

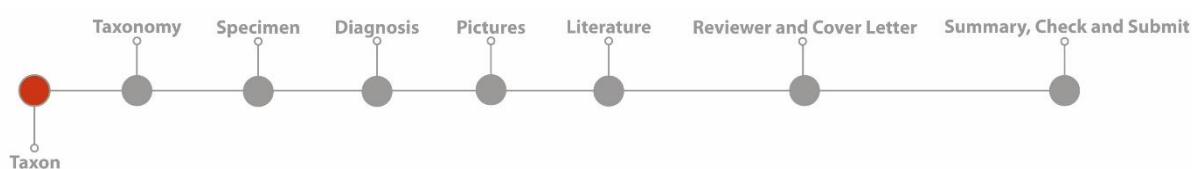
Instructions for Authors

Submission Guide

- ✿ **Register** first (free of charge). Registration includes the agreement to the “Terms of Condition” and the “Instructions for Authors”.
- Note to authors:** Please consider that you have to give your correct Last name, First name and Email-address to be accepted as author.
- ✿ Go to **Submit Data**.
- ✿ Authors are asked to follow the “Instructions for Authors”.
- ✿ Go to **New Submission** to submit data.
 - With the entry of a species at the **Taxon** page you are creating a new dataset. This dataset with the status “in submission” immediately shows up in the list **My Submissions**.
 - Submissions with status “in submission” and “pending” can be edited or deleted, as long as no reviewer started the review process.
 - Submissions in the status “in submission”, “pending” and “rejected” will be deleted automatically after 6 months.
- ✿ Submitted data will be reviewed.
- ✿ If your submission has to be revised, you will be informed by e-mail. You will find the submission in status “in revision” in the list **My Submissions**. Open submission and consider the reviewer’s comments listed at the respective submission page(s).
Edit your submission and **resubmit** again.
- ✿ After a positive review process and the editorial acceptance, the submission will be published online immediately.
- ✿ All your publications will be listed in **My Publications**.

Notice:

- Initially new authors can submit 2 datasets only. After 2 accepted submissions (online publications) your account will be activated for unlimited publications.
 - Input fields must be filled in English.
 - To avoid unintended actions, any click on important functional buttons (like “delete” or “submit”) is followed by a final warning.
-
- ✿ A submission includes **8 submission pages**.
 - Note, that all your entries during the submission process can be saved with the **Next** button. You may interrupt/proceed your submission at any time. If you leave a submission page without saving (**Next** button), the entries will be lost.
 - ✿ For help, follow the **guide/help.pdf** provided on each page.
 - ✿ **We would appreciate your contribution to PalDat!**

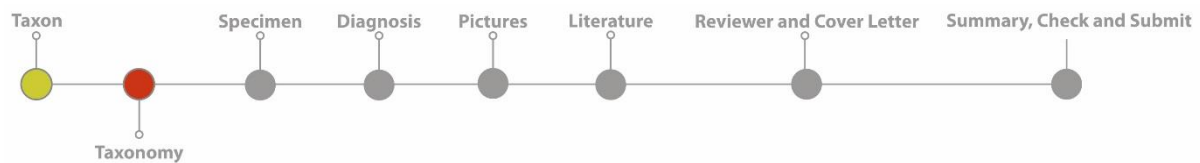


Submit – Taxon

- ✿ Enter **Genus** and **Species-Epithet**. Names for genus and species-epithet are suggested in the input-fields, in case they are known in *PalDat*.
 - Note: Plant names are already suggested after typing the first 3 characters.
- ✿ If an online publication of the species already exists in *PalDat*, you can contribute to this publication. In this case some/all fields of the following submission pages may be pre-filled from the latest publication. Any contributor to the latest online publication will become a co-author. The co-author can modify the dataset, except the pictures. Any changes made by co-author(s) will be recorded and finally checked by reviewers and the editor.
- ✿ If your species (taxonym) was not found in *PalDat*, please check the name of the taxon with one of the following pages: **Tropicos**, **KEW Checklist**, **The Plant List**, or **IPNI** and/or check if a synonym already exists in *PalDat*.
 - A taxonym is the name of a taxon/species.
 - Note, that plant checklists are not always up-to-date, as plant names as well as taxonomy are permanently changing. Please check carefully if the name of the taxon is accepted.
- ✿ If the genus/species is completely new, please add a field guide, a Flora or the relevant paper -used for identification - at the **Literature** page and/or write a comment in the **Annotations for Taxonomy** (on the next submission page).
- ✿ If a synonym already exists in *PalDat*, click checkbox **Synonym**, then add the former name of genus and species-epithet at **Taxon** page to submit data to the latest publication. Please notice, that the new taxon-name has to be submitted on the submission page **Taxonomy**! Also consider possible changes in taxonomy.

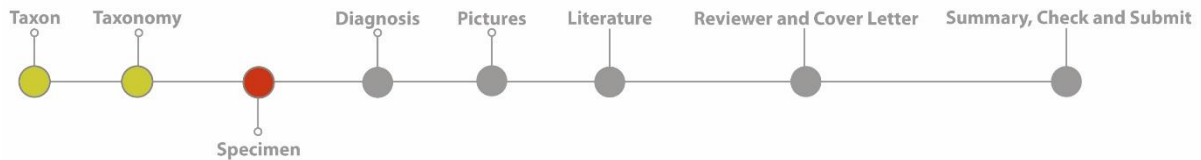
Notice:

- A submission of a new species without verification or without references will be rejected by the editor.



Submit – Taxonomy

- ✿ The taxonomic system used in *PalDat* is based on *APG III* (Angiosperm Phylogeny Group, 2009).
- ✿ If you need help in plant taxonomy, please use the links on the [Taxonomy](#) page:
 - *APG III (2009)*: open pdf and use the pdf-search to **search for family or order**
 - *Global Biodiversity Information Facility (GBIF)*: **search for the name of the species** and get the complete classification
- ✿ **Division, Order, Family** are mandatory fields. If known or existing, we would appreciate if you also add **Subfamily, Tribe** and **Subtribe**. Please, make sure, that all names start with a capital letter.
- ✿ If the species already exists in *PalDat*, the taxonomy will be pre-filled.
- ✿ If your species is not listed in *APG III* or not conform with the *APG III – System*, please make a note in the **Annotations** field.
- ✿ You can also add a link to websites, e.g., herbarium site



Submit – Specimen

The **Specimen** is a voucher for an individual plant, which represents the taxon. Please add an own **Specimen** for each individual plant investigated. We ask you to fill as many input fields as possible. Any information will upgrade the dataset!

- ❄ **Specimen Number** is the only mandatory field. The **Specimen Number** is your personal protocol number for the investigated species, without requirements on our part.
 E.g. 1256/2/350 or API250/15
- ❄ In the field **Collection** you may choose from a list of frequently used herbaria codes or you can add a new code, if necessary.
- ❄ To add a new specimen click on the button **+ add specimen** below the **Annotations** field. All specimens will be listed on the left side of the page (see figure).

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Specimen

1256/2-350

✕ remove this specimen

New specimen

Specimen Number *

Fixation Number

Collection

Determined

Collector(s)

add collector

collectors are unknown

Collection date

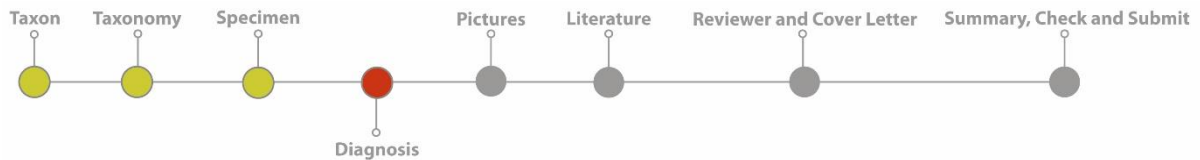
Continent

Country

State

City

Locality



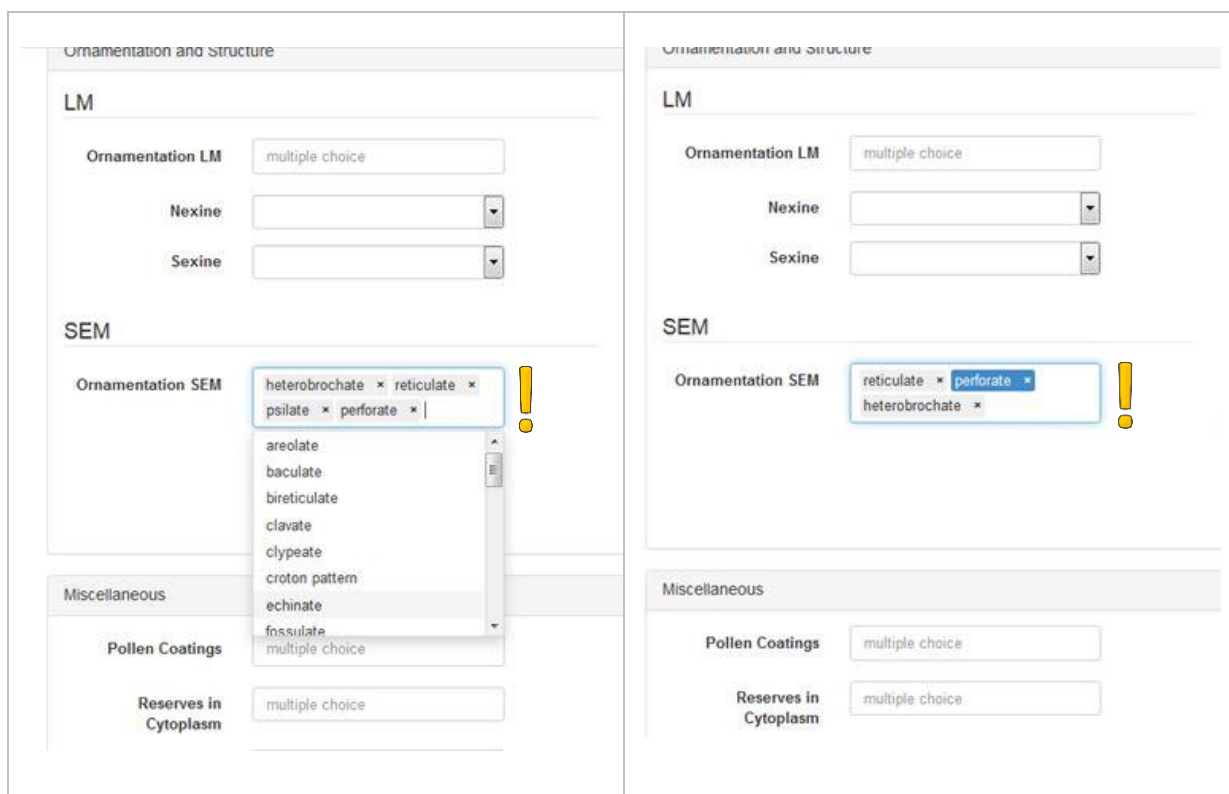
Submit – Diagnosis

For describing a pollen grain, please follow our “**Illustrated Pollen Terms**” (free pdf-download at Terminology/Tools for Pollen Description/Illustrated Pollen Terms). The terms are based on our book “**Illustrated Pollen Terminology** (Halbritter et al. 2018)” and are the common language in *PalDat* 3.0.

- ✿ All descriptive terms are provided in dropdown lists. Some fields have **multiple choice function**, to select one or more descriptive term (see figure).

in the **multiple choice fields** it is possible to:

1. Select one or more terms (from the dropdown list)
2. Determine the priority and sort them by drag and drop
3. Remove terms



The figure displays two side-by-side screenshots of the 'Ornamentation and Structure' form in PalDat, illustrating the multiple choice functionality for SEM Ornamentation SEM.

Left Screenshot: Shows the 'SEM Ornamentation SEM' dropdown menu open, displaying a list of terms: heterobrochate, reticulate, psilate, perforate, areolate, baculate, bireticolate, clavate, clypeate, croton pattern, echinate, fossulate, and multiple choice. A yellow exclamation mark is present next to the dropdown.

Right Screenshot: Shows the 'SEM Ornamentation SEM' dropdown menu with three terms selected: reticulate, perforate, and heterobrochate. A yellow exclamation mark is present next to the dropdown.

- For a better overview, the sections can be opened or closed with a mouse click (like a folder). Klick on the field-headline, e.g., “Shape, Size and Aperture”, to retract or open the window.

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Diagnosis

Shape, Size and Aperture

Ornamentation and Structure

Miscellaneous

<p>Pollen Coatings <input type="text" value="multiple choice"/></p> <p>Reserves in Cytoplasm <input type="text" value="multiple choice"/></p> <p>Cell Number <input type="text" value=""/> ▾</p> <p>Ubisch bodies <input type="text" value=""/> ▾</p>	<p>Annotations <input style="width: 100%; height: 40px;" type="text"/></p>	<p>Author(s) of Diagnosis <input type="text" value="lastname, firstname"/></p> <p style="text-align: center;"><input type="button" value="add author"/></p>
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- The **Annotations** field will be displayed in the online publication and is also included into the **Combined Search**. Please use this field for additional information, which is not provided in our diagnosis (e.g. variations in aperture number or other exceptions).
- The field **Author(s) of Diagnosis** is pre-filled. You may add one or more co-authors to your submission. Please consider that the sequence of the authors in the online publication is conform with in the sequence of their entry at the **Diagnosis** page.

Pollen size measurements (see also [How to measure pollen for PalDat](#))

How to measure the size of hydrated pollen in LM and SEM

1. The **size of pollen in LM**, and the **dominant orientation** can be documented in the database during the submission process at the **Diagnosis page** (see „**Shape, Size, and Aperture**“, sections „**Pollen Unit**“ and „**Polarity and Shape**“). The size-categories can be selected in a dropdown list in the submission fields for hydrated pollen in LM, which are as follows:

Size (Pollen Unit)	medium-sized (26-50 μm)	▼
Size Of Hydrated Pollen (LM)	longest axis of hydrated pollen	
Shortest Polar Axis in Equatorial View (LM)		▼
Longest Polar Axis in Equatorial View (LM)		▼
Shortest Diameter in Equatorial or Polar View (LM)		▼
Longest Diameter in Equatorial or Polar View (LM)		▼

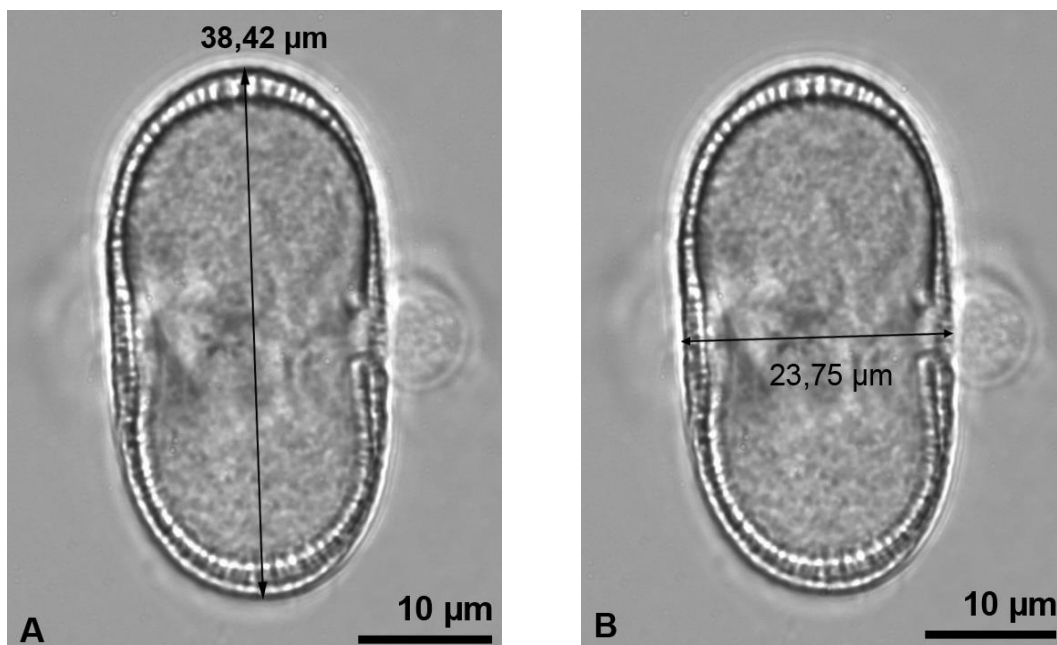
- ✿ **Size of Hydrated Pollen (LM):** „longest axis of hydrated pollen“
The size to be measured relates to the longest axis of a pollen grain in optical cross-section (size of hydrated pollen = longest axis, see pictures A, D); it is possible to select and arrange different size categories.
- ✿ **Shortest Polar Axis in Equatorial View (LM):** „shortest polar axis“
The size to be measured is the shortest polar axis in optical cross-section (see picture C).
- ✿ **Longest Polar Axis in Equatorial View (LM):** „longest polar axis“
The size to be measured is the longest polar axis in optical cross-section (see picture A).
- ✿ **Shortest Diameter in Equatorial or Polar View (LM):** „shortest (equatorial) diameter“
The size to be measured is the shortest diameter in optical cross-section in polar view (see picture C), or the equatorial diameter in optical cross-section in equatorial view (see picture B).
- ✿ **Longest Diameter in Equatorial or Polar View (LM):** „longest (equatorial) diameter“
The size to be measured is the longest diameter in optical cross-section in polar view or equatorial diameter in optical cross-section in equatorial view (see picture A).

- ✿ **Determination of the “Dominant Orientation”:** The “dominant orientation” can be selected on the submission-page “Diagnosis” in the section “Polarity and “Shape” (can be: polar, equatorial, or oblique, see pictures A, B).

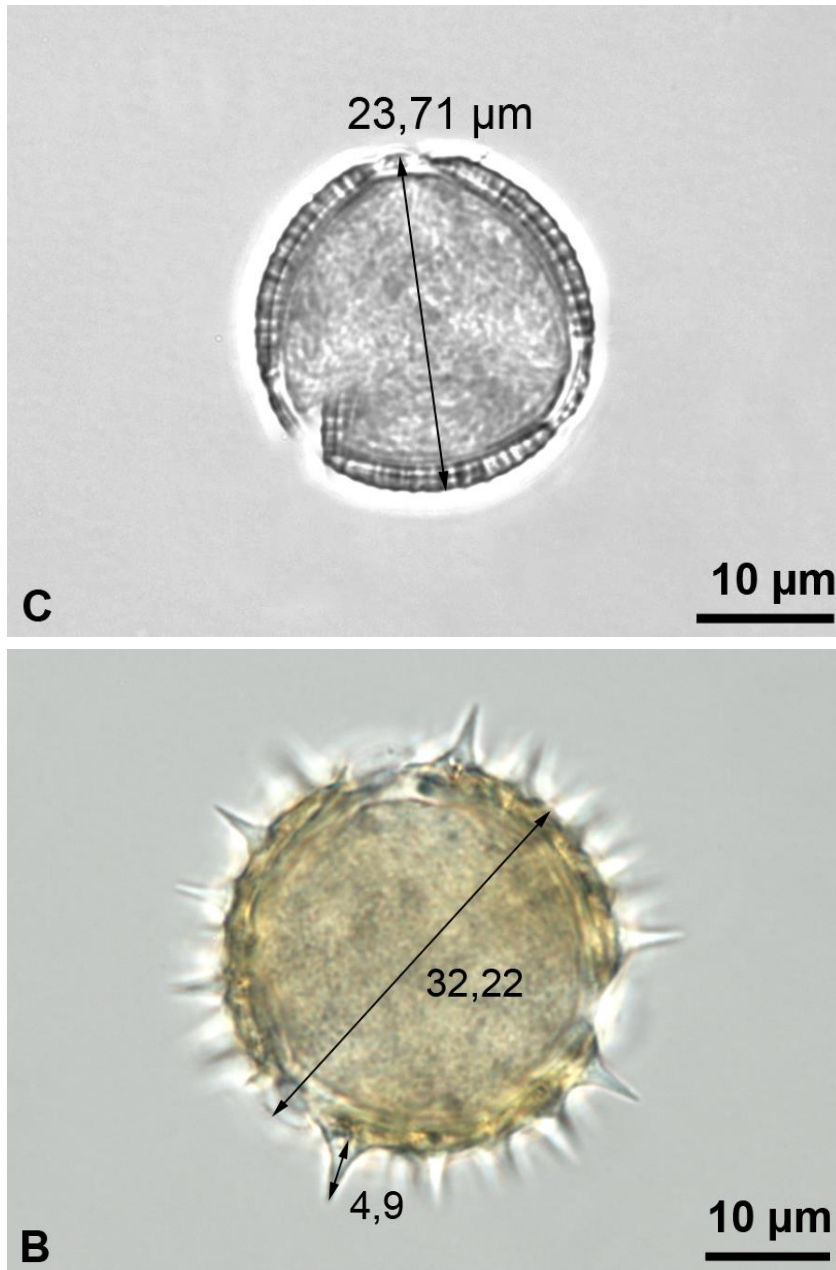
The measurement method described here should be applicable to all pollen types (**see also [How to measure pollen for PalDat](#)**).

- ✿ Pollen grains are measured in optical cross-section in both equatorial and polar view.
- ✿ In **equatorial view**, the **polar axis and equatorial diameter** are measured (see pictures A, B).
- ✿ In **polar view**, the **diameter** is measured from an aperture to the opposite outer pollen wall (exine, see picture C), excluding sculpture elements (see picture D). The diameter in polar view is incorporated in the range of the equatorial diameter measured in equatorial view (see picture B).
- ✿ Based on these measurements, the size range of a taxon can be determined and documented **in the multiple dropdown field “size of hydrated pollen in LM”**.
- ✿ Annotation: *Usually, as many measurements as there are apertures per pollen grain are conducted on 10 pollen grains for a representative size range.*

Example 1. Measuring hydrated pollen (LM) in equatorial view. **A.** Polar axis in optical cross-section in equatorial view (an imaginary centrally placed axis extending between the poles). **B.** Equatorial diameter in optical cross-section in equatorial view (an imaginary centrally placed axis extending across the equator; \pm corresponds to the diameter observed in polar view). The dominant orientation in this case is “equatorial”. A, B. Pollen of *Heracleum* sp. hydrated in water (LM); picture copyright by K. Kölzer.



Example 2. Measuring hydrated pollen (LM) in polar view. The diameter in polar view is measured from an aperture to the opposite side of the pollen wall (C, D). The size range of ornamentation elements should be measured separately and can be noted in the annotation field. Pollen of *Erucaria microcarpa* (C) and *Silphium perfoliatum* (D), hydrated in water (LM); picture copyright by K. Kölzer.

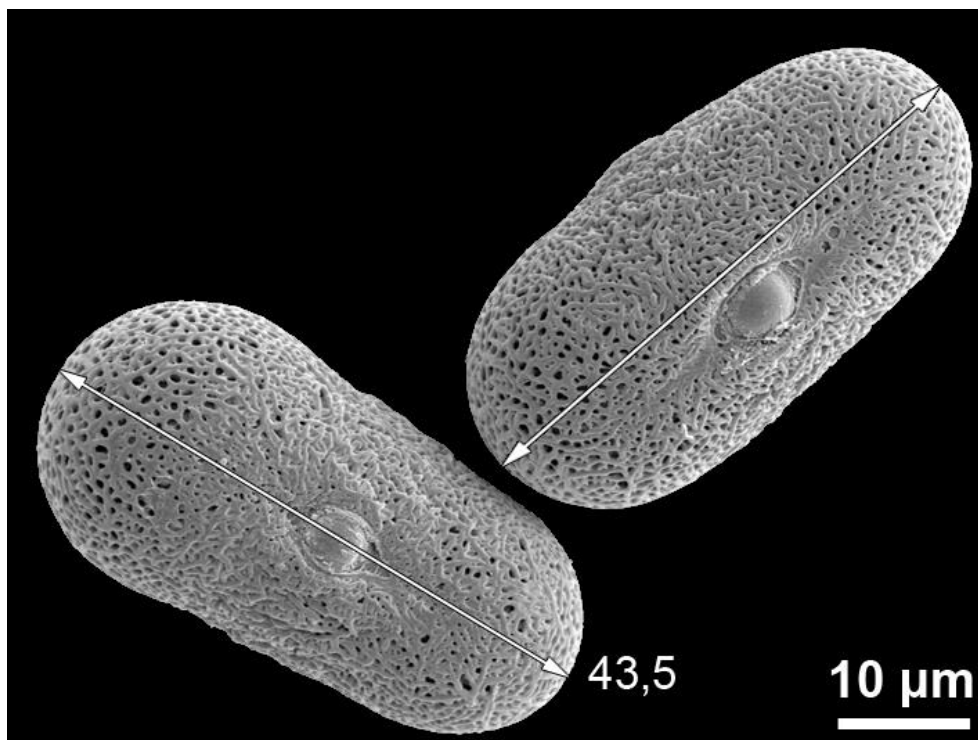


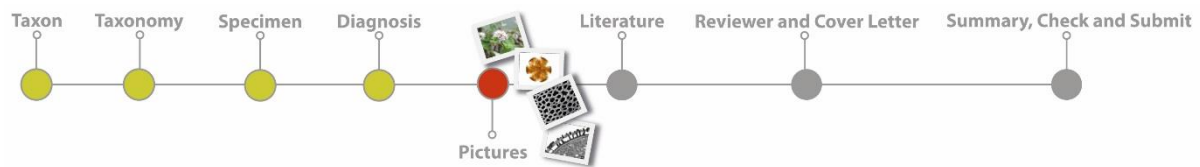
For further examples, please follow respective literature (e.g. Goldblatt et al. 1991; Grímsson & Zetter 2011; Halbritter et al. 2018; Sivak 1973).

2. Size measurements of hydrated pollen in SEM

- ✿ Besides natural size variations pollen size is also depending on the preparation method(s) used. Due to dehydration and critical point drying the size of hydrated pollen in SEM can differ considerably from that of hydrated pollen in LM.
- ✿ The size to be measured relates to the longest axis of a pollen grain in SEM, as shown in the picture below of hydrated *Heracleum* pollen (picture copyright: H. Halbritter).

The **size of hydrated pollen in SEM** can be documented in the database during the submission process at the **Diagnosis** page (see „**Shape, Size, and Aperture**“, sections „**Pollen Unit**“). For a rough classification of the size of hydrated pollen in SEM, five **size categories** - very small, small, medium, large, and very large - can be selected in the database in the entry field **size (pollen unit)**.



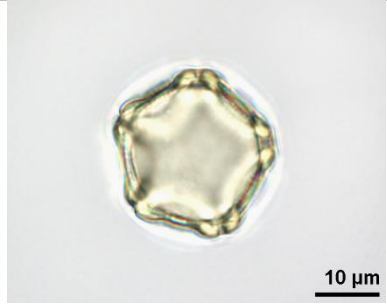
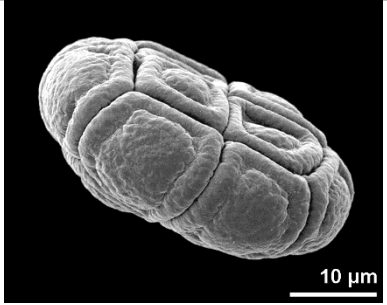
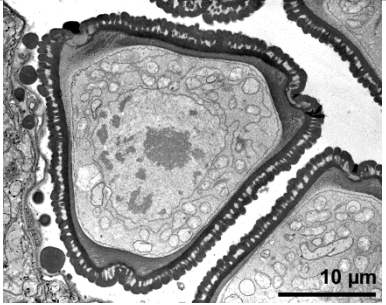


Submit – Pictures

Please, illustrate all features described in the **Diagnosis**. We would appreciate a complete dataset, including **LM-, SEM-, TEM-**pictures, as well as pictures of the plant/flower(s)/inflorescence(s).

You are also welcome, to complete an existing publication with e.g., TEM-pictures only.

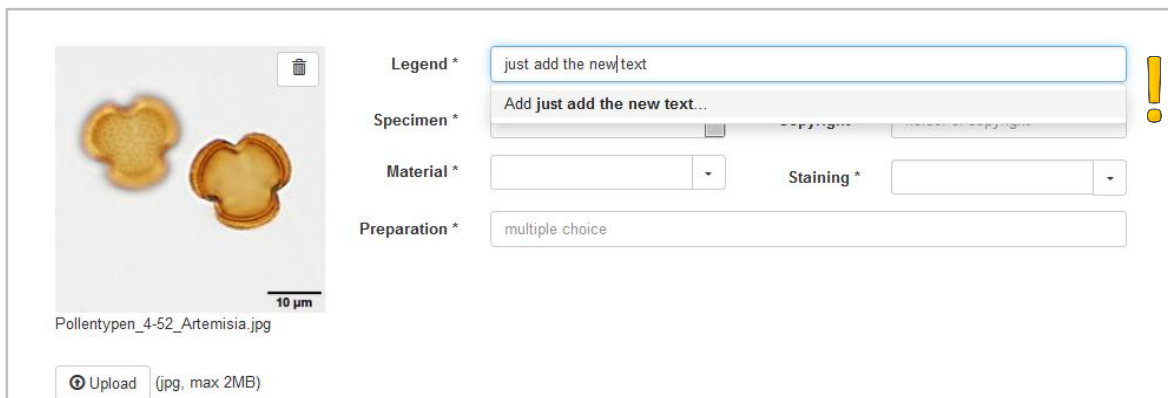
✿ Requirements for the pictures:

minimum resolution: 300 dpi	size: 6 (width) x 4.5 (height) cm	maximum file size: 2 MB
file format: jpg	scale bars in picture: 9 px (black/white), right corner	letters in picture: Arial bold, 9 pt
SEM pictures should have a black background if possible.		
		
Notice: Picture manipulations must be reduced to a minimum e.g. size, brightness and contrast. You may also check online publications, to be conform with <i>PalDat</i> .		

✿ For **uploading pictures** you have two possibilities:

1. Use the **upload** button and open one or more picture files at once.
 2. You may also drag one or more selected pictures from a picture folder and just drop them to the **upload** button.
- Notice: If pictures do not show up, check the format and size of the picture(s) (requirements: jpg, max 2 MB, 6x4,5 cm).

- ✿ Within each section (Plant, LM-, SEM-, and TEM-Pictures) the sequence of the uploaded pictures can be easily changed by moving them with the mouse (drag and drop) to the desired position.
- ✿ All fields describing a picture are mandatory. Some fields have *multiple choice function* in order to select more than one term and/or to add a new term.
- ✿ In the dropdown our favorite descriptive terms are listed.
- ✿ To add a new description write the new text in the input field. This text will then show up in the dropdown list (see figure). Please be short and concise.



Legend * just add the new|text

Specimen * Add just add the new text...

Material * Staining *

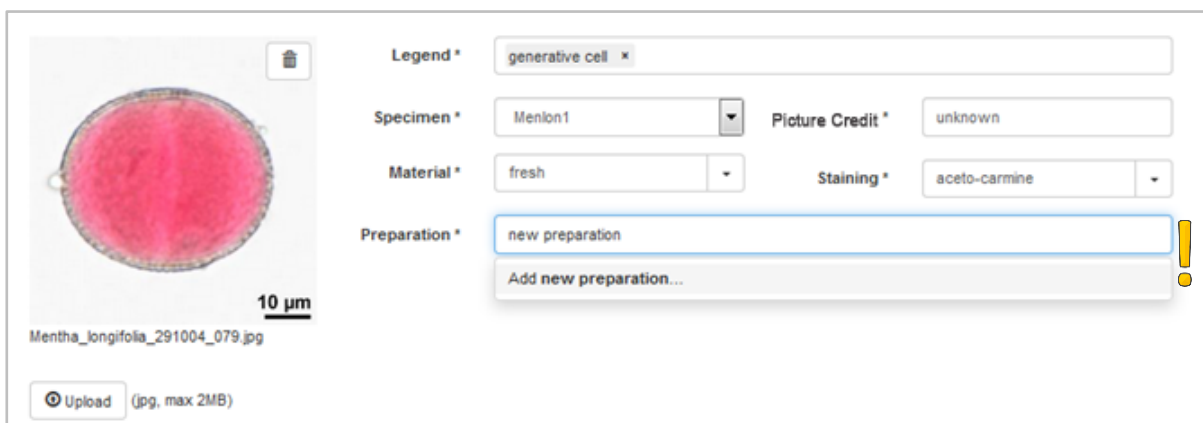
Preparation * multiple choice

Pollentypen_4-52_Artemisia.jpg

10 µm

Upload (jpg, max 2MB)

- ✿ Please make a note in the **Annotations** field in case the technique is e.g., new and/or a modification of standard preparation and/or staining techniques.
- ✿ If you **add a new preparation or staining technique** in the corresponding *multiple choice field* (see figure), you must add the relevant reference at the **Literature** page. There will be a request to enter the new method in the section **Methods**.



Legend * generative cell

Specimen * Menlon1 Picture Credit * unknown

Material * fresh Staining * aceto-carmin

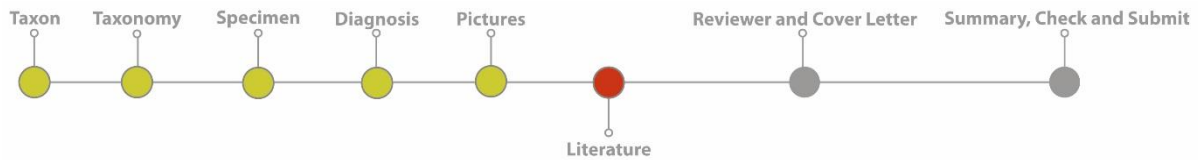
Preparation * new preparation
Add new preparation...

Mentha_longifolia_291004_079.jpg

10 µm

Upload (jpg, max 2MB)

- ✿ Please add new names in the field **Photographer** in the following style: “Last name, First name”. All authors contributed to PalDat will also be included in the dropdown list for further submissions.



Submit – Literature

Add relevant literature to the submitted species. Literature is not mandatory. However, we would highly appreciate references for taxon identification and for new methods.

- ❁ Within the **Literature** page all dropdown lists contain our relevant references for pollen preparation and staining, some basic field guides and Floras, and other references about pollen and corresponding plants.
 - Choose reference(s) from the dropdown list.
 - Use the **Add**-Button to add the selected reference to your species.
- ❁ **Add New Literature** opens a new page for literature entry. Please fill the form carefully.
- ❁ The **Literature Key** is mandatory, including name of author(s) and year of publication.
Examples: Erdtman 1969 or Erdtman & Straka 1961 or Halbritter et al. 2018
- ❁ The input mask **Methods (Preparation or Staining)** will only show up if a new method (preparation or staining) has been entered together with pictures.
- ❁ *New literature entries* will be added to the literature database after successful publication and included to the dropdown lists.

New Submission

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Literature

Field Guide or Flora

Please enter field guide or Flora used for taxon identification.

Not found your book in the list? Create a new one:

Methods (Preparation or Staining)

Following methods are new: new method.

Please enter literature

Not found your book in the list? Create a new one:

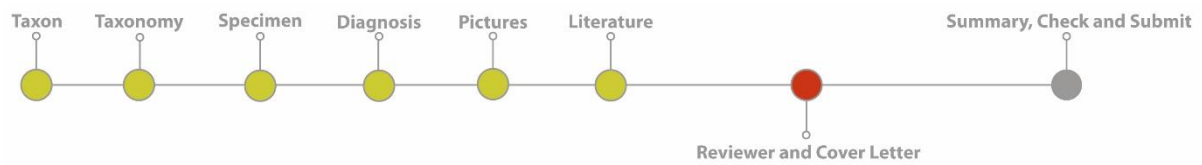
Pollen Literature

Please enter relevant literature

Not found your book in the list? Create a new one:

Other Literature

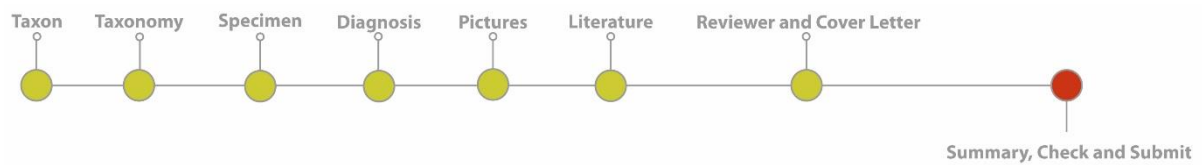
Please enter relevant literature



Submit – Reviewer and Cover letter

Any submission to *PalDat* will be reviewed.

- ✿ You may select one or two reviewers from the dropdown list. Currently the reviewer-list includes members of the pollen research group and few other experts.
- ✿ Reviewers will be informed automatically by e-mail. We will review the submission as soon as possible, at the latest in 3 month.



Submit – Summary, Check and Submit

- ✿ The **Summary, Check and Submit** page shows a preview of your submission/online publication. Authors are asked to check for typing errors and the correctness of all submitted data.
- ✿ **Submit** the dataset for review and final publication.

Notice:

- Submissions with status “in submission” can be *edited* or *deleted* at any time by the author.