

Online herbarium transactions: image based loans

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Introduction

BRAHMS and BRAHMS online (BOL) provide facilities to generate and manage online, image based loans. This document explains how to create an online loan transaction and how the loan is processed and then returned by the recipient.

Advantages of image based, online loans include:

- Requests for specimens can be processed and dispatched quickly, in some cases instantly.
- The physical material remains safely in place. In some cases, herbaria have a policy not to distribute historic or otherwise rare or fragile material.
- The data and images assembled for the loan, if they do not already exist, benefit the lender.
- The system encourages and facilitates a return of determinations which can be evaluated and electronically fed into the senders database.
- With no postage costs, faster processing and reduced paperwork, the financial gain can be significant, especially for larger herbaria.

If you already have a virtual herbarium with specimen images online, in some respects, your herbarium is already acting as a large online loan service. The online transaction module discussed here ensures that the material requested is available online, that the correct details are communicated to the borrower and that some form of arrangement is reached encouraging the return of determinations – which is normally the principal objective of the lender.

Summary of steps

For the lending institution

- Create a normal loan transaction record in BRAHMS for the requested material.
- Ensure that the specimens are imaged and that these images are in place on your server.
- Use the BRAHMS option to publish the transaction online.
- Notify the borrower that the loan is available by sending the transaction URL and ID.
- In due course, receive the returned determinations file and incorporate updated names and related details to the local database as appropriate.

For the recipient

- Login to BRAHMS online using the transaction URL received.
- Confirm or otherwise edit the names over a period of time using the images and online tools provided. If preferred, edit an Excel work sheet.
- Return the edited data either in stages or when all specimens have been checked and annotated.

Instructions for creating an online loan

Your website

If you do not already have a BRAHMS online website for your herbarium, this must be created. The herbarium website you create may be solely to support your online loans service. Alternatively, the website may be more general in nature and include online loans as one of its functions.

Website creation is discussed in the [BRAHMS WebConnect](#) documentation.

Some notes on specimen images

Images are a critical part of the online loans process. Images replace physical specimens in the transaction and thus it is important that image quality is good, ideally sufficient to make an identification. There are different views on the minimum image resolution necessary and this value may vary by taxonomic group. Clearly, the higher the quality of the image, the better. However, as image file size increases, most image related actions tend to slow up. These may include (depending in your facilities) initial scanning and the saving and copying of the images online. With very high resolution images (*e.g.* 600dpi or more), additional costs may be incurred simply with file storage and maintenance, especially if large numbers of images are being stored. The actual viewing of images online is not necessarily slower with larger file size as BRAHMS online deploys Zoomify to facilitate efficient image zooming.

In practice, the imaging of herbarium specimens is a trade-off between image quality, time, cost and the reasons for imaging.

Email for receiving returning data

Before processing any online transactions, an email address must be entered in your overall BRAHMS configuration to receive the return of details (names and annotations) concerning the material in question. This will be normally be the email address of the herbarium curator or loans manager.

Select **Admin > Project configuration > Transactions > Email for online loan returns**.

System wide settings | **Personal settings for Administration**

Barc/acc | Track | UserFile | Indexing | SysFont | BOL | PrivateFields | ForcedChecks | AutoComplete | FoxPro | Living collections

DatabaseID | FolderSettings | ExternalFiles | Cleaning | Dates | SpeciesFormat | Geo | Maps | Biblio | RDE | **Transactions** | Seedbank | Collections

You can enter standard text here to include in loan reminder letters. To include this text in a Visual Report, you need to include a report object linked to the data source sys.loanremtxt.

Loan reminder letter text

Default sort for transaction specimen lists

- ☒ Collector + number
- ☐ Barcode
- ☐ Family+species+collector+number
- ☐ Species + collector + number
- ☐ Order of entry

☐ Open transaction sorted by transaction number

Email for online loan returns:

Save and Exit

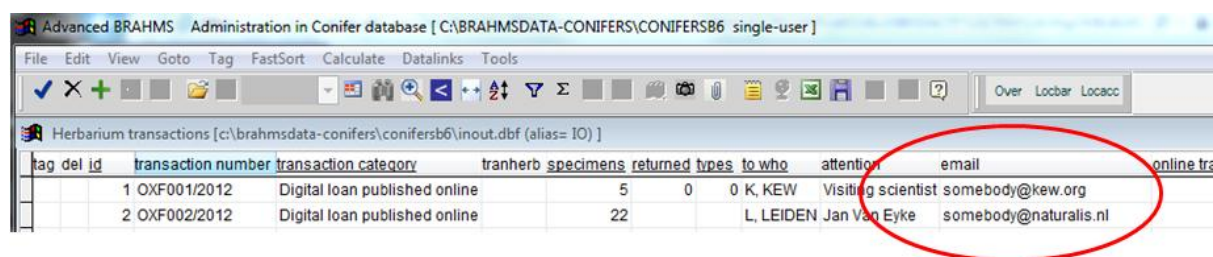
Creating the transaction in BRAHMS

Before placing data/images for the requested material online, a transaction record must be created in BRAHMS in the normal way. This process is described in the BRAHMS manual section on Herbarium transactions. In brief:

- A transaction record is entered using **Herbaria > Transactions file**.
- This will include a link to the recipient whose address should already be entered in your herbarium list (**Herbaria > Herbarium list**).
- The selected specimens, ideally will one or more image links within BRAHMS, are then linked to the transaction record using one of several methods. If the data for the requested specimens have been newly added to an RDE file, the records can be auto-linked on transferring the RDE file to BRAHMS. If the records are already in BRAHMS, you can manually link specimens one by one or alternatively, extract the specimens (e.g. everything in a genus) and then auto-link tagged specimen records in the specimen extract file to the transaction using the **Tools** option provided.

Entering the email for the loan recipient

When entering the transaction record, you must include the email of the loan recipient. This will be used to identify the recipient when they login to the BRAHMS online service.



Advanced BRAHMS Administration in Conifer database [C:\BRAHMSDATA-CONIFERS\CONIFERSB6 single-user]

File Edit View Goto Tag FastSort Calculate Datalinks Tools

Herbarium transactions [c:\brahmsdata-conifers\conifersb6\inout.dbf (alias= IO)]

tag	del	id	transaction number	transaction category	tranherb	specimens	returned	types	to who	attention	email	online trs
		1	OXF001/2012	Digital loan published online		5	0	0	K, KEW	Visiting scientist	somebody@kew.org	
		2	OXF002/2012	Digital loan published online		22			L, LEIDEN	Jan Van Eyke	somebody@naturalis.nl	

Uploading the transaction

The equivalent to physically sending the loan by post is publishing the transaction on your website. When you do this, the data and images for this loan are published online but only available and visible as a transaction to the recipient.

The images linked to the relevant specimens in BRAHMS must be separately copied to the correct folder on your server otherwise they will not be visible. Notes on image folders are provided in the WebConnect guide.


Here are the steps:

- Select **PublishOnline > Upload or remove data from the selected server** and log in using your online credentials.
- Choose the **Herbarium transaction** option and select the transaction number to upload and then **Create XML and upload to server**.

Database ID: AGLAIA

Upload data Delete data Upload history

Data category to process and/or upload

- ☐ Taxa Total taxa in species file: 805
- ☐ Gazetteer
- ☐ Botanical records, specimens and determinations
- ☐ DST - Species distribution summaries
- ☐ Seed passport, processing and germination tests
- ☐ Living collections
- ☐ Images
- ☒ Herbarium transaction 

Restrictions

- ☒ Restrict to tagged entries in batch uploads table
- ☐ Extracted records for relevant data category
- ☐ Tagged records for relevant data category
- ☐ Restrict specimens to herbarium:
- ☐ Restrict specimens of a selected category
- ☐ Tagged families only
- ☐ Tagged genera only
- ☐ Exclude material tagged NOTONLINE
- ☐ Restrict locality data for PROTECT species

What happens when you upload a transaction:


- The specimens linked to the transaction are uploaded to your server - even if these specimens have already been uploaded. This ensures the transaction specimens are online and up to date.
- Image data (links between images and specimens, keywords, copyright notes, captions if provided) for these specimens are uploaded as available. As mentioned above, the actual image files must be copied as a separate process to the correct images folder on your server.
- The transaction details (ID, date, address, *etc.*) are uploaded.
- Finally, an online transaction URL is generated and added to the transaction record in BRAHMS. The transaction URL is discussed further below.

Database ID: AGLAIA

Upload data Delete data Upload history

The status report lists all uploads made from this database to BRAHMS online server. Uploads are categorized by type (e.g. Botanical records, images, taxa). The status is: Queued (data submitted to server and in upload queue); Importing (data currently being imported to server database); Complete (data import complete). Import error reported in the status field. The update history is auto-updated when you open this page. The Refresh option can be used to force an update if you are monitoring uploads.

Use the separate option to update the online transaction URL field in your main transaction file.

TAG DEL	ID	CATEGORY	DATABASE	SUPPLIED BY	SUPPLIED ON	UPLOADED BY	UPLOADED ON	FILENAME	FILESIZE	IMPORT TIME	STATUS
	1213	Botanical Re	AGLAIA	Administration	14/03/2020	DLF	14/03/2020	AGLAIA-0	435	00:34	Complete
<input type="checkbox"/>	1214	Botanical Re	AGLAIA	Administration	14/03/2020	DLF	14/03/2020	AGLAIA-0	192	00:35	Complete
<input type="checkbox"/>	1215	Images	AGLAIA	Administration	14/03/2020	DLF	14/03/2020	AGLAIA-0	637	00:18	Complete
<input type="checkbox"/>	1628	Botanical Re	AGLAIA	Administration	07/01/2012	DLF	07/01/2012	AGLAIA-0	7	00:00	Importing
<input type="checkbox"/>	1629	Images	AGLAIA	Administration	07/01/2012	DLF	07/01/2012	AGLAIA-0	2	00:00	Queued
<input type="checkbox"/>	1630	Transaction	AGLAIA	Administration	07/01/2012	DLF	07/01/2012	AGLAIA-0	0	00:00	Queued

The status of the upload can be monitored on the **Upload history** tab.

Advanced BRAHMS Administration in Aglaia [C:\BRAHMSDATA-AGLAIA\AGLAIAMERGED single-user]

File Edit View Goto Tag FastSort Calculate Datalinks Tools

Herbarium transactions [c:\brahmsdata-aglaia\aglaiamerged\inout.dbf (alias= IO)]

del id	transaction number	transaction category	specimens	returned	types	to who	attention	online transaction url
1	KEP01JULY2012	Digital loans	8	0	0	L, LEIDEN	Visitor	http://herbaria.plants.ox.ac.uk/bol/aglaia/Results/Transaction/8

When you generate an online transaction, a transaction URL is added to the transaction record.

The transaction URL, auto-generated when you post the transaction online, is added to the relevant transaction record in BRAHMS (**Herbaria > Transactions file**). This URL is a direct website link to the transaction. It requires a login to open.

Dispatching a covering email/letter

Your next task is to send the all-important transaction URL to the borrowing institution with an appropriate covering note explaining that the material requested is available online.

It will be advisable to include a standard attachment with a simple description of online editing procedures as explained in the next section together with the usual persuasive blurb encouraging a speedy return of determinations.

Instructions for online loan recipients

Login to view and edit the transaction

When the user goes to the transaction URL on the BRAHMS website, he/she will be asked to log in. The login provides full editing access to the transaction. Nobody else can see the transaction.

The login name will be their email. If the login password has been forgotten or the recipient is not registered on the BRAHMS website, they can easily retrieve the password or register.

After login, they will be taken by default to the **Transaction** data grid which lists the relevant specimens.

The screenshot shows the Oxford University Herbaria website. The navigation menu at the top includes 'Summary', 'Family', 'Genus', 'Species', 'Bot. Recs', 'Transaction' (highlighted with a red circle), and 'Images'. On the right, there are 'Grid View' and 'Reports' buttons, also highlighted with red circles. The main content area displays transaction details for 'Transaction: KEF01JULY2012'. Below this, there is a table of transaction specimens.

T	Collector	Number	Herbarium	Barcode	Accession	Type category	Family	Species	Current Family	Current Species	Collected	Country	Major	Image
1	Chua, L.S.L.	FRI38...	KEP	95545			Meliaceae	Aglaia rubiginosa	Meliaceae	Aglaia rubiginosa	1992-0...	Malay...	Selan...	
2	Chua, L.S.L.	FRI38...	KEP		95544		Meliaceae	Aglaia rubiginosa	Meliaceae	Aglaia rubiginosa	1992-0...	Malay...	Selan...	
3	Corner, E.J.H.	SFN3...	KEP	95561			Meliaceae	Aglaia rubiginosa	Meliaceae	Aglaia rubiginosa	1939-0...	Malay...	Johor	
4	Corner, E.J.H.	SFN3...	KEP		95560		Meliaceae	Aglaia rubiginosa	Meliaceae	Aglaia rubiginosa	1939-0...	Malay...	Johor	
5	Ngadiman	SFN3...	KEP	95566			Meliaceae	Aglaia rubiginosa	Meliaceae	Aglaia rubiginosa	1939-0...	Malay...	Johor	

The default transaction view in Grid view mode. And below, viewed in Report mode.

The material can also be viewed using any of the other active menu options in grid or report mode.

Summary Family Genus Species Bot. Recs Transaction Images

Transaction: KEP01JULY2012

Attn: Visitor Rijksherbarium P. O. Box 9514, 2300 RA Leiden Netherlands	Database: AGLAIA Category: Digital loans Period (from - to): 01/07/2012 - 01/07/2013 Supplied by: Administration
--	---

Comments: 8 specimen(s) of Aglaia (Meliaceae) [Return my details...](#)

[Return to 'My Transactions' list](#)

Collection Summary	Herbarium Summary	Type Summary	Image(s)
Current Name: Meliaceae <i>Aglaia rubiginosa</i> (Hiern) Pannell Collector: Chua, L.S.L., FRI38757, 1992-04-28 (y-m-d). Malaysia ; Selangor; Kuala Selangor; Sungai Karang Forest Reserve.	Herbarium Code: KEP Category: Extra sheet Barcode: 95545.	no type status.	
	Herbarium Code: KEP Category: Sheet Accession No: 95544.	no type status.	
Current Name: Meliaceae <i>Aglaia rubiginosa</i> (Hiern) Pannell Collector: Corner, E.J.H., SFN36601, 1939-06-25 (y-m-d). With Henderson, M.R.	Herbarium Code: KEP Category: Extra sheet Barcode: 95561	no type status.	

In Report mode, data and images can be viewed on a single page.

To view all images together, select the **Images** menu

http://herbaria.plants.ox.ac.uk/bol/oxford/Results?view=Transaction Results

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Summary Family Genus Species Bot. Recs Transaction **Images**

Menu
Display Options
Navigator
Toolbox

Meliaceae
Aglaia

A. rubiginosa *A. rubiginosa* *A. rubiginosa*

A. rubiginosa *A. rubiginosa* *A. rubiginosa*

The images tab displays all images for this transaction, sorted by taxa.

Images and Zoomify

Images can be viewed specimen by specimen on the transaction menu (grid or reports) or collectively from the Images menu. In either case, images are displayed in Zoomify and the user can explore each image to the maximum detail provided.

Together with the data provided (or read from images of labels), the recipient can decide on the identification of the specimens

Editing determinations and saving changes



The toolbar shown above in the red circle opens the determination editing form. The form is used to edit specimen determinations as required. The form provides the options:

- ❖ Existing det. is confirmed
- ❖ Existing det. is incorrect (det. Unknown)
- ❖ Existing det. is incorrect (new det. doubtful)
- ❖ Existing det. is incorrect (new det. Is certain)

A screenshot of the 'Determination Editor' window. The form contains the following fields and options:

- Existing Det:** Meliaceae *Aglaiia rubiginosa*
- Det. Certainty:** Four radio button options:
 - ☐ Existing det. is confirmed
 - ☐ Existing det. is incorrect (det. unknown)
 - ☐ Existing det. is incorrect (new det. doubtful)
 - ☒ Existing det. is incorrect (new det. is certain)
- Family:** Meliaceae
- Genus:** Aglaila
- Sp1:** rubiginosa
- Author1:** (Hiern) Pannell
- Rank1:** (empty field)
- Sp2:** (empty field)
- Author2:** (empty field)
- Rank2:** (empty field)
- Sp3:** (empty field)
- Author3:** (empty field)
- Collector:** Chua, L.S.L.
- Number:** FR138757
- Collected:** 1992-04-28
- Country:** Malaysia
- Type Notes:** There are my type notes
- Other Comments:** Any other comments can be added here
- Buttons:** Apply det., Apply to tagged, Cancel

The determination editing form. If options 3 or 4 are selected, the species editing options are enabled as shown here.

Transaction Specimens

Tagging: [Icons]

Page 1 of 1

Tag	Collector	Number	Herbarium	Barcode
<input checked="" type="checkbox"/>	Chua, L.S.L.	FRI3...	KEP	95545
<input type="checkbox"/>	Chua, L.S.L.	FRI3...	KEP	
<input checked="" type="checkbox"/>	Corner, E....	SFN...	KEP	95561
<input type="checkbox"/>	Corner, E....	SFN...	KEP	
<input checked="" type="checkbox"/>	Ngadiman	SFN...	KEP	95566
<input type="checkbox"/>	Ngadiman	SFN...	KEP	
<input type="checkbox"/>	Ngadiman	SFN...	KEP	95557
<input type="checkbox"/>	Ngadiman	SFN...	KEP	

Sp3: []

Author3: []

Collector: Chua, L.S.L.
Number: FRI38757
Collected: 1992-04-28
Country: Malaysia

Type Notes: The type has been lost.

Other Comments: []

Apply det. Apply to tagged Cancel

The recipient can apply the current decision to a single specimen or all tagged specimens.

Any edits to the names or the determination status are saved securely on the server when the **Apply det** or **Apply to tagged** option is selected. Inevitably, editing may continue for several weeks or months and these changes are always saved.

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Home Search Stats Resources Members Administration Logout Help

Summary Family Genus Species Bot. Recs Transaction Images

Grid View Reports

Transaction: KEP01JULY2012

Attn: Visitor
Rijksherbarium
P. O. Box 9514, 2300 RA Leiden
Netherlands

Database: AGLAIA
Category: Digital loans
Period (from - to): 01/07/2012 - 01/07/2013
Supplied by: Administration

Comments: 8 specimen(s) of Aglaia (Meliaceae)

[Return my dets...](#)

[Return to 'My Transactions' list](#)

Det. Status Key

- a. Det. not yet considered
- b. Existing det. is incorrect (det. unknown)
- c. Existing det. is incorrect (new det. doubtful)
- d. Existing det. is confirmed
- e. Existing det. is incorrect (new det. is certain)

Transaction Specimens

Tagging: [Icons]

Page 1 of 1

Display 20 records per page

Tag	Det.	Collector	Number	Herbarium	Barcode	Species	Current Species	Collected	Country	Images
<input type="checkbox"/>	d.	Chua, L.	FRI...	KEP	95545	Aglaia rubinervis	Aglaia rubiginosa	1992-04-28	Malaysia	
<input type="checkbox"/>	d.	Chua, L.	FRI...	KEP		Aglaia rubinervis	Aglaia rubiginosa	1992-04-28	Malaysia	
<input type="checkbox"/>	d.	Corner, ...	SFN...	KEP	95561	Aglaia rubinervis	Aglaia rubiginosa	1939-06-25	Malaysia	
<input type="checkbox"/>	d.	Corner, ...	SFN...	KEP		Aglaia rubinervis	Aglaia rubiginosa	1939-06-25	Malaysia	
<input checked="" type="checkbox"/>	e.	Ngadim...	SFN...	KEP	95566	Aglaia rubinervis ssp. myname	Aglaia rubiginosa	1939-06-27	Malaysia	
<input checked="" type="checkbox"/>	e.	Ngadim...	SFN...	KEP		Aglaia rubinervis ssp. myname	Aglaia rubiginosa	1939-06-27	Malaysia	
<input type="checkbox"/>	d.	Ngadim...	SFN...	KEP	95557	Aglaia rubinervis	Aglaia rubiginosa	1939-07-24	Malaysia	
<input type="checkbox"/>	d.	Ngadim...	SFN...	KEP		Aglaia rubinervis ssp. myname	Aglaia rubiginosa	1939-07-24	Malaysia	

Determination categories are colour coded.

Determination return

The revised determinations / confirmations can be returned in part (as with a physical loan) or when all the material has been identified. To return the edited file (confirmations/determinations), the

Return my dets option is used. This generate a text file and an excel file to send back to the lender – with the updated dets and any other annotations.

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Home Search Stats Resources Members Administration Logout Help

Summary Family Genus Species Bot. Recs Transaction Images

Transaction: KEF01JULY2012

Attn: Visitor
Rijksherbarium
P. O. Box 9514, 2300 RA Leiden
Netherlands

Database: AGLAIA
Category: Digital loans
Period (from - to): 01/07/2012 - 01/07/2013
Supplied by: Administration

Comments: 8 specimen(s) of Aglaia (Meliaceae)

[Return my dets...](#)

[Return to 'My Transactions' list](#)

Transaction Specimens

Tagging

Page 1 of 1

T	Collector	Number	Herbarium	Barcode	Accession	Type category	Family	Species	Current Family
1	Chua, L.S.L.	FRI38	KEP	95545			Meliaceae	Aglaia rubiginosa	Meliaceae

Determinations/ confirmations can be returned at any time, either a partial list or the complete loan. A colour coded list of dets is created as show below, together with an Excel attachment. These data are sent to the email set up for receiving returned determinations as described earlier in this document.

To:

Subject:

☒ Copy to self

Please enter a covering message below:

additional notes can be added here by the borrower...

Attn: Visitor
Rijksherbarium
P. O. Box 9514, 2300 RA Leiden
Netherlands

Database: AGLAIA
Category: Digital loans
Period: 01/07/2012 - 01/07/2013
Supplied by: Administration

Comments: 8 specimen(s) of Aglaia (Meliaceae)

The following dets are confirmed:

Specimen Id: 12138
Species: Meliaceae *Aglaia rubiginosa*
Confirmed By: Andrew Liddell on 03/07/2012

Specimen Id: 62
Species: Meliaceae *Aglaia rubiginosa*
Confirmed By: Andrew Liddell on 03/07/2012

Specimen Id: 12202
Species: Meliaceae *Aglaia rubiginosa*
Confirmed By: Andrew Liddell on 03/07/2012

Specimen Id: 1271
Species: Meliaceae *Aglaia rubiginosa*
Confirmed By: Andrew Liddell on 03/07/2012

Specimen Id: 12205
Species: Meliaceae *Aglaia rubiginosa*
Confirmed By: Andrew Liddell on 03/07/2012

The following dets are wrong (new det certain):

Specimen Id: 12203
Original Species: Meliaceae *Aglaia rubiginosa*
Species Det: Meliaceae *Aglaia rubinervis* ssp. *myname*
Det By: Andrew Liddell on 03/07/2012

Specimen Id: 1272
Original Species: Meliaceae *Aglaia rubiginosa*
Species Det: Meliaceae *Aglaia rubinervis* ssp. *myname*
Det By: Andrew Liddell on 03/07/2012

Specimen Id: 1278

A sample determinations return file