Image Management

Updated June 2026

For installation and upgrading: https://herbaria.plants.ox.ac.uk/bol/brahms/support/installv8

Training guide: https://herbaria.plants.ox.ac.uk/bol/content/software/v8/Getting_Started_BRAHMS.pdf

Demonstration database: https://herbaria.plants.ox.ac.uk/bol/brahms/support/conifers

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http://herbaria.plants.ox.ac.uk/bol/brahms/software/v8

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Introduction



Images can be linked to records in any table in BRAHMS. You can link multiple images to the same record.

Images may of any standard image file type – and may be registered in BRAHMS as physical file paths or as URL links. The image files themselves are not stored within BRAHMS.

Typically, images are of preserved specimens (insects, herbarium, fossils), illustrations/paintings, or of field/habit shots in any location. But equally, they may be images of maps, people, landscapes, *etc*.

Images can be viewed from the main image table itself, clearly one image per record, and/or from the records to which your images are linked. The main images table is opened using **Images/Documents > Image Records**.

The links between images and data records in BRAHMS are maintained in a separate Imagelinks table opening using **Images/Documents > Image Links**. This table holds the GUIDs of the image records, the GUIDs of the data records to which the images are linked and a few other details to indicate what records your images are linked to.

Various tools are provided to help manage images including options to import images and link images to records. As well as adding images directly to BRAHMS, you can add images to RDE files for several categories of data.

See examples on https://herbaria.plants.ox.ac.uk/bol/brahms/software/v8#images

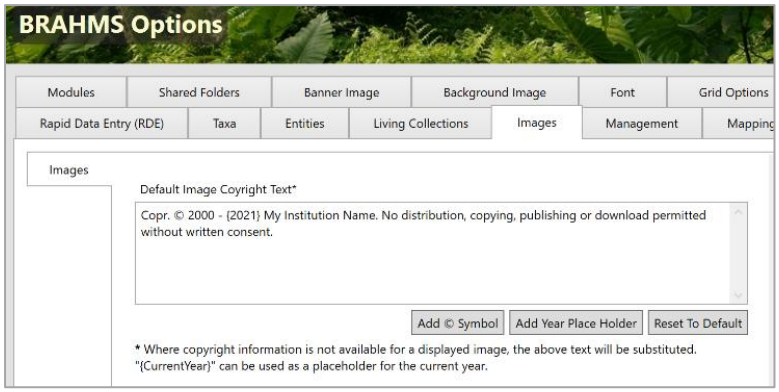
Managing and Viewing Image Files

Image copyright

Image copyright text can be stored and presented in one of 3 ways:

- A default text for all images can be added under **System > Options**.
- Copyright text can be added to the image table.
- Copyright text is extracted from the IPTC image header if this is available.

The priority is that the IPTC header will be used if available, then the image record data and finally, if neither available, your default copyright text.



A default image copyright can be added for all images – but these settings are overridden if copyright details are added to individual images.

The main image library

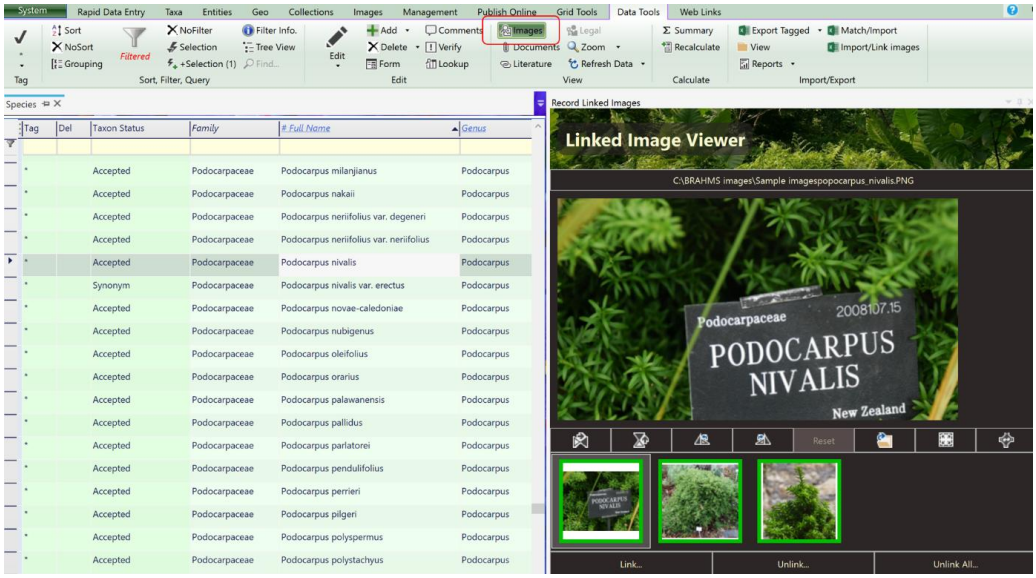
The main image table is opened using **Images > Image Records**. The image table only stores references and image details (*e.g.* caption) as added.

Field name	Notes
Image file	The file name of the image
Directory	The folder location of the image file
Image URL	The full URL of the image
File Found	Boolean field to indicate if the image can be located
Is Linked	Boolean field to indicate if the image is linked to a record in BRAHMS
# Image Links	The number of image links found per image
File Type	The type of image file
File Size	The image file size
Image Type	User defined classification of your images (scan, painting, illustration, etc.)
Image Caption	Free text
Foto Prefix	Used to further reference an image source
Foto Number	Used to further reference an image source
Foto Suffix	Used to further reference an image source
Priority	Numeric value to indicate image priority within your project
Image Date	Date image taken
Copyright	Free text
Not Online	Yes/No field to optional prevent uploading
Comments	Free text
Uploaded to BOL by	Who uploaded image to BRAHMS online
Uploaded to BOL on	Date image uploaded to BRAHMS online
Audit fields	Standard fields for who added/modified image record

Image table fields.

Viewing images

The image viewer is opened from any BRAHMS or RDE table using the **Images** toolbar option on **Data Tools**. Unless you are in the main image table, you will only see images if the image/s are linked to the data record you are checking.



If any images are linked to the current record, these will be displayed in the viewer with thumbs in the lower part of the form.

The image viewer has a number of controls below the main image:



Options, left to right:

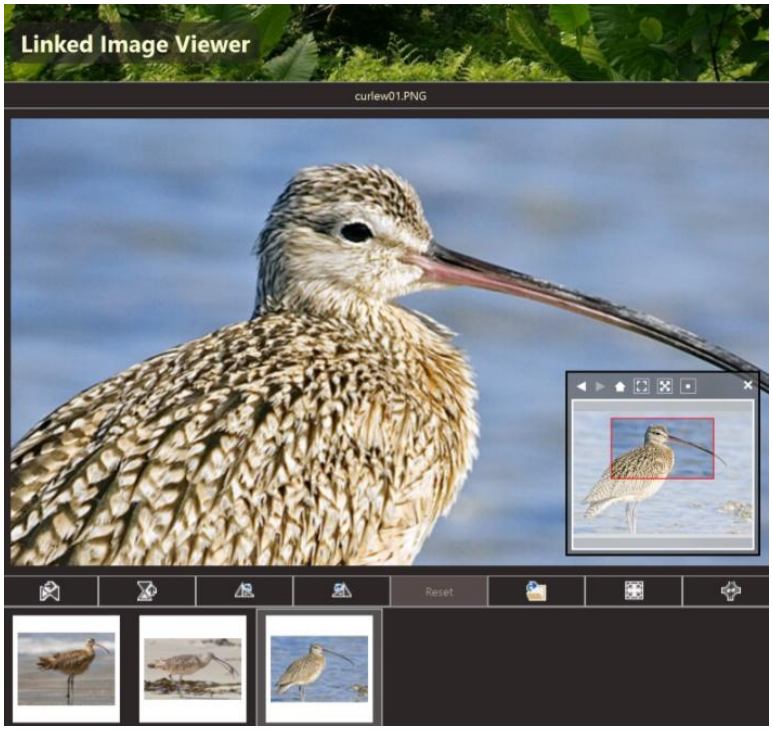
- Flip image horizontally, Flip image vertically
- Rotate left 90 degrees, Rotate right 90 degrees
- Reset
- Open image in your default image viewer
- Fit content within bounds
- Fill bounds with content

Image viewer function keys:

- Shift + Mouse Wheel: zoom
- Ctrl+ Mouse Wheel: pan



The slightly obscure icon bottom right is used to open the View Finder. This provides a zoom/pan image explore option.



The View Finder in use.

Image file metadata

Images may have additional information embedded within the image files themselves – data stored in the image header. These data are exposed when you view images directly in the image library.



The image data is likely to include a lot of camera settings but also data such as image date/time, copyright, keywords and GPS data, depending on your camera facilities and settings.

Image location

Images may be located in any location including in media libraries and cloud servers. They may be referenced in any standard way include UNC paths. Rather than referring to physical file names, you can also refer to URLs. Using URLs implies your images are accessible online. The great advantage is that you will be able to view the images even if you do not have access to the file directories. Also see the Image Folders section below.

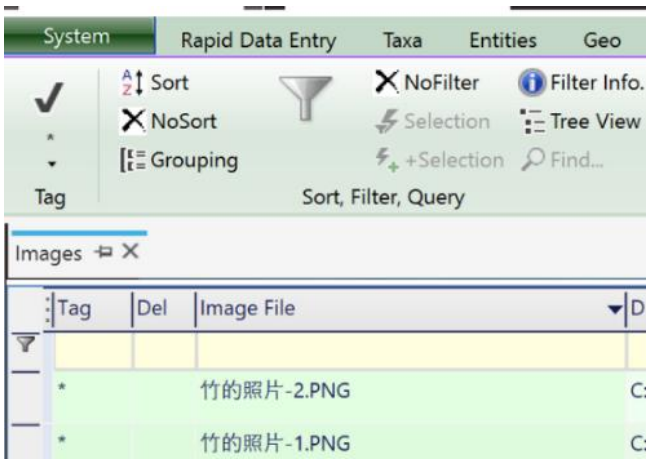
Image file names

It is good planning to think through your image file naming strategy. Avoid using spaces in image file names as these are not easily managed if you are publishing images online. Ideally File names will include components that can used to automate the linking of images to data records.

Currently BRAHMS can auto-link to specimens using barcodes or accession numbers embedded in the image file name. In the example label image named INPA_00012345_Label.JPG, BRAHMS would be able to locate the 00012345 as a barcode or an accession number. See section on Auto linking below.

The following are examples of valid file names and URL paths:

C:\Myimages\00015343.jpg
H:\SharedDrive\Images\00015343.png
\\myfilestore\MuseumFiles\InsectImages\AASY00ww4046_12089.jpg
http://medialib.naturalis.nl/file/id/L.2436411/format/large



Images file names may be in any language.

Checking image files exist

To check if images exist and/or can be located, open your images table and on the Images toolbar, select **Check Images Exist...** This option checks all (or tagged) image files registered in your images table and

updates the tick box ‘File Found’ field. If the image files exist on a network drive, ensure the drive is accessible before running the check.

Image folders and moving images

As you import images, the image folder names are added to the Image Folders table. This table can be opened directly using **Images/Documents > Image Folders**.

Each image folder has a GUID which is stored in the images table, assuming the images are no URLs.

If you move **all** the images from folder A to folder B, you can edit the image folder directory manually or using a lookup in the Image Folders table.

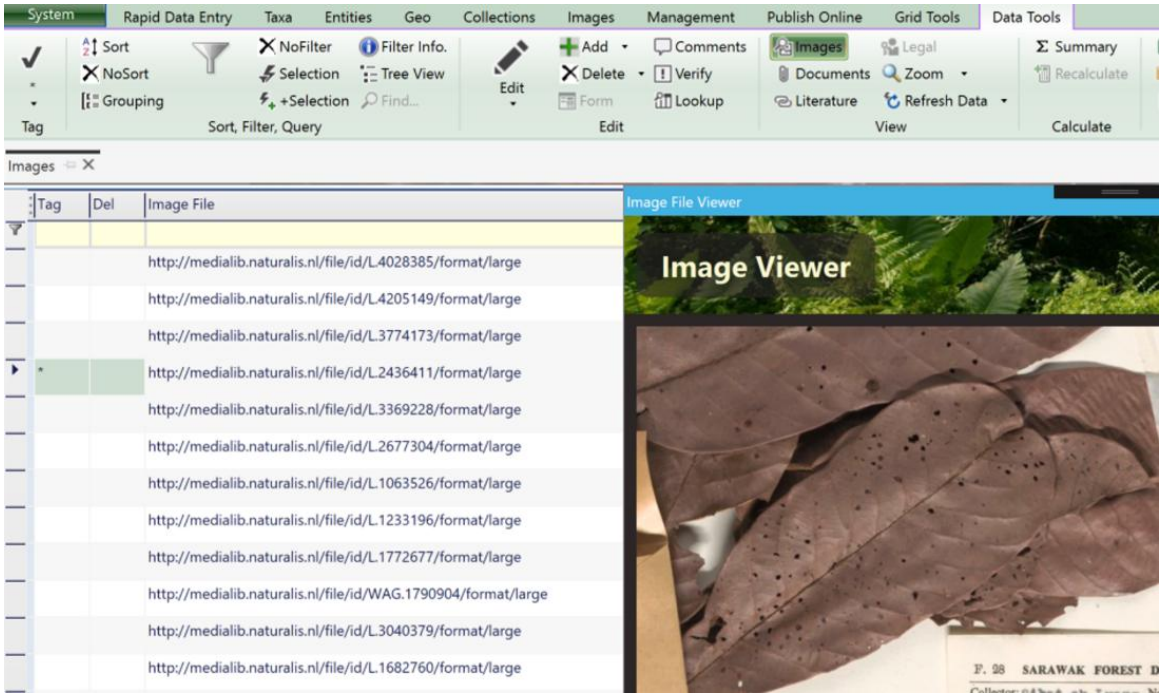
If you want to move only some images from folder A to folder B, it becomes more complicated as there is currently (up to v8.7.4) no tool in the images table to change the directory for tagged images. This will be added to v8.7.5. However, until we add this tool, there are 2 solutions:

A) Delete all images that have moved to a new folder – and then use the tool **Import Images** to import all the images from the new folder. The downside to this is that deleting the images will also delete any image links. If the images are not linked to records – or can be easily auto-linked, this is an option.
B) Run a simple SQL command to update the image directory GUID in the images table for tagged records. Do this by copying the new Image Folder Record ID to the clipboard and then, in the main images table, **after tagging the images to move**, select the main Query tool SQL table and issue the following command:

```
With mytags(recordid) as (select recordid from tags where tags.brahmsuserid = (select top 1
brahmsuserid from brahmsusers where knownas = 'my known as name'))
UPDATE images
set imagefolderid  = '2408fae4-514a-43bf-94f6-1d78abd01aae'
from mytags where mytags.recordid = imageid;
```

Using image URLs

You can store images as URL references, the advantage being that your images can be viewed from any location.



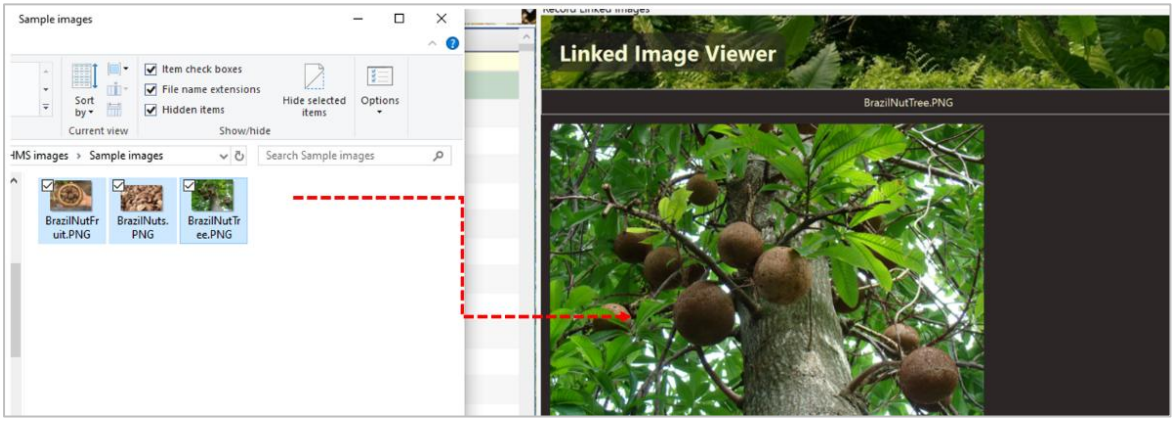
Images accessed from the Naturalis Museum media library. This BRAHMS database has over 5 million image records.

Linking images to data

Manually linking images to data records

Images can be linked to or unlinked from any record in BRAHMS when using the Image Viewer. As an example, linking images to a species record:

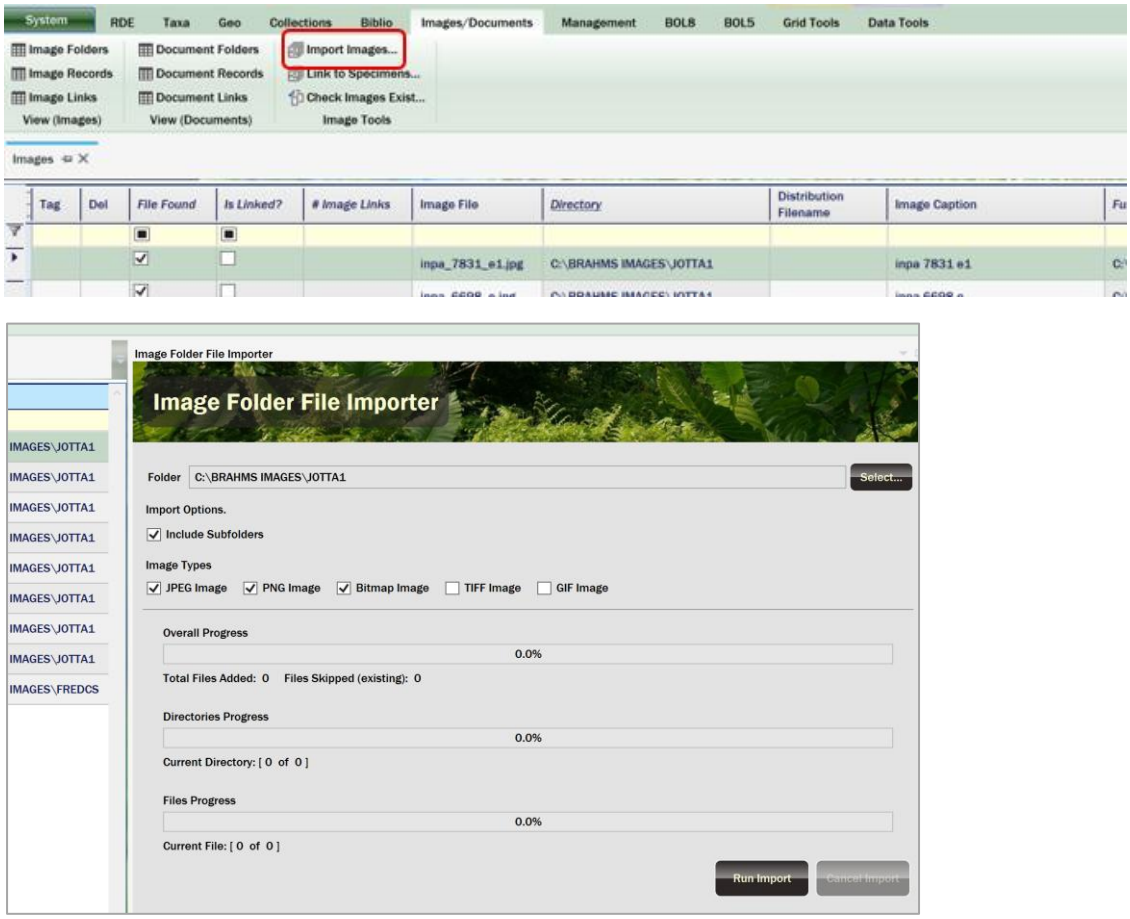
- Select **Taxa > Species** and then on **Data Tools**, select **Images...** to open the Image Viewer.
- Ensure you are in **Edit** mode.
- Here, you can either use the **Link** button or drag image(s) to the Image Viewer.
- This action will add the image reference to your images table and link the image to the species.



To link images to a record, in Edit mode, you can drag the image (or images) from your file manager onto the BRAHMS Image Viewer.

Importing images from selected folders

The Image Tool option **Import Images…** can be used to quickly register images from any selected folder.



Running the image file importer for a folder and its subfolders.

You can import many 1000s of images quickly using this tool. Once imported, you can sort and filter the images by file name as well as view the images. This is often helpful to check the file names and track down errors.

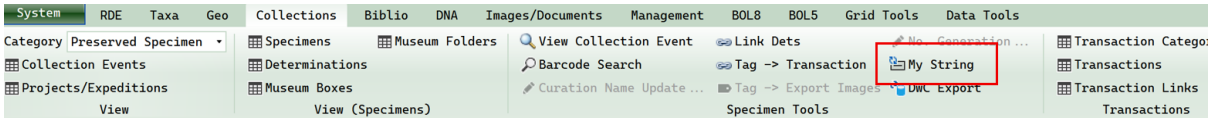
Auto-link images (v8.7.5 onwards)

From 8.7.5, BRAHMS has a new process to auto-link images. This replaces the option as added to 8.7.4 which was restricted to auto linking images to specimens based on barcode/accession numbering. The new tool has 2 stages:

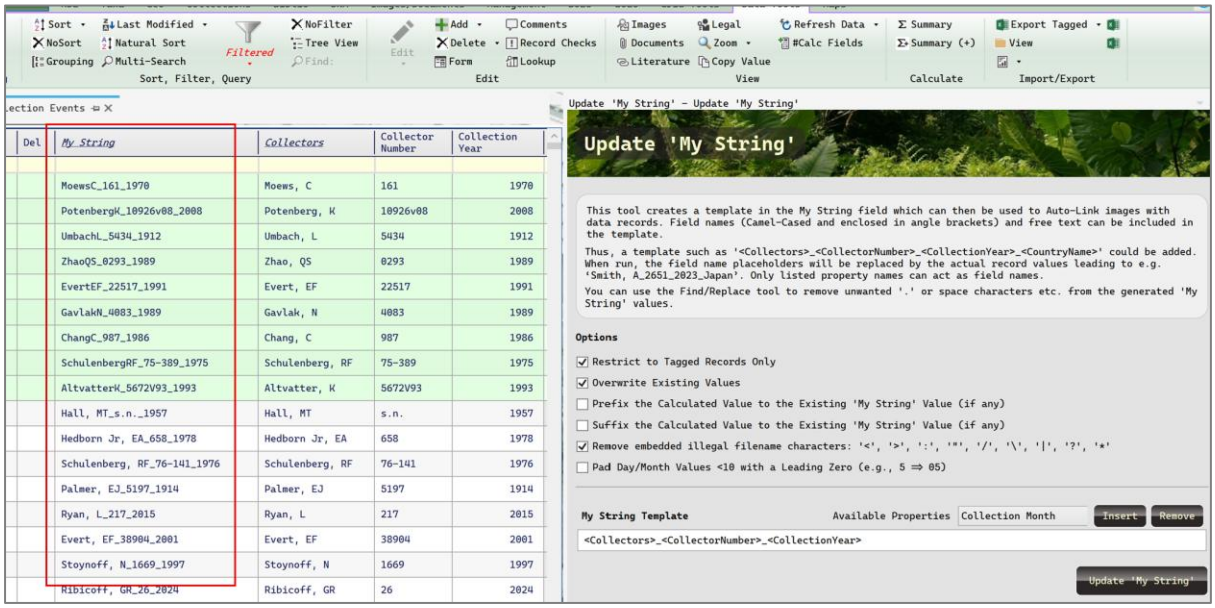
a) Generate a template in the My String field in the table where you wish to auto-link images (currently available in species, collection events, specimens, plants, seed accessions).
b) Auto-link your images based on this template.

Generating My String template

This tool is currently available in Species, Collection Events, Specimens, Living Collections and Seed Accessions.



The purpose of this tool is to generate a text string that will be uniquely equal to your image file names excluding the image file extensions. It may consist of constants (*e.g.* all of your images may begin with "OXF_" but the primary purpose of the function is to add one or more field name components that will vary record by record, for example a barcode or a collector name + collection number + year. When run, this function does not link images. Rather, it adds a text string, based on your template, to the My String character field. You can inspect this field and, if necessary, you can adjust it using e.g. a find/replace command. The field does NOT need to include image fil extensions such as .jpg.



Use Update My String to generate the values in this field based on your template.

In the above example, the template is set to <Collectors>_<CollectorNumber>_<CollectionYear> which adds a text string like SmithAB_10399_2023 to the My String field for the relevant record. Note that field names are enclosed in angle brackets as in <fieldname>. Adding text such as underscores between the <field names> is optional. It entirely depends on how your images are named. The fields permitted for use in these templates are listed under the Available Properties drop-down.

If necessary, you can use a simple Find/Replace command to additionally remove periods, commas and spaces from My String (as here in the collector names). Any image that matches the My String text in the image file name will be auto-linked.

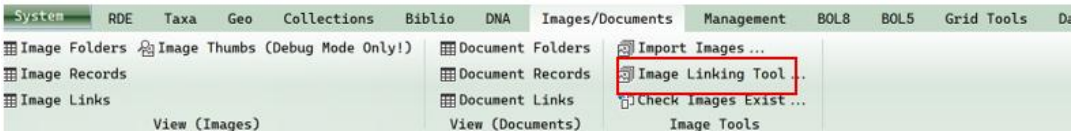
As another example, a template in the specimen table may be set to <MuseumCode>_<SpecimenAccession> or simply <SpecimenBarcode>. In the SpecimenAccession example, the museum code is added as may be necessary in a database with mixed museum codes and with accession numbers that are only unique within museum code.

If your image file names always have the same text prefix and/or suffix in the image file name, you can add this to the template as in the example OXF_<SpecimenBarcode>. This would be used where all image file names start 'OXF_'. You can also add a constant prefix during the auto-linking process as discussed below.

NB: if your images have various suffixes such as imagename_L1, imagename_L2, imagename_Habit where L1, L2 and Habit are added to represent label1, label2 and habit, these varying suffixes will be added during the auto-link process as discussed below.

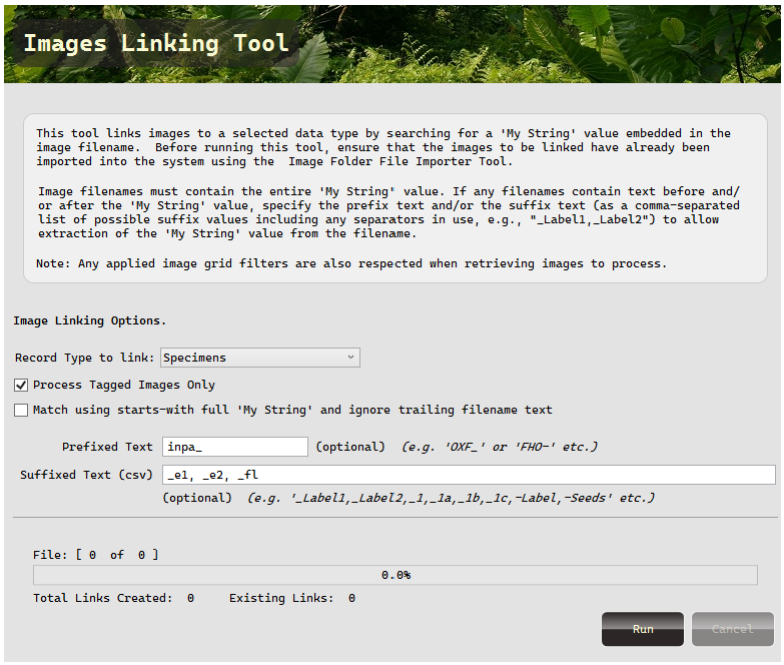
Auto-link images using My String

The auto-link process is run from the main Image table.



It processes all or tagged image records and matches the My String text in the selected table (e.g. specimens) to your images, If the text matches the image file name, it links that image to the relevant record.

The use of Suffixed Text may be important. You may have several images with the same basic file name, for example INPA_12345_e1, INPA_12345_e2, INPA_12345_fl. The _e1, _e2 and _fl may have been added to your image file names to indicate two images of labels and one of flowers. (etiqueta = label in Portuguese). In this case, you can add a comma separated list "_e1, _e2, _fl" to Suffixed Text on the linking form and the linking process will link all 3 images to INPA 12345.



The settings here will include images prefixed with inpa_ and optionally, with 3 additional endings.

Match using 'starts-with' option

If your image file names include text you wish to ignore, you can do this by selecting the option 'Match using starts-with ...' on the auto-link form.

For example, your image file names may start with collector name and number followed by a species name as in: 'Smith AB_12345_Pinus_caribaea'. However, you may wish to auto-link only using 'Smith AB_12345' as the species names used in your image file names may have changed in the database itself.

By selecting the 'Match using starts-with …' option, you can do this. However, this only works where the image name starts with your generated template in My String. Thus, it is not a 'contains' function.

Importing images and image links from Excel

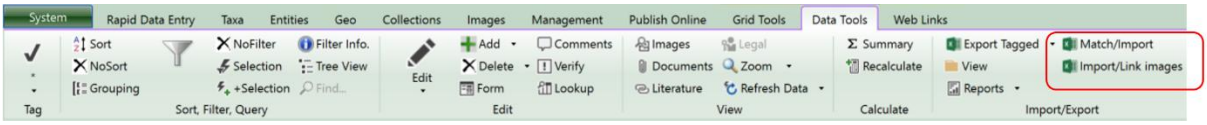
If you have many images to link to data in BRAHMS, and assuming you cannot use the auto-link features, it will more efficient to use the **Image Import Wizard** tool rather than manually linking the images via the Image Viewer. This tool has been designed to make it as simple as possible to link your images to any record in any BRAHMS table.

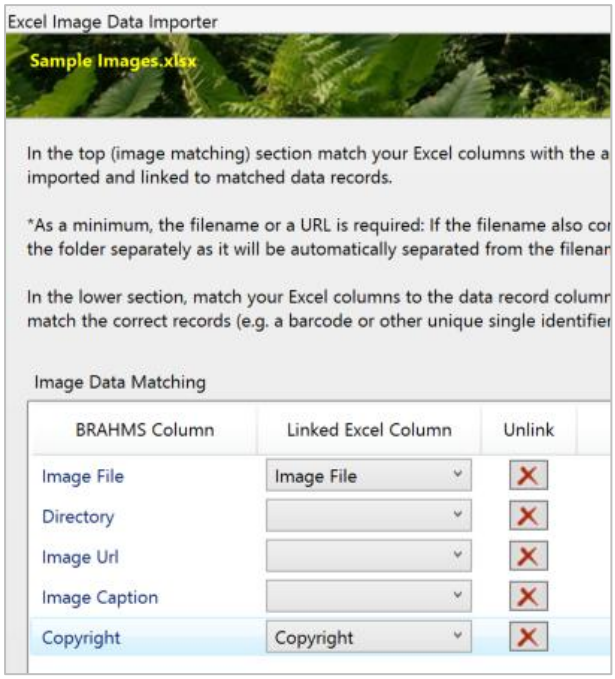
To use this option, all you need is an Excel (xlsx) table that has a column with the image file names (or URLs) and one or more columns that will allow you to match the records to your data records in BRAHMS.

The **Image Import Wizard** tool has two key functions:

a) to import images and image meta data into BRAHMS, matching your excel file image field names with those used in BRAHMS.
b) To link the images to the appropriate records in the currently opened BRAHMS table, using your selected record matching criteria.

To open the image import wizard tool, select **Import/Link images** on the **Data Tools** toolbar.

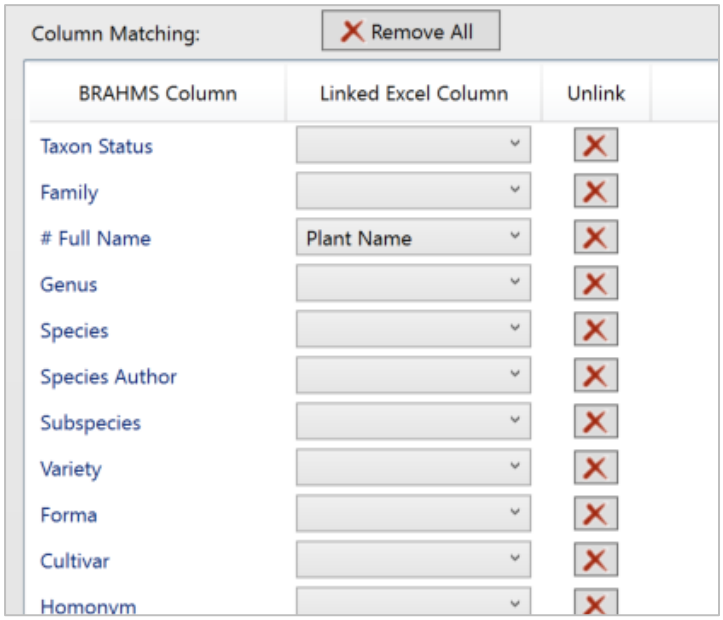




In the top part of the image matching section, you can match your Excel columns with the appropriate image data column(s) – these are the image data that will be imported and linked to matched data records. As a minimum, the Image File name or a URL is required: If the filename also contains the full directory /folder path there is no requirement to match the folder separately as it will be automatically separated from the filename. All other image

fields are optional. If URL entries are added to the Image File field, these will be treated as URLs and processed accordingly.

Note. The image import can be processed even if the image files are not currently accessible.



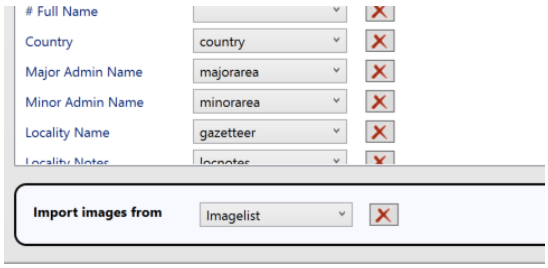
In the lower section, you can match your Excel columns to BRAHMS data record columns – this controls which images will be linked to which records. Ensure the columns selected match the correct records in your database. For example, if you are linking images to specimen records based on the barcode, ensure the Excel file has a column with the barcodes. In the example here, the match is made between the Excel field 'Plant Name' and the BRAHMS field # Full Name. Any field or series of fields can be selected.

Note. Make sure any columns you want to use in matching are visible in the grid before using this tool.

Importing images from Excel to RDE files

As discussed in the RDE sections of the main guide, images can be transferred from Excel files to RDE. When transferring RDE files to BRAHMS, the RDE image data are added to the main database.

If your Excel file includes image references as physical file names (path + file name) or URLs, these can be imported to and viewed in the RDE file. If there is more than one image, the entries should be comma or semi-colon separated or on different lines.



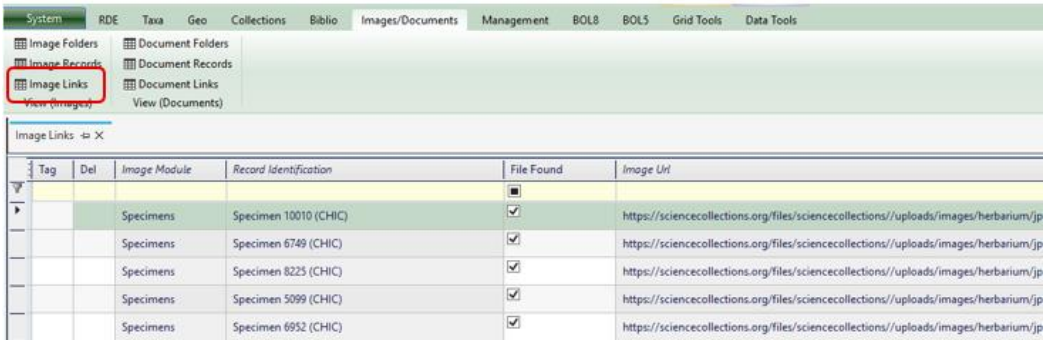
By default, BRAHMS checks for the fields Imagelist or Images and auto-selects either if they are available. Otherwise, you can select the image field using the field selector provided.

	A
1	Imagelist
2	C:\My Images\20180410.jpg
3	C:\My Images\0092333.jpg, C:\My Images\0092334.jpg
4	http://medialib.naturalis.nl/file/id/AMD.126077/format/large?fpi=1
5	http://medialib.naturalis.nl/file/id/AMD.125831/format/large?fpi=1, http://medialib.naturalis.nl/file/id/AMD.126096/format/large?fpi=1
6	

In the above Excel table, the column Imagelist includes physical file and URL references.

Viewing image links

You can view all image record links in your database using the **Image Links** menu option.



The image links table - in this case showing URLs.

Including images in reports

It is possible to include images in your reports using the Image Component and adding the image source (file path). You can also add watermark images to the report background. When creating a new report, you can choose to include the image link table in the available tables.

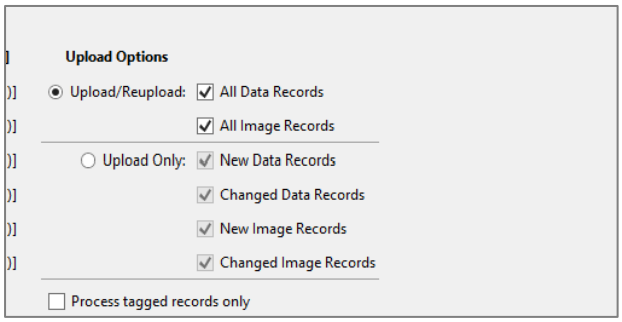
For further information on this, please contact the BRAHMS project to request some report samples.

Images on BRAHMS online

Introduction

You can upload your image record links to BRAHMS online (BOL) using BOL v8. When you upload any category of data, the data uploader provides the option to include and upload images links related to your data records. Note. The images themselves are not uploaded. It is your responsibility to ensure that your BOL system has access to any images you wish to display online.

Uploading image links

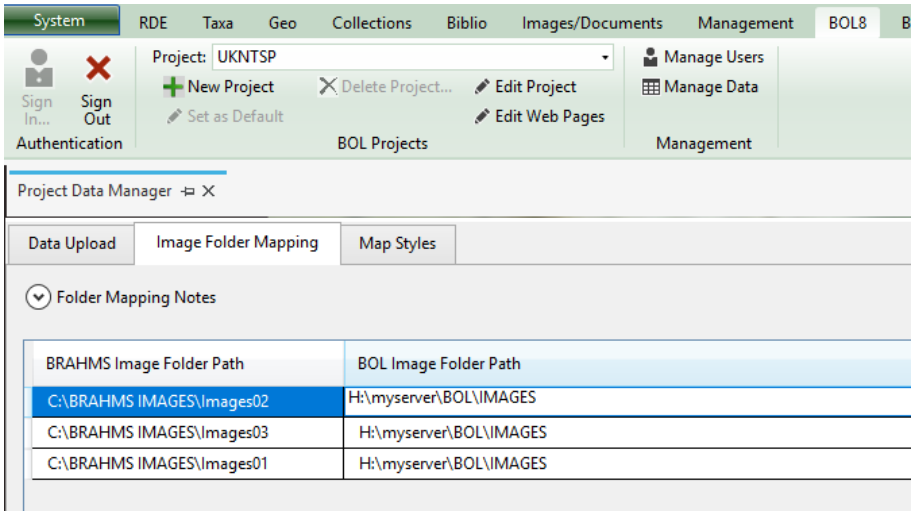


When uploading data, you have a choice about which image links, if any, you wish to upload.

Editing your image folders

Ideally, BRAHMS desktop and BOL would have access and thus share the same images. This is made easier by having URL links for your images. However, depending on your setup, it may be necessary to copy images to a different location.

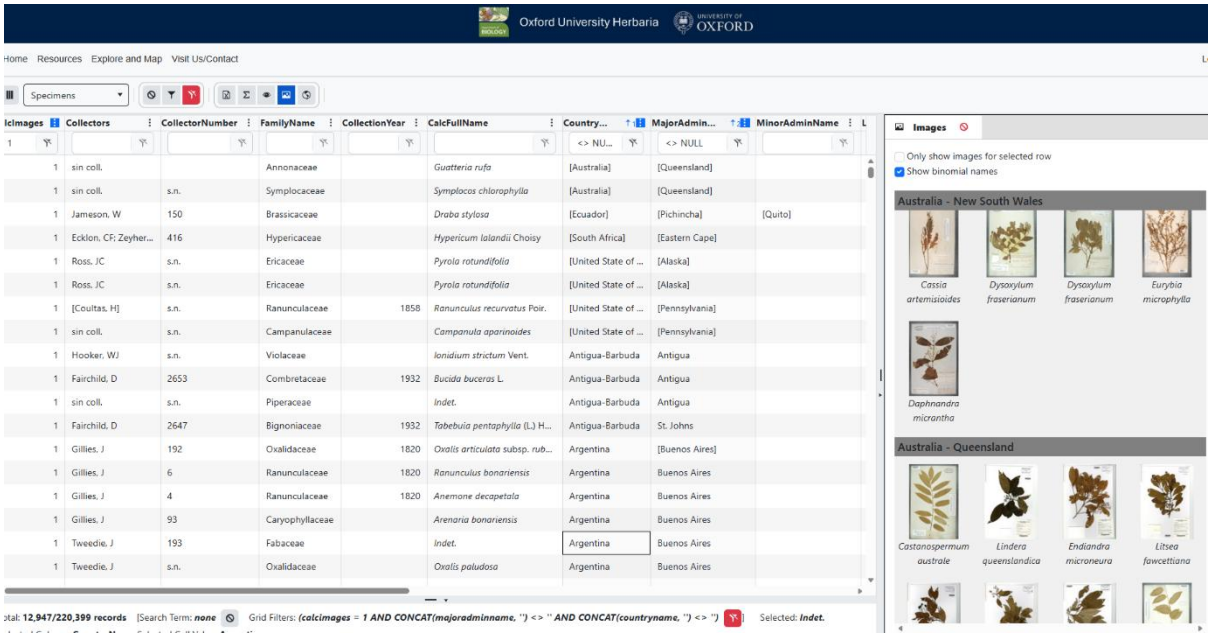
The BOL v8 editor provides an image director mapping feature making it very easy to move/copy physical image files from their existing folder structure to any other arrangement you choose for your online system.



Using the Image Folder Mapping option to setup the folder location of BOL images.

Viewing images on BOL

On BRAHMS online, new features have been added to display all images (as image thumbs) associated with records in the current data grid. The images displayed respect grid filters as these are applied. Furthermore, the images are displayed in groups that correspond to any selected data grid sort. For example, if you sort the data grid by genus, the image thumbs are grouped by genus. Clicking on any image thumb will go to and highlight the relevant data grid record. And clicking on the data grid will highlight the relevant image thumb.



Adding images from the garden app

If using the BRAHMS garden app, you can take images on your tablet linking these to plant records. The data and images can then be imported from the tablet into your BRAHMS database. See https://herbaria.plants.ox.ac.uk/bol/content/software/v8/BRAHMSapp_guide.pdf for further details.

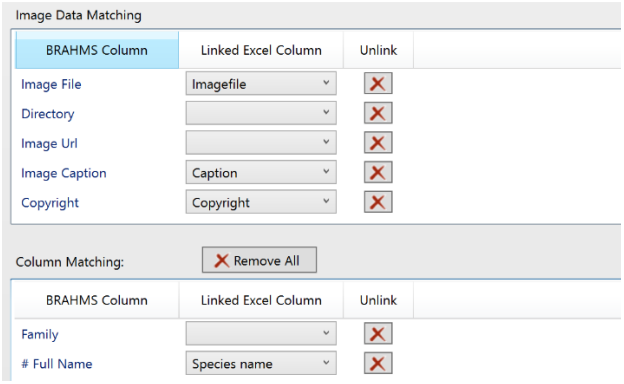
Appendix 1 – Examples importing images from Excel

Image import example 1

D15 | Sample caption

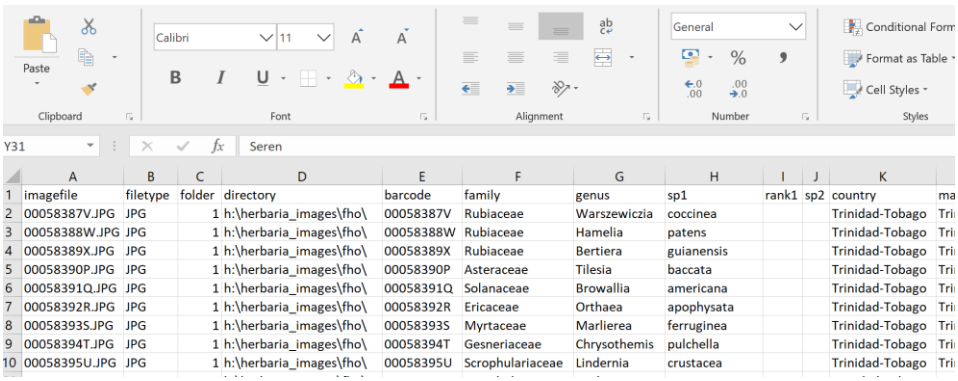
	A	B	C	D
1	Species name	Imagefile	Copyright	Caption
2	Pinus kamtschatica	C:\BRAHMS images\Sample images\Pinus_kamtschatica_01.jpg	BRAHMS Project demo only	Sample captior
3	Juniperus wallichiana var. loderi	C:\BRAHMS images\Sample images\Junip_wall_loderi.jpg	BRAHMS Project demo only	Sample captior
4	Pinus pinaster subsp. hamiltonii	C:\BRAHMS images\Sample images\image_867.jpg	BRAHMS Project demo only	Sample captior
5	C:\BRAHMS images\Sample images\Widdringtonia cupressoides	C:\BRAHMS images\Sample images\widdringtonia_image1.jpg	BRAHMS Project demo only	Sample captior

Snapshot of a sample Excel file with demo image details and also a field to use for record matching, in this example 'Species name'. Note that the imagefile field includes the full path name of the images. In other cases, file and directory names may be held in separate fields.



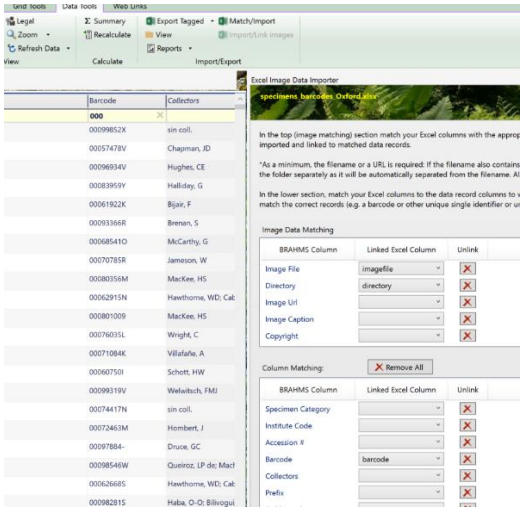
In the above example, the user has matched the image fields to be imported. Note that it is not necessary to add the Directory name - in this case, the image file includes the full path. The records are being matched using an excel field called Species name and this has been matched to the BRAHMS field #Full Name.

Image import example 2



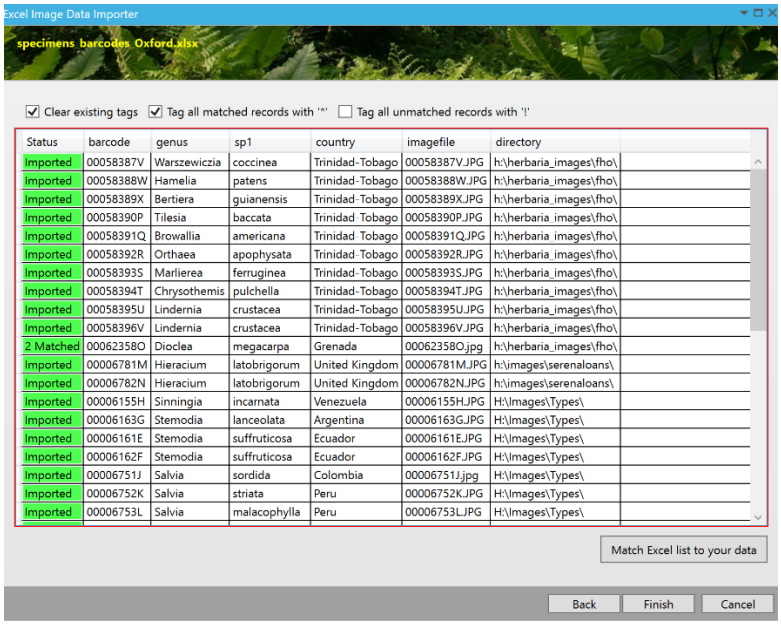
	A	B	C	D	E	F	G	H	I	J	K
1	imagefile	filetype	folder	directory	barcode	family	genus	sp1	rank1	sp2	country
2	00058387V.JPG	JPG	1	h:\herbaria_images\fho\	00058387V	Rubiaceae	Warszewiczia	coccinea			Trinidad-Tobago
3	00058388W.JPG	JPG	1	h:\herbaria_images\fho\	00058388W	Rubiaceae	Hamelia	patens			Trinidad-Tobago
4	00058389X.JPG	JPG	1	h:\herbaria_images\fho\	00058389X	Rubiaceae	Bertiera	guianensis			Trinidad-Tobago
5	00058390P.JPG	JPG	1	h:\herbaria_images\fho\	00058390P	Asteraceae	Tilesia	baccata			Trinidad-Tobago
6	00058391Q.JPG	JPG	1	h:\herbaria_images\fho\	00058391Q	Solanaceae	Browallia	americana			Trinidad-Tobago
7	00058392R.JPG	JPG	1	h:\herbaria_images\fho\	00058392R	Ericaceae	Orthaea	apophysata			Trinidad-Tobago
8	00058393S.JPG	JPG	1	h:\herbaria_images\fho\	00058393S	Myrtaceae	Marlierea	ferruginea			Trinidad-Tobago
9	00058394T.JPG	JPG	1	h:\herbaria_images\fho\	00058394T	Gesneriaceae	Chrysothemis	pulchella			Trinidad-Tobago
10	00058395U.JPG	JPG	1	h:\herbaria_images\fho\	00058395U	Scrophulariaceae	Lindernia	crustacea			Trinidad-Tobago

The excel file here includes barcodes that can be used to match to records in the BRAHMS specimen table. The other fields such as family, genus, sp1, in this case, need not be used for matching as the barcode is sufficient. The image file and directory names here are held in separate fields.



The selected image and matching settings.

Note that record matching may involve using several fields – you can select any group of fields that you feel will match records correctly. You may have exported data from BRAHMS to Excel including the record GUID – and this on its own would be sufficient.



Status	barcode	genus	sp1	country	imagefile	directory
Imported	00058387V	Warszewiczia	coccinea	Trinidad-Tobago	00058387V.JPG	h:\herbaria_images\fho\
Imported	00058388W	Hamelia	patens	Trinidad-Tobago	00058388W.JPG	h:\herbaria_images\fho\
Imported	00058389X	Bertiera	guianensis	Trinidad-Tobago	00058389X.JPG	h:\herbaria_images\fho\
Imported	00058390P	Tilesia	baccata	Trinidad-Tobago	00058390P.JPG	h:\herbaria_images\fho\
Imported	00058391Q	Browallia	americana	Trinidad-Tobago	00058391Q.JPG	h:\herbaria_images\fho\
Imported	00058392R	Orthaea	apophysata	Trinidad-Tobago	00058392R.JPG	h:\herbaria_images\fho\
Imported	00058393S	Marlierea	ferruginea	Trinidad-Tobago	00058393S.JPG	h:\herbaria_images\fho\
Imported	00058394T	Chrysothemis	pulchella	Trinidad-Tobago	00058394T.JPG	h:\herbaria_images\fho\
Imported	00058395U	Lindernia	crustacea	Trinidad-Tobago	00058395U.JPG	h:\herbaria_images\fho\
Imported	00058396V	Lindernia	crustacea	Trinidad-Tobago	00058396V.JPG	h:\herbaria_images\fho\
2 Matched	00062358O	Dioclea	megacarpa	Grenada	00062358O.jpg	h:\herbaria_images\fho\
Imported	00006781M	Hieracium	latobrigorum	United Kingdom	00006781M.JPG	h:\images\serenaloans\
Imported	00006782N	Hieracium	latobrigorum	United Kingdom	00006782NJPG	h:\images\serenaloans\
Imported	00006155H	Sinningia	incarnata	Venezuela	00006155HJPG	H:\Images\Types\
Imported	00006163G	Stemodia	lanceolata	Argentina	00006163GJPG	H:\Images\Types\
Imported	00006161E	Stemodia	suffruticosa	Ecuador	00006161EJPG	H:\Images\Types\
Imported	00006162F	Stemodia	suffruticosa	Ecuador	00006162FJPG	H:\Images\Types\
Imported	00006751J	Salvia	sordida	Colombia	00006751J.jpg	H:\Images\Types\
Imported	00006752K	Salvia	striata	Peru	00006752KJPG	H:\Images\Types\
Imported	00006753L	Salvia	malacophylla	Peru	00006753LJPG	H:\Images\Types\

As the data are imported, the Status is updated. Status options are:

- **Unmatched:** the importer is unable to match the data to a record in the current BRAHMS table. For example, a barcode cannot be located.
- **Matched:** the importer is able to match the data to a record in the current BRAHMS table. However, it is unable to add an image as the image data are not correctly available in the Excel file. Note that the image file itself is not be accessible, this will not stop the import.
- **2 Matched:** (2 or more) the importer has located more than one potential record match and the process cannot proceed.
- **Imported:** the image is successfully added to your image table and the image linked to a data record.

Exists: the image data have already been added and will not be added again.