

# Plutof

Taxonomy module

User manual

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## Introduction

PlutoF provides cloud database and computing services for the biology and related disciplines. The purpose of the platform is to provide synergy through common modules for the taxon occurrences, classifications, geography, projects, agents, analytical tools, etc.

PlutoF includes taxonomy module to create and manage biological classifications – individual users and workgroups can develop and publish their own consensus-based classifications.

Default PlutoF classifications accessible to all users are –

1. PlutoF consensus classification that is based on a number of different global classifications (e.g. Index Fungorum (<http://www.indexfungorum.org/>) for fungi, Fauna Europaea (<http://www.faunaeur.org/>) for animals, APG III system and The Plant List (<http://www.theplantlist.org/>) for plants, etc.) PlutoF classification is being continuously updated by Estonian and foreign taxonomy experts. It is used as taxonomic backbone for the Estonian Species Registry (<http://elurikkus.ut.ee/elr.php>) and Estonian Nature Information System (EELIS, <http://loodus.keskkonnainfo.ee/eelis/>);
2. Fossil classification SARV from Geoscience collections of Estonia (<http://geokogud.info/>);

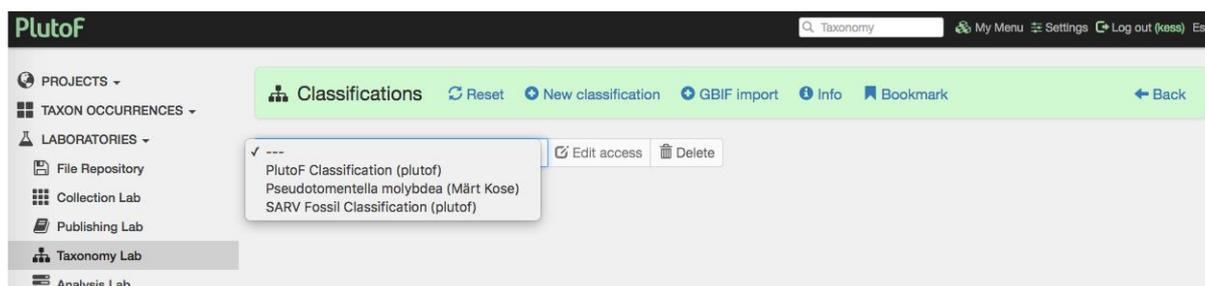
Identical taxon names (names sharing the same taxon concept) can be linked between different classifications – this allows us to show species identifications that are linked to taxon occurrences, and their taxonomic placement, based on different classifications in the system.

All taxon names belonging to classifications visible to the user can be connected to PlutoF taxon occurrences (human observations, collection specimens, living cultures, gene sequences, reference based occurrences) and taxon descriptions.

**NB! Current user manual is meant to be used together with the PlutoF main user manual (<https://plutof.ut.ee/#/manual>) that we kindly ask you to read beforehand. Main manual explains the general working principles of the workbench that are not fully covered in this manual.**

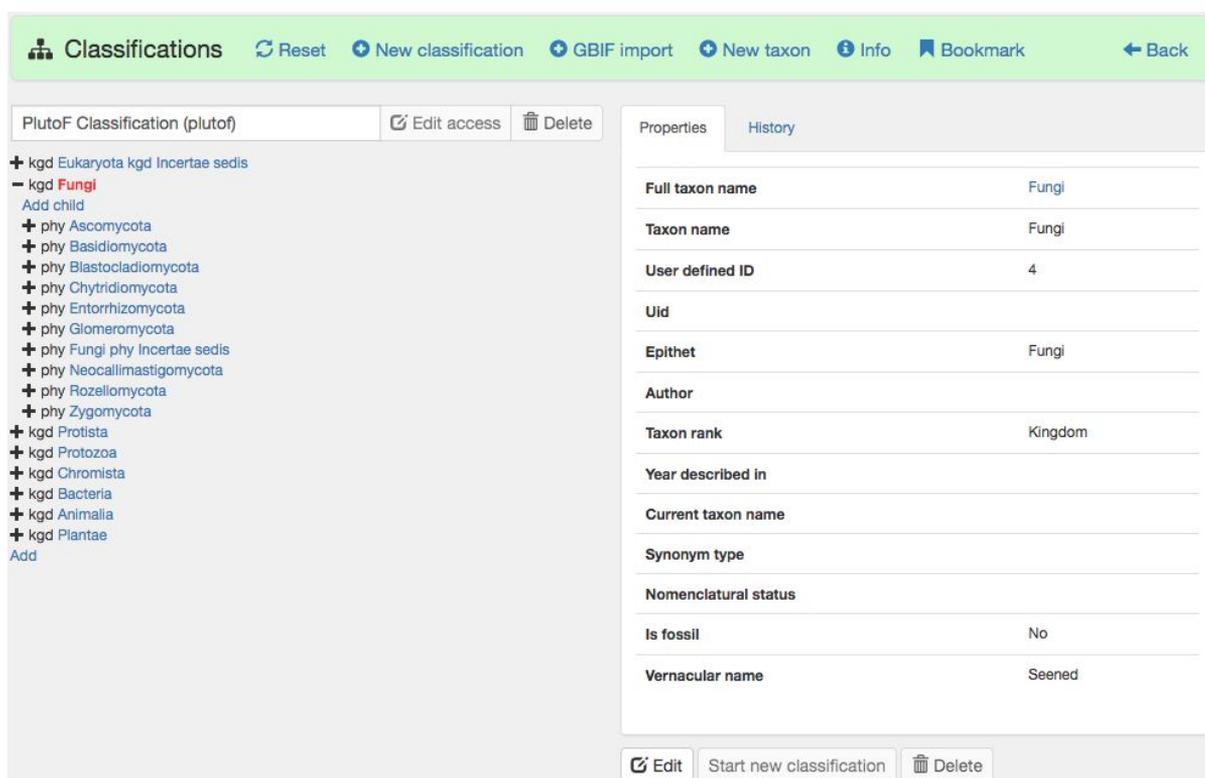
# 1 Classifications

Classifications visible to the user can be found from the main menu by following *Laboratories* => *Taxonomy Lab* => *Classifications* (figure 1).



**Figure 1.** Classifications visible to the user.

Classifications can be browsed as hierarchical tree by clicking on “+” and “-“ signs in front of the taxon names (figure 2). Clicking on taxon name will open taxon detail view on the right side of the page. Classification view page also includes direct entry point to taxon name search, and links to adding new names (“*Add child*”) and editing existing names (“*Edit*”). More detailed description of these actions can be found in paragraph 3.



**Figure 2.** Browsing classification.

## 1.1 Creating new classification

Clicking on the “Create new” link on the classification page navigation bar will open a form to create new classification (figure 2). User has to fill the only mandatory field – name for the new classification (figure 3). For cloning existing classification, or one of its branches, also higher taxon name has to be specified (“*Higher taxon node*”, see p. 1.2).

The form is titled "New Classification" and features a yellow header bar with navigation links: "Bookmark", "Info", "Reset", and "Back". The form is divided into two main sections: "Classification Data" and "Access Rights".

**Classification Data**

- Tree name**: A large text input field.
- Higher taxon node**: A search input field with the placeholder "Type to find..."
- Origin tree**: A search input field with the placeholder "Type to find..."

**Access Rights**

**View**

- Public
- Workgroups and Users
- Private

**Edit**

- Workgroups and Users
- Private

Classification Data

**Figure 3.** Form for creating new classification.

## 1.2 Cloning existing classification

In addition to creating empty classification, it is possible to start new classification based on existing classification or its branch (sub-taxon). For example, if user wants to reorganize the placement of taxa in some organism group, or to add new unpublished taxon names. Figure 4 illustrates creating new classification based on existing one. By inserting taxon name on the *Higher taxon node* field, a list of possible taxon names is shown. By selecting correct taxon name (e.g. Lepidoptera) from the list, and clicking save, new classification, which is the identical copy of the one that was used as a template, will be created.

**Figure 4.** Cloning existing classification.

Classifications created by the users can be 1) made public, 2) made available for viewing and editing to other workbench users and workgroups, or 3) kept private (figure 4, panel “Access Rights”). More detailed description of Access Rights can be found in PlutoF main user manual.

## 2 Taxon names

Detailed information on taxon name is shown in 1) classification view (see p. 1), and 2) taxon name detail view (figure 5).

Field	Value
Full taxon name	Cygnus columbianus (Ord, 1815)
Taxon name	Cygnus columbianus
User defined ID	172482
Uid	
Epithet	columbianus
Author	Ord
Taxon rank	Species
Year described in	1815
Current taxon name	
Synonym type	
Nomenclatural status	
Is fossil	No
Vernacular name	väikeluik, Tundra Swan, Dvergsvane, Pikkujoutsen, Mazais gulbis, Pibesvane, Mindre sångsvan, Mažoji gulbé

**Figure 5.** Taxon name detail view. Important links are marked with red circles.

Taxon name detail view includes information on its vernacular names, hyperlinked placement in classification, change log showing all edit actions with the name (“History”), link to edit taxon name, and direct link to hierarchical classification view (🏠). New classification can be created with this taxon name as starting point by clicking on the *Start new classification* link on the navigation bar.

## 2.1 Taxon name search

Taxonomy search module can be entered either from page header (figure 6) or by clicking the search icon in main menu.



**Figure 6.** Entering taxonomy search module.

Taxon name search returns all scientific and vernacular names matching the search query (figure 7), maximum 500 records per page. List of available search filters (e.g. created at, last updated at, created by, etc.) appears when clicking the “Filters” button on the search bar.

Search string: cygnus    Module: Taxonomy    Filters    Search

Active filters

List view    Image view    Map view    Statistics

Found 9 results for "cygnus".

#	Record	Created at	Created by	In Estonia	Is deleted	Is synonym	Last modified	Name
1		2014-01-02 00:00	plutof	Yes	No	No	2014-01-02 00:00	Cygnus c
2		2016-03-06 17:00	plutof	No	No	No	2016-03-06 17:00	Panuilirus
3		2014-01-02 00:00	plutof	Yes	No	Yes	2014-01-02 00:00	Cygnus b
4		2014-01-02 00:00	plutof	Yes	No	No	2014-01-02 00:00	Cygnus o
5		2014-01-02 00:00	plutof	Yes	No	No	2014-01-02 00:00	Cygnus c
6		2014-01-02 00:00	plutof	Yes	No	No	2014-01-02 00:00	Cygnus c
7		2014-01-02 00:00	plutof	Yes	No	No	2014-01-02 00:00	Cygnus E
8		2014-01-02 00:00	plutof	Yes	No	No	2014-01-02 00:00	Cygnus a
9		2014-01-02 00:00	plutof	Yes	No	No	2014-01-02 00:00	Cygnus c

- All
- Created at
- Created by
- In Estonia
- In Plutof
- Is deleted
- Is public
- Is synonym
- Last modified
- Name
- Rights holder
- Protected category in Estonia
- Taxon name
- Taxon rank
- Classification
- Valid name

**Figure 7.** Taxon name search results.

By clicking the cog icon (figure 7), data fields in the search results table can be added and removed. These include, for example, taxon rank, synonymic status, current taxon name, etc. Clicking on the hyperlinked record will open taxon name detail view.

## 2.2 Adding new taxon names

In order to add and edit taxon names in PlutoF default classification, specific access rights are needed. These can be obtained by sending join request to the workgroup managing access rights for PlutoF default classifications –

*Settings => Workgroups => Search workgroup “PlutoF taxonomy“ => Send Join request*

To add new taxon name, we advise to start with searching higher taxon node for this taxon (see p. 2.1). For example, if you want to add new species name to genus *Cygnus*, you should search for “cygnus”, and choose the returned genus name as starting point to add new species. Clicking the “Add child” link in higher taxon detail view (figure 8) opens new taxon name add form with higher taxon already selected (figure 9).



**Figure 8.** Link to adding new taxon name on higher taxon navigation bar.

Mandatory fields in taxon name add form (figure 9) are marked with red background color – forms “Save” button activates only if all mandatory fields are correctly filled. In addition to mandatory fields (taxon rank, taxon name/species epithet) we recommend to also fill out data on describing author, year described in, original unique identifier (LSID), and vernacular names. Checking the “Use parentheses” checkbox will display parentheses around the describing author and year in taxon name representation.

A screenshot of the 'New taxon' form. The form has a yellow header with 'New taxon' and navigation links for 'Bookmark', 'Info', 'Reset', and 'Back'. The main content area is divided into sections: 'Attributes', 'Vernacular Names', and 'General Data'. The 'Attributes' section contains several input fields: 'Classification' (PlutoF Classification (Aino plutof)), 'Higher taxon' (Cygnus Bechstein, 1803), 'Taxon rank' (---), 'Taxon name concept' (Type to find...), 'Epithet' (---), 'Author' (---), 'Use parentheses' (checkbox), 'Year described in' (---), 'Nomenclatural status' (---), 'Current taxon name' (Type to find...), 'Uid' (---), 'User defined ID' (---), 'Remarks' (---), and 'Citation text' (---). The 'Taxon rank', 'Epithet', and 'Author' fields have a red background. The 'General Data' section at the bottom has 'Save' and 'Cancel' buttons.

**Figure 9.** Taxon name add form.

Adding synonymic name requires also filling out current taxon name, synonym type, and taxon name where this name was originally described in (*Taxon described in*, figure 10).



**Figure 10.** Mandatory fields when synonym is added.

In case hybrid name is added, taxon names forming the hybrid (*Parent 1* and *Parent 2*, figure 11) have to be specified.

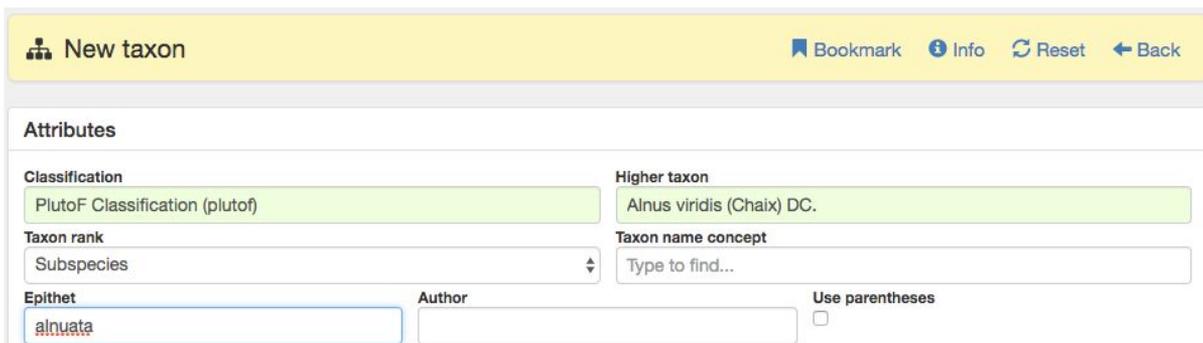


**Figure 11.** Mandatory fields when hybrid is added.

**NB! Before adding new taxon name, please check the presence of this name in the system by using taxon name search. Although there are control mechanisms in place to prevent adding duplicate names, small differences in author abbreviations can appear, leading to cases where taxon names for the same taxon will be treated as different records in the system.**

## 2.3 Adding infraspecific taxon names

Infraspecific taxon names (e.g. form, variety, subspecies, etc.) are connected directly to species level taxon name (higher taxon = species) where species epithet field should include infraspecific epithet (figure 12).



**Figure 12.** Adding subspecific taxon name.

In cases where infraspecific name is added to another infraspecific name (e.g. *Alnus viridis* subsp. *sinuata* var. *viridis*), first infraspecific taxon name (*Alnus viridis* subsp. *sinuata*) should be selected as higher taxon.

## 2.4 Editing taxon names

Clicking the *“Edit”* link in taxon name detail view opens taxon name edit form. Edit form and its control mechanisms are identical to those in taxon name add form. The most common actions when editing taxon names are –

- Updating taxon name/species epithet, author name, or year described in – it is enough to update the corresponding text fields and to click “Save” button to complete these actions;
- Changing current name to synonym – similar to the act of adding new synonym, current taxon name, synonym type, and higher taxon where this name was originally described in, have to be specified (figure 10);
- Changing synonym to current name – requires clearing the “Current taxon name” field and specifying higher taxon this name belongs to (done automatically by the system).
- Changing taxon name’s placement in the classification (for example, moving entire genus to new family) – *Higher taxon* should be changed to new higher taxon name;
- Adding and editing vernacular names – common names can be added in taxon name add and edit forms (panel “*Vernacular Names*”). After inserting the name and selecting language (mandatory field), “Add” button must be clicked to confirm the action and clear input form for adding new common names (figure 13). Existing common names cannot be edited. In order to do that, existing record has to be deleted and added as a new.

Vernacular Names			
Vernacular name	language	Is not preferred	
vernacular rahvapärane ✖	English	<input type="checkbox"/>	<input checked="" type="button" value="Add"/>

**Figure 13.** Panel to add vernacular names.

- Deleting taxon names – incorrect and duplicate names in PlutoF default classifications can be marked as deleted as long as they are not connected to any other objects in the system through identifications. Users’ own classifications can be deleted as one set with one requirement filled – taxon names linked to this classification are not connected to any other objects in the system through identifications.