EntomoLabels
User Manual

Version 8.0.01 (build 201020)

Manual Revision 2 (10-2020)

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Introduction

As computer software development advanced dramatically with the development of graphical user interfaces in the 1980s and 1990s, there was a tremendous market for capturing and cataloguing data that relied less on programming, allowing non-programmers to easily record and report data. The Entomology discipline was no exception, with the need to create specimen labels a priority. Over the decades there have been many attempts to build dedicated programs for label creation alone. Today, most people use spreadsheets or word processing programs, while larger organizations use full-featured software solutions. Each solution has limitations, ranging from having a limited feature set, to being prohibitively expensive.

Our intent is that EntomoLabels should meet most users' needs for designing and printing labels for collections. Initially, it was intended to be a program only for entomological labels - hence the name - but during development, we saw that EntomoLabels could be used to create labels for any type of collection. Older versions were written using Microsoft Access over 20 years ago; however, Access was limited in its functionality (and too expensive); there were so many limitations to Access that three years ago it was decided to rewrite the program in C # using Microsoft Visual Studio.

About EntomoLabels…

EntomoLabels software is a free tool for designing and printing labels that you can use to organize and arrange collections. While designed with the needs of Entomology practitioners, Entomolabels can be used for other biological (or non-biological) collections, thanks to the ability to create custom label templates. EntomoLabels provides a variety of built-in label templates that can be easily customized as well. You can configure labels with parameters (length and width) and customization features (tags, text boxes, lines, frames and images). Labels are fillable and editable – you can add an unlimited number of items. The final layout depends merely on your imagination and creativity.

Acknowledgments…

Thanks go out to the authors, who are (as of this writing):

- Grzegorz Banasiak
- Bartosz Charchut
- Michael Gould
- Bartok Kaliszewski
- Maciej Bialek - Graphics
- Jacek Kurzawa – Website

Thanks also to everyone who uses EntomoLabels – that includes you!

System Requirements

- Windows 7 PC or newer.

Important! As of January 14, 2020, Windows 7 is no longer supported or patched by Microsoft. While EntomoLabels will continue to work at this time, we highly recommend upgrading to Windows 8.1 or higher to ensure the highest level of protection against malware.

- .NET Framework 4.6 or newer installed.

  Note: You can download the newest .NET Framework from
 https://dotnet.microsoft.com/download/dotnet-framework

- Core2Duo processor or newer
- 4GB RAM
- Monitor with a resolution of 1366 x 768 or better.
- Laser printer 300DPI or better which can print on thicker paper.

New Features in Version 8:

- Smoother Zoom of the EntomoLabels workspace
- Updated Print Preview with smooth zoom
- Ruler calibration - aligning the Label Design workspace to a physical ruler to allow for precise sizing and placement of label elements.
- Customizable context (right-click) menu for inserting repeated text and symbols.
- (In development) Custom functions.
- Miscellaneous user interface improvements, including new icons.
- The maximum size of the label has been increased to 140x140 mm.

How to Download/Update EntomoLabels

If you do not already have EntomoLabels, then open a web browser and go to http://labels.entomo.pl
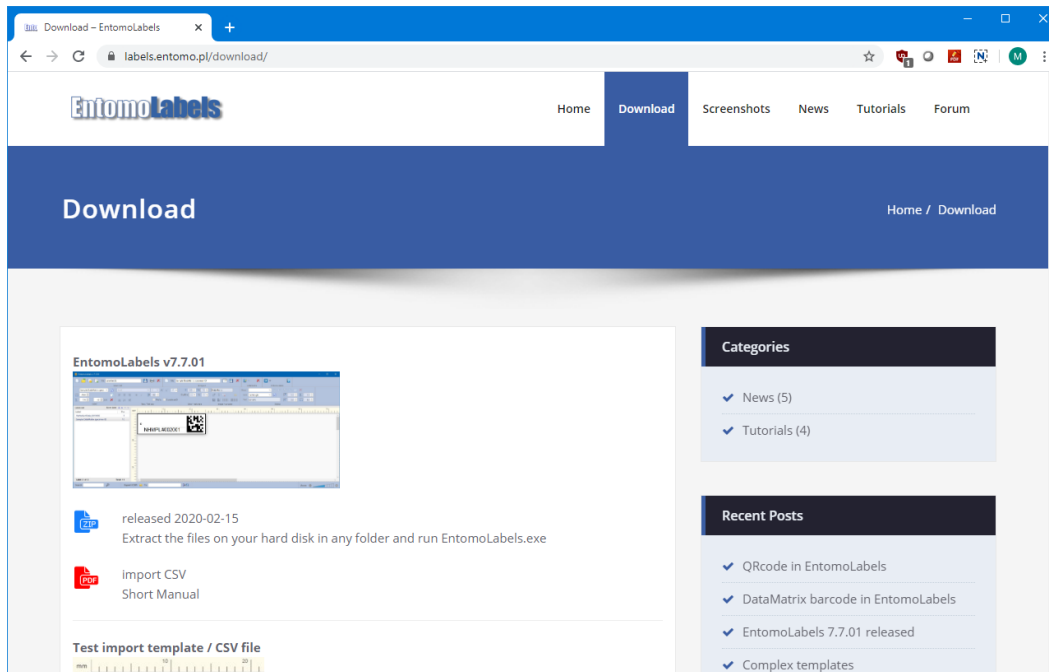
Click on the Download link, and you will see the download page where you can get the latest version. It will download as a ZIP file which you can extract to wherever you like. Once you have extracted the ZIP file, go to the extracted folder and run EntomoLabels.exe.

Note: Since Entomolabels does not use Windows Installer, there will be no shortcuts created on your desktop and in the Start Menu. You can create shortcuts by right-clicking on the EntomoLabels application file (EntomoLabels.exe) and select Copy, then right-click on your Windows desktop and select Paste Shortcut.

Folder structure and File Types

The folder structure of EntomoLabels is shown in the following graphic. The main folder is highlighted in blue. It can have any name, while subfolders must keep the names as in the graphic.
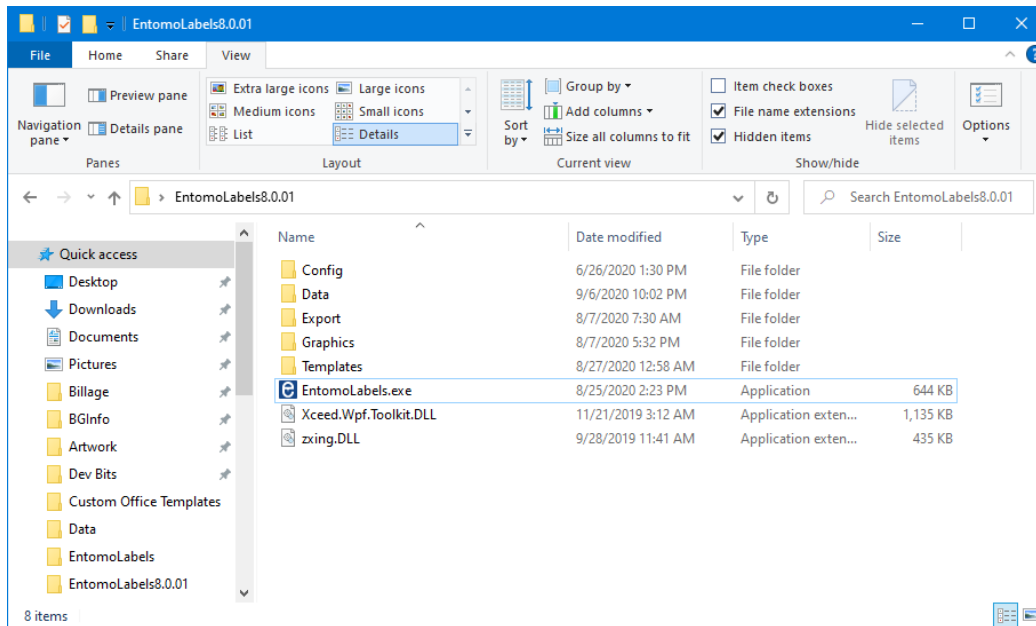
The following files are in the main folder:

- EntomoLabels.exe
- Xceed.Wpf.Toolkit.dll
- Zxing.dll

Subfolders and their contents:

- Config
  The program configuration files are stored in this folder
  - entomolabels.cfg
  - Default.cfg or print.cfg
- Data
  This folder stores data files, notebooks, and notebook icons
  - LabelSet files with saved label sets (*.eld - **E**ntomo**L**abels **D**ata)
  - Notebooks files (*.eln - **E**ntomo**L**abels **N**otebook).
  - Notebook icon files (*.png) resolution 16x16px or 24x24px (preferred).
- Export
  Files with exported data are saved in this folder (*.csv)
- Graphics
  This folder stores graphic symbol files (male, female) and other user graphic files that can be used to design templates. EntomoLabels can use image files with the extensions * .bmp, * .jpg and * .png.
- Templates
  Files containing template definitions are stored in this folder (*.elt - **E**ntomo**L**abels **T**emplate)
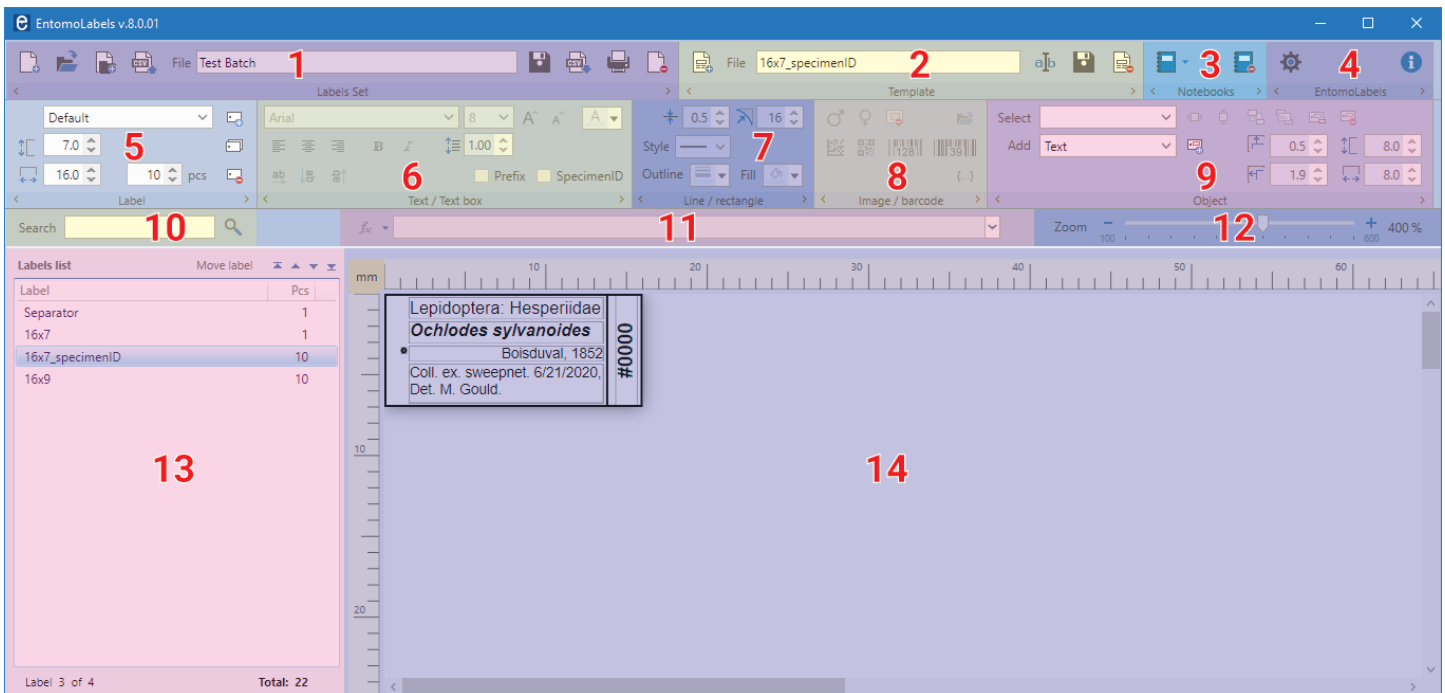
Note: Configuration files, data files and template definitions are based on the XML standard.

Overview of the EntomoLabels Workspace

Once you launch EntomoLabels, you will see the workspace:
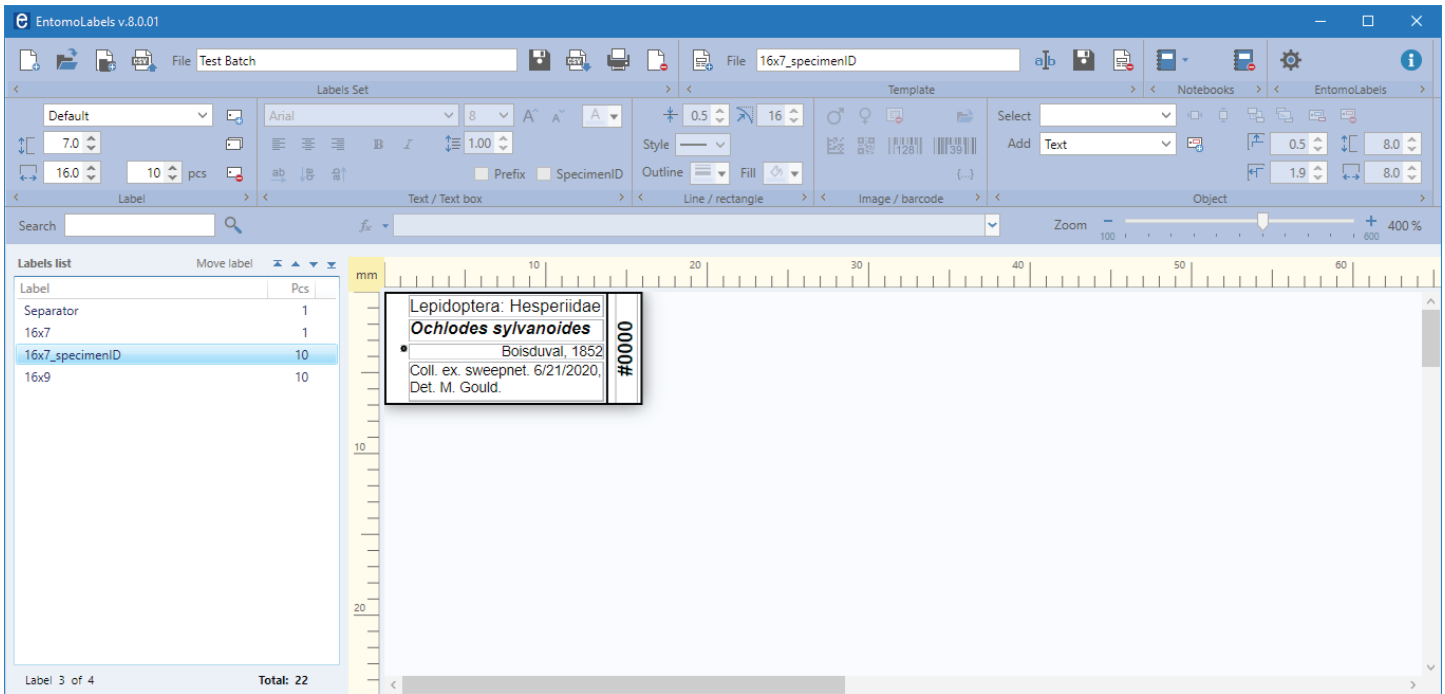
Here is the workspace, divided into sections…

Here is an overview of each section and their functions:

1. Labels Set Panel: Here you create a new LabelSet File, open an existing LabelSet file, add the contents of a LabelSet file to your current batch, and you can import data from a CSV file.
2. Template Panel: Here you can create new, rename, save and delete existing label templates.
3. Notebooks Panel: Here you can create, open or delete notes files to write down notes that are useful. Please see the included sample files for examples of how you can use these.
   Note: Notebook files are not linked to label sets.
4. EntomoLabels Panel: This section controls global settings, saves toolbar layouts and checks for updates to EntomoLabels.
5. Label Selection Panel: Here you can create a label from a stored template, then customize its size and specify the number of labels you want to add based on the selected template.
6. Text Panel: Specify the font, size, alignment, line spacing, plus a couple of extra attributes that will be explained later in this manual.
7. Line/Rectangle Panel: Draw lines, rectangles, rounded rectangles and circles and specify line thickness and color.
8. Image/Barcode Panel: Insert images and barcodes (these can be linked to textboxes, see **How Barcodes work in EntomoLabels**). Also, you can import images via CSV.
9. Object Panel: Add, select, resize, position and delete label objects to your label.
10. Search Panel: Searches for text within the label set.
11. Formula Panel: Type in values for text labels and text boxes; also calculated formulas for text boxes and barcodes.
12. Zoom Panel: Allows you to change the size of the label design panel (11) for easier label customization. The zoom range is 100-600%. Clicking "+" or "-" increases/decreases the zoom in 1% increments.
13. Labels List Panel: Shows all the labels you have added to the current Label Set.
14. Label Design Panel: Shows a preview of the current label being worked on in the set.

Note: you can customize the position of toolbar panels to suit your workflow.

Labels Set Panel

The Labels Set panel allows you to perform operations on LabelSet files. A LabelSet is a collection of different label templates in 1 file. Once created, this file can be reused as needed and customized as your needs change.


LabelSet Panel Controls:
1. New LabelSet
2. Open LabelSet
3. Import another LabelSet to the existing LabelSet
4. Import CSV data
5. LabelSet File Name
6. Save LabelSet
7. Export LabelSet data to CSV.
8. Print LabelSet
9. Delete LabelSet

When you start EntomoLabels, you start with a blank LabelSet, with a default file name in the **File** field. Once you create and customize labels, you can change the file name, then click the save button to an .eld file with the same name. These files are stored by default in the Data subfolder.

Clicking on the [New] button will create a new LabelSet, but not before giving you the option to save the existing LabelSet...
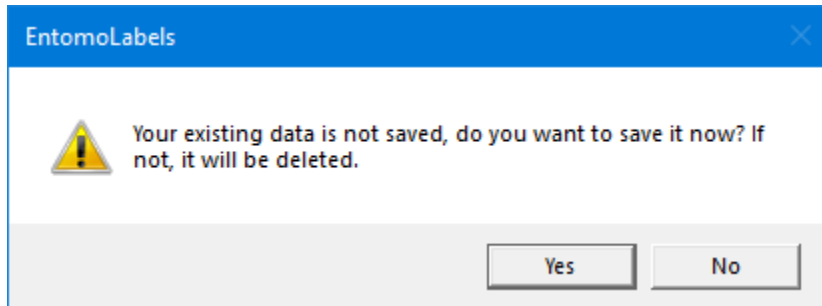

Note: *As mentioned in the above dialog; if you do not save the data, it will be permanently deleted.*

If you do not type in your own file name in the File field, the name of the new file is created automatically (and is unique) according to the *LabelSet(n)* formula where *n* is the next number.

Clicking on the [Open File] button will allow you to open an existing LabelSet file.
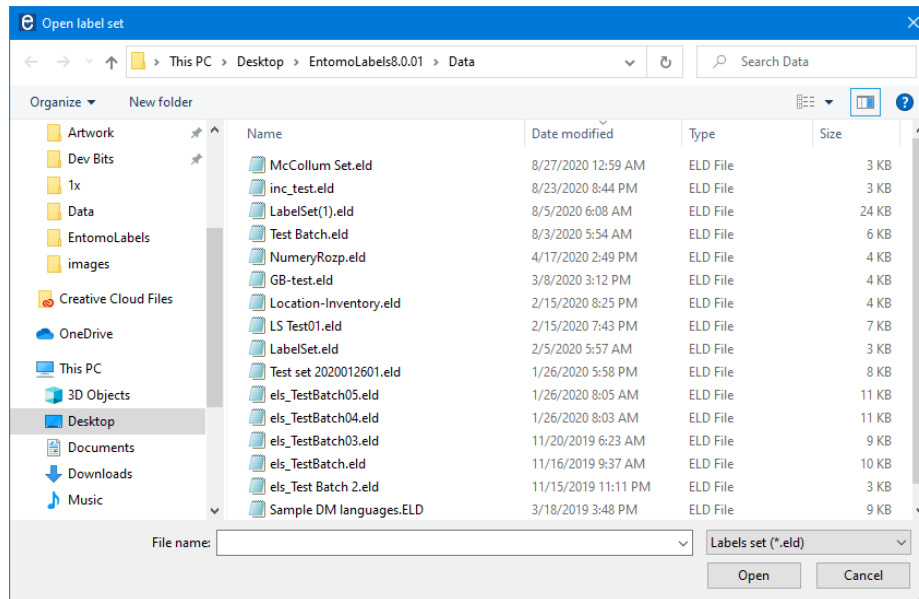
Clicking on the [Append…] button will add the contents of an existing LabelSet to the current workspace.
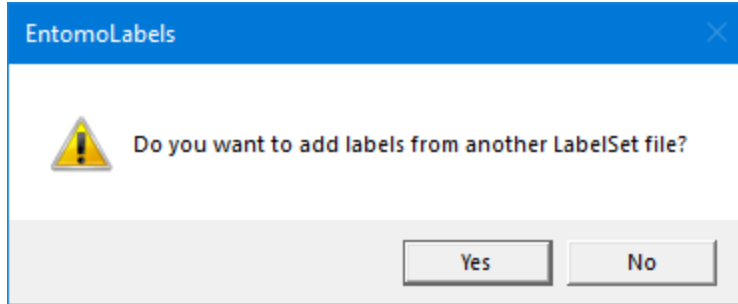
You can therefore make LabelSet templates if you have a batch of label types that you want to use for each site you collect specimens from.

You can also import .CSV files to populate your labels by clicking on the Import CSV button.
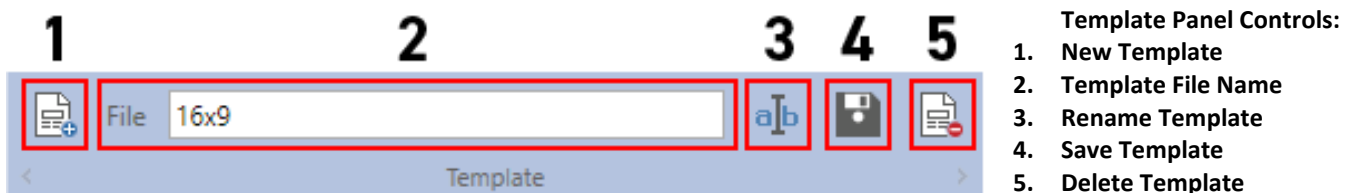
In addition, there is the print button, see **Printing Labels**, and the Delete button. Clicking this will pop up a list of LabelSet files that you can choose to delete.
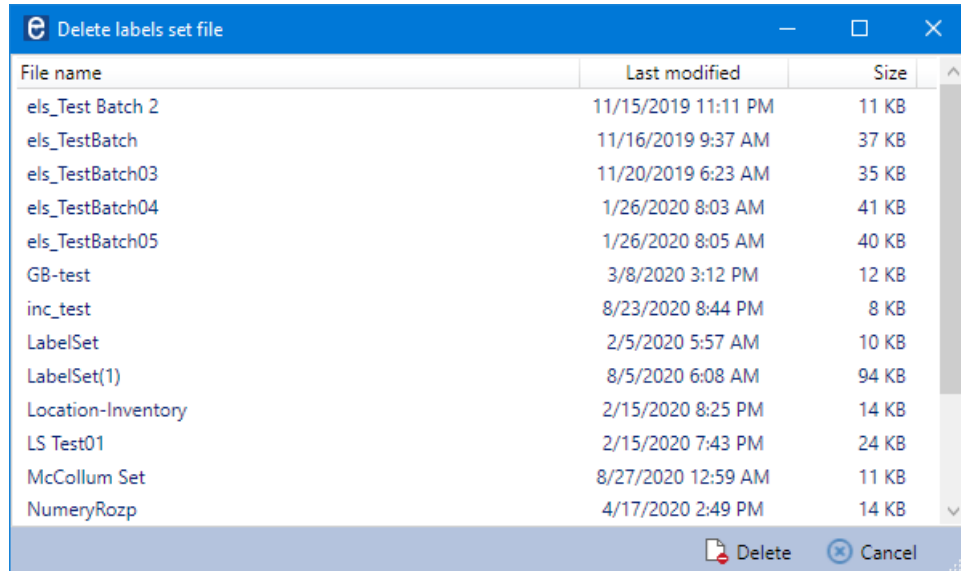

Note: Once the file is deleted, it is gone forever.

Templates Panel

Here you can create, name/rename, save and delete templates. The template starts with the label background and includes all text and image objects that you wish to include on it. Once the template is saved, you can quickly build similar labels without having to rebuild a template from scratch.

Template Panel Controls:
1. **New Template**
2. **Template File Name**
3. **Rename Template**
4. **Save Template**
5. **Delete Template**

If you wish to delete a template, click on the [Delete] button, and you can select the template from a list to delete.
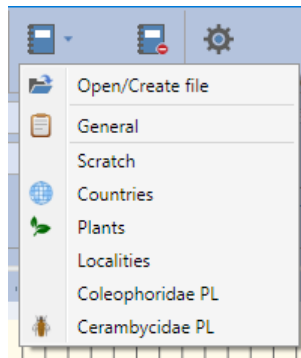
Notebooks Panel

Notebooks are a resource to keep notes on the projects you create. They are a separate resource from LabelSets and Templates. Here is the Notebook panel:
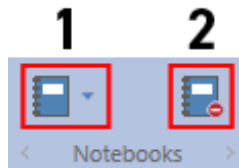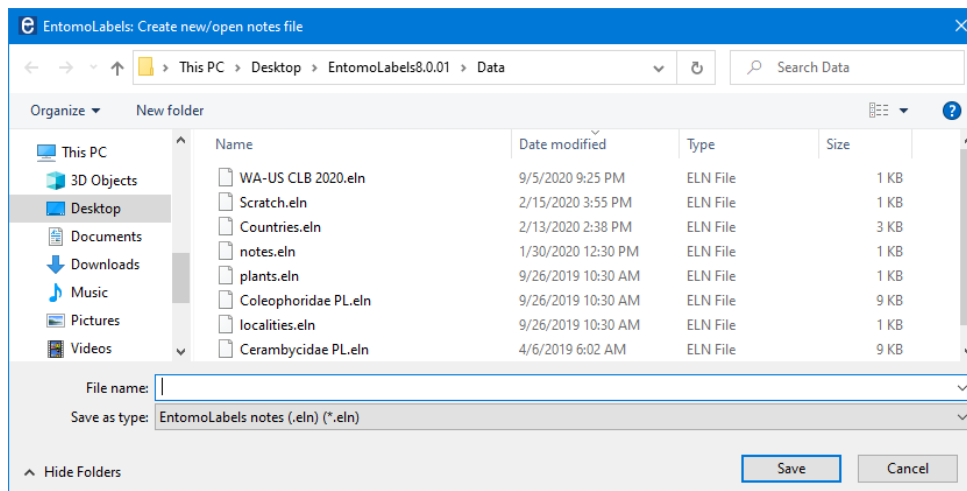

Notebook Panel Controls:
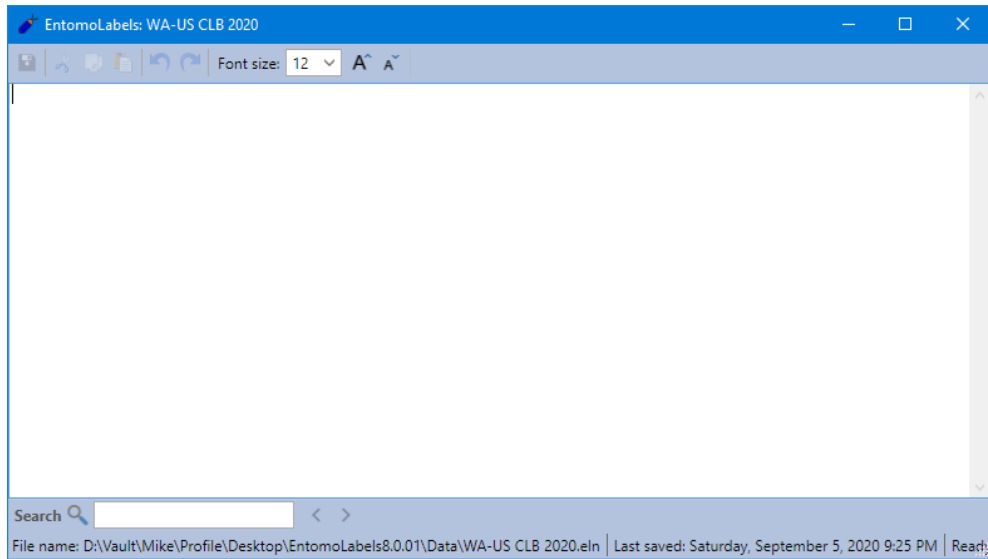1. **New/Select Notebook**
2. **Delete Notebook**

It's quite simple to create, maintain and delete notebook files. To get started, just click on the notebook drop-down button:

…then select Open/Create file, you'll get a save file dialog…

Type in your new notebook's name and click [Save]. Now the Notebook workspace pops up:

The Notebook workspace is a simple text editor like Windows Notepad. You can change the font size (default is 12 pt.), cut, copy and paste text, undo/redo and search your notes as illustrated above.

If you want to personalize your notebook, you can do this by adding a *.png image file (preferably no larger than 24x24px) that is named **exactly the same** as your notebook file in your \data folder. This will give you the following result:
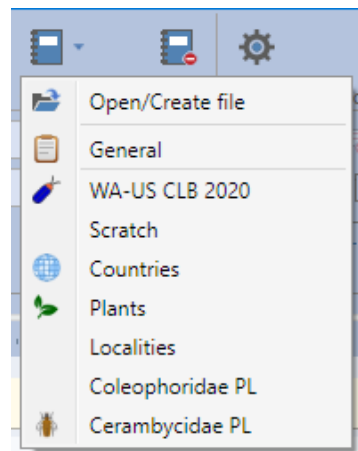
Using the example above, the image file name is "WA-US CLB 2020.png".

If you wish to delete a notebook, click on the [Delete] button and select the notebook you wish to delete:
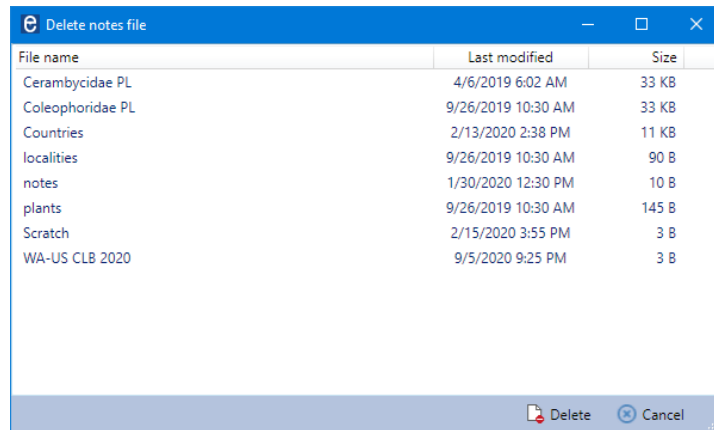
…then click the [Delete] button. Once deleted, the notebook file cannot be recovered.

EntomoLabels Panel

The panel contains controls for changing global program options (Global EntomoLabels Options) and about the program (About / Check for updates).
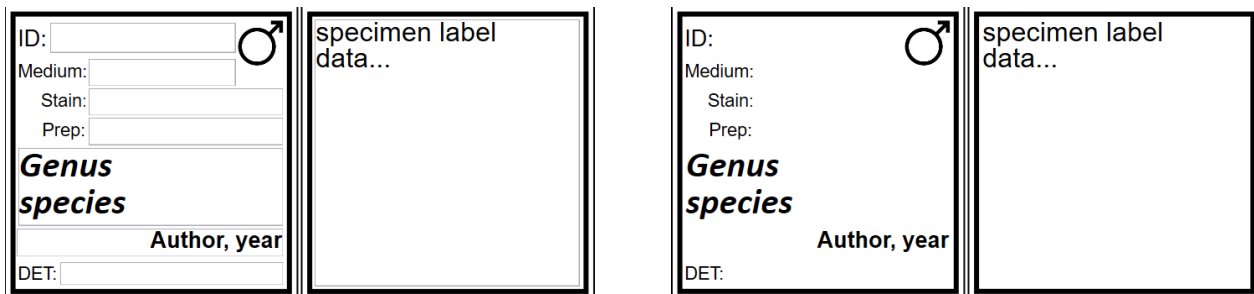

EntomoLabels Panel Controls:
1. **EntomoLabels Options**
2. **About EntomoLabels**

Global EntomoLabels Options Panel

Use checkboxes to set global options that affect the program's operation. By enabling or disabling individual options, you make them immediately take effect and apply to current labels. You can also save the settings, making them the default until you change them.
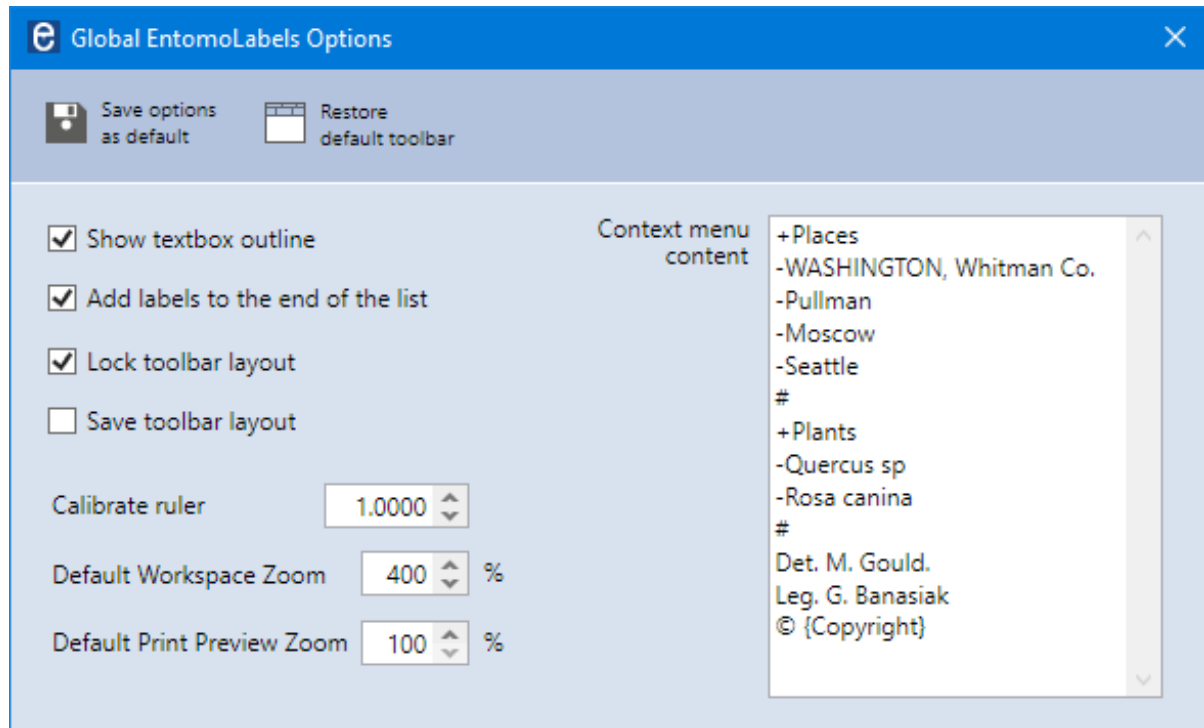
Show textbox outlines – this option enables or disables the display of the text field outline. This option allows you to see better what the label will look like when you design a template.
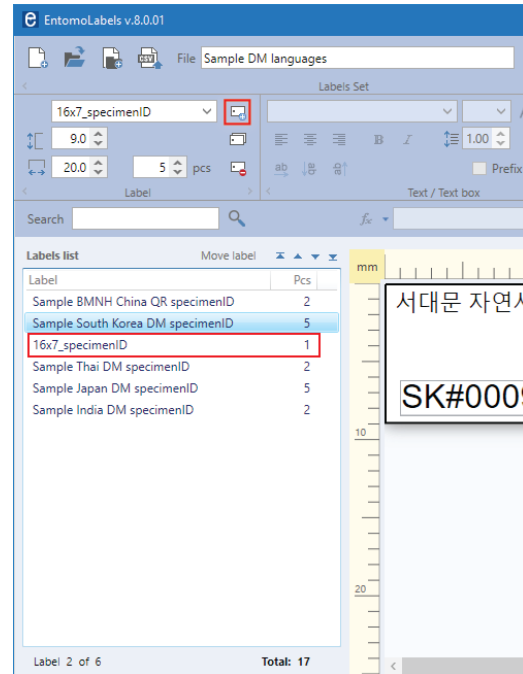

Add labels to the end of the list – Enabling this option adds new labels to the end of the label list; disabling this option allows you to add new labels after the selected label list item.
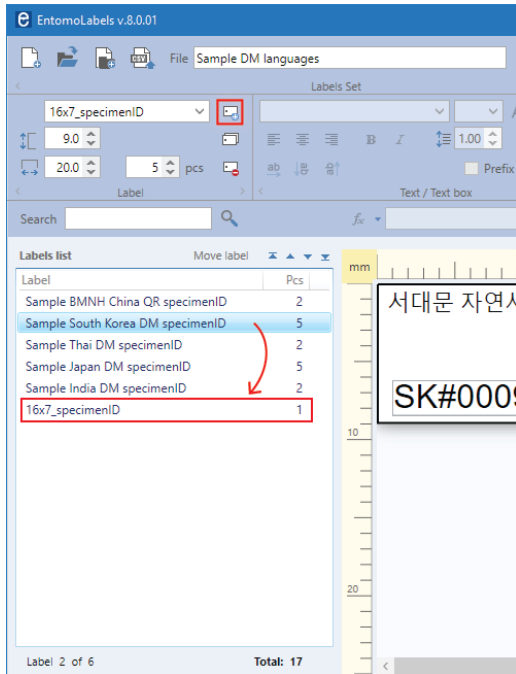
☑ Add labels to the end of the list ☐ Add labels to the end of the list

Customizing the EntomoLabels Workspace - In the toolbar, you can also change the order of individual panels to suit your preferred workflow, save the layout of panels and restore the default layout of panels.
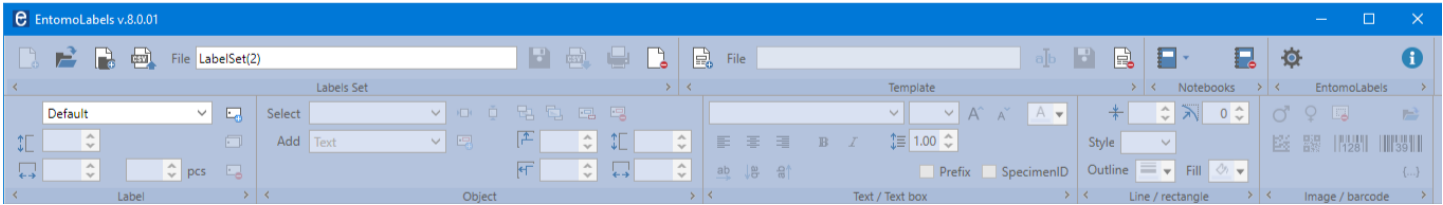
Lock toolbar layout – allows you to lock or unlock the ability to change the position of toolbar panels. Enabling this option hides controls that allow you to move toolbar panels, while disabling activates these controls and allows you to make changes.
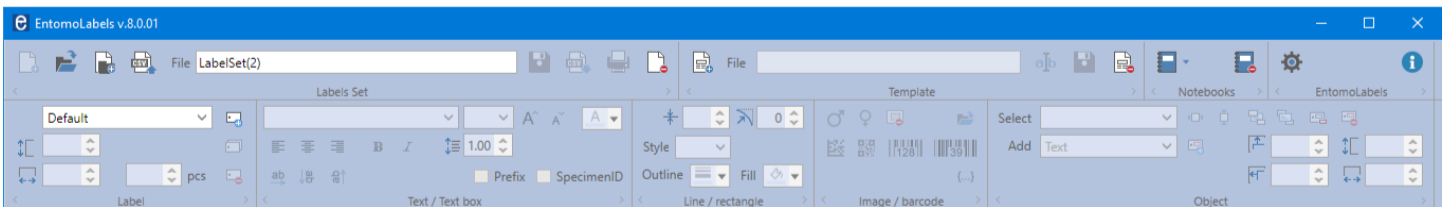
☑ Lock toolbar layout
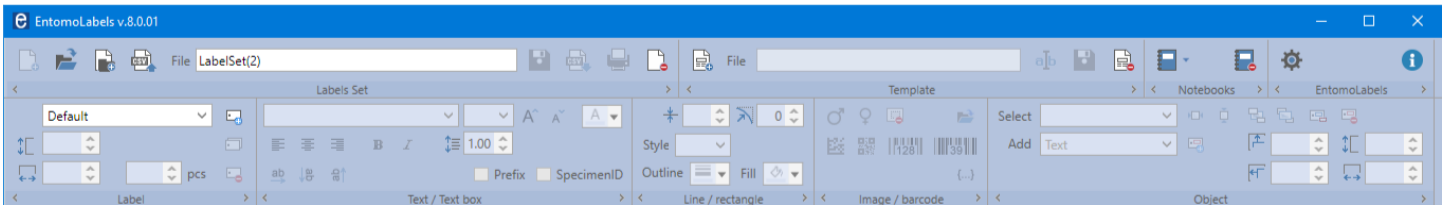
☐ Lock toolbar layout

Adjusted toolbar example

When the controls that allow you to change the position of the toolbar panels are visible, use the [<] and [>] buttons to move the panel left or right. If the panel is in the leftmost position and you press the [<] button, it will be moved to the end of the bar and if it is in the rightmost position, when you press the [>] button, it will be moved to the beginning of the bar. The diagrams below show the panning direction for the [<] and [>] buttons.

Save toolbar layout – by selecting this option, the current settings are saved as default (the [Save as default] button also remembers the current layout of the toolbar panels). When this option is not selected, the layout of the toolbar panels is not saved.

Calibrate ruler This is a new feature where you can calibrate the label preview space on your preferred monitor to the actual size of the label. The calibration range is 0.800 – 1.200, with 0.1 micrometer precision. If you have a multi-monitor setup using different pixel-pitch monitors, your calibration can only be set to one monitor. Here are the steps to calibrate your monitor:

1. Set your workspace Zoom to 100%.
2. Using a metric ruler (preferably plastic to minimize screen damage risk), line up the ruler scale with the workspace scale horizontally.
3. Adjust the Calibrate Ruler scale up or down to match the screen ruler with the physical one.
4. Click on the [Save options as default] button to save the setting.

Default Workspace Zoom – Sets the default workspace zoom level.

Default Print Preview Zoom – Sets the default print preview zoom level.

Context Menu Content – A new feature where you can right-click on a text box and paste text and symbols of your choosing into text boxes and text labels:
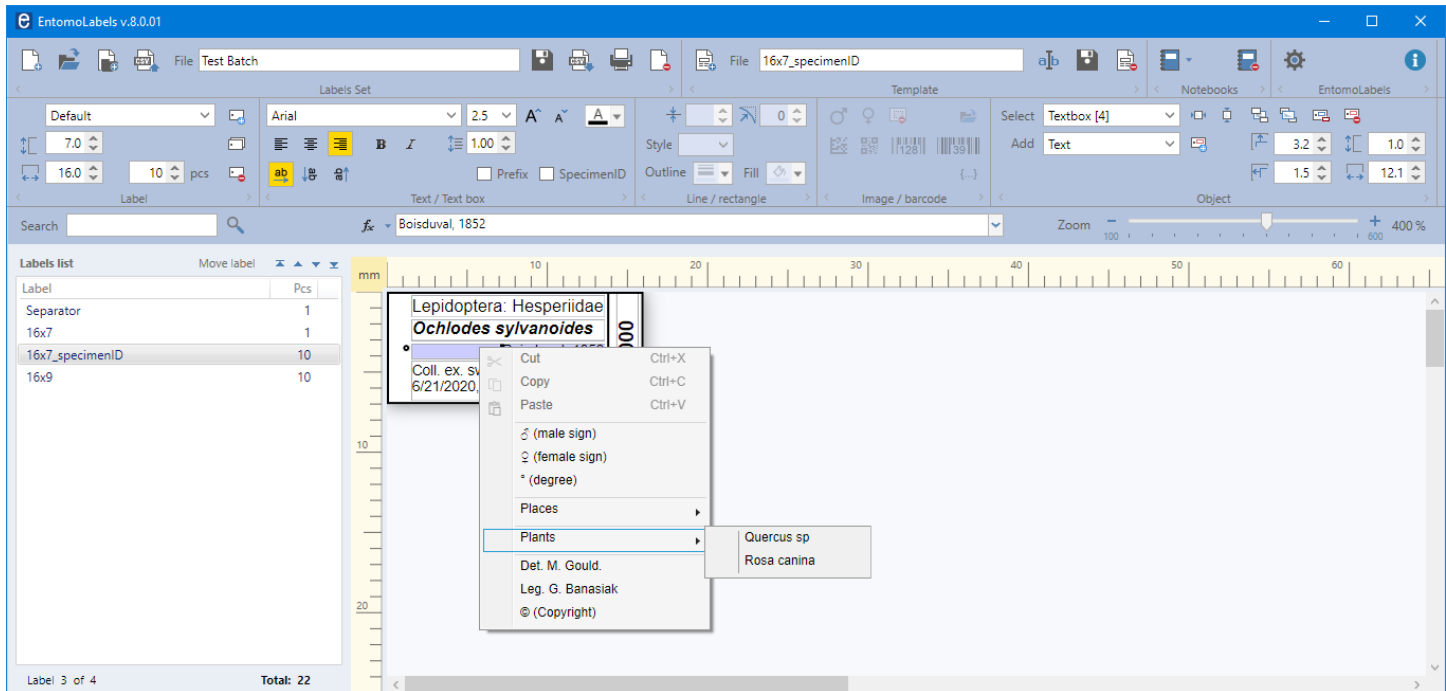
The Context Menu Content is a text box where you can enter text and additional symbols to the context menu. Each line is a line item on the list that, when selected, is pasted into your text box at the cursor.
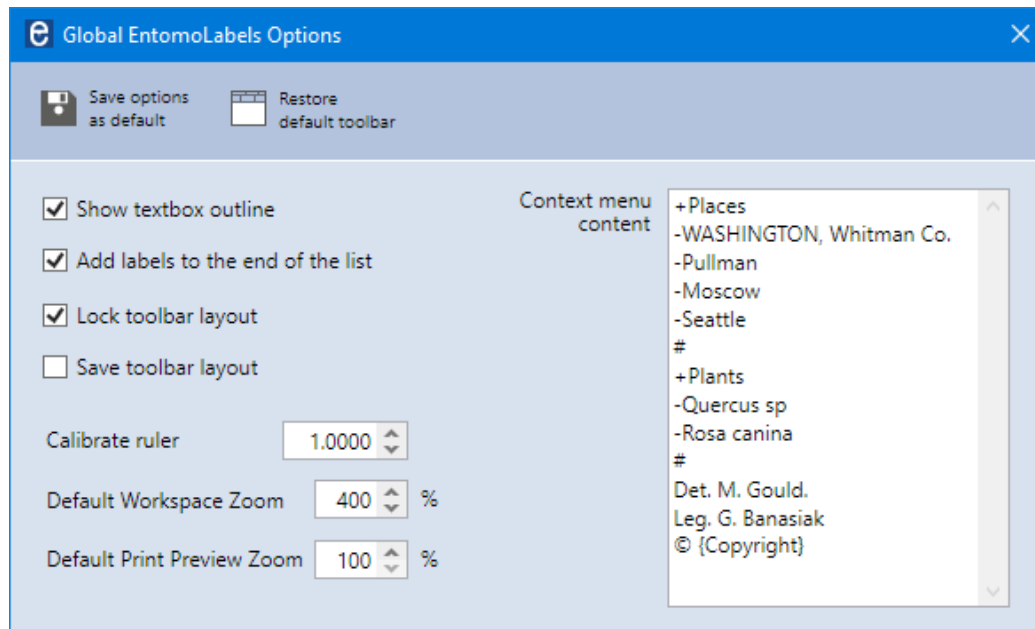
In addition, you can nest content by adding a "+" before your category name, then add "-" before each element in that category. Using a "#" at the beginning of a line draws a separator between categories. In addition, if you want to add a symbol or abbreviation that needs a description, add that item, then enclose a short description in braces {}. The description will appear in parentheses in the context menu and only paste the symbol in your text control.

Note that if you do not save the options as default, your context menu changes will be deleted when you close EntomoLabels.

The buttons at the top of the dialog are

[**Save options as default**] button – saves the set parameters as default.

[**Restore default toolbar**] button – restores the default layout of the toolbar panels.

About / Check for Updates

Displays the 'About ...' window and lets you check for updates. Remember that you need Internet access to check for newer versions of EntomoLabels. You can download the newest version of EntomoLabels and additional information and files from labels.entomo.pl.
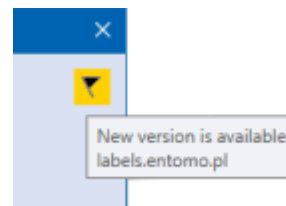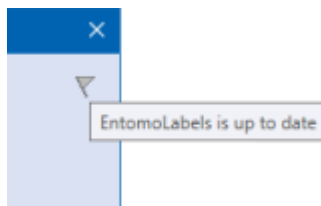
Label Panel

The Label panel is where you select and resize a label template, set the quantity of labels, or delete the template from the LabelSet.
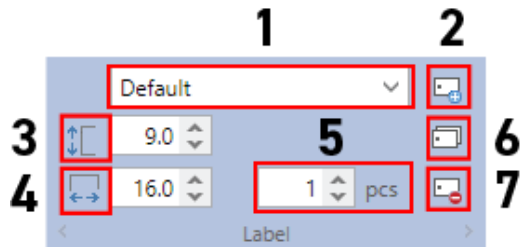
Label Panel:
1. Selected Label Template
2. Add new label from selected template
3. Label Width
4. Label Height
5. Quantity of labels from selected template
6. Copy Label to new list entry
7. Delete Label entry

EntomoLabels comes with a sizable assortment of label templates to help you get started. From these you can make your own custom label templates as well. Any new template you create can be saved via the Templates panel. Once you select the template you want, click on the Add button to add it to your Label List. Use the Quantity field to set the number of labels you want from the selected template.

Object Panel

The Object Panel is the starting point for adding text and graphics to your labels. Here you can select the object to add, then position, align and arrange it vertically.
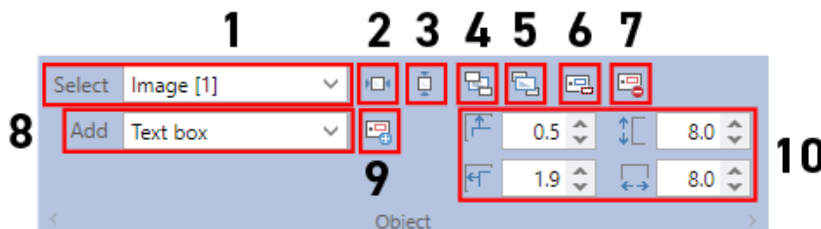
Object Panel Controls

1. Object Selector	7. Delete Object
2. Center Object Horizontally	8. Object Type Selector
3. Center Object Vertically	9. Add Selected Object to Label
4. Send Object Backward	10. Size and Position Object
5. Bring Object Forward	
6. Copy Object	

You can select existing objects on a label by clicking on the Object dropdown and selecting the object from the list.
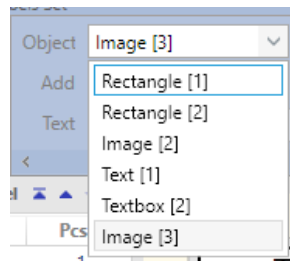
To add a new object to the label, click on the Add dropdown and select the object you wish to add from the list:
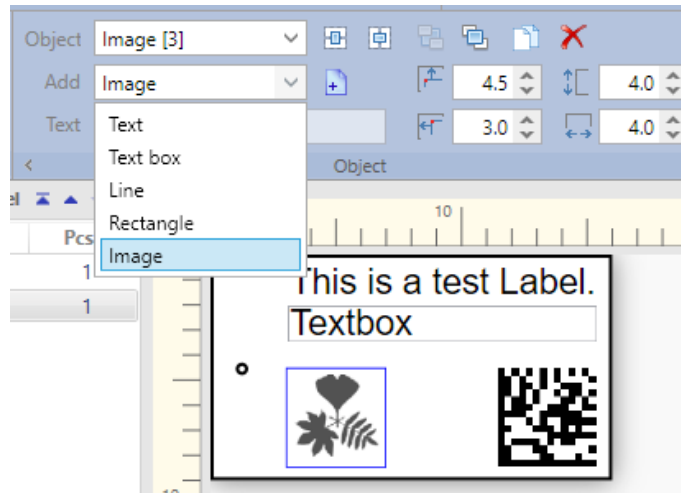
You can add the following types of objects to your label:

- Text Label – This is for static text that will appear on every label. When you select a Text label object, the formula (*f*$_x$) field is enabled, allowing you to type in the text you want for the object, or you can type into the field itself.
- Text Box – This holds static or dynamic text (from a CSV import, for example).
  - Note for both Text Label and Text Box controls: If you prefix a number with the hash (#) symbol, EntomoLabels will increment the number by 1 for each label up to the quantity you entered for that template. You can pad zeroes in front of your starting number as well and include text elements: examples – "ABC#000123", "PL-2020-#0001", and even "PL-2020-#0001-Łz". The numeric portion preceded by the hash symbol will auto-increment in all cases shown.
- Line – You can use lines to divide your label into sections. You can adjust the thickness (minimum is 0.5 unit, maximum is 5.0; 1 unit = 1/96th inch, about 0.26 mm) length. When designing the position of the line, you specify the X, Y coordinates of the start point and the X, Y coordinates of the end point.
- Rectangle - along with line thickness adjustments, you can also round the corners.
- Image – You can insert an image that is either included with EntomoLabels or provide your own. Please consider that some images do not scale well to small labels, so you want to test the image before creating specimen labels.

  Barcode images – You can insert DataMatrix, QR Code, Code 39 and Code 128 barcodes onto a label to facilitate scanning. The barcode is paired with up to two text boxes using the Prefix & Specimen ID check boxes and can auto-increment within a Label List entry. See ***How Barcodes work in EntomoLabels*** for more details.

  Note: Changing the color in either a text label or text box changes all the text in that control to the chosen color. The same is true for font, bold, italics, etc.

With the help of the size and position controls (outlined below), you can change the position of an object on the template and its size. This can be done by changing the value of the top and left margins (change in position) and changing the height and width of the object (change in size).
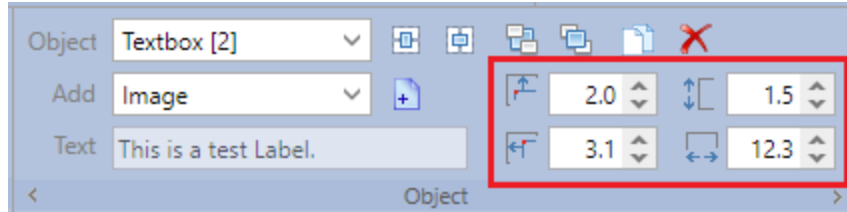
Line Objects are handled differently; the controls outlined below sets the positions of the beginning and the end of the line.   This sets the length and the angle of the line object.
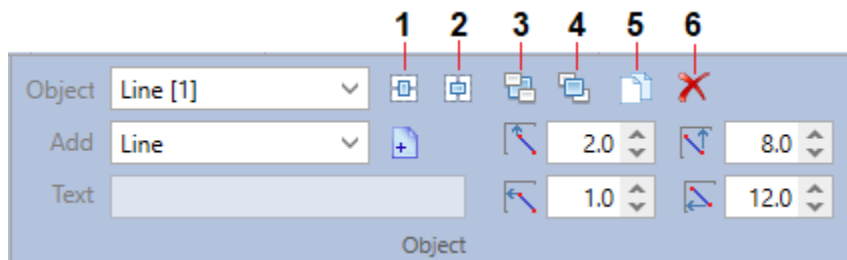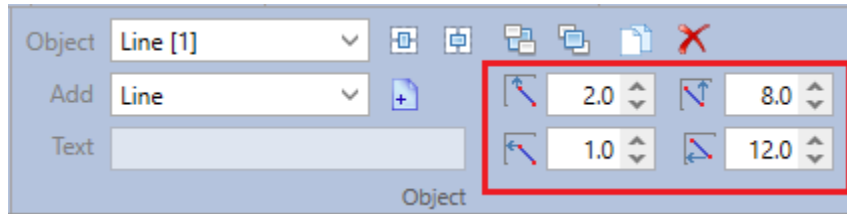
For any selected object, the numbered buttons above are used to:

1. Center object horizontally on the label
2. Center object vertically on the label
3. Arrange object – send object backward
4. Arrange object - bring object forward
5. Duplicate object – the duplicate is offset automatically.
6. Delete object

Text/Text Box Panel

The Text/Text Box Panel is where you can set text properties for the Text Label and Text Box objects.
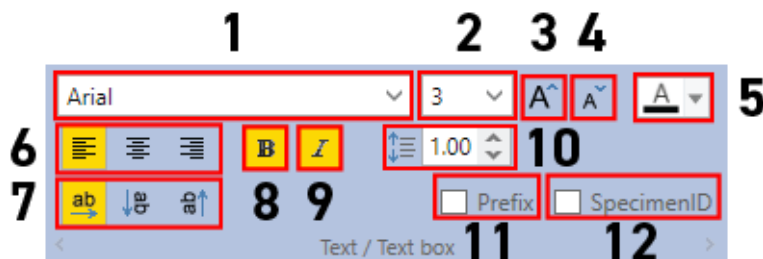
Text/TextBox Panel Controls

1. Font Selector
2. Font Size selector
3. Increase font size
4. Decrease font size
5. Font Color
6. Align text
7. Text Orientation
8. Make text Bold
9. Italicise text
10. Set line spacing
11. Set Barcode Prefix
12. Set Barcode Specimen ID

Here you see mostly standard controls for setting text attributes like font face & font size controls; text alignment and orientation; line spacing and color.

In addition, you will notice the Prefix and Specimen ID checkboxes. These are roles you can assign to the control to aid in barcode creation, which we'll go over later.

One nice feature of the text size dropdown is that 2.5 pt and 3.5 pt text are included as options. This allows you to place text more precisely on small labels.

Line/Rectangle Panel

Here you define and change attributes of line and rectangle objects. Note that for sizing and positioning such objects, you would need to make those changes in the Object panel:
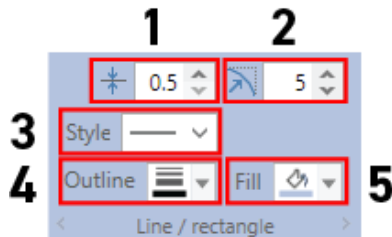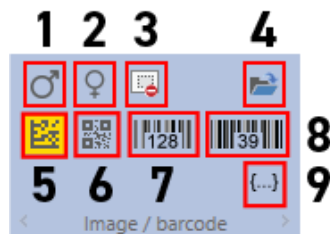
Line Rectangle Panel Controls
1. **Line Thickness**
2. **Rectangle Corner Roundness**
3. **Line Style**
4. **Line Color**
5. **Rectangle Fill Color**

You can change line thickness, round rectangle corners, and change line and rectangle fill colors.

Image/Barcode Panel

Here you can add images and barcodes to your labels:

Image/Barcode Panel Controls
1. **Male symbol image**
2. **Female symbol image**
3. **Delete image file entry**
4. **Open image file**
5. **DataMatrix Barcode**
6. **QR Barcode**
7. **Code 128 barcode**
8. **Code 39 barcode**
9. **Import Image from CSV?**

EntomoLabels has several built-in images (such as gender symbols) and supports the following image formats: *.bmp, *.jpg and *.png.

For best results, use *.png files because they are smaller files (as opposed to *.bmp), have minimal or no rendering artefacts (as opposed to *.jpg), and provide image transparency, which allows more color flexibility for your label.

To import an image of your choice:

1. Click on the Open Image File button   . By default, the Graphics subfolder in EntomoLabels is selected, but you cannot select a file from any location accessible to your PC – at this time you will need to copy an image to the Graphics subfolder. This will be fixed in a future release.
2. Select the desired image, keeping in mind that most labels are rather small, so it should not be a large image.

3. The image should appear in your label. In the formula field, you will see the filename of the graphic.

An additional feature is that you can link image file names to a CSV file using the Import image from CSV button. This will be explained further in the Import from CSV.

How Barcodes work in EntomoLabels:

The ability to add barcodes to labels allows you to quickly scan and catalogue your collection(s). EntomoLabels supports the following barcode formats

Barcode Type	Sample	Allowed Characters
Code 39		Alphanumeric & "-.$/+%" & [Space]
Code 128		Alphanumeric+Symbols
DataMatrix (2d)		Alphanumeric+Symbols. See Appendix 1: DataMatrix in EntomoLabels for more.
QR Code (2d)		Alphanumeric+Symbols. See Appendix 2: QR Code in EntomoLabels for more.

To add a barcode to a label template, do the following steps:

1. Add a TextBox object to the label from the Object panel.
2. Select the TextBox, then size and position it where you want it.
3. Go to the Text panel and click on the Specimen ID checkbox to assign the role.
4. Add an Image object from the Object panel.
5. Make sure the Image object is selected.
6. From the Image/Barcode panel, select the Barcode type you wish to use. The image will change to a sample of that barcode symbol.
7. Size and position the barcode to your liking.
8. Now fill in the TextBox. Remember that if you want to auto-increment the labels, the numeric portion of the textbox (or Text Label) value has to be preceded with a hash symbol (example #000001).
9. If you want additional static information on the barcode, create and place another TextBox or Text Label object on your label, fill in the value you want, and select the Prefix checkbox. It will be added to the resulting barcode. Here is an example:
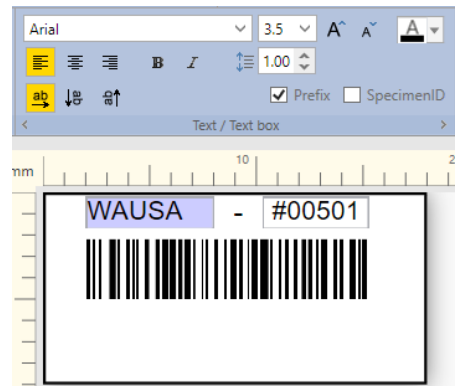
Note: *If you had previously set a TextBox as a Specimen ID and decide to assign that role to a different Text object, EntomoLabels will clear the previous Specimen ID role assignment. The same is true for the Prefix* role.

Let's Make Labels

EntomoLabels includes several ready-made templates to make it easier to get started creating your own LabelSets. When you start working with EntomoLabels, use these to learn the program's capabilities. In the remainder of the Manual you will learn how to easily design your own templates.
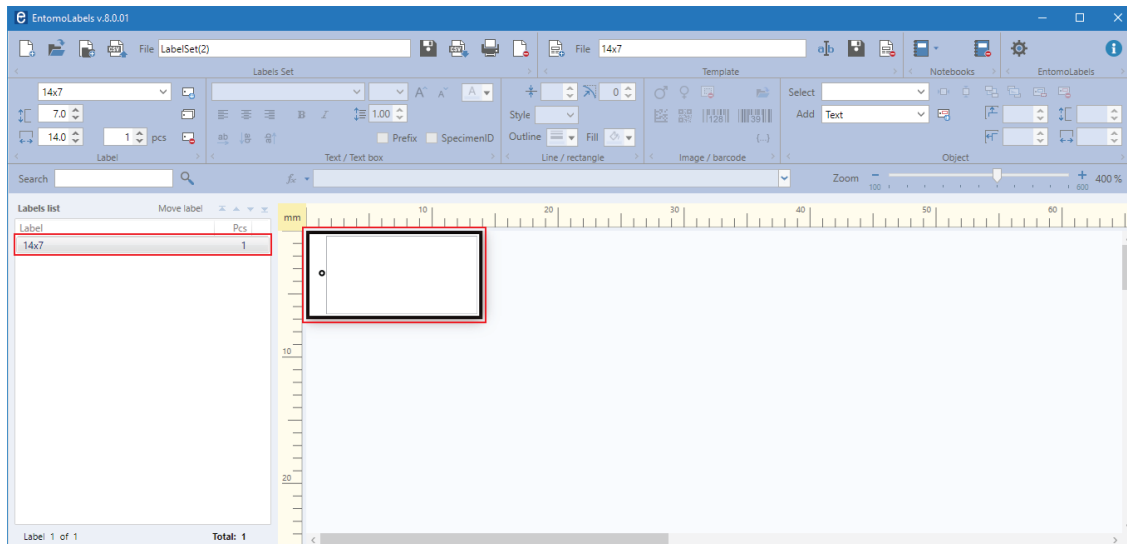
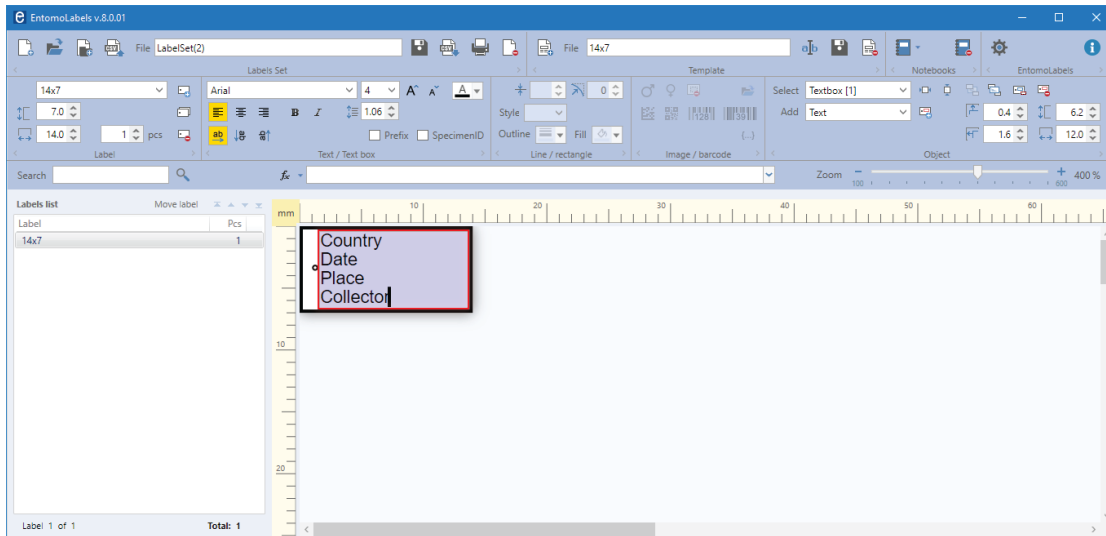Select one of the defined templates from the drop-down list...
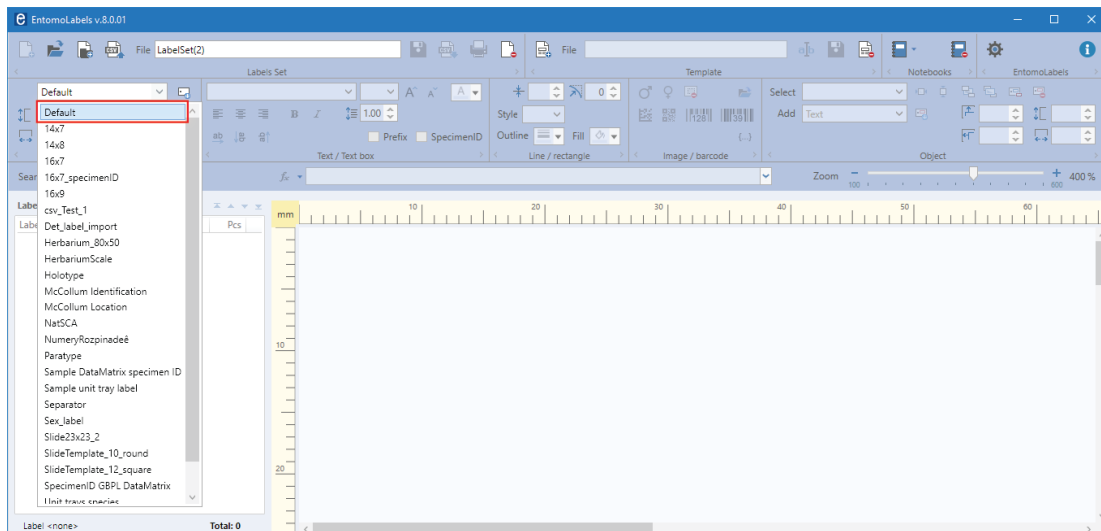
Press Add new label button to add a new label by using the selected template
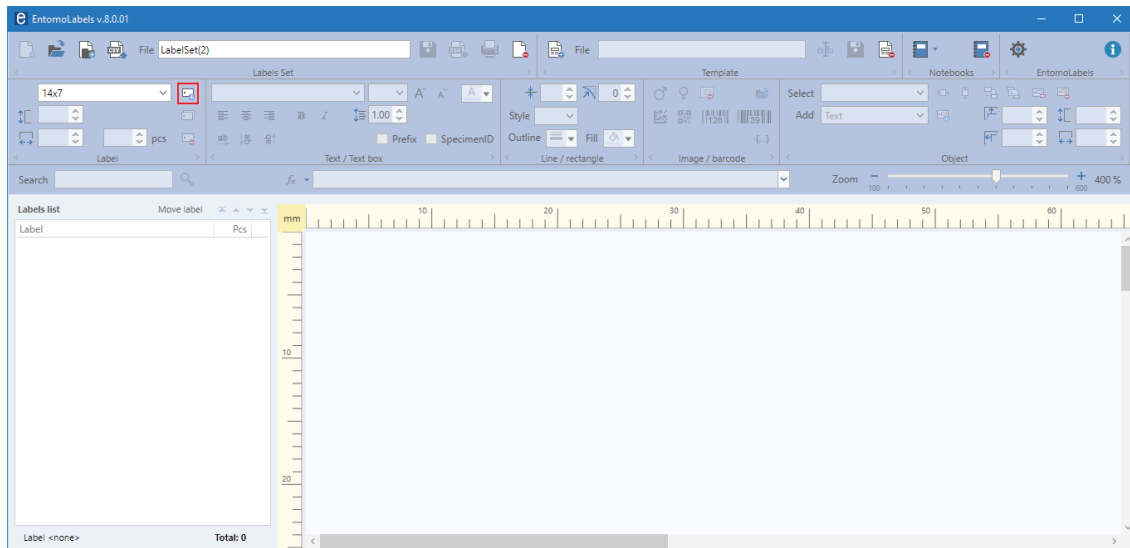
The new label will be added to the list and its template displayed in the work area


Click on the template text field and enter the text into it

Enter the quantity you need (1 is the default). You can do this by clicking the up and down arrows or enter the quantity directly in the field. The quantity range is 0 - 1000. Labels with a quantity of 0 are not printed but can be used as a placeholder in your LabelSet file.
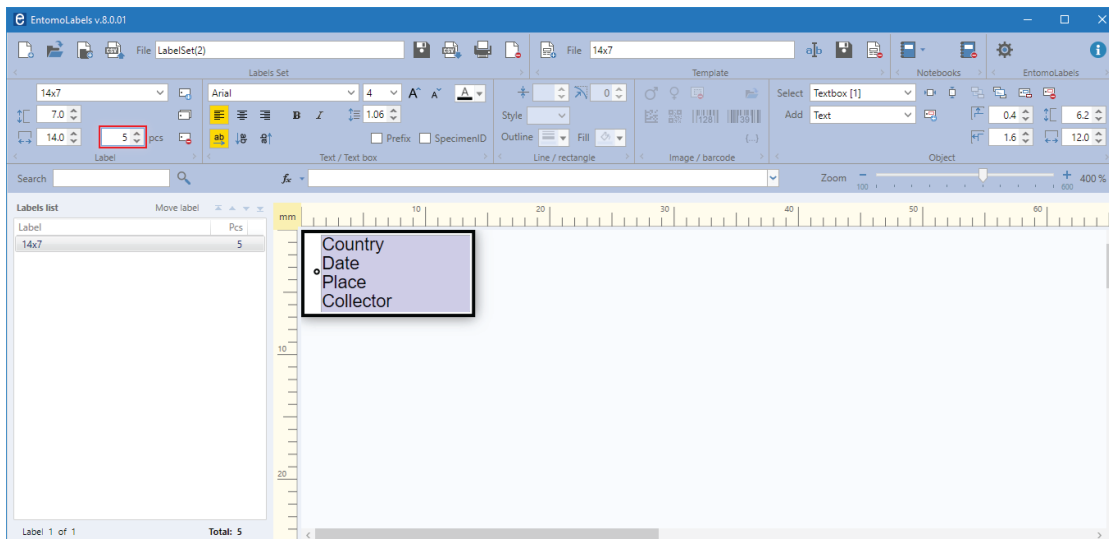
Repeat these steps for each label you need. To break up the page visually, you can add a Separator label to break up your LabelSet into sections… Any template can take the separator role; you can set it in the print window (Breaks tab) by selecting it from the Special Template drop down list.
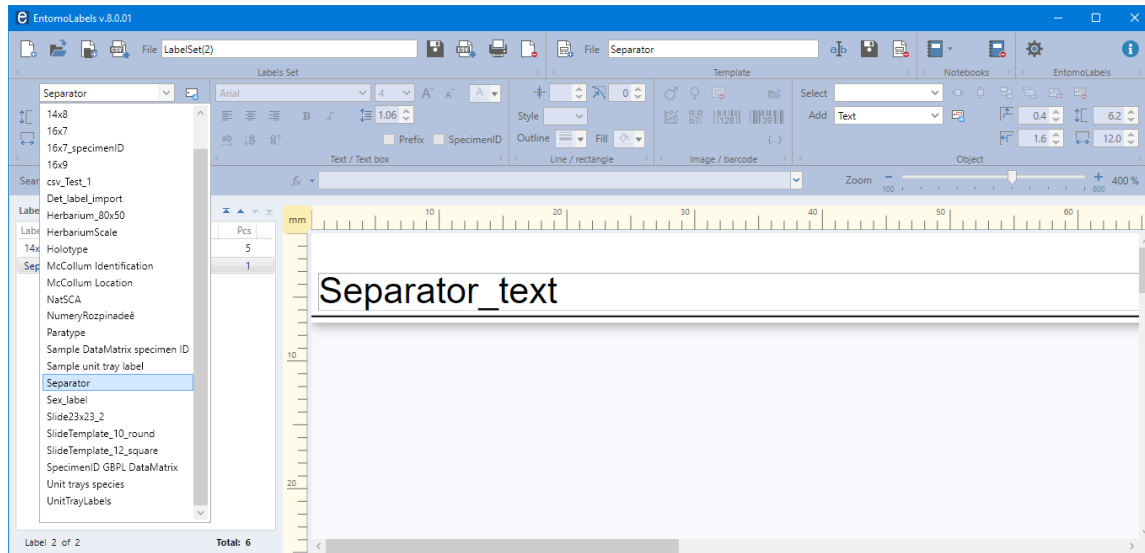
When you are finished entering data, you can print the labels. A description of the print process can be found later in the Manual.

Make your own Label Templates

Congratulations on making your first label batch(es) using the pre-built templates included in EntomoLabels! After going through a few batches, you might want to create your own custom label that fits the needs of your collection. This section will help you get started.

First we want to talk about all the components of a label template:

1. The Label canvas - You can customize the size of the canvas to fit the needs of your label. Please refer back to section V., Label Creation Panel to review the controls available to you. It is here that you set the number of labels to print as well.

    Important! If you are printing labels on US Letter or US Legal paper; EntomoLabels units are in millimeters (mm), and you can make adjustments to a label and its objects to the nearest 1/10 mm. Remember that 1 inch = 25.4 mm. Most current US Laser printers have ¼-inch margins in their print area, so you are safe using 6.5 to 7mm margins.

2. Label Objects:
a) Text Label – This is for static text that will appear on every label.
b) Text Box – This holds static or dynamic text (from a CSV import, for example). In addition, if you prefix a number with the hash (#) symbol, EntomoLabels will increment the number by 1 for each label in that set up to the quantity you entered for that template.
c) Line – You can use lines to divide your label into sections. You can adjust the thickness (minimum is 0.5 unit, maximum is 5.0; 1 unit = 1/96th inch, or about 0.26 mm) length. When designing the position of the line, you specify the X, Y coordinates of the start point and the X, Y coordinates of the end point.
d) Rectangle – You can adjust the size and dimensions of rectangle objects, and round the corners as well. This allows you to turn a square into a circle or rectangle into an ellipse.

e) Image – You can insert an image that is either included with EntomoLabels or provide your own. Please consider that some images do not scale well to small labels, so you want to test the image before creating specimen labels.

f) Barcode – You can insert DataMatrix, QR, Code 39 and Code 128 barcodes onto a label to facilitate scanning. The barcode is paired with up to two text boxes using the Prefix & Specimen ID check boxes and can auto-increment within a Label List entry. See {section} for more details.

Note: Changing the color in either a text label or text box changes all the text in that control to the chosen color.

Now that you've been introduced to what makes a label template, let's make one now! To get started:

1. In the Label panel, select an existing label template that is close to the size you want the final template to be and add it to your LabelSet list. Alternately, you can click on the New Template button in the Template panel, which will create a blank 14x7 mm label.
2. Change the label canvas dimensions using the Label Height and Width controls.
3. Add and size label objects to your liking.
4. Go to the Template Panel, and type a new name for your new label template, click the Rename button to rename the template on the Labels List, then click on the Save button to save your new template.
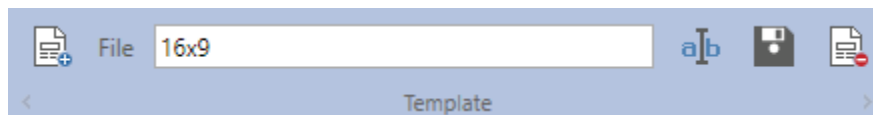
5. If you decide to delete a template from the program, just click on the delete button, and select the template to delete from the list that pops up.

Printing Labels

When you are ready to print your LabelSet, click on the print button in the Labels Set panel, which loads the print dialog. Along with a multi-page print preview (including visible page margins), you'll get the following print options:
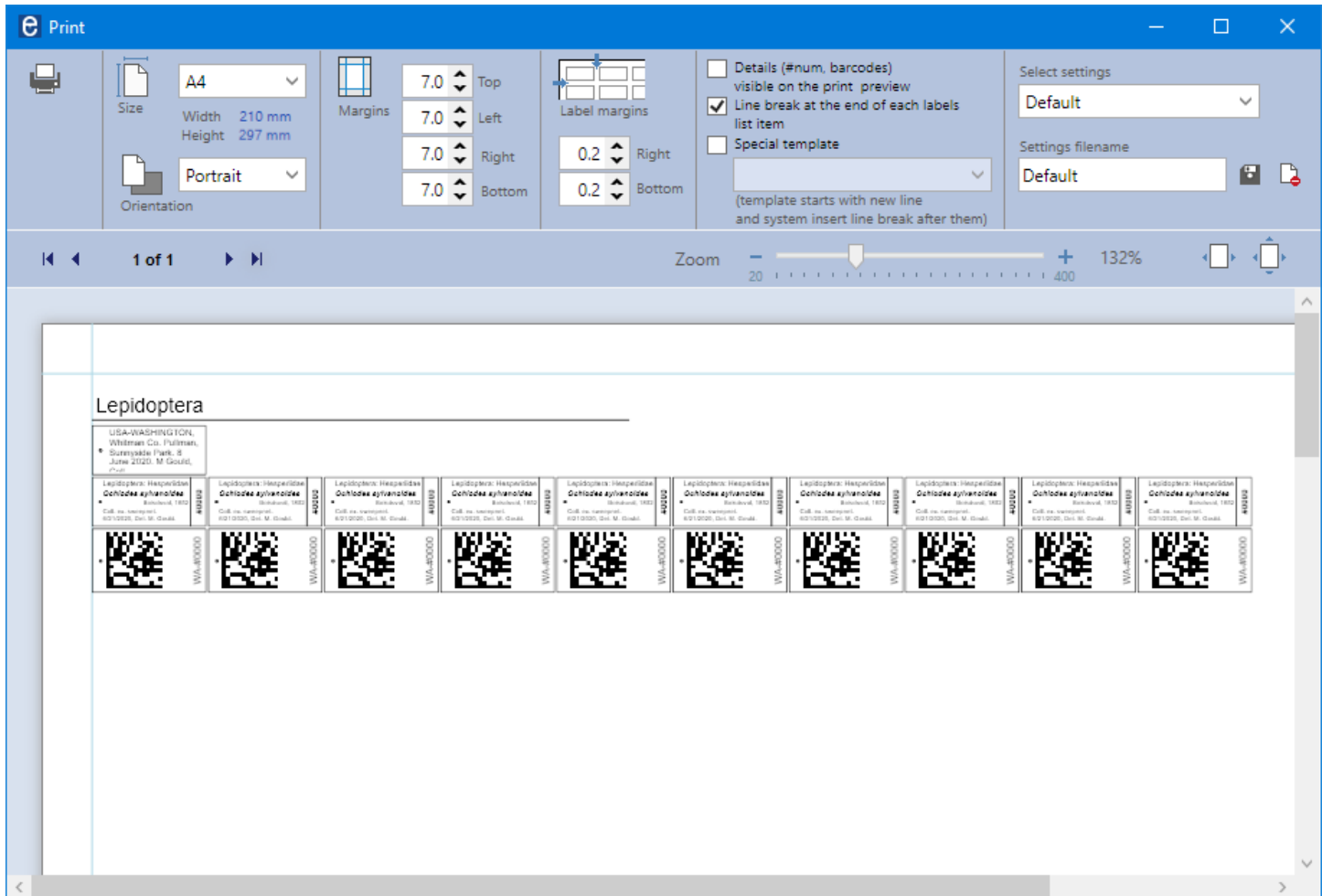
You can select your paper size, then set the paper orientation. The default page margins should be good for most printers, regardless of the paper sizes, but you want to avoid going less than 7mm unless you have an edge-to-edge printer. You can likewise set the inter-label margins as well.

The next section allows you to show rendered barcodes and serial numbering in the preview, setting a line break after each entry in your label list, and the option to use a template as a line break.

Once you set your print options the way you like, you can type in the name of the settings in the 'Settings filename' field and click the [Save] button so that you do not have to change them every time you want to print. Naming the settings "Default" replaces the existing default settings for the print dialog. You can also delete settings files by clicking the [Delete] button.

The next section below allows you to adjust the print preview – you can inspect all the pages in the print batch, just use the zoom slider to resize the preview. Clicking "+" or "-" increases/decreases the zoom in 1% increments. There are 2 buttons as well; 1 zooms the preview to the print dialog width, and the other fits the entire page to the preview.

You can save different settings for different paper sizes or for commercially available adhesive labels. By default, the parameters from the 'Default' file are loaded; you can select others from the 'Select settings' drop-down list.

Click the [Print] button to display the Windows Print dialog box or close the Print dialog to cancel.

> **Note:** When adjusting print options, you can print to an image file via Microsoft Print to PDF, the Microsoft XPS Document Writer, or another PDF print driver, so that you don't have to waste paper getting your label layout set to your satisfaction. However, if you have a high-resolution printer, you will want to print to it directly when you are ready to make labels to ensure the highest quality printouts.

Importing Data from CSV files

EntomoLabels allows you to import data from CSV files into specially designed templates. These templates contain tags - that is, the names enclosed in braces **{...}**. Tags can have upper- and lower-case letters, underscores, and dashes. In addition, a csv tag can be part of a longer text string and can even be used to link graphics to your labels.
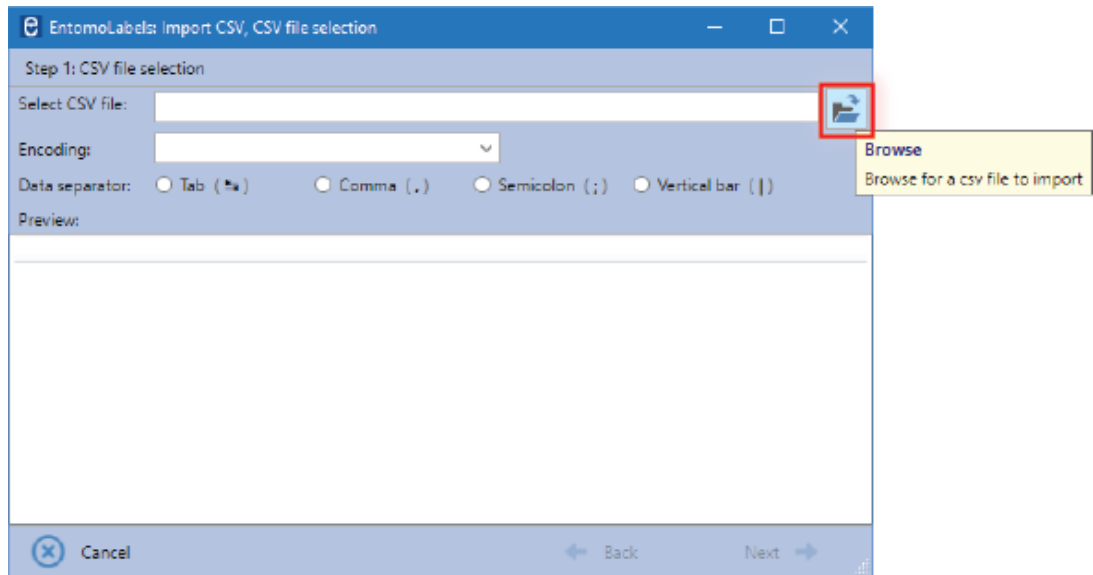
Note: *The first line of the CSV file must contain column names.*
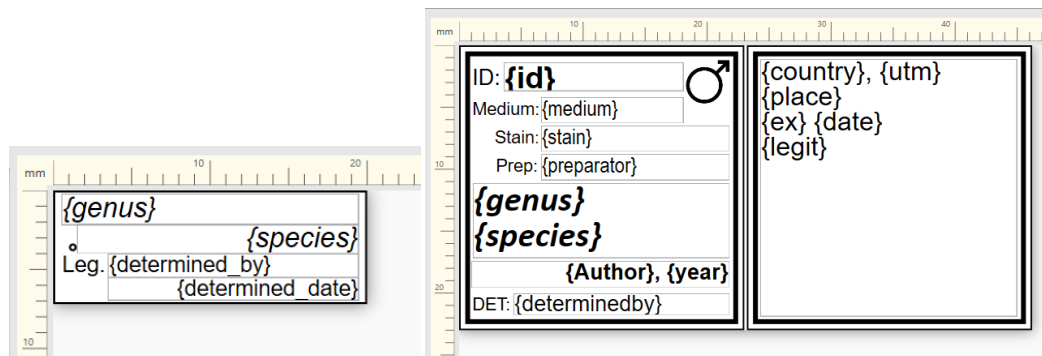
To start importing data from a CSV file, press the Import button
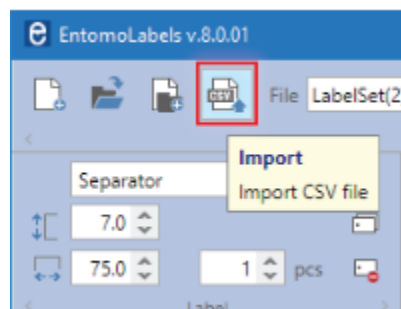
In the dialog, press the Browse button to select the CSV file to import.

The file will be loaded and displayed in the table. EntomoLabels will attempt to set a column separator based on the content of the CSV file, but you can change it by selecting the appropriate option. Character encoding is also detected but can be changed.
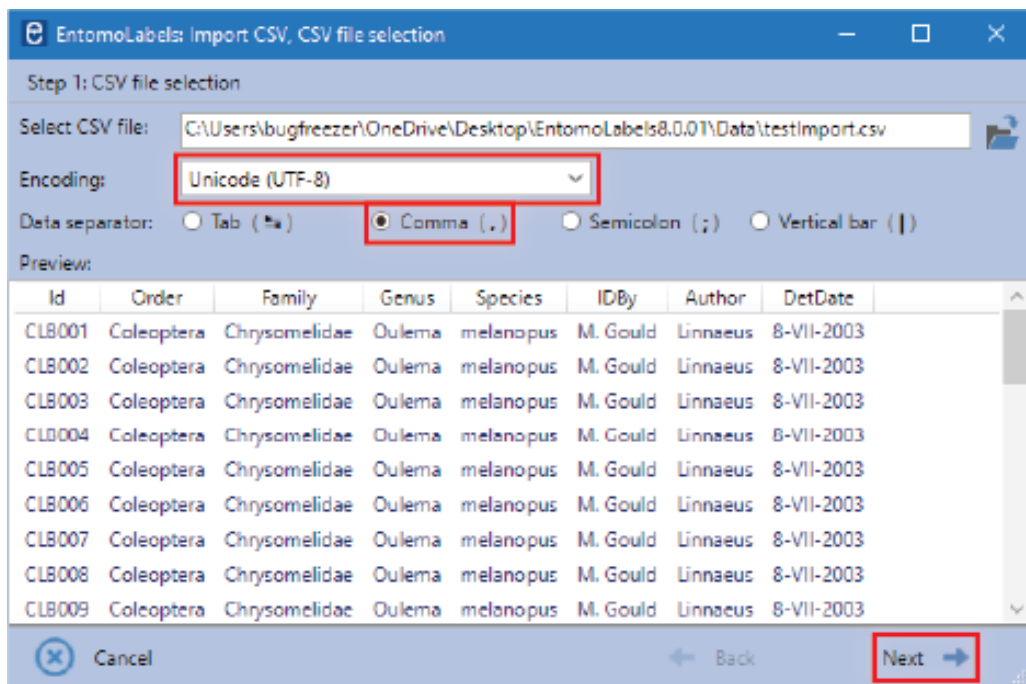
NOTE: EntomoLabels will compare the chosen data separator with the data preview. If the Data Separator does not result in a grid output, a warning message will be displayed as shown below:
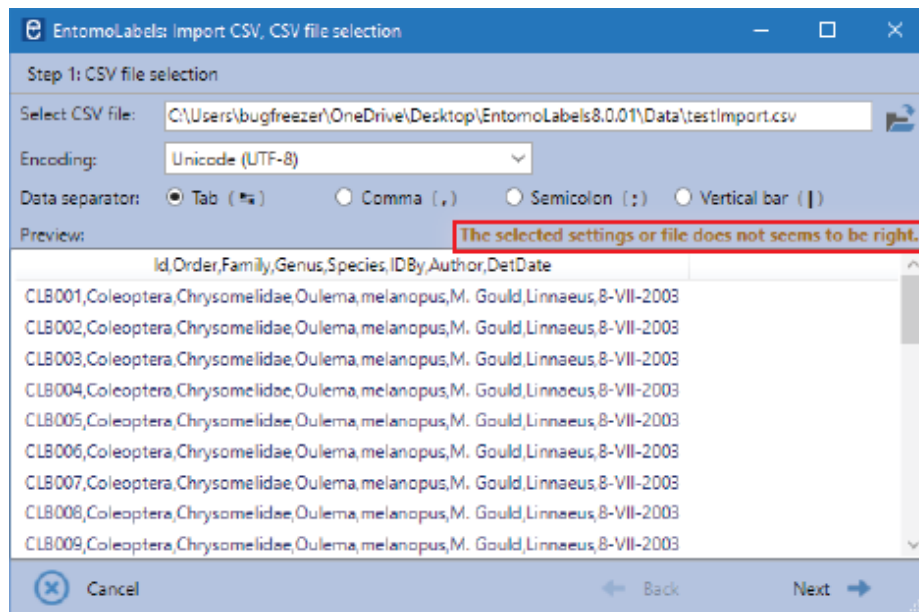

If the file, separator and character encoding is correct and the displayed table shows ordered data, press the Next button to move on.

In the next dialog select the template to which the data will be imported and specify the number of copies (Pcs) of each label - the default value is 1.
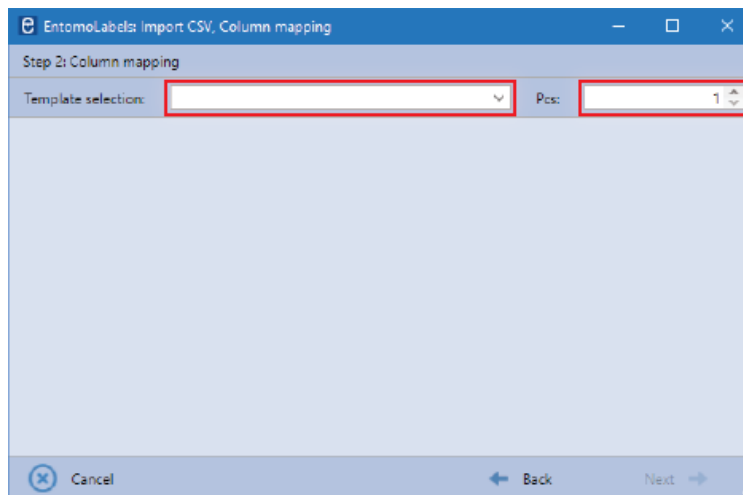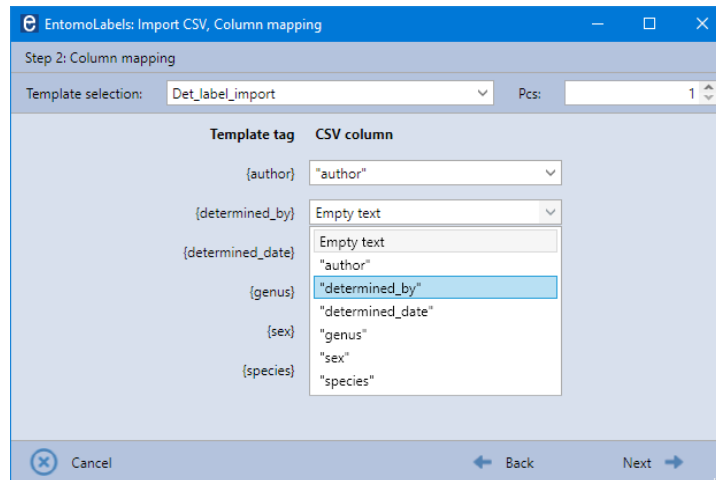

The drop-down list contains all templates and those that contain valid import tags are marked in black, the others are gray.
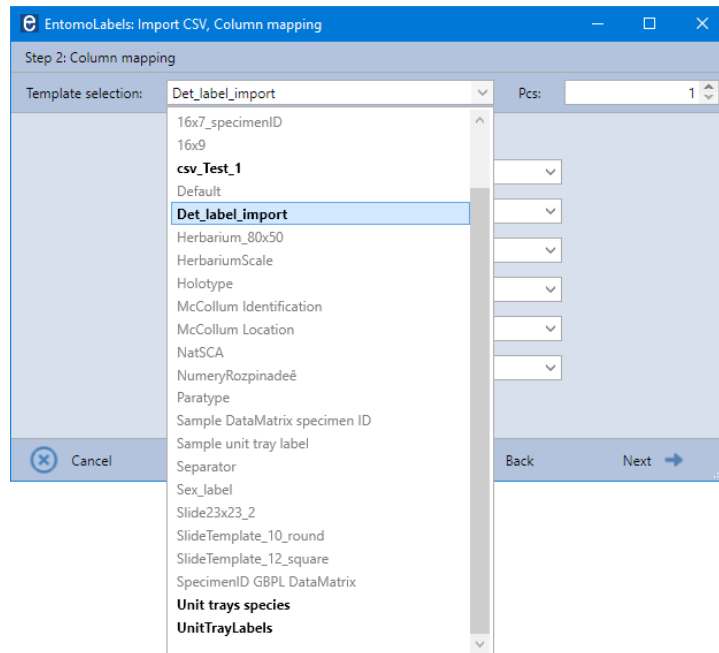
EntomoLabels automatically maps the import template {...} tags with columns of the CSV file, if possible. When mapping is not possible, it sets the value to 'Empty text'.
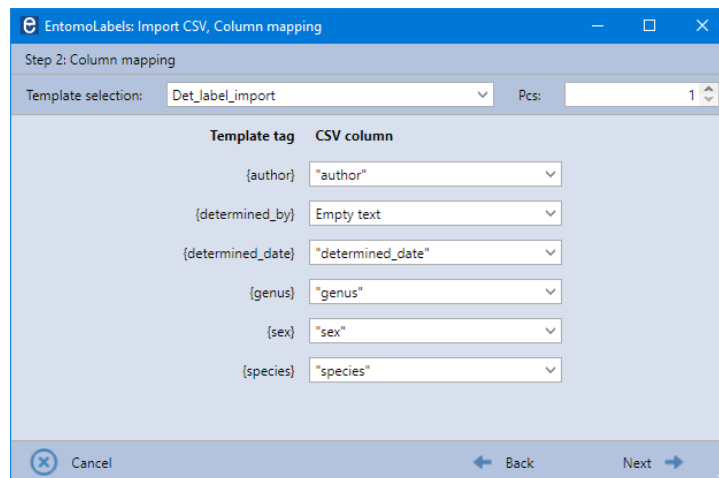

To manually map a tag with a CSV file column, expand the list and select a column.

When you map all desired tags with columns of the CSV file (you can leave undesired tags as 'Empty text') press the Next button. The next dialog will display a summary: the name of the CSV file, the number of lines to import, the template to which the data will be imported, and the number of copies of each label.
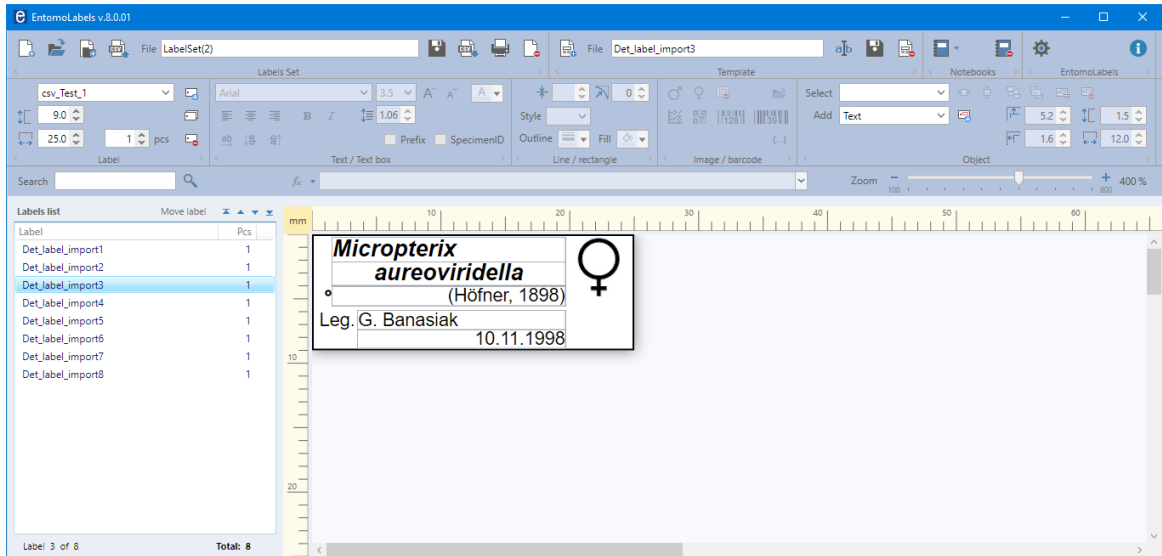
Imported data can be added to your existing LabelSet:
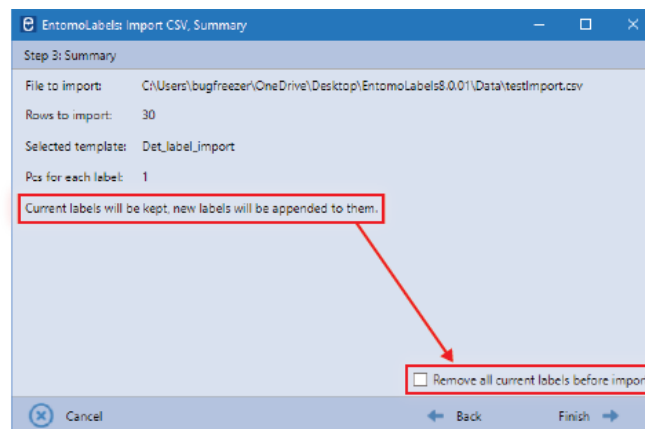
...or you can replace your existing LabelSet entirely with the import batch:
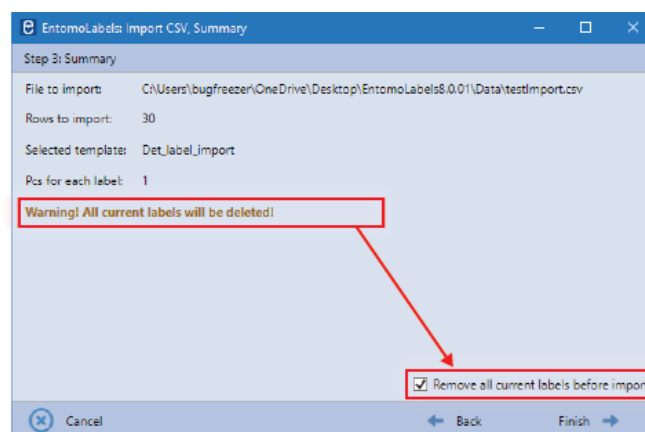
Pressing [Finish] begins the import and adds labels to the list. Each imported label has a name consisting of the template name and '_import[n]', where 'n' is the line number from the CSV file.

Importing small amounts of data goes quickly; depending on the speed of the computer, it can take over 10 seconds when importing thousands of lines from a CSV file.

Important! Remember that if you wish to make a label template that can accept CSV tags:

1. In the formula bar after selecting the textbox control, type a single-string (no spaces, please) textbox value in braces **{ }**, using alphanumeric and underscore "_" characters only. If the value is not correctly set, the template will not work for CSV data import.
2. Save the label as a new template so that EntomoLabels can recognize and use it for importing CSV data.

Using CSV tags to add images to a label:

Since the text of a CSV tag can be part of a larger text string, you can also create image file names using this method and use that value in the CSV image formula value. A good example of this would be to have a set of images for insect genders In the data set you are importing, if you have a gender code, you can make the gender code part of a file name so that the correct gender symbol is displayed for each specimen.

Other applications apply as well.

Exporting CSV Data

If you manually build a LabelSet, filled it with data, printed your labels, then realize that you want to use the data elsewhere, you can save that data as a CSV file.   By default, the exported data is stored in the Export subfolder of the EntomoLabels directory. Here are the steps to create a new CSV file:

1. Click on the Export CSV button on the Labels Set panel ![icon]. A standard Windows Save dialog will open to the default EntomoLabels export folder.
2. Enter the new file name and set the location, then click [Save]
3. That's all – the export is complete.

If you want to add data to an existing CSV file, select the existing file and say yes to appending the export data to the existing file, otherwise it will be overwritten with the new data.

Note: In the current release, all the labels in your LabelSet will be exported to a single file with no column headers, and using all the different templates you used to create the LabelSet. You therefore would have to separate the data and add your own column headers before importing into a database. This will be addressed in a future release.

Functions in EntomoLabels

Starting in version 8.0, we are adding functions to EntomoLabels per user requests. We will add more functions to EntomoLabels in future releases. Our first function, INC, is described below:

Function INC

In version 8.0 of EntomoLabels, the first function was implemented that allows for uniform numbering using a named increment across the current LabelSet. The syntax for the function is as follows:

{INC:IncrementLabel:NumberFormat} where:|
{ opening brace
INC - function name – INCrement
: colon
IncrementLabel - name of the numbering scheme
: colon
NumberFormat - number format, including the initial value
} closing brace

The first function call in the LabelSet initializes the initial value (Blank initial values start at 1). The same or any different formatting can be used the next time the function is called; the next value is set based on the one that was used in the first function call – If you try to change the start number for a given IncrementLabel later in a LabelSet, it will be ignored.

first use: {INC:SpecimenID:000100} ==> 000100
second use: {INC:SpecimenID:000} ==> 101
third use: {INC:SpecimenID:000} ==> 102 ...

If you want to use complex formatting symbols, you can put them together like this:
first use: ENT/COL/{INC:SlideID:12300}/20 ==> ENT/COL/12300/20
second use: ENT/COL/{INC:SlideID:12300}/20 ==> ENT/COL/12301/20
third use: ENT/COL/{INC:SlideID:12300}/20 ==> ENT/COL/12302/20 ...

It is possible to use multiple increment function instances simultaneously, even within a single label. See the included inc_test.eld for examples of this.

Since the functions increase the amount of text in the fields, for easier editing you can use the "expand" button to expand the editing field above the work area and edit it conveniently there. When you don't need it, you can collapse the field with the same button.
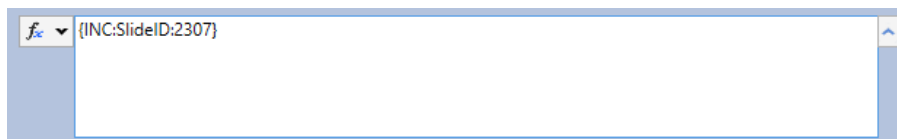
For easier management of the functions in the current label set, we added a function button ("f_x") with which you can check if and what functions have been used and easily reuse them. After pressing the "f_x" button, a dialog window will open in which the list of used functions will be displayed. Double clicking on any item in the list will insert the selected function into the edited field at the cursor position. If no function has been used in the current label set yet, the window will display a list of some examples of using functions that you can quickly use.
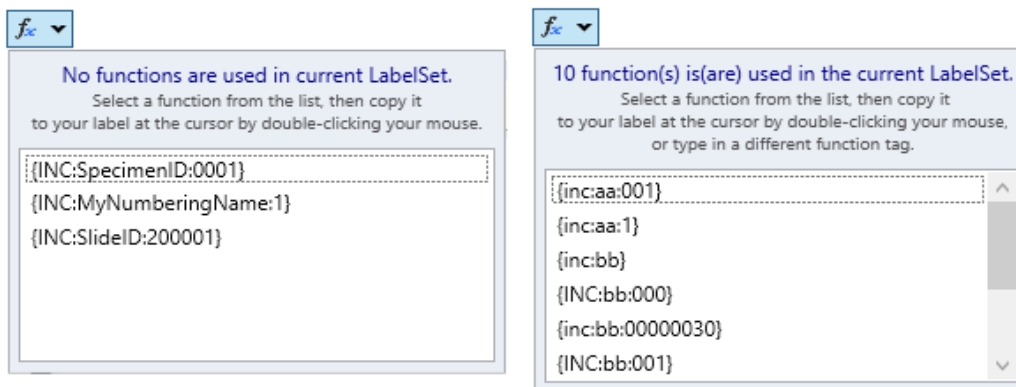
Appendices

1. DataMatrix in EntomoLabels

The maximum capacity of a DataMatrix 2D barcode is defined according to the standard by:

- the symbol size: number of rows and columns of dots
- the data type: numeric or alphanumeric
- in this code you can include a full, extended ASCII character set, the code also allows you to encode Arabic, Greek, Hebrew and Cyrillic characters
- six coding schemes selected in such a way that the resulting code is as small as possible (one optimal code is selected)
- up to 2335 alphanumeric characters, 1556 eight-bit characters or 3116 numeric characters can be encoded

Check if your printer prints accurately enough for the code reader to read a code.

Number of characters encoded by DataMatrix	Matrix size (points)	Sample code		
1-6 numeric 1-3 alphanumeric	10x10	123456	abc	
7-10 numeric 4-6 alphanumeric	12x12	1234567890	abcdef	
11-16 numeric 7-10 alphanumeric	14x14	1234567890 123456	abcdefghij	
17-20 numeric 11-13 alphanumeric	8x32	1234567890 1234567890	abcdefghijkl m	
21-24 numeric 14-16 alphanumeric	16x16	1234567890 1234567890 1234	abcdefghijkl mnop	
25-32 numeric 17-22 alphanumeric	12x26	1234567890 1234567890 1234567890 12	abcdefghijkl mnoprstuwx	

| 33-36 numeric
23-25
alphanumeric | 18x18 | 1234567890
1234567890
1234567890
123456 | abcdefghijkl
mnoprstuwx
yza | |
| 37-44 numeric
26-31
alphanumeric | 20x20 | 1234567890
1234567890
1234567890
1234567890
1234 | abcdefghijkl
mnoprstuwx
yzabcdefg | |

2. QR Code in EntomoLabels

A QR code uses four standardized encoding modes (numeric, alphanumeric, byte/binary, and kanji) to store data efficiently. It enables encoding of kanji / kana characters, hence it is popular in Japan. In addition, it allows you to encode characters that belong to the Arabic, Greek, Hebrew or Cyrillic alphabet as well as other symbols specified by the user.

QR Code is available in two versions: basic (Model 1) and extended (Model 2), which allows you to encode up to 7089 numerical characters, 4296 alphanumeric characters, 1817 Kanji characters, 2953 eight-bit binary data or 984 UTF-8 characters.

| 1234567890
abc | 1234567890
abc標本の一
つです | 1234567890
abcdefghijkl
これは私のコレ
クションの多く
の標本の一つ
です | 12345lkjslfk
sjflskfjlskfjls
kfjlskfdslkfdjl
dkfjhkdfjghd
kfgjhdkgfjhd
kgfjhdkgjhdk
fjghdkgjhdkg |