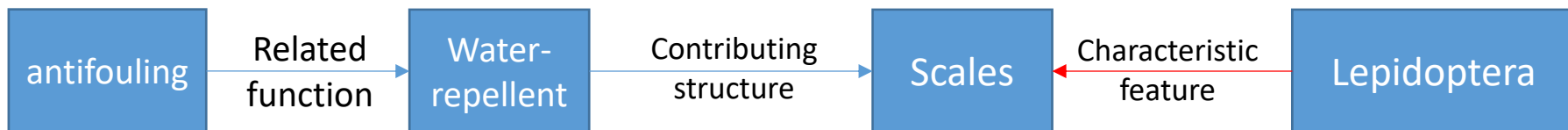# General explanation of Keyword Explorer

Species contained in this prototype system of the Keyword explorer

- Starting from the four target functions:
  Antifouling, low resistance, desorption, detection (sensing)
  users can find all the paths reaching to related organisms

- Users can easily retrieve relevant information for several online DBs with the found organism as a keyword

- Hopefully, it works as a workbench for engineers in biomimetics.

- The number of the organisms in it = 317 species
    - Animals　　　　　　　　　　:27
    - Fishes　　　　　　　　　　　:48
    - Birds　　　　　　　　　　　:37
    - Insects　　　　　　　　　　:187
   - Plants　　　　　　　　　　　:39
    - Others　　　　　　　　　　　:18

Reading of the map

- Node: keywords such as *functions, behaviors, properties, structure, creatures, environments, etc.*

- Links between nodes：relationships between nodes such as *is-a, part-of, etc.*）

- Path:
  - A sequence of nodes and links from the center to the terminal (the selected node)
  - The process of associative inference

| antifouling | →Related function→ | Water-repellent | →Contributing structure→ | Scales | ←Characteristic feature← | Lepidoptera |

Display of overlapping nodes

- When the cursor is over any node, those overlapped nodes nearby are enlarged in a fan-shaped <u>purple region</u>

- By left-clicking the node, the region is fixed and you can see all the nodes all of which can be dealt with as normal nodes

- You can kill this function by putting off the "Zoom-in function" at the bottom
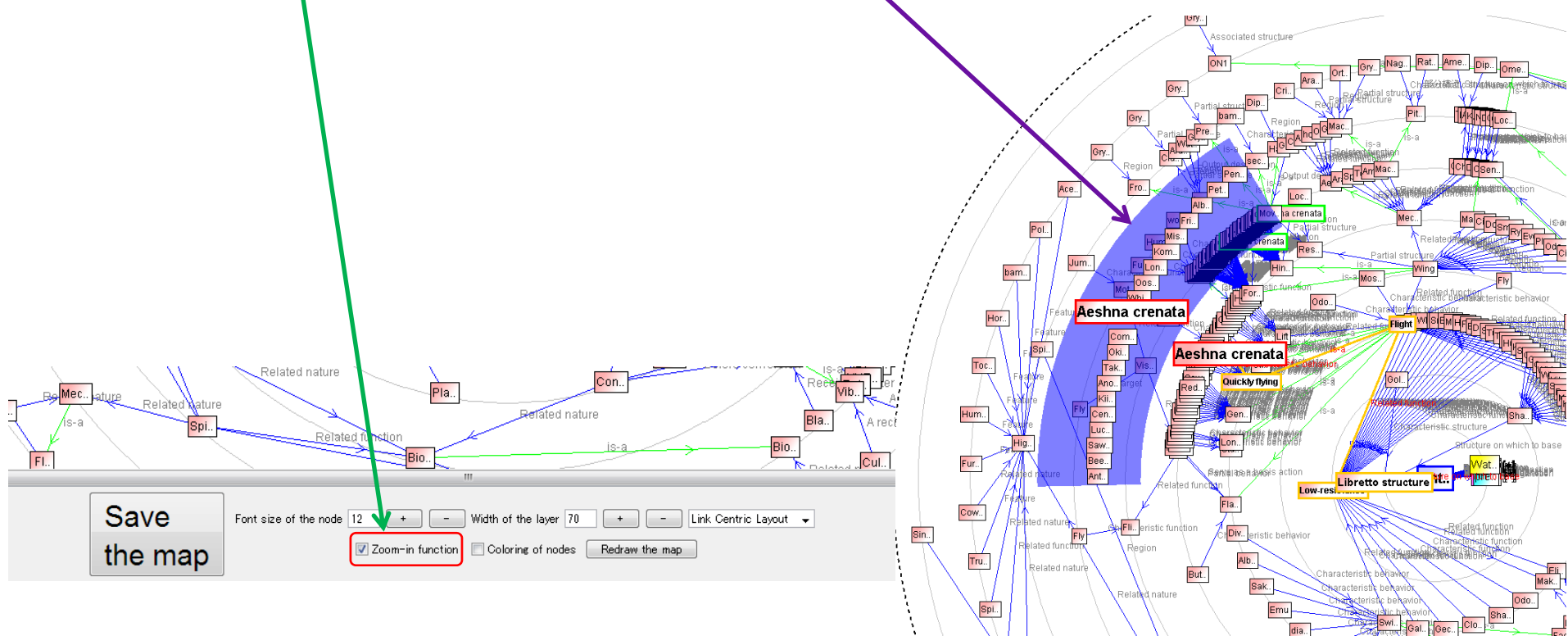
Thumb-up command

- You can mark a node you find interesting by "Thumb-up" command for close investigation after exploration

- By right-clicking the node you like, you can issue the "Thumb-up" command

- If you save a map, it means you like it, and you can analyze afterwards like the saved paths

- All pieces of marked and saved information are shown in the lower half of the start-up screen

Open/close paths command

- By double-clicking a node, all the paths from it are closed

- Those closed nodes are displayed with "+" and can be opened by double-clicking it

- You can open/close nodes layer-wise by "Open/Close all the nodes on the out-most layer". When you reach either end, the open/close operation is reverted automatically

Comparison of maps

- The typical pattern of path generation is exploration
  from *Function* to *Creatures*

- But, you can explore in the reverse direction, that is,
  from a *particular creature* to *function*, and

- Comparison of these two maps might give you new hints