

# The labels module

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## 1. INTRODUCTION

RBINS and RMCA use several systems to produce the labels for the specimens.

These labels are sometimes placed in the alcohol / fluids solution and should resist chemical and mechanical damages. RBINS and RMCA are thus using printers with thermal transfer allowing them to print alcohol-resistant labels and with an auto-cut feature.

RBINS uses ZEBRA 300DPI printers and RMCA uses an AveryDennison AP 5.4 300dpi printer. RMCA is also printing the labels directly to an A4 laser printer but with specific support.

The Zebra and Avery printers require specific pilotes and the previous version of the RBINS DaRWIn delegated this task to an external reporting server and to the commercial software BarTender (<https://www.seagullscientific.com/>). The price for a licence is significant but the internal development of the driver(s) can also be very time-consuming and thus expensive. Nevertheless the BarTender server was out of service after a migration of the network environment demonstrating that this commercial solution was not as stable as it was expected.

The RBINS BarTender system was not working anymore after a migration of OS and RMCA has no licence of BarTender. It was thus decided to explore other options.

## 2. METHODOLOGY

RMCA choosed to develop the printer driver. This allows to integrate the production of the labels directly in the DaRWIN application. Nevertheless it is very time consuming and the work has to be redo when a new printer will be ordered.

RBINS decided to develop a more generic and versatile system allowing to export the fields information directly in CSV file and to print the labels using a spreadsheet application for the label formatting and the printing of the labels. The CSV file is imported in a "raw data" sheet and the data are reformatted in different labels templates available. This approach is relatively printer independant and labels can even be controlled and manually modified by the Curator or the Collection manager.

## 3. INFRASTRUCTURE

The 2 explored options allow a simplification of the DaRWIN ecosystem as no elaborated reporting module is required and that the commercial BarTender application is not used anymore.

## 4. RESULTS AND RECOMMENDATIONS

### 4.1 Direct printing using a dedicated printer driver

The Avery Thermal transfer printer could not easily be connected to the network and be found as other printers. A specific python spooler was then developed.

To be able to print labels, a service has to be launched on the user's computer. This service is started automatically at each Windows boot and consists in a "bat" file calling 2 python programs:

- The first one manages the connection and spooling
- The second one manages the printing of the labels.

The design of the labels is done by a script, coded in a language called EasyPlus. This script (prn file) is sent to the printer. A python script on the server is used to create the file, the script is called by DaRWIN.

In DaRWIN, to print labels, click on the button "Thermic print" found in the search results page, above the results :

Figure 1. Buttons to print, on the results page

This button is only visible by the conservator of a collection and can be limited to some collections only. The label printing on A4 pages is also possible by clicking on the button “print”.

It opens a new window where you can choose the template :

Figure 2. Template choice for A4 printing

Once the template is chosen, labels are displayed, and you can print the result on the printer of your choice:

My Preferences	Searches	Add	Administration	Help
Templates: <input type="text" value="7*3 Good Ecology Complete Locality"/> <input type="button" value="Print"/>				
Use the "print preview" feature of your browser to check the layout				
Anabantidae 4undefined <i>Microctenopoma nanum</i> (Günther,1896) Det. Pellegrin, J. 1927 Loc. Africa.Congo Belge.Congo, Democratic Republic of the.Mai Ndombe region.Mongende  Lat. -2.1 Long. 16.33333 Rec. Schouteden H. P.18941-18944.	Anabantidae 6undefined <i>Microctenopoma nanum</i> (Günther,1896) Det. Pellegrin, J. 1927 Loc. Africa.Congo Belge.Congo, Democratic Republic of the.Bas-Congo region.Butu Polo  Lat. -4.78333 Long. 12.96667 Rec. Schouteden H. P.18935-18940.	Anabantidae 2undefined <i>Microctenopoma nanum</i> (Günther,1896) Det. Pellegrin, J. 1927 Loc. Africa.Congo Belge.Congo, Democratic Republic of the.Kasai region.Dumb  Lat. -5.5 Long. 21 Rec. Schouteden H. P.18906-18907.		

Figure 3. Preview of the labels

## 4.2 Indirect printing using a CSV file and LibreOffice Calc

This approach is based on the search results and the possibility to select some specimens in the table. The data of the selected specimens are then saved as a CSV file.

An "How To" video is available at the following link:

[https://www.naturalheritage.be/darwin/help-and-manuals/help-and-manuals/HowToLabelsVERT.mp4/at\\_download/file](https://www.naturalheritage.be/darwin/help-and-manuals/help-and-manuals/HowToLabelsVERT.mp4/at_download/file)

### 4.2.1. Export data from Darwin

- Do not use the export option available on the bottom of the Search form
- Save first your research in DarWIN
- Go to "My Preferences" menu
- Select "Saved Search"
- Click on "get reports" option for the saved search corresponding to your labels in order to get the full export of data for the selected specimens.

### 4.2.2. Open the CSV export file in Notepad/Notepad++

- Select all text, titles included (CTRL+A)
- Copy selected, text copy (CTRL+C)

### 4.2.3. Download the template worksheet

- BE-RBINS VZ  
[https://www.naturalheritage.be/darwin/help-and-manuals/help-and-manuals/etiquettes\\_vertebrates\\_20191118.ods/at\\_download/file](https://www.naturalheritage.be/darwin/help-and-manuals/help-and-manuals/etiquettes_vertebrates_20191118.ods/at_download/file)

<b>How to create labels ready to print?</b>	
<b>1. Export data from Darwin</b>	
With "Saved search" tool. Next to your saved search, click on "Get report" (specimens) to get the full export of data for the selected specimens.	
<b>2. Open export in Notepad/Notepad++</b>	
<b>3. Copy data in "RAW-DARWIN" worksheet</b>	
How? Select all, titles included (CTRL+A), copy (CTRL+C) and paste (CTRL+V) in "RAW-DARWIN" worksheet, from first cell (A1). Column titles have to be pasted too. Otherwise the program won't work. You can copy data from different exports if needed. When you are ready, you can choose which format you wish to create by clicking on the corresponding button below. Each format is visible on the example worksheet with the corresponding name followed by "TEMPLATE". These worksheets are protected from edition.	
<b>4. Create labels</b>	
Click on one of the buttons below, depending on the format. A new worksheet will be created, with your labels formatted. You can edit each label in this worksheet if needed (example: abbreviate too long names or comments, adapt font size, etc.) Screen will update, let the program work until you see a message "Done!"	
<b>Which label do you wish to create?</b>	
A4 10 label:	7.6x5 cm labels
<b>5. Export labels to PDF</b>	
Select cells containing labels to print on worksheet with new labels. File > Export as PDF > Select "Selection/Selected sheet(s)" in General tab, Range section > Choose name and directory	
<b>Worksheets description</b>	
RAW-DARWIN: Where the raw data from DarWIN export are pasted, with headers.	
Data: Where the raw data from DarWIN export are edited to fit label fields.	
Labels 7.6x5 TEMPLATE: PROTECTED SHEET; format for 7.6x5 cm labels, used to create labels with info from Data worksheet.	
Labels 7.6x5 NEW: contains labels, with data in Data worksheet; can be edited and used for printing	
A4 10 Labels TEMPLATE: PROTECTED SHEET; format for A4 10 labels/page, used to create labels with info from Data worksheet.	
A4 10 Labels NEW: contains labels, with data in Data worksheet; can be edited and used for printing	

Figure 6. Example "10 labels" by A4 label

#### 4.2.4. Copy data in "RAW-DARWIN" worksheet

LibreOffice Calc Options has to be modified to allow macro to run (to do once)

- Go to macro security setting in Tools - Options - LibreOffice - Security
- Select the medium option + OK + OK

Goto in "RAW-DARWIN" worksheet

- Erase all content
- Select the first cell (A1).
- Paste (CTRL+V)

Column titles have to be pasted too. Otherwise the program won't work. You can copy data from different exports if needed.

When you are ready, you can choose which format you wish to create by clicking on the corresponding button below.

Each format is visible on the example worksheet with the corresponding name followed by “TEMPLATE”. These worksheets are protected from edition.

<b>IRSNB-KBIN 18541</b>		<b>Hyperollidae</b>
I.G.:	33806	<i>paratype</i>
TAXON:	<i>Bufo procerus</i> (Loveridge, 1922)	
SPEC.:	1, alcohol	
LOC.:	Tanzania; Udzungwa; Masisiwe	
	Lat: 8° 18' S - Long: 35° 55' E	
DATE:	9/2/1996	
LEG.:	Rasmussen J. B.	
DET.:	Rasmussen J. B.	
REM.:	general: Echange Musée de Copenhague (ex. ZMUCR 631323)	

Figure 7. Example “10 labels” by A4 label

<b>IRSNB-KBIN 18541</b>		<b>Colubridae</b>
I.G.:	33806	
Taxon:	<i>Bufo procerus</i> (Loveridge, 1922)	
Spec.:	1, alcohol	
Loc.:	Tanzania; Udzungwa; Masisiwe	
	Lat: 8° 18' S - Long: 35° 55' E	
Date:	9/2/1996	
Leg.:	Rasmussen J. B.	
Det.:	Rasmussen J. B.	
Rem.:	general: Echange Musée de Copenhague (ex. ZMUCR 631323)	

Figure 8. Example of 7.6 x 5 cm label

#### 4.2.5. Create labels

- Click on one of the buttons below, depending on the format. A new worksheet will be created, with your labels formatted.

You can edit each label in this worksheet if needed (example: abbreviate too long names or comments, adapt font size, etc.)

- Screen will update, let the program work until you see a message “Done!”

#### **4.2.6. Print labels**

- Select in the Print menu the printer, the paper and the other printing options
- Print labels using all, selected of current

This allows printing using the Thermal transfer printer like the Zebra printer but also the very cheap Brother thermal printer or to print on the main available printer devices on any support.

Authors : Jean-Marc Herpers, Franck Theeten, Marielle Adam & Patrick Semal