Apr 26, 2023

Step by Step from Environmental Samples to Preservation Vials

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Protocol status: Working
We use this protocol and it's working

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Protocol Integer ID: 80039

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Abstract

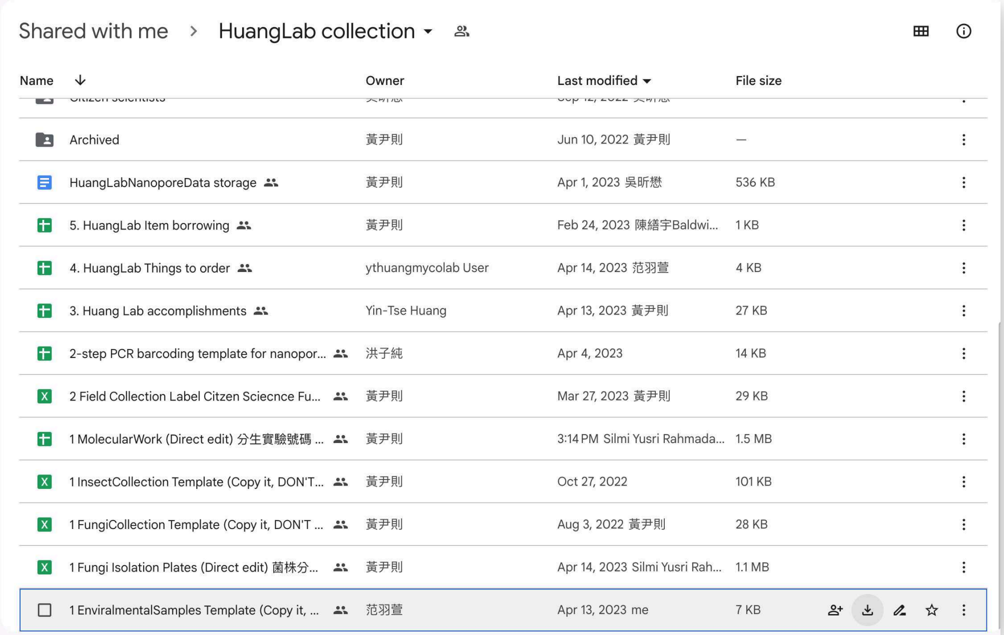
This protocol shows how to generate a MICROBES ISOLATION FROM ENVIRONMENTAL SAMPLES into LAB COLLECTION. Please follow the instructions and do not modify the protocols by yourself. If any changes are needed please inform the lab manager or admin.

Troubleshooting

Isolate Primary Culture from Environmental Samples

1 **Once you received your environmental samples.**

Please catalog them in your Environmental Samples spreadsheet.



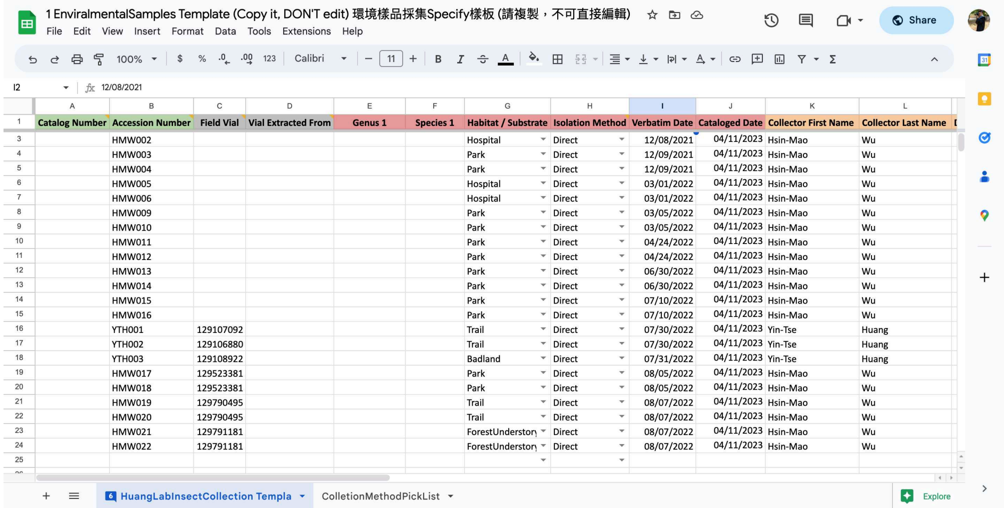
Name	Owner	Last modified	File size
Archived	黃尹則	Jun 10, 2022 黃尹則	—
HuangLabNanoporeData storage	黃尹則	Apr 1, 2023 吳昕懋	536 KB
5. HuangLab Item borrowing	黃尹則	Feb 24, 2023 陳緒宇Baldwi...	1 KB
4. HuangLab Things to order	ythuangmycolab User	Apr 14, 2023 范羽萱	4 KB
3. Huang Lab accomplishments	Yin-Tse Huang	Apr 13, 2023 黃尹則	27 KB
2-step PCR barcoding template for nanopor...	洪子純	Apr 4, 2023	14 KB
2 Field Collection Label Citzen Sciecnce Fu...	黃尹則	Mar 27, 2023 黃尹則	29 KB
1 MolecularWork (Direct edit) 分生實驗號碼 ...	黃尹則	3:14 PM Silmi Yusri Rahmada...	1.5 MB
1 InsectCollection Template (Copy it, DON'T...	黃尹則	Oct 27, 2022	101 KB
1 FungiCollection Template (Copy it, DON'T ...	黃尹則	Aug 3, 2022 黃尹則	28 KB
1 Fungi Isolation Plates (Direct edit) 菌株分...	黃尹則	Apr 14, 2023 Silmi Yusri Rah...	1.1 MB
☐ 1 EnviralmentalSamples Template (Copy it, ...	范羽萱	Apr 13, 2023 me	7 KB

Make a copy of the template for yourself. The template "1 EnvironmentalSamples Template" marked with blue box is available in HuangLab Collection.

2 **Fill in the columns of the spreadsheet step by step (As shown in the following steps 2.1-2.15)**

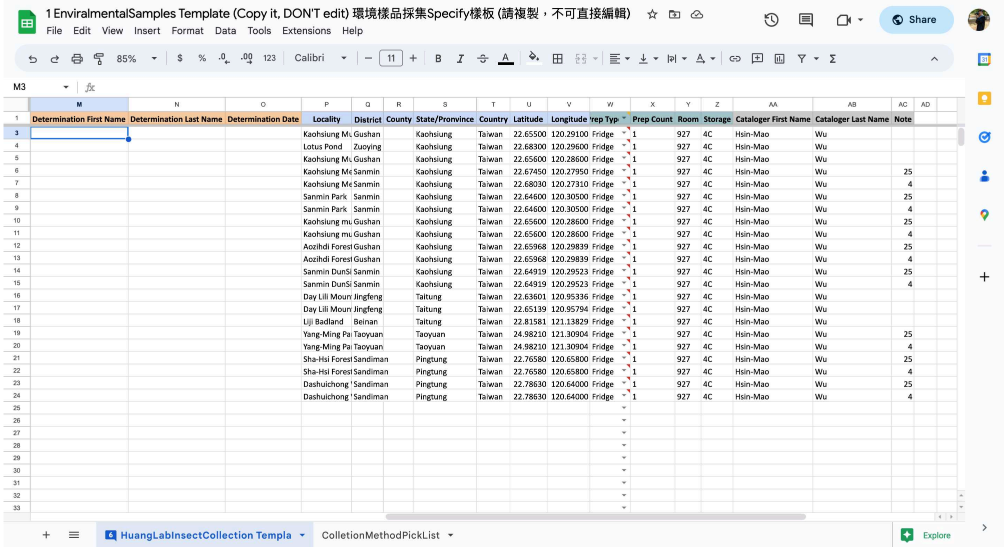
∗In the template, some template data are there for your reference, please **delete them in your copy** and fill in only your data.

* Remember to scroll to the right and fill in as much as information you can.



	A	B	C	D	E	F	G	H	I	J	K	L
1	Catalog Number	Accession Number	Field Vial	Vial Extracted From	Genus 1	Species 1	Habitat / Substrate	Isolation Method	Verbatim Date	Cataloged Date	Collector First Name	Collector Last Name
3		HMW002					Hospital	Direct	12/08/2021	04/11/2023	Hsin-Mao	Wu
4		HMW003					Park	Direct	12/09/2021	04/11/2023	Hsin-Mao	Wu
5		HMW004					Park	Direct	12/09/2021	04/11/2023	Hsin-Mao	Wu
6		HMW005					Hospital	Direct	03/01/2022	04/11/2023	Hsin-Mao	Wu
7		HMW006					Hospital	Direct	03/01/2022	04/11/2023	Hsin-Mao	Wu
8		HMW009					Park	Direct	03/05/2022	04/11/2023	Hsin-Mao	Wu
9		HMW010					Park	Direct	03/05/2022	04/11/2023	Hsin-Mao	Wu
10		HMW011					Park	Direct	04/24/2022	04/11/2023	Hsin-Mao	Wu
11		HMW012					Park	Direct	04/24/2022	04/11/2023	Hsin-Mao	Wu
12		HMW013					Park	Direct	06/30/2022	04/11/2023	Hsin-Mao	Wu
13		HMW014					Park	Direct	06/30/2022	04/11/2023	Hsin-Mao	Wu
14		HMW015					Park	Direct	07/10/2022	04/11/2023	Hsin-Mao	Wu
15		HMW016					Park	Direct	07/10/2022	04/11/2023	Hsin-Mao	Wu
16		YTH001	129107092				Trail	Direct	07/30/2022	04/11/2023	Yin-Tse	Huang
17		YTH002	129106880				Trail	Direct	07/30/2022	04/11/2023	Yin-Tse	Huang
18		YTH003	129108922				Badland	Direct	07/31/2022	04/11/2023	Yin-Tse	Huang
19		HMW017	129523381				Park	Direct	08/05/2022	04/11/2023	Hsin-Mao	Wu
20		HMW018	129523381				Park	Direct	08/05/2022	04/11/2023	Hsin-Mao	Wu
21		HMW019	129790495				Trail	Direct	08/07/2022	04/11/2023	Hsin-Mao	Wu
22		HMW020	129790495				Trail	Direct	08/07/2022	04/11/2023	Hsin-Mao	Wu
23		HMW021	129791181				ForestUnderston	Direct	08/07/2022	04/11/2023	Hsin-Mao	Wu
24		HMW022	129791181				ForestUnderston	Direct	08/07/2022	04/11/2023	Hsin-Mao	Wu

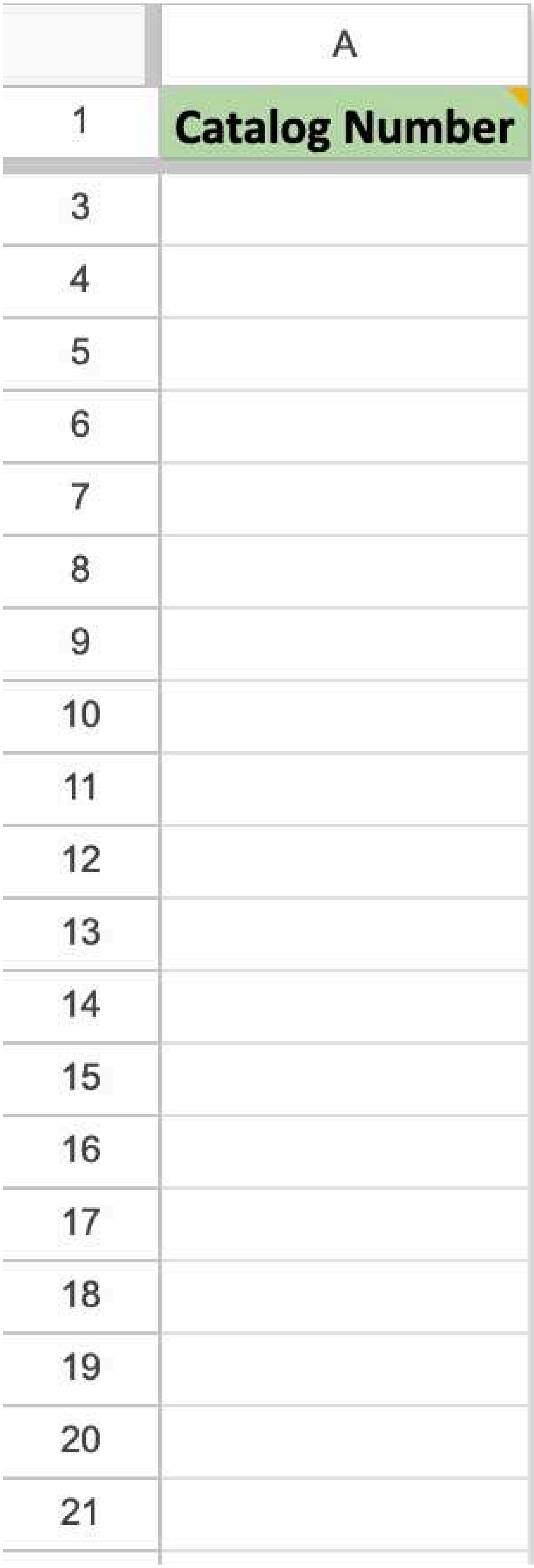
Column in the left



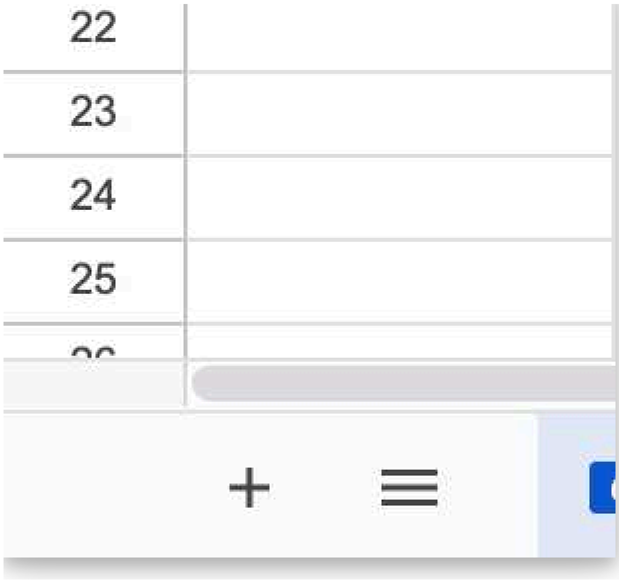
	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1	Determination First Name	Determination Last Name	Determination Date	Locality	District	County	State/Province	Country	Latitude	Longitude	'rep Typ	Prep Count	Room	Storage	Cataloger First Name	Cataloger Last Name	Note	
3				Kaohsiung Mu	Gushan		Kaohsiung	Taiwan	22.65500	120.29100	Fridge	1	927	4C	Hsin-Mao	Wu		
4				Lotus Pond	Zuoying		Kaohsiung	Taiwan	22.68300	120.29600	Fridge	1	927	4C	Hsin-Mao	Wu		
5				Kaohsiung Mu	Gushan		Kaohsiung	Taiwan	22.65600	120.28600	Fridge	1	927	4C	Hsin-Mao	Wu		
6				Kaohsiung Me	Sanmin		Kaohsiung	Taiwan	22.67450	120.27950	Fridge	1	927	4C	Hsin-Mao	Wu	25	
7				Kaohsiung Me	Sanmin		Kaohsiung	Taiwan	22.68030	120.27310	Fridge	1	927	4C	Hsin-Mao	Wu	4	
8				Sanmin Park	Sanmin		Kaohsiung	Taiwan	22.64600	120.30500	Fridge	1	927	4C	Hsin-Mao	Wu	25	
9				Sanmin Park	Sanmin		Kaohsiung	Taiwan	22.64600	120.30500	Fridge	1	927	4C	Hsin-Mao	Wu	4	
10				Kaohsiung mu	Gushan		Kaohsiung	Taiwan	22.65600	120.28600	Fridge	1	927	4C	Hsin-Mao	Wu	25	
11				Kaohsiung mu	Gushan		Kaohsiung	Taiwan	22.65600	120.28600	Fridge	1	927	4C	Hsin-Mao	Wu	4	
12				Aozihdi Forest	Gushan		Kaohsiung	Taiwan	22.65968	120.29839	Fridge	1	927	4C	Hsin-Mao	Wu	25	
13				Aozihdi Forest	Gushan		Kaohsiung	Taiwan	22.65968	120.29839	Fridge	1	927	4C	Hsin-Mao	Wu	4	
14				Sanmin DunSi	Sanmin		Kaohsiung	Taiwan	22.64919	120.29523	Fridge	1	927	4C	Hsin-Mao	Wu	25	
15				Sanmin DunSi	Sanmin		Kaohsiung	Taiwan	22.64919	120.29523	Fridge	1	927	4C	Hsin-Mao	Wu	4	
16				Day Lili Moun	Jingfeng		Taitung	Taiwan	22.63601	120.95336	Fridge	1	927	4C	Hsin-Mao	Wu		
17				Day Lili Moun	Jingfeng		Taitung	Taiwan	22.65139	120.95794	Fridge	1	927	4C	Hsin-Mao	Wu		
18				Liji Badland	Beinan		Taitung	Taiwan	22.81581	121.13829	Fridge	1	927	4C	Hsin-Mao	Wu		
19				Yang-Ming Pa	Taoyuan		Taoyuan	Taiwan	24.98210	121.30904	Fridge	1	927	4C	Hsin-Mao	Wu	25	
20				Yang-Ming Pa	Taoyuan		Taoyuan	Taiwan	24.98210	121.30904	Fridge	1	927	4C	Hsin-Mao	Wu	4	
21				Sha-Hsi Forest	Sandiman		Pingtung	Taiwan	22.76580	120.65800	Fridge	1	927	4C	Hsin-Mao	Wu	25	
22				Sha-Hsi Forest	Sandiman		Pingtung	Taiwan	22.76580	120.65800	Fridge	1	927	4C	Hsin-Mao	Wu	4	
23				Dashuichong	Sandiman		Pingtung	Taiwan	22.78630	120.64000	Fridge	1	927	4C	Hsin-Mao	Wu	25	
24				Dashuichong	Sandiman		Pingtung	Taiwan	22.78630	120.64000	Fridge	1	927	4C	Hsin-Mao	Wu	4	

Scrolling to the right and fill them in

2.1 Leave the Catalog Number (Column A) blank. The Catalog Number will be generated automatically from Specify. Copy and paste it directly after the upload.

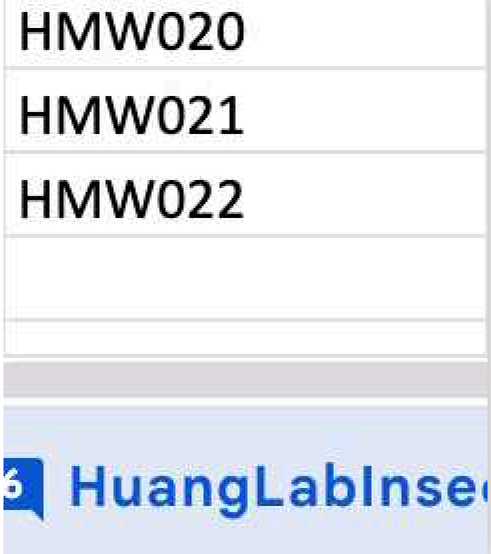


	A
1	Catalog Number
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	



2.2 Accession Number (Column B) is for your own reference, you can name your sample as you want, there is no specific format for this.

Accession Number
HMW002
HMW003
HMW004
HMW005
HMW006
HMW009
HMW010
HMW011
HMW012
HMW013
HMW014
HMW015
HMW016
YTH001
YTH002
YTH003
HMW017
HMW018
HMW019

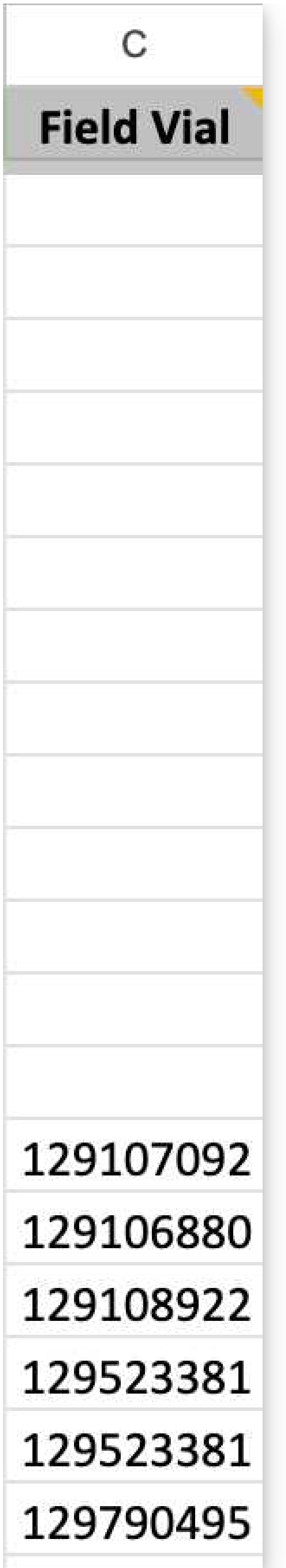


HMW020

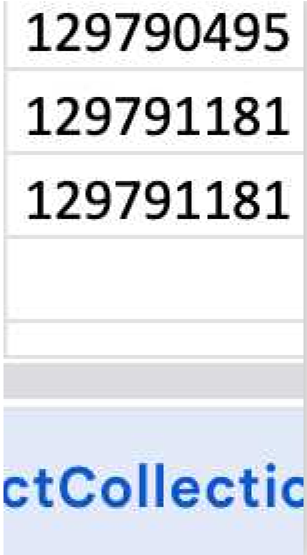
HMW021

HMW022

2.3 Field Vial (Column C) is the iNaturalist code. You only need to fill this column when you got the samples from citizen scientists.



C
Field Vial
129107092
129106880
129108922
129523381
129523381
129790495



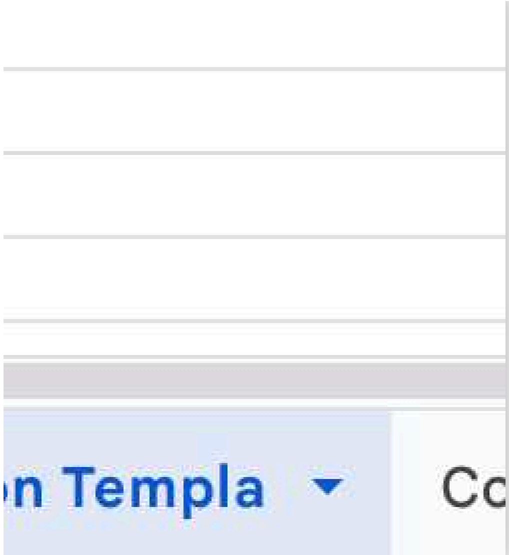
129790495

129791181

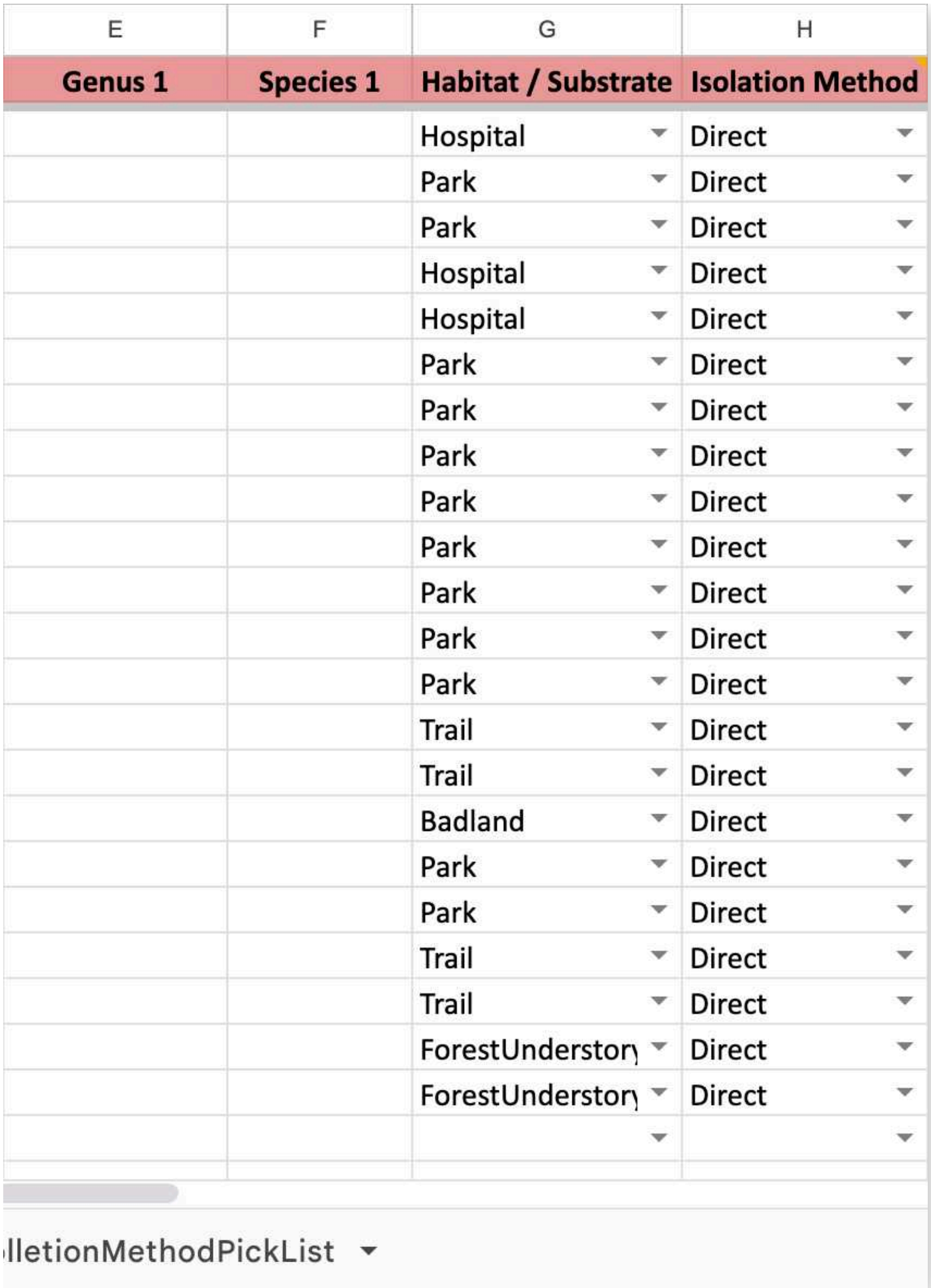
129791181

2.4 Leave the Vial Extracted From (Column D) blank.

D
Vial Extracted From



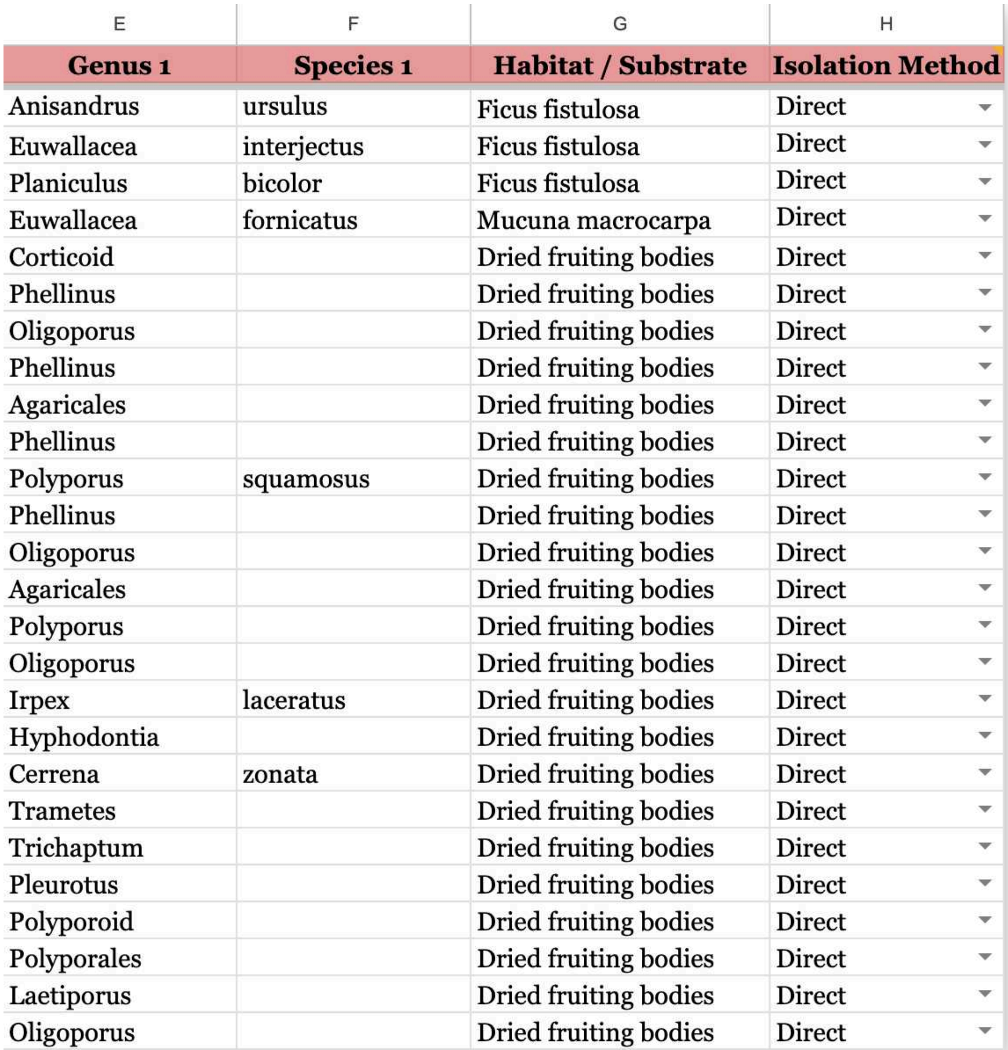
2.5 For Column E, F, G, G:
If your samples are **SOIL SAMPLES**, please follow this example.



E	F	G	H
Genus 1	**Species 1**	**Habitat / Substrate**	**Isolation Method**
		Hospital	Direct
		Park	Direct
		Park	Direct
		Hospital	Direct
		Hospital	Direct
		Park	Direct
		Park	Direct
		Park	Direct
		Park	Direct
		Park	Direct
		Park	Direct
		Park	Direct
		Park	Direct
		Trail	Direct
		Trail	Direct
		Badland	Direct
		Park	Direct
		Park	Direct
		Trail	Direct
		Trail	Direct
		ForestUnderstory	Direct
		ForestUnderstory	Direct

This is the example for Soil Samples.
Genus 1 & Species 1: Leave it blank.
Habitat/Substrate: What is the environment you collected your samples.
Isolation: How you isolate your samples (the default is Direct).

If your samples are **ENVIRONMENTAL SAMPLES**, please follow this example.

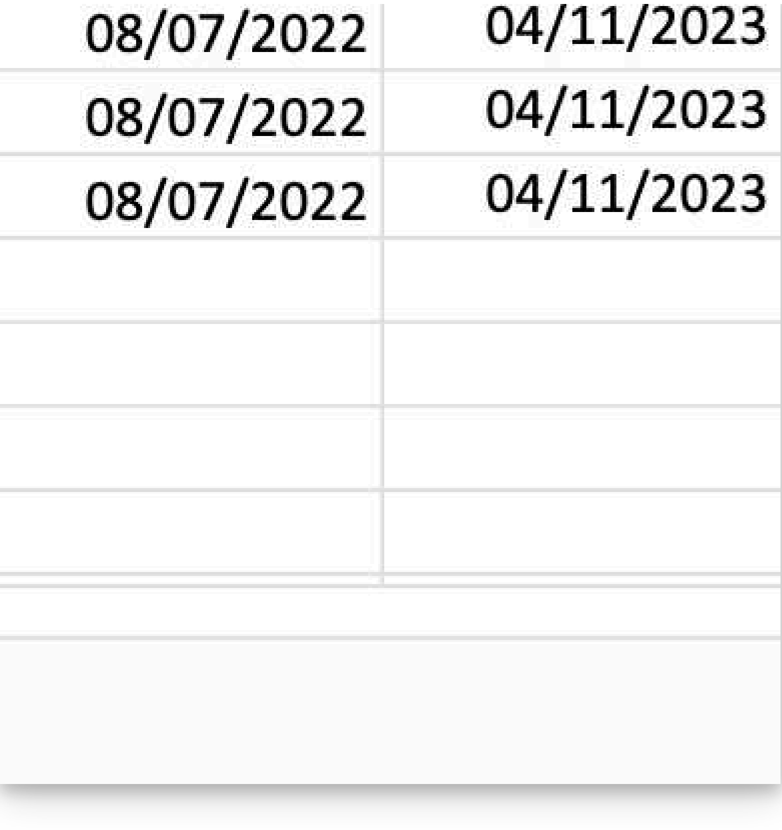


E	F	G	H
Genus 1	**Species 1**	**Habitat / Substrate**	**Isolation Method**
Anisandrus	ursulus	Ficus fistulosa	Direct
Euwallacea	interjectus	Ficus fistulosa	Direct
Planiculus	bicolor	Ficus fistulosa	Direct
Euwallacea	fornicatus	Mucuna macrocarpa	Direct
Corticoid		Dried fruiting bodies	Direct
Phellinus		Dried fruiting bodies	Direct
Oligoporus		Dried fruiting bodies	Direct
Phellinus		Dried fruiting bodies	Direct
Agaricales		Dried fruiting bodies	Direct
Phellinus		Dried fruiting bodies	Direct
Polyporus	squamosus	Dried fruiting bodies	Direct
Phellinus		Dried fruiting bodies	Direct
Oligoporus		Dried fruiting bodies	Direct
Agaricales		Dried fruiting bodies	Direct
Polyporus		Dried fruiting bodies	Direct
Oligoporus		Dried fruiting bodies	Direct
Irpex	laceratus	Dried fruiting bodies	Direct
Hyphodontia		Dried fruiting bodies	Direct
Cerrena	zonata	Dried fruiting bodies	Direct
Trametes		Dried fruiting bodies	Direct
Trichaptum		Dried fruiting bodies	Direct
Pleurotus		Dried fruiting bodies	Direct
Polyporoid		Dried fruiting bodies	Direct
Polyporales		Dried fruiting bodies	Direct
Laetiporus		Dried fruiting bodies	Direct
Oligoporus		Dried fruiting bodies	Direct

This is the example for Environmental Samples (e.g., ambrosia & bark beetles, fruiting bodies, etc).
Genus 1 & Species 1: Fill in the scientific name of your samples (unable to identify just leave it blank).
Habitat/Substrate: What is the environment you collected your samples (e.g., the host plant for the ambrosia & bark beetles).
Isolation: How you isolate your samples (the default is Direct).

2.6 Fill in the Verbatim Date (Column I) with the date **you COLLECTED the samples**.
Fill in the Cataloged Date (Column J) with the date **you UPLOADED the data to Specify**.

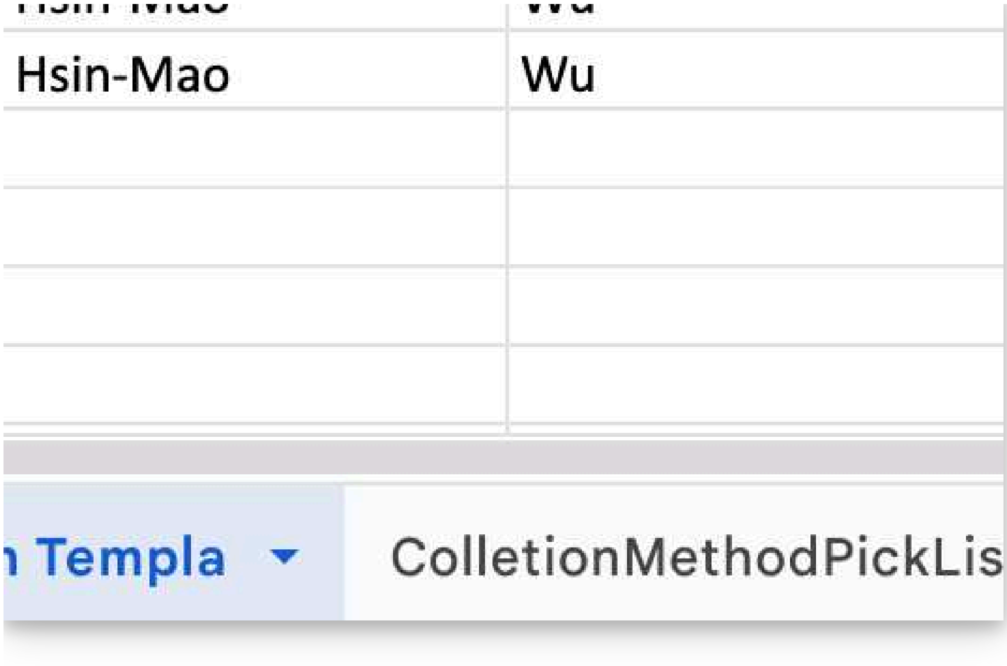
Verbatim Date	Cataloged Date
12/08/2021	04/11/2023
12/09/2021	04/11/2023
12/09/2021	04/11/2023
03/01/2022	04/11/2023
03/01/2022	04/11/2023
03/05/2022	04/11/2023
03/05/2022	04/11/2023
04/24/2022	04/11/2023
04/24/2022	04/11/2023
06/30/2022	04/11/2023
06/30/2022	04/11/2023
07/10/2022	04/11/2023
07/10/2022	04/11/2023
07/30/2022	04/11/2023
07/30/2022	04/11/2023
07/31/2022	04/11/2023
08/05/2022	04/11/2023
08/05/2022	04/11/2023
08/07/2022	04/11/2023



08/07/2022	04/11/2023
08/07/2022	04/11/2023
08/07/2022	04/11/2023

2.7 Collector First Name (Column K) and Collector Last Name (Column L)
Fill in the name of the collector.

K	L
Collector First Name	**Collector Last Name**
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Yin-Tse	Huang
Yin-Tse	Huang
Yin-Tse	Huang
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu



Hsin-Mao	Wu

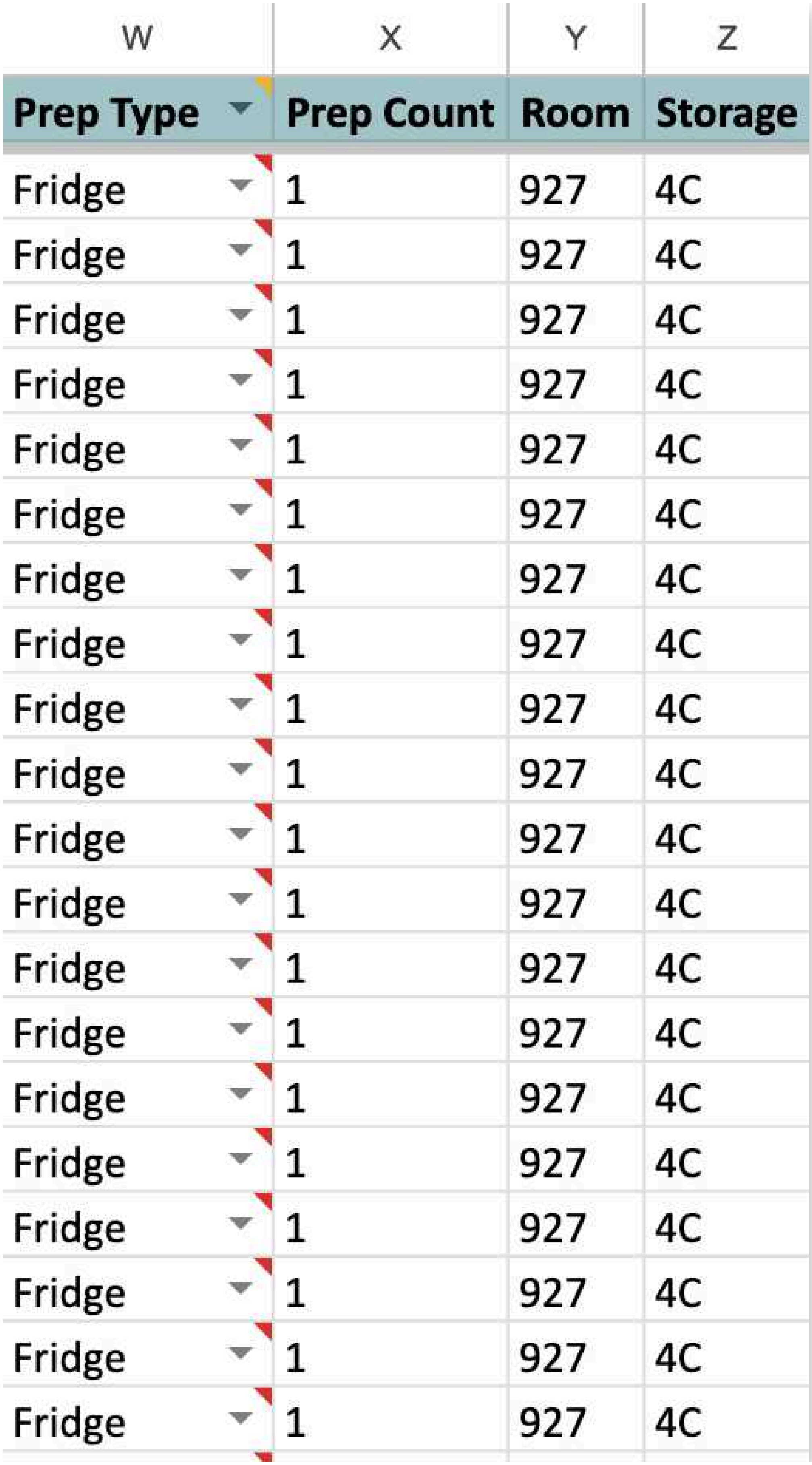
2.8 Fill in these columns when the sample is identified with a scientific name, remember to fill Column E and F (Genus and Species names) as well. If not, leave it blank.
Fill in the date you did the determination (identification).

M	N	O
Determination First Name	Determination Last Name	Determination Date

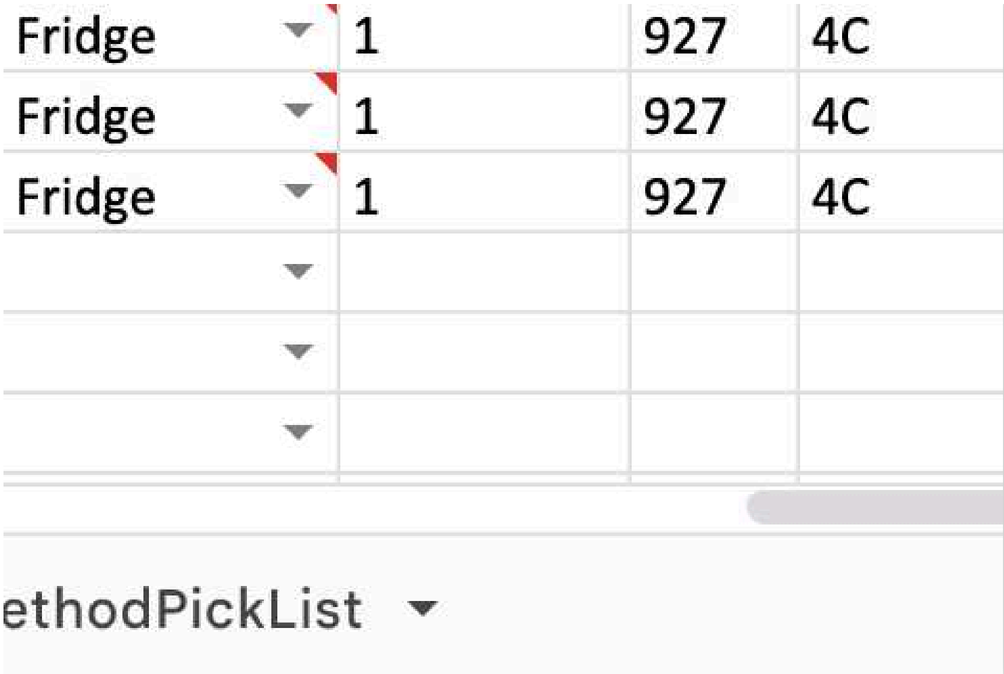
2.9 Fill in these columns with the geographical information of your samples.
Leave it blank, when you don't have the information or the materials is outsourced lacking this info.

P	Q	R	S	T	U	V
Locality	**District**	**County**	**State/Pronvince**	**Country**	**Latitude**	**Longitude**
Kaohsiung Mu	Gushan		Kaohsiung	Taiwan	22.65500	120.29100
Lotus Pond	Zuoying		Kaohsiung	Taiwan	22.68300	120.29600
Kaohsiung Mu	Gushan		Kaohsiung	Taiwan	22.65600	120.28600
Kaohsiung Me	Sanmin		Kaohsiung	Taiwan	22.67450	120.27950
Kaohsiung Me	Sanmin		Kaohsiung	Taiwan	22.68030	120.27310
Sanmin Park	Sanmin		Kaohsiung	Taiwan	22.64600	120.30500
Sanmin Park	Sanmin		Kaohsiung	Taiwan	22.64600	120.30500
Kaohsiung mu	Gushan		Kaohsiung	Taiwan	22.65600	120.28600
Kaohsiung mu	Gushan		Kaohsiung	Taiwan	22.65600	120.28600
Aozihdi Fores	Gushan		Kaohsiung	Taiwan	22.65968	120.29839
Aozihdi Fores	Gushan		Kaohsiung	Taiwan	22.65968	120.29839
Sanmin DunSi	Sanmin		Kaohsiung	Taiwan	22.64919	120.29523
Sanmin DunSi	Sanmin		Kaohsiung	Taiwan	22.64919	120.29523
Day Lili Moun	Jingfeng		Taitung	Taiwan	22.63601	120.95336
Day Lili Moun	Jingfeng		Taitung	Taiwan	22.65139	120.95794
Liji Badland	Beinan		Taitung	Taiwan	22.81581	121.13829
Yang-Ming Pa	Taoyuan		Taoyuan	Taiwan	24.98210	121.30904
Yang-Ming Pa	Taoyuan		Taoyuan	Taiwan	24.98210	121.30904
Sha-Hsi Fores	Sandiman		Pingtung	Taiwan	22.76580	120.65800
Sha-Hsi Fores	Sandiman		Pingtung	Taiwan	22.76580	120.65800
Dashuichong	Sandiman		Pingtung	Taiwan	22.78630	120.64000
Dashuichong	Sandiman		Pingtung	Taiwan	22.78630	120.64000

2.10 The values of these columns were set using a formula. You only need to choose the **Prep Type** (Column W), which is the way you preserve your samples.
*Inform admin when other Prep Type is needed.

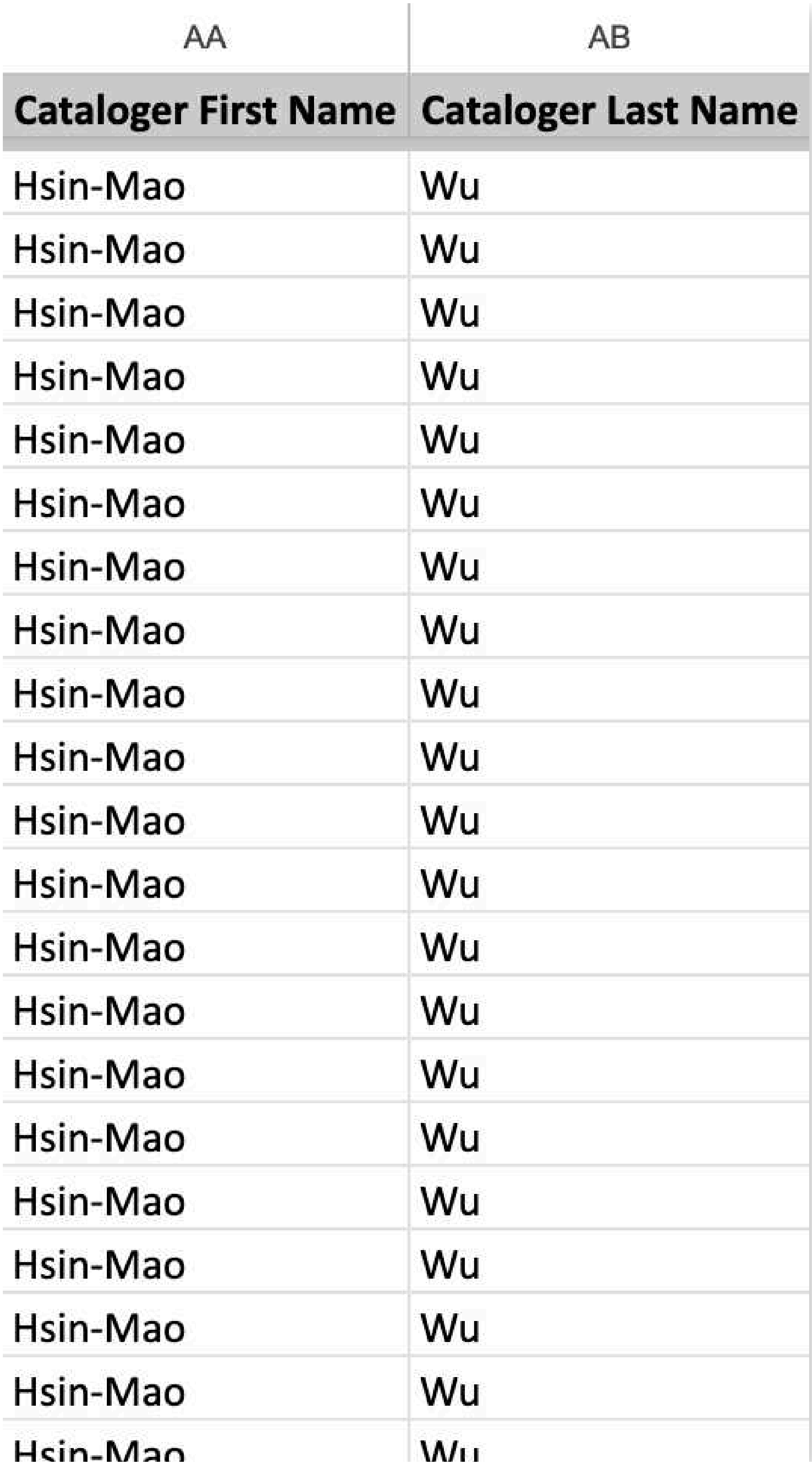


Prep Type	Prep Count	Room	Storage
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C



Fridge	1	927	4C
Fridge	1	927	4C
Fridge	1	927	4C

2.11 Fill in the name (Column AA and AB) of who uploaded the data to Specify.



AA	AB
Cataloger First Name	**Cataloger Last Name**
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu
Hsin-Mao	Wu

Hsin-Mao	Wu
Hsin-Mao	Wu

2.12 You can leave any informative notes of your samples. If not, leave it blank.

AC
Note
25
4
25
4
25
4
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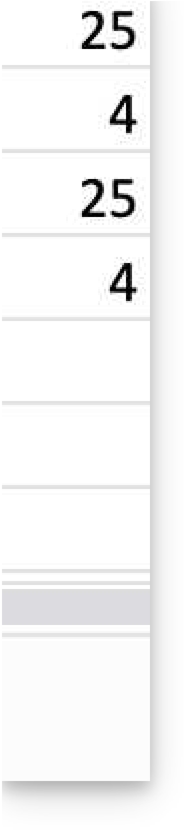
4
25
4
25
4



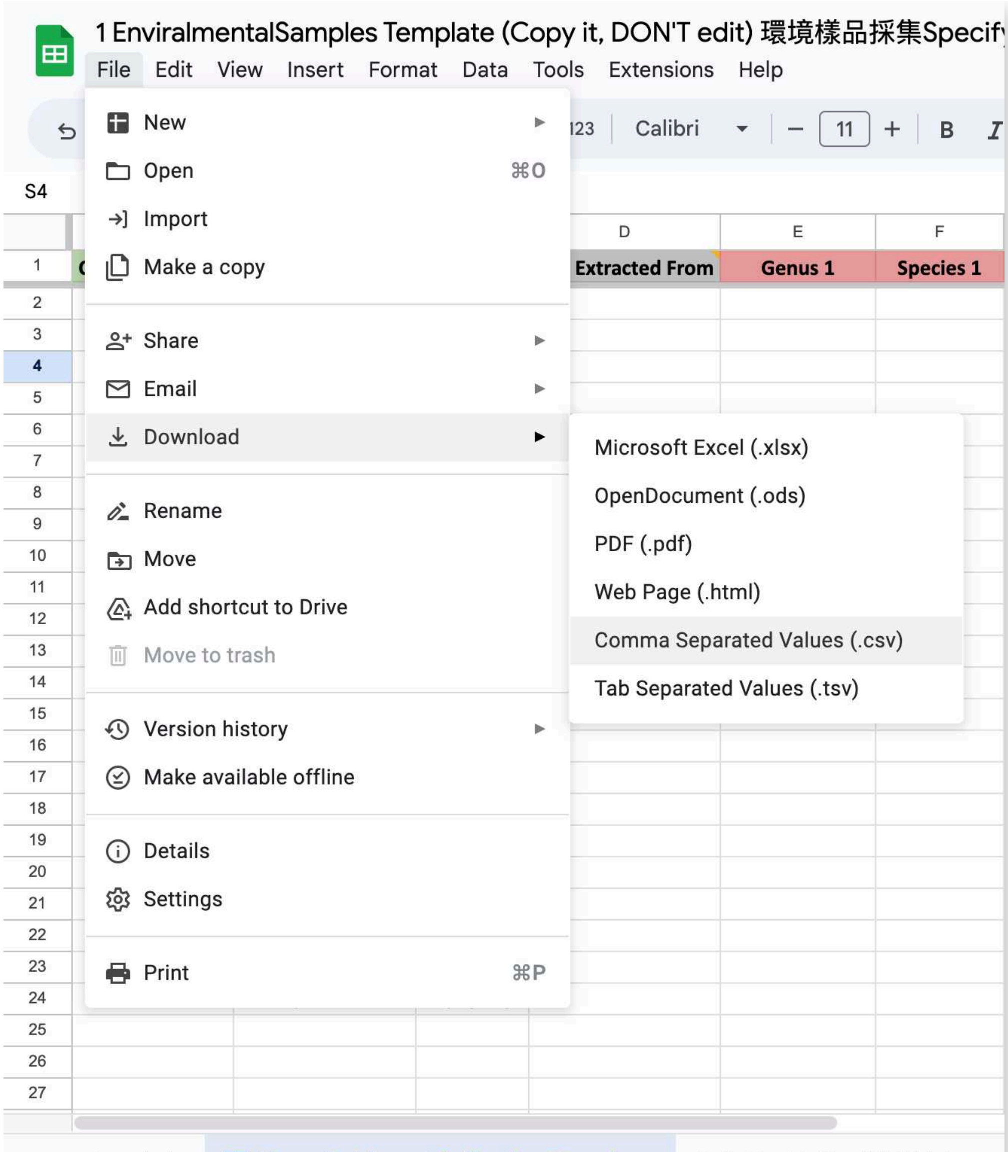
25

4

25

4

2.13 Done!! Download the spreadsheet as .csv format.

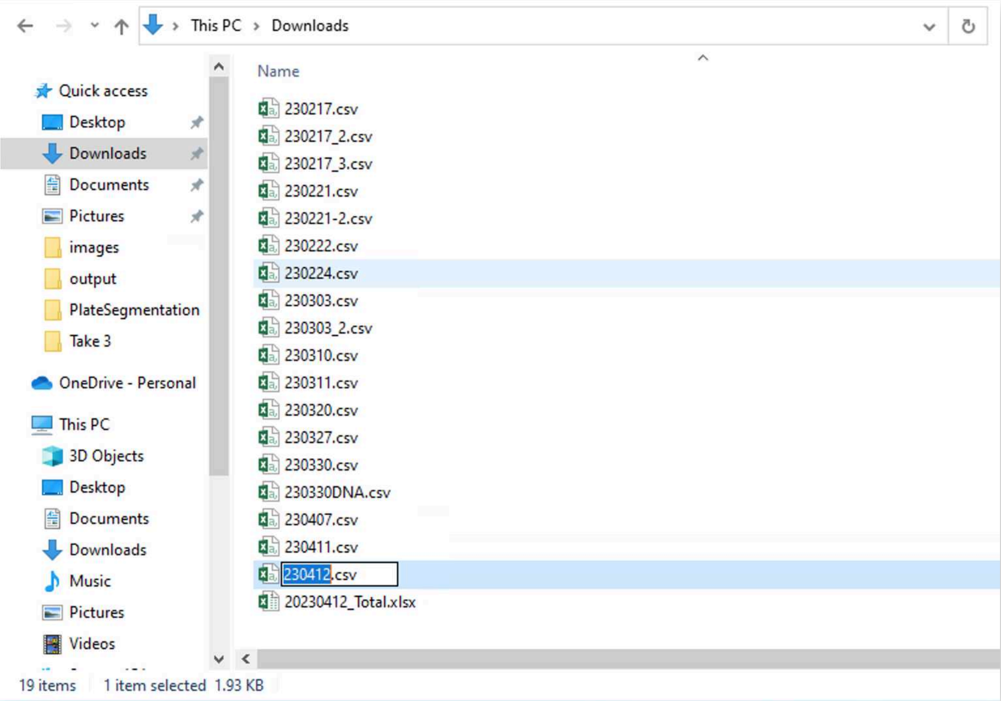


2.14 Delete the row with existed Catalog Number if any.

∗∗Leave the not-uploaded rows only.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Catalog Number	Accession Nu	Field Vial	Vial Extracte	Genus 1	Species 1	Habitat / Sub	Isolation Met	Verbatim Dat	Cataloged Da	Collector Firs	Collector Las
2	2023-000133	HMW002					Hospital	Direct	12/08/2021	04/12/2023	Hsin-Mao	Wu
3		HMW003					Park	Direct	12/09/2021	04/12/2023	Hsin-Mao	Wu
4		HMW004					Park	Direct	12/09/2021	04/12/2023	Hsin-Mao	Wu
5		HMW005					Hospital	Direct	03/01/2022	04/12/2023	Hsin-Mao	Wu
6		HMW006					Hospital	Direct	03/01/2022	04/12/2023	Hsin-Mao	Wu
7		HMW009					Park	Direct	03/05/2022	04/12/2023	Hsin-Mao	Wu

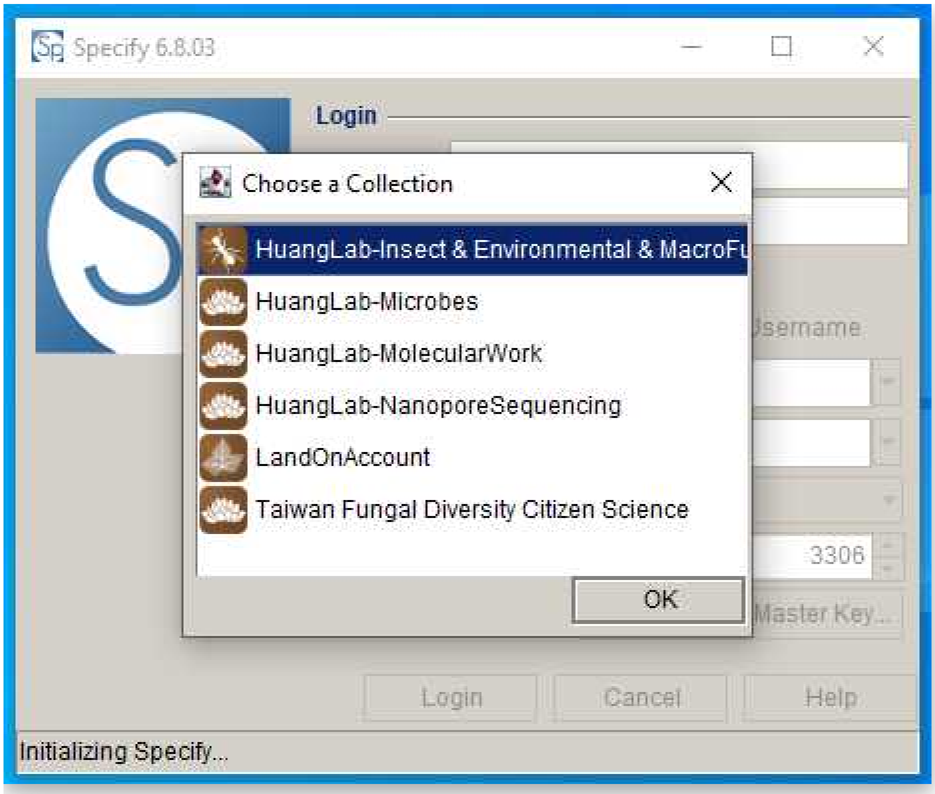
2.15 Rename the file with the date you are going to upload the datasheet to Specify.



Upload your datasheet to Specify database

3 ****The account setup is skipped****

Login to the Specify database. Choose the **first collection (HuangLab-Insect & Environmental & MacroFungi)**.

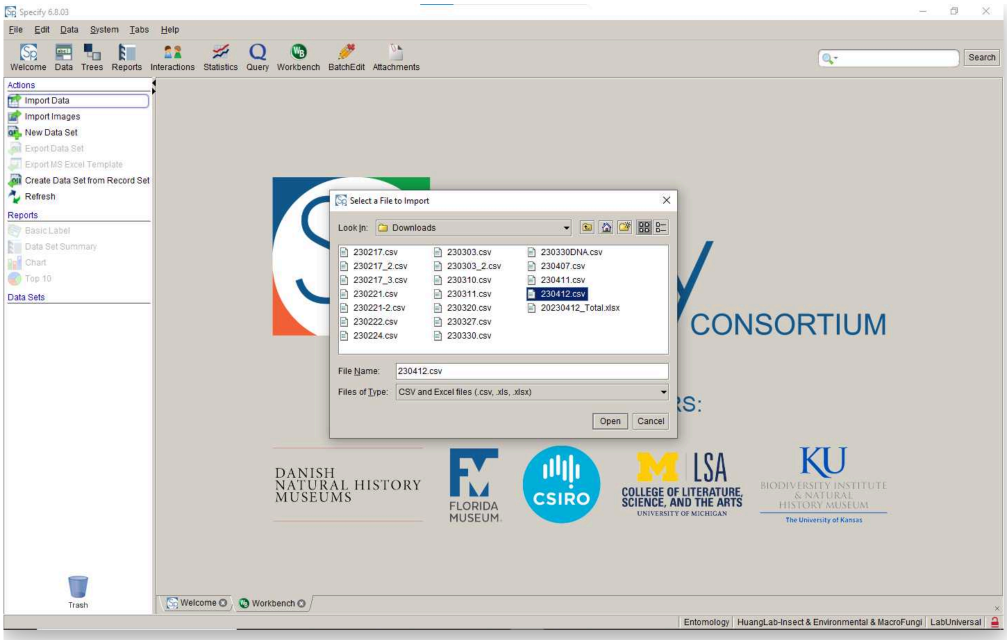


3.1 Go to the **Workbench** tab.

3.2 Click **Import Data**.

Import data from an MS Excel or CSV file

3.3 Choose the file you wanted to import (upload), and click **Open**.

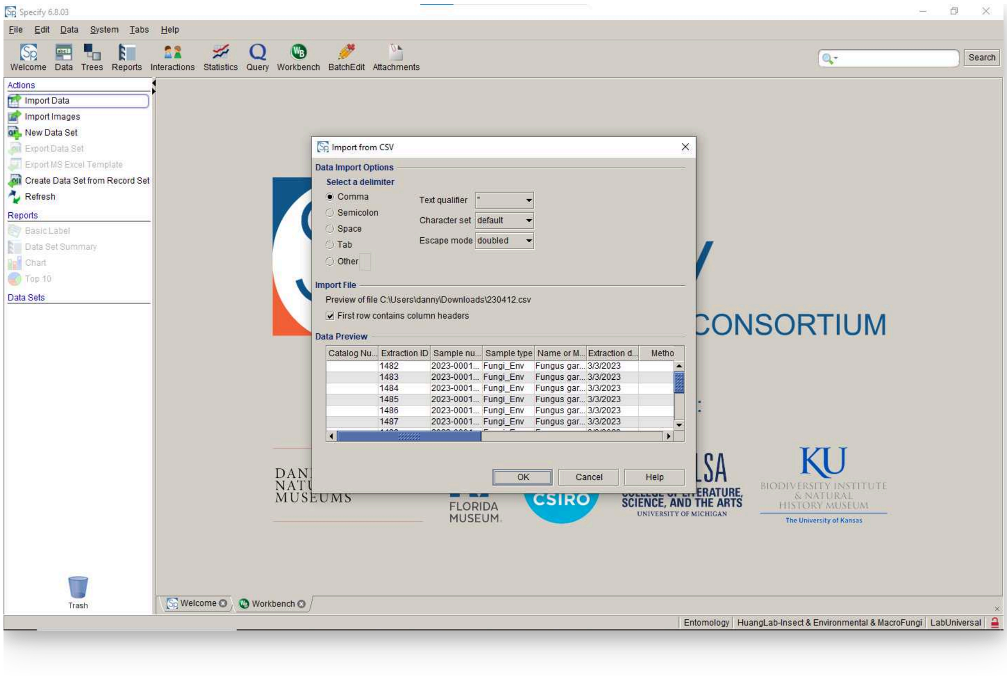


Look In: Downloads

File Name: 230412.csv

Files of Type: CSV and Excel files (.csv, .xls, .xlsx)

3.4 Let everything as default. Then, click **OK**.



Import from CSV

Data Import Options

Select a delimiter

● Comma
○ Semicolon
○ Space
○ Tab
○ Other

Text qualifier: "
Character set: default
Escape mode: doubled

Import File

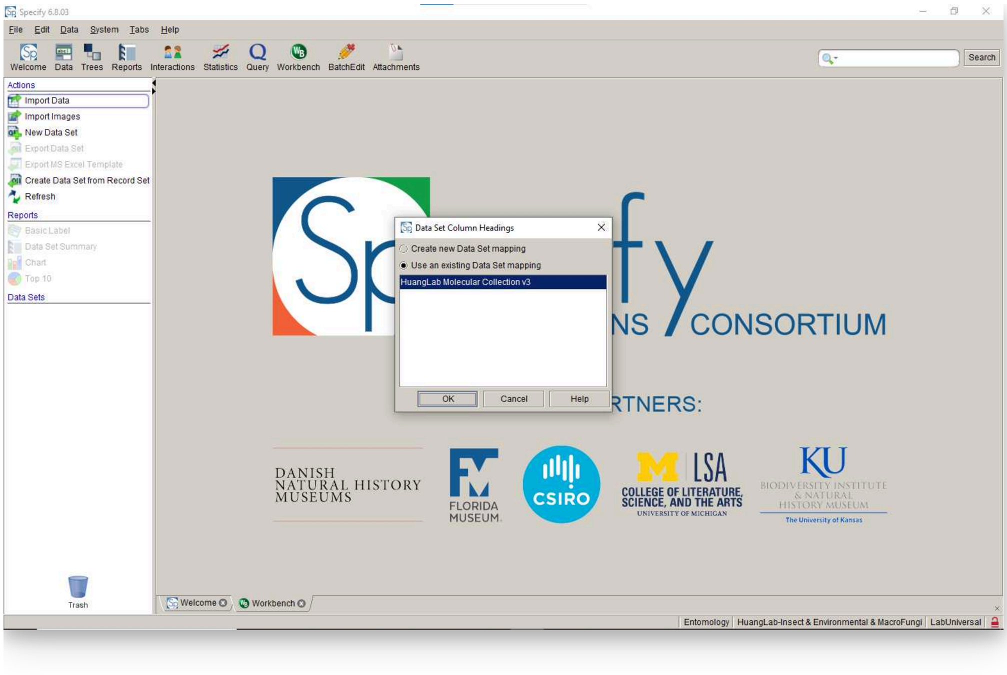
Preview of file C:\Users\danny\Downloads\230412.csv

☑ First row contains column headers

Data Preview

Catalog Nu...	Extraction ID	Sample nu...	Sample type	Name or M...	Extraction d...	Metho
	1482	2023-0001...	Fungi_Env	Fungus gar...	3/3/2023	
	1483	2023-0001...	Fungi_Env	Fungus gar...	3/3/2023	
	1484	2023-0001...	Fungi_Env	Fungus gar...	3/3/2023	
	1485	2023-0001...	Fungi_Env	Fungus gar...	3/3/2023	
	1486	2023-0001...	Fungi_Env	Fungus gar...	3/3/2023	
	1487	2023-0001...	Fungi_Env	Fungus gar...	3/3/2023	

3.5 Select the second option: **Use an existing Data Set mapping**.

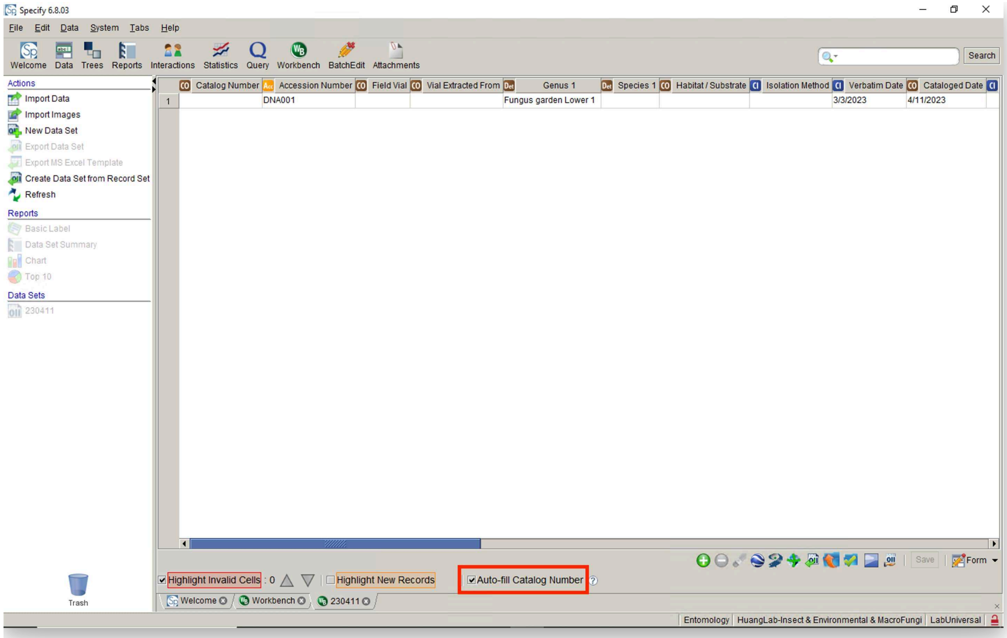


Data Set Column Headings

○ Create new Data Set mapping
● Use an existing Data Set mapping

HuangLab Molecular Collection v3

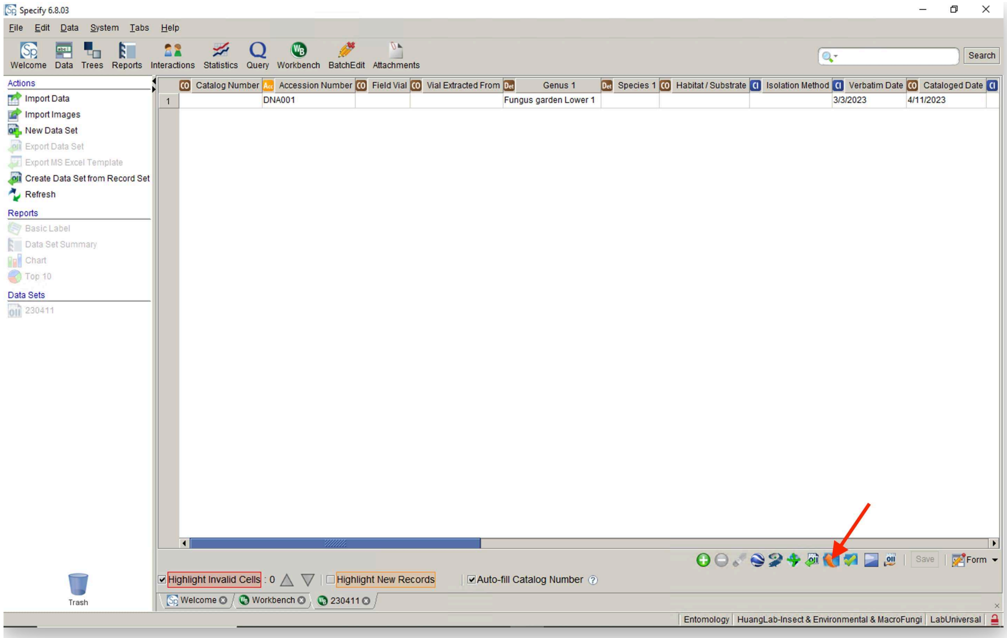
3.6 Check for any invalid cells (red highlighted cells).
Remember to tick Auto-fill Catalog Number (marked with red box).



	Catalog Number	Accession Number	Field Vial	Vial Extracted From	Genus 1	Species 1	Habitat / Substrate	Isolation Method	Verbatim Date	Cataloged Date
1		DNA001			Fungus garden Lower 1				3/3/2023	4/11/2023

☑ Highlight Invalid Cells : 0 ☐ Highlight New Records ☑ Auto-fill Catalog Number

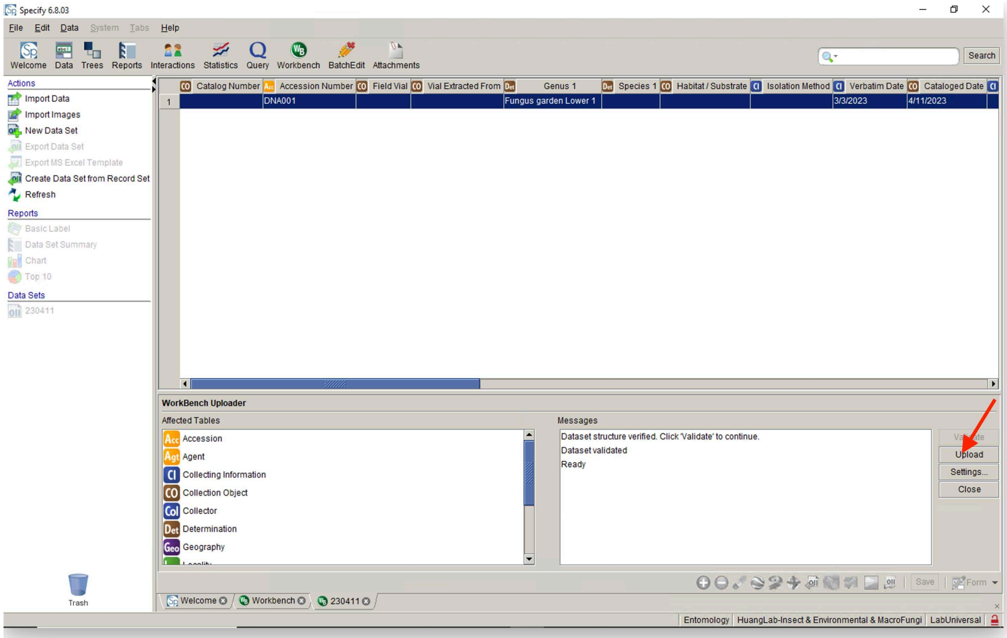
3.7 Click **Upload** (pointed with red arrow).



	Catalog Number	Accession Number	Field Vial	Vial Extracted From	Genus 1	Species 1	Habitat / Substrate	Isolation Method	Verbatim Date	Cataloged Date
1		DNA001			Fungus garden Lower 1				3/3/2023	4/11/2023

☑ Highlight Invalid Cells : 0 ☐ Highlight New Records ☑ Auto-fill Catalog Number

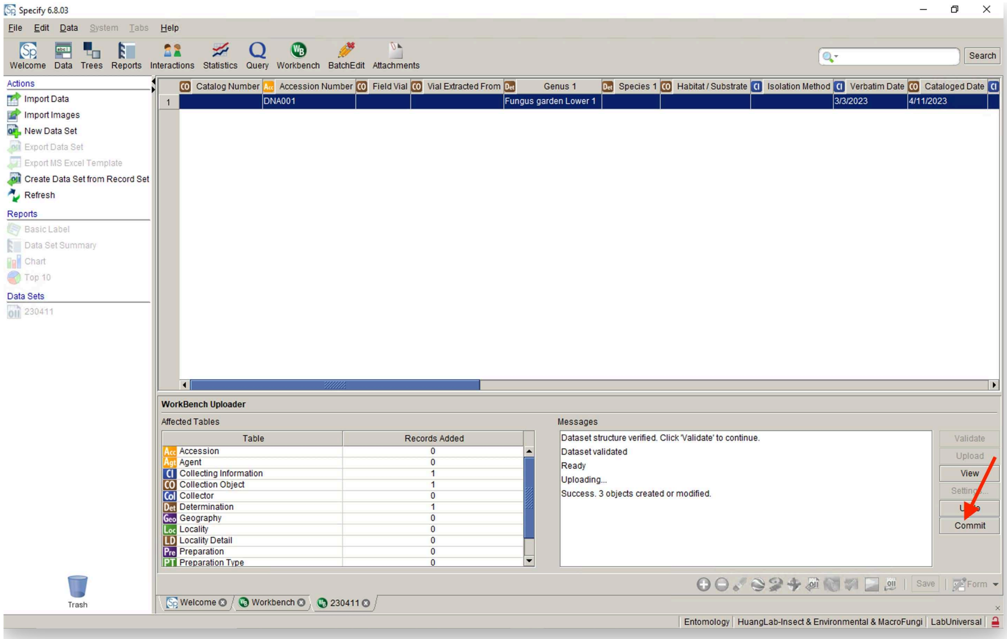
3.8 Click **Upload** again (pointed with red arrow).



	Catalog Number	Accession Number	Field Vial	Vial Extracted From	Genus 1	Species 1	Habitat / Substrate	Isolation Method	Verbatim Date	Cataloged Date
1		DNA001			Fungus garden Lower 1				3/3/2023	4/11/2023

```
Dataset structure verified. Click 'Validate' to continue.
Dataset validated
Ready
```

3.9 Then Click **Commit** (marked with red arrow).

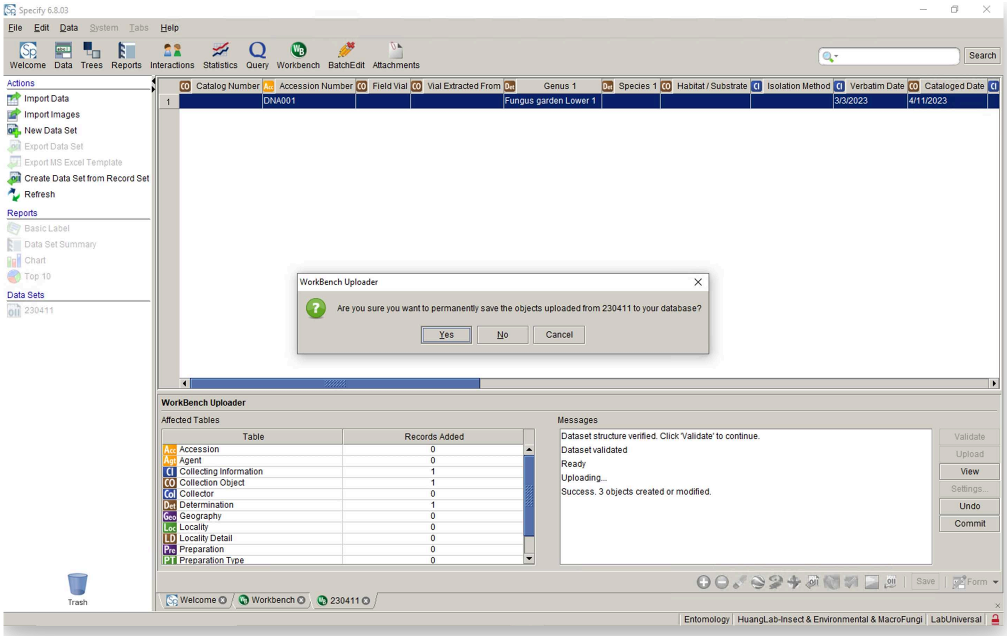


	Catalog Number	Accession Number	Field Vial	Vial Extracted From	Genus 1	Species 1	Habitat / Substrate	Isolation Method	Verbatim Date	Cataloged Date
1		DNA001			Fungus garden Lower 1				3/3/2023	4/11/2023

Table	Records Added
Accession	0
Agent	0
Collecting Information	1
Collection Object	1
Collector	0
Determination	1
Geography	0
Locality	0
Locality Detail	0
Preparation	0
Preparation Type	0

```
Dataset structure verified. Click 'Validate' to continue.
Dataset validated
Ready
Uploading...
Success. 3 objects created or modified.
```

3.10 Click **Yes** to finish the upload progress.



	Catalog Number	Accession Number	Field Vial	Vial Extracted From	Genus 1	Species 1	Habitat / Substrate	Isolation Method	Verbatim Date	Cataloged Date
1		DNA001			Fungus garden Lower 1				3/3/2023	4/11/2023

WorkBench Uploader

Are you sure you want to permanently save the objects uploaded from 230411 to your database?

Yes No Cancel

WorkBench Uploader

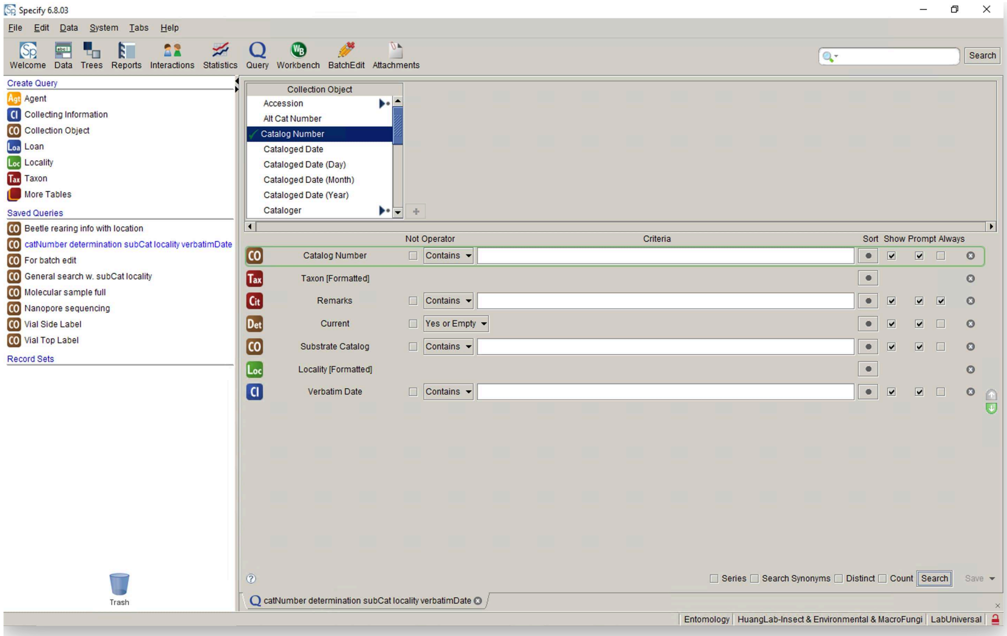
Affected Tables

Table	Records Added
Accession	0
Agent	0
Collecting Information	1
Collection Object	1
Collector	0
Determination	1
Geography	0
Locality	0
Locality Detail	0
Preparation	0
Preparation Type	0

Messages

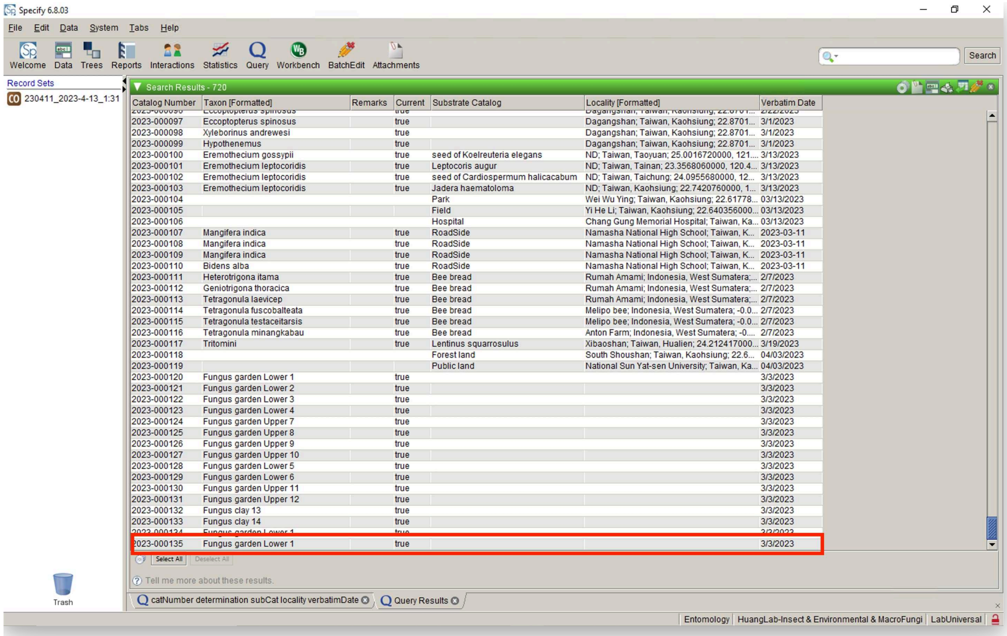
Dataset structure verified. Click 'Validate' to continue.
Dataset validated
Ready
Uploading...
Success. 3 objects created or modified.

3.11 Now you can go to **Query** → **catNumber determination...**(under the Saved Queries in left panel) to check if the upload succeeded.
Click **Search** to start querying.



	Not	Operator	Criteria	Sort	Show	Prompt	Always
Catalog Number	☐	Contains		●	☑	☑	☐
Taxon [Formatted]				●			
Remarks	☐	Contains		●	☑	☑	☑
Current	☐	Yes or Empty		●	☑	☑	☐
Substrate Catalog	☐	Contains		●	☑	☑	☐
Locality [Formatted]				●			
Verbatim Date	☐	Contains		●	☑	☑	☐

3.12 Ta-Da!! The upload was succesful.



Search Results - 720

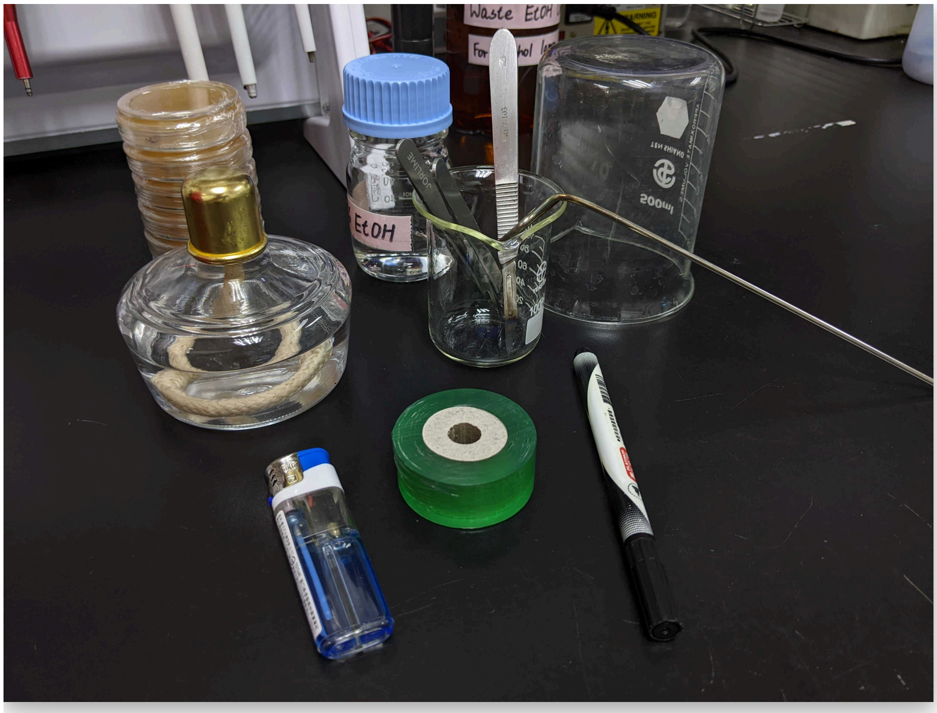
Catalog Number	Taxon [Formatted]	Remarks	Current	Substrate Catalog	Locality [Formatted]	Verbatim Date
2023-000097	Eccoptopterus spinosus		true		Dagangshan; Taiwan, Kaohsiung; 22.8701...	3/1/2023
2023-000098	Xyleborinus andrewesi		true		Dagangshan; Taiwan, Kaohsiung; 22.8701...	3/1/2023
2023-000099	Hypothenemus		true		Dagangshan; Taiwan, Kaohsiung; 22.8701...	3/1/2023
2023-000100	Eremothecium gossypii		true	seed of Koelreuteria elegans	ND; Taiwan, Taoyuan; 25.0016720000, 121....	3/13/2023
2023-000101	Eremothecium leptocoridis		true	Leptocoris augur	ND; Taiwan, Tainan; 23.3568060000, 120.4...	3/13/2023
2023-000102	Eremothecium leptocoridis		true	seed of Cardiospermum halicacabum	ND; Taiwan, Taichung; 24.0955680000, 12...	3/13/2023
2023-000103	Eremothecium leptocoridis		true	Jadera haematoloma	ND; Taiwan, Kaohsiung; 22.7420760000, 1...	3/13/2023
2023-000104				Park	Wei Wu Ying; Taiwan, Kaohsiung; 22.61778...	03/13/2023
2023-000105				Field	Yi He Li; Taiwan, Kaohsiung; 22.640356000...	03/13/2023
2023-000106				Hospital	Chang Gung Memorial Hospital; Taiwan, Ka...	03/13/2023
2023-000107	Mangifera indica		true	RoadSide	Namasha National High School; Taiwan, K...	2023-03-11
2023-000108	Mangifera indica		true	RoadSide	Namasha National High School; Taiwan, K...	2023-03-11
2023-000109	Mangifera indica		true	RoadSide	Namasha National High School; Taiwan, K...	2023-03-11
2023-000110	Bidens alba		true	RoadSide	Namasha National High School; Taiwan, K...	2023-03-11
2023-000111	Heterotrigona itama		true	Bee bread	Rumah Amami; Indonesia, West Sumatera;...	2/7/2023
2023-000112	Geniotrigona thoracica		true	Bee bread	Rumah Amami; Indonesia, West Sumatera;...	2/7/2023
2023-000113	Tetragonula laevicep		true	Bee bread	Rumah Amami; Indonesia, West Sumatera;...	2/7/2023
2023-000114	Tetragonula fuscobalteata		true	Bee bread	Melipo bee; Indonesia, West Sumatera; -0.0...	2/7/2023
2023-000115	Tetragonula testaceitarsis		true	Bee bread	Melipo bee; Indonesia, West Sumatera; -0.0...	2/7/2023
2023-000116	Tetragonula minangkabau		true	Bee bread	Anton Farm; Indonesia, West Sumatera; -0....	2/7/2023
2023-000117	Tritomini		true	Lentinus squarrosulus	Xibaoshan; Taiwan, Hualien; 24.212417000...	3/19/2023
2023-000118				Forest land	South Shoushan; Taiwan, Kaohsiung; 22.6...	04/03/2023
2023-000119				Public land	National Sun Yat-sen University; Taiwan, Ka...	04/03/2023
2023-000120	Fungus garden Lower 1		true			3/3/2023
2023-000121	Fungus garden Lower 2		true			3/3/2023
2023-000122	Fungus garden Lower 3		true			3/3/2023
2023-000123	Fungus garden Lower 4		true			3/3/2023
2023-000124	Fungus garden Upper 7		true			3/3/2023
2023-000125	Fungus garden Upper 8		true			3/3/2023
2023-000126	Fungus garden Upper 9		true			3/3/2023
2023-000127	Fungus garden Upper 10		true			3/3/2023
2023-000128	Fungus garden Lower 5		true			3/3/2023
2023-000129	Fungus garden Lower 6		true			3/3/2023
2023-000130	Fungus garden Upper 11		true			3/3/2023
2023-000131	Fungus garden Upper 12		true			3/3/2023
2023-000132	Fungus clay 13		true			3/3/2023
2023-000133	Fungus clay 14		true			3/3/2023
2023-000135	Fungus garden Lower 1		true			3/3/2023

****Remember to delete the Data Sets & Record Sets before closing the Specify.**

3.13 Paste the **Catalog Number** of uploaded data back to your spreadsheet.

Isolate the microbes from your environmental samples

4 Prepare the equipment and materials first for sample isolation. Put them on another bench first.



1. Alcohol lamps
2. 95% ethanol cooling bottle
3. Beakers (small & large)
4. Tweezers
5. Scalpel with blade
6. Separator
7. Grafting tube
8. Lighter
9. Marker pen
10. Media

4.1 Sterilize the microbes isolation area (air and bench) using a 75% ethanol sprayer. ****Make sure the mist is emitted.****

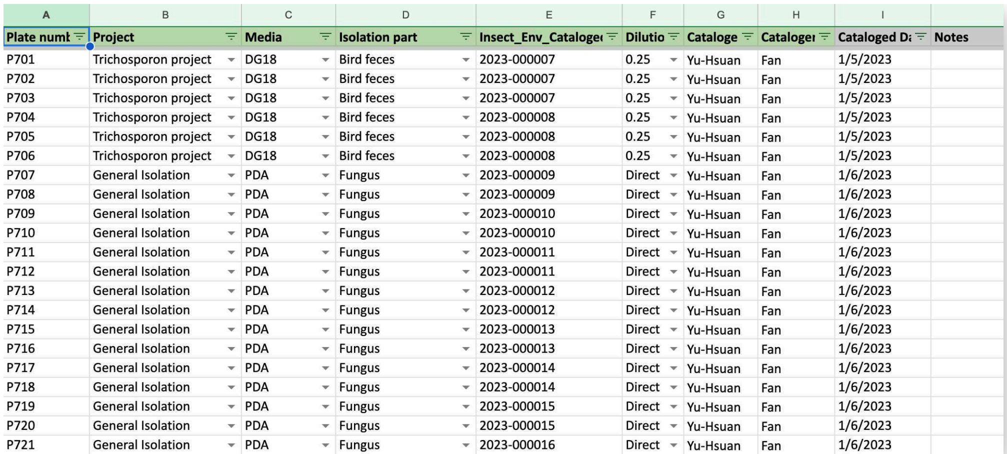
Spray it a few times up to the air.

Spray it a few times onto the bench.

Wipe the bench unidirectionally using paper towels.

4.2 Now, move the equipment and materials for microbes isolation back to the sterilized area.

4.3 Before isolation, key the information about your isolation (how many plates you are going to isolate, what kind of media you will use, etc) into the **1 Fungi Isolation Plates (Direct edit) 菌株分離培養基編號 (直接編輯)** spreadsheet first



A	B	C	D	E	F	G	H	I	
Plate numb	Project	Media	Isolation part	Insect_Env_Cataloge	Dilutio	Cataloge	Cataloger	Cataloged Da	Notes
P701	Trichosporon project	DG18	Bird feces	2023-000007	0.25	Yu-Hsuan	Fan	1/5/2023	
P702	Trichosporon project	DG18	Bird feces	2023-000007	0.25	Yu-Hsuan	Fan	1/5/2023	
P703	Trichosporon project	DG18	Bird feces	2023-000007	0.25	Yu-Hsuan	Fan	1/5/2023	
P704	Trichosporon project	DG18	Bird feces	2023-000008	0.25	Yu-Hsuan	Fan	1/5/2023	
P705	Trichosporon project	DG18	Bird feces	2023-000008	0.25	Yu-Hsuan	Fan	1/5/2023	
P706	Trichosporon project	DG18	Bird feces	2023-000008	0.25	Yu-Hsuan	Fan	1/5/2023	
P707	General Isolation	PDA	Fungus	2023-000009	Direct	Yu-Hsuan	Fan	1/6/2023	
P708	General Isolation	PDA	Fungus	2023-000009	Direct	Yu-Hsuan	Fan	1/6/2023	
P709	General Isolation	PDA	Fungus	2023-000010	Direct	Yu-Hsuan	Fan	1/6/2023	
P710	General Isolation	PDA	Fungus	2023-000010	Direct	Yu-Hsuan	Fan	1/6/2023	
P711	General Isolation	PDA	Fungus	2023-000011	Direct	Yu-Hsuan	Fan	1/6/2023	
P712	General Isolation	PDA	Fungus	2023-000011	Direct	Yu-Hsuan	Fan	1/6/2023	
P713	General Isolation	PDA	Fungus	2023-000012	Direct	Yu-Hsuan	Fan	1/6/2023	
P714	General Isolation	PDA	Fungus	2023-000012	Direct	Yu-Hsuan	Fan	1/6/2023	
P715	General Isolation	PDA	Fungus	2023-000013	Direct	Yu-Hsuan	Fan	1/6/2023	
P716	General Isolation	PDA	Fungus	2023-000013	Direct	Yu-Hsuan	Fan	1/6/2023	
P717	General Isolation	PDA	Fungus	2023-000014	Direct	Yu-Hsuan	Fan	1/6/2023	
P718	General Isolation	PDA	Fungus	2023-000014	Direct	Yu-Hsuan	Fan	1/6/2023	
P719	General Isolation	PDA	Fungus	2023-000015	Direct	Yu-Hsuan	Fan	1/6/2023	
P720	General Isolation	PDA	Fungus	2023-000015	Direct	Yu-Hsuan	Fan	1/6/2023	
P721	General Isolation	PDA	Fungus	2023-000016	Direct	Yu-Hsuan	Fan	1/6/2023	

Plate number: The number is **auto-generated**.
Project: Choose an existing one or create one for yourself for latter identified.
Media: The media to isolate your microbes.
Isolation part: The part of the environment samples you isolated your microbes.
Insect_Env_Cataloged #: The catalog number of the environmental samples.
Dilution: The dilution factor of this particular plate for isolation (e.g., 0.001, 0.01, or Direct).
Cataloger First Name & Cataloger Last Name: The name of who uploads the data.
Cataloged Date: The date on which the data is uploaded.
Notes: Any information you wanted to remark on the certain plate. Leave it when you didn't have any notes.

4.4 Write the plate information on the downside of the plate following the example photo shown below.

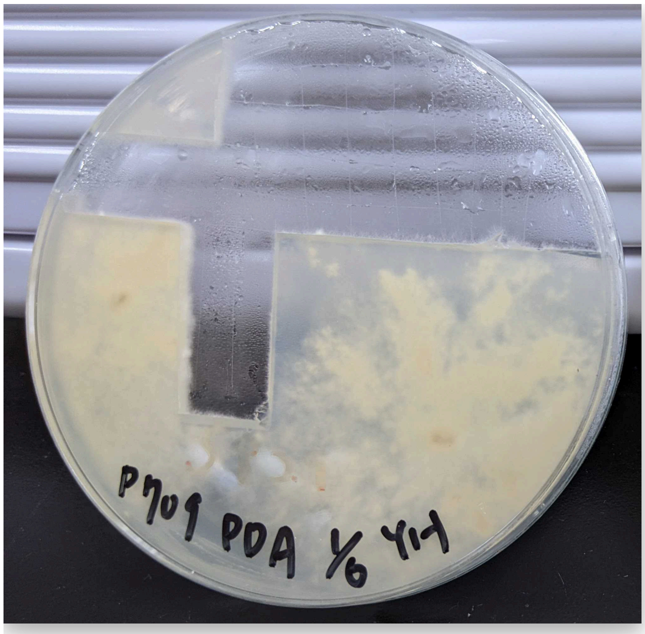


Plate number, Media, Date, Your name

4.5 **Make sure that you sterilize every tool before using them for each isolation:**
1. Dip the scalpel, tweezer, or spreader into 95% ethanol cooling bottle, and flame it immediately.
2. Repeat the step(dip and flame) **THREE times** for sterilization of equipment.

4.6 Now, you can start to isolate microbes from your environmental samples. We called them primary cultures.
****Isolation method varied depend on the type of sample, check published papers or consult with seniors if needed****

4.7 After finishing all the isolation, seal the plates with grafting tape for 2 rounds.

4.8 Pack all the plates using a PP bag (no. 8, 10, or 12 depending on how many plates you have). Incubate the plates in your slot in the incubator for 7~21 days (depending on the growth rate of the microbes).

no. 8: 8 plates
no. 10: 24 or 32 plates
no. 12: 48 or 56 plates

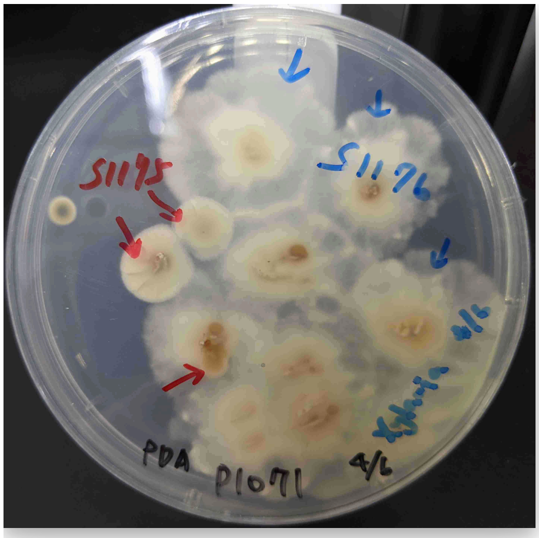
Flip the PP bag over when keeping it in the incubator. The cover of the plates needed to be facing downwards to prevent the microbes from drowning by the water vapors.

4.9 Check the growth condition of the primary cultures every day. **Make sure they are not overgrown.**

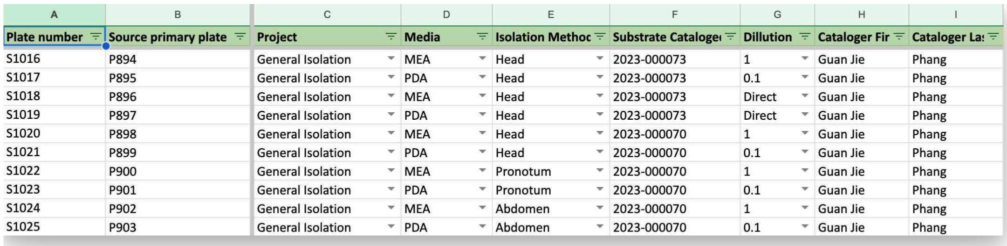
Once they are matured, you can start to subculture them.

Record and upload the data of primary cultures

5 1. Examine the microbes colonies under a dissecting microscope.
2. Choose your desired colonies, which are your targeted colonies.
3. Mark the targeted colonies with their later corresponding secondary plate number.
4. If there is more than one morphotype targeted colony in a certain plate, you need to record them into a distinct plate number, e.g., **TWO morphotypes will have TWO distinct secondary plate numbers** from the same primary plate number.

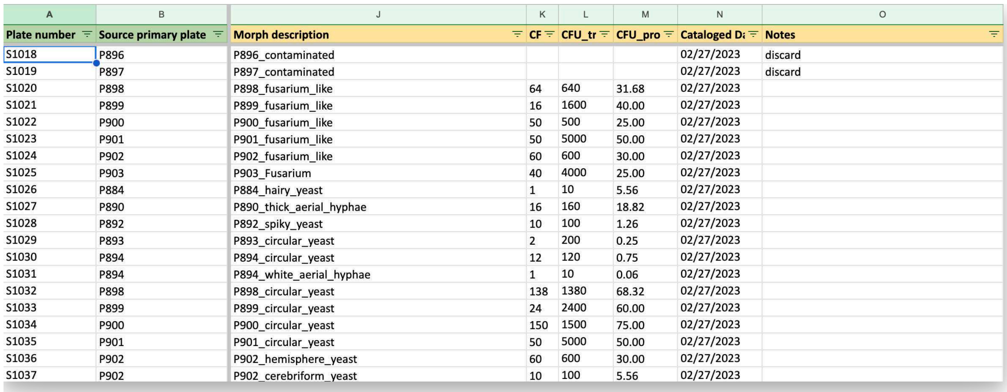


5.1 Record all the data of primary cultures to the second worksheet: **Secondary Isolate PDA** (in 1 Fungi Isolation Plates (Direct edit) 菌株分離培養基編號 (直接編輯)).
Fill in all the columns following the photos and instructions shown below.



A	B	C	D	E	F	G	H	I
Plate number	Source primary plate	Project	Media	Isolation Methoc	Substrate Cataloge	Dillution	Cataloger Fir	Cataloger La
S1016	P894	General Isolation	MEA	Head	2023-000073	1	Guan Jie	Phang
S1017	P895	General Isolation	PDA	Head	2023-000073	0.1	Guan Jie	Phang
S1018	P896	General Isolation	MEA	Head	2023-000073	Direct	Guan Jie	Phang
S1019	P897	General Isolation	PDA	Head	2023-000073	Direct	Guan Jie	Phang
S1020	P898	General Isolation	MEA	Head	2023-000070	1	Guan Jie	Phang
S1021	P899	General Isolation	PDA	Head	2023-000070	0.1	Guan Jie	Phang
S1022	P900	General Isolation	MEA	Pronotum	2023-000070	1	Guan Jie	Phang
S1023	P901	General Isolation	PDA	Pronotum	2023-000070	0.1	Guan Jie	Phang
S1024	P902	General Isolation	MEA	Abdomen	2023-000070	1	Guan Jie	Phang
S1025	P903	General Isolation	PDA	Abdomen	2023-000070	0.1	Guan Jie	Phang

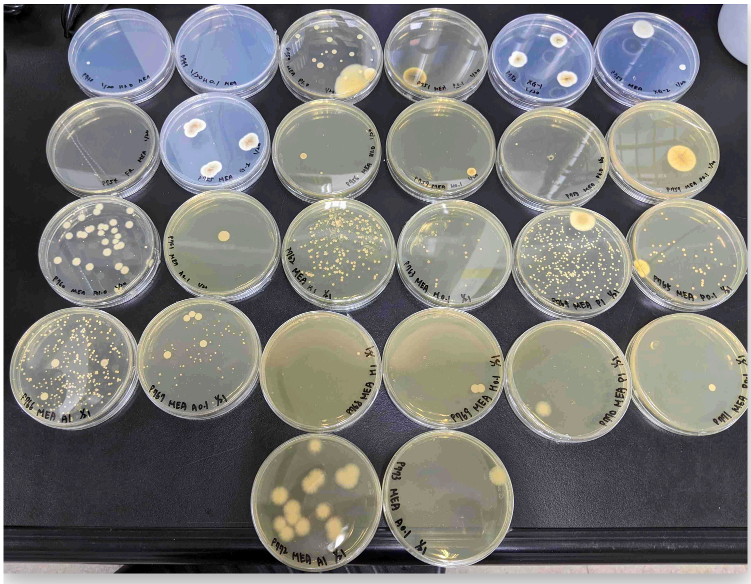
Plate number: It is **auto-generated**.
Column B to Column I: You can copy and paste directly from the Column A to Column H of the first worksheet **Primary Isolate MEA**; (Hint: **GREEN columns to GREEN columns**)



A	B	J	K	L	M	N	O
Plate number	Source primary plate	Morph description	CF	CFU_tr	CFU_pro	Cataloged Da	Notes
S1018	P896	P896_contaminated				02/27/2023	discard
S1019	P897	P897_contaminated				02/27/2023	discard
S1020	P898	P898_fusarium_like	64	640	31.68	02/27/2023	
S1021	P899	P899_fusarium_like	16	1600	40.00	02/27/2023	
S1022	P900	P900_fusarium_like	50	500	25.00	02/27/2023	
S1023	P901	P901_fusarium_like	50	5000	50.00	02/27/2023	
S1024	P902	P902_fusarium_like	60	600	30.00	02/27/2023	
S1025	P903	P903_Fusarium	40	4000	25.00	02/27/2023	
S1026	P884	P884_hairy_yeast	1	10	5.56	02/27/2023	
S1027	P890	P890_thick_aerial_hyphae	16	160	18.82	02/27/2023	
S1028	P892	P892_spiky_yeast	10	100	1.26	02/27/2023	
S1029	P893	P893_circular_yeast	2	200	0.25	02/27/2023	
S1030	P894	P894_circular_yeast	12	120	0.75	02/27/2023	
S1031	P894	P894_white_aerial_hyphae	1	10	0.06	02/27/2023	
S1032	P898	P898_circular_yeast	138	1380	68.32	02/27/2023	
S1033	P899	P899_circular_yeast	24	2400	60.00	02/27/2023	
S1034	P900	P900_circular_yeast	150	1500	75.00	02/27/2023	
S1035	P901	P901_circular_yeast	50	5000	50.00	02/27/2023	
S1036	P902	P902_hemisphere_yeast	60	600	30.00	02/27/2023	
S1037	P902	P902_cerebriform_yeast	10	100	5.56	02/27/2023	

Morph description: This is generated automatically by the formula. Replace **YOUR DESCRIPTION** with what you do observe on your targeted colony under a dissecting microscope. Type **contaminated** if you got others than your target or all the colonies were overgrown by common molds.
CFU: The number of colonies of your target in a plate.
CFU_true: It is **auto-filled** based on the dilution factor of each plate.
CFU_proportion: The proportion of your targeted colony in a certain plate (i.e. what percentage of your target among all the observed colonies on the plate).
Cataloged Date: The date you do the subculture and upload the data.
Notes: Any information you think is important to record. If you have **contaminated** in Morph description, please type discard here.

5.2 Record or take a photo of the order of your plates that are ready for scanning. **6** plates as a group, so you can refer back during the photo editing.

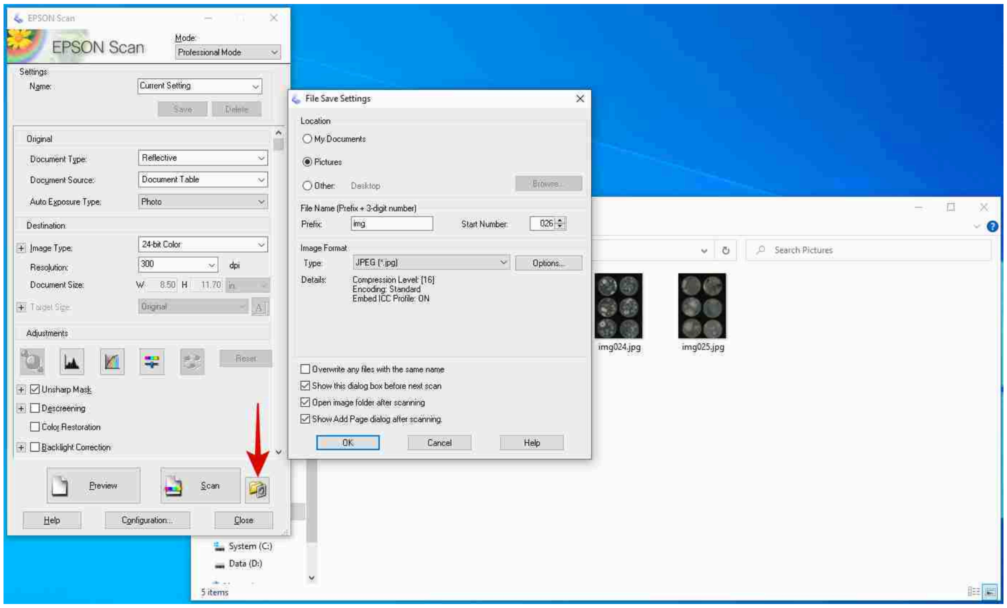


5.3 Before scanning plate, you need to sterilize the environment and scanner glass using paper towels with 75% ethanol.

5.4 Wipe the scanner glass using paper towels with dishwashing detergent (this prevents water condensation on the glass).

5.5 Keep the order of the plates, remove the plates cover, and put the plates upside down onto the scanner glass.
****Do not change the order before and after scanning****

5.6 Search and open **EPSON Scan** software. Choose **Professional mode**. Go to the **File Save Settings** (red arrow), and make sure the image format is **.jpg** (follow all the settings as the photo below shown).



EPSON Scan

Mode: Professional Mode

Settings

Name: Current Setting

Original

Document Type: Reflective

Document Source: Document Table

Auto Exposure Type: Photo

Destination

Image Type: 24-bit Color

Resolution: 300 dpi

Document Size: W 8.50 H 11.70 in.

Target Size: Original

Adjustments

☑ Unsharp Mask

☐ Descreening

☐ Color Restoration

☐ Backlight Correction

File Save Settings

Location

○ My Documents

● Pictures

○ Other: Desktop

File Name (Prefix + 3-digit number)

Prefix: img Start Number: 026

Image Format

Type: JPEG (*.jpg)

Details: Compression Level: [16]
Encoding: Standard
Embed ICC Profile: ON

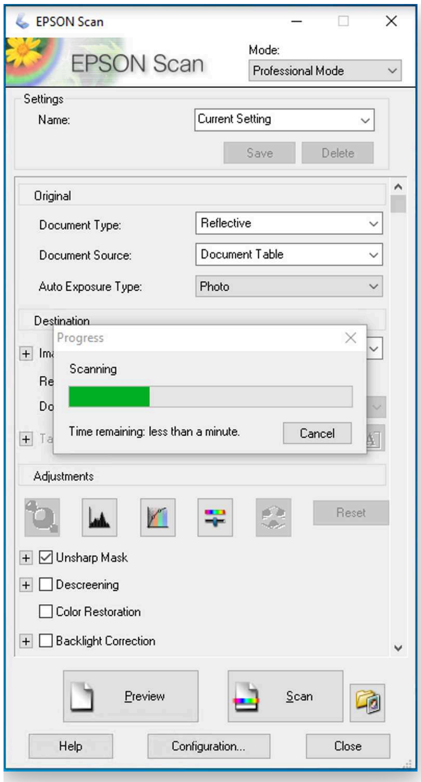
☐ Overwrite any files with the same name

☑ Show this dialog box before next scan

☑ Open image folder after scanning

☑ Show Add Page dialog after scanning.

5.7 Then, click **OK**. (It will start scanning like the photo shown below).



EPSON Scan

Mode: Professional Mode

Settings

Name: Current Setting

Original

Document Type: Reflective

Document Source: Document Table

Auto Exposure Type: Photo

Destination

Progress

Scanning

Time remaining: less than a minute.

Adjustments

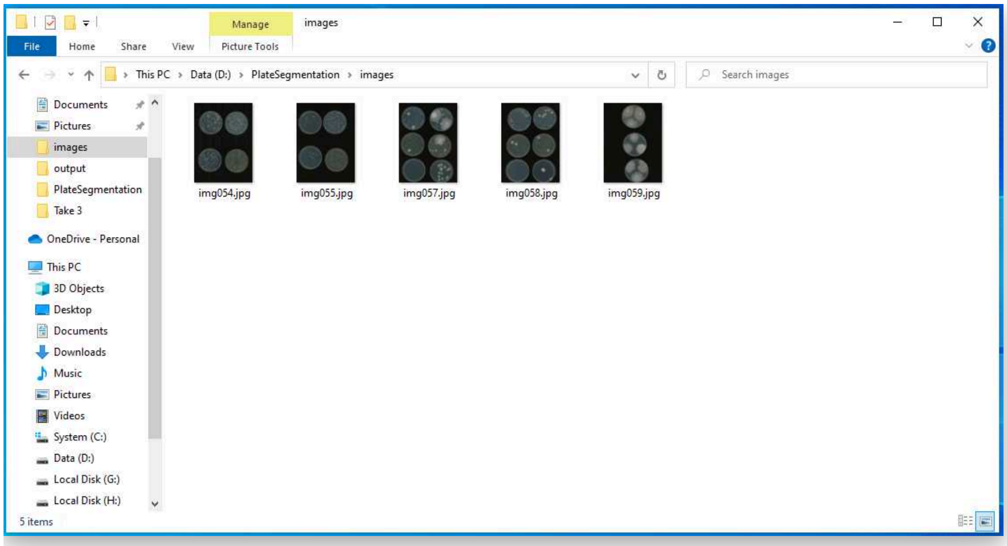
☑ Unsharp Mask

☐ Descreening

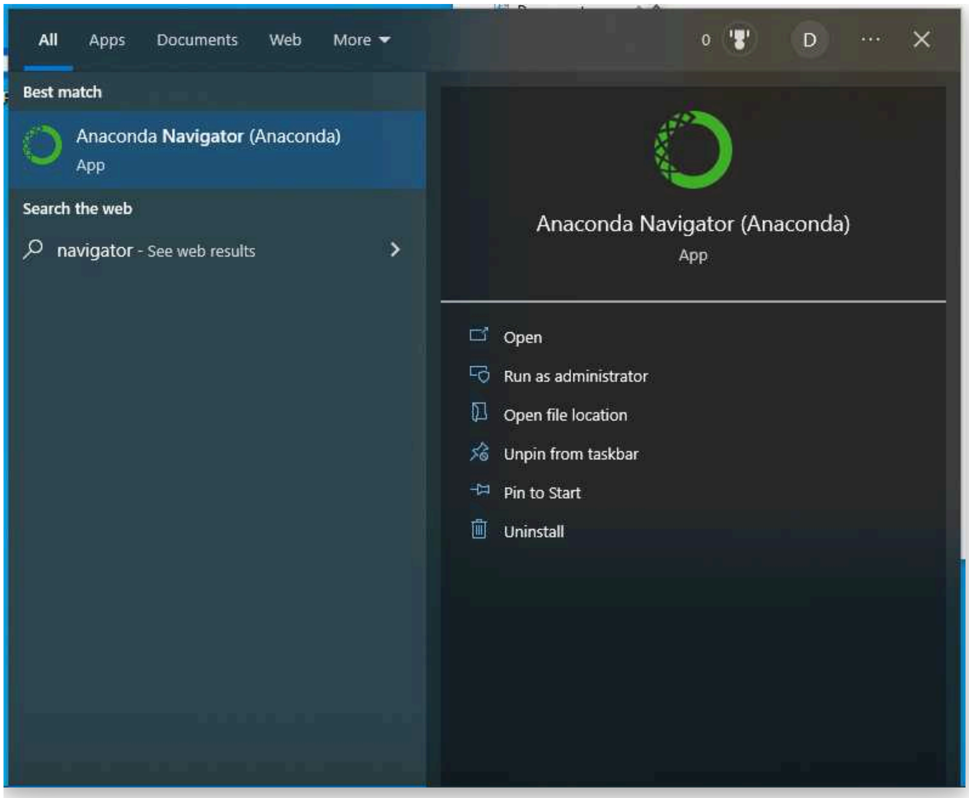
☐ Color Restoration

☐ Backlight Correction

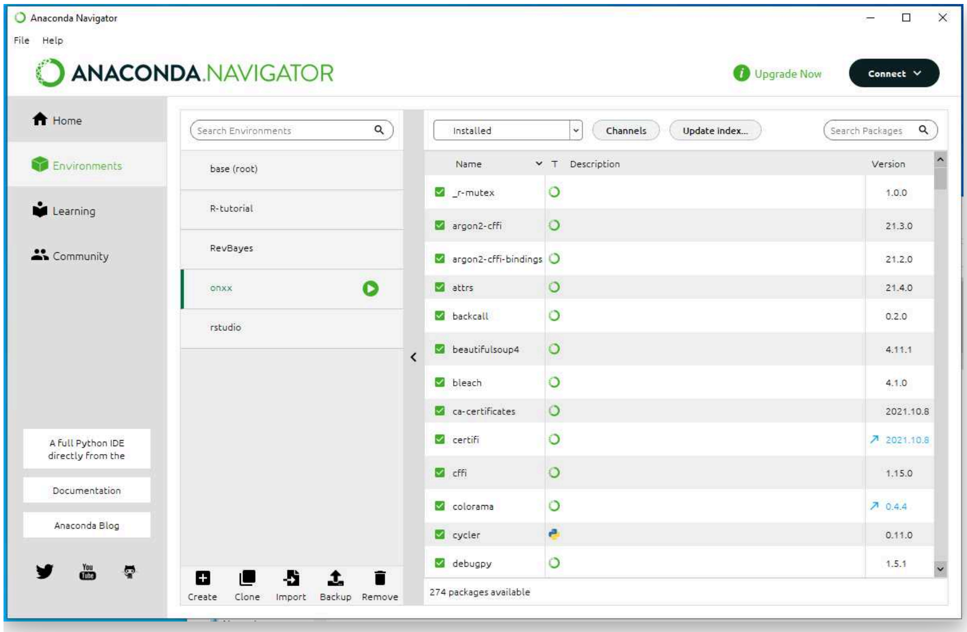
5.8 Move the files from your **Pictures** folder to the **D:\PlateSegmentation\images**



5.9 Search and open **Anaconda Navigator** software.

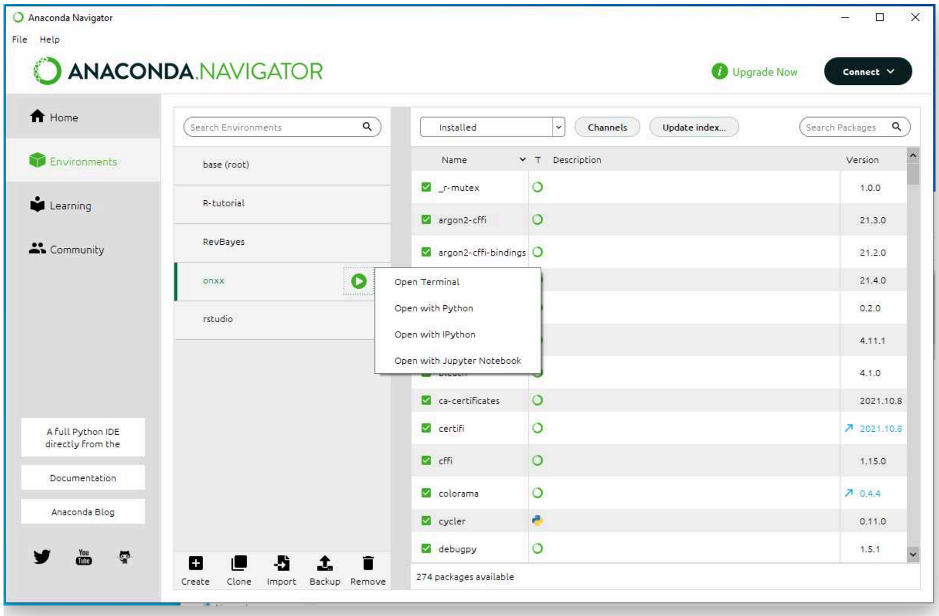


You will see the interface as the photo shown below.



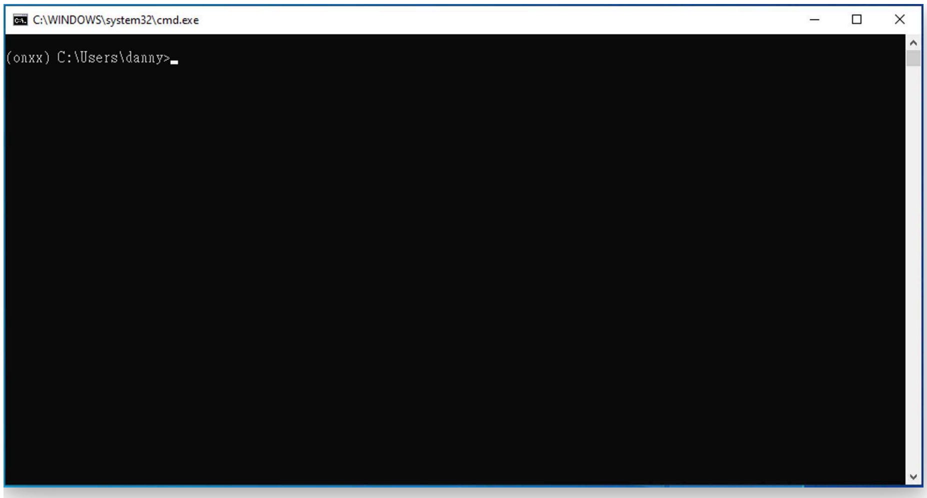
Name	T	Description	Version
☑ _r-mutex			1.0.0
☑ argon2-cffi			21.3.0
☑ argon2-cffi-bindings			21.2.0
☑ attrs			21.4.0
☑ backcall			0.2.0
☑ beautifulsoup4			4.11.1
☑ bleach			4.1.0
☑ ca-certificates			2021.10.8
☑ certifi			↗ 2021.10.8
☑ cffi			1.15.0
☑ colorama			↗ 0.4.4
☑ cycler			0.11.0
☑ debugpy			1.5.1

5.10 Select **onxx** under **Environments** tab (as the photo shown below).



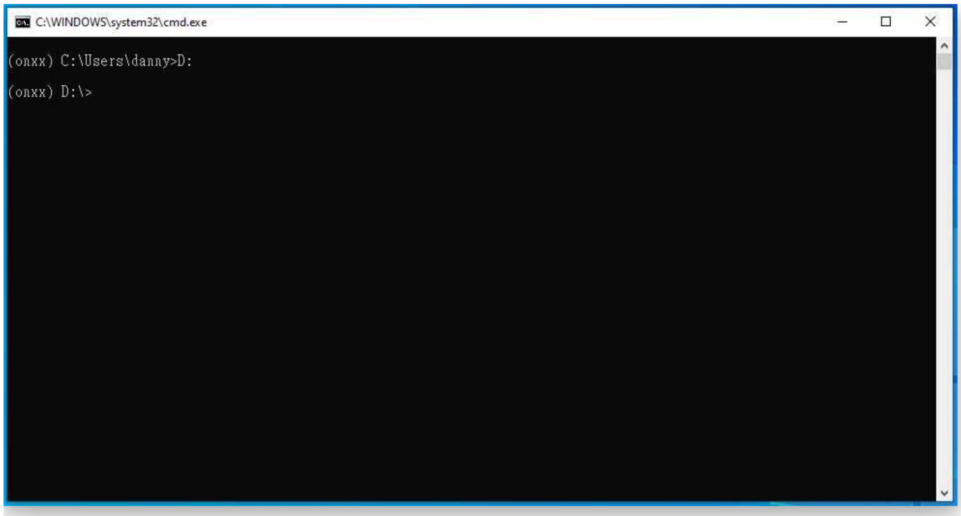
Name	T	Description	Version
☑ _r-mutex			1.0.0
☑ argon2-cffi			21.3.0
☑ argon2-cffi-bindings			21.2.0
			21.4.0
			0.2.0
			4.11.1
			4.1.0
☑ ca-certificates			2021.10.8
☑ certifi			↗ 2021.10.8
☑ cffi			1.15.0
☑ colorama			↗ 0.4.4
☑ cycler			0.11.0
☑ debugpy			1.5.1

Left click the **play button**. Select **Open Terminal**.



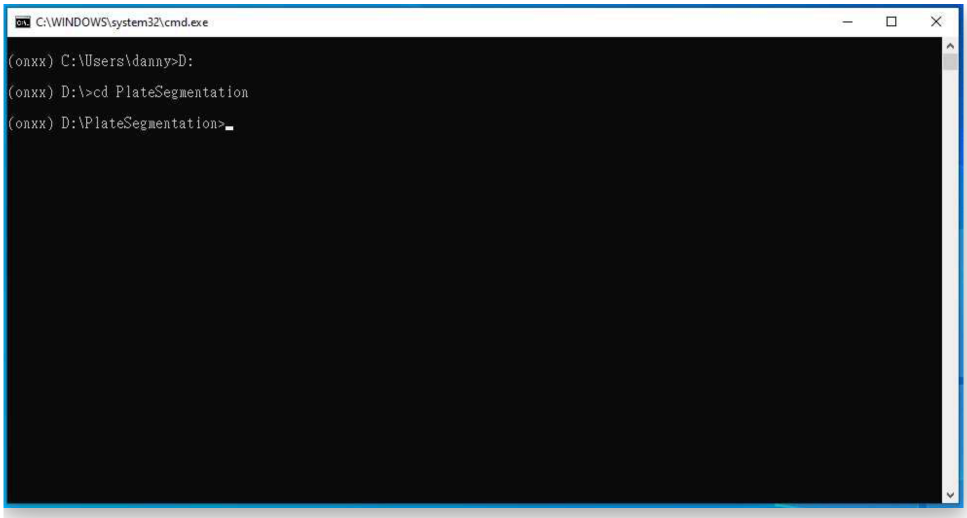
```
(onxx) C:\Users\danny>
```

5.11 Follow the commands, and you will have the similar output as the photos shown below.
Type **D:** , then press **enter**



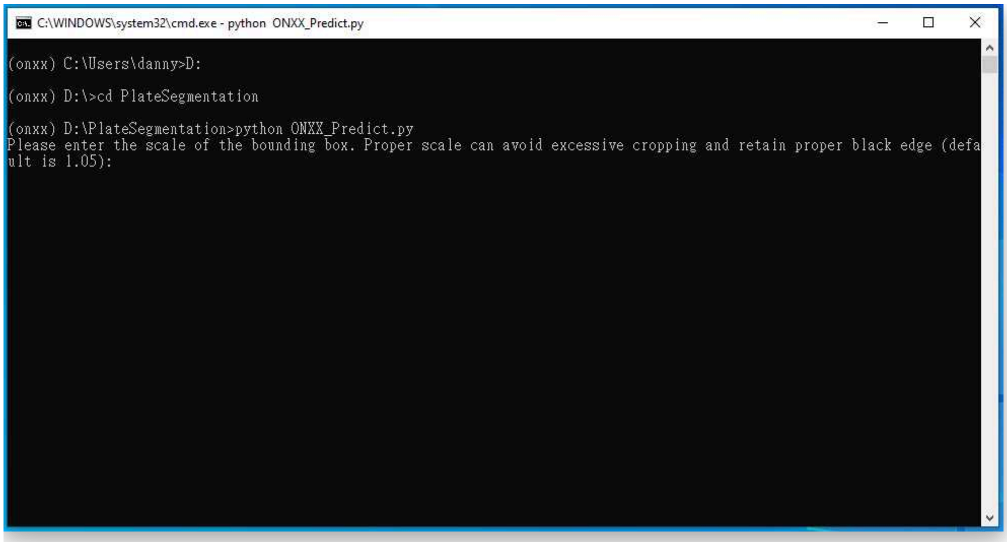
```
(onxx) C:\Users\danny>D:

(onxx) D:\>
```

Type **cd PlateSegmentation** , then press **enter**



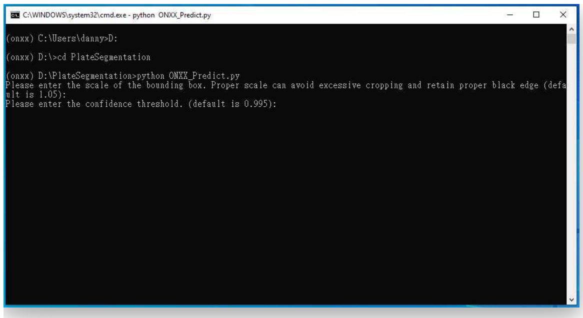
```
(onxx) C:\Users\danny>D:

(onxx) D:\>cd PlateSegmentation

(onxx) D:\PlateSegmentation>_
```

Type **python ONXX_predict.py** , then press **enter**

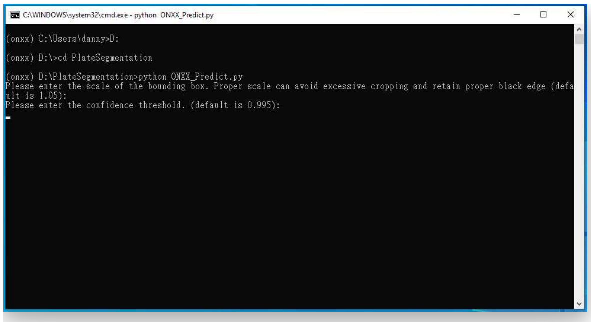


```
(onxx) C:\Users\danny>D:

(onxx) D:\>cd PlateSegmentation

(onxx) D:\PlateSegmentation>python ONXX_Predict.py
Please enter the scale of the bounding box. Proper scale can avoid excessive cropping and retain proper black edge (defa
ult is 1.05):
```

Press **enter** again and again. You will see a **_** flashing.

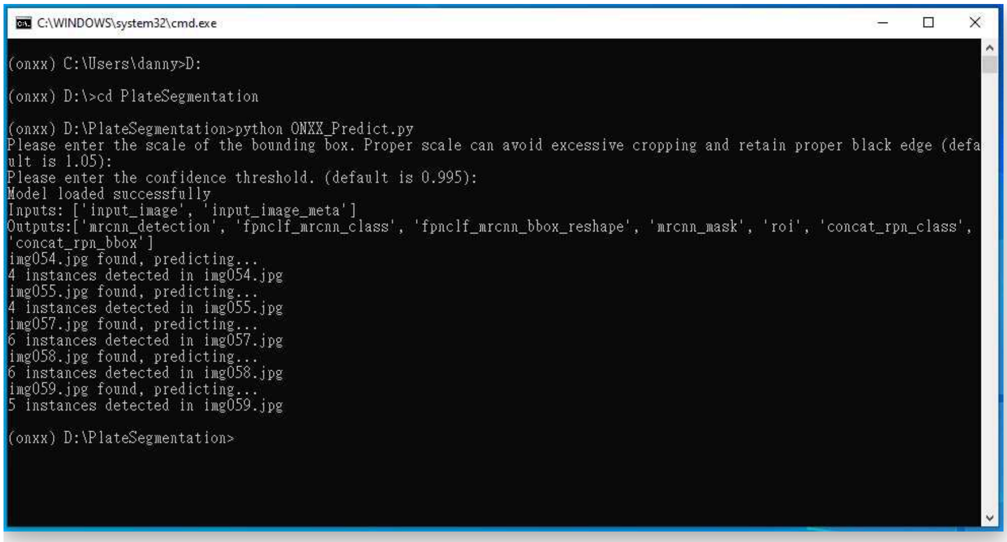


```
(onxx) C:\Users\danny>D:

(onxx) D:\>cd PlateSegmentation

(onxx) D:\PlateSegmentation>python ONXX_Predict.py
Please enter the scale of the bounding box. Proper scale can avoid excessive cropping and retain proper black edge (defa
ult is 1.05):
Please enter the confidence threshold. (default is 0.995):
```



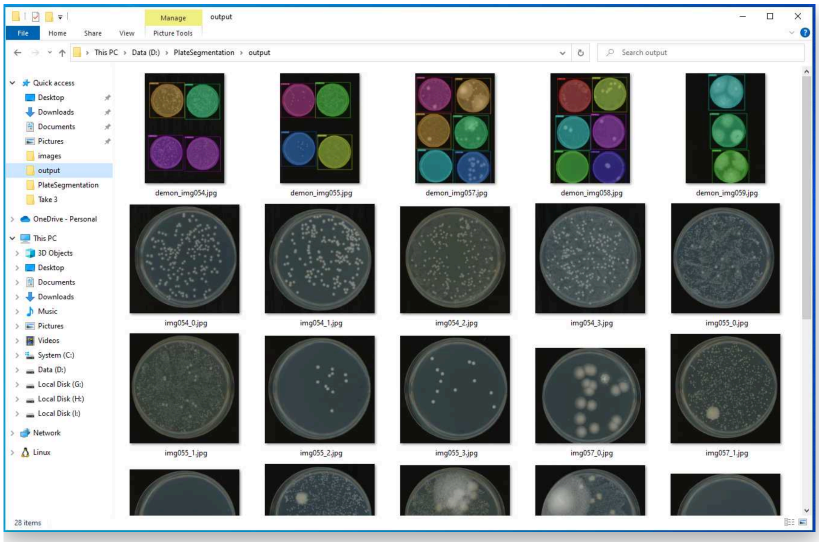
```
(onxx) C:\Users\danny>D:

(onxx) D:\>cd PlateSegmentation

(onxx) D:\PlateSegmentation>python ONXX_Predict.py
Please enter the scale of the bounding box. Proper scale can avoid excessive cropping and retain proper black edge (defa
ult is 1.05):
Please enter the confidence threshold. (default is 0.995):
_
```

Then, a new command line comes out, which represent the program execution was complete.

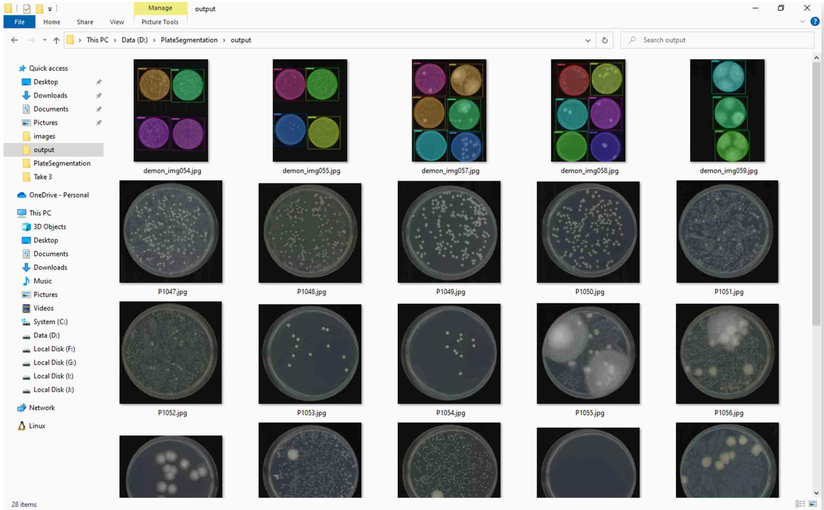


```
(onxx) C:\Users\danny>D:

(onxx) D:\>cd PlateSegmentation

(onxx) D:\PlateSegmentation>python ONXX_Predict.py
Please enter the scale of the bounding box. Proper scale can avoid excessive cropping and retain proper black edge (defa
ult is 1.05):
Please enter the confidence threshold. (default is 0.995):
Model loaded successfully
Inputs: ['input_image', 'input_image_meta']
Outputs:['mrcnn_detection', 'fpnclf_mrcnn_class', 'fpnclf_mrcnn_bbox_reshape', 'mrcnn_mask', 'roi', 'concat_rpn_class',
'concat_rpn_bbox']
img054.jpg found, predicting...
4 instances detected in img054.jpg
img055.jpg found, predicting...
4 instances detected in img055.jpg
img057.jpg found, predicting...
6 instances detected in img057.jpg
img058.jpg found, predicting...
6 instances detected in img058.jpg
img059.jpg found, predicting...
5 instances detected in img059.jpg

(onxx) D:\PlateSegmentation>
```

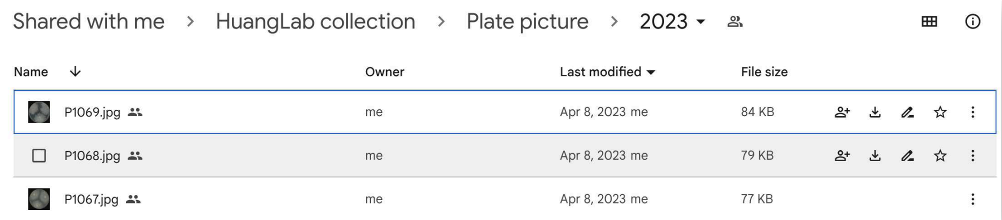
5.12 The output files are in the **D:\PlateSegmentation\output**.



Rename the output files with their **corresponding plate number**.



Upload them to the **HuangLab Collection/Plate picture/20XX**


Shared with me › HuangLab collection › Plate picture › 2023

Name	Owner	Last modified	File size
P1069.jpg	me	Apr 8, 2023 me	84 KB
P1068.jpg	me	Apr 8, 2023 me	79 KB
P1067.jpg	me	Apr 8, 2023 me	77 KB

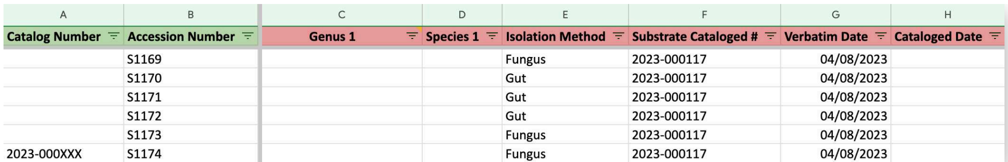
Subculture the primary cultures

6 Follow go to step #4.4 to go to step #4.9 for the subculture of primary cultures.
Now, we called them **secondary cultures**.
You may need to keep the primary cultures for a while before the secondary plate are all secured.

Ready for preservation

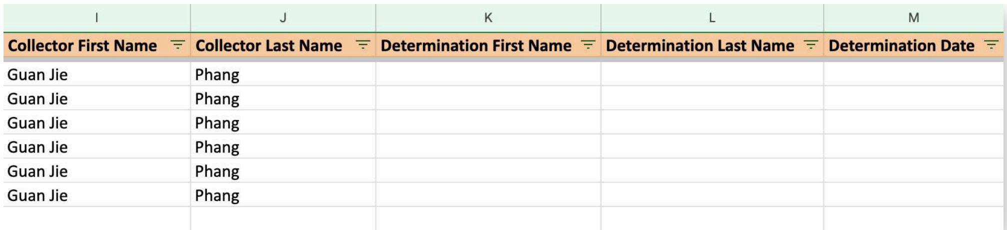
7 After 7-21 days (depending on the growth rate of your targeted microbes), the secondary cultures are ready to be preserved. If the secondary cultures were contaminated, please redo the subculture from the primary cultures.

7.1 Before prepare preservation vials, the **For Specify cateloging COPY to MODIFY!!!** worksheet need to be filled.



A	B	C	D	E	F	G	H
Catalog Number	Accession Number	Genus 1	Species 1	Isolation Method	Substrate Cataloged #	Verbatim Date	Cataloged Date
	S1169			Fungus	2023-000117	04/08/2023	
	S1170			Gut	2023-000117	04/08/2023	
	S1171			Gut	2023-000117	04/08/2023	
	S1172			Gut	2023-000117	04/08/2023	
	S1173			Fungus	2023-000117	04/08/2023	
2023-000XXX	S1174			Fungus	2023-000117	04/08/2023	

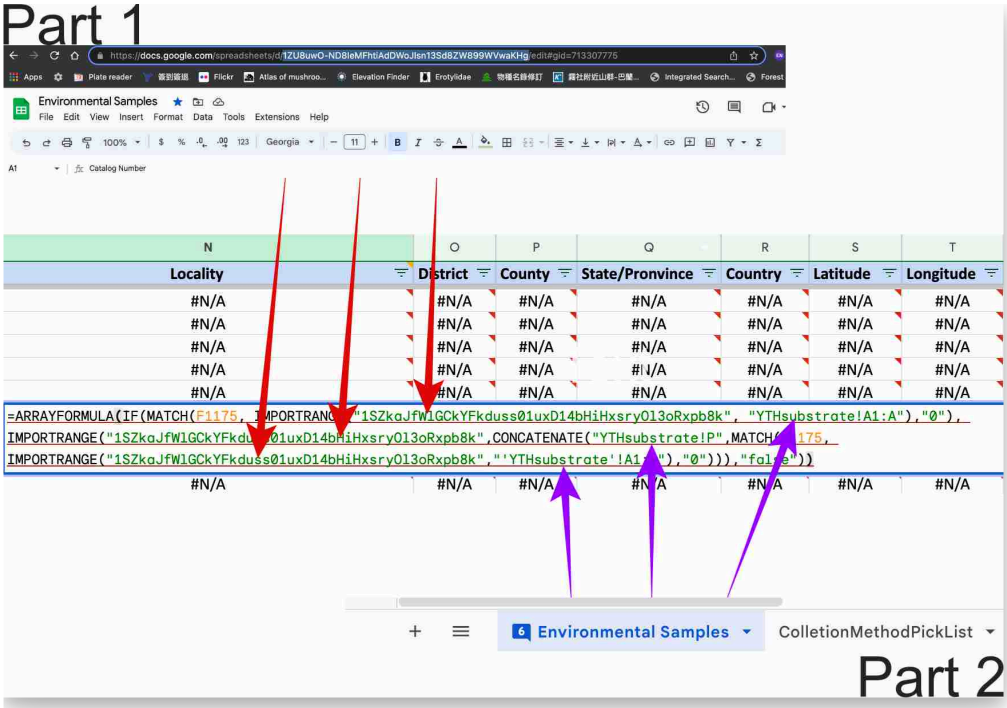
Catalog Number: It is auto-generated from Specify, fill in after you upload the data.
Column B, Column E to Column G: It is synchronized from the **Secondary Isolate PDA** worksheet.
Genus 1 & Species 1: Only fill in when you can identify them.
Cataloged Date: Same as previous spreadsheet.



I	J	K	L	M
Collector First Name	Collector Last Name	Determination First Name	Determination Last Name	Determination Date
Guan Jie	Phang			
Guan Jie	Phang			
Guan Jie	Phang			
Guan Jie	Phang			
Guan Jie	Phang			
Guan Jie	Phang			

Collector First Name & Collector Last Name: Same as previous spreadsheet.
Column K to Column M: Same as previous spreadsheet.

There is 2 part for all the locality information, you need to replace the each information: spreadsheet code (red arrow pointed), worksheet name (purple arrow pointed) with your own spreadsheet information.



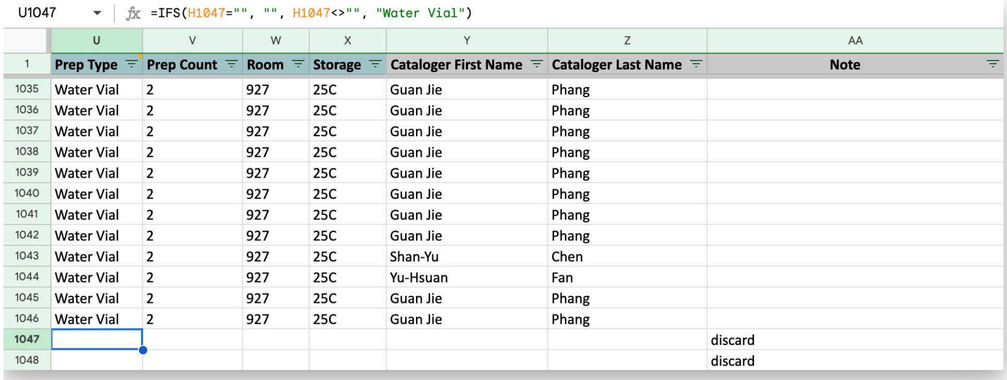
N	O	P	Q	R	S	T
Locality	District	County	State/Province	Country	Latitude	Longitude
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

```
=ARRAYFORMULA(IF(MATCH(F1175, IMPORTRANGE("1SZkaJfWlGCkYFkduss01uxD14bHiHxsryOl3oRxpb8k", "YTHsubstrate!A1:A"),"0"),
IMPORTRANGE("1SZkaJfWlGCkYFkduss01uxD14bHiHxsryOl3oRxpb8k",CONCATENATE("YTHsubstrate!P",MATCH(F1175,
IMPORTRANGE("1SZkaJfWlGCkYFkduss01uxD14bHiHxsryOl3oRxpb8k","'YTHsubstrate'!A1:A"),"0"))),"false"))
```

N	O	P	Q	R	S	T
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Part 1: Replace the red arrow pointed region of the written formula with your own spreadsheet code (highlighted region).
Part 2: Replace the purple arrow pointed region of the written formula with your own worksheet name (blue shaded region).

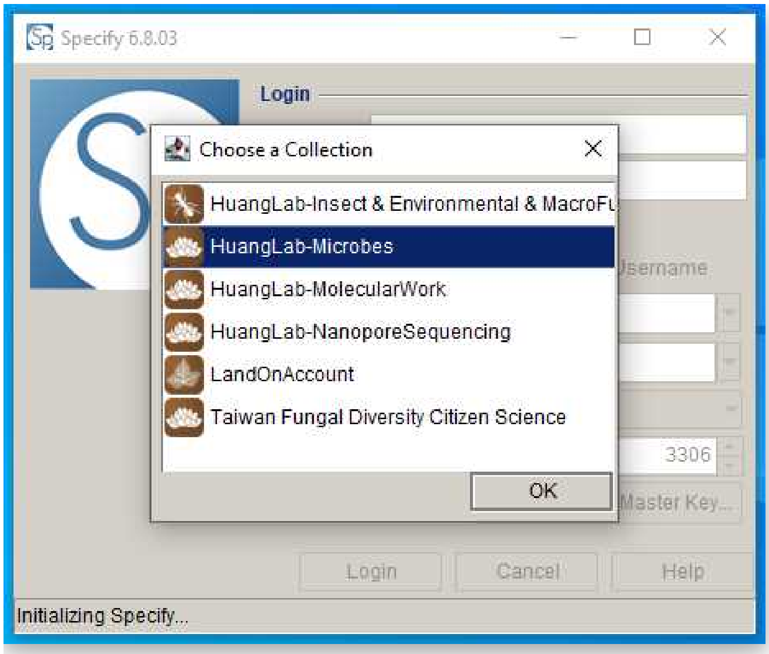
If the Cataloged Date is filled, the Column U to Column Z is auto-filled with the written formula. Do not change it unless it needed. The Column AA is synchronized with the Column O of the **Secondary Isolate PDA** worksheet.



U1047 =IFS(H1047="", "", H1047<>"", "Water Vial")

	U	V	W	X	Y	Z	AA
1	Prep Type	Prep Count	Room	Storage	Cataloger First Name	Cataloger Last Name	Note
1035	Water Vial	2	927	25C	Guan Jie	Phang	
1036	Water Vial	2	927	25C	Guan Jie	Phang	
1037	Water Vial	2	927	25C	Guan Jie	Phang	
1038	Water Vial	2	927	25C	Guan Jie	Phang	
1039	Water Vial	2	927	25C	Guan Jie	Phang	
1040	Water Vial	2	927	25C	Guan Jie	Phang	
1041	Water Vial	2	927	25C	Guan Jie	Phang	
1042	Water Vial	2	927	25C	Guan Jie	Phang	
1043	Water Vial	2	927	25C	Shan-Yu	Chen	
1044	Water Vial	2	927	25C	Yu-Hsuan	Fan	
1045	Water Vial	2	927	25C	Guan Jie	Phang	
1046	Water Vial	2	927	25C	Guan Jie	Phang	
1047							discard
1048							discard

7.2 Once the spreadsheet is filled, download the data with .csv format.
Open **Specify**, go to **HuangLab-Microbes** collection.



Choose a Collection

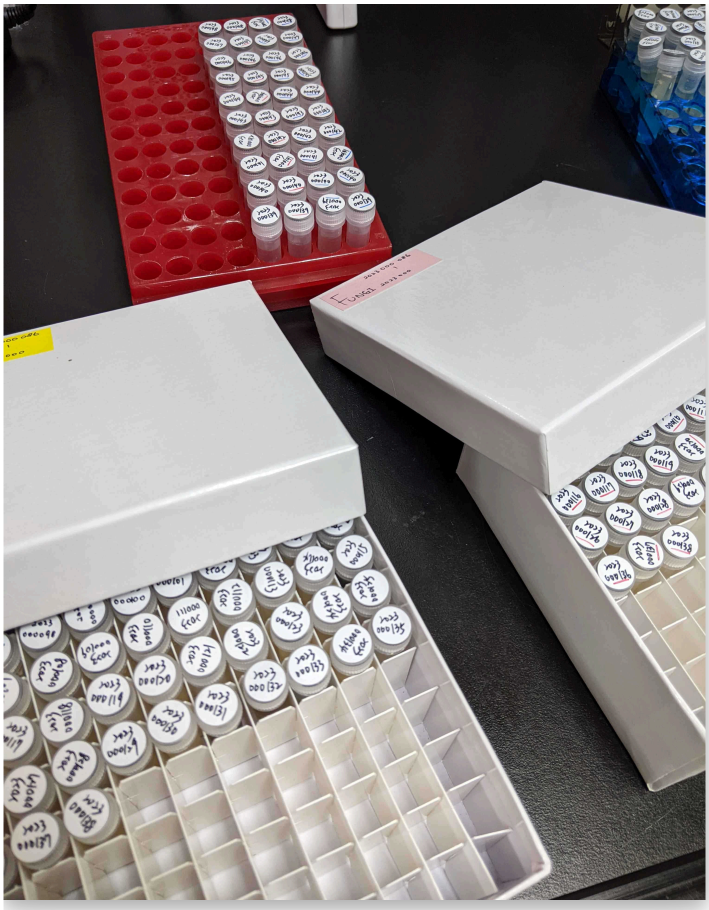
- HuangLab-Insect & Environmental & MacroFu
- HuangLab-Microbes
- HuangLab-MolecularWork
- HuangLab-NanoporeSequencing
- LandOnAccount
- Taiwan Fungal Diversity Citizen Science

7.3 Follow go to step #3.1 to go to step #3.13 for preservation vials data upload.

7.4 For each **Catalog Number**, you must prepare **2** water vials and **2** glycerol vials. You also need a 2 ml microtube with lysis mixture and beads (for details, check **DNA extraction protocols**).

Each tube needed a sticker with its corresponding **Catalog Number** on top of the cap. The label should be written with a black color marker pen or a technical pen alternative.

Please follow the example in the photo shown below.



For water vials: either tube must have a RED underline.
For glycerol vials: both tubes must have a BLUE underline.

The lysis mixture microtubes that are ready for use will look like this.

7.5 Operate UV sterilization of the laminar flow for 15 minutes. After UV sterilization, you need to ethanol-sterilize the materials that are going into the laminar flow.

Light up the alcohol lamp and flame the material.

****The materials you need are the same as go to step #4 , but you only need a scalpel instead of a tweezer and a spreader.****

Culture preservation

8 Preserve the plates with one water and one glycerol vial for one colony. The rest is for DNA extraction. Make sure you flame-sterilize the scalpel every time before slicing the agar.

****The details of culture preservation are not provided here.****

8.1 Store the preservation vials in their corresponding freezing box.

For water vials, you can keep them directly.

For glycerol vials, you need to keep them in a freezing container and then freeze them inside a -20ºC fridge for 1 day before keeping them in the -80ºC fridge collection.
****The freezing boxes of water vials are kept in the steel cabinet in front of Prof. Huang's office; the freezing boxes of glycerol vials are kept in the -80ºC fridge outside N927****

The tubes are needed to be kept in the order shown above, but not the other way around.