OXREF BUNDLE

OXREF – Biblatex styles inspired by the *Oxford Guide to Style*

Alex Ball

1st February 2023

v3.0

Contents

*

1 Introduction

This document provides the documented sources for the oxref biblography styles:

- oxnotes: a style similar to the standard verbose and its variants, intended for use with footnotes;
- oxnum: a style similar to the standard numeric, intended for use with numeric in-text citation labels;
- oxalph: a style similar to the standard alphabetic, intended for use with alphabetic in-text citation labels;
- oxyear: a style similar to the standard authoryear, intended for use with parenthetical in-text citations.

1.1 Quick start

The styles are self-contained, so you can load them with biblatex:

```
\usepackage[style=oxnotes]{biblatex}
```

```
\usepackage[style=oxalph]{biblatex}
```

```
\usepackage[style=oxnum]{biblatex}
```

```
\usepackage[style=oxyear]{biblatex}
```

For further information, including some additional options you can set, please refer to the separate documentation files `oxnotes-doc.pdf`, `oxnum-doc.pdf`, `oxalph-doc.pdf`, and `oxyear-doc.pdf` respectively.

1.2 Installation

1.2.1 Dependencies

To compile the documentation you will need to have the minted package working, which in turn relies on Python 2.6+ and Pygments. See the documentation of that package for details.

1.2.2 Managed way

The latest stable release of the biblatex-oxref bundle has been packaged for TeX Live and MiKTeX. If you are running TeX Live and have `tlmgr` installed, you can install the bundle simply by running `tlmgr install biblatex-oxref`. If you are running MiKTeX, you can install the bundle

by running `mpm --install=biblatex-oxref`. Both `tlmgr` and `mpm` have GUI versions that you might find friendlier.

1.2.3 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
  - oxref.bbx, oxnotes.bbx, oxnotes-ibid.bbx, oxnotes-note.bbx, oxnotes-inote.bbx, oxnotes-trad1.bbx, oxnotes-trad2.bbx, oxnotes-trad3.bbx, oxyear.bbx, oxnum.bbx, oxalph.bbx
  - oxnotes.cbx, oxnotes-ibid.cbx, oxnotes-note.cbx, oxnotes-inote.cbx, oxnotes-trad1.cbx, oxnotes-trad2.cbx, oxnotes-trad3.cbx, oxyear.cbx, oxnum.cbx, oxalph.cbx
  - american-oxref.lbx, british-oxref.lbx, english-oxref.lbx
  - oxnotes.dbx, oxnotes-ibid.dbx, oxnotes-note.dbx, oxnotes-inote.dbx, oxnotes-trad1.dbx, oxnotes-trad2.dbx, oxnotes-trad3.dbx, oxyear.dbx, oxnum.dbx, oxalph.dbx
  - oxref.bib
  - oxref.ins
  - oxnotes-doc.tex, oxyear-doc.tex, oxnum-doc.tex, oxalph-doc.tex
- Running `make` generates the above files and also oxref.pdf, oxnotes-doc.pdf, oxyear-doc.pdf, oxnum-doc.pdf and oxalph-doc.pdf.
- 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`.
- Running `make clean` removes auxiliary files from the working directory.
- Running `make distclean` removes the generated files from the working directory as well.

1.2.4 Manual way

To install the bundle from scratch, follow these instructions. If you have downloaded the zip file from the Releases page on GitHub, you can skip the first two steps.

1. Run `luatex oxref.dtx` to generate the source files. (You can safely skip this step if you are confident about step 2.)
2. Compile oxref.dtx, oxnotes-doc.tex, oxyear-doc.tex, and oxnum-doc.tex with LuaLaTeX and Biber to generate the documentation. You will need to enable shell escape so that minted can typeset the listings.
3. Move the files to your TeX tree as follows:
   - `source/latex/biblatex-oxref`: oxref.dtx, (oxref.ins)
   - `tex/latex/biblatex-oxref`: american-oxref.lbx, british-oxref.lbx, english-oxref.lbx, oxalph.bbx, oxalph.cbx, oxalph.dbx, oxnotes.bbx, oxnotes.cbx, oxnotes.dbx, oxnotes-ibid.bbx, oxnotes-ibid.cbx, oxnotes-ibid.dbx, oxnotes-inote.bbx, oxnotes-inote.cbx, oxnotes-inote.dbx, oxnotes-note.bbx, oxnotes-note.cbx, oxnotes-note.dbx, oxnotes-trad1.bbx, oxnotes-trad1.cbx, oxnotes-trad1.dbx, oxnotes-trad2.bbx, oxnotes-trad2.cbx, oxnotes-trad2.dbx, oxnotes-trad3.bbx, oxnotes-trad3.cbx, oxnotes-trad3.dbx, oxnum.bbx, oxnum.cbx, oxnum.dbx, oxref.bbx, oxyear.bbx, oxyear.cbx, oxyear.dbx

- `doc/latex/biblatex-oxref`: README.md, oxalph-doc.pdf, oxalph-doc.tex, oxnotes-doc.pdf, oxnotes-doc.tex, oxnum-doc.pdf, oxnum-doc.tex, oxref.bib, oxref.pdf, oxyear-doc.pdf, oxyear-doc.tex

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

1.3 Licence

2

Bibliography styles

2.1 Base style: oxref.bbx

2.1.1 Loading dependencies, setting up languages, applying options

Dependencies:

- For ease of maintenance, we will patch some definitions with xpatch instead of writing out our own in full.
- We will manipulate strings with xstring.
- We will use graphicx for stretching `\bibnamedashes`

```
\RequirePackage{etoolbox}
\RequirePackage{xpatch}
\RequirePackage{xstring}
\RequirePackage{graphicx}
```

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

```
\DeclareLanguageMappingSuffix{-oxref}
```

We provide some additional bibliography strings:

- roles expressed as functions;

```
\NewBibliographyString{%
  director, performer, reader, conductor, serieseditor, holder, editorcm,
  directors, performers, readers, conductors, serieseditors, holders, editorcms,
```

- roles expressed as actions;

```
  bydirector, byperformer, byreader, byconductor, byserieseditor, byholder, byeditorcm,
```

- publication details;

```
  facsimile, revised, revisedenlarged, revisedreprint, suppto, equals, original, amendedby,
```

- publication state;

```
    inpressin,
```

- pagination;

```
    book, books, canto, cantos, stanza, stanzas, act, acts, scene, scenes, folio, folios,
    article, articles, clause, clauses, regulation, regulations, rule, rules,
    booktotal, booktotals, cantototal, cantototals, stanzatotal, stanzatotals,
    acttotal, acttotals, scenetotal, scenetotals, foliototal, foliototals,
    articletotal, articletotals, clausetotal, clausetotals, regulationtotal,
    regulationtotals, ruletotal, ruletotals,
```

- types;

```
    facebook, tweet, podcast, clip, webcast, poster,
```

- miscellaneous;

```
    nolocation, modified, recorded, uploaded, filed, issued,
```

- labels;

```
    anon, pseudo, urldown,
```

- country names, patents, and patent requests;

```
    countryjp, patentjp, patreqjp,
```

- borrowed from other styles.

```
    1column, 2column, inflayer, suplayer, paper, papyrus, parchment,
    eucase, eujoinedcases, commissiondecision, application,
    order, bill, draft, opened, signed, adopted, inforce,
  }
```

The `\blx@ox@langbibstring` utility is used to prefix a bibstring with one or more language names, but since this only works in certain languages, by default it discards the language names (first argument) and just prints the bibstring (second argument). This is overridden in `english-oxref.lbx` and friends.

```
  \def\blx@ox@langbibstring#1#2{\bibstring{#2}}
```

We base our styles on the standard on the principle of least surprise (and to aid with maintenance in the face of new biblatex versions). We set some defaults different to the standard ones, but the author can still override them.

```
  \RequireBibliographyStyle{standard}
  \ExecuteBibliographyOptions{urldate=comp,pagetracker,timezeros=false,time=12h,isbn=false}
```

Here are the new default punctuation conventions. The new `\recordseriespunct` is used for audiovisual resources, while `\cacasetitlepunct` and `\uscasetitlepunct` are for punctuation following the case title in Canadian and American cases respectively.

```
\renewcommand*{\labelnamepunct}{\addcomma\space}
\renewcommand*{\newunitpunct}{\addcomma\space}
\renewcommand*{\subtitlepunct}{\addcolon\space}
\renewcommand*{\intitlepunct}{\nopunct\space}
\renewcommand*{\bibnamedash}{\resizebox{2em}{\height}{\textemdash}\addthinspace}
\newcommand*{\recordseriespunct}{\addcomma\space}
\newcommand*{\cacasetitlepunct}{\addcomma\space}
\newcommand*{\uscasetitlepunct}{\addcomma\space}
\renewcommand*{\relateddelim}{\addsemicolon\space}
\DeclareDelimFormat{revsdnamedelim}{\addcomma}
\DeclareDelimFormat{authortypedelim}{\addspace}
\DeclareDelimFormat{editortypedelim}{\addspace}
\DeclareDelimFormat{translatortypedelim}{\addspace}
```

2.1.2 Names

We declare some new name formats so that authors/editors/others who appear mid-reference can be handled differently from those that appear at the head of the reference.

```
\DeclareNameAlias{bookauthor}{default}
\DeclareNameAlias{bookeditor}{default}
```

Traditionally, Oxford style (for the humanities) prints author names in small capitals in the bibliography, but in normal case in citations. This is falling out of fashion, so we introduce it as an option.

```
\newtoggle{blx@ox@scnames}
\DeclareBibliographyOption{scnames}[true]{%
  \settoggle{blx@ox@scnames}{#1}
}
```

The style manuals prefer to omit titles but accept they may need to be included in some circumstances. There are some titles that are only used with full names and some that may be used with initials, so we provide an option for manually switching them off.

```
\newtoggle{blx@ox@nametitle}\toggletrue{blx@ox@nametitle}%
\DeclareBiblatexOption{global,type,entry}{usenametitles}[true]{%
  \settoggle{blx@ox@nametitle}{#1}}
```

We provide some additional macros for formatting names with titles. Here is the one for natural name order.

```
\newbibmacro*{name:title-given-family}[5]{%
  \usebibmacro{name:delim}{#2#3#1}%
  \usebibmacro{name:hook}{#2#3#1}%
  \ifdefvoid{#5}{}{\iftoggle{blx@ox@nametitle}{\mkbibnametitle{#5}\isdot\bibnamedelimd}{}}%
  \ifdefvoid{#2}{}{\mkbibnamegiven{#2}\isdot\bibnamedelimd}%
  \ifdefvoid{#3}{}{%
    \mkbibnameprefix{#3}\isdot
    \ifprefchar
      {}
      {\ifuseprefix{\bibnamedelimc}{\bibnamedelimd}}}%
  \mkbibnamefamily{#1}\isdot
  \ifdefvoid{#4}{}{\ifnumeral{#4}{}{\addcomma}\bibnamedelimd\mkbibnamesuffix{#4}\isdot}}
```

Here is the one for inverted name order.

```
\newbibmacro*{name:family-title-given}[5]{%
  \ifuseprefix{%
    \usebibmacro{name:delim}{#3#1}%
    \usebibmacro{name:hook}{#3#1}%
    \ifdefvoid{#3}{}{%
      \ifcapital{%
        \mkbibnameprefix{\MakeCapital{#3}}\isdot
      }{%
        \mkbibnameprefix{#3}\isdot}%
      \ifprefchar{}{\bibnamedelimc}}%
    \mkbibnamefamily{#1}\isdot
    \ifdefvoid{#4}{}{\ifnumeral{#4}{}{\addcomma}\bibnamedelimd\mkbibnamesuffix{#4}\isdot}%
    \ifboolexpe{%
      (test {\ifdefvoid{#5}} or not togl {blx@ox@nametitle})
      and
      test {\ifdefvoid{#2}}%
    }{}{%
      \printdelim{revsdnamedelim}}%
    \ifdefvoid{#5}{}{\iftoggle{blx@ox@nametitle}{\bibnamedelimd\mkbibnametitle{#5}\isdot}{}}%
    \ifdefvoid{#2}{}{\bibnamedelimd\mkbibnamegiven{#2}\isdot}%
  }{%
    \usebibmacro{name:delim}{#1}%
    \usebibmacro{name:hook}{#1}%
    \mkbibnamefamily{#1}\isdot
    \ifdefvoid{#4}{}{\ifnumeral{#4}{}{\addcomma}\bibnamedelimd\mkbibnamesuffix{#4}\isdot}%
    \ifboolexpe{%
      (test {\ifdefvoid{#5}} or not togl {blx@ox@nametitle})
      and
      test {\ifdefvoid{#2}}
      and
      test {\ifdefvoid{#3}}%
    }{}{%
      \printdelim{revsdnamedelim}}%
    \ifdefvoid{#5}{}{\iftoggle{blx@ox@nametitle}{\bibnamedelimd\mkbibnametitle{#5}\isdot}{}}%
    \ifdefvoid{#2}{}{\bibnamedelimd\mkbibnamegiven{#2}\isdot}%
    \ifdefvoid{#3}{}{\bibnamedelimd\mkbibnameprefix{#3}\isdot}}}
```

Oxford style (for the humanities) is to write author names surname first in the bibliography, but in natural order in citations. We implement this, along with the case changing option, in the following name format. We also add a second hash for checking if names (e.g. `author` and `authoraddon`) are the same.

```
\def\blx@ox@lasthash{}
\DeclareNameFormat{bib-family-given/cite-given-family}{%
  \iffieldannotation{inferred}{\ifnumequal{\value{listcount}}{1}{\bibopenbracket}{}}{}%
  \ifitemannotation{inferred}{\bibopenbracket}{}%
  \ifbibliography{%
    \iftoggle{blx@ox@scnames}{%
      \renewcommand*{\mkbibnamefamily}[1]{\textsc{##1}}%
      \renewcommand*{\mkbibnamegiven}[1]{\textsc{##1}}%
      \renewcommand*{\mkbibnameprefix}[1]{\textsc{##1}}%
      \renewcommand*{\mkbibnamesuffix}[1]{\textsc{##1}}%
      \renewcommand*{\mkbibnametitle}[1]{##1}%
    }{}%
    \ifgiveninits{%
      \usebibmacro{name:family-title-given}%
        {\namepartfamily}%
        {\namepartgiveni}%
        {\namepartprefix}%
        {\namepartsuffix}%
        {\nameparttitle}%
```

```
    }{%
      \usebibmacro{name:family-title-given}%
        {\namepartfamily}%
        {\namepartgiven}%
        {\namepartprefix}%
        {\namepartsuffix}%
        {\nameparttitle}%
    }%
    \savefield{hash}{\blx@ox@lasthash}%
    \ifitemannotation{pseudo}{%
      \addspace\printtext[parens]{%
        \iftoggle{blx@ox@scnames}{%
          \textsc{\bibsstring{pseudo}}%
        }{%
          \bibsstring{pseudo}%
        }}%
    }{}%
    \iftoggle{blx@ox@scnames}{%
      \renewcommand*{\mkbibnamefamily}[1]{##1}%
      \renewcommand*{\mkbibnamegiven}[1]{##1}%
      \renewcommand*{\mkbibnameprefix}[1]{##1}%
      \renewcommand*{\mkbibnamesuffix}[1]{##1}%
      \renewcommand*{\mkbibnametitle}[1]{##1}%
    }{}%
    \ifboolexpe{%
      test {\ifnumgreater{\value{listcount}}{1}}
      or (
        test {\ifdefvoid\namepartgiven}
        and
        test {\ifdefvoid\namepartprefix}
      )
    }{}{\usebibmacro{name:revsdelim}}%
  }{%
    \ifgiveninits{%
      \usebibmacro{name:title-given-family}%
        {\ifitemannotation{pseudo}{\biblstring{pseudo}}{}\namepartfamily}%
        {\namepartgiveni}%
        {\namepartprefix}%
        {\namepartsuffix}%
        {\nameparttitle}%
    }{%
      \usebibmacro{name:title-given-family}%
        {\ifitemannotation{pseudo}{\biblstring{pseudo}}{}\namepartfamily}%
        {\namepartgiven}%
        {\namepartprefix}%
        {\namepartsuffix}%
        {\nameparttitle}%
    }%
    \savefield{hash}{\blx@ox@lasthash}%
  }%
  \ifitemannotation{inferred}{\bibclosebracket}{}%
  \usebibmacro{name:andothers}%
  \iffieldannotation{inferred}{%
    \ifboolexpr{
      test {\ifnumequal{\value{listcount}}{\value{maxnames}}}
      or
      test {\ifnumequal{\value{listcount}}{\value{listtotal}}}
      or (
        test {\ifnumequal{\value{listcount}}{\value{minnames}}}
        and
        test {\ifnumgreater{\value{listtotal}}{\value{maxnames}}}
      )
```

```
      }{\bibclosebracket}{}%
    }{}%
  }
```

We change the regular `given-family` format to include the alternative-name hash and use the title-enhanced name format. We also add a toggle for triggering special formatting if `authoraddon` or `editoraddon` are annotated with `variant`.

```
  \newtoggle{blx@ox@variantname}
  \DeclareNameFormat{given-family}{%
    \ifgiveninits
      {\usebibmacro{name:title-given-family}
        {\namepartfamily}
        {\namepartgiveni}
        {\namepartprefix}
        {\namepartsuffix}
        {\nameparttitle}}
      {\usebibmacro{name:title-given-family}
        {\namepartfamily}
        {\namepartgiven}
        {\namepartprefix}
        {\namepartsuffix}
        {\nameparttitle}}%
    \savefield{hash}{\blx@ox@lasthash}%
    \ifitemannotation{variant}{%
      \global\settoggle{blx@ox@variantname}{true}%
    }{%
      \global\settoggle{blx@ox@variantname}{false}}%
    \usebibmacro{name:andothers}}
```

We do likewise for the regular `family-given` format.

```
  \DeclareNameFormat{family-given}{%
    \ifgiveninits
      {\usebibmacro{name:family-title-given}
        {\namepartfamily}
        {\namepartgiveni}
        {\namepartprefix}
        {\namepartsuffix}
        {\nameparttitle}}
      {\usebibmacro{name:family-title-given}
        {\namepartfamily}
        {\namepartgiven}
        {\namepartprefix}
        {\namepartsuffix}
        {\nameparttitle}}%
    \savefield{hash}{\blx@ox@lasthash}%
    \ifitemannotation{variant}{%
      \global\settoggle{blx@ox@variantname}{true}%
    }{%
      \global\settoggle{blx@ox@variantname}{false}}%
    \ifboolexpe{%
      test {\ifnumgreater{\value{listcount}}{1}}
      or (
        test {\ifdefvoid\namepartgiven}
        and
        test {\ifdefvoid\namepartprefix}
      )
    }{}{\usebibmacro{name:revsdelim}}%
    \usebibmacro{name:andothers}}
```

There is no comma before numeric suffixes, but there is before textual ones (e.g. ‘junior’).

```
\xpatchbibmacro{name:given-family}%
  {\bibnamedelimd\mkbibnamesuffix{#4}}%
  {\ifnumeral{#4}{}{\addcomma}\bibnamedelimd\mkbibnamesuffix{#4}}%
{}{\wlog{WARNING: biblatex-oxref failed to patch name:given-family}}
\xpatchbibmacro{name:family-given}%
  {\bibnamedelimd\mkbibnamesuffix{#4}}%
  {\ifnumeral{#4}{}{\addcomma}\bibnamedelimd\mkbibnamesuffix{#4}}%
{}{\wlog{WARNING: biblatex-oxref failed to patch name:family-given}}
```

Pseudonyms are printed after the main name, enclosed in parentheses (OGS) or brackets (NHR). Biblatex provides the nameaddon field for this use case, but it is a literal field (it doesn’t format the name provided).

```
\DeclareFieldFormat{nameaddon}{\mkbibbrackets{#1}}
\DeclareFieldFormat{namevariant}{\mkbibparens{\bibstring{equals}\space #1}}
```

We provide an alternative method that uses new name fields authoraddon and editoraddon. To do this, we define a bibmacro that reimplements the loopcode logic of \printnames, but operates on two name lists simultaneously; we use saveboxes to extract the hashes, and only print the alternative name if it has a different hash. The same technique is used by oxyear below to pair up names with the short form used in references, so this bibmacro is written to handle both cases.

The namepairs bibmacro takes two arguments: the data fields holding the main name and alternative name respectively.

```
\newcounter{namepairs}
\newsavebox{\blx@ox@namebox}
\newsavebox{\blx@ox@altnamebox}
\newbibmacro*{namepairs}[2]{%
  \setcounter{namepairs}{0}%
  \savebibmacro{name:andothers}%
  \renewbibmacro*{name:andothers}{}%
  \whileboolexpr{%
    test {\ifnumless{\value{namepairs}}{\value{#1}}}
    and (
      test {\ifdefvoid{\c@maxnames}}
      or
      test {\ifnumequal{\c@maxnames}{0}}
      or
      test {\ifnumless{\value{#1}}{\c@maxnames}}
      or
      test {\ifnumequal{\value{#1}}{\c@maxnames}}
      or
      test {\ifdefvoid{\c@minnames}}
      or
      test {\ifnumequal{\c@minnames}{0}}
      or
      test {\ifnumless{\value{namepairs}}{\c@minnames}}
    )
  }{%
    \stepcounter{namepairs}%
    \ifnumgreater{\value{namepairs}}{1}{%
      \ifnumequal{\value{#1}}{2}{%
        \setunit*{\addspace\bibstring{and}\addspace}%
      }{%
        \ifnumequal{\value{namepairs}}{\value{#1}}{%
          \setunit*{\addcomma\space\bibstring{and}\addspace}%
        }{%
```

```
            \setunit*{\addcomma\space}%
          }%
        }%
      }{}%
      \savebox{\blx@ox@namebox}{%
        \printnames[#1][\value{namepairs}-\value{namepairs}]{#1}%
      }%
      \let\blx@ox@firsthash=\blx@ox@lasthash
```

This is the part intended for `authoraddon` and `editoraddon`. Note that it contains an additional test for the variant name toggle.

```
      \IfEndWith{#2}{addon}{%
        \savebox{\blx@ox@altnamebox}{%
          \printnames[by#1][\value{namepairs}-\value{namepairs}]{#2}%
        }%
        \let\blx@ox@secondhash=\blx@ox@lasthash
        \ifdefstrequal{\blx@ox@firsthash}{\blx@ox@secondhash}{%
          \unhbox\blx@ox@namebox
        }{%
          \unhbox\blx@ox@namebox\addspace
          \iftoggle{blx@ox@variantname}{%
            \ifbibliography{%
              ↪ \printtext[namevariant]{\printnames[#1][\value{namepairs}-\value{namepairs}]{#2}}%
            }{}%
          }{%
            \printtext[nameaddon]{\unhbox\blx@ox@altnamebox}%
          }%
        }%
```

This is the part intended for `shortauthor` and `shorteditor`. There are differences in the formatting, and the alternative name is actually printed before the main name.

```
      }{%
        \savebox{\blx@ox@altnamebox}{%
          \printnames[#1][\value{namepairs}-\value{namepairs}]{#2}%
        }%
        \let\blx@ox@secondhash=\blx@ox@lasthash
        \ifdefstrequal{\blx@ox@firsthash}{\blx@ox@secondhash}{%
          \unhbox\blx@ox@namebox
        }{%
          \unhbox\blx@ox@altnamebox
          \addspace\mkbibparens{\unhbox\blx@ox@namebox}%
        }%
      }%
    }%
```

Now we return to common code.

```
    \ifboolexpr{
      test {\ifnumequal{\value{namepairs}}{\c@minnames}}
      and
      test {\ifnumgreater{\value{#1}}{\c@maxnames}}
    }{%
      \ifnumgreater{\c@minnames}{1}{%
        \finalandcomma
      }{}%
      \printdelim{andothersdelim}\bibstring{andothers}%
    }{}%
```

```
    \restorebibmacro{name:andothers}%
  }
```

We use this now for authors. We provide additional handling to support printing editors or translators promoted to joint authorship status.

```
  \newbibmacro*{author+altauthor}{%
    \ifboolexpr{
      test {\ifnameundef{authoraddon}}
      and
      test {\ifnameundef{jointauthor}}
    }{%
      \printnames{author}%
    }{%
      \ifnumequal{\value{authoraddon}}{\value{author}}{%
        \usebibmacro{namepairs}{author}{authoraddon}%
      }{%
        \printnames{author}%
        \ifnameundef{authoraddon}{}{%
          \setunit*{\addspace}%
          \printtext[nameaddon]{\printnames[byauthor]{authoraddon}}}%
      }%
      \ifnameundef{jointauthor}{}{%
        \setunit{\addcomma\space}%
        \iffieldundef{jointauthortype}{%
          \bibstring{byeditor}%
        }{%
          \printfield{jointauthortype}}%
        \setunit{\addspace}%
        \printnames[author]{jointauthor}%
      }%
    }%
  }
  \DeclareFieldFormat{jointauthortype}{%
    \ifbibstring{by#1}{\bibstring{by#1}}{#1}}
```

This is the (simpler) implementation for editors.

```
  \newbibmacro*{editor+alteditor}{%
    \ifnameundef{editoraddon}{%
      \printnames{editor}%
    }{
      \ifnumequal{\value{editoraddon}}{\value{editor}}{%
        \usebibmacro{namepairs}{editor}{editoraddon}%
      }{%
        \printnames{editor}%
        \setunit*{\addspace}%
        \printtext[nameaddon]{\printnames[byeditor]{editoraddon}}%
      }%
    }%
  }
```

Traditional Oxford style is to use dashes instead of repeating author names, but NHR recommends abandoning the practice as it interferes with text mining. We therefore turn this feature off by default, but allow authors to switch it on with `dashed=true`.

```
  \newbibmacro*{bbx:savehash}{}
  \DeclareBibliographyOption{dashed}[true]{%
    \ifstrequal{#1}{true}{%
      \ExecuteBibliographyOptions{pagetracker}%
```

```
      \renewbibmacro*{bbx:savehash}{\savefield{fullhash}{\bbx@lasthash}}%
    }{%
      \renewbibmacro*{bbx:savehash}{}%
    }%
  }
  \InitializeBibliographyStyle{%
    \global\undef\bbx@lasthash}
  \newbibmacro*{bbx:dashcheck}[2]{%
    \ifboolexpr{
      test {\iffieldequals{fullhash}{\bbx@lasthash}}
      and
      not test \iffirstonpage
      and
      (
        not bool {bbx@inset}
        or
        test {\iffieldequalstr{entrysetcount}{1}}
      )
    }{#1}{#2}%
  }
```

The following is used in the `authortitle` and `authoryear` styles to switch off the dash check macro for reference sets.

```
  \newbool{bbx@inset}
  \DeclareBibliographyDriver{set}{%
    \booltrue{bbx@inset}%
    \entryset{}{}%
    \newunit\newblock
    \usebibmacro{setpageref}%
    \finentry}
```

We provide options for how to handle the author name ‘Anonymous’.

```
  \newtoggle{blx@ox@autoanon}
  \newtoggle{blx@ox@abbranon}
  \DeclareBibliographyOption[string]{anon}[short]{%
    \ifcsdef{blx@ox@opt@anon@#1}{%
      \csuse{blx@ox@opt@anon@#1}%
    }{%
      \PackageError{biblatex-oxref}
      {Invalid option 'anon=#1'}
      {Valid values are 'long', 'short', and 'literal'.}}}
  \csdef{blx@ox@opt@anon@literal}{\togglefalse{blx@ox@autoanon}}
  \csdef{blx@ox@opt@anon@long}{\toggletrue{blx@ox@autoanon}\togglefalse{blx@ox@abbranon}}
  \csdef{blx@ox@opt@anon@short}{\toggletrue{blx@ox@autoanon}\toggletrue{blx@ox@abbranon}}
```

We copy the `author` to `rawauthor` for easier testing.

```
  \DeclareStyleSourcemap{
    \maps[datatype=bibtex]{%
      \map{%
        \step[fieldsource=author]%
        \step[fieldset=rawauthor, origfieldval]%
      }
    }%
  }
```

The `author` macro is enhanced from the standard version by

- checking if the author name is ‘Anonymous’;

- including a dash check, to see if the name(s) should be replaced with a dash (as in `authortitle` and `authoryear`);
- inserting the `nameaddon` field if provided;
- inserting the author type if provided (as in `authoryear`).

```
\newcommand*{\oxrefanon}{Anonymous}
\newtoggle{blx@ox@isanon}
\renewbibmacro*{author}{%
  \iffieldequals{rawauthor}{\oxrefanon}{%
    \toggletrue{blx@ox@isanon}%
  }{%
    \togglefalse{blx@ox@isanon}}%
  \ifboolexpr{
    test \ifuseauthor
    and
    ( not test {\ifnameundef{author}} )
    and (
      ( not togl {blx@ox@isanon} )
      or
      ( not togl {blx@ox@autoanon} )
      or
      test {\ifbibliography}
    )
  }
  {\usebibmacro{bbx:dashcheck}
    {\bibnamedash}
    {\usebibmacro{bbx:savehash}%
      \ifboolexpr{
        togl {blx@ox@autoanon}
        and
        togl {blx@ox@isanon}
      }{%
        \iftoggle{blx@ox@abbranon}{\bibcpsstring{anon}}{\bibcplstring{anon}}%
      }{%
        \usebibmacro{author+altauthor}%
      }%
      \iffieldundef{nameaddon}
      {}
      {\setunit{\addspace}%
        \printfield{nameaddon}}%
      \setunit{\printdelim{authortypedelim}}}%
    \iffieldundef{authortype}
    {}
    {\usebibmacro{authorstrg}%
      \setunit{\addspace}}}%
  {\global\undef\bbx@lasthash}}
\DeclareFieldFormat{authortype}{\mkbibparens{#1}}
```

We make the punctuation between a title and ‘by [author]’ configurable.

```
\newcommand{\titlebyauthordelim}{\addcomma\space}
```

Following `authortitle` and `authoryear`, we redefine the `editor` and `editor+others` macros to use a common `bbx:editor` macro. The macro we use is the similar to the normal one except we delegate printing editor names to `editor+alteditor`, and we don’t yet add the year label.

```
\renewbibmacro*{editor}{%
  \usebibmacro{bbx:editor}{editorstrg}}
\renewbibmacro*{editor+others}{%
```

```
    \usebibmacro{bbx:editor}{editor+othersstrg}}
  \newbibmacro*{bbx:editor}[1]{%
    \ifboolexpr{
      test \ifuseeditor
      and
      not test {\ifnameundef{editor}}
    }
    {\usebibmacro{bbx:dashcheck}
      {\bibnamedash}
      {\usebibmacro{editor+alteditor}%
       \setunit{\printdelim{editortypedelim}}%
       \usebibmacro{bbx:savehash}}%
      \usebibmacro{#1}%
      \clearname{editor}}
    {\global\undef\bbx@lasthash}}
  \DeclareFieldFormat{editortype}{\mkbibparens{#1}}
```

We do the same for `translator` as well.

```
  \renewbibmacro*{translator}{%
    \usebibmacro{bbx:translator}{translatorstrg}}
  \renewbibmacro*{translator+others}{%
    \usebibmacro{bbx:translator}{translator+othersstrg}}
  \newbibmacro*{bbx:translator}[1]{%
    \ifboolexpr{
      test \ifusetranslator
      and
      not test {\ifnameundef{translator}}
    }
    {\usebibmacro{bbx:dashcheck}
      {\bibnamedash}
      {\printnames{translator}%
        \setunit{\printdelim{translatortypedelim}}%
        \usebibmacro{bbx:savehash}}%
      \usebibmacro{#1}%
      \clearname{translator}%
      \setunit{\addspace}}%
    {\global\undef\bbx@lasthash}}
  \xpatchbibmacro{translatorstrg}%
    {\bibstring}%
    {\bibstring[\mkbibparens]}%
  {}{\wlog{WARNING: biblatex-oxref failed to patch translatorstrg}}%
  \xpatchbibmacro{translator+othersstrg}%
    {\bibstring}%
    {\bibstring[\mkbibparens]}%
  {}{\wlog{WARNING: biblatex-oxref failed to patch translator+othersstrg}}%
```

When referencing one work from a collection by the same author, Oxford style traditionally puts ‘id.’ in the `bookauthor` position (instead of omitting it as in standard biblatex).

```
  \renewbibmacro*{bybookauthor}{%
    \ifnamesequal{author}{bookauthor}%
    {\bibstring{idem\thefield{gender}}}%
    {\printnames{bookauthor}}}
```

Similarly, with mixed collections, if referencing a work by the editor of the collection, the editor name is replaced with ‘id.’. We insert this logic into a copy of the `editor+others` macro, which will *not* get a year inserted into it by oxyear.

```
\newbibmacro*{bookeditor}{%
  \ifboolexpr{
    test \ifuseeditor
    and
    not test {\ifnameundef{editor}}
  }{%
    \ifnamesequal{author}{editor}{%
      \bibstring{idem\thefield{gender}}%
      \setunit{\addspace}%
      \usebibmacro{editor+othersstrg}%
      \clearname{editor}%
    }{%
      \printnames[bookeditor]{editor}%
      \setunit*{\addspace}%
      \usebibmacro{editor+othersstrg}%
      \clearname{editor}%
    }%
  }{}}
```

We provide a macro for printing series editors.

```
\newbibmacro*{byseriseditor}{%
  \ifnameundef{seriseditor}
    {}
    {\usebibmacro{bytypestrg}{seriseditor}{seriseditor}%
     \setunit{\addspace}%
     \printnames[byeditor]{seriseditor}%
     \newunit}}

```

2.1.3 Titles

Title handling is mostly as it is in the standard styles, except that the `titleaddon` is printed in square brackets; it is not preceeded by punctuation.

```
\renewbibmacro*{title}{%
  \ifboolexpr{
    test {\iffieldundef{title}}
    and
    test {\iffieldundef{subtitle}}
  }
  {}
  {\printtext[title]{%
      \printfield[titlecase]{title}%
      \setunit{\subtitlepunct}%
      \printfield[titlecase]{subtitle}}%
    \setunit{\addspace}}%
  \usebibmacro{origtitle}%
  \setunit*{\addspace}%
  \printfield{titleaddon}%
  \iffieldequalstr{relatedtype}{equals}{%
    \iftoggle{bbx:related}{%
      \usebibmacro{related:init}%
      \usebibmacro{related}%
      \clearfield{related}%
    }{}%
  }{}%
}
\DeclareFieldFormat{titleaddon}{\mkbibbrackets{#1}}
```

The `origtitle` field is used for translated works. If the cited work is a native language translation of a foreign work, the original title is given in parentheses. If the cited work is foreign translation of a native language work, the original title is printed in square brackets, preceded by the name of the foreign language (if appropriate) and 'translation of'.

```
\DeclareFieldFormat{origtitle}{\mkbibemph{#1}}
\newbibmacro*{origtitle}{%
  \iffieldundef{origtitle}{}{%
    \iflistundef{language}{%
      \printtext[parens]{\printfield{origtitle}}%
    }{%
      \printtext[brackets]{%
        \blx@ox@langbibstring{\printlist{language}}{translationof}\addspace
        \printfield{origtitle}}}}}
```

2.1.4 Dates and times

Year ranges are truncated (e.g. 2012–3). Therefore, we provide a command that compares two years, and outputs a full or truncated version of the second year, depending on how similar it is to the first. It is adapted from code by Marco Daniel.[1]

```
\newcommand{\blx@ox@compyear}[2]{%
  \def\num@one{#1}%
  \def\num@two{#2}%
  \StrLen{\num@one}[\num@one@len]%
  \StrLen{\num@two}[\num@two@len]%
```

The year is only trimmed if it is greater than, but has the same number of digits as, the comparison number.

```
  \ifboolexpr{
    test {\ifnumequal{\num@one@len}{\num@two@len}}
    and
    test {\ifnumless{\num@one}{\num@two}}
  }{%
```

For years since 1000, at least two digits must be the same before trimming occurs.

```
    \StrCompare{\num@one}{\num@two}[\Result]%
    \ifnum\num@two@len>3%
      \IfStrEq{\Result}{2}{\def\Result{1}}{}%
    \fi
```

In legal references, the truncated year is at least two digits.

```
      \ifboolexpr{
      (
        test {\ifentrytype{jurisdiction}}
        or
        test {\ifentrytype{legislation}}
      )
      and
      test {\IfStrEq{\Result}{4}}
    }{\def\Result{3}}{}%
```

Since `\Result` is the number of digits to trim from the left hand side of the year, plus one, we provide an extra sacrificial zero before trimming.

[1] http://tex.stackexchange.com/questions/23483/

```
      \StrGobbleLeft{0\num@two}{\Result}%
    }{\num@two}}
```

We patch the date range formats from `biblatex.sty` to use the above function.

```
  \patchcmd{\mkdaterangefull}{%
    \csuse{mkbibdate#1}{#2endyear}{#2endmonth}{#2endday}%
  }{%
    \iffieldundef{#2endmonth}%
      {\blx@ox@compyear{\thefield{#2year}}{\thefield{#2endyear}}}%
      {\csuse{mkbibdate#1}{#2endyear}{#2endmonth}{#2endday}}%
  }{}{\wlog{WARNING: biblatex-oxref failed to patch mkdaterangefull}}
  \patchcmd{\mkdaterangefullextra}{%
    \csuse{mkbibdate#1}{#2endyear}{#2endmonth}{#2endday}%
  }{%
    \iffieldundef{#2endmonth}%
      {\blx@ox@compyear{\thefield{#2year}}{\thefield{#2endyear}}}%
      {\csuse{mkbibdate#1}{#2endyear}{#2endmonth}{#2endday}}%
  }{}{\wlog{WARNING: biblatex-oxref failed to patch mkdaterangefullextra}}
  \patchcmd{\mkdaterangetrunc@i}{%
    \csuse{mkbibdate#1}{#2endyear}{#2endmonth}{#2endday}%
  }{%
    \iffieldundef{#2endmonth}%
      {\blx@ox@compyear{\thefield{#2year}}{\thefield{#2endyear}}}%
      {\csuse{mkbibdate#1}{#2endyear}{#2endmonth}{#2endday}}%
  }{}{\wlog{WARNING: biblatex-oxref failed to patch mkdaterangetrunc@i}}
  \patchcmd{\mkdaterangetruncextra@i}{%
    \csuse{mkbibdate#1}{#2endyear}{#2endmonth}{#2endday}%
  }{%
    \iffieldundef{#2endmonth}%
      {\blx@ox@compyear{\thefield{#2year}}{\thefield{#2endyear}}}%
      {\csuse{mkbibdate#1}{#2endyear}{#2endmonth}{#2endday}}%
  }{}{\wlog{WARNING: biblatex-oxref failed to patch mkdaterangetruncextra@i}}
```

We provide a way of prefacing dates (and times) with a type. This is mainly intended for online resources.

```
  \DeclareFieldFormat{datetype}{%
    \ifbibstring{#1}{\bibstring{#1}}{#1\isdot}%
  }
  \newtoggle{blx@ox@timefirst}
  \DeclareBiblatexOption{global,type,entry}{timefirst}[true]{%
    \settoggle{blx@ox@timefirst}{#1}}
  \newbibmacro*{date+time}{%
    \ifboolexpr{
      test {\iffieldundef{year}}
      and
      test {\iffieldundef{yeardivision}}
      and
      test {\iffieldundef{month}}
      and
      test {\iffieldundef{hour}}
    }{}{%
      \printfield{datetype}}%
    \setunit*{\addspace}%
    \iftoggle{blx@ox@timefirst}{%
      \printtime
      \setunit*{\addcomma\space}}{}%
    \printdate
    \iftoggle{blx@ox@timefirst}{}{%
      \setunit*{\addcomma\space}%
```

```
      \printtime}%
  }
  \renewbibmacro*{date}{\usebibmacro{date+time}}
```

We provide an equivalent for origdate. This is mainly intended for audiovisual resources (for the date of recording).

```
  \DeclareFieldFormat{origdatetype}{%
    \ifbibstring{#1}{\bibstring{#1}}{#1\isdot}%
  }
  \newbibmacro*{origdate+time}{%
    \ifboolexpr{
      test {\iffieldundef{origyear}}
      and
      test {\iffieldundef{origyeardivision}}
      and
      test {\iffieldundef{origmonth}}
      and
      test {\iffieldundef{orighour}}
    }{}{%
      \printfield{origdatetype}}%
    \setunit*{\addspace}%
    \iftoggle{blx@ox@timefirst}{%
      \printorigtime
      \setunit*{\addcomma\space}}{}%
    \printorigdate
    \iftoggle{blx@ox@timefirst}{}{%
      \setunit*{\addcomma\space}%
      \printorigtime}%
  }
```

If a date is inferred, it goes in square brackets.

```
  \DeclareFieldFormat{date}{%
    \def\currentfield{date}%
    \iffieldannotation{inferred}{\mkbibbrackets{#1}}{#1}%
    \undef\currentfield}
  \DeclareFieldFormat{origdate}{%
    \def\currentfield{origdate}%
    \iffieldannotation{inferred}{\mkbibbrackets{#1}}{#1}%
    \undef\currentfield}
  \DeclareFieldFormat{eventdate}{%
    \def\currentfield{eventdate}%
    \iffieldannotation{inferred}{\mkbibbrackets{#1}}{#1}%
    \undef\currentfield}
```

2.1.5 Editions, pages, and other number-like fields

We let `edition` take a localization key as well as a number.

```
  \xpatchfieldformat{edition}%
    {#1\isdot}%
    {\ifbibstring{#1}{\bibstring{#1}}{#1\isdot}}%
  {}{\wlog{WARNING: biblatex-oxref failed to patch edition}}
```

Page ranges are compressed, but are not usually marked with ‘pp.’. The exception is if the page numbers are not obviously numbers.

```
\DeclareFieldFormat{pages}{%
  \iffieldundef{bookpagination}%
    {\mkcomprange{#1}}%
    {\mkcomprange[{\mkpageprefix[bookpagination]}]{#1}}%
}
```

The same is true in citations.

```
\DeclareFieldFormat{postnote}{%
  \iffieldundef{pagination}%
  {\mkcomprange{#1}}%
  {\mkcomprange[{\mkpageprefix}]{#1}}%
}

```

2.1.6 Publishers

The *Oxford Guide to Style* says it is fine to omit publisher names uniformly from bibliographic information. This is odd, but we can support it with a simple option.

```
\DeclareBibliographyOption{nopublisher}[true]{%
  \DeclareFieldInputHandler{publisher}{\def\NewValue{}}%
}
```

The style guides are less forgiving about omitting the place of publication. We provide a bibliography option that fills in such gaps with the `nolocation` localization string for selected entry types. It works using a source map, which is a clean solution but cannot easily be switched off again or used on a per-type basis.

```
\DeclareBibliographyOption{nolocation}[true]{%
  \DeclareStyleSourcemap{
    \maps[datatype=bibtex]{
      \map{
        \pertype{book}
        \pertype{mvbook}
        \pertype{bookinbook}
        \pertype{inbook}
        \pertype{suppbook}
        \pertype{collection}
        \pertype{mvcollection}
        \pertype{incollection}
        \pertype{suppcollection}
        \pertype{reference}
        \pertype{mvreference}
        \pertype{inreference}
        \pertype{proceedings}
        \pertype{mvproceedings}
        \pertype{inproceedings}
        \step[notfield=location, fieldset=location,
        ↪  fieldvalue={\noexpand\bibstring{nolocation}}]
      }
    }
  }%
}
```

We also provide an entry option that has the same effect; this works using the `\restorelist` mechanism instead.

```
\newtoggle{blx@ox@noloc}
\def\blx@ox@noloc{{\bibstring{nolocation}}}
\DeclareEntryOption{nolocation}[true]{%
  \settoggle{blx@ox@noloc}{#1}%
  \iflistundef{location}{%
    \iftoggle{blx@ox@noloc}{\restorelist{location}{\blx@ox@noloc}}{}%
  }{}}
```

2.1.7 URLs

The OGS recommends the ISO convention of enclosing URLs in angle brackets, but NHR recommends leaving URLs bare so as not to interfere with text-mining. The latter is the default.

```
\DeclareBibliographyOption{isourls}[true]{%
  \ifstrequal{#1}{true}
    {\DeclareFieldFormat{url}{$\langle$\url{##1}$\rangle$}}
    {\DeclareFieldFormat{url}{\url{##1}}}%
}
\ExecuteBibliographyOptions{isourls=false}
```

NHR specifies that URLs should be broken across lines after slashes and percents, and before other punctuation. They should never break after hyphens.

```
\renewcommand*{\biburlsetup}{%
  \Urlmuskip=0mu plus 2mu\relax
  \mathchardef\UrlBigBreakPenalty=100\relax
  \mathchardef\UrlBreakPenalty=200\relax
  \def\UrlBigBreaks{\do\/\do\:}%
  \def\UrlNoBreaks{\do\(\do\[\do\{\do\<}%
  \def\UrlBreaks{%
    \do\>\do\}\do\]\do\)\do\\\do\|%
    \do\'\do\$\do\*\do\^\do\”}%
  \appto\UrlSpecials{%
    \do\!{\mathbin{}\mskip-\Urlmuskip\mathchar`\!\mskip\Urlmuskip}%
    \do\&{\mathbin{}\mskip-\Urlmuskip\mathchar`\&\mskip\Urlmuskip}%
    \do\+{\mathbin{}\mskip-\Urlmuskip\mathchar`\+\mskip\Urlmuskip}%
    \do\,{\mathbin{}\mskip-\Urlmuskip\mathchar`\,\mskip\Urlmuskip}%
    \do\-{\mathbin{}\mskip-\Urlmuskip\mathchar`\-\mskip\Urlmuskip}%
    \do\.{\mathbin{}\mskip-\Urlmuskip\mathchar`\.\mskip\Urlmuskip}%
    \do\;{\mathbin{}\mskip-\Urlmuskip\mathchar`\;\mskip\Urlmuskip}%
    \do\={\mathbin{}\mskip-\Urlmuskip\mathchar`\=\mskip\Urlmuskip}%
    \do\?{\mathbin{}\mskip-\Urlmuskip\mathchar`\?\mskip\Urlmuskip}%
    \do\_{\mathbin{}\mskip-\Urlmuskip\_\mskip\Urlmuskip}%
    \do\#{\mathbin{}\mskip-\Urlmuskip\#\mskip\Urlmuskip}%
  }%
  \ifnumgreater{\value{biburlnumpenalty}}{0}
    {\def\do##1{\appto\UrlSpecials{\do##1{\mathchar`##1 \penalty\value{biburlnumpenalty}}}}%
     \do\1\do\2\do\3\do\4\do\5\do\6\do\7\do\8\do\9\do\0}
    {}%
  \ifnumgreater{\value{biburlucpenalty}}{0}
    {\def\do##1{\appto\UrlSpecials{\do##1{\mathchar`##1 \penalty\value{biburlucpenalty}}}}%
     \do\A\do\B\do\C\do\D\do\E\do\F\do\G\do\H\do\I\do\J
     \do\K\do\L\do\M\do\N\do\O\do\P\do\Q\do\R\do\S\do\T
     \do\U\do\V\do\W\do\X\do\Y\do\Z}
    {}%
  \ifnumgreater{\value{biburllcpenalty}}{0}
    {\def\do##1{\appto\UrlSpecials{\do##1{\mathchar`##1 \penalty\value{biburllcpenalty}}}}%
     \do\a\do\b\do\c\do\d\do\e\do\f\do\g\do\h\do\i\do\j
     \do\k\do\l\do\m\do\n\do\o\do\p\do\q\do\r\do\s\do\t
```

```
      \do\u\do\v\do\w\do\x\do\y\do\z}
    {}%
  \let\do=\noexpand}
```

URL dates are set off with a comma rather than parentheses.

```
\DeclareFieldFormat{urldate}{\bibstring{urlseen}\space#1}
\xpatchbibmacro{url+urldate}%
  {\setunit*{\addspace}}%
  {\setunit*{\addcomma\addspace}}%
{}{\wlog{WARNING: biblatex-oxref failed to patch url+urldate}}
```

The DOI is introduced by ‘doi’ in lowercase.

```
\xpatchfieldformat{doi}%
  {\mkbibacro{DOI}}%
  {\printtext{doi}}%
{}{\wlog{WARNING: biblatex-oxref failed to patch doi}}
```

Unlike URLs, DOIs are preceded by a full stop.

```
\xpatchbibmacro{doi+eprint+url}%
  {\printfield{doi}}%
  {\setunit{\addperiod\space}\printfield{doi}}%
{}{\wlog{WARNING: biblatex-oxref failed to patch doi+eprint+url}}

```

2.1.8 Addenda

The publication state is given in parentheses. Other addenda are added plain.

```
\renewbibmacro*{addendum+pubstate}{%
  \ifboolexpr{
    test {\iffieldundef{pubstate}}
    or
    test {\iffieldequalstr{labeldatesource}{pubstate}}
  }{}{%
    \nopunct
    \ifbibstring{\thefield{pubstate}}{%
      \printtext[pubstate]{\bibstring{\thefield{pubstate}}}%
    }{%
      \printfield{pubstate}}}%
  \setunit{\addsemicolon\addspace}\newblock
  \printfield{addendum}}
\DeclareFieldFormat{pubstate}{\mkbibparens{#1}}
```

Publication descriptions are printed plain for unpublished works, and in brackets for other entry types.

```
\DeclareFieldFormat{howpublished}{\mkbibbrackets{#1}}
\DeclareFieldFormat[misc,unpublished]{howpublished}{#1}
```

2.1.9 Articles and periodicals

Subtypes for articles and similar are in square brackets.

```
\DeclareFieldFormat[article,periodical,suppperiodical,review]{entrysubtype}{\mkbibbrackets{#1}}
```

We provide a command for testing if a title is abbreviated. We use the traditional LaTeX accent commands in case a non-Unicode input encoding is being used. Testing for Ç and Ş causes errors when using OT1 encoding.

```
\newcommand*{\blx@ox@abbrevstring}{%
  A\^{A}BCDEFG\u{G}HI\.{I}\^{I}JKLMNO\"{O}\^{O}PQRSTU\"{U}\^{U}VWXYZ.}%
\AtBeginDocument{
  \ifdefstring{\encodingdefault}{OT1}{}{%
    \renewcommand*{\blx@ox@abbrevstring}{%
      A\^{A}BC\c{C}DEFG\u{G}HI\.{I}\^{I}JKLMNO\"{O}\^{O}PQRS\c{S}TU\"{U}\^{U}VWXYZ.}%
  }%
}
\newcommand*{\ifabbrev}[3]{%
  \StrRight{#1}{1}[\blx@ox@lastchar]%
  \expandafter\IfSubStr*{\blx@ox@abbrevstring}{\blx@ox@lastchar}{#2}{#3}%
}
```

We renew the `journal+issuetitle` macro so that if a work takes up a whole issue (signified by using `issuetitle` *instead* of `title`), the title and journal title are separated by '=' instead of the usual punctuation. It also inserts an appropriate localization string if the publication status demands it. We insert a comma after the journal title, regardless of what follows. There is also a comma after numeric (but not textual) series.

```
\renewbibmacro*{journal+issuetitle}{%
  \ifboolexpr{
    test {\iffieldundef{title}}
    and
    not test {\iffieldundef{issuetitle}}
  }{%
    \usebibmacro{issue}%
    \setunit{\addspace =\addspace}%
  }{%
    \ifboolexpr{
      ( not test {\iffieldundef{pubstate}} )
      and
      test {\ifbibxstring{\thefield{pubstate}in}}
    }{%
      \printtext{\bibstring{\thefield{pubstate}in}\space}%
      \clearfield{pubstate}%
    }{}}%
  \usebibmacro{journal}%
  \iffieldundef{journalsubtitle}{%
    \ifabbrev{\strfield{journaltitle}}{\setunit{\addspace}}{\newunit}%
  }{%
    \ifabbrev{\strfield{journalsubtitle}}{\setunit{\addspace}}{\newunit}}%
  \iffieldundef{series}{}{%
    \newunit\newblock
    \printfield{series}%
    \ifbibxstring{\thefield{series}}{%
      \setunit{\addspace}%
    }{%
      \newunit}}%
  \usebibmacro{volume+number+eid}%
  \setunit{\addspace}%
  \usebibmacro{issue+date}%
  \newunit}
```

We renew the `title+issuetitle` macro (for whole periodical issues) to apply the same punctuation changes after the periodical name and series. At the same time, we delegate handling of volume and issue numbers to the appropriate macro so we can customize it.

```
\renewbibmacro*{title+issuetitle}{%
  \usebibmacro{periodical}%
  \iffieldundef{subtitle}{%
    \ifabbrev{\strfield{title}}{\setunit{\addspace}}{\newunit}%
  }{%
    \ifabbrev{\strfield{subtitle}}{\setunit{\addspace}}{\newunit}}%
  \iffieldundef{series}{}{%
    \newunit\newblock
    \printfield{series}%
    \ifbibxstring{\thefield{series}}{%
      \setunit{\addspace}%
    }{%
      \newunit}}%
  \usebibmacro{volume+number+eid}%
  \setunit{\addspace}%
  \usebibmacro{issue+date}%
  \newunit}
```

OGS and NHR provide plentiful options for formatting volume and issue numbers. We implement four of them here as options. The default is to use a slash between volume and issue number. Note that we prevent the `volume+number+eid` macro from actually printing the EID; this is printed by `issue+date` instead (see below).

```
\DeclareBibliographyOption[string]{issuestyle}[slash]{%
  \ifcsdef{blx@ox@issuestyle@#1}{%
    \csuse{blx@ox@issuestyle@#1}%
  }{%
    \PackageError{biblatex-oxref}
      {Invalid option 'issuestyle=#1'}
      {Valid values are 'slash', 'colon', 'comma', 'parens'}%
  }%
}
\csdef{blx@ox@issuestyle@slash}{%
  \renewbibmacro*{volume+number+eid}{%
    \printfield{volume}%
    \setunit*{\addslash}%
    \printfield{number}%
  }%
}
\csdef{blx@ox@issuestyle@colon}{%
  \renewbibmacro*{volume+number+eid}{%
    \printfield{volume}%
    \setunit*{\addcolon\space}%
    \printfield{number}%
  }%
}
\csdef{blx@ox@issuestyle@comma}{%
  \renewbibmacro*{volume+number+eid}{%
    \printfield{volume}%
    \setunit*{\addcomma\space}%
    \printfield{number}%
  }%
}
\csdef{blx@ox@issuestyle@parens}{%
  \renewbibmacro*{volume+number+eid}{%
    \printfield{volume}%
    \setunit*{\addspace}%
```

```
      \printfield[parens]{number}%
    }%
  }
  \ExecuteBibliographyOptions{issuestyle=slash}
```

OGS consistently prints dates of newspapers and magazines bare, but those of academic journals in parentheses. NHR seems to favour printing dates in parentheses regardless, but notes that some publishing houses take the OGS approach.

We provide an option for switching between the two approaches. If active and an issue has no volume or issue numbers (first block), the year division and date are printed bare. Otherwise (second block) they are printed in parentheses just as in the standard version of the macro.

```
\newtoggle{blx@ox@varissuedate}
\DeclareBiblatexOption{global,type,entry}{varissuedate}[true]{%
  \settoggle{blx@ox@varissuedate}{#1}}
\DeclareBiblatexOption{global,type,entry}{issuedate-plain}[true]{%
  \settoggle{blx@ox@varissuedate}{#1}}
\renewbibmacro*{issue+date}{%
  \ifboolexpr{
    test {\iffieldundef{issue}}
    and
    test {\iffieldundef{year}}
    and
    test {\iffieldundef{yeardivision}}
    and
    test {\iffieldundef{month}}
  }{}{%
    \ifboolexpr{
      togl {blx@ox@varissuedate}
      and
      test {\iffieldundef{volume}}
      and
      test {\iffieldundef{number}}
    }{%
      \newunit
      \printtext{%
        \iffieldundef{issue}{%
          \usebibmacro{date}
        }{%
          \printfield{issue}%
          \setunit*{\addspace}%
          \usebibmacro{date}}}%
    }{%
      \printtext[parens]{%
        \iffieldundef{issue}{%
          \usebibmacro{date}%
        }{%
          \printfield{issue}%
          \setunit*{\addspace}%
          \usebibmacro{date}}}}}%
  \newunit
  \printfield{eid}%
}
```

Our `article` driver is like the standard one except

- it has no ‘in’ macro;
- there is a handler for the suppto relation;
- there is no language macro;

- the punctuation before related items is configurable.

```
\DeclareBibliographyDriver{article}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author/translator+others}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \usebibmacro{bytranslator+others}%
  \newunit\newblock
  \printfield{version}%
  \newunit\newblock
  \usebibmacro{journal+issuetitle}%
  \newunit
  \usebibmacro{byeditor+others}%
  \iffieldequalstr{relatedtype}{suppto}{%
    \setunit{\addsemicolon\space}%
    \iftoggle{bbx:related}{%
      \usebibmacro{related:init}%
      \usebibmacro{related}%
      \clearfield{related}%
    }{}%
  }{}%
  \newunit
  \usebibmacro{note+pages}%
  \newunit\newblock
  \iftoggle{bbx:isbn}
    {\printfield{issn}}
    {}%
  \newunit\newblock
  \usebibmacro{doi+eprint+url}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
  \iftoggle{bbx:related}
    {\usebibmacro{related:init}%
     \usebibmacro{related}}
    {}%
  \setunit{\bibpagerefpunct}\newblock
  \usebibmacro{pageref}%
  \usebibmacro{finentry}}
```

Similar changes are made to the `periodical` driver.

```
\DeclareBibliographyDriver{periodical}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{editor}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title+issuetitle}%
  \newunit\newblock
  \usebibmacro{byeditor}%
  \newunit\newblock
  \printfield{note}%
  \newunit\newblock
  \iftoggle{bbx:isbn}
    {\printfield{issn}}
    {}%
  \newunit\newblock
  \usebibmacro{doi+eprint+url}%
```

```
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

The suppperiodical driver is just like the `article` one, except the note comes sooner after the title. This is to allow it to be used as a descriptor. Since we're breaking the alias, we need to explicitly replicate the article formatting for the rest of the entry.

```
  \DeclareFieldFormat[suppperiodical]{title}{%
    \def\currentfield{title}%
    \iffieldannotation{descriptor}{#1}{\mkbibquote{#1\isdot}}%
    \undef\currentfield}
  \DeclareFieldFormat[suppperiodical]{volume}{#1}% volume of a journal
  \DeclareFieldFormat[suppperiodical]{number}{#1}% number of a journal
  \DeclareFieldFormat[suppperiodical]{series}{% series of a journal
    \ifinteger{#1}
    {\mkbibordseries{#1}~\bibstring{jourser}}
    {\ifbibstring{#1}{\bibstring{#1}}{#1}}}
  \DeclareBibliographyDriver{suppperiodical}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \usebibmacro{author/translator+others}%
    \setunit{\printdelim{nametitledelim}}\newblock
    \usebibmacro{title}%
    \setunit{\titlebyauthordelim}\newblock
    \usebibmacro{byauthor}%
    \newunit\newblock
    \usebibmacro{bytranslator+others}%
    \newunit\newblock
    \printfield{note}\clearfield{note}%
    \newunit\newblock
    \printfield{version}%
    \newunit\newblock
    \usebibmacro{journal+issuetitle}%
    \newunit
    \usebibmacro{byeditor+others}%
    \iffieldequalstr{relatedtype}{suppto}{%
      \setunit{\addsemicolon\space}%
      \iftoggle{bbx:related}{%
        \usebibmacro{related:init}%
        \usebibmacro{related}%
        \clearfield{related}%
      }{}%
    }{}%
    \newunit
    \usebibmacro{note+pages}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{issn}}
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
```

```
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

2.1.10 Books and works in books

By default, editors do not appear before the title in book or reference entries.

```
\ExecuteBibliographyOptions[book,mvbook,reference,mvreference]{useeditor=false,usetranslator=false}
```

The titles of books that have been collected into an anthology are treated like regular chapters and set in quotes. Poems and plays, however, are set in italics.

```
\DeclareFieldFormat[bookinbook]{title}{%
  \ifboolexpr{
    test {\iffieldequalstr{entrysubtype}{poem}}
    or
    test {\iffieldequalstr{entrysubtype}{play}}
  }{%
    \mkbibemph{#1}%
  }{%
    \mkbibquote{#1\isdot}}}
```

Unlike the standard styles, we have a separate driver for `inreference`, so we need to change the title style accordingly.

```
\DeclareFieldFormat[inreference]{title}{\mkbibquote{#1\isdot}}
```

Volume numbers in monograph-style entries are formatted as roman numerals (if they are indeed numbers). We take some care here to support simple ranges (e.g. 1-3, 4–9). Support for more complex ranges may be considered on request.

```
\DeclareFieldFormat[book,mvbook,bookinbook,inbook,suppbook,%
collection,mvcollection,incollection,suppcollection,%
proceedings,mvproceedings,inproceedings,%
reference,mvreference,inreference]{volume}{%
\IfSubStr{#1}{-}{%
  \StrCount{#1}{-}[\blx@ox@dashnum]%
  \StrBefore{#1}{-}[\blx@ox@volnum]%
  \expandafter\ifinteger\blx@ox@volnum{\Rn{\blx@ox@volnum}}{\blx@ox@volnum}\bibrangedash
  \StrBehind[\blx@ox@dashnum]{#1}{-}[\blx@ox@volnum]%
  \expandafter\ifinteger\blx@ox@volnum{\Rn{\blx@ox@volnum}}{\blx@ox@volnum}%
}{%
  \ifinteger{#1}{\Rn{#1}}{#1}}}
```

Where a multi-volume work is more like a series, the volume number and main title are put in a bracketted block between the volume title and the usual publication block.

```
\newbibmacro*{maintitle+volume}{%
  \ifboolexpr{
    test {\iffieldundef{maintitle}}
    or
    test {\iffieldundef{volume}}
  }{}%
```

```
    {\printtext[maintitle+volume]{%
      \bibstring{volume}\addspace
      \printfield{volume}\printfield{part}\addspace
      \bibstring{ofseries}\addspace
      \usebibmacro{maintitle}}}
  }
  \DeclareFieldFormat{maintitle+volume}{\mkbibbrackets{#1}}
```

The `in` before the booktitle is suppressed for works in yearbooks.

```
  \renewbibmacro*{in:}{%
    \iffieldequalstr{entrysubtype}{yearbook}{}{%
      \bibstring{in}%
      \printunit{\intitlepunct}}}
```

Oxford style signifies formal publication by putting the relevant details in parentheses.

```
  \DeclareFieldFormat{publication}{\mkbibparens{#1}}
```

Standard biblatex puts a space between series name and number. OGS separates them with a comma. It also has an example with a series editor.

```
  \renewbibmacro*{series+number}{%
      \printfield{series}%
      \setunit*{\addcomma\space}%
      \usebibmacro{byserieseditor}%
      \setunit*{\addcomma\space}%
      \printfield{number}}
```

We provide an option for displaying the series information before, instead of within, the publication block.

```
  \newtoggle{blx@ox@altbookseries}
  \DeclareBibliographyOption[string]{bookseries}[in]{%
    \ifstrequal{#1}{out}{%
      \toggletrue{blx@ox@altbookseries}%
    }{%
      \togglefalse{blx@ox@altbookseries}%
      \ifstrequal{#1}{in}{}{%
        \PackageError{biblatex-oxref}
        {Invalid option 'bookseries=#1'}
        {Valid values are 'in' and 'out'.}}}}
```

When citing both the first and a later edition, the first one comes first, and the later one comes after a semicolon. As per standard biblatex, the elements of a single edition are separated by commas except that the publisher is preceded by a colon. The origdate is only printed here if at least one of the edition, the origlocation or the origpublisher is also specified.

```
  \newcounter{locpubpairs}
  \newbibmacro*{edition+publisher+location+date}{%
    \printlist{origlocation}%
    \iflistundef{origpublisher}%
      {\setunit*{\addcomma\space}}%
      {\setunit*{\addcolon\space}}%
    \printlist{origpublisher}%
    \setunit*{\addcomma\space}%
    \ifboolexpr{
      test {\iflistundef{origlocation}}
```

```
      and
      test {\iflistundef{origpublisher}}
      and
      test {\iffieldundef{edition}}
    }{}{%
      \printorigdate}%
    \setunit{\addsemicolon\space}%
    \printfield{edition}%
    \setunit*{\addcomma\space}%
```

If there are the same number of locations and publishers, and there are more than one pair, we print them pairwaise rather than in two separate lists. This uses the same principle as the `namepairs` bibmacro, but does not have the list truncation apparatus.

```
  \ifboolexpr{%
    test {\ifnumcomp{\value{publisher}}{>}{1}}
    and
    test {\ifnumequal{\value{location}}{\value{publisher}}}
  }{%
    \setcounter{locpubpairs}{0}%
    \savebibmacro{list:andothers}%
    \renewbibmacro*{list:andothers}{}%
    \whileboolexpr{%
      test {\ifnumcomp{\value{locpubpairs}}{<}{\value{publisher}}}
    }{%
      \stepcounter{locpubpairs}%
      \ifnumcomp{\value{locpubpairs}}{>}{1}{%
        \ifnumequal{\value{publisher}}{2}{%
          \setunit*{\addspace\bibstring{and}\addspace}%
        }{%
          \ifnumequal{\value{locpubpairs}}{\value{publisher}}{%
            \setunit*{\addcomma\space\bibstring{and}\addspace}%
          }{%
            \setunit*{\addcomma\space}%
          }%
        }%
      }{}%
      \printlist[][\value{locpubpairs}-\value{locpubpairs}]{location}%
      \setunit*{\addcolon\space}%
      \printlist[][\value{locpubpairs}-\value{locpubpairs}]{publisher}%
    }%
    \restorebibmacro{list:andothers}%
  }{%
    \printlist{location}%
    \iflistundef{publisher}%
    {\setunit*{\addcomma\space}}%
    {\setunit*{\addcolon\space}}%
    \printlist{publisher}%
  }%
  \setunit*{\addcomma\space}%
  \usebibmacro{date}%
}
```

Oxford style is to provide publication details – series name and number, edition, publisher, location, date – in a parenthetical block after the title information.

```
\newbibmacro*{series+number+edition+publisher+location+date}{%
  \iftoggle{blx@ox@altbookseries}{%
    \usebibmacro{series+number}%
    \setunit{\addspace}\newblock}{}%
```

```
    \ifboolexpr{
      test {\iffieldundef{series}}
      and
      test {\iffieldundef{number}}
      and
      test {\iffieldundef{edition}}
      and
      test {\iflistundef{publisher}}
      and
      test {\iflistundef{location}}
      and
      test {\iffieldundef{year}}
      and
      test {\iffieldundef{yeardivision}}
      and
      test {\iffieldundef{month}}
    }{}{%
      \nopunct
      \printtext[publication]{%
      \iftoggle{blx@ox@altbookseries}{}{%
        \usebibmacro{series+number}%
        \setunit{\addsemicolon\addspace}}%
      \usebibmacro{edition+publisher+location+date}%
      \usebibmacro{copub}}}%
    \iffieldequalstr{relatedtype}{copub}{\clearfield{related}}%
    \setunit{\addspace}\newblock
    \usebibmacro{origpub}%
  }
```

The edition information for reference works is recorded earlier in the reference, so we provide a variant that excludes it from the publication block.

```
  \newbibmacro*{series+number+publisher+location+date}{%
    \iftoggle{blx@ox@altbookseries}{%
      \usebibmacro{series+number}%
      \setunit{\addspace}\newblock}{}%
    \ifboolexpr{
      test {\iffieldundef{series}}
      and
      test {\iffieldundef{number}}
      and
      test {\iflistundef{publisher}}
      and
      test {\iflistundef{location}}
      and
      test {\iffieldundef{year}}
      and
      test {\iffieldundef{yeardivision}}
      and
      test {\iffieldundef{month}}
    }{}{%
      \nopunct
      \printtext[publication]{%
      \iftoggle{blx@ox@altbookseries}{}{%
        \usebibmacro{series+number}%
        \setunit{\addsemicolon\addspace}}%
      \usebibmacro{publisher+location+date}%
      \usebibmacro{copub}}}%
    \iffieldequalstr{relatedtype}{copub}{\clearfield{related}}%
    \setunit{\addspace}\newblock
    \usebibmacro{origpub}%
```

```
  }
```

The copub macro prints co-publication details.

```
  \newbibmacro*{copub}{%
    \ifboolexpr{
      togl {bbx:related}
      and
      test {\iffieldequalstr{relatedtype}{copub}}
    }{%
      \setunit{\addsemicolon\space}%
      \usebibmacro{related:init}%
      \usebibmacro{related}%
    }{}%
  }
```

The origpub macro prints the origdate field if it has not yet been cleared.

```
  \newbibmacro*{origpub}{%
    \ifboolexpr{
      test {\iflistundef{origlocation}}
      and
      test {\iflistundef{origpublisher}}
      and
      test {\iffieldundef{edition}}
      and
      ( not test {\iffieldundef{origyear}} )
    }{%
      \printtext[parens]{\bibstring{origpubin}\space\printorigdate}%
    }{}%
  }
```

The changes to the book driver compared to the standard style are as follows:

- `maintitle` is processed with `volume` just before `series`, instead of with `title`;
- `edition` is processed where the standard style processes `note`, and vice versa;
- `volumes` is omitted;
- `series` to `date` information is delegated to a separate macro;
- support is added for `howpublished` field;

```
  \DeclareBibliographyDriver{book}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \usebibmacro{author/editor+others/translator+others}%
    \setunit{\printdelim{nametitledelim}}\newblock
    \usebibmacro{title}%
    \setunit{\titlebyauthordelim}\newblock
    \usebibmacro{byauthor}%
    \newunit\newblock
    \usebibmacro{byeditor+others}%
    \newunit\newblock
    \printfield{note}%
    \newunit\newblock
    \usebibmacro{maintitle+volume}%
    \newunit
    \usebibmacro{series+number+edition+publisher+location+date}%
    \setunit{\addspace}%
    \printfield{howpublished}%
```

```
    \newunit\newblock
    \usebibmacro{chapter+pages}%
    \newunit
    \printfield{pagetotal}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

Unlike the standard styles, we have a separate driver for `mvbook` which behaves slightly differently. It is in fact closer to the standard `book` driver. The changes are as follows:

- `volume`/`part` is processed just after `maintitle+title`;
- `edition` is processed where the standard style processes `note`;
- `note` is processed after `volumes`;
- `series` to `date` information is delegated to a separate macro;

```
  \DeclareBibliographyDriver{mvbook}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \usebibmacro{author/editor+others/translator+others}%
    \setunit{\printdelim{nametitledelim}}\newblock
    \usebibmacro{maintitle+title}%
    \newunit
    \ifboolexpr{
      test {\iffieldequalstr{relatedtype}{multivolume}}
      or
      ( not test {\iffieldundef{maintitle}} )
    }{}{%
      \printfield{volume}%
      \printfield{part}}%
    \setunit{\titlebyauthordelim}\newblock
    \usebibmacro{byauthor}%
    \newunit\newblock
    \usebibmacro{byeditor+others}%
    \newunit\newblock
    \printfield{volumes}%
    \newunit\newblock
    \printfield{note}%
    \newunit\newblock
    \ifboolexpr{
      test {\iffieldequalstr{relatedtype}{multivolume}}
      and
      test {\iffieldundef{maintitle}}
    }{%
      \printfield{volume}%
      \printfield{part}%
    }{}%
    \newunit\newblock
```

```
    \usebibmacro{series+number+edition+publisher+location+date}%
    \newunit\newblock
    \usebibmacro{chapter+pages}%
    \newunit
    \printfield{pagetotal}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

Our inbook driver modifies the standard one in just the same way as our mvbook driver modifies the standard book.

```
  \DeclareBibliographyDriver{inbook}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \usebibmacro{author/translator+others}%
    \setunit{\printdelim{nametitledelim}}\newblock
    \usebibmacro{title}%
    \setunit{\titlebyauthordelim}\newblock
    \usebibmacro{byauthor}%
    \newunit\newblock
    \usebibmacro{in:}%
    \usebibmacro{bybookauthor}%
    \newunit\newblock
    \usebibmacro{maintitle+booktitle}%
    \newunit
    \iffieldundef{maintitle}
      {\printfield{volume}%
       \printfield{part}}
      {}%
    \newunit\newblock
    \usebibmacro{byeditor+others}%
    \newunit\newblock
    \printfield{volumes}%
    \newunit\newblock
    \printfield{note}%
    \newunit\newblock
    \usebibmacro{series+number+edition+publisher+location+date}%
    \newunit\newblock
    \usebibmacro{chapter+pages}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
```

```
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

Our suppbook driver is just like `inbook` except that the note is moved nearer the title so it can be used as a descriptor.

```
  \DeclareFieldFormat[suppbook]{title}{%
    \def\currentfield{title}%
    \iffieldannotation{descriptor}{#1}{\mkbibemph{#1}}%
    \undef\currentfield}
  \DeclareBibliographyDriver{suppbook}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \usebibmacro{author/translator+others}%
    \setunit{\printdelim{nametitledelim}}\newblock
    \usebibmacro{title}%
    \setunit{\titlebyauthordelim}\newblock
    \usebibmacro{byauthor}%
    \newunit\newblock
    \printfield{note}%
    \setunit{\addspace}\newblock
    \usebibmacro{in:}%
    \usebibmacro{bybookauthor}%
    \newunit\newblock
    \usebibmacro{maintitle+booktitle}%
    \newunit
    \iffieldundef{maintitle}
      {\printfield{volume}%
       \printfield{part}}
      {}%
    \newunit\newblock
    \usebibmacro{byeditor+others}%
    \newunit\newblock
    \printfield{volumes}%
    \newunit\newblock
    \usebibmacro{series+number+edition+publisher+location+date}%
    \newunit\newblock
    \usebibmacro{chapter+pages}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

We also provide a `bookinbook` driver that handles `origdate` differently.

```
\DeclareBibliographyDriver{bookinbook}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author/translator+others}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \usebibmacro{in:}%
  \usebibmacro{bybookauthor}%
  \newunit\newblock
  \usebibmacro{maintitle+booktitle}%
  \newunit
  \iffieldundef{maintitle}
    {\printfield{volume}%
     \printfield{part}}
    {}%
  \newunit\newblock
  \usebibmacro{byeditor+others}%
  \newunit\newblock
  \printfield{volumes}%
  \newunit\newblock
  \printfield{note}%
  \newunit\newblock
  \usebibmacro{series+number+edition+publisher+location+date}%
  \newunit\newblock
  \usebibmacro{chapter+pages}%
  \newunit\newblock
  \iftoggle{bbx:isbn}
    {\printfield{isbn}}
    {}%
  \newunit\newblock
  \usebibmacro{doi+eprint+url}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
  \iftoggle{bbx:related}
    {\usebibmacro{related:init}%
     \usebibmacro{related}}
    {}%
  \setunit{\bibpagerefpunct}\newblock
  \usebibmacro{pageref}%
  \usebibmacro{finentry}}
```

Our `collection` driver modifies the standard one in just the same way as our book driver.

```
\DeclareBibliographyDriver{collection}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{editor+others}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \newunit\newblock
  \usebibmacro{byeditor+others}%
  \newunit\newblock
  \printfield{note}%
  \newunit\newblock
  \usebibmacro{maintitle+volume}%
  \newunit
  \usebibmacro{series+number+edition+publisher+location+date}%
  \newunit\newblock
```

```
    \usebibmacro{chapter+pages}%
    \newunit
    \printfield{pagetotal}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

Our `mvcollection` driver modifies the standard `collection` driver in just the same way as our `mvbook` driver modifies the standard book.

```
  \DeclareBibliographyDriver{mvcollection}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \usebibmacro{editor+others}%
    \setunit{\printdelim{nametitledelim}}\newblock
    \usebibmacro{maintitle+title}%
    \newunit
    \ifboolexpr{
      test {\iffieldequalstr{relatedtype}{multivolume}}
      or
      ( not test {\iffieldundef{maintitle}} )
    }{}{%
      \printfield{volume}%
      \printfield{part}}%
    \newunit\newblock
    \usebibmacro{byeditor+others}%
    \newunit\newblock
    \printfield{volumes}%
    \newunit\newblock
    \printfield{note}%
    \newunit\newblock
    \ifboolexpr{
      test {\iffieldequalstr{relatedtype}{multivolume}}
      and
      test {\iffieldundef{maintitle}}
    }{%
      \printfield{volume}%
      \printfield{part}%
    }{}%
    \newunit\newblock
    \usebibmacro{series+number+edition+publisher+location+date}%
    \newunit\newblock
    \usebibmacro{chapter+pages}%
    \newunit
    \printfield{pagetotal}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
      {}%
```

```
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

Our `incollection` driver modifies the standard one in the same way as our `mvbook` driver modifies the standard book. In addition, the `bookeditor` macro precedes `maintitle` instead of `byeditor+others` following it.

```
  \DeclareBibliographyDriver{incollection}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \usebibmacro{author/translator+others}%
    \setunit{\printdelim{nametitledelim}}\newblock
    \usebibmacro{title}%
    \setunit{\titlebyauthordelim}\newblock
    \usebibmacro{byauthor}%
    \newunit\newblock
    \usebibmacro{in:}%
    \usebibmacro{bookeditor}%
    \newunit\newblock
    \usebibmacro{maintitle+booktitle}%
    \newunit
    \iffieldundef{maintitle}
      {\printfield{volume}%
       \printfield{part}}
      {}%
    \newunit\newblock
    \printfield{volumes}%
    \newunit\newblock
    \printfield{note}%
    \newunit\newblock%
    \usebibmacro{series+number+edition+publisher+location+date}%
    \newunit\newblock
    \usebibmacro{chapter+pages}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

Our `suppcollection` driver is just like `incollection` except that the note is moved nearer the title so it can be used as a descriptor.

```
\DeclareFieldFormat[suppcollection]{title}{%
  \def\currentfield{title}%
  \iffieldannotation{descriptor}{#1}{\mkbibemph{#1}}%
  \undef\currentfield}
\DeclareBibliographyDriver{suppcollection}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author/translator+others}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \printfield{note}%
  \setunit{\addspace}\newblock
  \usebibmacro{in:}%
  \usebibmacro{bookeditor}%
  \newunit\newblock
  \usebibmacro{maintitle+booktitle}%
  \newunit
  \iffieldundef{maintitle}
    {\printfield{volume}%
     \printfield{part}}
    {}%
  \newunit\newblock
  \printfield{volumes}%
  \newunit\newblock%
  \usebibmacro{series+number+edition+publisher+location+date}%
  \newunit\newblock
  \usebibmacro{chapter+pages}%
  \newunit\newblock
  \iftoggle{bbx:isbn}
    {\printfield{isbn}}
    {}%
  \newunit\newblock
  \usebibmacro{doi+eprint+url}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
  \iftoggle{bbx:related}
    {\usebibmacro{related:init}%
     \usebibmacro{related}}
    {}%
  \setunit{\bibpagerefpunct}\newblock
  \usebibmacro{pageref}%
  \usebibmacro{finentry}}
```

Unlike the standard styles, we provide a separate driver for `reference`. It is just like `book` except that `edition` is given directly after the title.

```
\DeclareBibliographyDriver{reference}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author/editor+others/translator+others}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \newunit\newblock
  \printfield{edition}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \usebibmacro{byeditor+others}%
```

```
    \newunit\newblock
    \printfield{note}%
    \newunit\newblock
    \usebibmacro{maintitle+volume}%
    \newunit
    \usebibmacro{series+number+publisher+location+date}%
    \newunit\newblock
    \usebibmacro{chapter+pages}%
    \newunit
    \printfield{pagetotal}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

Similarly, `mvreference` is just like `mvbook` except that `edition` is given directly after the title.

```
  \DeclareBibliographyDriver{mvreference}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \usebibmacro{author/editor+others/translator+others}%
    \setunit{\printdelim{nametitledelim}}\newblock
    \usebibmacro{maintitle+title}%
    \newunit
    \ifboolexpr{
      test {\iffieldequalstr{relatedtype}{multivolume}}
      or
      ( not test {\iffieldundef{maintitle}} )
    }{}{%
      \printfield{volume}%
      \printfield{part}}%
    \newunit\newblock
    \printfield{edition}%
    \setunit{\titlebyauthordelim}\newblock
    \usebibmacro{byauthor}%
    \newunit\newblock
    \usebibmacro{byeditor+others}%
    \newunit\newblock
    \printfield{volumes}%
    \newunit\newblock
    \printfield{note}%
    \newunit\newblock
    \ifboolexpr{
      test {\iffieldequalstr{relatedtype}{multivolume}}
      and
      test {\iffieldundef{maintitle}}
    }{%
      \printfield{volume}%
      \printfield{part}%
    }{}%
```

```
    \newunit\newblock
    \usebibmacro{series+number+publisher+location+date}%
    \newunit\newblock
    \usebibmacro{chapter+pages}%
    \newunit
    \printfield{pagetotal}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

Our `inreference` driver is just like `inbook` except `bookeditor` replaces `bybookauthor` and `edition` is given just before `byeditor+others`.

```
  \DeclareBibliographyDriver{inreference}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \usebibmacro{author/translator+others}%
    \setunit{\printdelim{nametitledelim}}\newblock
    \usebibmacro{title}%
    \setunit{\titlebyauthordelim}\newblock
    \usebibmacro{byauthor}%
    \newunit\newblock
    \iffieldundef{editor}{}{%
      \usebibmacro{in:}%
      \usebibmacro{bookeditor}%
      \newunit\newblock}%
    \usebibmacro{maintitle+booktitle}%
    \newunit
    \iffieldundef{maintitle}
      {\printfield{volume}%
       \printfield{part}}
      {}%
    \newunit\newblock
    \printfield{edition}%
    \newunit
    \usebibmacro{byeditor+others}%
    \newunit\newblock
    \printfield{volumes}%
    \newunit\newblock
    \printfield{note}%
    \newunit\newblock%
    \usebibmacro{series+number+publisher+location+date}%
    \newunit\newblock
    \usebibmacro{chapter+pages}%
    \newunit
    \printfield{pagetotal}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
```

```
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

2.1.11 Works presented at meetings

By default, editors do not appear before the title in proceedings entries.

```
\ExecuteBibliographyOptions[proceedings,mvproceedings]{useeditor=false,usetranslator=false}
```

In our version of the `event+venue+date` macro, the venue and date are set off with commas respectively instead of parentheses.

```
\renewbibmacro*{event+venue+date}{%
  \printfield{eventtitle}%
  \newunit
  \printfield{eventtitleaddon}%
  \newunit
  \printfield{venue}%
  \newunit%
  \printeventdate%
  \newunit}
```

The changes to the `proceedings` driver compared to the standard style are as follows:

- We support the concept of an `author` before the title, which is usually the `organization`;
- `editor` comes after the title, not before;
- `volume`/`part` is processed just after `maintitle+title`;
- `note` is moved to before `series`;
- `series` to `date` information is delegated to a separate macro;

As in the (inherited) standard style, `mvproceedings` is an alias for this driver, since it is unlikely that the proceedings of a single meeting will be split into long series of independently published volumes!

```
\DeclareBibliographyDriver{proceedings}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author}%
  \newunit
  \usebibmacro{maintitle+title}%
  \newunit
  \iffieldundef{maintitle}
    {\printfield{volume}%
     \printfield{part}}
    {}%
  \newunit\newblock
  \usebibmacro{event+venue+date}%
```

```
    \newunit\newblock
    \usebibmacro{byeditor+others}%
    \newunit\newblock
    \printfield{volumes}%
    \newunit\newblock
    \printfield{note}%
    \newunit\newblock
    \printlist{organization}%
    \newunit
    \usebibmacro{series+number+edition+publisher+location+date}%
    \newunit\newblock
    \usebibmacro{chapter+pages}%
    \newunit
    \printfield{pagetotal}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

Our `inproceedings` driver modifies the standard one in the same way as our `proceedings` driver modifies the standard one.

```
  \DeclareBibliographyDriver{inproceedings}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \usebibmacro{author/translator+others}%
    \setunit{\printdelim{nametitledelim}}\newblock
    \usebibmacro{title}%
    \setunit{\titlebyauthordelim}\newblock
    \usebibmacro{byauthor}%
    \newunit\newblock
    \usebibmacro{in:}%
    \usebibmacro{maintitle+booktitle}%
    \newunit
    \iffieldundef{maintitle}
      {\printfield{volume}%
       \printfield{part}}
      {}%
    \newunit\newblock
    \usebibmacro{event+venue+date}%
    \newunit\newblock
    \usebibmacro{byeditor+others}%
    \newunit\newblock
    \printfield{volumes}%
    \newunit\newblock
    \printfield{note}%
    \newunit\newblock
    \printlist{organization}%
    \newunit
    \usebibmacro{series+number+publisher+location+date}%
```

```
    \newunit\newblock
    \usebibmacro{chapter+pages}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

2.1.12 Grey literature

We provide a macro for handling `type+number`. We provide some extra logic to insert 'No.' before the number if there is no type.

```
  \newbibmacro*{series+type+number}{%
    \ifboolexpr{
      test {\iffieldundef{series}}
      and
      test {\iffieldundef{type}}
    }{}{%
      \printfield{series}%
      \newunit
      \ifboolexpr{%
          test {\iffieldundef{type}}
          and
          not test {\iffieldundef{number}}
      }{%
        \bibcpstring{number}
      }{%
        \printfield{type}%
      }%
      \setunit*{\addspace}%
      \printfield{number}}}
```

Our version of the `institution+location+date` macro is just like the standard one except it is wrapped in parentheses, and the preceding punctuation is therefore suppressed. This is used by the `report` driver.

```
  \renewbibmacro*{institution+location+date}{%
    \ifboolexpr{
      ( test {\iffieldundef{number}}
        or
        not test {\iffieldundef{type}}
        or
        not test {\iffieldundef{series}}
      )
      and
      test {\iflistundef{institution}}
      and
      test {\iflistundef{location}}
```

```
      and
      test {\iffieldundef{year}}
      and
      test {\iffieldundef{yeardivision}}
      and
      test {\iffieldundef{month}}
    }{}{%
      \nopunct
      \printtext[publication]{%
        \ifboolexpr{
          test {\iffieldundef{series}}
          and
          test {\iffieldundef{type}}
        }{%
          \printfield{number}%
          \setunit*{\addcomma\space}%
        }{}%
        \printlist{location}%
        \iflistundef{institution}%
        {\setunit*{\addcomma\space}}%
        {\setunit*{\addcolon\space}}%
        \printlist{institution}%
        \setunit*{\addcomma\space}%
        \usebibmacro{date}}}}
```

We provide a slightly more complicated version with the type included at the beginning. It is used by the `thesis` driver. We provide two versions: one with the type outside and one with it inside the parentheses.

```
\newtoggle{blx@ox@altthesis}
\newtoggle{blx@ox@plainthesis}
\DeclareFieldAlias{thesis:publication}{publication}
\DeclareFieldFormat{plain}{#1}
\DeclareBibliographyOption{altthesis}[true]{%
  \settoggle{blx@ox@altthesis}{#1}
}
\DeclareBibliographyOption[string]{thesis}[out]{%
  \ifstrequal{#1}{plain}{%
    \toggletrue{blx@ox@altthesis}%
    \toggletrue{blx@ox@plainthesis}%
    \DeclareFieldAlias{thesis:publication}{plain}%
  }{%
    \togglefalse{blx@ox@plainthesis}%
    \DeclareFieldAlias{thesis:publication}{publication}%
    \ifstrequal{#1}{in}{%
      \toggletrue{blx@ox@altthesis}%
    }{%
      \togglefalse{blx@ox@altthesis}%
      \ifstrequal{#1}{out}{}{%
        \PackageError{biblatex-oxref}
        {Invalid option 'bookseries=#1'}
        {Valid values are 'in', 'out', and 'plain'.}}}}}
\newbibmacro*{type+institution+location+date}{%
  \iftoggle{blx@ox@altthesis}{%
    \ifboolexpr{
      test {\iffieldundef{type}}
      and
      test {\iflistundef{institution}}
      and
      test {\iflistundef{location}}
      and
```

```
      test {\iffieldundef{year}}
      and
      test {\iffieldundef{yeardivision}}
      and
      test {\iffieldundef{month}}
    }{}{%
      \iftoggle{blx@ox@plainthesis}{}{\nopunct}%
      \printtext[thesis:publication]{%
        \printfield{type}%
        \setunit*{\addcomma\space}%
        \printlist{location}%
        \iflistundef{institution}{%
          \setunit*{\addcomma\space}%
        }{%
          \setunit*{\addcolon\space}}%
        \printlist{institution}%
        \setunit*{\addcomma\space}%
        \usebibmacro{date}}}
  }{%
    \printfield{type}%
    \newunit
    \usebibmacro{institution+location+date}}}
```

We provide an even more convoluted version that also includes `series`, `title` and `number`, and uses the more common `publisher` in place of `institution`. We also include some logic that means `organization` is used instead of `publisher` if no `publisher` is provided; otherwise it is printed before `location`. This is used by the `manual` driver.

```
\newbibmacro*{type+series+number+edition+organization+publisher+location+date}{%
  \ifboolexpr{
    test {\iffieldundef{type}}
    and
    test {\iffieldundef{series}}
    and
    test {\iffieldundef{number}}
    and
    test {\iffieldundef{edition}}
    and
    test {\iflistundef{organization}}
    and
    test {\iflistundef{publisher}}
    and
    test {\iflistundef{location}}
    and
    test {\iffieldundef{year}}
    and
    test {\iffieldundef{yeardivision}}
    and
    test {\iffieldundef{month}}
  }{}{%
    \nopunct
    \printtext[publication]{%
      \usebibmacro{series+type+number}%
      \setunit{\addsemicolon\space}%
      \printfield{edition}%
      \setunit*{\addcomma\space}%
      \iflistundef{publisher}{}{%
        \printlist{organization}%
        \setunit*{\addcomma\space}}%
      \printlist{location}%
      \iflistundef{publisher}{%
```

```
        \iflistundef{organization}{%
          \setunit*{\addcomma\space}%
        }{%
          \setunit*{\addcolon\space}%
          \printlist{organization}}%
      }{%
        \setunit*{\addcolon\space}%
        \printlist{publisher}}%
      \setunit*{\addcomma\space}%
      \usebibmacro{date}}}}
```

The changes to the `report` driver compared to the standard style are as follows:

- support is added for `volume`, `maintitle` and `series`;
- `type` and `number` are moved to just before the publication information block;
- the punctuation is slightly different for the `legal` entry subtype.

```
\newcommand*{\legreport}{legal}
\DeclareBibliographyDriver{report}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{maintitle+title}%
  \newunit
  \iffieldundef{maintitle}
    {\printfield{volume}%
     \printfield{part}}
    {}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \printfield{version}%
  \newunit\newblock
  \printfield{note}%
  \newunit\newblock
  \usebibmacro{series+type+number}%
  \setunit{\addspace}%
  \usebibmacro{institution+location+date}%
  \iffieldequals{entrysubtype}{\legreport}{%
    \setunit{\addspace}\nopunct
    \let\origadddot\adddot
    \def\adddot{}%
    \usebibmacro{chapter+pages}%
    \let\adddot\origadddot
  }{%
    \newunit\newblock
    \usebibmacro{chapter+pages}%
  }%
  \newunit
  \printfield{pagetotal}%
  \newunit\newblock
  \iftoggle{bbx:isbn}
    {\printfield{isrn}}
    {}%
  \newunit\newblock
  \usebibmacro{doi+eprint+url}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
  \iftoggle{bbx:related}
```

```
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

We patch the thesis driver to use our slightly more complex version.

```
\xpatchbibdriver{thesis}{%
  \printfield{type}%
  \newunit
  \usebibmacro{institution+location+date}%
}{%
  \usebibmacro{type+institution+location+date}%
}{}{\wlog{WARNING: biblatex-oxref failed to patch thesis}}
```

We give booklet entries descriptor support.

```
\DeclareFieldFormat[booklet]{title}{%
  \def\currentfield{title}%
  \iffieldannotation{descriptor}{#1}{%
    \mkbibquote{#1\isdot}}%
  \undef\currentfield}
```

With patents, the titles are italic and the patent type is not abbreviated.

```
\DeclareFieldFormat[patent]{title}{\mkbibemph{#1}}
\DeclareFieldFormat[patent]{type}{\ifbibstring{#1}{\biblstring{#1}}{#1}}
```

The `holder`, `origdate` and `date` fields have explicit signposting; the latter two use `origdatetype` and `datetype`, with some sensible defaults.

```
\DeclareNameAlias{byholder}{default}
\renewbibmacro*{byholder}{%
  \ifnameundef{holder}{}{%
    \bibstring{byholder}%
    \setunit{\addspace}%
    \printnames[byholder]{holder}}}
\newbibmacro*{location+dates}{%
  \ifboolexpr{
    test {\iffieldundef{location}}
    and
    test {\iffieldundef{origyear}}
    and
    test {\iffieldundef{origmonth}}
    and
    test {\iffieldundef{year}}
    and
    test {\iffieldundef{month}}
  }{}{%
    \nopunct
    \printtext[publication]{%
      \printlist[][-\value{listtotal}]{location}%
      \setunit*{\addcomma\space}%
      \ifboolexpr{
        test {\iffieldundef{origyear}}
        and
        test {\iffieldundef{origmonth}}
```

```
      }{}{%
        \iffieldundef{origdatetype}{%
          \bibstring{filed}
        }{
          \printfield{origdatetype}}%
        \setunit*{\addspace}}%
      \usebibmacro{origdate+time}%
      \setunit*{\addcomma\space}%
      \ifboolexpr{
        test {\iffieldundef{year}}
        and
        test {\iffieldundef{month}}
      }{}{%
        \iffieldundef{datetype}{%
          \bibstring{issued}%
        }{
          \printfield{datetype}}%
        \setunit*{\addspace}}%
      \usebibmacro{date}}}}
```

The `patent` driver differs from the regular one by having `note` moved further forward, and having a publication block consisting of `location`, `origdate` and `date`.

```
\DeclareBibliographyDriver{patent}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \newunit
  \printlist{language}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \printfield{note}%
  \newunit\newblock
  \printfield{type}%
  \setunit*{\addspace}%
  \printfield{number}%
  \newunit\newblock
  \usebibmacro{byholder}%
  \newunit\newblock
  \usebibmacro{location+dates}%
  \newunit\newblock
  \usebibmacro{doi+eprint+url}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
  \iftoggle{bbx:related}
    {\usebibmacro{related:init}%
     \usebibmacro{related}}
    {}%
  \setunit{\bibpagerefpunct}\newblock
  \usebibmacro{pageref}%
  \usebibmacro{finentry}}
```

Direct use of the `manual` entry type is not encouraged, but it serves as a basis for other entry types, notably standards, and software. The main change to the `manual` driver compared to the standard style is that `type`, `series`, `number`, `edition` and `organization` are moved into the publication information block with `publisher`, `location` and `date`. Note that standards will put the `number` field at the head of the reference if there is no author.

```
\DeclareBibliographyDriver{manual}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \ifboolexpr{
    test {\ifentrytype{standard}}
    and
    ( test {\ifnameundef{author}}
      or
      not test \ifuseauthor )
    and
    not test {\iffieldundef{number}}
  }{%
    \printfield{number}\clearfield{number}%
    \newunit\newblock
  }{}%
  \usebibmacro{author/editor}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \ifentrytype{software}
    {\usebibmacro{title+version}}
    {\usebibmacro{title}}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \usebibmacro{byeditor}%
  \newunit
  \ifentrytype{software}
    {}
    {\newunit\printfield{version}}%
  \newunit
  \printfield{note}%
  \newunit\newblock
  \usebibmacro{type+series+number+edition+organization+publisher+location+date}%
  \newunit\newblock
  \usebibmacro{chapter+pages}%
  \newunit
  \printfield{pagetotal}%
  \newunit\newblock
  \iftoggle{bbx:isbn}
    {\printfield{isbn}}
    {}%
  \newunit\newblock
  \usebibmacro{doi+eprint+url}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
  \iftoggle{bbx:related}
    {\usebibmacro{related:init}%
     \usebibmacro{related}}
    {}%
  \setunit{\bibpagerefpunct}\newblock
  \usebibmacro{pageref}%
  \usebibmacro{finentry}}
\DeclareBibliographyAlias{standard}{manual}
\ExecuteBibliographyOptions[standard]{useeditor=false}
```

2.1.13 Audiovisual materials

The publication block for audiovisual resources is quite different from the normal, as the `type`, `series` and `number` come between the `publisher` and `date`. The punctuation or otherwise between elements depends on the combination present. The date and time of recording is given before the block if a `number` is provided (indicating a published recording) but within it otherwise.

```
\newbibmacro*{publisher+type+series+number+date}{%
  \iffieldundef{number}{}{%
    \setunit{\addcomma\space}%
    \usebibmacro{origdate+time}%
  }%
  \ifboolexpr{%
    test {\iflistundef{origpublisher}}
    and
    test {\iflistundef{location}}
    and
    test {\iflistundef{publisher}}
    and
    test {\iffieldundef{type}}
    and
    test {\iffieldundef{series}}
    and
    test {\iffieldundef{number}}
    and
    test {\iffieldundef{year}}
    and
    test {\iffieldundef{yeardivision}}
    and
    test {\iffieldundef{month}}
    and
    test {\iffieldundef{origyear}}
    and
    test {\iffieldundef{origyeardivision}}
    and
    test {\iffieldundef{origmonth}}
    and
    test {\iffieldundef{hour}}
  }{}{%
    \nopunct
    \printtext[publication]{%
      \printlist{origpublisher}%
      \setunit*{\addsemicolon\space}%
      \printlist{location}%
      \iflistundef{publisher}%
        {\setunit*{\addcomma\space}}%
        {\setunit*{\addcolon\space}}%
      \printlist{publisher}%
      \iffieldundef{series}%
        {\setunit*{\addspace}}%
        {\setunit*{\recordseriespunct}}%
      \printfield{series}%
      \setunit*{\addcomma\space}%
      \printfield{type}%
      \iflistundef{publisher}%
        {\setunit*{\addcomma\space}}%
        {\setunit*{\addspace}}%
      \printfield{number}%
      \iffieldundef{number}{%
        \setunit{\addcomma\space}%
        \usebibmacro{origdate+time}%
      }{}%
      \setunit{\addcomma\space}%
      \usebibmacro{date+time}}}}
```

We provide the `endeditor` option to determine if credits should be placed before or after the publication block.

```
\newtoggle{blx@ox@endeditor}
\DeclareEntryOption{endeditor}[true]{%
  \settoggle{blx@ox@endeditor}{#1}}
\newbibmacro*{pre-byeditor+others}{%
  \iftoggle{blx@ox@endeditor}{}{%
    \usebibmacro{byeditor+others}%
  }}
\newbibmacro*{post-byeditor+others}{%
  \iftoggle{blx@ox@endeditor}{%
    \usebibmacro{byeditor+others}%
  }{}}
```

We provide a specialist `audio` driver. It borrows elements from the `book` and `online` drivers, and incorporates the above variations.

```
\DeclareBibliographyDriver{audio}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \newunit
  \usebibmacro{maintitle}%
  \iffieldequalstr{relatedtype}{includes}{%
    \iftoggle{bbx:related}{%
      \newunit\newblock
      \usebibmacro{related:init}%
      \usebibmacro{related}%
      \clearfield{related}%
    }{}%
  }{}%
  \setunit{\addspace}
  \usebibmacro{onlinetype}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \usebibmacro{pre-byeditor+others}%
  \newunit\newblock
  \printfield{volumes}%
  \newunit\newblock
  \printfield{note}%
  \newunit\newblock%
  \printlist{organization}%
  \newunit\newblock%
  \usebibmacro{publisher+type+series+number+date}%
  \setunit{\addspace}%
  \printfield{howpublished}%
  \newunit\newblock
  \usebibmacro{post-byeditor+others}%
  \newunit\newblock
  \iftoggle{bbx:isbn}
    {\printfield{isbn}}
    {}%
  \newunit\newblock
  \usebibmacro{doi+eprint+url}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
  \iftoggle{bbx:related}
    {\usebibmacro{related:init}%
     \usebibmacro{related}}
    {}%
```

```
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

The same driver will do very well for `music`, `video` and `movie`.

```
\DeclareBibliographyAlias{music}{audio}
\DeclareBibliographyAlias{movie}{audio}
\DeclareBibliographyAlias{video}{audio}
```

In parallel with book-like entries, we provide an `inaudio` driver for citing tracks from an album.

```
\DeclareBibliographyDriver{inaudio}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \usebibmacro{in:}%
  \usebibmacro{bybookauthor}%
  \newunit\newblock
  \usebibmacro{maintitle+booktitle}%
  \iffieldequalstr{relatedtype}{includes}{%
    \iftoggle{bbx:related}{%
      \newunit\newblock
      \usebibmacro{related:init}%
      \usebibmacro{related}%
      \clearfield{related}%
    }{}%
  }{}%
  \setunit{\addspace}
  \usebibmacro{onlinetype}%
  \newunit\newblock
  \usebibmacro{pre-byeditor+others}%
  \newunit\newblock
  \printfield{volumes}%
  \newunit\newblock
  \printfield{note}%
  \newunit\newblock%
  \printlist{organization}%
  \newunit\newblock%
  \usebibmacro{publisher+type+series+number+date}%
  \setunit{\addspace}%
  \printfield{howpublished}%
  \newunit\newblock
  \usebibmacro{post-byeditor+others}%
  \newunit\newblock
  \iftoggle{bbx:isbn}
    {\printfield{isbn}}
    {}%
  \newunit\newblock
  \usebibmacro{doi+eprint+url}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
  \iftoggle{bbx:related}
    {\usebibmacro{related:init}%
     \usebibmacro{related}}
    {}%
```

```
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

The same driver will do very well for `inmusic`, `invideo` and `inmovie`. The latter two are for completeness but probably not useful.

```
  \DeclareBibliographyAlias{inmusic}{inaudio}
  \DeclareBibliographyAlias{inmovie}{inaudio}
  \DeclareBibliographyAlias{invideo}{inaudio}
```

We set up appropriate inheritance rules.

```
  \DeclareDataInheritance{audio,music,movie,video}{inaudio,inmusic,inmovie,invideo}{%
    \inherit{title}{booktitle}
    \inherit{subtitle}{booksubtitle}
    \inherit{titleaddon}{booktitleaddon}
    \noinherit{shorttitle}
    \noinherit{sorttitle}
    \noinherit{indextitle}
    \noinherit{indexsorttitle}
  }
```

Titles for videos do not have a consistent format, so we define some `entrysubtype`-based variation. We also allow the use of descriptors; note that the title is transformed into a descriptor by means of an annotation, rather than using a dedicated field. This greatly simplifies the code used elsewhere.

```
  \DeclareFieldFormat[audio,music]{title}{%
    \def\currentfield{title}%
    \iffieldannotation{descriptor}{#1}{%
      \iffieldequalstr{entrysubtype}{podcast}{%
        \mkbibquote{#1\isdot}%
      }{%
        \mkbibemph{#1}}}%
    \undef\currentfield}
  \DeclareFieldFormat[movie,video]{title}{%
    \def\currentfield{title}%
    \iffieldannotation{descriptor}{#1}{%
      \ifboolexpr{
        test {\iffieldequalstr{entrysubtype}{episode}}
        or
        test {\iffieldequalstr{entrysubtype}{clip}}
        or
        test {\iffieldequalstr{entrysubtype}{webcast}}
      }{%
        \mkbibquote{#1\isdot}%
      }{%
        \mkbibemph{#1}}}%
    \undef\currentfield}
  \DeclareFieldFormat[inaudio,inmusic,inmovie,invideo]{title}{%
    \def\currentfield{title}%
    \iffieldannotation{descriptor}{#1}{%
      \mkbibquote{#1\isdot}%
    }%
    \undef\currentfield}
  \DeclareFieldFormat[inaudio,inmusic]{booktitle}{%
    \def\currentfield{booktitle}%
    \iffieldannotation{descriptor}{#1}{%
      \iffieldequalstr{entrysubtype}{podcast}{%
```

```
      \mkbibquote{#1\isdot}%
    }{%
      \mkbibemph{#1}}}%
  \undef\currentfield}
\DeclareFieldFormat[inmovie,invideo]{booktitle}{%
  \def\currentfield{booktitle}%
  \iffieldannotation{descriptor}{#1}{%
    \ifboolexpr{
      test {\iffieldequalstr{entrysubtype}{episode}}
      or
      test {\iffieldequalstr{entrysubtype}{clip}}
      or
      test {\iffieldequalstr{entrysubtype}{webcast}}
    }{%
      \mkbibquote{#1\isdot}%
    }{%
      \mkbibemph{#1}}}%
  \undef\currentfield}

```

The performance driver is similar to the audio driver, but instead of a publication block, it displays a set of event-related fields. With a bit of generosity, it can also work for artworks and images.

```
\DeclareBibliographyDriver{performance}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \newunit
  \usebibmacro{maintitle}%
  \iffieldequalstr{relatedtype}{includes}{%
    \iftoggle{bbx:related}{%
      \newunit\newblock
      \usebibmacro{related:init}%
      \usebibmacro{related}%
      \clearfield{related}%
    }{}%
  }{}%
  \setunit{\addspace}
  \usebibmacro{onlinetype}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \usebibmacro{pre-byeditor+others}%
  \setunit{\addspace}%
  \printfield{howpublished}%
  \newunit\newblock
  \printfield{type}%
  \newunit\newblock
  \printfield{note}%
  \ifboolexpr{
    test {\iffieldundef{origyear}}
    and
    test {\iffieldundef{origmonth}}
  }{}{%
    \setunit{\addspace}\newblock
    \printtext[publication]{\usebibmacro{origdate+time}}}
  \newunit\newblock
  \usebibmacro{event+venue+location+date}%
  \newunit\newblock
```

```
    \usebibmacro{post-byeditor+others}%
    \newunit\newblock
    \printlist{organization}%
    \newunit\newblock
    \iftoggle{bbx:isbn}
      {\printfield{isbn}}
      {}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
  \DeclareBibliographyAlias{image}{performance}
  \DeclareBibliographyAlias{artwork}{performance}
```

Here is the macro used for printing the event location and date for performances and exhibitions.

```
  \newbibmacro*{event+venue+location+date}{%
    \printfield{eventtitle}%
    \newunit
    \printfield{eventtitleaddon}%
    \newunit
    \printlist{institution}%
    \newunit
    \printfield{venue}%
    \newunit
    \printlist{location}%
    \newunit%
    \ifboolexpr{
      test {\iffieldundef{year}}
      and
      test {\iffieldundef{month}}
    }{\printeventdate}{\usebibmacro{date+time}}}

```

2.1.14 Digital media

Website articles and social media

The titles of web pages and similar intrinsically online resources are written in roman text within quotes.

```
  \DeclareFieldFormat[online,image]{title}{%
    \def\currentfield{title}%
    \iffieldannotation{descriptor}{#1}{\mkbibquote{#1\isdot}}%
    \undef\currentfield}

```

We provide an `onlinetype` macro for clarifying the type of online material. It is triggered by appropriate values of `entrysubtype`.

```
  \newbibmacro*{onlinetype}{%
    \ifboolexpr{
```

```
      test {\iffieldundef{url}}
      or
      test {\iffieldundef{entrysubtype}}
    }{}{%
      \ifbibxstring{\thefield{entrysubtype}}{%
        \printtext[brackets]{\bibstring{\thefield{entrysubtype}}}%
      }{}}}
```

The changes to the `online` driver compared to the standard style are as follows:

- We support the use of `maintitle` for, say, the title of the wesbite in which the web page is located. This comes after `title`.
- We insert the aforementioned `onlinetype` macro after `maintitle`.
- The date is wrapped in parentheses if present.
- We support displaying a publisher after the date; this is a legacy feature based on examples that are now deprecated.

```
\DeclareBibliographyDriver{online}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author/editor+others/translator+others}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \newunit
  \usebibmacro{maintitle}
  \setunit{\addspace}%
  \usebibmacro{onlinetype}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \usebibmacro{byeditor+others}%
  \newunit\newblock
  \printfield{version}%
  \newunit
  \printfield{note}%
  \newunit\newblock
  \printlist{organization}%
  \iffieldundef{year}{}{%
    \setunit{\addspace}\newblock
    \printtext[parens]{\usebibmacro{date+time}}%
  }%
  \newunit\newblock
  \printlist{publisher}%
  \newunit\newblock
  \iftoggle{bbx:eprint}
    {\usebibmacro{eprint}}
    {}%
  \newunit\newblock
  \usebibmacro{url+urldate}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
  \iftoggle{bbx:related}
    {\usebibmacro{related:init}%
     \usebibmacro{related}}
    {}%
  \setunit{\bibpagerefpunct}\newblock
  \usebibmacro{pageref}%
  \usebibmacro{finentry}}
```

Software

The version for software goes between the `title` and `titleaddon`.

```
\newbibmacro*{title+version}{%
  \ifboolexpr{
    test {\iffieldundef{title}}
    and
    test {\iffieldundef{subtitle}}
  }
  {}
  {\printtext[title]{%
      \printfield[titlecase]{title}%
      \setunit{\subtitlepunct}%
      \printfield[titlecase]{subtitle}}%
    \setunit{\addspace}}%
  \printfield{version}%
  \setunit{\addspace}%
  \printfield{titleaddon}%
}
\DeclareFieldFormat[software]{version}{\mkbibparens{\bibstring{version}~#1}}
```

The url date string is different for software: ‘downloaded’ rather than ‘accessed’.

```
\DeclareFieldFormat[software]{urldate}{\bibstring{urldown}\space#1}
```

The software driver is a variant of the manual driver.

```
\DeclareBibliographyAlias{software}{manual}
```

Datasets

The main change to the `dataset` driver compared to the standard style is that `type`, `series`, `number`, `edition` and `organization` are moved into the publication information block with `publisher`, `location` and `date`.

```
\DeclareBibliographyDriver{dataset}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author/editor+others/translator+others}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \newunit
  \printlist{language}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \usebibmacro{byeditor+others}%
  \newunit\newblock
  \printfield{type}%
  \newunit
  \printfield{version}%
  \newunit\newblock
  \printfield{note}%
  \newunit\newblock
  \usebibmacro{type+series+number+edition+organization+publisher+location+date}%
  \newunit\newblock
  \usebibmacro{doi+eprint+url}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
```

```
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
```

2.1.15 Legal references

Legal references are a law unto themselves, and thus require extensive fiddly coding. This entire section is adapted from oscola by Paul Stanley.

Entry options

```
\newtoggle{bbx:scotstyle}
\DeclareEntryOption{scottish-style}[true]{%
  \settoggle{bbx:scotstyle}{#1}}
\newboolean{bbx@year-essential}\setboolean{bbx@year-essential}{false}
\DeclareEntryOption{year-essential}[true]{%
    \setboolean{bbx@year-essential}{#1}}
\newboolean{bbx@paryear-essential}\setboolean{bbx@paryear-essential}{false}
\DeclareEntryOption{paryear-essential}[true]{%
    \setboolean{bbx@paryear-essential}{#1}}
\newtoggle{blx@ox@nopostnotedelim}
\newtoggle{bbx:altcourt}
\DeclareBiblatexOption{global,type,entry}{court-plain}[true]{%
  \settoggle{bbx:altcourt}{#1}}
\newtoggle{bbx@ecliuse}
\newtoggle{bbx@eclionly}
\DeclareBibliographyOption[string]{ecli}[yes]{%
  \ifstrequal{#1}{no}{%
    \global\togglefalse{bbx@ecliuse}%
    \global\togglefalse{bbx@eclionly}%
  }{%
    \global\toggletrue{bbx@ecliuse}%
    \ifstrequal{#1}{only}{%
      \global\toggletrue{bbx@eclionly}%
    }{}}}
```

Field formats

```
\DeclareFieldFormat{casenotetitle}{\mkbibquote{\mkbibemph{#1}}}
\DeclareFieldFormat[jurisdiction,legislation,legal]{journaltitle}{#1}
\DeclareFieldFormat[jurisdiction]{volume}{#1}
\DeclareFieldFormat[jurisdiction]{titleaddon}{\mkbibparens{#1}}
\DeclareFieldFormat{romanvol}{\RN{#1}}
\DeclareListFormat[jurisdiction]{listb}{}
\protected\def\mkusbibordinal#1{%
  \begingroup
  \@tempcnta0#1\relax\number\@tempcnta
  \@whilenum\@tempcnta>100\do{\advance\@tempcnta-100\relax}%
  \ifnum\@tempcnta>20
    \@whilenum\@tempcnta>9\do{\advance\@tempcnta-10\relax}%
  \fi
  \ifcase\@tempcnta th\or st\or d\or d\else th\fi
  \endgroup}%
\DeclareFieldFormat{usseries}{\ifinteger{#1}{\mkusbibordinal{#1}}{#1}}
```

```
\DeclareFieldFormat{verba}{#1}

\DeclareListFormat{echrinst}{%
  \ifboolexpr{%
    test {\ifnumequal{\value{listtotal}}{1}}
    or
    test {\ifnumequal{\value{listcount}}{\value{listtotal}}}
  }{%
    \ifboolexpr{
      test {\ifdefstring{\Commission}{#1}}
      or
      test {\ifdefstring{\commission}{#1}}%
    }{%
      \bibstring{commissiondecision}%
    }{#1}%
  }{%
    \setcounter{blx@tmpcnt}{\value{listcount}}%
    \addtocounter{blx@tmpcnt}{1}%
    \ifnumequal{\value{blx@tmpcnt}}{\value{listtotal}}{%
      #1\space\bibstring{and}\addspace
    }{%
      #1\addcomma\space}}}%

\newcommand*{\commission}{commission}
\newcommand*{\Commission}{Commission}
\DeclareListFormat{ecthr}{%
  \ifboolexpr{
    test {\ifdefstring{\Commission}{#1}}
    or
    test {\ifdefstring{\commission}{#1}}
  }{\bibstring[\mkbibparens]{commissiondecision}\toggletrue{blx@ox@nopostnotedelim}}{}}

\newcommand*{\pcijrep}{PCIJ Rep}
\DeclareFieldFormat{international}{%
  \iffieldequals{journaltitle}{\pcijrep}{%
    \bibcplstring{jourser}\space #1%
  }{#1}}

\DeclareListFormat{checkcontains}{%
  \bbx@check{#1}}
\newtoggle{bbx@institutiontoggle}
\newcommand\iflistcontains[2]{%
  \global\togglefalse{bbx@institutiontoggle}%
  \def\bbx@check##1{%
    \ifdefstring{#2}{##1}{\global\toggletrue{bbx@institutiontoggle}}{}}%
  \printlist[checkcontains]{#1}%
  \iftoggle{bbx@institutiontoggle}}

\DeclareFieldFormat{draftleg}{%
  \StrBefore{#1}{ Bill}}

\DeclareListFormat{billprinting}{%
  \ifstrequal{#1}{HC}{%
    \mkbibbrackets{\strfield{number}}%
    \toggletrue{blx@ox@nopostnotedelim}%
  }{%
    \strfield{number}%
    \togglefalse{blx@ox@nopostnotedelim}}}

\newcommand*{\treatypartysep}{\allowbreak ---\allowbreak}
\DeclareListFormat{treaty}{%
  \ifmoreitems{}{%
```

```
      \ifnumequal{\value{listcount}}{1}{%
        \bibopenparen
      }{}%
      \ifnumgreater{\value{liststop}}{\value{listcount}}{%
        #1\treatypartysep
      }{%
        #1\bibcloseparen}}}

\def\siganddate#1{%
  \def\bbx@tempa{#1}%
  \expandafter\bbx@signeddatei#1/relax}
\def\bbx@signeddatei#1=#2/relax{%
  \def\bbx@tempa{#2-}%
  \bibstring{#1}\space\expandafter\makebbx@datei\bbx@tempa}
\def\makebbx@datei#1-#2-#3-{%
  \makebbx@dateii{#1}{#2}{#3}}
\def\makebbx@dateii#1#2#3{%
  \blx@imc@stripzeros{#3}~\mkbibmonth{#2}%
  \space
  #1}
\DeclareListFormat{treatydates}{%
  \ifnumequal{\value{listcount}}{1}{%
    \siganddate{#1}%
  }{%
    \addcomma\space\siganddate{#1}}}

```

Pagination formats

We define an alternative to `\mkpageprefix` that takes a pagination key directly.

```
\newrobustcmd*{\mkrawpageprefix}[1][none]{%
  \begingroup
  \def\blx@tempa{\blx@mkpageprefix@i}%
  \ifstrequal{#1}{none}{}{%
    \ifbibstring{#1}{%
      \def\blx@tempa{\blx@mkpageprefix{#1}}%
    }{%
      \blx@warning@entry{Unknown pagination type '#1'}}}%
  \@ifnextchar[%]
    {\blx@tempa}
    {\blx@tempa[\@firstofone]}}

\newcommand*\paragraphmarkings{[]}
\DeclareFieldFormat[jurisdiction,legislation,legal]{postnote}{%
  \iffieldundef{pagination}{%
    \ifboolexpr{
      test {\ifkeyword{eu}}
      or
      test {\ifkeyword{echr}}
    }{%
      \mkcomprange[{\mkrawpageprefix[paragraph]}]{#1}%
    }{%
      \mkcomprange{#1}}%
  }{%
    \iffieldequals{pagination}{\paragraphmarkings}{%
      \mkcomprange[\mkbibbrackets]{#1}%
    }{%
      \mkcomprange[{\mkpageprefix[pagination]}]{#1}}}}
```

Shorthands

With legal references, the introduction of shorthands is less verbose.

```
\renewbibmacro*{shorthandintro}{%
  \iffieldundef{shorthandintro}
    {\iffieldundef{shorthand}
       {}
       {\setunit{\addspace}%
        \printtext[parens]{%
          \ifboolexpr{
            test {\ifentrytype{jurisdiction}}
            or
            test {\ifentrytype{legal}}
            or
            test {\ifentrytype{legislation}}
          }{}{%
            \bibstring{citedas}\space}%
          \printfield{shorthand}}}}
    {\setunit{\addspace}%
     \printtext[parens]{\printfield{shorthandintro}}}}

```

Common macros

```
\newbibmacro*{issue/volume}{%
  \iffieldundef{volume}%
    {\iffieldundef{issue}%
     {}%
     {\printfield{issue}}}%
    {\printfield[default]{volume}}}
\newcommand*{\subtypenewsp}{newspaper}
\newbibmacro*{year+vol+report}[1][default]{%
  \iffieldequals{entrysubtype}{\subtypenewsp}{%
    \setunit{\addcomma\space}%
  }{%
    \usebibmacro{journaldate}%
    \setunit{\addspace}%
    \printfield[parens]{origyear}%
    \setunit{\addspace}%
    \printfield{volume}%
    \setunit{\addspace}}%
  \printfield{journaltitle}%
  \setunit*{\addspace}%
  \iffieldundef{series}{}{%
    \setunit{\addspace}%
    \printfield[#1]{series}%
    \setunit{\addspace}}%
  \iffieldequals{entrysubtype}{\subtypenewsp}{%
    \setunit{\addcomma\space}%
    \printdate%
  }{}}
\newbibmacro*{journaldate}[1][]{%
  \ifboolexpr{
    test {\iffieldundef{#1volume}}
    or
    bool {bbx@#1year-essential}
  }{%
    \ifboolexpr{
      test {\ifkeyword{sc}}
      or
```

```
        test {\iftoggle{bbx:scotstyle}}
      }{%
        \setunit{\addcomma\space}%
        \printfield{#1year}%
      }{%
        \printfield[brackets]{#1year}}%
    }{%
      \printfield[parens]{#1year}}}
  \newcommand*{\casenote}{casenote}
  \newcommand{\casenotetext}{\bibstring{casenote}}
  \newbibmacro{journaltitle}{%
    \iffieldequals{entrysubtype}{\casenote}{%
      \iffieldundef{crossref}{%
        \usebibmacro{title}%
      }{%
        \iffieldundef{note}{%
          \restorefield{note}{\casenotetext}%
        }{}%
        \ifboolexpr{
          test {\iffootnote}
          and test {\iftoggle{bbx@samefootnote}}
          and test {\iffieldequals{crossref}{\blx@lastkey@foot}}%
        }{}{\printfield[casenotetitle]{title}}}%
    }{%
      \usebibmacro{title}}}
  \newbibmacro*{unreported}[1][default]{%
    \iffieldundef{verba}{%
      \ifboolexpr{
        test {\iflistundef{institution}}
        and
        test {\iffieldundef{date}}
        and
        test {\iffieldundef{year}}
      }{}{%
        \ifboolexpr{
          test {\iffieldundef{date}}
          and
          test {\iffieldundef{year}}
        }{%
          \mkbibparens{\printlist[jurisdiction]{institution}}%
        }{%
          \toggletrue{blx@ox@nopostnotedelim}%
          \iflistundef{institution}{%
            \mkbibparens{\usebibmacro{date}}%
          }{%
            \printtext[parens]{%
              \printlist[#1]{institution}%
              \setunit{\addcomma\space}
              \usebibmacro{date}}}}}%
    }{%
      \iftoggle{bbx@ecliuse}{}{%
        \printfield{verba}}}}
  \newbibmacro{court-note}{%
    \iffieldundef{note}%
      {}%
      {\printfield{note}%
       \toggletrue{blx@ox@nopostnotedelim}}}
  \newbibmacro*{jurisdictionpages}{%
    \let\origadddot\adddot
    \def\adddot{}%
    \iffieldequals{entrysubtype}{\subtypenewsp}{}{%
      \setunit{\addspace}%
```

```
      \printfield{pages}}%
    \let\adddot\origadddot
  }
  \newbibmacro{pcitenote}{%
    \iffieldundef{parreporter}{}{%
      \setunit{\addcomma\space}%
      \iffieldundef{postnote}{}{%
        \printfield{postnote}%
        \clearfield{postnote}%
        \setunit{\addsemicolon\space}}}}
  \newbibmacro*{courtid}{%
    \iffieldundef{number}{%
      \ifboolexpr{
        test {\iflistundef{institution}}
        and
        test {\iffieldundef{location}}%
      }{%
        \togglefalse{blx@ox@nopostnotedelim}%
      }{%
        \ifboolexpr{%
          test {\iffieldundef{journaltitle}}
          or
          not togl {bbx:altcourt}
        }{%
          \printtext[parens]{%
            \printfield{location}%
            \setunit{\addspace}%
            \printlist{institution}%
            \usebibmacro{unrep:date}}%
          \toggletrue{blx@ox@nopostnotedelim}
        }{%
          \setunit{\addcomma\space}%
          \printfield{location}%
          \setunit*{\addspace}%
          \printlist{institution}}}%
    }{%
      \togglefalse{blx@ox@nopostnotedelim}}}
  \newbibmacro*{unrep:date}{%
    \ifboolexpr{
      test {\iffieldundef{journaltitle}}%
      and
      test {\iffieldundef{number}}%
      and
      test {\iffieldundef{neutralcite}}%
    }{%
      \setunit{\addcomma\space}%
      \usebibmacro{date}%
    }{}}
```

Legal cases

There are different formats depending on the jurisdiction.

```
  \DeclareBibliographyDriver{jurisdiction}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \usebibmacro{juriscitation}%
    \usebibmacro{doi+eprint+url}%
    \setunit{\addspace}%\newblock
```

```
    \usebibmacro{addendum+pubstate}%
    \setunit{\addspace}%\newblock
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
  \newtoggle{bbx@juriscitedone}
  \newbibmacro{juriscitation}{%
    \togglefalse{bbx@juriscitedone}%
    \renewcommand{\do}[1]{%
      \ifkeyword{##1}{%
        \toggletrue{bbx@juriscitedone}\usebibmacro{##1juriscitation}%
        \listbreak
      }{}}%
    \docsvlist{eu,echr,int,ca,us}%
    \iftoggle{bbx@juriscitedone}{}{\usebibmacro{enjuriscitation}}%
  }
```

Here is the format for EU cases.

```
  \newtoggle{bbx@commissiondecision}
  \newbibmacro*{eujuriscitation}{%
    \ifboolexpr{
      test {\iflistcontains{institution}{\commission}}
      or
      test {\iflistcontains{institution}{\Commission}}
    }{%
      \toggletrue{bbx@commissiondecision}%
    }{%
      \togglefalse{bbx@commissiondecision}}%
    \iftoggle{bbx@commissiondecision}{}{%
      \usebibmacro{eucasenumber}}%
    \usebibmacro{title}%
    \setunit{\addspace}%
    \iftoggle{bbx@commissiondecision}{%
      \usebibmacro{eucommissiondecision}}{}%
    \setunit{\addspace}%
    \usebibmacro{eu:reportinfo}%
    \iftoggle{bbx@commissiondecision}{%
      \setunit{\addcomma\space}%
    }{%
      \setunit{\addspace}}%
    \usebibmacro{altreportdetails}%
    \usebibmacro{court-note}%
  }
  \newcommand*\oxrefand{ and }
  \newbibmacro{eucasetype}{%
    \iffieldundef{type}{%
      \ifboolexpr{
        test {\IfSubStr{\thefield{number}}{,}}
        or
        test {\IfSubStr{\thefield{number}}{--}}
        or
        test {\IfSubStr{\thefield{number}}{\oxrefand}}
      }{%
        \bibstring{eujoinedcases}%
      }{%
        \bibstring{eucase}}%
    }{%
```

```
      \printfield{type}}%
  }
  \newbibmacro{eucasenumber}{%
    \usebibmacro{eucasetype}%
    \setunit{\addnbspace}%
    \printfield{number}%
    \setunit{\addspace}}
  \newbibmacro{eucommissiondecision}{%
    \iffieldundef{userb}{%
      \iffieldundef{number}{}{%
        \printtext[parens]{%
          \usebibmacro{eucasetype}%
          \setunit{\addnbspace}%
          \printfield{number}}}%
    }{%
      \printtext[parens]{%
        \printfield{userb}}%
      \setunit{\addspace}%
      \iffieldundef{number}{}{%
        \iffieldundef{type}{%
          \setunit{\addspace\bibstring{commissiondecision}\addspace}%
        }{%
          \setunit{\addspace\printfield{type}\addspace}}%
        \printfield{number}}%
    }%
  }
  \newbibmacro*{eu:reportinfo}{%
    \iftoggle{bbx@eclionly}{%
      \iffieldundef{verba}{%
        \usebibmacro{eu:osreport}
      }{%
        \printfield{verba}}%
    }{%
      \usebibmacro{eu:osreport}}}
  \newbibmacro*{eu:osreport}{%
    \iftoggle{bbx@ecliuse}{%
      \iffieldundef{verba}{}{%
        \printfield{verba}%
        \setunit{\addcomma\space}}%
      }{}%
    \iffieldundef{journaltitle}{%
      \usebibmacro{unreported}%
    }{%
      \usebibmacro{eu:year+vol+report}}}
  \newcommand*\officialjournaltitle{OJ}
  \newcommand*\ecrreporttitle{ECR}
  \newbibmacro*{eu:year+vol+report}{%
    \iffieldequals{journaltitle}{\ecrreporttitle}{%
      \printfield[brackets]{year}%
      \setunit{\addspace}%
      \printfield{journaltitle}%
      \setunit{\addspace}%
      \printfield{volume}%
      \setunit*{\printtext{--\allowbreak}}%
      \printfield{pages}%
    }{%
      \iffieldequals{journaltitle}{\officialjournaltitle}{%
        \printfield[brackets]{year}%
        \setunit{\addspace}%
        \printfield{journaltitle}%
        \setunit{\addspace}%
        \printfield[default]{series}%
```

```
        \usebibmacro{issue/volume}%
        \setunit{\printtext{\slash}}%
        \printfield{pages}%
      }{%
        \usebibmacro{year+vol+report}}}}
```

Here is the format for European Human Rights cases.

```
  \newbibmacro*{echrjuriscitation}{%
    \usebibmacro{title}%
    \setunit{\addspace}\newblock
    \iffieldundef{number}{}{%
      \printtext[parens]{%
        \def\adddot{}%
        \bibstring{application}\space
        \bibstring{number}\space
        \printfield{number}}%
      \setunit{\addspace}\newblock}%
    \iffieldundef{journaltitle}{%
      \usebibmacro{unreported}[echrinst]%
    }{%
      \usebibmacro{echr:year+vol+report}
      \setunit{\addspace}\newblock
      \usebibmacro{echr:courtid}}%
    \setunit{\addspace}%
    \usebibmacro{court-note}%
    \newblock
    \setunit{\addspace}}
  \newcommand*{\seriesa}{Series A}
  \newcommand*{\echrreports}{ECHR}
  \newbibmacro*{echr:year+vol+report}{%
    \iffieldequals{journaltitle}{\seriesa}{%
      \usebibmacro{seriesareport}%
    }{%
      \iffieldequals{journaltitle}{\echrreports}{%
        \usebibmacro{echrreports}%
      }{%
        \usebibmacro{year+vol+report}
        \setunit{\addspace}%
    \printfield{pages}}}}
  \newbibmacro*{seriesareport}{%
    \printfield[parens]{year}%
    \setunit{\addspace}%
    \printfield{journaltitle}%
    \setunit{\addspace}%
    \printtext{\def\adddot{}\bibstring{number}\addspace}%
    \printfield{pages}}
  \newbibmacro*{echrreports}{%
    \printfield{journaltitle}%
    \setunit{\addspace}%
    \printfield{year}%
    \iffieldundef{volume}{}{%
      \printtext{--}\printfield[romanvol]{volume}}
    \setunit{\addspace}%
    \printfield{pages}}
  \newcommand*{\decisionsandreports}{DR}
  \newcommand*{\collectionofdecisions}{CD}
  \newbibmacro*{echr:courtid}{%
    \ifboolexpr{
      test {\iffieldequals{journaltitle}{\decisionsandreports}}
```

```
      or
      test {\iffieldequals{journaltitle}{\collectionofdecisions}}%
    }{}{%
      \printlist[ecthr]{institution}}}
```

Here is the format for international cases.

```
  \newbibmacro*{intjuriscitation}{%
    \iflistundef{institution}{%
      \setunit{}\printtext{}%
    }{%
      \printlist{institution}%
      \setunit{\addcomma\space}}%
    \usebibmacro{int:title}%
    \setunit{\addspace}\newblock
    \iffieldundef{journaltitle}{%
      \printfield{number}%
      \setunit{\addspace}\newblock
      \printtext[parens]{\printdate}%
    }{%
      \usebibmacro{year+vol+report}[international]%
    }%
    \setunit{\addspace}%
    \usebibmacro{int:jurisdictionpages}%
    \setunit{\addspace}\newblock
    \usebibmacro{court-note}%
  }
  \newbibmacro*{int:title}{%
    \ifboolexpr{
      test {\iffieldundef{title}}
      and
      test {\iffieldundef{subtitle}}
    }{}{%
      \printtext[title]{%
        \printfield[titlecase]{title}%
        \setunit{\addspace}%
        \printfield[parens]{subtitle}}}%
    \setunit{\addspace}%
    \printfield{titleaddon}%
  }
  \newbibmacro*{int:jurisdictionpages}{%
    \let\origaddot\adddot
    \def\adddot{}%
    \iffieldequals{journaltitle}{\pcijrep}{%
      \printtext{\bibcpstring{number}\addspace}%
      \iffieldundef{pages}{%
        \printfield{number}%
      }{%
        \printfield{pages}}%
    }{%
      \printfield{pages}}%
    \let\addot\origadddot
  }
```

Here is the format for Canadian cases.

```
  \newbibmacro{cajuriscitation}{%
    \usebibmacro{title}%
    \setunit{\cacasetitlepunct}\newblock
```

```
    \printfield{number}%
    \setunit{\addcomma\space}%
    \iffieldundef{journaltitle}{}{%
      \usebibmacro{can:year+vol+report}}%
    \usebibmacro{jurisdictionpages}%
    \usebibmacro{pcitenote}%
    \usebibmacro{altreportdetails}%
    \unspace\printlist[jurisdiction][1-\value{listtotal}]{listb}%
    \newunit\newblock
    \usebibmacro{courtid}%
    \newunit%
    \usebibmacro{court-note}%
    \newblock%
    \newunit}
  \newbibmacro*{can:year+vol+report}{%
    \iffieldundef{number}{%
      \setunit{\addspace}%
    }{%
      \ifboolexpr{
        test {\iffieldundef{volume}}
        or
        bool {bbx@year-essential}%
      }{}{%
        \clearfield{year}}}%
    \iffieldequals{entrysubtype}{\subtypenewsp}{}{%
      \iffieldundef{year}{}{%
        \usebibmacro{journaldate}%
        \setunit{\addspace}}}
    \printfield{volume}%
    \setunit{\addspace}%
    \printfield{journaltitle}%
    \setunit*{\addspace}%
    \iffieldundef{series}{}{%
      \setunit{\addspace}%
      \printtext[parens]{\printfield[usseries]{series}}%
      \setunit{\addspace}}%
    \iffieldequals{entrysubtype}{\subtypenewsp}{%
      \setunit{\addcomma\space}%
      \usebibmacro{newspaperdate}%
    }{}}
```

Here is the format for American cases.

```
  \newbibmacro{usjuriscitation}{%
    \usebibmacro{title}%
    \setunit{\uscasetitlepunct}\newblock%
    \iffieldundef{journaltitle}{%
      \printfield{number}%
      \setunit{\addcomma\space}%
      \printfield[default]{eprint}%
      \clearfield{eprint}%
    }{
      \usebibmacro{us:vol+report}}%
    \setunit{\addspace}%
    \usebibmacro{jurisdictionpages}%
    \usebibmacro{us:postnote}%
    \usebibmacro{altreportdetails}%
    \setunit{\addspace}\newblock
    \unspace\printlist[jurisdiction][1-\value{listtotal}]{listb}%
    \setunit{\addspace}%
    \usebibmacro{us:courtid+date}%
    \setunit{\addspace}%
```

```
    \usebibmacro{court-note}%
    \newblock
    \setunit{\addspace}}
  \newbibmacro{us:vol+report}{%
    \printfield{volume}%
    \setunit{\addspace}%
    \printfield{journaltitle}%
    \iffieldundef{series}{}{%
      \setunit{\addspace}%
      \printfield[usseries]{series}}}
  \newbibmacro{us:postnote}{%
    \iffieldundef{postnote}{}{%
      \setunit{\addcomma\space}%
      \printfield{postnote}%
      \clearfield{postnote}%
    }}
  \newbibmacro{us:courtid+date}{%
    \ifboolexpr{
      test {\iflistundef{institution}}
      and
      test {\iflistundef{location}}
      and
      test {\iffieldundef{year}}
    }{}{%
      \printtext[parens]{%
        \printlist{location}%
        \setunit*{\addspace}%
        \printlist{institution}%
        \setunit{\addspace}%
        \printfield{year}%
        \nopunct}}}

```

Here is the format for English cases.

```
  \newbibmacro{enjuriscitation}{%
    \usebibmacro{title}%
    \setunit{\addspace}\newblock
    \printfield{neutralcite}%
    \setunit*{\addcomma\space}%
    \printfield{number}%
    \setunit*{\addcomma\space}%
    \iffieldundef{journaltitle}{}{%
      \usebibmacro{year+vol+report}}%
    \usebibmacro{jurisdictionpages}%
    \usebibmacro{pcitenote}%
    \usebibmacro{altreportdetails}%
    \unspace\printlist[jurisdiction][1-\value{listtotal}]{listb}% additionalreports
    \setunit{\addspace}\newblock
    \usebibmacro{courtid}%
    \setunit{\addspace}%
    \usebibmacro{court-note}}
  \newbibmacro{altreportdetails}{%
    \restorefield{prenote}{\postnotesecond}%
    \iffieldundef{parreporter}{}{%
      \usebibmacro{journaldate}[par]%
      \setunit{\addspace}\newblock
      \usebibmacro{altreportvolume}%
      \setunit{\addspace}\newblock
      \usebibmacro{altjournaltitle}%
      \setunit{\addspace}\newblock
```

```
      \usebibmacro{altseries}%
      \setunit{\addspace}\newblock
      \usebibmacro{altjurisdictionpages}%
      \iffieldundef{prenote}{}{%
        \setunit{\addcomma\space}%
        \printfield[postnote]{prenote}}}}
  \newbibmacro*{altreportvolume}{%
    \iffieldundef{parvolume}{}{%
      \printfield{parvolume}}}
  \newbibmacro*{altjournaltitle}{%
    \iffieldundef{parreporter}{}{
      \printfield{parreporter}}}
  \newbibmacro*{altseries}{%
    \iffieldundef{parseries}{}{%
      \printfield{parseries}}}
  \newbibmacro*{altjurisdictionpages}{%
    \iffieldundef{parpages}{}{%
      \printfield{parpages}}}%
```

Legislation

Legislation tends to have a more consistent format, though European entries need special handling.

```
  \newcommand*{\subtypecourtrules}{procedure-rule}
  \DeclareBibliographyDriver{legislation}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \ifieldequals{entrysubtype}{\subtypecourtrules}{%
      \usebibmacro{courtrules}%
    }{%
      \ifkeyword{draft}{%
        \usebibmacro{legislation:bill}%
      }{%
        \ifkeyword{eu}{%
          \usebibmacro{eulegislation}%
        }{%
          \printfield[default]{title}%
          \setunit{\addspace}%
          \printfield[default]{year}%
          \setunit*{\addspace}%
          \usebibmacro{legnumber}%
          \setunit{\addspace}\newblock
          \usebibmacro{legsupp}}}}%
    \setunit{\addcomma\space}%
    \printfield{note}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
  \newbibmacro*{courtrules}{%
    \restorefield{prenote}{\postnotesecond}%
    \ifieldequalstr{shorttitle}{PD}{%
      \printfield{postnote}%
      \clearfield{postnote}%
      \setunit{\addspace}%
    }{}%
    \iffieldundef{shorttitle}{%
      \printfield[default]{title}%
    }{%
```

```
      \printfield[default]{shorttitle}}%
    \setunit{\addspace}\newblock
    \iffieldundef{postnote}{%
      \toggletrue{blx@ox@nopostnotedelim}%
    }{%
      \iffieldequalstr{shorttitle}{CPR}{%
        \printfield{postnote}%
        \setunit{\addspace}%
      }{%
        \printtext{%
          \bibstring{order}\space
          \printfield{postnote}%
          \setunit{\addcomma\space}}}}%
    \restorefield{postnote}{\postnotesecond}%
    \usebibmacro{postnote}%
    \clearfield{postnote}%
    \setunit{\addspace}\newblock}
  \newcommand*{\subtypeprimarylegislation}{primary}
  \newbibmacro*{legislation:bill}{%
    \printfield[draftleg]{title}%
    \setunit{\addspace}%
    \printlist{institution}%
    \setunit*{\addspace}%
    \iffieldequals{entrysubtype}{\subtypeprimarylegislation}{%
      \bibcpstring{bill}%
      \setunit{\addspace}%
      \printtext[parens]{\usebibmacro{sessionyear}}%
      \setunit{\addspace}%
      \iffieldundef{number}{}{%
        \printlist[billprinting]{institution}}%
    }{%
      \printtext[parens]{%
        \bibstring{draft}\space
        \printdate}}
    \setunit{\addspace}}
  \newbibmacro*{sessionyear}{%
    \iffieldundef{year}{}{%
      \printfield{year}%
      \iffieldundef{endyear}{}{%
        \bibdaterangesep
        \blx@ox@compyear{\thefield{year}}{\thefield{endyear}}}}}
  \newbibmacro{eulegislation}{%
    \printfield[default]{title}%
    \setunit{\addspace}\newblock%
    \usebibmacro{eulegref}}
  \newcommand*{\ojspecedtitle}{OJ Spec Ed}
  \newbibmacro*{eulegref}{%
    \iffieldequals{journaltitle}{\officialjournaltitle}{%
      \printfield[brackets]{year}%
      \setunit{\addspace}%
      \printfield{journaltitle}%
      \setunit{\addspace}%
      \iffieldundef{series}{%
        \printtext{L}%
      }{%
        \printfield[default]{series}}%
      \usebibmacro{issue/volume}%
      \setunit*{\addslash}%
      \printfield{pages}%
      \togglefalse{blx@ox@nopostnotedelim}%
    }{%
      \usebibmacro{year+vol+report}%
```

```
      \setunit*{\addspace}%
      \printfield{pages}}}
  \newbibmacro*{legnumber}{%
    \iffieldequals{entrysubtype}{\subtypeprimarylegislation}{%
      \ifboolexpr{(
          test {\iffieldundef{number}}
          or
          not test {\iffieldundef{title}} )
        and not (
          test {\ifkeyword{cy}}
          or
          test {\ifkeyword{sc}}
          or
          test {\ifkeyword{ni}} )
      }{}{%
        \printtext[parens]{\printfield{number}}%
        \toggletrue{blx@ox@nopostnotedelim}}%
    }{%
      \iffieldundef{number}{}{%
        \setunit{\addcomma\addspace}%
        \printfield{number}%
        \togglefalse{blx@ox@nopostnotedelim}}}}
```

This adds additional material for Welsh statutory instruments.

```
  \newbibmacro*{legsupp}{%
    \ifkeyword{cy}
      {\iffieldundef{userb}
        {}
        {\printtext{\mkbibparens{\printfield{userb}}}\toggletrue{blx@ox@nopostnotedelim}}}
      {}}

```

Treaties, explanatory notes and Hansard

```
  \newcommand*{\explanatorynote}{explanatory note}
  \newcommand*{\parliamentarytype}{parliamentary}
  \newcommand*{\treatysubtype}{piltreaty}
  \DeclareBibliographyDriver{legal}{%
    \usebibmacro{bibindex}%
    \usebibmacro{begentry}%
    \iffieldequals{entrysubtype}{\explanatorynote}{%
      \printfield[default]{title}%
      \setunit{\addspace}\newblock
    }{%
      \iffieldequals{entrysubtype}{\parliamentarytype}{%
        \usebibmacro{legal:parliamentary}%
      }{%
        \usebibmacro{treatycitation}}}%
    \setunit{\addcomma\space}\newblock
    \printfield[default]{note}
    \setunit{\addspace}\newblock
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}%
    \usebibmacro{pageref}%
    \usebibmacro{finentry}}
  \newbibmacro{legal:parliamentary}{%
```

```
    \printfield[default]{title}%
    \newunit\newblock
    \printfield{type}%
    \setunit{\addspace}%
    \iffieldundef{series}{}{%
      \printtext[parens]{%
        \biblstring{jourser}\space
        \printfield{series}}}%
    \setunit{\addspace}%
    \printfield{volume}%
    \setunit{\addcomma\space}%
    \usebibmacro{hansard-ref}%
    \setunit{\addspace}%
    \iffieldundef{year}{}{%
      \printtext[parens]{\usebibmacro{date}}}%
    \togglefalse{blx@ox@nopostnotedelim}}
  \newbibmacro*{hansard-ref}{%
    \iffieldundef{postnote}{%
      \iffieldundef{pages}{}{%
        \printfield{pages}}%
    }{}}%
  \newbibmacro{treatycitation}{%
    \printfield[default]{title}%
    \setunit{\addspace}\newblock%
    \printlist[treaty]{institution}
    \setunit{\addspace}\newblock
    \usebibmacro{treatyinfo}%
    \setunit{\addspace}\newblock
    \usebibmacro{treaty:year+vol+report}}
  \newbibmacro{treatyinfo}{%
    \iflistundef{lista}{% execution
      \iffieldundef{year}{}{%
        \iffieldundef{volume}{}{%
          \printtext[parens]{\printdate}}}%
    }{%
      \printtext[parens]{\printlist[treatydates]{lista}}}}
  \newbibmacro{treaty:year+vol+report}{%
    \iffieldequals{journaltitle}{\officialjournaltitle}{%
      \usebibmacro{eulegref}%
    }{%
      \usebibmacro{treaty:date}%
      \setunit{\addspace}%
      \printfield[default]{volume}%
      \setunit{\addspace}%
      \printfield{journaltitle}%
      \setunit*{\addspace}%
      \iffieldundef{series}{%
        \printfield{type}%
        \setunit*{\addspace}%
      }{%
        \printfield{series}%
        \iffieldundef{type}{%
          \setunit{\addspace}%
          \bibcpstring{number}
          \setunit{\addspace}%
        }{%
          \setunit{\addcomma\space}%
        }}
      \printfield{number}
      \setunit*{\addspace}%
      \printfield{pages}}}%
  \newbibmacro*{treaty:date}{%
```

```
    \ifboolexpr{
      test {\iffieldundef{volume}}
      or
      bool {bbx@year-essential}
    }{%
      \ifboolexpr{
        test {\ifkeyword{sc}}
        or
        test {\iftoggle{bbx:scotstyle}}
      }{%
        \printfield{year}%
      }{%
        \printfield[brackets]{year}%
      }}{}}

```

We don't really deal with commentaries as distinct from books.

```
\DeclareBibliographyAlias{commentary}{book}
```

2.1.16 Manuscripts

In the spirit of compatibility, this code is adapted from biblatex-manuscripts-philology by Maïeul Rouquette.

Here are the additional punctuation commands.

```
\newcommand{\locationlibrarypunct}{\addcomma\addspace}
\newcommand{\collectionshelfmarkpunct}{\addspace}
\newcommand{\datingpagespunct}{\addcomma\addspace}
\newcommand{\librarycollectionpunct}{\addcomma\addspace}
\newcommand{\pagetotalpagespunct}{\addcomma\addspace}
\newcommand{\columnslayerpunct}{\addsemicolon\addspace}%
```

Here are the configurable macros for the two sides of a folio.

```
\def\recto{r}
\def\verso{v}
\NumCheckSetup{\def\recto{}\def\verso{}}
```

Here are some special field formats for the `manuscript` driver. Note that the title is transformed into a descriptor by means of an annotation, rather than using a dedicated field. This greatly simplifies the code used elsewhere.

```
\DeclareFieldFormat[manuscript,unpublished]{title}{%
  \def\currentfield{title}%
  \iffieldannotation{descriptor}{#1}{\mkbibquote{#1\isdot}}%
  \undef\currentfield}
\DeclareFieldFormat{columns+layer}{\mkbibparens{#1}}
\DeclareFieldFormat{columns}{\mkbibparens{#1}}
\DeclareFieldFormat{layer}{\mkbibparens{#1}}
\DeclareFieldFormat{dating}{#1\isdot}%
\DeclareFieldFormat{support}{\ifbibstring{#1}{\bibstring{#1}}{#1}}
```

Here are the unique bibmacros used by the `manuscripts` driver. We hide the date if there is no author or title to prevent it appearing as the first element in the reference. Similarly, we hide the (vague) `dating` field if the (exact) `date` is displayed.

```
\newbibmacro{manuscript:date}{%
  \ifboolexpr{
    test {\ifnameundef{author}}
    and
    test {\iffieldundef{title}}
    and
    test {\iffieldundef{label}}
  }{}{\usebibmacro{date}}}
\newbibmacro{dating}{%
  \ifboolexpr{(
      test {\ifnameundef{author}}
      and
      test {\iffieldundef{title}}
      and
      test {\iffieldundef{label}}
    ) or
    test {\iffieldundef{year}}
  }{%
    \printfield{dating}%
  }{}}
```

We follow the structure of the biblatex-manuscripts-philology approach to allow special formatting to be applied to the collection and shelfmark, but we do not actually apply any.

```
\newbibmacro{location+library+collection+shelfmark}{%
  \printfield{library}%
  \setunit{\locationlibrarypunct}%
  \printlist{location}%
  \setunit{\librarycollectionpunct}%
  \usebibmacro{collection+shelfmark}}
\newbibmacro{collection+shelfmark}{%
  \ifboolexpr{
    test {\iffieldundef{collection}}
    and
    test {\iffieldundef{shelfmark}}
  }{}{%
    \printtext[collection+shelfmark]{%
      \printfield{collection}%
      \setunit*{\collectionshelfmarkpunct}%
      \printfield{shelfmark}}}}
```

Again, following biblatex-manuscripts-philology, we allow different formatting to be applied to columns and layers according to whether they occur adjacently or not, as they might be separated by a page specification.

```
\newbibmacro{manuscript:pages}{%
  \printfield{pagetotal}%
  \setunit{\addspace}%
  \iffieldundef{pages}{%
    \usebibmacro{manuscript:columns+layer}%
  }{%
    \usebibmacro{manuscript:columns}%
    \setunit{\pagetotalpagespunct}%
    \printfield{pages}%
    \setunit{\addspace}%
    \usebibmacro{manuscript:layer}}}
\newbibmacro{manuscript:columns}{%
  \iffieldundef{columns}{}{%
    \printtext[columns]{\bibstring{\strfield{columns}column}}}%
}%
```

```
\newbibmacro{manuscript:layer}{%
  \iffieldundef{layer}{}{%
    \printtext[layer]{\bibstring{\strfield{layer}layer}}}%
}%
\newbibmacro{manuscript:columns+layer}{%
  \ifboolexpr{
    test {\iffieldundef{columns}}
    or
    test{\iffieldundef{layer}}
  }{%
    \usebibmacro{manuscript:columns}%
    \usebibmacro{manuscript:layer}%
  }{%
    \printtext[columns+layer]{%
      \bibstring{\strfield{columns}column}%
      \setunit*{\columnslayerpunct}%
      \bibstring{\strfield{layer}layer}}}}%
```

Putting it all together, here is the `manuscript` driver.

```
\DeclareBibliographyDriver{manuscript}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \printfield{howpublished}%
  \newunit\newblock
  \printfield{note}%
  \newunit\newblock
  \usebibmacro{manuscript:date}%
  \newunit\newblock
  \usebibmacro{location+library+collection+shelfmark}%
  \newunit
  \printfield{support}%
  \newunit
  \usebibmacro{dating}%
  \setunit{\datingpagespunct}
  \usebibmacro{manuscript:pages}
  \newunit\newblock%
  \iftoggle{bbx:url}{%
    \usebibmacro{url+urldate}%
  }{}%
  \iftoggle{bbx:related}{%
    \usebibmacro{related:init}%
    \usebibmacro{related}%
  }{}%
  \setunit{\bibpagerefpunct}\newblock
  \usebibmacro{pageref}%
  \usebibmacro{finentry}}
```

We provide an alternative bibmacro for doing much the same but with the regular biblatex fields.

```
\newbibmacro*{library+location+series+number}{%
  \printfield{library}%
  \setunit{\locationlibrarypunct}%
  \printlist{location}%
  \setunit{\librarycollectionpunct}%
```

```
    \ifboolexpr{
      test {\iffieldundef{series}}
      and
      test {\iffieldundef{number}}
    }{}{%
      \printtext[collection+shelfmark]{%
        \printfield{series}%
        \setunit*{\collectionshelfmarkpunct}%
        \printfield{number}}}}
```

Lastly, we adapt the `unpublished` driver to allow it to do a similar thing but with the regular biblatex fields. The presence of the `library` field is what triggers 'manuscript mode'.

```
\newtoggle{blx@ox@ms}
\DeclareBibliographyDriver{unpublished}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \iffieldundef{library}{\togglefalse{blx@ox@ms}}{\toggletrue{blx@ox@ms}}%
  \usebibmacro{author}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \printfield{note}%
  \newunit\newblock
  \printfield{howpublished}%
  \newunit\newblock
  \iftoggle{blx@ox@ms}{%
    \usebibmacro{manuscript:date}%
    \newunit\newblock
    \usebibmacro{library+location+series+number}%
    \newunit
    \printfield{support}%
    \newunit
    \usebibmacro{dating}%
    \setunit{\datingpagespunct}
    \usebibmacro{manuscript:pages}
  }{%
    \usebibmacro{location+date}%
  }%
  \newunit\newblock
  \iftoggle{bbx:url}
    {\usebibmacro{url+urldate}}
    {}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
  \iftoggle{bbx:related}
    {\usebibmacro{related:init}%
     \usebibmacro{related}}
    {}%
  \setunit{\bibpagerefpunct}\newblock
  \usebibmacro{pageref}%
  \usebibmacro{finentry}}
```

2.1.17 Letters

The driver for letters is similar to the one for other unpublished materials.

```
\DeclareBibliographyDriver{letter}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \iffieldundef{library}{\togglefalse{blx@ox@ms}}{\toggletrue{blx@ox@ms}}%
  \usebibmacro{author}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \printfield{note}%
  \iffieldundef{howpublished}{}{\nopunct\printfield{howpublished}}%
  \newunit\newblock
  \iftoggle{blx@ox@ms}{%
    \usebibmacro{manuscript:date}%
    \newunit\newblock
    \usebibmacro{library+location+series+number}%
    \newunit
    \printfield{support}%
    \newunit
    \usebibmacro{dating}%
    \setunit{\datingpagespunct}
    \usebibmacro{manuscript:pages}
  }{%
    \usebibmacro{location+date}%
  }%
  \newunit\newblock
  \iftoggle{bbx:url}
    {\usebibmacro{url+urldate}}
    {}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
  \iftoggle{bbx:related}
    {\usebibmacro{related:init}%
     \usebibmacro{related}}
    {}%
  \setunit{\bibpagerefpunct}\newblock
  \usebibmacro{pageref}%
  \usebibmacro{finentry}}
\DeclareFieldFormat[letter]{title}{%
  \def\currentfield{title}%
  \iffieldannotation{descriptor}{#1}{\mkbibquote{#1\isdot}}%
  \undef\currentfield}
\DeclareFieldFormat[letter]{date}{%
  \iffieldundef{url}{#1}{\mkbibparens{#1}}}
```

2.1.18 Related entries

We make the punctuation before related items configurable in remaining drivers inherited from the standard style, and move the `pageref` macro to the end.

```
\xpatchbibdriver{booklet}{%
  \setunit{\bibpagerefpunct}\newblock
  \usebibmacro{pageref}%
  \newunit\newblock
  \iftoggle{bbx:related}
    {\usebibmacro{related:init}%
     \usebibmacro{related}}
    {}%
}{%
```

```
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
  }{}{\wlog{WARNING: biblatex-oxref failed to patch booklet}}
```

```
  \xpatchbibdriver{misc}{%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
    \newunit\newblock
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
  }{%
    \iftoggle{bbx:related}
      {\usebibmacro{related:init}%
       \usebibmacro{related}}
      {}%
    \setunit{\bibpagerefpunct}\newblock
    \usebibmacro{pageref}%
  }{}{\wlog{WARNING: biblatex-oxref failed to patch misc}}
```

We provide an option for setting the relatedtype punctuation.

```
  \DeclareDelimFormat{begrelateddelimamendedby}{\addcomma\space}
  \DeclareDelimFormat{begrelateddelimequals}{\addspace}
  \DeclareDelimFormat{begrelateddelimin}{\addcomma\space}
  \DeclareDelimFormat{begrelateddelimincludes}{\addcomma\space}
  \DeclareDelimFormat{begrelateddelimreprintfrom}{\addperiod\space}
  \DeclareDelimFormat{begrelateddelimreviewof}{\newunitpunct}
  \DeclareDelimFormat{begrelateddelimtranslationof}{\addspace}
  \DeclareDelimFormat{begrelateddelimmultivolume}{\newunitpunct}
  \DeclareDelimFormat{relateddelimmultivolume}{\newunitpunct}
  \newtoggle{blx@ox@success}
  \DeclareBiblatexOption{global,type}[string]{relationpunct}[semicolon]{%
    \bgroup\blx@blxinit
    \ifcsdef{add#1}{\global\toggletrue{blx@ox@success}}{%
      \global\togglefalse{blx@ox@success}%
      \PackageError{biblatex-oxref}{%
        Invalid option 'relationpunct=#1'%
      }{%
        Valid values are 'dot', 'comma', 'semicolon', 'colon',\MessageBreak
        'period', 'exclam', 'question', and 'space'.}}%
    \egroup
    \iftoggle{blx@ox@success}{\ifstrequal{#1}{space}{%
      \DeclareDelimFormat{begrelateddelim}{\addspace}%
    }{%
      \DeclareDelimFormat{begrelateddelim}{\csuse{add#1}\space}}%
    }{}}
  \DeclareEntryOption[string]{relationpunct}[semicolon]{%
    \bgroup\blx@blxinit
    \ifcsdef{add#1}{\global\toggletrue{blx@ox@success}}{%
      \global\togglefalse{blx@ox@success}%
      \PackageError{biblatex-oxref}{%
        Invalid option 'relationpunct=#1'%
      }{%
        Valid values are 'dot', 'comma', 'semicolon', 'colon',\MessageBreak
```

```
        'period', 'exclam', 'question', and 'space'.}}%
    \egroup
    \iftoggle{blx@ox@success}{\ifstrequal{#1}{space}{%
      \DeclareDelimFormat{begrelateddelim}{\addspace}%
      \DeclareDelimFormat{begrelateddelimamendedby}{\addspace}
      \DeclareDelimFormat{begrelateddelimequals}{\addspace}%
      \DeclareDelimFormat{begrelateddelimin}{\addspace}%
      \DeclareDelimFormat{begrelateddelimincludes}{\addspace}%
      \DeclareDelimFormat{begrelateddelimreprintfrom}{\addspace}%
      \DeclareDelimFormat{begrelateddelimreviewof}{\addspace}%
      \DeclareDelimFormat{begrelateddelimtranslationof}{\addspace}%
      \DeclareDelimFormat{begrelateddelimmultivolume}{\addspace}%
    }{%
      \DeclareDelimFormat{begrelateddelim}{\csuse{add#1}\space}%
      \DeclareDelimFormat{begrelateddelimamendedby}{\csuse{add#1}\space}
      \DeclareDelimFormat{begrelateddelimequals}{\csuse{add#1}\space}%
      \DeclareDelimFormat{begrelateddelimin}{\csuse{add#1}\space}%
      \DeclareDelimFormat{begrelateddelimincludes}{\csuse{add#1}\space}%
      \DeclareDelimFormat{begrelateddelimreprintfrom}{\csuse{add#1}\space}%
      \DeclareDelimFormat{begrelateddelimreviewof}{\csuse{add#1}\space}%
      \DeclareDelimFormat{begrelateddelimtranslationof}{\csuse{add#1}\space}%
      \DeclareDelimFormat{begrelateddelimmultivolume}{\csuse{add#1}\space}}%
    }{}}
  \ExecuteBibliographyOptions{relationpunct}
  \newcounter{blx@ox@relitem}
  \xapptobibmacro{begrelated}{%
    \setcounter{blx@ox@relitem}{0}%
  }{}{\wlog{WARNING: biblatex-oxref failed to append to begrelated}}
```

We provide an option to prevent a related item beginning with ”in”.

```
  \newtoggle{blx@ox@norelin}
  \DeclareBiblatexOption{global,type,entry}{norelatedin}[true]{%
    \settoggle{blx@ox@norelin}{#1}}
  \xapptobibmacro{begrelatedloop}{%
    \iftoggle{blx@ox@norelin}{%
      \renewbibmacro*{in:}{%
        \ifboolexpr{
          test {\iffieldequalstr{entrysubtype}{yearbook}}
          or (
            test {\ifnameundef{author}}
            and
            test {\ifnameundef{translator}}
            and
            test {\iffieldundef{title}}
        )}{}{%
          \bibstring{in}%
          \printunit{\intitlepunct}%
        }}}{}%
  }{}{\wlog{WARNING: biblatex-oxref failed to append to begrelatedloop}}

```

Translations

Where the related item is the translation, the related string is (by default, in English at least) prefaced with the language.

```
  \newbibmacro*{rellanguage}{%
    \def\do##1{%
      \entrydata{##1}{%
```

```
      \printlist{language}}}%
    \docsvfield{related}%
  }
  \DeclareFieldFormat{relatedstring:translationof}{%
    \iffieldundef{relatedstring}{%
      \blx@ox@langbibstring{\usebibmacro{rellanguage}}{original}%
      \printunit{\addcomma\space}
    }{%
      \thefield{relatedstring}\printunit{\relatedpunct}}}

  \DeclareFieldFormat{related:translationof}{%
    \mkbibbrackets{#1}}
```

Co-publications

This relation simply prints what would go in the publication block.

```
  \newbibmacro*{related:copub}[1]{%
    \entrydata*{#1}{%
      \usebibmacro{publisher+location+date}%
      \setunit{\relateddelim}}}
```

Reprints

The standard styles define a special driver for the `reprintfrom` relation. For oxref, the standard generic driver is sufficient, so this code reverts the specialization.

```
  \renewbibmacro*{related:reprintfrom}[1]{%
    \entrydata*{#1}{%
      \nopunct
      \usedriver{%
        \ifnameundef{savedauthor}{%
          \ifnameundef{savededitor}{}{%
            \ifnamesequal{editor}{savededitor}{%
              \clearname{editor}%
            }{}}%
        }{%
          \ifnamesequal{author}{savedauthor}{%
            \clearname{author}%
          }{}}%
        \iffieldundef{savedtitle}{}{%
          \iffieldsequal{savedtitle}{title}{%
            \clearfield{title}%
          }{}}%
        \renewbibmacro*{related:init}{}%
        \DeclareNameAlias{sortname}{default}%
        \ifbibmacroundef{date+extradate}{}{%
          \renewbibmacro*{date+extradate}{}%
          \renewbibmacro*{date}{\printdate}}%
        \renewbibmacro*{pageref}{}%
      }{%
        \thefield{entrytype}}}}
```

Articles that span issues

If an article spans several issues of a journal, we print the second reference after the first, omitting any information in common.

```
\newbibmacro*{related:serialarticle}[1]{%
  \entrydata*{#1}{%
    \iffieldundef{savedjournaltitle}{}{%
      \iffieldsequal{journaltitle}{savedjournaltitle}{%
        \clearfield{journaltitle}%
      }{}}%
    \iffieldundef{savedjournalsubtitle}{}{%
      \iffieldsequal{journalsubtitle}{savedjournalsubtitle}{%
        \clearfield{journalsubtitle}%
      }{}}%
    \iffieldundef{savedseries}{}{%
      \iffieldsequal{series}{savedseries}{%
        \clearfield{series}%
      }{}}%
    \iffieldundef{savedyear}{\clearfield{year}}{
      \iffieldsequal{year}{savedyear}{%
        \clearfield{year}%
      }{}}%
    \usebibmacro{journal+issuetitle}%
    \newunit
    \usebibmacro{note+pages}%
    \newunit\newblock
    \usebibmacro{doi+eprint+url}%
    \newunit\newblock
    \usebibmacro{addendum+pubstate}}}
```

Reviews

We ensure that the field formatting for `review` entries matches that for `article` entries.

```
\DeclareFieldFormat[review]{title}{\mkbibquote{#1\isdot}}
\DeclareFieldFormat[review]{volume}{#1}% volume of a journal
\DeclareFieldFormat[review]{number}{#1}% number of a journal
\DeclareFieldFormat[review]{series}{% series of a journal
  \ifinteger{#1}
  {\mkbibordseries{#1}~\bibstring{jourser}}
  {\ifbibstring{#1}{\bibstring{#1}}{#1}}}
```

We take advantage of the Biber-specific mechanism of relating items in order to handle reviews. Compared to the default code, this is simpler in that we don't check for repeated authors/editors (it would be a rather biased review!), we directly set the author format, and we don't nullify the `date+extradate` macro.

```
\newbibmacro*{related:reviewof}[1]{%
  \entrydata*{#1}{%
    \usedriver{%
      \renewbibmacro*{related:init}{}%
      \DeclareNameAlias{author}{given-family}%
      \renewbibmacro*{pageref}{}%
    }{\thefield{entrytype}}%
  }%
}
```

Since a review is a special kind of journal article, the `review` driver is based on the `article` one, the difference being that the `related` macro comes just before `journal+issuetitle`. Oxford style links the two with 'in'.

```
\DeclareBibliographyDriver{review}{%
  \usebibmacro{bibindex}%
  \usebibmacro{begentry}%
  \usebibmacro{author/translator+others}%
  \setunit{\printdelim{nametitledelim}}\newblock
  \usebibmacro{title}%
  \setunit{\titlebyauthordelim}\newblock
  \usebibmacro{byauthor}%
  \newunit\newblock
  \usebibmacro{bytranslator+others}%
  \newunit\newblock
  \printfield{version}%
  \newunit\newblock
  \iftoggle{bbx:related}{%
    \usebibmacro{related:init}%
    \usebibmacro{related}%
  }{}%
  \newunit\newblock
  \usebibmacro{in:}%
  \setunit{\addspace}%
  \usebibmacro{journal+issuetitle}%
  \newunit
  \usebibmacro{byeditor+others}%
  \iffieldundef{note}%
    {\newunit}%
    {\setunit{\addsemicolon\addspace}}%
  \usebibmacro{note+pages}%
  \newunit\newblock
  \iftoggle{bbx:isbn}
    {\printfield{issn}}
    {}%
  \newunit\newblock
  \usebibmacro{doi+eprint+url}%
  \newunit\newblock
  \usebibmacro{addendum+pubstate}%
  \setunit{\bibpagerefpunct}\newblock
  \usebibmacro{pageref}%
  \usebibmacro{finentry}}
```

Multiple volumes

Standard biblatex provides the `multivolume` relation for different volumes of the same work that have slightly different publication details, but it doesn't quite work for Oxford style. This works better.

```
\DeclareFieldFormat{related:multivolume}{#1}
\renewbibmacro*{related:multivolume}[1]{%
  \entrydata*{#1}{%
    \printtext{%
      \printfield{volume}%
      \printfield{part}%
      \iffieldsequal{savedtitle}{title}{}{%
        \setunit{\addcolon\space}%
        \usebibmacro{title}}%
    }%
    \setunit*{\addspace}%
    \iffieldsequal{savedseries}{series}{\clearfield{series}}{}%
    \iffieldsequal{savednumber}{number}{\clearfield{number}}{}%
    \iffieldsequal{savededition}{edition}{\clearfield{edition}}{}%
```

```
      \ifboolexpr{
        test {\iflistsequal{savedpublisher}{publisher}}
        and
        test {\iflistsequal{savedlocation}{location}}
      }{\clearlist{publisher}\clearlist{location}}{}%
        \iffieldsequal{saveddate}{date}{\clearfield{date}}{}%
        \usebibmacro{series+number+edition+publisher+location+date}%
      }}
```

Related editions

This macro is based on the 'bytranslator' one, but more general. Note that `\mkrelatedstringtext` was introduced in biblatex v3.16, so we backport it if an earlier version is used.

```
  \providecommand*{\mkrelatedstringtext}[1]{{{\mainlang #1}}}
  \newbibmacro*{related:editedas}[1]{%
    \entrydata{#1}{%
      \renewbibmacro*{name:hook}[1]{%
        \ifnumequal{\value{listcount}}{1}
          {\mkrelatedstringtext{\lbx@initnamehook{#1}}}
          {}}%
      \printfield{edition}%
      \setunit{\addspace}%
      \usebibmacro{byeditor+others}%
      \setunit*{\addcomma\space\bibstring[\mkrelatedstringtext]{astitle}\space}%
      \usebibmacro{maintitle+title}%
      \setunit{\addspace}%
      \printfield{note}%
      \newunit\newblock
      \printfield{volumes}%
      \newunit
      \usebibmacro{series+number+publisher+location+date}}}
  \renewbibmacro*{related:bytranslator}[1]{%
    \entrydata{#1}{%
      \renewbibmacro*{name:hook}[1]{%
        \ifnumequal{\value{listcount}}{1}
          {\mkrelatedstringtext{\lbx@initnamehook{#1}}}
          {}}%
      \printnames[bytranslator]{translator}%
      \setunit*{\addspace\bibstring[\mkrelatedstringtext]{astitle}\space}%
      \usebibmacro{maintitle+title}%
      \setunit{\addspace}%
      \printfield{note}%
      \newunit\newblock
      \printfield{volumes}%
      \newunit
      \usebibmacro{series+number+publisher+location+date}}}
```

Joint releases

We provide support for CDs (for example) which contain more than one work.

```
  \newbibmacro*{related:includes}[1]{%
    \stepcounter{blx@ox@relitem}%
    \ifnumequal{\value{blx@ox@relitem}}{\value{bbx:relatedtotal}}%
      {\bibstring{and}\addspace}{}%
    \entrydata{#1}{%
```

```
      \ifbibmacroundef{date+extradate}{}{%
        \renewbibmacro*{date+extradate}{}}%
      \usebibmacro{author}%
      \setunit{\printdelim{nametitledelim}}\newblock
      \usebibmacro{title}}}
```

Subitems

We provide support for items in items in items. The outer two layers should be taken care of with an `incollection` entry or equivalent. The innermost item should be a `misc` entry. While we're at it, we provide descriptor support for `misc` entries.

```
\DeclareFieldFormat[misc]{title}{%
  \def\currentfield{title}%
  \iffieldannotation{descriptor}{#1}{%
    \iffieldequalstr{relatedtype}{in}{%
      \mkbibquote{#1\isdot}%
    }{%
      \mkbibemph{#1}%
    }}%
  \undef\currentfield}
\newbibmacro*{related:in}[1]{%
  \entrydata*{#1}{%
    \usedriver
      {\ifnameundef{savedauthor}
         {\ifnameundef{savededitor}
            {}
            {\ifnamesequal{editor}{savededitor}
               {\clearname{editor}}
               {}}}
         {\ifnamesequal{author}{savedauthor}
            {\clearname{author}}
            {}}%
       \renewbibmacro*{related:init}{}%
       \DeclareNameAlias{sortname}{default}%
       \ifbibmacroundef{date+extradate}
         {}
         {\renewbibmacro*{date+extradate}{}%
          \renewbibmacro*{date}{\printdate}}%
       \renewbibmacro*{pageref}{}}
      {\thefield{entrytype}}%
    \ifboolexpr{
      test {\iffieldundef{pages}}
      or
      test {\iffieldundef{savedpages}}
    }{%
      \newunit\newblock
    }{%
      \setunit{\addspace}%
      \bibstring{thiscite}%
      \printunit{\addspace}%
    }%
  }%
  \usebibmacro{chapter+pages}%
}

```

2.1.19 Source maps

We use the source mapping capabilities of Biber to fix the following issues.

```
  \DeclareStyleSourcemap{%
    \maps[datatype=bibtex]{%
```

Sort order

`proceedings` and `mvproceedings` entries allow an organization to be printed in the author position.

```
      \map{
        \pertype{proceedings}
        \pertype{mvproceedings}
        \step[notfield=author,
          fieldsource=organization,
          fieldtarget=author]
      }
```

Descriptors

This map provides a helpful `descriptor` field that can simplify the provision of descriptors, being notes that can act as titles.

```
      \map[overwrite=false]{
        \step[fieldsource=descriptor, final]
        \step[notfield=title,
          fieldset=title+an,
          fieldvalue={=descriptor}]
        \step[notfield=title,
          fieldsource=descriptor,
          fieldtarget=title]
        \step[fieldsource=descriptor,
          fieldtarget=note]
      }
```

Pseudonyms and inferred authorship

These help ensure compatibility with biblatex-realauthor.

```
      \map[overwrite=false]{
        \step[fieldsource=realauthor, final]
        \step[notfield=author,
          fieldset=author+an,
          fieldvalue={=inferred}]
        \step[notfield=author,
          fieldsource=realauthor,
          fieldtarget=author]
        \step[fieldsource=realauthor,
          fieldtarget=authoraddon]
      }
      \map[overwrite=false]{
        \step[fieldsource=realeditor, final]
        \step[notfield=editor,
          fieldset=editor+an,
          fieldvalue={=inferred}]
        \step[notfield=editor,
          fieldsource=realeditor,
          fieldtarget=editor]
        \step[fieldsource=realeditor,
          fieldtarget=editoraddon]
```

```
4209      }
```

Editors as joint authors

This map provides a more portable interface for declaring a translator or revisor to be a joint author.

```
4210      \map[overwrite=false]{
4211        \step[fieldsource=editor+an,
4212          match=\regexp{=jointauthor},
4213          final]
4214        \step[fieldsource=editor,
4215          fieldtarget=jointauthor]
4216        \step[fieldsource=editortype,
4217          fieldtarget=jointauthortype]
4218      }
4219      \map[overwrite=false]{
4220        \step[fieldsource=translator+an,
4221          match=\regexp{=jointauthor},
4222          final]
4223        \step[fieldsource=translator,
4224          fieldtarget=jointauthor]
4225        \step[fieldset=jointauthortype,
4226          fieldvalue={=translator}]
4227      }
```

Standards

The purpose of this map is to move the number to the head of the reference in the absence of an author, and try to fix the sorting accordingly.

```
4228      \map[overwrite=false]{
4229        \pertype{standard}
4230        \step[notfield=author,
4231              fieldsource=number,
4232              final]
4233        \step[fieldset=sortkey,
4234              origfieldval]
4235      }
```

Audiovisual materials

For audiovisual materials, `origdatetype` defaults to ‘recorded’.

```
4236      \map[overwrite=false]{
4237        \pertype{audio}
4238        \pertype{music}
4239        \pertype{movie}
4240        \pertype{video}
4241        \pertype{inaudio}
4242        \pertype{inmusic}
4243        \pertype{inmovie}
4244        \pertype{invideo}
4245        \step[fieldset=origdatetype,fieldvalue={recorded}]
4246      }
```

Legal references

These help ensure compatibility with oscola.

```
      \map[overwrite=false]{
        \pertype{jurisdiction}
        \step[fieldsource=reporter,
              fieldtarget=journaltitle]
        \step[fieldsource=court,
              fieldtarget=institution]
        \step[fieldsource=additionalreports,
              fieldtarget=listb]
        \step[fieldsource=ecli,
              fieldtarget=verba]
       }%
      \map[overwrite=false]{
        \pertype{legal}
        \step[fieldsource=reporter,
              fieldtarget=journaltitle]
      }
      \map[overwrite=true]{
          \pertype{legal}
          \step[fieldsource=parties,
                fieldtarget=institution]
          \step[fieldsource=execution,
                fieldtarget=lista]
      }
```

This is how oscola removes dots from entries.

```
      \map[overwrite=true]{
       \pertype{jurisdiction}
       \pertype{legislation}
       \pertype{legal}
       \step[fieldsource=title,
             match=\regexp{(\d)\.(\d)},
             replace=\regexp{$1.$2}]
       \step[fieldsource=title,
             match=\regexp{(\D)\.(\d)},
             replace=\regexp{$1 $2}]
       \step[fieldsource=title,
              match=\regexp{(?:\A|[^{])\K\.([^\d}])},
              replace=\regexp{$1}]
       \step [fieldsource=title,
              match=\regexp{([^\d{])\.(?![}])},
              replace=\regexp{$1}]
       \step[fieldsource=shorttitle,
             match=\regexp{(\d)\.(\d)},
             replace=\regexp{$1.$2}]
       \step[fieldsource=shorttitle,
             match=\regexp{(\D)\.(\d)},
             replace=\regexp{$1 $2}]
       \step[fieldsource=shorttitle,
              match=\regexp{(?:\A|[^{])\K\.([^\d}])},
              replace=\regexp{$1}]
       \step [fieldsource=shorttitle,
              match=\regexp{([^\d{])\.(?![}])},
              replace=\regexp{$1}]
       \step[fieldsource=parreporter,
             match=\regexp{(\d)\.(\d)},
             replace=\regexp{$1.$2}]
       \step[fieldsource=parreporter,
```

```
4302              match=\regexp{(\D)\.(\d)},
4303              replace=\regexp{$1 $2}]
4304        \step[fieldsource=parreporter,
4305               match=\regexp{(?:\A|[^{])\K\.([^\d}])},
4306               replace=\regexp{$1}]
4307        \step [fieldsource=parreporter,
4308               match=\regexp{([^\d{])\.(?![}])},
4309               replace=\regexp{$1}]
4310        \step[fieldsource=journaltitle,
4311              match=\regexp{(\d)\.(\d)},
4312              replace=\regexp{$1.$2}]
4313        \step[fieldsource=journaltitle,
4314              match=\regexp{(\D)\.(\d)},
4315              replace=\regexp{$1 $2}]
4316        \step[fieldsource=journaltitle,
4317               match=\regexp{(?:\A|[^{])\K\.([^\d}])},
4318               replace=\regexp{$1}]
4319        \step [fieldsource=journaltitle,
4320               match=\regexp{([^\d{])\.(?![}])},
4321               replace=\regexp{$1}]
4322        \step[fieldsource=institution,
4323              match=\regexp{(\d)\.(\d)},
4324              replace=\regexp{$1.$2}]
4325        \step[fieldsource=institution,
4326              match=\regexp{(\D)\.(\d)},
4327              replace=\regexp{$1 $2}]
4328        \step[fieldsource=institution,
4329               match=\regexp{(?:\A|[^{])\K\.([^\d}])},
4330               replace=\regexp{$1}]
4331        \step[fieldsource=institution,
4332               match=\regexp{([^\d{])\.(?![}])},
4333               replace=\regexp{$1}]
4334        \step[fieldsource=publisher,
4335              match=\regexp{(\d)\.(\d)},
4336              replace=\regexp{$1.$2}]
4337        \step[fieldsource=publisher,
4338              match=\regexp{(\D)\.(\d)},
4339              replace=\regexp{$1 $2}]
4340        \step[fieldsource=publisher,
4341               match=\regexp{(?:\A|[^{])\K\.([^\d}])},
4342               replace=\regexp{$1}]
4343        \step [fieldsource=publisher,
4344               match=\regexp{([^\d{])\.(?![}])},
4345               replace=\regexp{$1}]
4346        \step[fieldsource=location,
4347              match=\regexp{(\d)\.(\d)},
4348              replace=\regexp{$1.$2}]
4349        \step[fieldsource=location,
4350              match=\regexp{(\D)\.(\d)},
4351              replace=\regexp{$1 $2}]
4352        \step[fieldsource=location,
4353               match=\regexp{(?:\A|[^{])\K\.([^\d}])},
4354               replace=\regexp{$1}]
4355        \step [fieldsource=location,
4356               match=\regexp{([^\d{])\.(?![}])},
4357               replace=\regexp{$1}]
4358        \step[fieldsource=series,
4359              match=\regexp{(\d)\.(\d)},
4360              replace=\regexp{$1.$2}]
4361        \step[fieldsource=series,
4362              match=\regexp{(\D)\.(\d)},
4363              replace=\regexp{$1 $2}]
```

```
      \step[fieldsource=series,
            match=\regexp{(?:\A|[^{])\K\.([^\d}])},
            replace=\regexp{$1}]
      \step [fieldsource=series,
            match=\regexp{([^\d{])\.(?![}])},
            replace=\regexp{$1}]
      \step[fieldsource=indextitle,
           match=\regexp{(\d)\.(\d)},
           replace=\regexp{$1.$2}]
      \step[fieldsource=indextitle,
           match=\regexp{(\D)\.(\d)},
           replace=\regexp{$1 $2}]
      \step[fieldsource=indextitle,
            match=\regexp{(?:\A|[^{])\K\.([^\d}])},
            replace=\regexp{$1}]
      \step [fieldsource=indextitle,
            match=\regexp{([^\d{])\.(?![}])},
            replace=\regexp{$1}]
    }
```

If `casenumber` is given, it is converted to `number` or, if the `number` is already set, `userb`.

```
    \map[overwrite=false]{
      \step[fieldsource=casenumber, final]
      \step[notfield=number, fieldsource=casenumber, fieldtarget=number]
      \step[fieldsource=casenumber, fieldtarget=userb]
    }
  }%
}
```

2.1.20 Sorting schemes

We adjust the sort order to take into account some other fields that might end up at the front (library, collection, series). The ‘`nty`‘ scheme is used by oxnotes.

```
\DeclareSortingTemplate{nty}{
  \sort{
    \field{presort}
  }
  \sort[final]{
    \field{sortkey}
  }
  \sort{
    \field{sortname}
    \field{author}
    \field{editor}
    \field{translator}
    \field{sorttitle}
    \field{title}
    \field{library}
  }
  \sort{
    \field{sorttitle}
    \field{title}
  }
  \sort{
    \field{sortyear}
    \field{year}
  }
```

```
    \sort{
      \field{volume}
      \literal{0}
    }
    \sort{
      \field{location}
    }
    \sort{
      \field{collection}
      \field{series}
    }
  }
```

The ‘nyt‘ scheme is used by oxyear.

```
  \DeclareSortingTemplate{nyt}{
    \sort{
      \field{presort}
    }
    \sort[final]{
      \field{sortkey}
    }
    \sort{
      \field{sortname}
      \field{author}
      \field{editor}
      \field{translator}
      \field{sorttitle}
      \field{title}
      \field{library}
    }
    \sort{
      \field{sortyear}
      \field{labelyear}
      \field{year}
    }
    \sort{
      \field{sorttitle}
      \field{title}
    }
    \sort{
      \field{volume}
      \literal{0}
    }
    \sort{
      \field{location}
    }
    \sort{
      \field{collection}
      \field{series}
    }
  }
```

The ‘anyt‘ scheme is used by oxalph.

```
  \DeclareSortingTemplate{anyt}{
    \sort{
      \field{presort}
    }
    \sort{
      \field{labelalpha}
```

```
    }
    \sort[final]{
      \field{sortkey}
    }
    \sort{
      \field{sortname}
      \field{author}
      \field{editor}
      \field{translator}
      \field{sorttitle}
      \field{title}
      \field{library}
    }
    \sort{
      \field{sortyear}
      \field{labelyear}
      \field{year}
    }
    \sort{
      \field{sorttitle}
      \field{title}
    }
    \sort{
      \field{volume}
      \literal{0}
    }
    \sort{
      \field{location}
    }
    \sort{
      \field{collection}
      \field{series}
    }
  }
```

The following entry types never put editors first.

```
\ExecuteBibliographyOptions
  [proceedings,report,artwork,audio,image,music,movie,performance,video,%
  manuscript,unpublished,review]{useeditor=false}
```

2.2 Notes style: oxnotes.bbx

2.2.1 Preliminaries

First we load the common oxref features.

```
\RequireBibliographyStyle{oxref}
```

2.2.2 Names

We apply our special name format to names likely to appear at the start of an entry.

```
\DeclareNameAlias{author}{bib-family-given/cite-given-family}
\DeclareNameAlias[related:reviewof]{author}{given-family}
\DeclareNameAlias{editor}{bib-family-given/cite-given-family}
\DeclareNameAlias[related:reviewof]{editor}{given-family}
```

We ensure the printing of the anon localization string matches.

```
\xpatchbibmacro{author}{%
  \iftoggle{blx@ox@abbranon}{\bibcpsstring{anon}}{\bibcplstring{anon}}%
}{%
  \iftoggle{blx@ox@abbranon}{%
    \iftoggle{blx@ox@scnames}{\bibcpsstring[\textsc]{anon}}{\bibcpsstring{anon}}%
  }{%
    \iftoggle{blx@ox@scnames}{\bibcplstring[\textsc]{anon}}{\bibcplstring{anon}}%
  }%
}{}{\wlog{WARNING: biblatex-oxref (oxnotes) failed to patch author}}
```

2.2.3 Multivolume dates

For the very particular use case of breaking down multivolume works into their constituent volumes, we remove the overall date, assuming that the individual volume dates will be used instead.

```
\xpretobibmacro{series+number+edition+publisher+location+date}{%
  \iffieldequalstr{relatedtype}{multivolume}{%
    \clearfield{year}\clearfield{month}\clearfield{day}%
  }{}}{}{}
```

2.2.4 Source maps

```
\DeclareStyleSourcemap{%
  \maps[datatype=bibtex]{%
```

Sort order

For entry types that print the `maintitle` and `volume` before the `title`, we need to make sure this is reflected in the sort order.

```
    \map{
      \pertype{mvbook}
      \pertype{mvcollection}
      \pertype{mvreference}
      \pertype{proceedings}
      \pertype{mvproceedings}
      \pertype{report}
      \step[fieldsource=maintitle]%
      \step[fieldset=sorttitle, origfieldval]%
      \step[fieldsource=volume]%
      \step[fieldset=sorttitle, append, origfieldval]%
      \step[fieldsource=title]%
      \step[fieldset=sorttitle, append, origfieldval]%
    }%
  }%
}
```

2.3 Numeric style: oxnum.bbx

2.3.1 Preliminaries

First we load the common oxref features.

```
\RequireBibliographyStyle{oxref}
```

2.3.2 Names

We apply our special name format to names likely to appear at the start of an entry.

```
\DeclareNameAlias{author}{bib-family-given/cite-given-family}
\DeclareNameAlias[related:reviewof]{author}{given-family}
\DeclareNameAlias{editor}{bib-family-given/cite-given-family}
\DeclareNameAlias[related:reviewof]{editor}{given-family}
```

We ensure the printing of the anon localization string matches.

```
\xpatchbibmacro{author}{%
  \iftoggle{blx@ox@abbranon}{\bibcpsstring{anon}}{\bibcplstring{anon}}%
}{%
  \iftoggle{blx@ox@abbranon}{%
    \iftoggle{blx@ox@scnames}{\bibcpsstring[\textsc]{anon}}{\bibcpsstring{anon}}%
  }{%
    \iftoggle{blx@ox@scnames}{\bibcplstring[\textsc]{anon}}{\bibcplstring{anon}}%
  }%
}{}{\wlog{WARNING: biblatex-oxref (oxnum) failed to patch author}}
```

2.3.3 Multivolume dates

For the very particular use case of breaking down multivolume works into their constituent volumes, we remove the overall date, assuming that the individual volume dates will be used instead.

```
\xpretobibmacro{series+number+edition+publisher+location+date}{%
  \iffieldequalstr{relatedtype}{multivolume}{%
    \clearfield{year}\clearfield{month}\clearfield{day}%
  }{}}{}{}
```

2.3.4 Label numbers

This next code is extracted from the standard `numeric` style.

```
\ExecuteBibliographyOptions{labelnumber}

\providebool{bbx:subentry}

\DeclareBibliographyOption{subentry}[true]{%
  \setbool{bbx:subentry}{#1}}

\DeclareFieldFormat{bibentrysetcount}{\mkbibparens{\mknumalph{#1}}}
\DeclareFieldFormat{labelnumberwidth}{\mkbibbrackets{#1}}
\DeclareFieldFormat{shorthandwidth}{\mkbibbrackets{#1}}

\defbibenvironment{bibliography}
  {\list
     {\printtext[labelnumberwidth]{%
      \printfield{labelprefix}%
      \printfield{labelnumber}}}
     {\setlength{\labelwidth}{\labelnumberwidth}%
      \setlength{\leftmargin}{\labelwidth}%
      \setlength{\labelsep}{\biblabelsep}%
      \addtolength{\leftmargin}{\labelsep}%
      \setlength{\itemsep}{\bibitemsep}%
      \setlength{\parsep}{\bibparsep}}%
      \renewcommand*{\makelabel}[1]{\hss##1}}
```

```
    {\endlist}
    {\item}

  \defbibenvironment{shorthand}
    {\list
       {\printfield[shorthandwidth]{shorthand}}
       {\setlength{\labelwidth}{\shorthandwidth}%
        \setlength{\leftmargin}{\labelwidth}%
        \setlength{\labelsep}{\biblabelsep}%
        \addtolength{\leftmargin}{\labelsep}%
        \setlength{\itemsep}{\bibitemsep}%
        \setlength{\parsep}{\bibparsep}%
        \renewcommand*{\makelabel}[1]{\hss##1}}}
    {\endlist}
    {\item}

  \DeclareBibliographyDriver{set}{%
    \entryset
      {\ifbool{bbx:subentry}
         {\printfield[bibentrysetcount]{entrysetcount}%
          \printunit*{\addnbspace}}
         {}}
      {}%
    \newunit\newblock
    \usebibmacro{setpageref}%
    \finentry}
```

2.4 Author–year style: oxyear.bbx

2.4.1 Preliminaries

First we load the common oxref features.

```
  \RequireBibliographyStyle{oxref}
```

Here we set some defaults different to the standard ones. The author can still override them.

```
  \ExecuteBibliographyOptions{giveninits,labeldateparts,sorting=nyt,pagetracker,maxcitenames=2}
```

2.4.2 Date merging option

We provide the `mergedate` option from the `authoryear` style. In case it isn't clear from the standard documentation, the purpose of this option is twofold: it determines whether the date printed at the head of the reference is the same as or different from `labeldate` as used in the citations, and to what extent the date information at the head of the reference is repeated later on. The OGS and NHR consistently use a variant that is between the basic and compact options, in that the year is always moved to the head of the reference (matching `labeldate`) but the month and day are never moved; this is implemented as the `year` value.

```
  \DeclareBiblatexOption{global,type,entry}{mergedate}[true]{%
    \ifcsdef{bbx@opt@mergedate@#1}
      {\csuse{bbx@opt@mergedate@#1}}
      {\PackageError{biblatex-oxref}
         {Invalid option 'mergedate=#1'}
         {Valid values are 'maximum', 'compact', 'basic', 'minimum',\MessageBreak
          'year', 'true' (=year), and 'false'.}}}
```

The various values affect the definition of the following macro, used at the head of the reference, for which we coin the `datelabel` field format.

```
\providebibmacro*{date+extradate}{}
\DeclareFieldFormat{datelabel}{\mkbibparens{#1}}
\DeclareFieldFormat{labeldate}{%
  \iflabeldateisdate{%
    \def\currentfield{date}%
  }{%
    \iflabeldateisanydate{%
      \def\currentfield{\thefield{labeldatesource}date}%
    }{%
      \def\currentfield{\thefield{labeldatesource}}}}%
  \iffieldannotation{inferred}{\mkbibbrackets{#1}}{#1}%
  \undef\currentfield}
```

On a related note, the `labeldate` uses the `origdate` if provided in preference to `date`, and falls back to `pubstate` if provided.

```
\DeclareLabeldate{%
  \field{origdate}
  \field{date}
  \field{year}
  \field{eventdate}
  \field{pubstate}
  \literal{nodate}
}
```

The `extradate` string should be printed bare.

```
\DeclareFieldFormat{extradate}{%
  \iffieldundef{\thefield{labeldatesource}}{%
    \iffieldnums{\thefield{labeldatesource}year}{}{~}%
  }{%
    \iffieldnums{\thefield{labeldatesource}}{}{~}%
  }%
  \mkbibemph{\mknumalph{#1}}}%

```

We provide tests similar to `\labeldateisdate` to tell if the `labeldate` is (*a*) any type of date, and (*b*) neither a date nor `pubstate`.

```
\def\iflabeldateisanydate{%
  \ifboolexpr{%
    togl {blx@labeldateparts}
    and not test {\iffieldundef{labeldatesource}}
    and (
      test {\iffieldequalstr{labeldatesource}{year}}
      or not test {\iffieldundef{\thefield{labeldatesource}year}}
    )}}
\def\iflabeldateispubstate{%
  \ifboolexpr{%
    not test {\iffieldundef{labeldatesource}}
    and test {\iffieldequalstr{labeldatesource}{pubstate}}}}
```

We also provide a wrapper around `\printlabeldateextra` that does nothing if the label date is the ‘nodate’ literal *and* `sortyear` is defined. Sadly `sortyear` is consumed before we get to this point, so we need a proxy toggle.

```
\newtoggle{blx@ox@nonodate}
\DeclareBiblatexOption{global,type,entry}{nonodate}[true]{%
  \settoggle{blx@ox@nonodate}{#1}}
\newbibmacro*{labeldate}{%
  \ifboolexpr{
    test {\iffieldequalstr{labeldatesource}{nodate}}
    and
    togl {blx@ox@nonodate}
  }{}{\printtext[datelabel]{\printlabeldateextra}}}

```

Here we provide the various possible definitions. The `authoryear` implementation does it by clearing, changing or restoring the normal definitions of the `date` and `issue+date` macros. This is not so great for us as our versions of those macros are quite complex (too much to keep repeating). There are additional complications that arise from us using `origdate` in preference to `date` for the label year, and from our option that requires us to print some dates without years. Conceptually it is more straightforward to clear the data fields instead.

- `true` is the same as `year` (see below).

```
\def\bbx@opt@mergedate@true{\bbx@opt@mergedate@year}
```

- `maximum` merges the `issue` and the whole `date` with the date label. Therefore, we clear year, month, and day from the date used for the label, as well as the `issue` field.

```
\def\bbx@opt@mergedate@maximum{%
  \renewbibmacro*{date+extradate}{%
    \iffieldundef{labelyear}{}{%
      \iflabeldateisdate{%
        \printtext[datelabel]{%
          \printfield{issue}\clearfield{issue}%
          \setunit*{\addspace}%
          \printdateextra}%
        \clearfield{year}\clearfield{yeardivision}\clearfield{month}\clearfield{day}%
      }{%
        \iflabeldateisanydate{%
          \printtext[datelabel]{%
            \csuse{print\thefield{labeldatesource}dateextra}}%
          \clearfield{\thefield{labeldatesource}year}%
          \clearfield{\thefield{labeldatesource}yeardivision}%
          \clearfield{\thefield{labeldatesource}month}%
          \clearfield{\thefield{labeldatesource}day}%
        }{%
          \usebibmacro{labeldate}%
          \iflabeldateispubstate{}{\clearfield{\thefield{labeldatesource}}}}}}}}
```

- `compact` merges the whole `date` (but not `issue`) with date label. Therefore, we clear year, month, and day from the date used for the label, but leave the `issue` field alone.

```
\def\bbx@opt@mergedate@compact{%
  \renewbibmacro*{date+extradate}{%
    \iffieldundef{labelyear}{}{%
      \iflabeldateisdate{%
        \printtext[datelabel]{\printdateextra}%
        \clearfield{year}\clearfield{yeardivision}\clearfield{month}\clearfield{day}%
      }{%
        \iflabeldateisanydate{%
```

```
            \printtext[datelabel]{%
              \csuse{print\thefield{labeldatesource}dateextra}}%
            \clearfield{\thefield{labeldatesource}year}%
            \clearfield{\thefield{labeldatesource}yeardivision}%
            \clearfield{\thefield{labeldatesource}month}%
            \clearfield{\thefield{labeldatesource}day}%
          }{%
            \usebibmacro{labeldate}%
            \iflabeldateispubstate{}{\clearfield{\thefield{labeldatesource}}}}}}}}
```

- `year` 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.

```
\def\bbx@opt@mergedate@year{%
  \renewbibmacro*{date+extradate}{%
    \iffieldundef{labelyear}{}{%
      \usebibmacro{labeldate}%
      \iflabeldateisdate{%
        \clearfield{year}
      }{%
        \iflabeldateisanydate{%
          \clearfield{\thefield{labeldatesource}year}%
        }{%
          \iflabeldateispubstate{}{\clearfield{\thefield{labeldatesource}}}%
        }}}}}
```

- `basic` will merge a year-only date with the date label, but will otherwise display the label year at the head of the reference and the full date later. Therefore we clear the year if and only if there is no month component *and* (if this is the regular `date`) no `issue`.

```
\def\bbx@opt@mergedate@basic{%
  \renewbibmacro*{date+extradate}{%
    \iffieldundef{labelyear}{}{%
      \usebibmacro{labeldate}%
      \iflabeldateisdate{%
        \ifboolexpr{
          test {\ifdateshavedifferentprecision{label}{}}
          or
          not test {\iffieldundef{issue}}
        }{}{%
          \clearfield{year}}%
      }{%
        \iflabeldateisanydate{%
          \ifdateshavedifferentprecision{label}{\thefield{labeldatesource}}{}{%
            \clearfield{\thefield{labeldatesource}year}}%
        }{%
          \iflabeldateispubstate{}{\clearfield{\thefield{labeldatesource}}}%
        }}}}}
```

- `minimum` will only merge the `date` with the label date if the two are identical, that is, a bare year with no month or disambiguating suffix. Therefore we clear the year if and only if there is no month component, no `extradate`, *and* (if this is the regular `date`) no `issue`.

```
\def\bbx@opt@mergedate@minimum{%
  \renewbibmacro*{date+extradate}{%
    \iffieldundef{labelyear}{}{%
```

```
      \usebibmacro{labeldate}%
      \iflabeldateisdate{%
        \ifboolexpr{
          test {\ifdateshavedifferentprecision{label}{}}
          or
          not test {\iffieldundef{extradate}}
          or
          not test {\iffieldundef{issue}}
        }{}{%
          \clearfield{year}}%
      }{%
        \iflabeldateisanydate{%
          \ifboolexpr{
            test {\ifdateshavedifferentprecision{label}{\thefield{labeldatesource}}}
            or
            not test {\iffieldundef{extradate}}
          }{}{%
            \clearfield{\thefield{labeldatesource}year}}%
        }{%
          \iflabeldateispubstate{}{\clearfield{\thefield{labeldatesource}}}%
        }}}}
```

- `false` suppresses any merging. We only clear the label date source if it is a non-date field other than `pubstate`.

```
\def\bbx@opt@mergedate@false{%
  \renewbibmacro*{date+extradate}{%
    \iffieldundef{labelyear}{}{%
      \usebibmacro{labeldate}%
      \iflabeldateisanydate{}{%
        \iflabeldateispubstate{}{\clearfield{\thefield{labeldatesource}}}%
      }}}}
```

We set the default to be `true/year`.

```
\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`.

```
\newrobustcmd*{\mknoyeardaterangefull}[2]{%
  \iffieldundef{#2month}{}{%
    \printtext[{#2date}]{%
      \datecircaprint
      \iffieldundef{#2yeardivision}{%
        \csuse{mkbibdate#1}{}{#2month}{#2day}%
        \blx@printtime{#2}{}%
      }{%
        \csuse{mkbibyeardivisiondate#1}{}{#2yeardivision}}%
      \dateuncertainprint
      \iffieldundef{#2endmonth}{}{%
        \iffieldequalstr{#2endmonth}{}{%
          \mbox{\bibdaterangesep}%
        }{%
          \bibdaterangesep
          \enddatecircaprint
          \iffieldundef{#2yeardivision}{%
```

```
            \csuse{mkbibdate#1}{}{#2endmonth}{#2endday}%
            \blx@printtime{#2}{end}%
          }{%
            \csuse{mkbibyeardivisiondate#1}{}{#2endyeardivision}}%
          \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.

```
\newrobustcmd*{\mknoyeardaterangetrunc}[2]{%
  \iffieldundef{#2month}{}{%
    \printtext[{#2date}]{%
      \datecircaprint
      \iffieldundef{#2yeardivision}{%
        \ifboolexpr{
          test {\ifdateyearsequal{label}{labelend}}
          and
          test {\iffieldsequal{#2month}{#2endmonth}}
        }{%
          \csuse{mkbibdate#1}{}{}{#2day}%
        }{%
          \csuse{mkbibdate#1}{}{#2month}{#2day}}%
      }{%
        \csuse{mkbibyeardivisiondate#1}{}{#2yeardivision}}%
      \dateuncertainprint
      \iffieldundef{#2endmonth}{}{%
        \iffieldequalstr{#2endmonth}{}{%
          \mbox{\bibdaterangesep}%
        }{%
          \bibdaterangesep
          \enddatecircaprint
          \iffieldundef{#2yeardivision}{%
            \csuse{mkbibdate#1}{}{#2endmonth}{#2endday}%
          }{%
            \csuse{mkbibyeardivisiondate#1}{}{#2endyeardivision}}%
          \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.

```
\xpatchcmd{\mkdaterangefull}{%
  \iffieldundef{#2year} {\blx@nounit}%
}{%
  \iffieldundef{#2year} {\mknoyeardaterangefull{#1}{#2}}%
}{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch mkdaterangefull}}
\xpatchcmd{\mkdaterangetrunc@i}{%
  \iffieldundef{#2year} {\blx@nounit}%
}{%
  \iffieldundef{#2year} {\mknoyeardaterangetrunc{#1}{#2}}%
}{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch mkdaterangetrunc@i}}
\xpatchcmd{\mkdaterangefullextra}{%
  \iffieldundef{#2year} {\blx@nounit}%
}{%
  \iffieldundef{#2year} {\mknoyeardaterangefull{#1}{#2}}%
}{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch mkdaterangefullextra}}
\xpatchcmd{\mkdaterangetruncextra@i}{%
  \iffieldundef{#2year} {\blx@nounit}%
```

```
  }{%
    \iffieldundef{#2year} {\mknoyeardaterangetrunc{#1}{#2}}%
  }{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch mkdaterangetruncextra@i}}

```

2.4.3 Bibliography formatting

We let biblatex measure shorthands so we can use `\shorthandwidth` later.

```
  \DeclareFieldFormat{shorthandwidth}{#1}
```

We enhance the `family-given` name format to handle the `pseudo` and `inferred` annotations.

```
  \xpretonameformat{family-given}{%
    \iffieldannotation{inferred}{\ifnumequal{\value{listcount}}{1}{\bibopenbracket}{}}{}%
    \ifitemannotation{inferred}{\bibopenbracket}{}%
  }{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to prepend to family-given}}
  \xpatchnameformat{family-given}{%
    \usebibmacro{name:andothers}%
  }{%
    \ifitemannotation{pseudo}{%
      \addspace\printtext[parens]{\bibsstring{pseudo}}%
    }{}%
    \ifitemannotation{inferred}{\bibclosebracket}{}%
    \usebibmacro{name:andothers}%
    \iffieldannotation{inferred}{%
      \ifboolexpr{
        test {\ifnumequal{\value{listcount}}{\value{maxnames}}}
        or
        test {\ifnumequal{\value{listcount}}{\value{listtotal}}}
        or (
          test {\ifnumequal{\value{listcount}}{\value{minnames}}}
          and
          test {\ifnumgreater{\value{listtotal}}{\value{maxnames}}} )
      }{\bibclosebracket}{}%
    }{}%
  }{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch family-given}}
  \DeclareNameAlias{shortauthor}{family-given}
  \DeclareNameAlias{shorteditor}{family-given}
```

Names at the head of the reference are family-given, but names elsewhere are given-family.

```
  \DeclareNameAlias{sortname}{family-given}
  \DeclareNameAlias{author}{family-given}
  \DeclareNameAlias{editor}{family-given}
  \DeclareNameAlias{translator}{family-given}
```

The bibliography formatting is just like `authoryear` except we do not eliminate item separation by default.

```
  \defbibenvironment{bibliography}
    {\list
       {}
       {\setlength{\leftmargin}{\bibhang}%
        \setlength{\itemindent}{-\leftmargin}%
        \setlength{\itemsep}{\bibitemsep}%
        \setlength{\parsep}{\bibparsep}}}
    {\endlist}
    {\item}
```

The shorthand formatting is just like authoryear.

```
\defbibenvironment{shorthand}
  {\list
     {\printfield[shorthandwidth]{shorthand}}
     {\setlength{\labelwidth}{\shorthandwidth}%
      \setlength{\leftmargin}{\labelwidth}%
      \setlength{\labelsep}{\biblabelsep}%
      \addtolength{\leftmargin}{\labelsep}%
      \setlength{\itemsep}{\bibitemsep}%
      \setlength{\parsep}{\bibparsep}%
      \renewcommand*{\makelabel}[1]{##1\hss}}}
  {\endlist}
  {\item}
```

2.4.4 Name and date formatting

We set up hashing just as in authoryear.

```
\InitializeBibliographyStyle{\global\undef\bbx@lasthash}
```

We ensure related entries do not interfere with the hashing.

```
\xapptobibmacro{begrelated}{%
  \booltrue{bbx@inset}}%
{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to append to begrelated}}
\xapptobibmacro{endrelated}{%
  \usebibmacro*{bbx:savehash}}%
{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to append to endrelated}}
```

We patch the author macro so that the date label information appears at the end (as in authoryear).

```
\xpatchbibmacro{author}{%
  \iffieldundef{authortype}%
}{%
  \usebibmacro{date+extradate}%
  \setunit*{\addspace}%
  \iffieldundef{authortype}%
}{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch author (authortype)}}%
\xpatchbibmacro{author}{%
  \global\undef\bbx@lasthash
}{%
  \global\undef\bbx@lasthash
  \usebibmacro{labeltitle}%
  \setunit*{\addspace}%
  \usebibmacro{date+extradate}%
}{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch author (lasthash)}}%
```

We patch it further so that, where an author name has a corresponding (different) short author name, the short name is given first and the long name given in parentheses. Note that this only affects cases where authoraddon has not been provided.

```
\xpatchbibmacro{namepairs}{%
  \printnames[by#1]%
}{%
  \printnames[#1]%
}{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch namepairs}}
\xpatchbibmacro{author+altauthor}{%
  \printnames{author}%
```

```
  }{%
    \ifboolexpr{%
      ( not test {\ifnameundef{shortauthor}} )
      and
      test {\ifnumequal{\value{shortauthor}}{\value{author}}}
    }{%
      \usebibmacro{namepairs}{author}{shortauthor}%
    }{%
      \printnames{author}%
    }%
  }{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch author+altauthor}}%
```

We apply the same patches to `bbx:editor`, but also move the editor string to after the date label.

```
  \xpatchbibmacro{bbx:editor}{%
    \usebibmacro{#1}%
  }{%
    \usebibmacro{date+extradate}%
    \setunit*{\addspace}%
    \usebibmacro{#1}%
  }{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch bbx:editor}}%
  \xpatchbibmacro{bbx:editor}{%
    \global\undef\bbx@lasthash
  }{%
    \global\undef\bbx@lasthash
    \usebibmacro{labeltitle}%
    \setunit*{\addspace}%
    \usebibmacro{date+extradate}%
  }{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch bbx:editor (lasthash)}}%
  \xpatchbibmacro{editor+alteditor}{%
    \printnames[byeditor]%
  }{%
    \printnames[editor]%
  }{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch editor+alteditor}}
  \xpatchbibmacro{editor+alteditor}{%
    \printnames{editor}%
  }{%
    \ifboolexpr{%
      ( not test {\ifnameundef{shorteditor}} )
      and
      test {\ifnumequal{\value{shorteditor}}{\value{editor}}}
    }{%
      \usebibmacro{namepairs}{editor}{shorteditor}%
    }{%
      \printnames{editor}%
    }%
  }{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch editor+alteditor (shorteditor)}}%
```

We apply the same patches to `bbx:translator` as we do for `bbx:editor`, except for the shortening one.

```
  \xpatchbibmacro{bbx:translator}{%
    \global\undef\bbx@lasthash
  }{%
    \global\undef\bbx@lasthash
    \usebibmacro{labeltitle}%
    \setunit*{\addspace}%
    \usebibmacro{date+extradate}%
  }{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch bbx:translator (lasthash)}}%
  \xpatchbibmacro{bbx:translator}{%
    \usebibmacro{#1}%
```

```
  }{%
    \usebibmacro{date+extradate}%
    \setunit*{\addspace}%
    \usebibmacro{#1}%
  }{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch bbx:translator}}%
```

The `labeltitle` macro differs from the one from `authoryear` in that it also includes the subtitle. We record the fact that we have cleared the title.

```
  \newtoggle{blx@ox@clearedtitle}
  \newbibmacro*{labeltitle}{%
    \iffieldundef{label}{%
      \iffieldundef{shorttitle}{%
        \ifboolexpr{
          test {\iffieldundef{title}}
          and
          test {\iffieldundef{subtitle}}
        }{%
          \printfield{library}%
          \clearfield{library}%
        }{%
          \printtext[title]{%
            \printfield[titlecase]{title}%
            \setunit{\subtitlepunct}%
            \printfield[titlecase]{subtitle}}%
          \clearfield{title}%
          \clearfield{subtitle}%
          \toggletrue{blx@ox@clearedtitle}%
          \setunit{\addspace}%
        }%
      }{%
        \printtext[title]{\printfield[titlecase]{shorttitle}}%
      }%
    }{%
      \printfield{label}%
    }%
  }
```

If the labeltitle pulls the title from a maintitle+title macro, we flick a switch to make the driver use maintitle+volume instead.

```
  \xpretobibmacro{maintitle+title}{%
    \iftoggle{blx@ox@clearedtitle}{%
      \usebibmacro{maintitle+volume}%
      \clearfield{maintitle}%
      \clearfield{volume}%
    }{}%
  }{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to prepend to maintitle+title}}
  \DeclareFieldFormat[mvbook,mvcollection,mvreference,proceedings,mvproceedings]{maintitle+volume}{#1}
```

The date of `online` entries is printed in parentheses; as the year is moved after the author, this can lead to empty parentheses unless a month is printed, so we change the test accordingly.

```
  \xpatchbibdriver{online}{%
    \iffieldundef{year}%
  }{%
    \ifboolexpr{
      test {\iffieldundef{yeardivision}}
      and
      test {\iffieldundef{month}}
```

```
    }%
  }{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch online}}
```

We ensure the label title in citations matches the formatting used for the equivalent information in the bibliography entry.

```
  \DeclareFieldFormat[bookinbook]{citetitle}{%
    \ifboolexpr{
      test {\iffieldequalstr{entrysubtype}{poem}}
      or
      test {\iffieldequalstr{entrysubtype}{play}}
    }{%
      \mkbibemph{#1}%
    }{%
      \mkbibquote{#1\isdot}}}
  \DeclareFieldFormat[suppperiodical,inaudio,inmusic,inmovie,invideo,online,%
      image,manuscript,unpublished]{citetitle}{%
    \def\currentfield{title}%
    \ifboolexpr{
      test {\iffieldannotation{descriptor}}
      or (
        test {\iffieldundef{shorttitle}}
        and
        test {\iffieldundef{title}}
      )
    }{#1}{\mkbibquote{#1\isdot}}%
    \undef\currentfield}
  \DeclareFieldFormat[suppperiodical,inaudio,inmusic,inmovie,invideo,online,%
      image,manuscript,unpublished]{citetitle}{%
    \def\currentfield{title}%
    \ifboolexpr{
      test {\iffieldannotation{descriptor}}
      or (
        test {\iffieldundef{shorttitle}}
        and
        test {\iffieldundef{title}}
      )
    }{#1}{\mkbibquote{#1\isdot}}%
    \undef\currentfield}
  \DeclareFieldFormat[audio,music]{citetitle}{%
    \def\currentfield{title}%
    \ifboolexpr{
      test {\iffieldannotation{descriptor}}
      or (
        test {\iffieldundef{shorttitle}}
        and
        test {\iffieldundef{title}}
      )
    }{#1}{%
      \iffieldequalstr{entrysubtype}{podcast}{%
        \mkbibquote{#1\isdot}%
      }{%
        \mkbibemph{#1}}}%
    \undef\currentfield}
  \DeclareFieldFormat[movie,video]{citetitle}{%
    \def\currentfield{title}%
    \ifboolexpr{
      test {\iffieldannotation{descriptor}}
      or (
        test {\iffieldundef{shorttitle}}
        and
```

```
      test {\iffieldundef{title}}
    )
  }{#1}{%
    \ifboolexpr{
      test {\iffieldequalstr{entrysubtype}{episode}}
      or
      test {\iffieldequalstr{entrysubtype}{clip}}
      or
      test {\iffieldequalstr{entrysubtype}{webcast}}
    }{%
      \mkbibquote{#1\isdot}%
    }{%
      \mkbibemph{#1}}}%
  \undef\currentfield}
\DeclareFieldFormat[legislation,legal]{citetitle}{#1}
\DeclareFieldFormat[misc]%
    {citetitle}{%
  \def\currentfield{title}%
  \ifboolexpr{
    test {\iffieldannotation{descriptor}}
    or (
      test {\iffieldundef{shorttitle}}
      and
      test {\iffieldundef{title}}
    )
  }{#1}{%
    \iffieldequalstr{relatedtype}{in}{%
      \mkbibquote{#1\isdot}%
    }{%
      \mkbibemph{#1}%
    }}%
  \undef\currentfield}

```

2.4.5 Journal division formatting

Oxyear uses a colon to demarcate page numbers in journal articles.

```
\renewcommand*{\bibpagespunct}{%
  \ifboolexpr{
    test {\ifentrytype{article}}
    or
    test {\ifentrytype{suppperiodical}}
    or
    test {\ifentrytype{review}}
  }{%
    \addcolon\space
  }{%
    \addcomma\space
  }%
}
```

2.4.6 Manuscripts

Since we clear the title, we need a more sophisticated test for whether to suppress the date.

```
\renewbibmacro{manuscript:date}{%
  \ifboolexpr{
    test {\ifnameundef{author}}
```

```
      and
      not togl {blx@ox@clearedtitle}
      and
      test {\iffieldundef{label}}
    }{}{\usebibmacro{date}}}
```

We include the `library` field as a fallback title.

```
  \DeclareLabeltitle{%
    \field{shorttitle}
    \field{title}
    \field{maintitle}
    \field{library}
  }
```

2.4.7 Source maps

We use the source mapping capabilities of Biber to fix the following issues.

```
  \DeclareStyleSourcemap{%
    \maps[datatype=bibtex]{%
```

Suppressing a 'nodate' label

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.

```
      \map[overwrite=true]{
        \step[notmatch=\regexp{nonodate}, fieldsource=options, final]
        \step[fieldsource=sortyear, final]
        \step[fieldset=options, append, fieldvalue={,nonodate}]
      }
      \map[overwrite=true]{
        \step[notfield=options, final]
        \step[fieldsource=sortyear, final]
        \step[fieldset=options, fieldvalue={nonodate}]
      }
```

Standards

The purpose of this map is to change the number into a label in the absence of an author, so that the citations come out right and the date is positioned correctly.

```
      \map[overwrite=false]{
        \pertype{standard}
        \step[notfield=author,
              fieldsource=number,
              fieldtarget=label]
      }
  }}

```

2.5 Alphabetic style: oxalph.bbx

2.5.1 Preliminaries

This style is based on oxyear.

```
\RequireBibliographyStyle{oxyear}
```

2.5.2 Suppressing labelextra

Since the label codes do all the disambiguation, it is not necessary for the date at the head of the reference to have a disambiguation component.

```
\xpatchcmd{\bbx@opt@mergedate@maximum}{%
  \printdateextra
}{%
  \printdate
}{}{\wlog{WARNING: biblatex-oxref (oxalph) failed to patch bbx@opt@mergedate@maximum
↪  (print)}}
\xpatchcmd{\bbx@opt@mergedate@maximum}{%
  \csuse{print\thefield{labeldatesource}dateextra}%
}{%
  \csuse{print\thefield{labeldatesource}date}%
}{}{\wlog{WARNING: biblatex-oxref (oxalph) failed to patch bbx@opt@mergedate@maximum
↪  (label)}}
\xpatchcmd{\bbx@opt@mergedate@compact}{%
  \csuse{print\thefield{labeldatesource}dateextra}%
}{%
  \csuse{print\thefield{labeldatesource}date}%
}{}{\wlog{WARNING: biblatex-oxref (oxalph) failed to patch bbx@opt@mergedate@compact}}
\xpatchbibmacro{labeldate}{%
  \printlabeldateextra
}{%
  \printlabeldate
}{}{\wlog{WARNING: biblatex-oxref (oxalph) failed to patch labeldate}}
\ExecuteBibliographyOptions{mergedate}

```

2.5.3 Label codes: printing

This next code is extracted from the standard alphabetic style, and among other things ensures the citation labels are printed in the bibliography.

```
\ExecuteBibliographyOptions{labelalpha,sorting=anyt}

\DeclareFieldFormat{labelalphawidth}{\mkbibbrackets{#1}}
\DeclareFieldFormat{shorthandwidth}{\mkbibbrackets{#1}}

\defbibenvironment{bibliography}
  {\list
     {\printtext[labelalphawidth]{%
        \printfield{labelprefix}%
\printfield{labelalpha}%
        \printfield{extraalpha}}}
     {\setlength{\labelwidth}{\labelalphawidth}%
      \setlength{\leftmargin}{\labelwidth}%
      \setlength{\labelsep}{\biblabelsep}%
      \addtolength{\leftmargin}{\labelsep}%
      \setlength{\itemsep}{\bibitemsep}%
```

```
      \setlength{\parsep}{\bibparsep}}%
      \renewcommand*{\makelabel}[1]{##1\hss}}
  {\endlist}
  {\item}

\defbibenvironment{shorthand}
  {\list
     {\printfield[shorthandwidth]{shorthand}}
     {\setlength{\labelwidth}{\shorthandwidth}%
      \setlength{\leftmargin}{\labelwidth}%
      \setlength{\labelsep}{\biblabelsep}%
      \addtolength{\leftmargin}{\labelsep}%
      \setlength{\itemsep}{\bibitemsep}%
      \setlength{\parsep}{\bibparsep}%
      \renewcommand*{\makelabel}[1]{##1\hss}}}
  {\endlist}
  {\item}
```

2.5.4 Label codes: generating

The standard labels are generated from the `labelname` and `year`. We widen the net a bit, so that if there is no `labelname`, we fall back to the `shortlabeltitle` or `labeltitle`; also we use `labelyear` in place of `year`. The `shortlabeltitle` is generated from all the capital letters in the title and subtitle, with the help of a source map.

```
\DeclareStyleSourcemap{%
  \maps[datatype=bibtex]{%
    \map[overwrite=false]{%
      \step[fieldsource=title, final]
      \step[fieldset=shortlabeltitle, origfieldval]
      \step[fieldsource=subtitle]
      \step[fieldset=shortlabeltitle, origfieldval, append=true]
      \step[fieldsource=shortlabeltitle,
            match=\regexp{[^\p{Lu}]},
            replace=\regexp{}]
}}}
\DeclareLabelalphaTemplate{%
  \labelelement{
    \field[final]{shorthand}
    \field{label}
    \field[strwidth=3,strside=left,ifnames=1]{labelname}
    \field[strwidth=1,strside=left]{labelname}
    \field[strwidth=3,strside=left]{shortlabeltitle}
    \field[strwidth=4,strside=left]{labeltitle}
  }
  \labelelement{
    \field[strwidth=2,strside=right]{labelyear}
  }
}
```

3

Citation styles

3.1 Notes style: oxnotes.cbx

The standard verbose style is a close match for what we need.

```
20  \RequireCitationStyle{verbose}
```

Variants are also provided that load the respective variant of verbose at this point.

The main difference is that the citepages option from these styles needs to be separate by default, and the \postnotedelim before the bibliography string thiscite ('at') is replaced by a simple space.

```
21  \newbibmacro*{cite:postnote:pages}{%
22    \setunit{\addspace}%
23    \bibstring{thiscite}%
24    \setunit{\addspace}%
25    \printfield{postnote}}
26  \ExecuteBibliographyOptions{citepages=separate}
```

3.2 Numeric style: oxnum.cbx

The standard numeric style works, needing only a little configuration.

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

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

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

The page reference postnote is given after a colon.

```
23  \renewcommand*{\postnotedelim}{\addcolon\space}
```

3.3 Author–year style: oxyear.cbx

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

```
\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.

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

We provide a slightly different labeldate macro that obeys the `nonodate` option.

```
\renewbibmacro*{cite:labeldate+extradate}{%
  \ifboolexpr{
    test {\iffieldundef{labelyear}}
    or
    ( test {\iffieldequalstr{labeldatesource}{nodate}}
      and
      togl {blx@ox@nonodate} )
  }{}{\printtext[bibhyperref]{\printlabeldateextra}}}
```

We insert anonymous author handling into `cite`.

```
\xpatchbibmacro{cite}{%
  \printnames{labelname}%
}{%
  \ifboolexpr{
    test {\iffieldequalstr{labelnamesource}{author}}
    and
    togl {blx@ox@autoanon}
    and
    test {\iffieldequals{rawauthor}{\oxrefanon}}
  }{%
    \iftoggle{blx@ox@abbranon}{\bibcpsstring{anon}}{\bibcplstring{anon}}%
  }{%
    \printnames{labelname}%
  }%
}{}{\wlog{WARNING: biblatex-oxref (oxyear) failed to patch cite}}
```

The name and year are usually separated by a space, but if the date is replaced by a word (e.g. ‘forthcoming’, ‘n.d.’), they are separated by a comma.

```
\DeclareDelimFormat{nameyeardelim}{%
  \iflabeldateisanydate
    {\addspace}%
    {\addcomma\space}}
\DeclareDelimFormat{nonameyeardelim}{%
  \iflabeldateisanydate
    {\addspace}%
    {\addcomma\space}}
```

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

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

The page reference postnote is given after a colon.

```
\renewcommand*{\postnotedelim}{\addcolon\space}
```

3.4 Alphabetic style: oxalph.cbx

The standard `alphabetic` style works, needing only a little configuration.

```
\RequireCitationStyle{alphabetic}
```

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

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

The page reference postnote is given after a colon.

```
\renewcommand*{\postnotedelim}{\addcolon\space}
```

3.5 Common citation fixes

This code is appended to all the citation style files.

Just in case someone loaded this without loading `oxref.bbx`, we ensure the necessary definitions are in place.

```
\RequirePackage{etoolbox}
\RequirePackage{xpatch}
\providetoggle{blx@ox@autoanon}
\providetoggle{blx@ox@abbranon}
```

We fix the `textcite` macro so if the anon option is set to `long` or `short`, a value of 'Anonymous' is replaced by the bibliography string anon.

```
\xpatchbibmacro{textcite}{%
  \printnames{labelname}%
}{%
  \ifboolexpr{
    test {\iffieldequalstr{labelnamesource}{author}}
    and
    togl {blx@ox@autoanon}
    and
    test {\iffieldequals{rawauthor}{\oxrefanon}}
  }{%
    \iftoggle{blx@ox@abbranon}{\bibcpsstring{anon}}{\bibcplstring{anon}}%
  }{%
    \printnames{labelname}%
  }%
}{}{\wlog{WARNING: biblatex-oxref failed to patch textcite}}
```

4

Data model adjustments

4.1 oxnotes.dbx, oxyear.dbx, oxnum.dbx, and oxalph.dbx

We provide an additional name part for handling titles.

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

The datetype and origdatetype fields are used for prefixing the date with a description.

```
\DeclareDatamodelFields[type=field,datatype=literal]{datetype,origdatetype}
```

We add the inaudio entry type and friends.

```
\DeclareDatamodelEntrytypes{inaudio,inmusic,inmovie,invideo}
```

The authoraddon and editoraddon fields are used for handling pseudonyms. The seriesseditor field is used for the editor of a book series, as opposed to the editor of the particular cited work.

```
\DeclareDatamodelFields[type=list,datatype=name]{authoraddon,editoraddon,seriesseditor}
```

The jointauthor and jointauthortype fields are used for internally for handling editors/translators who can be considered joint authors.

```
\DeclareDatamodelFields[type=list,datatype=name]{jointauthor}
\DeclareDatamodelFields[type=field,datatype=literal]{jointauthortype}
```

The rawauthor field is used internally for checking whether an the name given in the author field is a keyword meaning 'anonymous'.

```
\DeclareDatamodelFields[type=field,datatype=literal]{rawauthor}
\DeclareDatamodelEntryfields{datetype,origdatetype,authoraddon,editoraddon,%
  seriesseditor,jointauthor,jointauthortype,rawauthor}
```

We provide a shortlabeltitle field to contain our custom reduction of the labeltitle.

```
\DeclareDatamodelFields[type=field,datatype=literal]{shortlabeltitle}
```

This data model is borrowed from biblatex-manuscripts-philology.

```
\DeclareDatamodelEntrytypes{manuscript}
\DeclareDatamodelFields[type=field,datatype=literal]{catalog,dating,%
  shortlibrary,columns, collection,shortcollection,usualtitle,shelfmark,%
  sortshelfmark,support,columns,layer}
\DeclareDatamodelFields[type=list,datatype=name]{scribe,owner}
\DeclareDatamodelFields[type=list,datatype=literal]{origin}
\DeclareDatamodelEntryfields[manuscript]{catalog,dating,shortlibrary,%
  shortcollection,columns,languages,collection,usualtitle,shelfmark,%
  sortshelfmark,support,columns,origin,scribe,owner}
```

This data model helps with legal citations.

```
\DeclareDatamodelFields[type=field,datatype=date]{pardate}
\DeclareDatamodelFields[type=field,datatype=literal]{%
  parreporter,parseries,neutralcite}
\DeclareDatamodelFields[type=field,datatype=integer]{parvolume}
\DeclareDatamodelFields[type=field,datatype=range]{parpages}
\DeclareDatamodelEntryfields[jurisdiction]{neutralcite,pardate,%
  parreporter,parseries,parvolume,parpages}
```

5

Localization modules

5.1 English: english-oxref.lbx

Here we set some language-specific punctuation and date formatting. In particular, we set `\blx@ox@langbibstring` to use its first argument.

```
\InheritBibliographyExtras{english}
\DeclareBibliographyExtras{%
  \def\finalandcomma{\addcomma}%
  \def\blx@ox@langbibstring#1#2{#1\addspace\bibstring{#2}}%
}
\UndeclareBibliographyExtras{%
  \def\blx@ox@langbibstring#1#2{\bibstring{#2}}%
}
```

We load the standard set of localization strings, then add our adjustments.

```
\DeclareBibliographyStrings{%
  inherit         = {english},
```

These are new strings defined by oxref:

- Roles expressed as functions

```
  director        = {{director}{dir\adddot}},
  directors       = {{directors}{dirs\adddot}},
  performer       = {{}{}},
  performers      = {{}{}},
  reader          = {{reader}{reader}},
  readers         = {{readers}{readers}},
  conductor       = {{conductor}{cond\adddot}},
  conductors      = {{conductors}{cond\adddot}},
  serieseditor    = {{series editor}{ser\adddotspace ed\adddot}},
  serieseditors   = {{series editors}{ser\adddotspace eds\adddot}},
  holder          = {{holder}{holder}},
  holders         = {{holders}{holders}},
  editorcm        = {{editor and compiler}{ed\adddotspace and comp\adddot}},
  editorcms       = {{editors and compilers}{eds\adddotspace and comp\adddot}},
```

- Roles expressed as actions

```
    byperformer      = {{}{}},
    bydirector       = {{directed by}{dir\adddot}},
    byreader         = {{read by}{read by}},
    byconductor      = {{conducted by}{cond\adddot}},
    byserieseditor   = {{edited by}{ed\adddot}},
    byholder         = {{held by}{held by}},
    byeditorcm       = {{edited and compiled by}{ed\adddotspace and comp\adddot}},
```

- Publication details

```
    facsimile        = {{facsimile edition}{facs\adddotspace edn\adddot}},
    revised          = {{revised edition}{rev\adddotspace edn\adddot}},
    revisedenlarged  = {{revised and enlarged edition}{rev\adddotspace and enl\addotspace
    ↪  edn\adddot}},
    revisedreprint   = {{revised reprint}{rev\adddotspace repr\adddot}},
    suppto           = {{Supplement to}{Supplement to}},
    equals           = {{=}{=}},
    original         = {{original}{orig\adddot}},
    amendedby        = {{as amended by}{as amended by}},
```

- Publication state

```
    inpressin        = {{to be published in}{to be published in}},
```

- Pagination

```
    book             = {{book}{bk\adddot}},
    books            = {{books}{bks\adddot}},
    canto            = {{canto}{canto}},
    cantos           = {{cantos}{cantos}},
    stanza           = {{stanza}{stanza}},
    stanzas          = {{stanzas}{stanzas}},
    act              = {{Act}{Act}},
    acts             = {{Acts}{Acts}},
    scene            = {{Scene}{Scene}},
    scenes           = {{Scenes}{Scenes}},
    folio            = {{folio}{fo\adddot}},
    folios           = {{folios}{fos\adddot}},
    article          = {{article}{art\adddot}},
    articles         = {{articles}{arts\adddot}},
    clause           = {{clause}{cl\adddot}},
    clauses          = {{clauses}{cls\adddot}},
    regulation       = {{regulation}{reg\adddot}},
    regulations      = {{regulations}{regs\adddot}},
    rule             = {{rule}{r\adddot}},
    rules            = {{rules}{rr\adddot}},
    booktotal        = {{book}{bk\adddot}},
    booktotals       = {{books}{bks\adddot}},
    cantototal       = {{canto}{canto}},
    cantototals      = {{cantos}{cantos}},
    stanzatotal      = {{stanza}{stanza}},
    stanzatotals     = {{stanzas}{stanzas}},
    acttotal         = {{Act}{Act}},
    acttotals        = {{Acts}{Acts}},
    scenetotal       = {{Scene}{Scene}},
    scenetotals      = {{Scenes}{Scenes}},
    foliototal       = {{folio}{fo\adddot}},
    foliototals      = {{folios}{fos\adddot}},
    articletotal     = {{article}{art\adddot}},
```

```
    articletotals    = {{articles}{arts\adddot}},
    clausetotal      = {{clause}{cl\adddot}},
    clausetotals     = {{clauses}{cls\adddot}},
    regulationtotal  = {{regulation}{reg\adddot}},
    regulationtotals = {{regulations}{regs\adddot}},
    ruletotal        = {{rule}{r\adddot}},
    ruletotals       = {{rules}{rr\adddot}},
```

- Types

```
    facebook         = {{Facebook post}{Facebook post}},
    tweet            = {{Twitter post}{Twitter post}},
    podcast          = {{podcast}{podcast}},
    clip             = {{video}{video}},
    webcast          = {{webcast}{webcast}},
    poster           = {{poster}{poster}},
```

- Miscellaneous

```
    nolocation       = {{no place}{n\adddot p\adddot}},
    modified         = {{last modified}{last modified}},
    recorded         = {{recorded}{recorded}},
    uploaded         = {{uploaded}{uploaded}},
    filed            = {{filed}{filed}},
    issued           = {{issued}{issued}},
```

- Labels

```
    anon             = {{Anonymous}{Anon\adddot}},
    pseudo           = {{Pseudo-}{Ps\adddot-}},
    urldown          = {{downloaded}{downloaded}},
```

- Country names, patents, and patent requests,

```
    countryjp        = {{Japan}{JP}},
    patentjp         = {{Japanese patent}{Japanese pat.\adddot}},
    patreqjp         = {{Japanese patent request}{Japanese pat.\adddot req.\adddot}},
```

- These are borrowed from other styles.

```
    1column          = {{one column}{1\addnbspace col\adddot}},
    2column          = {{two columns}{2\addnbspace col\adddot}},
    inflayer         = {{inferior layer}{inf\adddotspace lay\adddot}},
    suplayer         = {{superior layer}{sup\adddotspace lay\adddot}},
    paper            = {{paper}{pap\adddot}},
    papyrus          = {{papyrus}{papy\adddot}},
    parchment        = {{parchment}{parch\adddot}},
    eucase           = {{Case}{Case}},
    eujoinedcases    = {{Joined Cases}{Joined Cases}},
    commissiondecision = {{Commission Decision}{Commission Decision}},
    application      = {{Application}{App\adddot}},
    order            = {{Order}{Ord\adddot}},
    bill             = {{Bill}{Bill}},
    draft            = {{draft}{draft}},
    opened           = {{opened for signature}{opened for signature}},
    signed           = {{signed}{signed}},
```

```
    adopted         = {{adopted}{adopted}},
    inforce         = {{entered into force}{entered into force}},
```

The rest of these strings are the standard ones, overridden to match the examples in the *Oxford Guide to Style* and *New Hart's Rules*. Many of these are guesses extrapolated from what is given.

The roles expressed as functions do not need adjusting. The roles expressed as actions do not typically end in 'by' when abbreviated; the 'with' parts go first when abbreviated if there is more than one editorial role (at least, that is one way of interpreting the examples).

```
    byeditor        = {{edited by}{ed\adddot}},
    bycompiler      = {{compiled by}{comp\adddot}},
    byfounder       = {{founded by}{found\adddot}},
    bycontinuator   = {{continued by}{cont\adddot}},
    byredactor      = {{redacted by}{red\adddot}},
    byreviser       = {{revised by}{rev\adddot}},
    byreviewer      = {{reviewed by}{rev\adddot}},
    bycollaborator  = {{in collaboration with}{in collab\adddotspace with}},
    bytranslator    = {{translated \lbx@lfromlang\ by}{trans\adddot\ \lbx@sfromlang}},
    bycommentator   = {{commented by}{comm\adddot}},
    byannotator     = {{annotated by}{annot\adddot}},
    byeditortr      = {{edited and translated \lbx@lfromlang\ by}%
                       {ed\adddotspace and trans\adddot\ \lbx@sfromlang}},
    byeditorco      = {{edited and commented by}%
                       {ed\adddotspace and comm\adddot}},
    byeditoran      = {{edited and annotated by}%
                       {ed\adddotspace and annot\adddot}},
    byeditorin      = {{edited, with an introduction, by}%
                       {ed.\adddotspace with introduction}},
    byeditorfo      = {{edited, with a foreword, by}%
                       {ed.\adddotspace with foreword}},
    byeditoraf      = {{edited, with an afterword, by}%
                       {ed.\adddotspace with afterword}},
    byeditortrco    = {{edited, translated \lbx@lfromlang\finalandcomma\ and commented by}%
                       {ed.,\addabbrvspace trans\adddot\ \lbx@sfromlang\finalandcomma\ and
                       ↪  comm\adddot}},
    byeditortran    = {{edited, translated \lbx@lfromlang\finalandcomma\ and annotated by}%
                       {ed.,\addabbrvspace trans\adddot\ \lbx@sfromlang\finalandcomma\ and
                       ↪  annot\adddot}},
    byeditortrin    = {{edited and translated \lbx@lfromlang, with an introduction, by}%
                       {with introduction, ed\adddotspace and trans\adddot\ \lbx@sfromlang}},
    byeditortrfo    = {{edited and translated \lbx@lfromlang, with a foreword, by}%
                       {with foreword, ed\adddotspace and trans\adddot\ \lbx@sfromlang}},
    byeditortraf    = {{edited and translated \lbx@lfromlang, with an afterword, by}%
                       {with afterword, ed\adddotspace and trans\adddot\ \lbx@sfromlang}},
    byeditorcoin    = {{edited and commented, with an introduction, by}%
                       {with introduction, ed\adddotspace and comm\adddot}},
    byeditorcofo    = {{edited and commented, with a foreword, by}%
                       {with foreword, ed\adddotspace and comm\adddot}},
    byeditorcoaf    = {{edited and commented, with an afterword, by}%
                       {with afterword, ed\adddotspace and comm\adddot}},
    byeditoranin    = {{edited and annotated, with an introduction, by}%
                       {with introduction, ed\adddotspace and annot\adddot}},
    byeditoranfo    = {{edited and annotated, with a foreword, by}%
                       {with foreword, ed\adddotspace and annot\adddot}},
    byeditoranaf    = {{edited and annotated, with an afterword, by}%
                       {with afterword, ed\adddotspace and annot\adddot}},
    byeditortrcoin  = {{edited, translated \lbx@lfromlang\finalandcomma\ and commented, with
    ↪  an introduction, by}%
                       {with introduction, ed.,\addabbrvspace trans\adddot\
                       ↪  \lbx@sfromlang\finalandcomma\ and comm\adddot}},
```

```
    byeditortrcofo   = {{edited, translated \lbx@lfromlang\finalandcomma\ and commented, with a
    ↪  foreword, by}%
                       {with foreword, ed.,\addabbrvspace trans\adddot\
                       ↪  \lbx@sfromlang\finalandcomma\ and comm\adddot}},
    byeditortrcoaf   = {{edited, translated \lbx@lfromlang\finalandcomma\ and commented, with
    ↪  an afterword, by}%
                       {with afterword, ed.,\addabbrvspace trans\adddot\
                       ↪  \lbx@sfromlang\finalandcomma\ and comm\adddot}},
    byeditortranin   = {{edited, translated \lbx@lfromlang\finalandcomma\ and annotated, with
    ↪  an introduction, by}%
                       {with introduction, ed.,\addabbrvspace trans\adddot\
                       ↪  \lbx@sfromlang\finalandcomma\ and annot\adddot}},
    byeditortranfo   = {{edited, translated \lbx@lfromlang\finalandcomma\ and annotated, with a
    ↪  foreword, by}%
                       {with foreword, ed.,\addabbrvspace trans\adddot\
                       ↪  \lbx@sfromlang\finalandcomma\ and annot\adddot}},
    byeditortranaf   = {{edited, translated \lbx@lfromlang\finalandcomma\ and annotated, with
    ↪  an afterword, by}%
                       {with afterword, ed.,\addabbrvspace trans\adddot\
                       ↪  \lbx@sfromlang\finalandcomma\ and annot\adddot}},
    bytranslatorco   = {{translated \lbx@lfromlang\ and commented by}%
                       {trans\adddot\ \lbx@sfromlang\ and comm\adddot}},
    bytranslatoran   = {{translated \lbx@lfromlang\ and annotated by}%
                       {trans\adddot\ \lbx@sfromlang\ and annot\adddot}},
    bytranslatorin   = {{translated \lbx@lfromlang, with an introduction, by}%
                       {trans\adddot\ \lbx@sfromlang\ with introduction}},
    bytranslatorfo   = {{translated \lbx@lfromlang, with a foreword, by}%
                       {trans\adddot\ \lbx@sfromlang\ with foreword}},
    bytranslatoraf   = {{translated \lbx@lfromlang, with an afterword, by}%
                       {trans\adddot\ \lbx@sfromlang\ with afterword}},
    bytranslatorcoin = {{translated \lbx@lfromlang\ and commented, with an introduction, by}%
                       {with introduction, trans\adddot\ \lbx@sfromlang\ and comm\adddot}},
    bytranslatorcofo = {{translated \lbx@lfromlang\ and commented, with a foreword, by}%
                       {with foreword, trans\adddot\ \lbx@sfromlang\ and comm\adddot}},
    bytranslatorcoaf = {{translated \lbx@lfromlang\ and commented, with an afterword, by}%
                       {with afterword, trans\adddot\ \lbx@sfromlang\ and comm\adddot}},
    bytranslatoranin = {{translated \lbx@lfromlang\ and annotated, with an introduction, by}%
                       {with introduction, trans\adddot\ \lbx@sfromlang\ and annot\adddot}},
    bytranslatoranfo = {{translated \lbx@lfromlang\ and annotated, with a foreword, by}%
                       {with foreword, trans\adddot\ \lbx@sfromlang\ and annot\adddot}},
    bytranslatoranaf = {{translated \lbx@lfromlang\ and annotated, with an afterword, by}%
                       {with afterword, trans\adddot\ \lbx@sfromlang\ and annot\adddot}},
```

The roles expressed as objects and terms for supplementary material are not abbreviated.

```
    withintroduction = {{with an introduction by}{with an introduction by}},
    withcommentator  = {{with a commentary by}{with a commentary by}},
    withannotator    = {{with annotations by}{with annotations by}},
    withintroduction = {{with an introduction by}{with an introduction by}},
    withforeword     = {{with a foreword by}{with a foreword by}},
    withafterword    = {{with an afterword by}{with an afterword by}},
    introduction     = {{introduction}{introduction}},
```

The abbreviations for some publication details are different.

```
    newseries        = {{new series}{\mkbibacro{NS}}},
    oldseries        = {{old series}{\mkbibacro{OS}}},
    edition          = {{edition}{edn\adddot}},
    reprint          = {{reprint\nopunct}{repr\adddot\nopunct}},
    reviewof         = {{review of}{review of}},
    reprintas        = {{reprinted as}{repr\adddotspace as}},
```

```
    reprintfrom      = {{from}{from}},
    translationas    = {{English translation as}{Eng\adddotspace trans\adddotspace as}},
    origpubin        = {{originally published in}{originally pub\adddot}},
```

There is also a different abbreviation for ‘paragraph’.

```
    paragraph        = {{paragraph}{para\adddot}},
    paragraphs       = {{paragraphs}{paras\adddot}},
```

New Hart’s Rules uses ‘accessed’ for URL dates.

```
    urlseen          = {{accessed}{accessed}},
```

Scholarly citation terms are abbreviated. Oxford style is to use ‘henceforth’ for shorthands and ‘at’ to cite a page within a range.

```
    idem             = {{idem}{id\adddot}},
    idemsm           = {{idem}{id\adddot}},
    idemsf           = {{eadem}{ead\adddot}},
    idemsn           = {{idem}{id\adddot}},
    idempm           = {{eidem}{eid\adddot}},
    idempf           = {{eaedem}{eaed\adddot}},
    idempn           = {{eadem}{ead\adddot}},
    idempp           = {{eidem}{eid\adddot}},
    citedas          = {{henceforth}{henceforth}},
    thiscite         = {{at}{at}},
```

Languages are abbreviated.

```
    langamerican     = {{English}{Eng\adddot}},
    langbrazilian    = {{Brazilian}{Braz\adddot}},
    langcatalan      = {{Catalan}{Catal\adddot}},
    langcroatian     = {{Croatian}{Croat\adddot}},
    langczech        = {{Czech}{Czech}},
    langdanish       = {{Danish}{Dan\adddot}},
    langdutch        = {{Dutch}{Dutch}},
    langenglish      = {{English}{Eng\adddot}},
    langestonian     = {{Estonian}{Eston\adddot}},
    langfinnish      = {{Finnish}{Finn\adddot}},
    langfrench       = {{French}{Fr\adddot}},
    langgerman       = {{German}{Ger\adddot}},
    langgreek        = {{Greek}{Gr\adddot}},
    langitalian      = {{Italian}{It\adddot}},
    langlatin        = {{Latin}{Lat\adddot}},
    langnorwegian    = {{Norwegian}{Norw\adddot}},
    langpolish       = {{Polish}{Pol\adddot}},
    langportuguese   = {{Portuguese}{Port\adddot}},
    langrussian      = {{Russian}{Russ\adddot}},
    langslovene      = {{Slovene}{Slov\adddot}},
    langspanish      = {{Spanish}{Sp\adddot}},
    langswedish      = {{Swedish}{Swed\adddot}},
  }
```

5.2 British English: british-oxref.lbx

Here we set some language-specific punctuation and date formatting.

```
\InheritBibliographyExtras{british}
\DeclareBibliographyExtras{%
```

The only difference from the standard British date format is that we print it ‘clean’, with a cardinal instead of an ordinal day.

```
  \protected\def\mkbibdatelong#1#2#3{%
    \iffieldundef{#3}
      {}
      {\stripzeros{\thefield{#3}}%
       \iffieldundef{#2}{}{\nobreakspace}}%
    \iffieldundef{#2}
      {}
      {\mkbibmonth{\thefield{#2}}%
       \iffieldundef{#1}{}{\space}}%
    \iffieldbibstring{#1}
      {\bibstring{\thefield{#1}}}
      {\dateeraprintpre{#1}\stripzeros{\thefield{#1}}}}%
```

As you’d expect from an Oxford style, we use the Oxford comma, and use a period as the time separator. The redefinition of `\blx@ox@langbibstring` is given here as well.

```
  \def\finalandcomma{\addcomma}%
  \def\bibtimesep{\addperiod}%
  \def\blx@ox@langbibstring#1#2{#1\addspace\bibstring{#2}}%
}
\UndeclareBibliographyExtras{%
  \def\blx@ox@langbibstring#1#2{\bibstring{#2}}%
}
```

We use the British abbreviations for 12-hour clock times.

```
\DeclareBibliographyStrings{%
  inherit          = {english},
  am               = {{a\adddot m\adddot}{a\adddot m\adddot}},
  pm               = {{p\adddot m\adddot}{p\adddot m\adddot}},
}
```

5.3 American English: american-oxref.lbx

```
\InheritBibliographyExtras{english}
\DeclareBibliographyExtras{\uspunctuation}
\InheritBibliographyStrings{english}
```

5.4 Other languages

Currently oxref only supports British and American English explicitly, but if there is demand more languages may be added. If you would like to contribute support for your language, a list of the non-standard bibliography strings requiring definition may be found in section **??**.