit\newblock
1557     \iftoggle{bbx:isbn}
1558       {\printfield{isrn}}
1559       {}%
1560     \newunit\newblock
1561     \usebibmacro{doi+eprint+url}%
1562     \newunit\newblock
1563     \usebibmacro{addendum+pubstate}%
1564     \setunit{\bibpagerefpunct}\newblock
1565     \usebibmacro{pageref}%
1566     \newunit\newblock
1567     \iftoggle{bbx:related}
1568       {\usebibmacro{related:init}%
1569        \usebibmacro{related}}
1570       {}%
1571     \usebibmacro{finentry}%
1572     \restorebibmacro{title}}
```

7.22 Legislation

Legislation is mostly formatted like a report, except there is no `nametitledelim` there is no `date+extradate`. There is also some variation in how the series/number/chapter information is punctuated.

```
1574   \DeclareFieldFormat[legislation]{datelabel}{%
1575     \iftoggle{bbx:eu-oj}{%
1576       \mkbibbrackets{#1}%
1577     }{#1}}
1578   \DeclareFieldFormat[legislation]{labeldate}{%
1579     \iftoggle{bbx:labelistitle}{\printtext[title]{#1}}{#1}}
1580   \DeclareFieldFormat[legislation]{chapter}{\biblcsstring{legalchapter}#1}
1581   \newbibmacro*{journal+series+volume+number+chapter+pages}{%
1582     \iftoggle{bbx:eu-oj}{%
1583       \setunit{\addspace}%
1584       \usebibmacro{eu:journal+series+volume+pages}%
1585     }{%
```

```latex
      \iffieldequalstr{entrysubtype}{secondary}{%
        \setunit{\addcomma\space}%
        \printfield{number}%
        \clearfield{number}%
        \printunit{\addcomma\space}%
    }{%
        \ifboolexpr{
          test {\iffieldundef{series}}
          and
          test {\iffieldundef{type}}
        }{%
          \iffieldundef{number}{%
            \setunit{\addcomma\space}%
            \printfield{chapter}%
          }{%
            \setunit{\addspace}%
            \printtext[parens]{%
              \printfield{number}%
              \setunit*{\addcomma\space}%
              \printfield{chapter}}}%
        }{%
          \iffieldundef{chapter}{}{\setunit{\addspace}}%
          \printtext[parens]{%
            \printfield{series}%
            \setunit{\addcomma\space}%
            \printfield{type}%
            \setunit*{\addspace}%
            \printfield{number}%
            \setunit*{\addcomma\space}%
            \printfield{chapter}}}}}}

\DeclareBibliographyDriver{legislation}{%
   \usebibmacro{bibindex}%
   \usebibmacro{begentry}%
   \usebibmacro{eucheck}%
   \usebibmacro{author}%
   \setunit{\printdelim{nametitledelim}}\newblock
   \usebibmacro{title}%
   \newunit
   \printlist{language}%
   \newunit\newblock
   \usebibmacro{byauthor}%
   \newunit\newblock
   \usebibmacro{journal+series+volume+number+chapter+pages}
   \newunit\newblock
   \printfield{note}%
   \newunit\newblock
   \usebibmacro{institution+location+date}%
   \newunit\newblock
   \printfield{pagetotal}%
   \newunit\newblock
   \iftoggle{bbx:isbn}
     {\printfield{isrn}}
     {}%
   \newunit\newblock
   \usebibmacro{doi+eprint+url}%
   \newunit\newblock
   \usebibmacro{addendum+pubstate}%
   \setunit{\bibpagerefpunct}\newblock
   \usebibmacro{pageref}%
   \newunit\newblock
   \iftoggle{bbx:related}
     {\usebibmacro{related:init}%
```

```
1649        \usebibmacro{related}}
1650      {}%
1651    \usebibmacro{finentry}}
```

7.23 Letters

This driver is used for emails. It is based loosely on the one for articles. The particular foible with this type is that the date must be printed complete at the start.

```
1653  \DeclareFieldFormat[letter]{title}{\iffieldundef{journaltitle}{\emph{#1}}{#1}}
1654  \ExecuteBibliographyOptions[letter]{mergedate=maximum}
1655  \DeclareBibliographyDriver{letter}{%
1656    \usebibmacro{bibindex}%
1657    \usebibmacro{begentry}%
1658    \usebibmacro{author/translator+others}%
1659    \setunit{\printdelim{nametitledelim}}\newblock
1660    \usebibmacro{title}%
1661    \newunit
1662    \printlist{language}%
1663    \newunit\newblock
1664    \usebibmacro{byauthor}%
1665    \newunit\newblock
1666    \usebibmacro{bytranslator+others}%
1667    \newunit\newblock
1668    \usebibmacro{journal+issuetitle}%
1669    \newunit\newblock
1670    \printfield{howpublished}%
1671    \newunit
1672    \printfield{note}%
1673    \newunit\newblock
1674    \usebibmacro{doi+eprint+url}%
1675    \newunit\newblock
1676    \usebibmacro{addendum+pubstate}%
1677    \setunit{\bibpagerefpunct}\newblock
1678    \usebibmacro{pageref}%
1679    \newunit\newblock
1680    \iftoggle{bbx:related}
1681      {\usebibmacro{related:init}%
1682       \usebibmacro{related}}
1683      {}%
1684    \usebibmacro{finentry}%
1685  }
```

7.24 Software

The driver for software entries is based on misc. The main difference is in how the type is printed.

```
1687  \DeclareFieldFormat[software]{type}{\mkbibbrackets{#1}}
1688  \DeclareBibliographyDriver{software}{%
1689    \usebibmacro{bibindex}%
1690    \usebibmacro{begentry}%
1691    \usebibmacro{author/editor+others/translator+others}%
1692    \setunit{\printdelim{nametitledelim}}\newblock
1693    \usebibmacro{title}%
1694    \setunit{\addspace}
1695    \printfield{type}%
1696    \newunit
1697    \printlist{language}%
1698    \newunit\newblock
1699    \usebibmacro{byauthor}%
1700    \newunit\newblock
1701    \usebibmacro{byeditor+others}%
```

```
1702    \newunit\newblock
1703    \printfield{howpublished}%
1704    \newunit\newblock
1705    \printfield{note}%
1706    \newunit\newblock
1707    \usebibmacro{organization+location+date}%
1708    \newunit\newblock
1709    \usebibmacro{doi+eprint+url}%
1710    \newunit\newblock
1711    \usebibmacro{addendum+pubstate}%
1712    \setunit{\bibpagerefpunct}\newblock
1713    \usebibmacro{pageref}%
1714    \newunit\newblock
1715    \iftoggle{bbx:related}
1716      {\usebibmacro{related:init}%
1717       \usebibmacro{related}}
1718      {}%
1719    \usebibmacro{finentry}}
```

7.25 Images

The driver for image is based on misc. The main difference is the support for the `library` field.

```
1721    \DeclareFieldFormat[image]{library}{#1}
1722    \DeclareBibliographyDriver{image}{%
1723      \usebibmacro{bibindex}%
1724      \usebibmacro{begentry}%
1725      \usebibmacro{author/editor+others/translator+others}%
1726      \setunit{\printdelim{nametitledelim}}\newblock
1727      \usebibmacro{title}%
1728      \newunit
1729      \printlist{language}%
1730      \newunit\newblock
1731      \usebibmacro{byauthor}%
1732      \newunit\newblock
1733      \usebibmacro{byeditor+others}%
1734      \newunit\newblock
1735      \printfield{howpublished}%
1736      \newunit\newblock
1737      \printfield{type}%
1738      \newunit
1739      \printfield{note}%
1740      \newunit\newblock
1741      \usebibmacro{organization+location+date+library}%
1742      \newunit\newblock
1743      \usebibmacro{doi+eprint+url}%
1744      \newunit\newblock
1745      \usebibmacro{addendum+pubstate}%
1746      \setunit{\bibpagerefpunct}\newblock
1747      \usebibmacro{pageref}%
1748      \newunit\newblock
1749      \iftoggle{bbx:related}
1750        {\usebibmacro{related:init}%
1751         \usebibmacro{related}}
1752        {}%
1753      \usebibmacro{finentry}}
```

The following code works slightly differently

```
1754    \newbibmacro*{organization+location+date+library}{%
1755      \ifboolexpr{
1756        test {\iffieldundef{library}}
1757        or
```

```
1758      not test {\iflistundef{publisher}}
1759    }{%
1760      \printlist{location}%
1761      \setunit*{\addcolon\space}%
1762      \clearfield{location}%
1763    }{}%
1764    \iflistundef{publisher}{%
1765      \printlist{organization}%
1766    }{%
1767      \printlist{publisher}%
1768    }%
1769    \setunit{\addcomma\space}%
1770    \usebibmacro{date}%
1771    \newunit
1772    \iffieldundef{library}{%
1773      \iffieldundef{institution}{}{%
1774        \bibsentence
1775        \bibstring{at}%
1776        \setunit{\addcolon\space}%
1777        \printlist{location}%
1778        \setunit*{\addperiod\space}%
1779        \printfield{institution}%
1780      }%
1781    }{%
1782      \bibsentence
1783      \bibstring{at}%
1784      \setunit{\addcolon\space}%
1785      \printlist{location}%
1786      \setunit*{\addperiod\space}%
1787      \printfield{library}\clearfield{library}%
1788    }%
1789  }
```

7.26 Unpublished

This driver is used for miscellaneous unpublished written material. It differs from the standard version by supporting `maintitle` and `booktitle`, and including a label at the end. The unpublished label is delegated to a macro in case future versions of the style place conditions on whether it is displayed.

```
1791  \newbibmacro*{isunpublished}{%
1792    \bibstring{unpublished}%
1793  }
1794  \DeclareBibliographyDriver{unpublished}{%
1795    \usebibmacro{bibindex}%
1796    \usebibmacro{begentry}%
1797    \usebibmacro{author}%
1798    \setunit{\printdelim{nametitledelim}}\newblock
1799    \usebibmacro{title}%
1800    \newunit
1801    \printlist{language}%
1802    \newunit\newblock
1803    \usebibmacro{byauthor}%
1804    \newunit\newblock
1805    \ifnameundef{editor}{}{\usebibmacro{in:}}%
1806    \usebibmacro{bookeditor}%
1807    \newunit\newblock
1808    \usebibmacro{maintitle+booktitle}%
1809    \usebibmacro{byeditor+others}%
1810    \newunit\newblock
1811    \printfield{howpublished}%
1812    \newunit\newblock
```

```
1813    \printfield{type}%
1814    \newunit\newblock
1815    \usebibmacro{event+venue+date}%
1816    \newunit\newblock
1817    \printfield{note}%
1818    \newunit\newblock
1819    \usebibmacro{location+date}%
1820    \newunit\newblock
1821    \usebibmacro{isunpublished}%
1822    \newunit\newblock
1823    \iftoggle{bbx:url}
1824      {\usebibmacro{url+urldate}}
1825      {}%
1826    \newunit\newblock
1827    \usebibmacro{addendum+pubstate}%
1828    \setunit{\bibpagerefpunct}\newblock
1829    \usebibmacro{pageref}%
1830    \newunit\newblock
1831    \iftoggle{bbx:related}
1832      {\usebibmacro{related:init}%
1833       \usebibmacro{related}}
1834      {}%
1835    \usebibmacro{finentry}}
```

7.27 Aliases

We define some handy semantic aliases.

```
1837    \DeclareBibliographyAlias{standard}{manual}
```

7.28 Sorting

This source map helps with correct sorting of anonymous `inreference` entries.

```
1839    \DeclareStyleSourcemap{%
1840      \maps[datatype=bibtex]{%
1841        \map{%
1842          \pertype{inreference}
1843          \step[notfield=author, final]
1844          \step[fieldsource=booktitle]
1845          \step[fieldset=sorttitle, origfieldval]
1846        }%
1847      }%
1848    }%
```

8 Implementation: data model

```
20    \DeclareDatamodelConstant[type=list]{nameparts}{prefix,family,suffix,given,cjk}
```

9 Implementation: General English language localization

The strings are mostly the same except for the following changes. Note that month names are never abbreviated.

```
20    \InheritBibliographyExtras{english}
21    \DeclareBibliographyStrings
22    {inherit           = {english}
23    ,editors           = {{editors}{eds}}
24    ,version           = {{version~}{v\adddot}}
```

```
25   ,inpreparation    = {{preprint}{preprint}}
26   ,submitted        = {{preprint}{preprint}}
27   ,urlseen          = {{Accessed}{Accessed}}
28   ,january          = {{January}{January}}
29   ,february         = {{February}{February}}
30   ,march            = {{March}{March}}
31   ,april            = {{April}{April}}
32   ,may              = {{May}{May}}
33   ,june             = {{June}{June}}
34   ,july             = {{July}{July}}
35   ,august           = {{August}{August}}
36   ,september        = {{September}{September}}
37   ,october          = {{October}{October}}
38   ,november         = {{November}{November}}
39   ,december         = {{December}{December}}
40   ,patreq           = {{patent application}{pat\adddot\ appl\adddot}}
41   ,patreqde         = {{German patent application}{German pat\adddot\ appl\adddot}}
42   ,patreqeu         = {{European patent application}{European pat\adddot\ appl\adddot}}
43   ,patreqfr         = {{French patent application}{French pat\adddot\ appl\adddot}}
44   ,patrequk         = {{British patent application}{British pat\adddot\ appl\adddot}}
45   ,patrequs         = {{U.S\adddotspace patent application}{U.S\adddotspace pat\adddot\
         appl\adddot}}
```

These are the new strings we define in this style.

```
46   ,online           = {{Online}{Online}}
47   ,hours            = {{hours}{hrs\adddot}}
48   ,at               = {{at}{at}}
49   ,unpublished      = {{unpublished}{unpublished}}
50   ,legalchapter     = {{chapter}{c\adddot}}
51   ,director         = {{director}{dir\adddot}}
52   ,directors        = {{directors}{dir\adddot}}
53   ,bydirector       = {{directed by}{directed by}}
54   ,performer        = {{}{}}
55   ,performers       = {{}{}}
56   ,byperformer      = {{}{}}
57   ,reader           = {{reader}{reader}}
58   ,readers          = {{readers}{readers}}
59   ,byreader         = {{read by}{read by}}
60   ,conductor        = {{conductor}{cond\adddot}}
61   ,conductors       = {{conductors}{cond\adddot}}
62   ,byconductor      = {{conducted by}{conducted by}}
63   }
```

10   Implementation: British English language localization

We use the standard version with a few changes. We display the day as a cardinal number instead of an ordinal. The date is separated from the time by a period, not just a space, and the time separator is a period instead of a colon.

```
20   \InheritBibliographyExtras{british}
21   \DeclareBibliographyExtras{%
22     \protected\def\mkbibdatelong#1#2#3{%
23       \iffieldundef{#3}
24         {}
25         {\thefield{#3}%
26          \iffieldundef{#2}{}{\nobreakspace}}%
27       \iffieldundef{#2}
28         {}
29         {\mkbibmonth{\thefield{#2}}%
30          \iffieldundef{#1}{}{\space}}%
31       \iffieldbibstring{#1}
```

```
32        {\bibstring{\thefield{#1}}}
33        {\dateeraprintpre{#1}\stripzeros{\thefield{#1}}}}%
34    \renewrobustcmd*{\bibdatetimesep}{\addperiod\space}%
35    \renewrobustcmd*{\bibtimesep}{\addperiod}%
36    }
37
38 \DeclareBibliographyStrings
39 {inherit          = {english}
40 }
```

11   Implementation: citation style

The standard `authoryear-comp` style is a close match for what we need.

```
20   \RequireCitationStyle{authoryear-comp}
```

This sets uniquename to `full`, but that conflicts with giveninits set by the bibliography style, so we set it to `init` instead. If left alone, biblatex would do this anyway, but if we do it explicitly, we avoid the warning message.

```
21   \ExecuteBibliographyOptions{uniquename=init}
```

Compressed citations are delimited with a semicolon, just like non-compressed citations.

```
22   \renewcommand*{\compcitedelim}{\addsemicolon\space}
```

We need to suppress the display of 'n.d.' in citations if the nonodate toggle is true.

```
23 \xpatchbibmacro{cite:labeldate+extradate}{%
24   \iffieldundef{labelyear}%
25 }{%
26   \ifboolexpr{
27     togl {bbx:nonodate}
28     and
29     not test {\iflabeldateisdate}}%
30 }{}{\wlog{WARNING: biblatex-bath failed to patch cite:labeldate+extradate}}
```

We activate the label-is-title toggle if the `labeltitle` is printed.

```
31 \providetoggle{bbx:labelistitle}
32 \xpatchbibmacro{cite:label}{%
33   \printtext[bibhyperref]{\printfield[citetitle]{labeltitle}}%
34 }{%
35   \printtext[bibhyperref]{\printfield[citetitle]{labeltitle}}%
36   \toggletrue{bbx:labelistitle}%
37 }{}{\wlog{WARNING: biblatex-bath failed to patch cite:label}}
```