

Supplementary notes on the silicoflagellate skeleton taxonomy

This supplement presents a comprehensive collection of over 2000 high-resolution photomicrographs, capturing the intricate details of silicoflagellate skeletons and other siliceous particles in North Pacific surface sediments (Table S1; Plates 1-97). These images were meticulously acquired using a Leica DM6B automated transmitted light microscope, operating at 200× magnification with an HC-PL FL Long 20× magnification Leica lens, and a Leica K3C camera controlled by LAS X software. The microscope parameters were precisely set at an intensity of 10, a depth of field of 38, an aperture of 33, and the condenser was lowered by 9 mm from the glass slide. The LAS X software parameters were set at an exposure of 9 ms and a gain of 1. For each field of view (FOV), 11 images were acquired by incrementally stepping the Z focus position through the microscopic slide (step size of 10 µm) to cover a total focal distance of 100 µm.

As mentioned in the main text, the encountered silicoflagellate skeletons in this study were assigned to the morphological classification by Poelchau (1976) for the application of their biogeography to paleoceanographic reconstruction. The silicoflagellate taxonomy has continued to be updated by the re-consideration of their morphological taxonomy and the evolutionary studies in addition to phylogenetic studies (e.g., Jordan and McCartney 2015, Chang et al. 2017, McCartney et al. 2022). Therefore, the names of some species in Poelchau (1976) that this study followed have been changed based on the recent morphological study of silicoflagellate skeletons (McCartney et al. 2022). The correspondence of the silicoflagellate taxonomy by Poelchau (1976) to the morphological taxonomy in this study is listed in Table S2.

Table S2. The correspondence of silicoflagellate taxonomy in this study and Poelchau (1976).

This study	Poelchau (1976)
<i>Dictyocha calida</i> Poelchau	<i>Dictyocha calida</i> Poelchau
<i>D. epiodon</i> Ehrenberg	<i>D. epiodon</i> Ehrenberg
<i>D. messanensis</i> f. <i>messanensis</i> Haeckel	<i>D. messanensis</i> f. <i>messanensis</i> Haeckel
<i>D. messanensis</i> f. <i>spinosa</i> Lemmermann	<i>D. messanensis</i> f. <i>spinosa</i> Lemmermann
<i>D. octangulata</i> (Wailes) McCartney	<i>Distephanus octangulatus</i> Wailes
<i>Distephanopsis crux</i> (Ehr.) Dumitrica	<i>Distephanus crux</i> (Ehr.) Haeckel
<i>Stephanocha quinquangella</i> (Bukry and Foster) McCartney and Jordan	<i>D. speculum</i> (Ehr.) Haeckel (?)
<i>Stephanocha speculum</i> (Ehr.) Jordan and McCartney	<i>D. speculum</i> (Ehr.) Haeckel
<i>Octactis pulchra</i> Schiller	<i>Octactis pulchra</i> Schiller

The detailed description of skeleton morphology and synonyms for each taxon is in Poelchau (1976), and thus it is briefly mentioned here.

***Dictyocha epiodon* Ehrenberg 1854 in Poelchau 1976**

Each middle part of the skeleton ringside slightly protrudes outward with a small nob (= subordinate radial spine in Poelchau 1976), resulting in the outline of the basal ring in apical view usually forming an octagonal close to the quadrate. The nob-structures are also commonly observed on lateral rods. The skeleton ring of some specimens is relatively elongated, and the apical bar is arranged counterclockwise from the diagonal line between two opposite ring corners along the elongated-ward ring axis (= major axis). The skeleton size distribution varies by area in the North Pacific and Atlantic Oceans (Takahashi 1991).

The original description of *Dictyocha epiodon* Ehrenberg 1844 mentions the presence of a tooth-like structure (= supporting spines) observed in each “window” of the skeleton to differentiate it from *D. fibula* whose supporting spines are not drawn by Ehrenberg (1854), although *D. fibula* specimens of Ehrenberg’s collection have a supporting spine at one or two sides only of the skeleton ring (Locker 1974). Thus, three specimens drawn as *D. epiodon* by Ehrenberg show various skeletal morphology except for the presence of supporting spines. Among the three skeleton drawings by Ehrenberg (1854), Ling (1970), Bukry and Foster (1973), and Poelchau (1976) treated the specimen only from the North Atlantic Ocean as *D. epiodon* (or other synonyms). *Dictyocha fibula* var. *aculeata* Lemmermann 1901, *Dictyocha aculeata* (Lemmermann) (not Ehrenberg) Dumitrica 1973, and *Dictyocha mandrai* Ling 1976 are conspecific to the selected type of Ehrenberg’s *D. epiodon* from the North Atlantic Ocean. Bukry (1977) mentioned that the oldest and appropriate name for this taxon is *D. aculeata* (Lemmermann) Dumitrica. Poelchau (1976) treated the species name as invalid because it was previously used for a form of *Stephanocha speculum*.

***Dictyocha messanensis* Haeckel in Peters 1860**

Dictyocha messanensis in Poelchau (1976) contains some *Dictyocha* species as synonyms (e.g., *Dictyocha fibula*, *D. fibula* f. *minor*, *D. stapedia*). The original definition in the text for *Dictyocha fibula* Ehrenberg 1839 is simple, and it can be assigned to various forms of quadrate silicoflagellate skeletons. The difference between *D. messanensis* and *D. fibula* was defined as the presence or absence of an apical spine (Peters 1860). *Dictyocha messanensis* and *D. stapedia* are probably conspecific, and the difference is the absence (for *D. messanensis*) or presence of supporting spines as far as comparing the original skeleton drawings of the two species. Bukry (1976) preferred to use *D. stapedia* instead of *D. messanensis* based on the comparison of prior morphological descriptions. Based on the drawings of *D. fibula* skeletons by Ehrenberg (1854), Ling (1970) limitedly treated the

skeletons as *D. fibula*, which shows morphologic characteristics with slightly rounded corners of the skeleton ring, apical bar along the longer skeleton axis, and a symmetrical structure in the apical view. Furthermore, the *D. fibula*-like skeleton showing completely symmetrical skeleton structure, relatively delicate (compared to basal ring) apical bar without apical spine, and supporting spine at/near the base of the lateral rod was newly defined as *Dictyocha calida* by Poelchau (1976). *Dictyocha calida* is different from the morphologically similar taxon *D. perlaevis* having larger and robust skeleton. There were no *D. calida* specimens at least in the photomicrograph set of this study.

Dictyocha messanensis is subdivided into two forms as follows:

***Dictyocha messanensis* f. *messanensis* Haeckel in Peters 1860**

This is the typical *D. messanensis*. Compared to the original skeleton drawings, four sides of the quadrate basal ring in this study are usually straight, in addition to the presence of supporting spines. The quadrate ring of many specimens is elongated, and the apical bar is usually arranged slightly counterclockwise from the major axis of the skeleton ring. The skeletons like *D. calida* but bearing an apical spine were treated as this taxon.

***Dictyocha messanensis* f. *spinosa* Lemmermann in Brandt and Apstein 1908**

The skeleton size is usually larger than the typical *D. messanensis* (Poelchau 1976, Takahashi 1991). There is an accessory spine on the lateral rods. The size of lateral rod spines varies for the specimen. As explained in Poelchau (1976), the skeleton shows large variability; there are also pentagonal and hexagonal rings with inconstant structures of lateral rods and apical bar. These might be treated as an aberrant form. The difference between this pentagonal form and *Dictyocha pentagona* (Schulz) Bukry & Foster is the presence or absence of spines on the lateral rods and apical bars. The similar skeleton morphology without apical spine might be assigned to *Dictyocha* sp. aff. *D. stapedia* Haeckel 1887 (large form) in Barron et al. (2009).

***Dictyocha octangulata* (Wailes) McCartney 2022**

This taxon has been assigned to *Stephanocha octangulata* (Wailes) Jordan and McCartney 2015 or *Distephanus octangulatus* Wailes in many previous works. McCartney et al. (2022) transferred the genus of this taxon to the genus *Dictyocha* based on the recent study on the evolutionary relationship with the possible ancestor taxon *Dictyocha subarctios* Ling.

***Distephanopsis crux* (Ehrenberg) Dumitrica 1978**

The basal ring is quadrate, rhombic, or rounded. Four radial spines are located at ~90° intervals like the quadrate *Dictyocha* species. The lateral rod arises from each side of the basal ring and connects to the quadrate apical ring. Poelchau (1976) treated this taxon as a reworked Tertiary fossil,

and thus Poelchau's silicoflagellate biogeography data does not contain the occurrence data of *D. crux*. According to the sediment trap study in the eastern Subarctic North Pacific Ocean, the mean relative abundance of this taxon in the silicoflagellate assemblage was ~1% for 1982-1984, and the skeleton sinking flux of *D. crux* temporally increased (Takahashi 1986).

***Octactis pulchra* Schiller 1925**

The octagonal ring with a relatively delicate apical ring structure is characteristic of this skeleton. The delicate apical structure might be lost in sediment and the settling process in water. In addition to the typical octagonal ring, skeletons having hexagonal, heptagonal, nonagonal, or decagonal rings were rarely observed in the studied material.

***Stephanocha quinquangella* (Bukry and Foster) McCartney and Jordan 2015**

It resembles to *S. speculum*, but it can be differentiated by the pentagonal skeleton structure. This taxon was originally described as *Distephanus speculum* var. *pentagonus* Lemmermann. Poelchau (1976) looks like treating the *S. speculum*-like pentagonal skeleton as one of the skeletal variabilities for *Stephanocha speculum*.

***Stephanocha speculum* (Ehrenberg) Jordan and McCartney 2015**

The skeletons of *Stephanocha speculum* have been subdivided into many varieties in the morphological taxonomy (e.g., Jordan and McCartney 2015). In addition to the typical hexagonal skeleton of this taxon, pentagonal to nonagonal skeletons are treated as the skeletal variability for *S. speculum* in Poelchau (1976). Because this study applies the biogeography of *S. speculum* in a large sense by Poelchau (1976), the skeletons identified as *S. speculum* in this study might contain several varieties of this taxon. The specimens that have a large apical ring nearly comparable to the internal diameter of the basal ring were identified as *Stephanocha speculum* var. *minuta* (Bachmann) McCartney and Jordan in the supplementary photomicrograph set.

References

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Plate 1

Dictyocha epidon

50 μ m

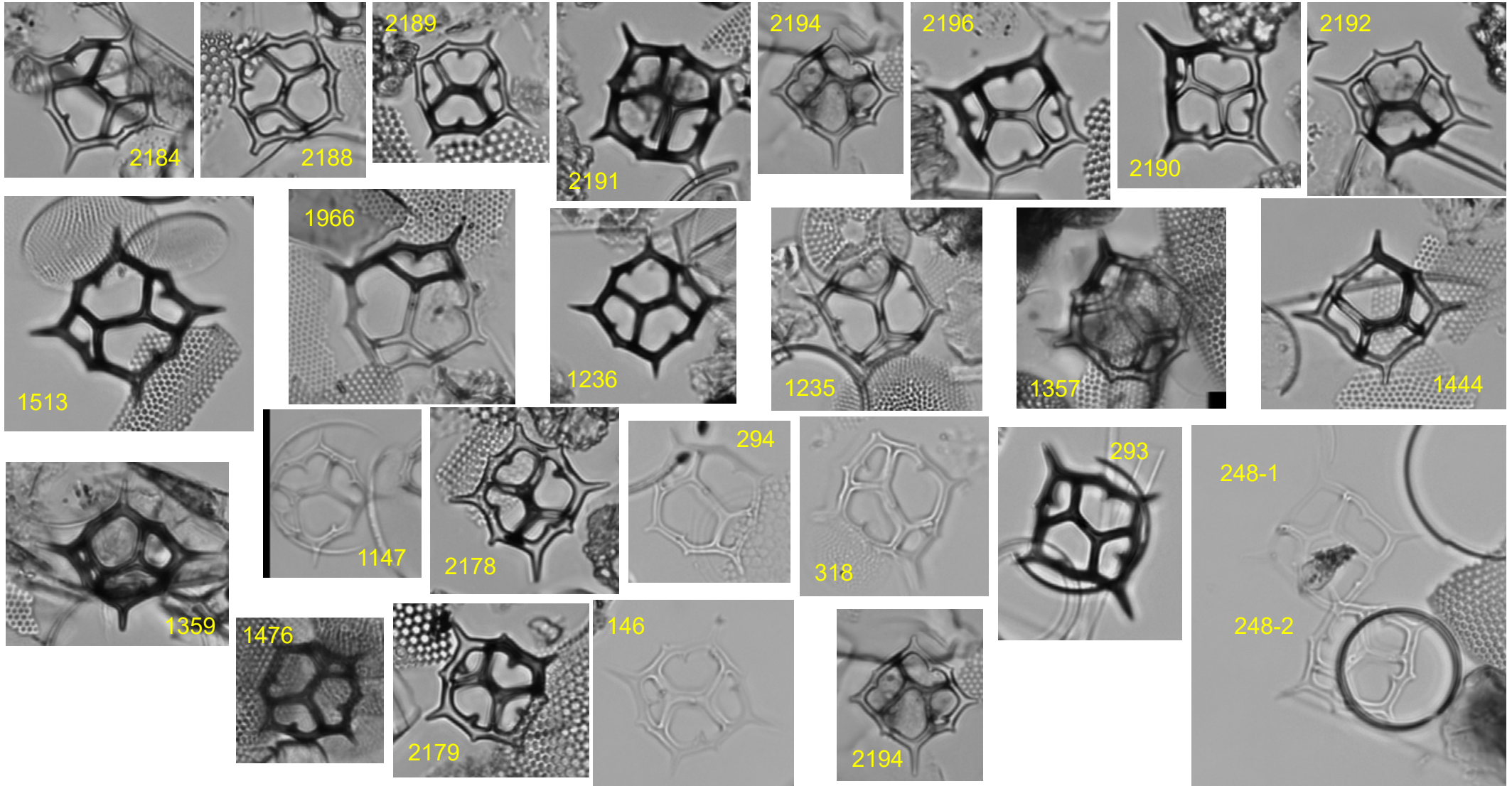


Plate 2

Dictyocha epidon

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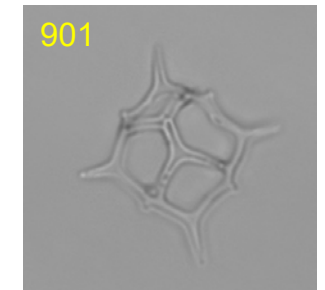
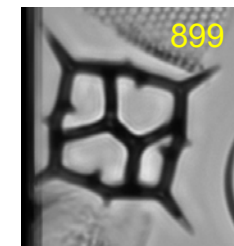
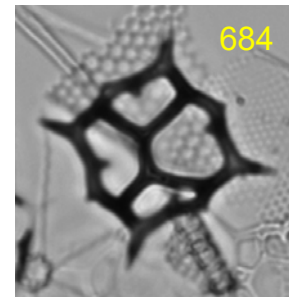
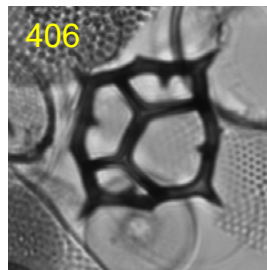
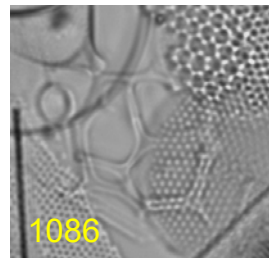
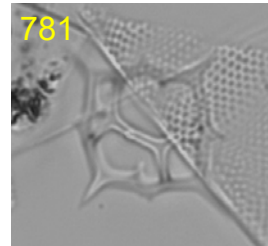
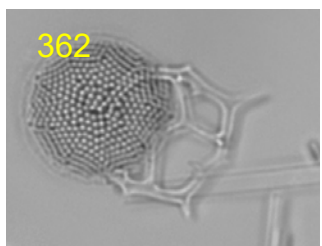
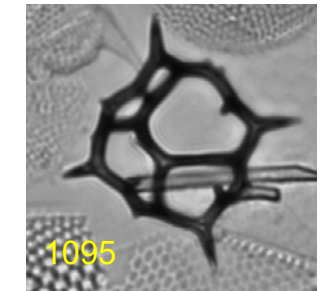
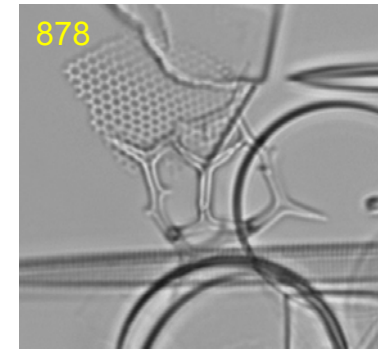
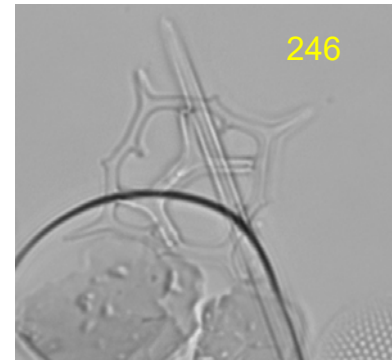
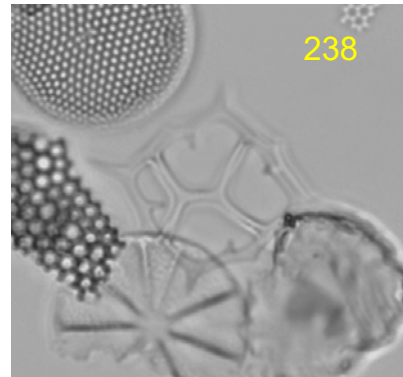
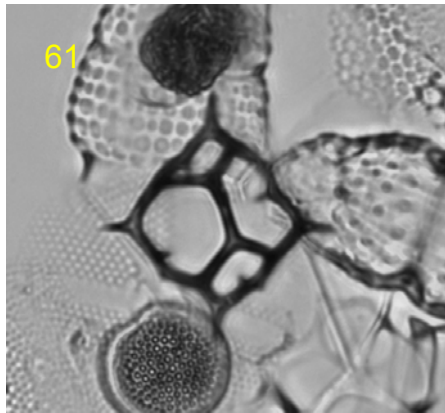
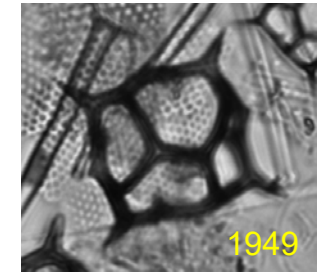
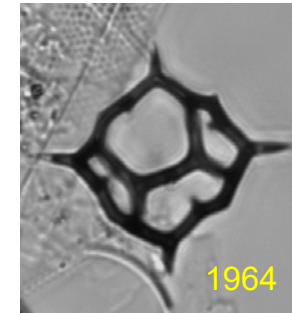
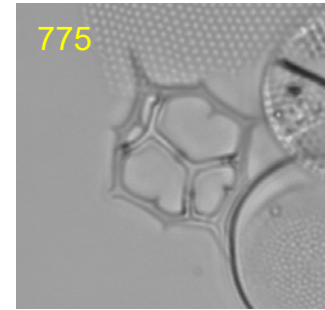
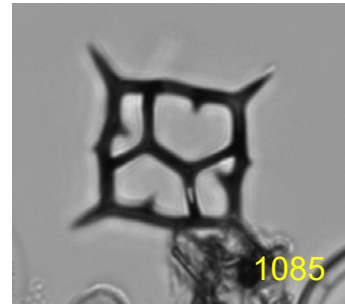
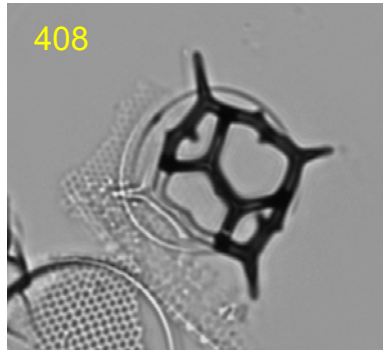
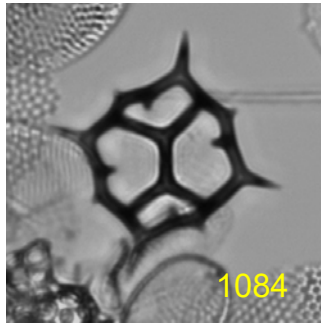


Plate 3

Dictyocha epidon

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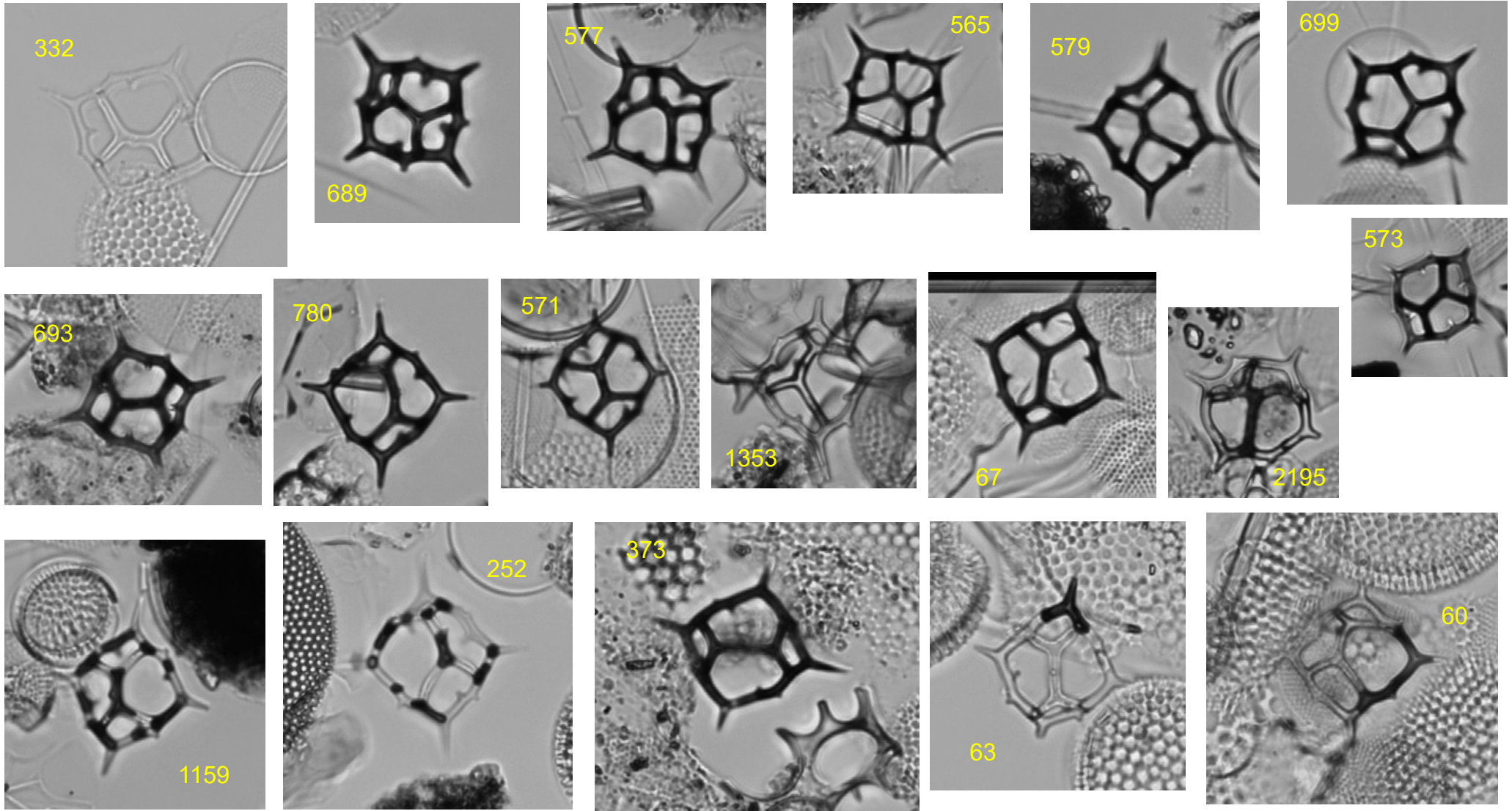


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Dictyocha epidon

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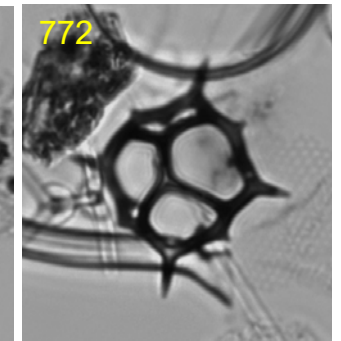
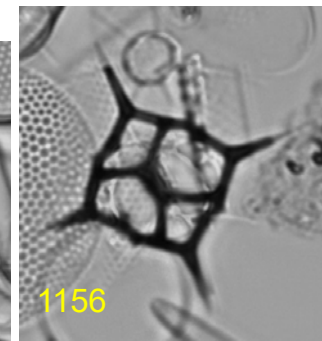
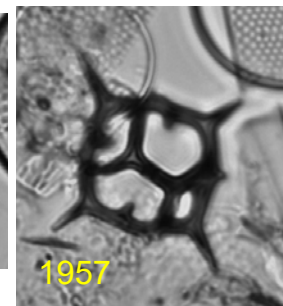
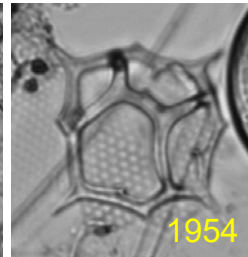
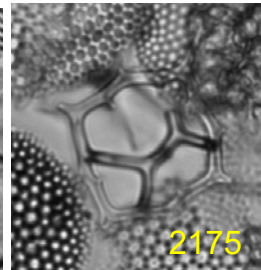
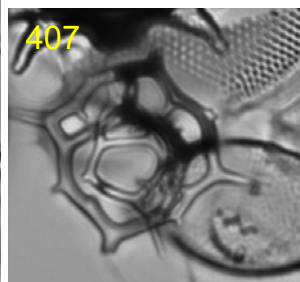
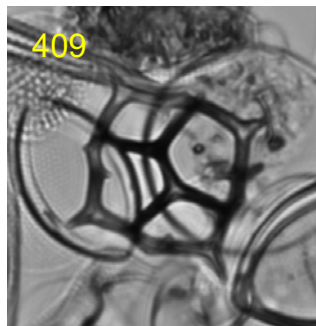
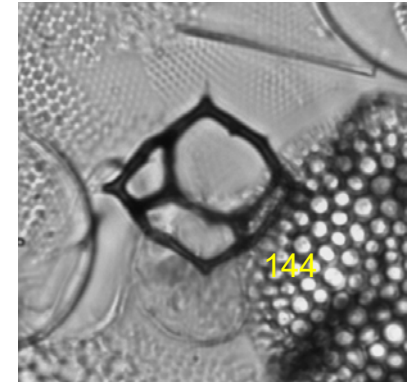
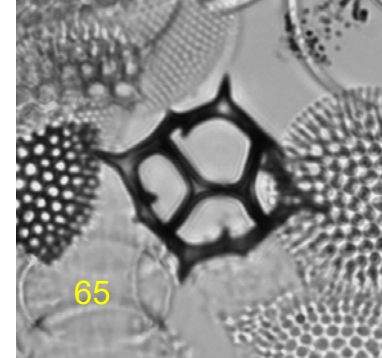
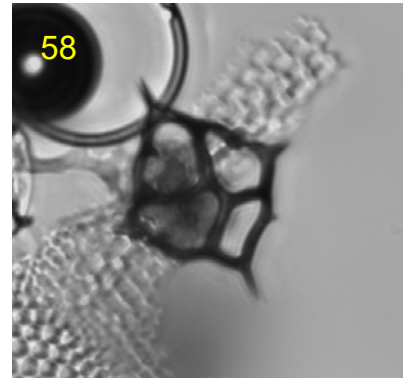
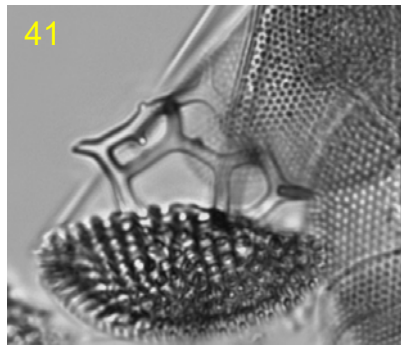
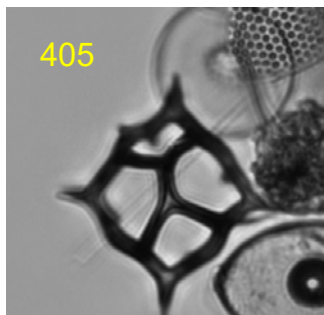
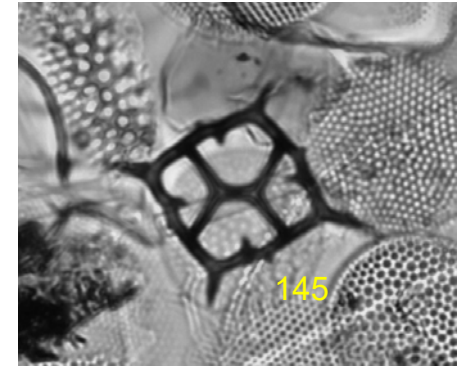
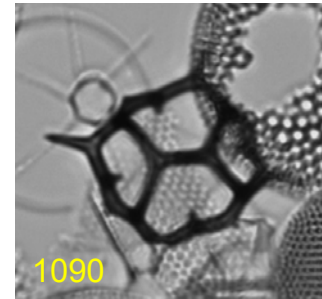
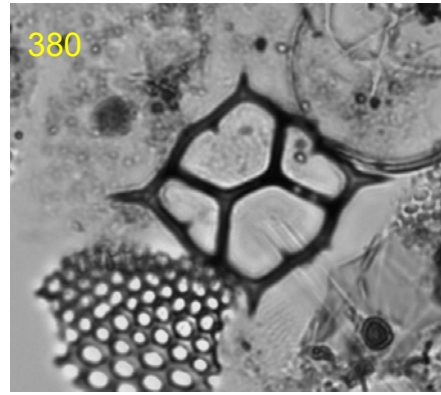
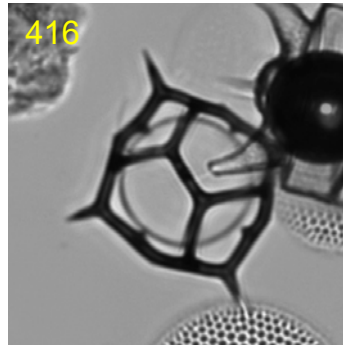
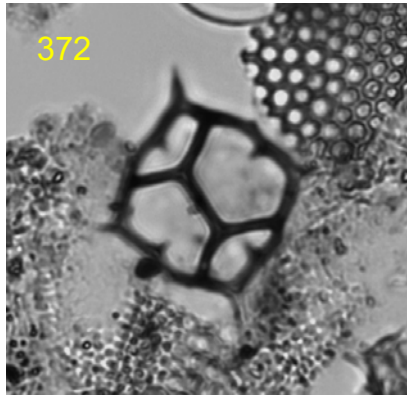


Plate 5

Dictyocha epidon

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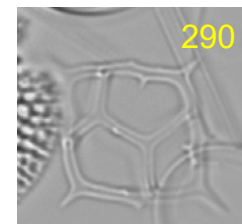
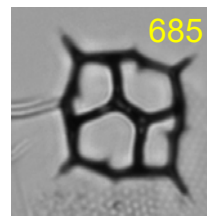
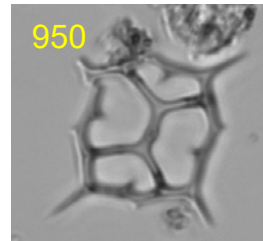
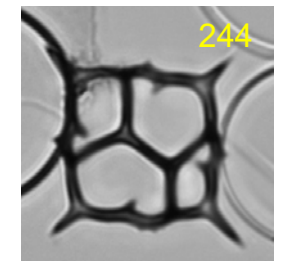
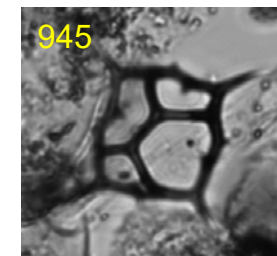
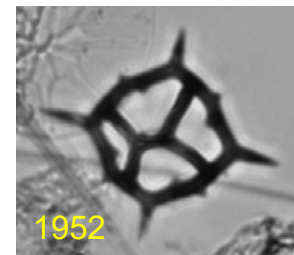
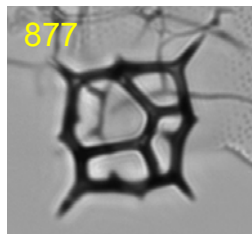
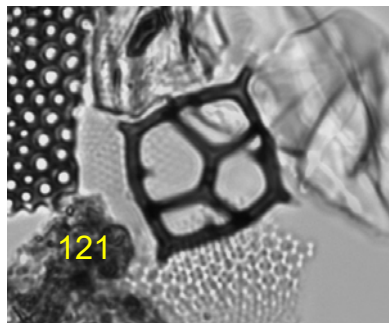
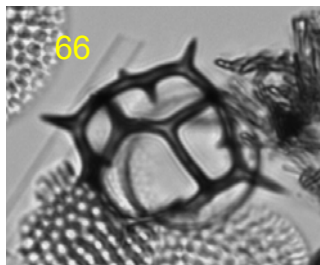
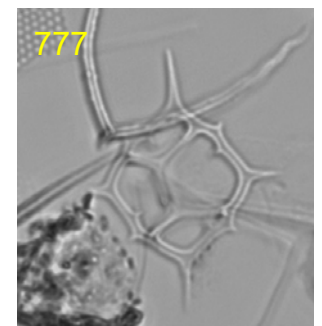
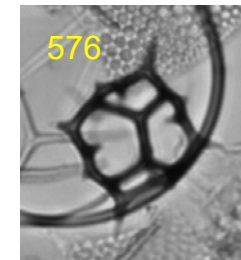
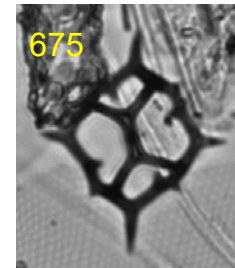
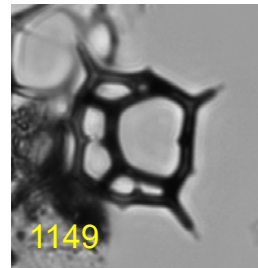
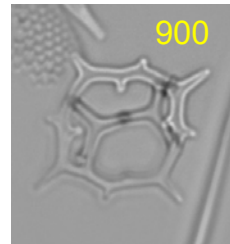
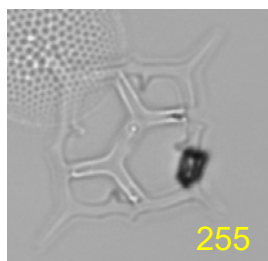
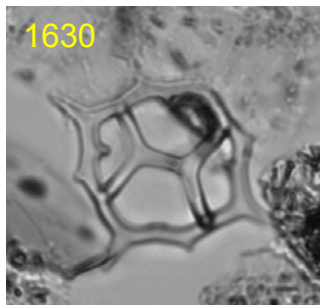
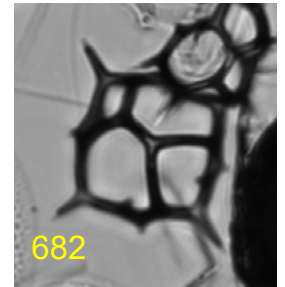
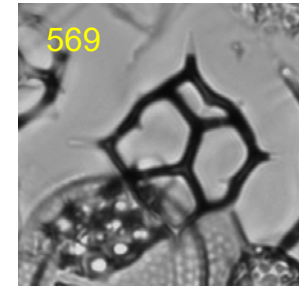
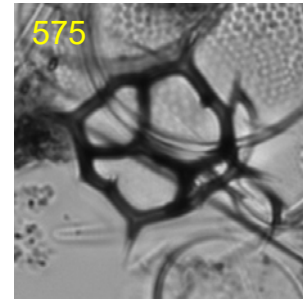
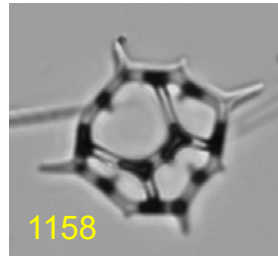
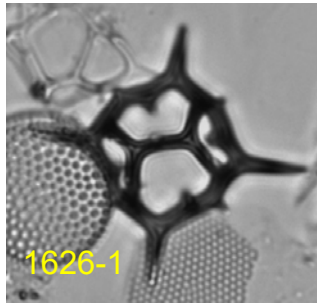
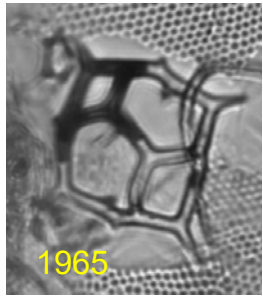


Plate 6

Dictyocha epiodon

50 μ m

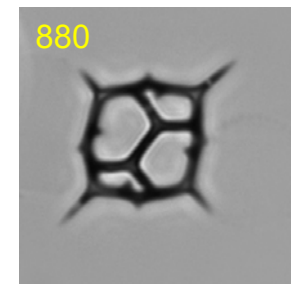
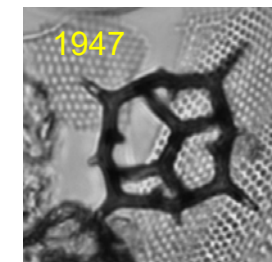
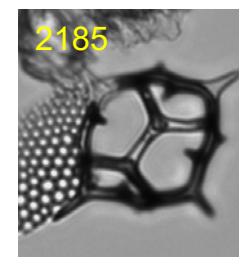
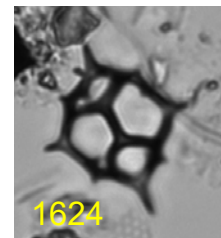
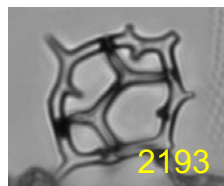
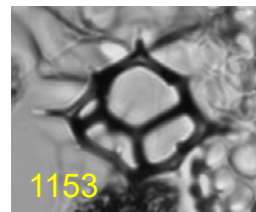
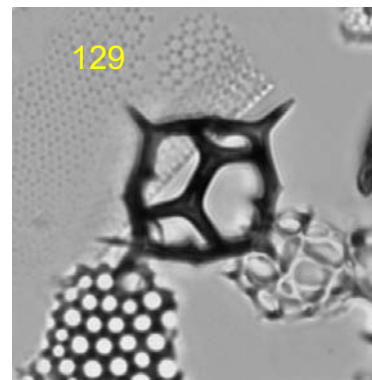
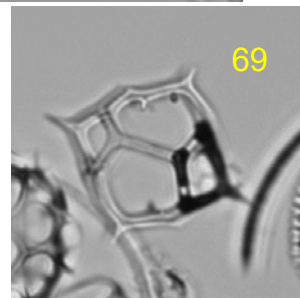
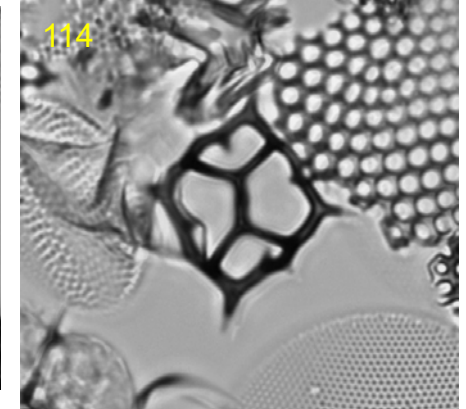
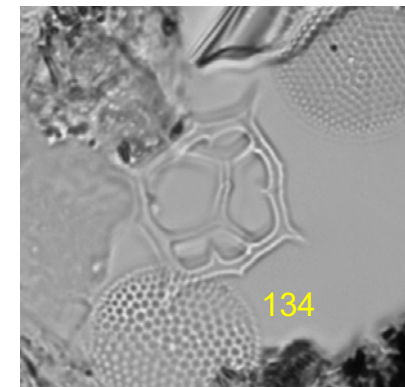
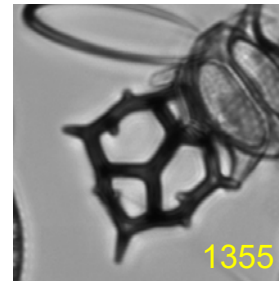
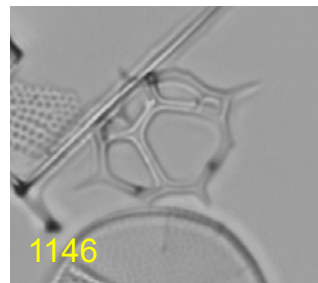
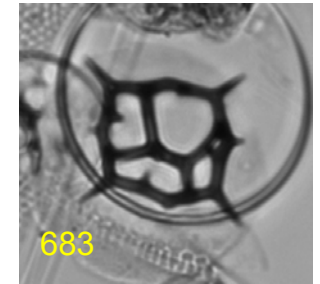
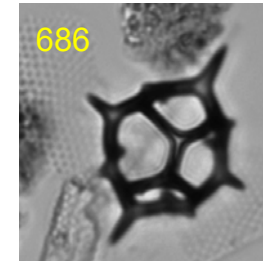
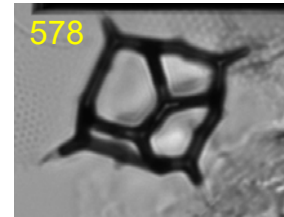
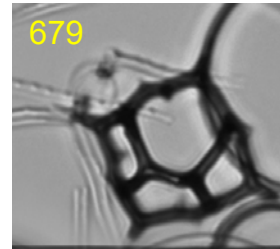
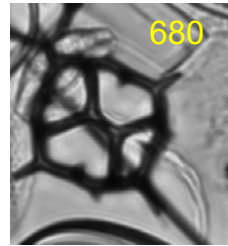
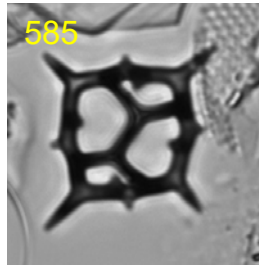
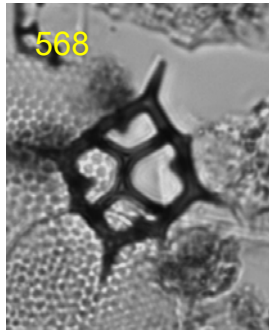


Plate 7

Dictyocha epidon

50 μ m

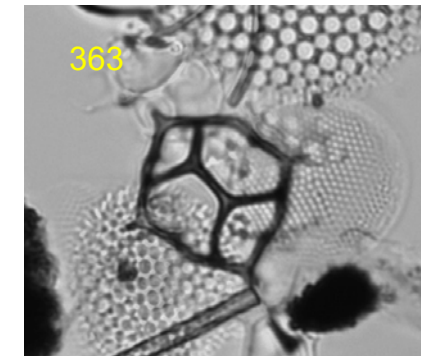
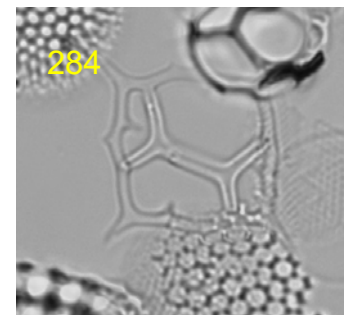
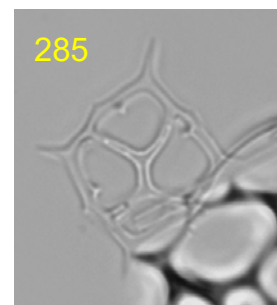
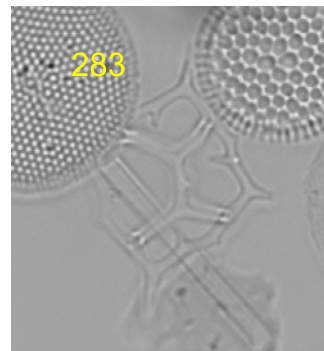
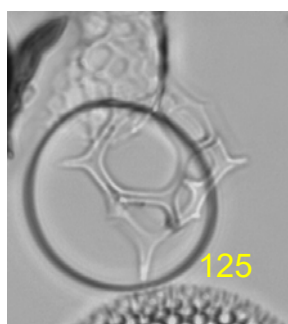
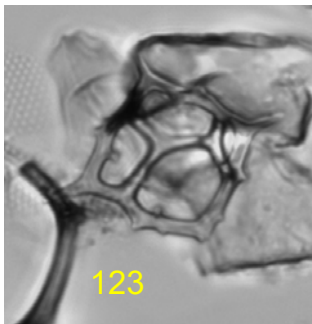
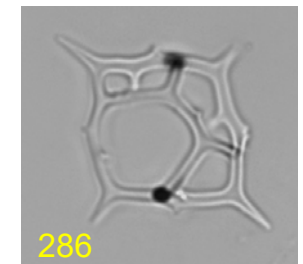
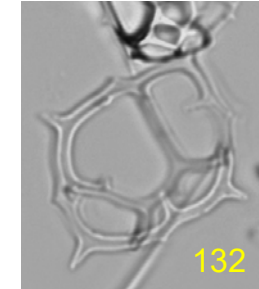
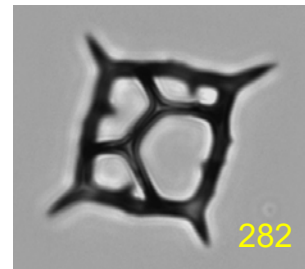
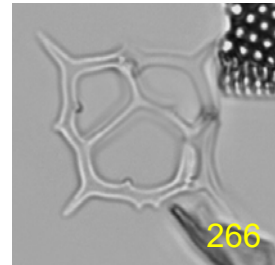
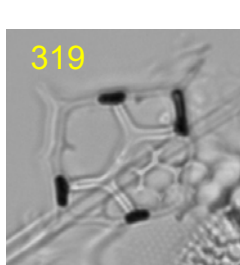
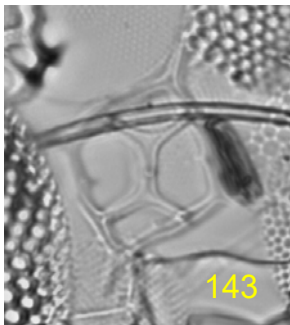
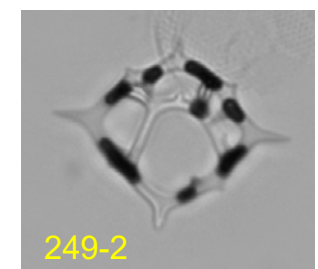
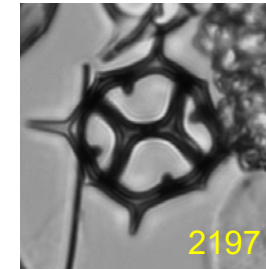
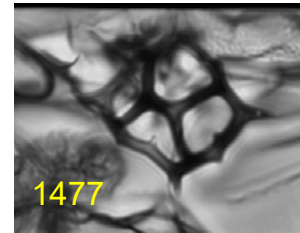
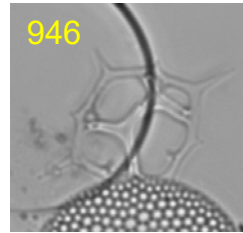
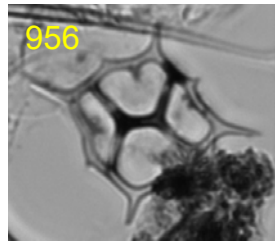
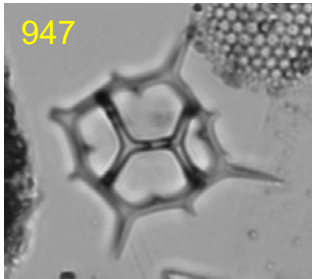
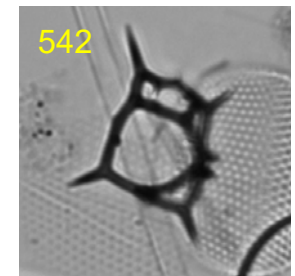
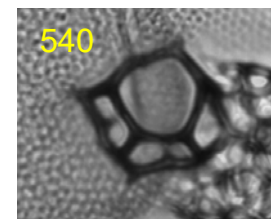
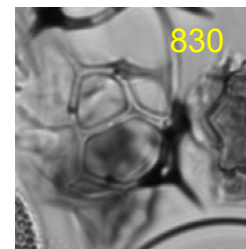
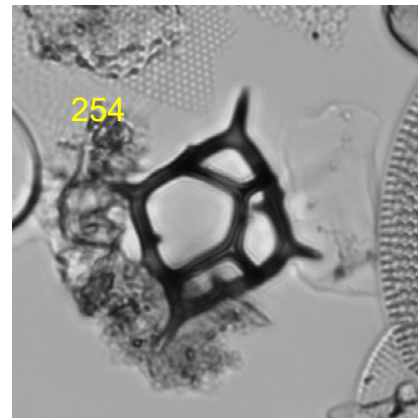
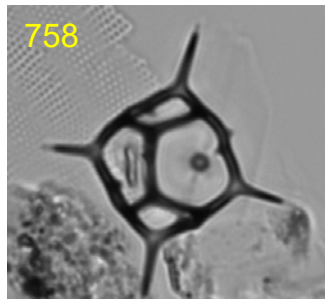
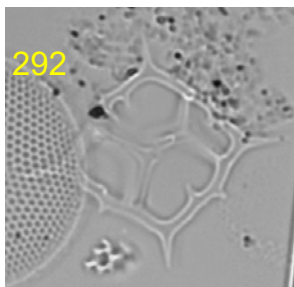
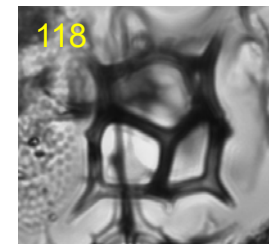
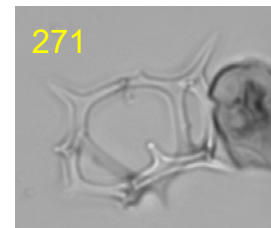
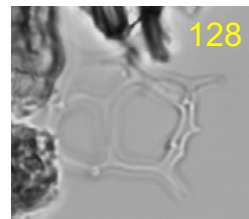
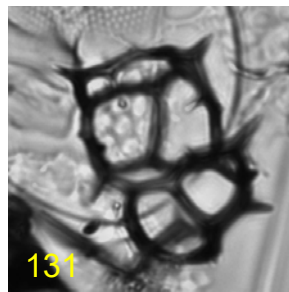
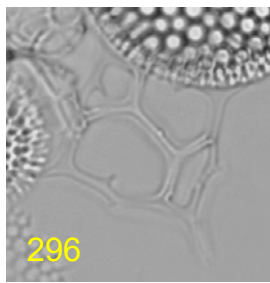
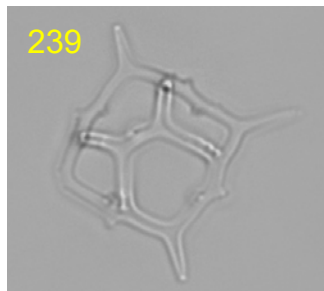
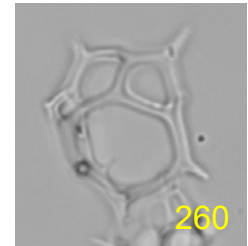
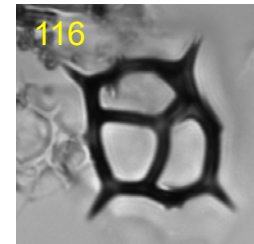
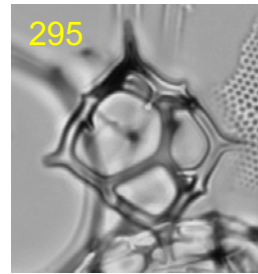
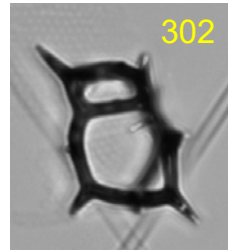
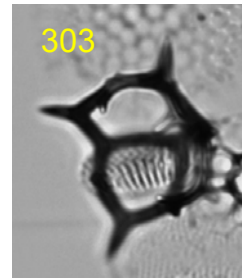
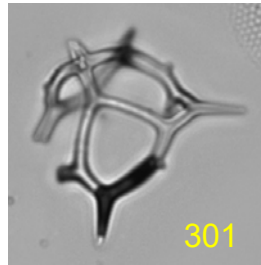
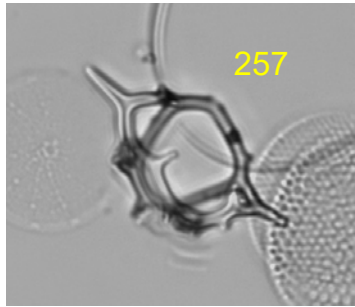


Plate 8

Dictyocha epidon

50 μ m



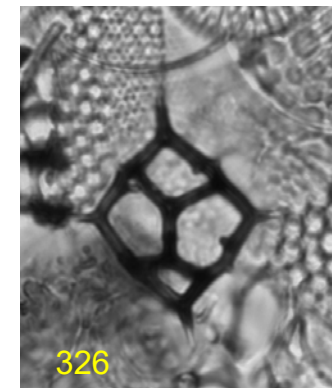
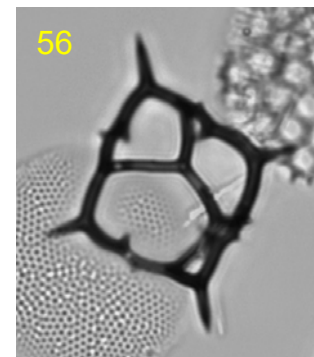
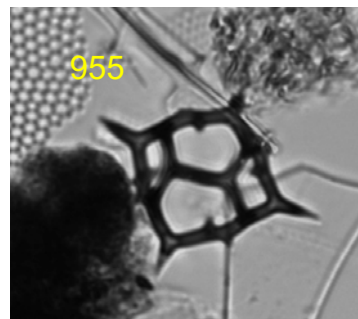
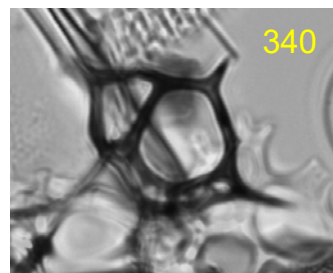
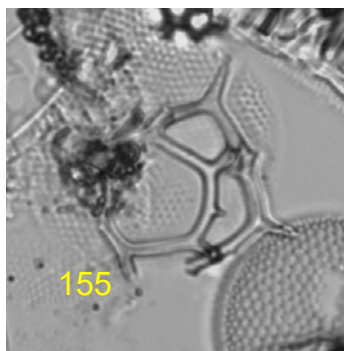
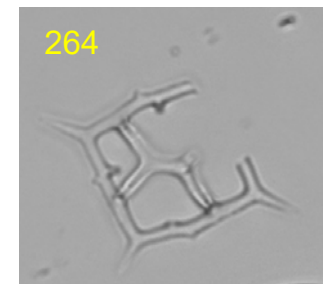
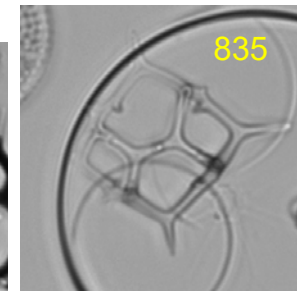
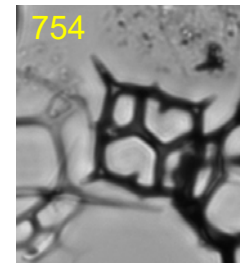
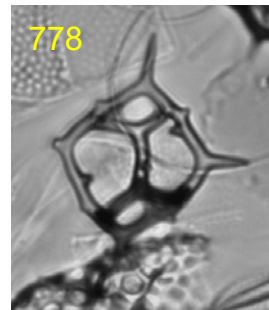
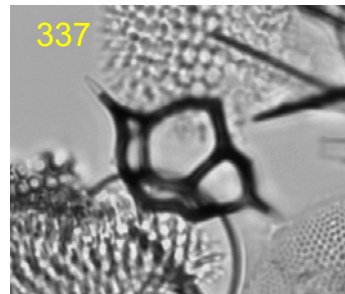
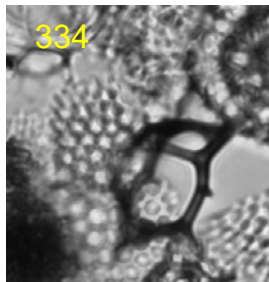
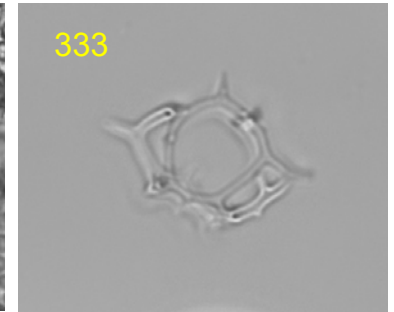
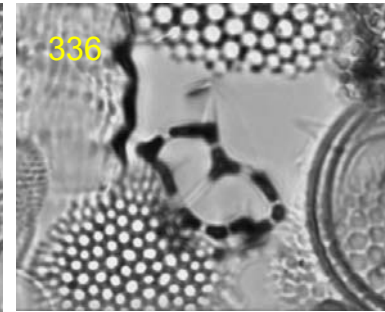
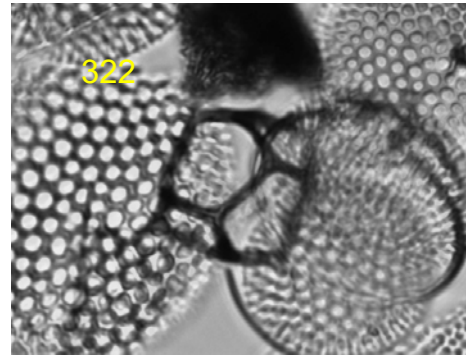
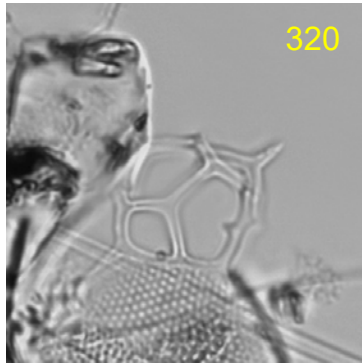
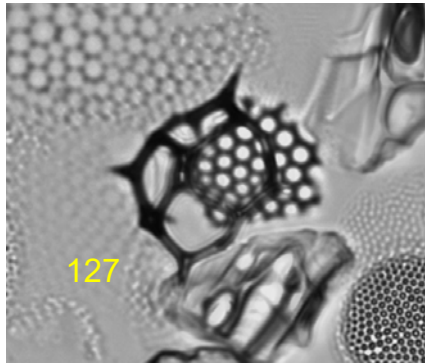


Plate 12

Dictyocha epidon

50 μ m

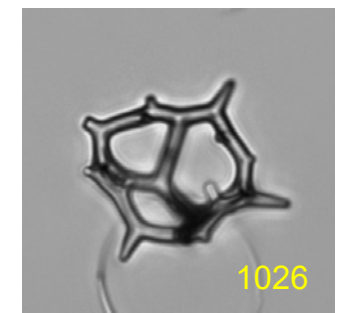
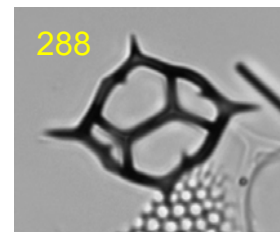
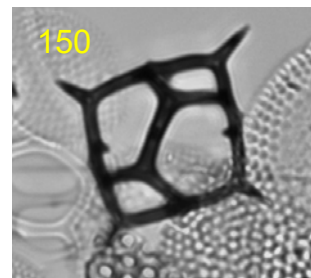
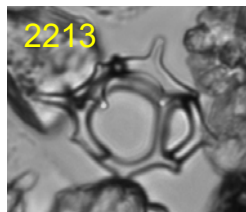
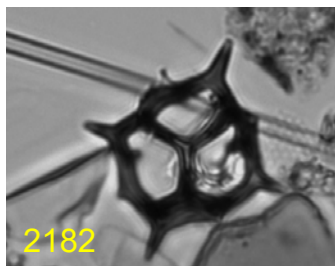
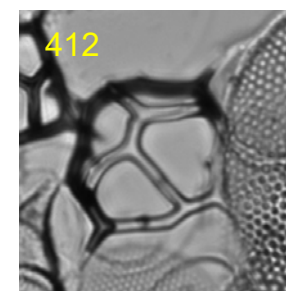
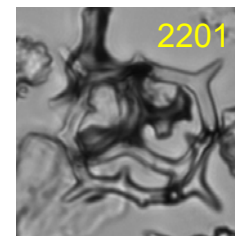
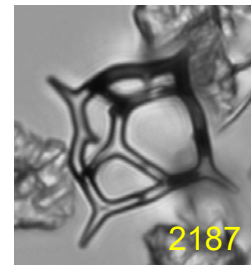
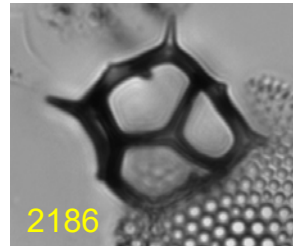
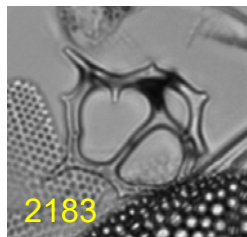
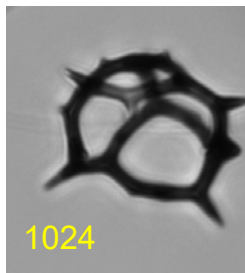
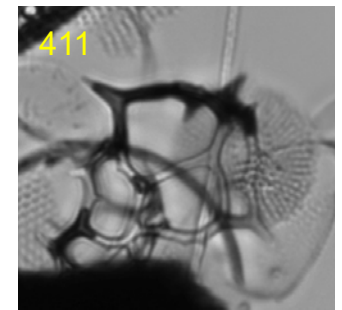
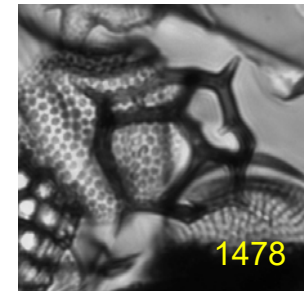
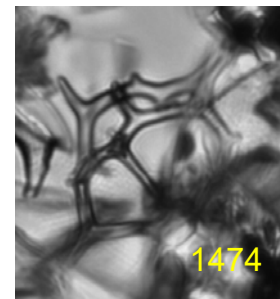
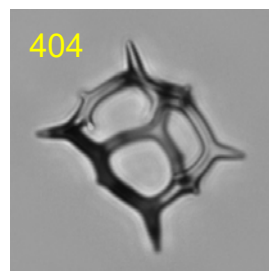
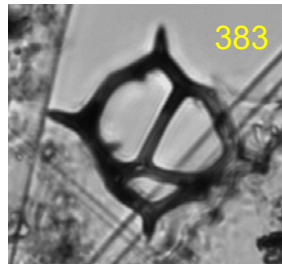
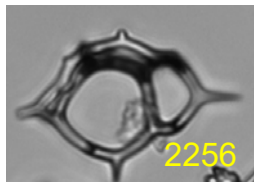
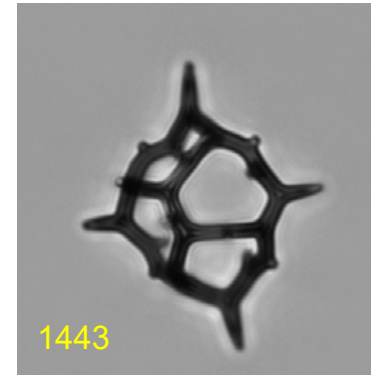
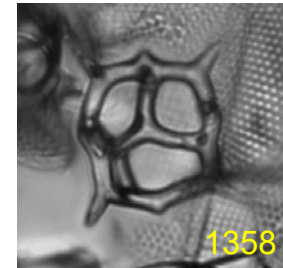
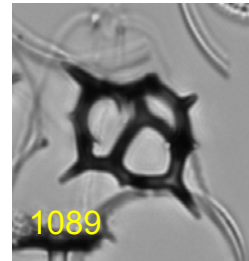
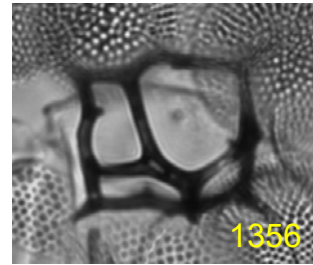
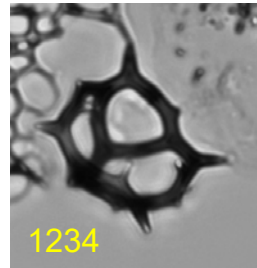
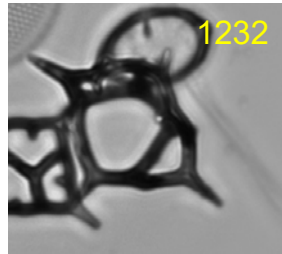
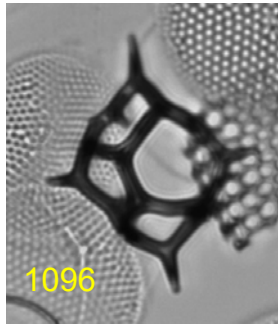


Plate 13

Dictyocha epidon

50 μ m

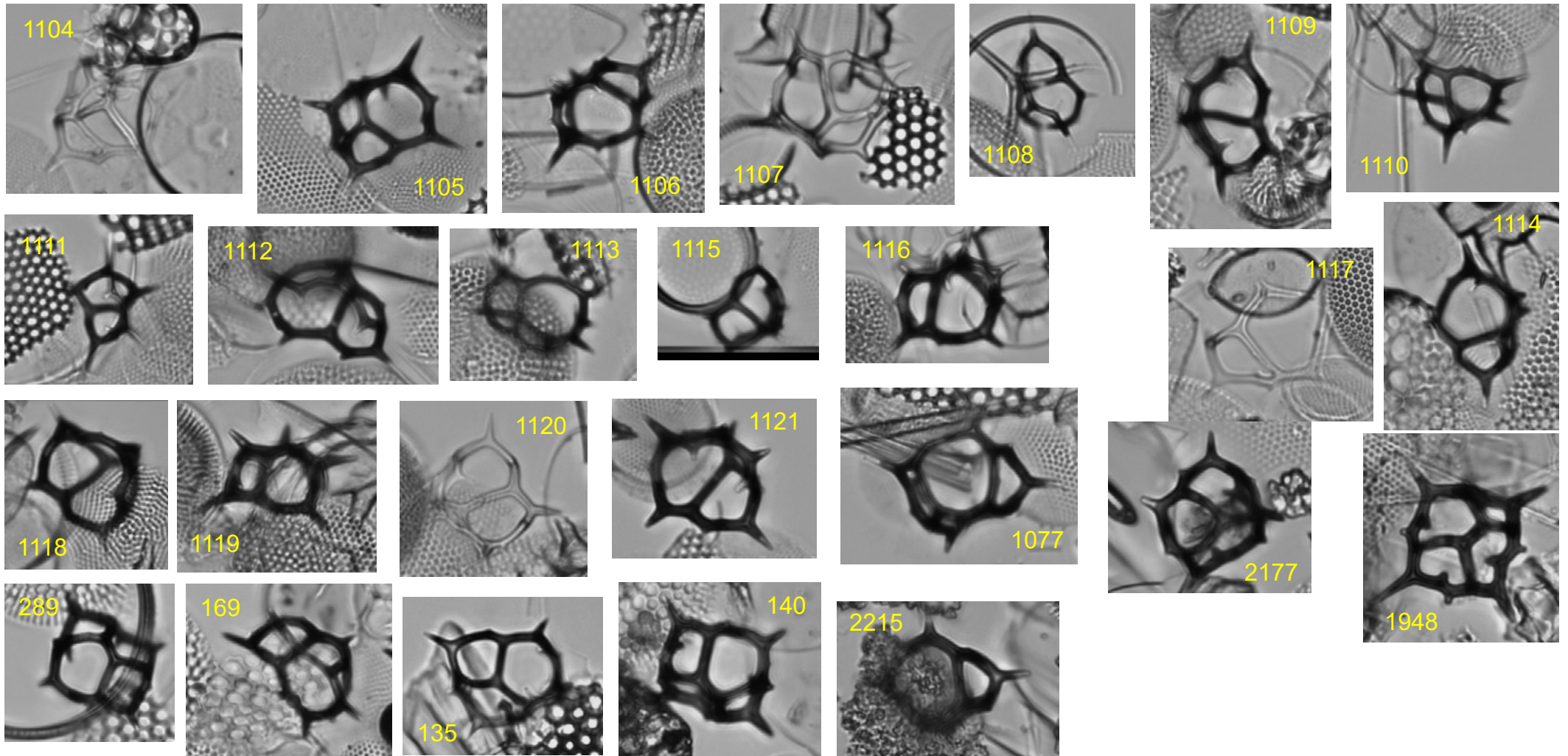
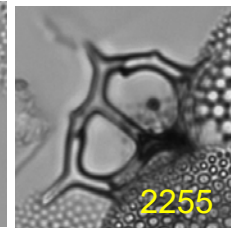
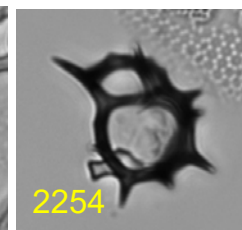
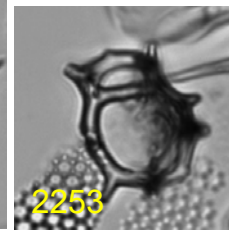
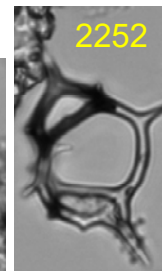
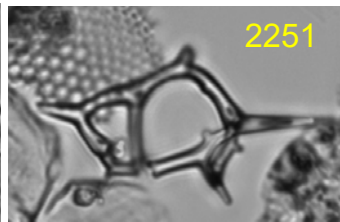
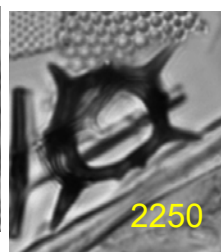
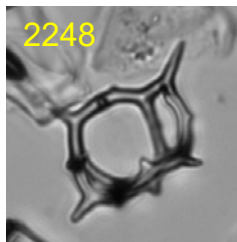
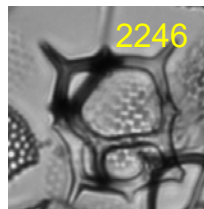
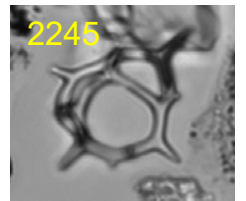
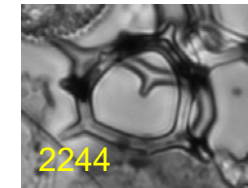
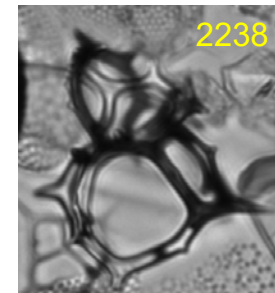
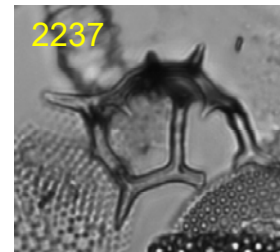
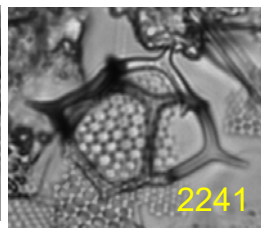
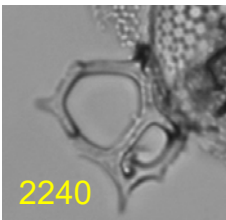
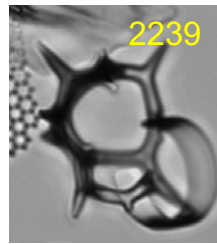
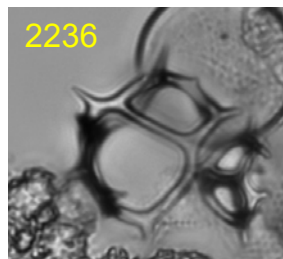
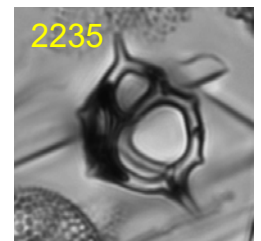
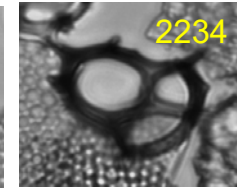
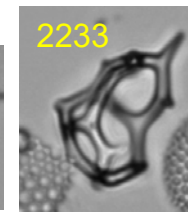
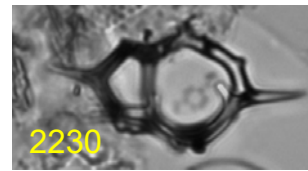
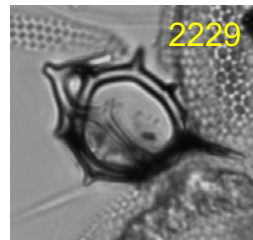
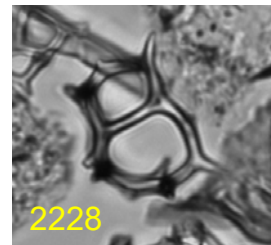
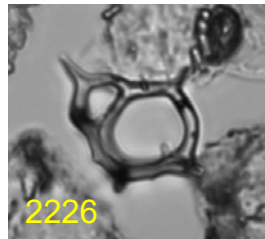
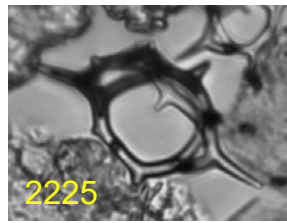
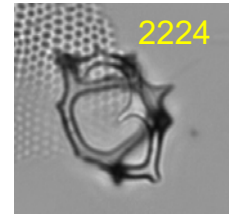
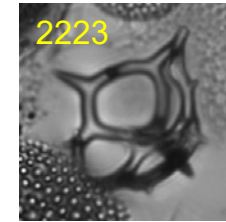
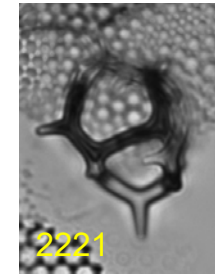
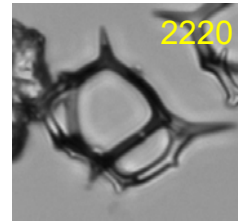
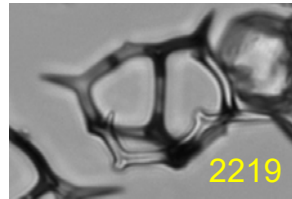
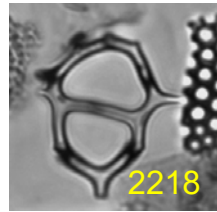
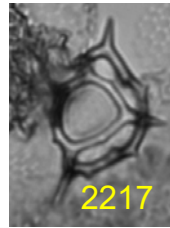
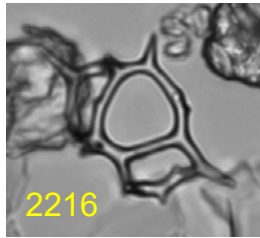


Plate 14

Dictyocha epiodon

50 μ m



Dictyocha epidon

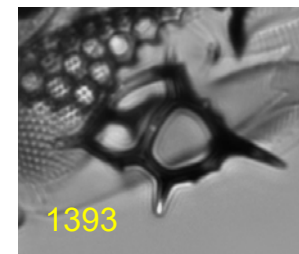
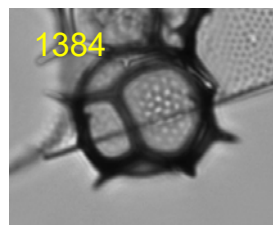
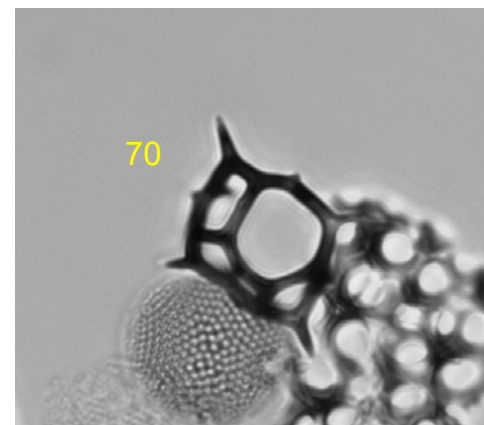
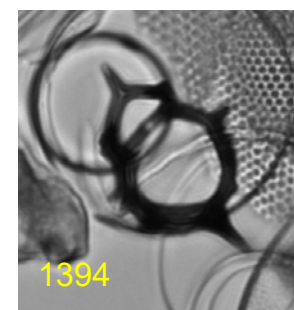
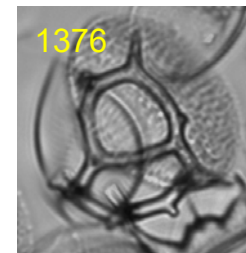


Plate 16

Dictyocha epidon

50 μ m

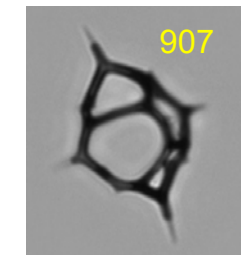
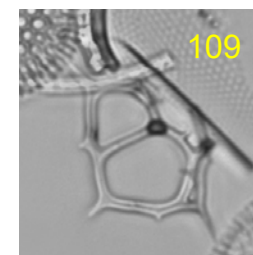
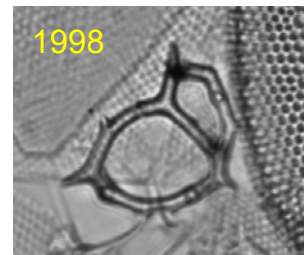
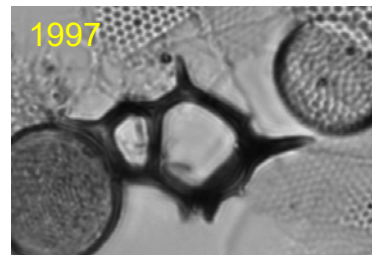
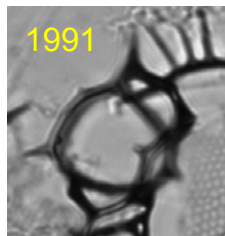
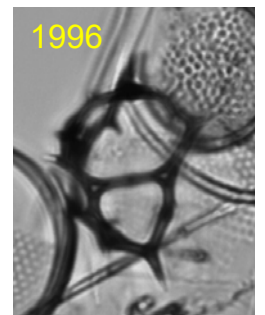
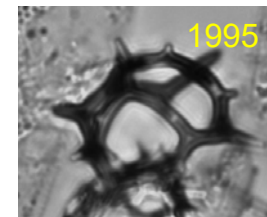
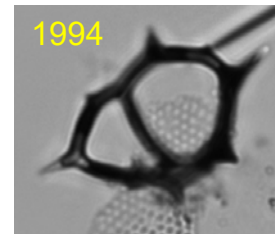
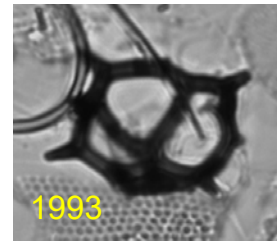
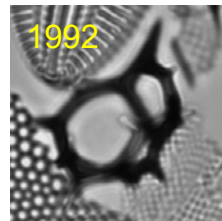
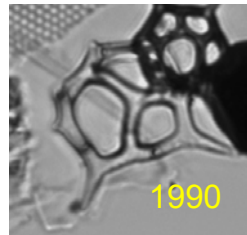
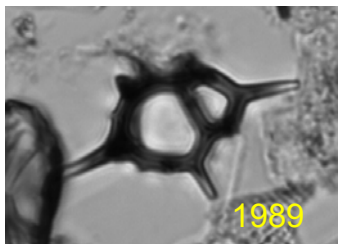
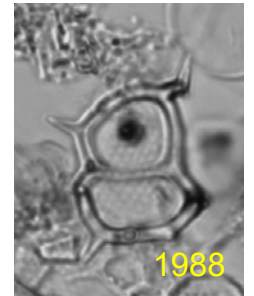
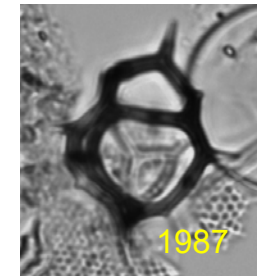
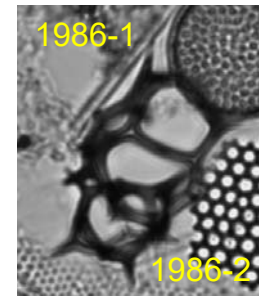
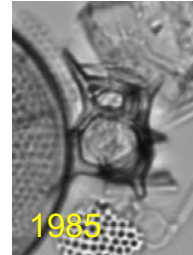
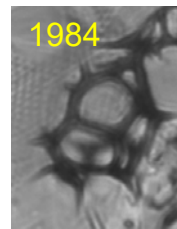
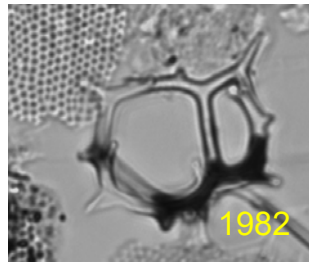
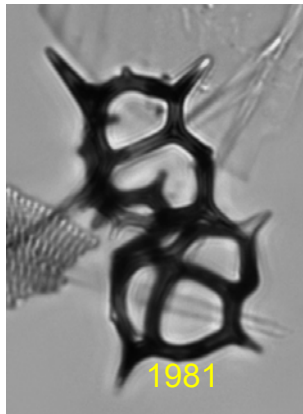
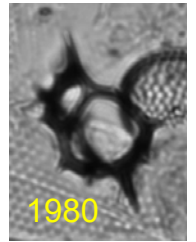
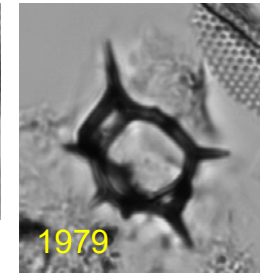
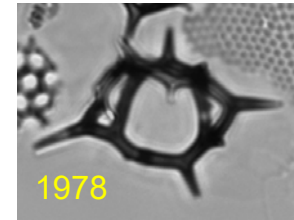
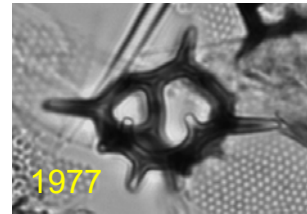
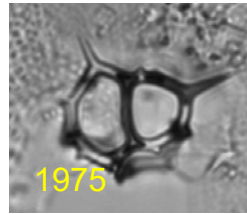
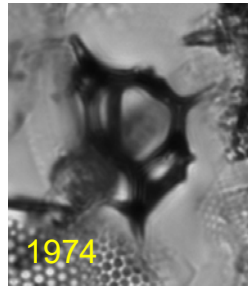
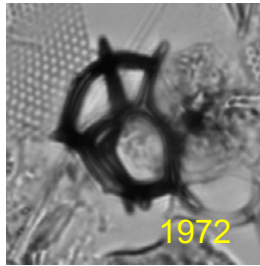


Plate 17

Dictyocha epiodon

50 μ m

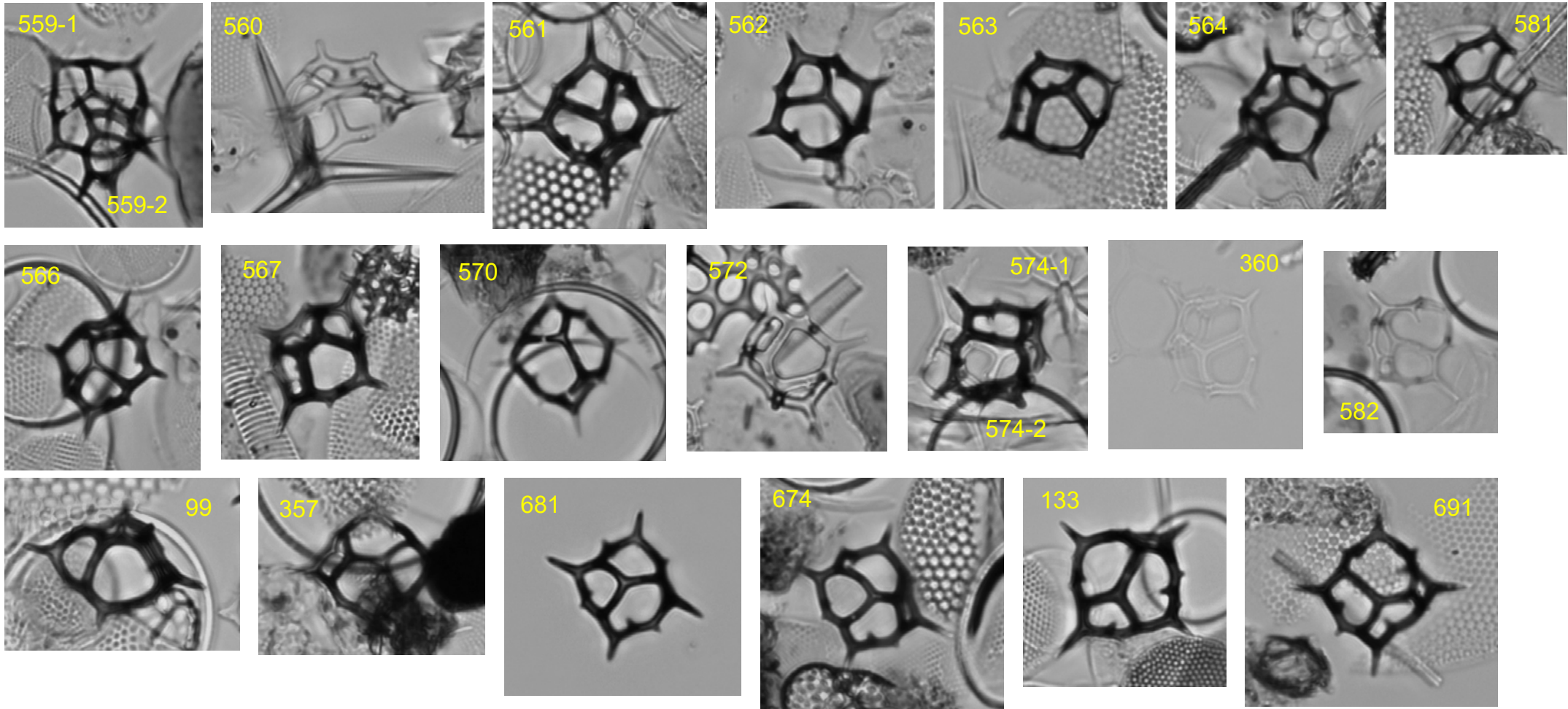


Plate 18

Dictyocha epiodon

50 μ m

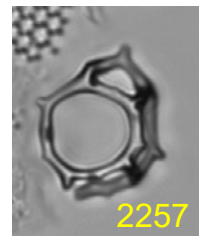
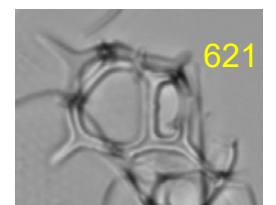
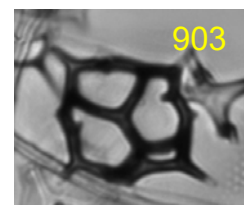
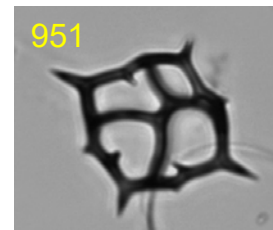
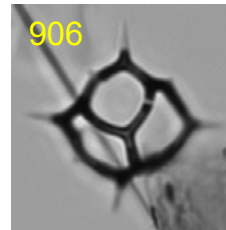
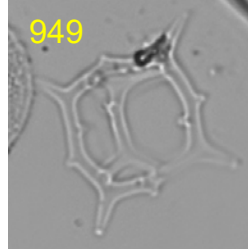
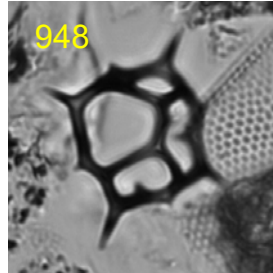
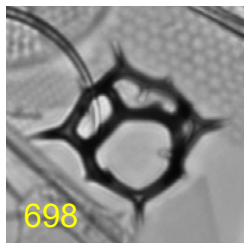
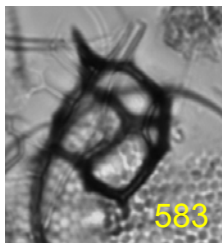
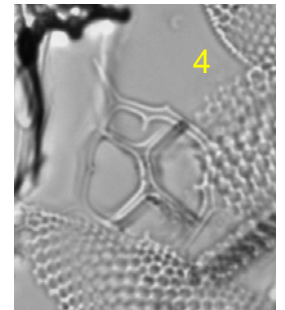
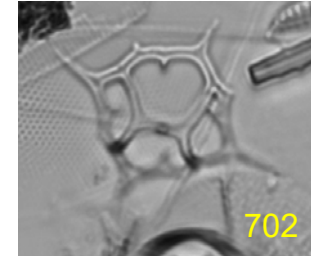
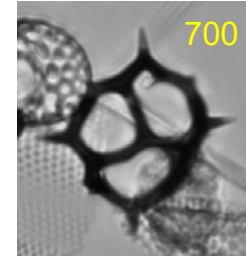
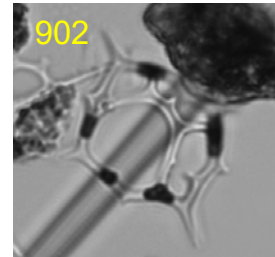
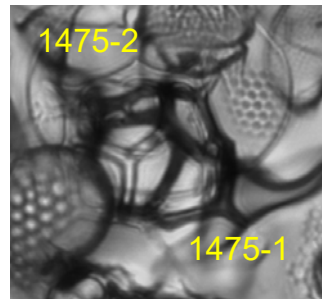
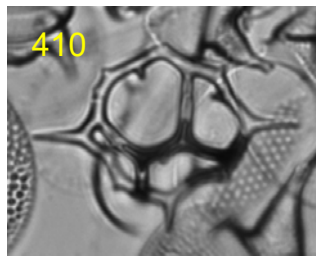
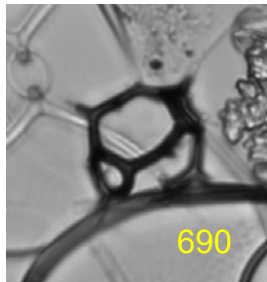
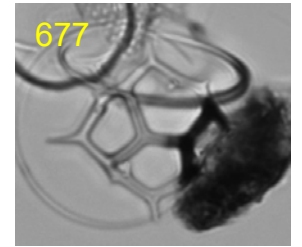
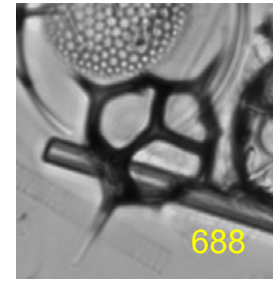
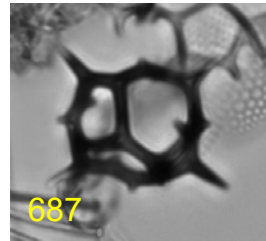
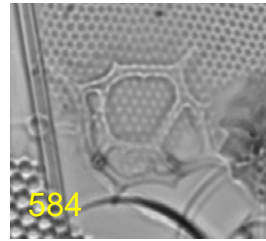
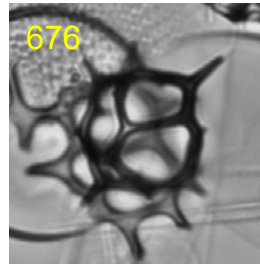
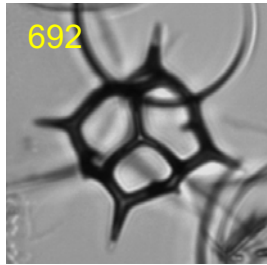
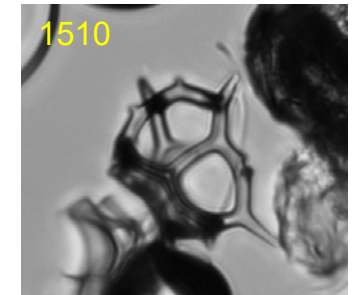
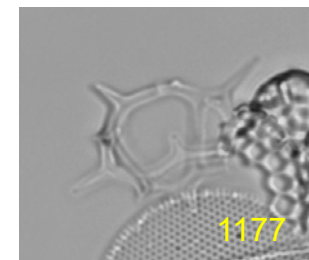
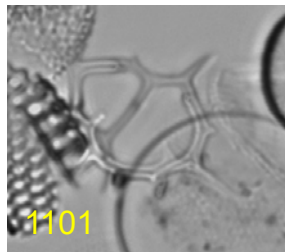
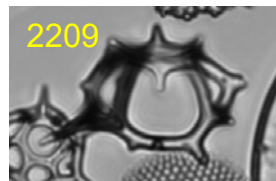
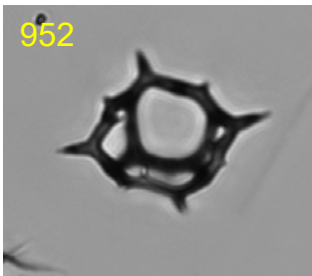
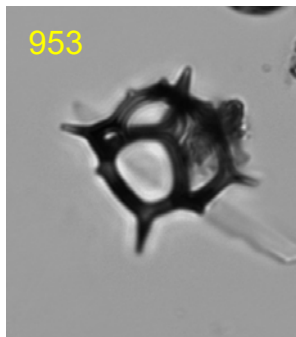
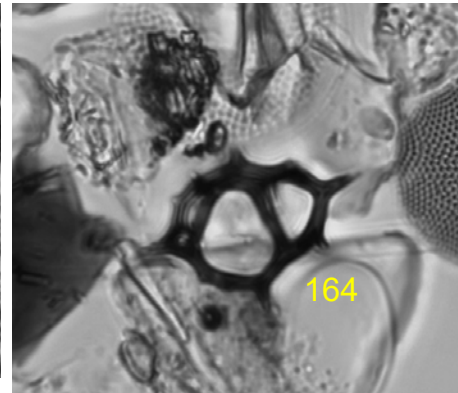
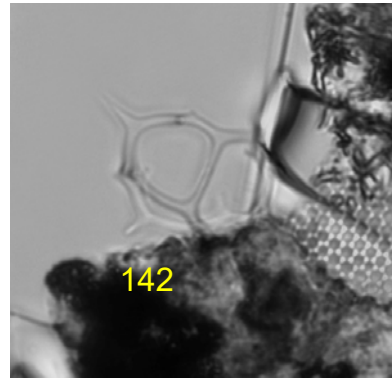
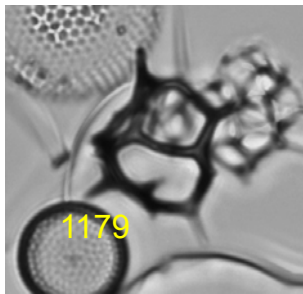
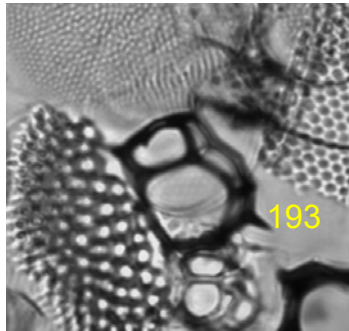
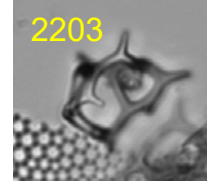
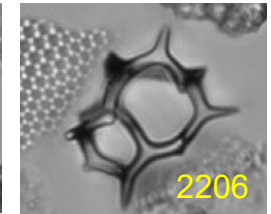
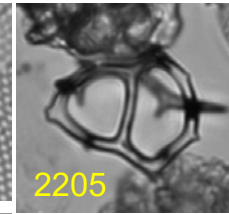
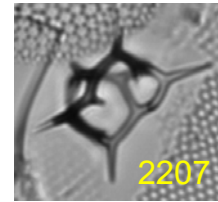
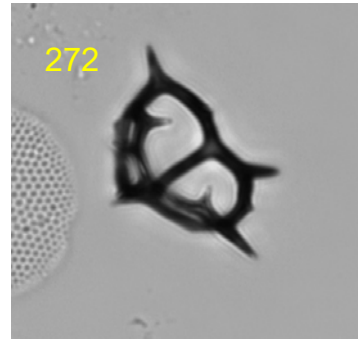
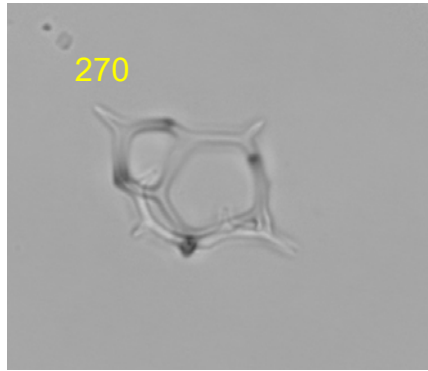
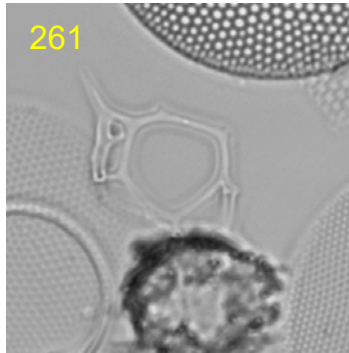
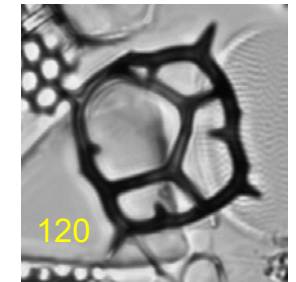
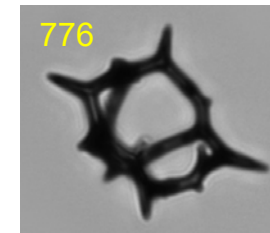
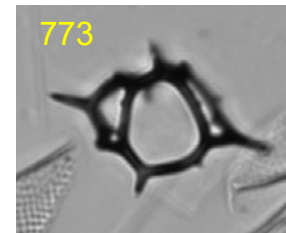
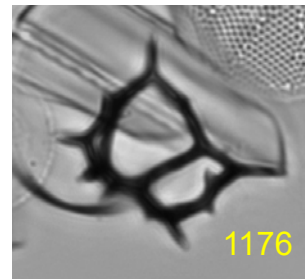
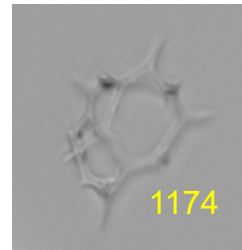
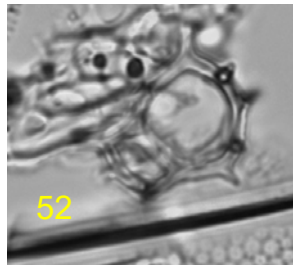
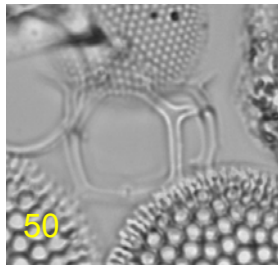
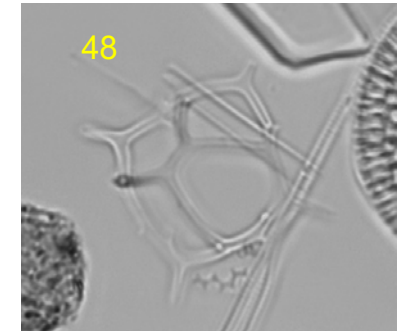
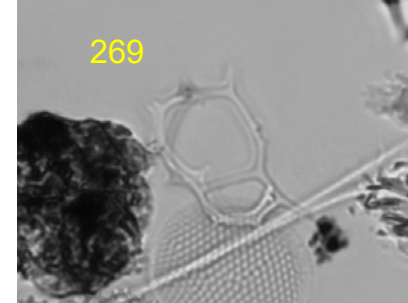
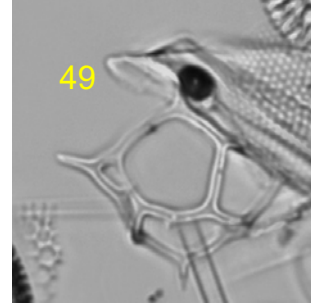
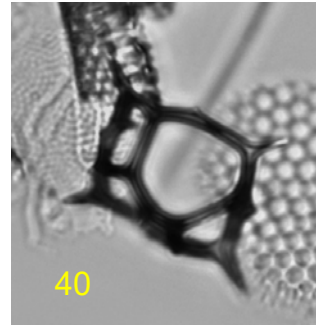
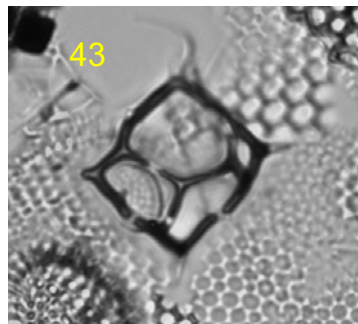
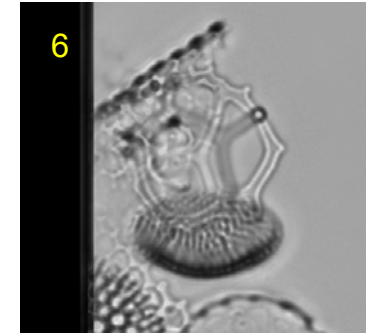
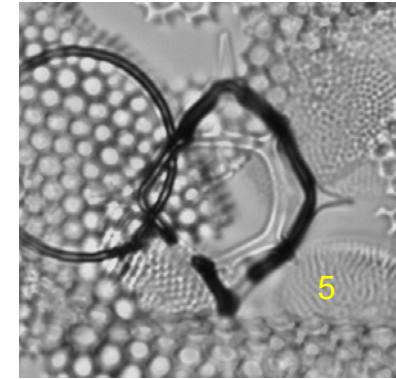
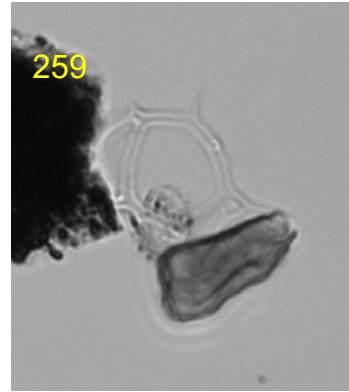
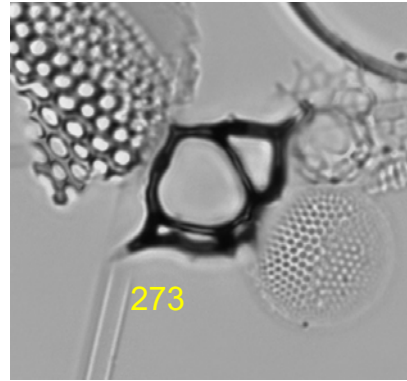
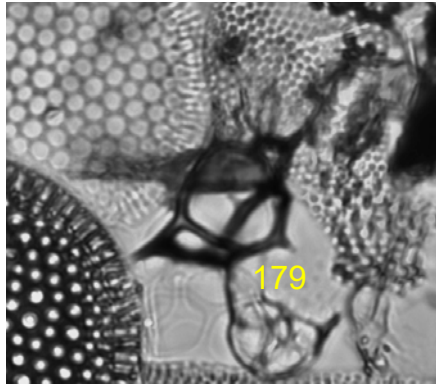


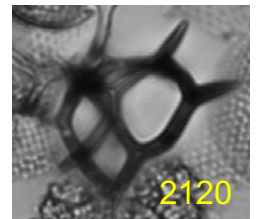
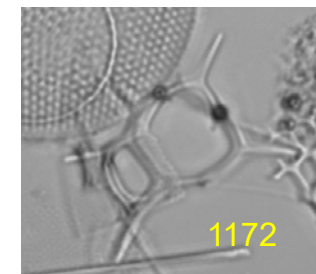
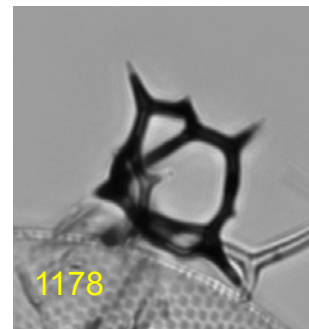
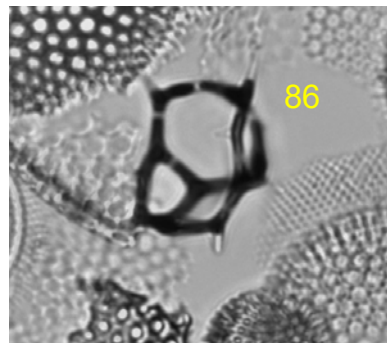
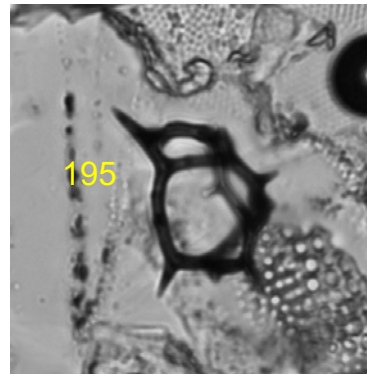
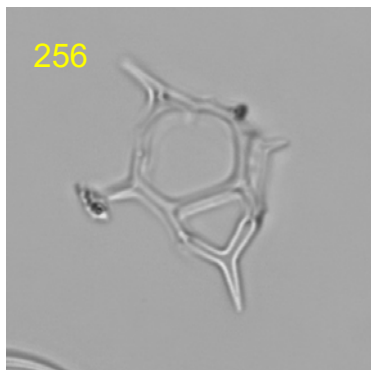
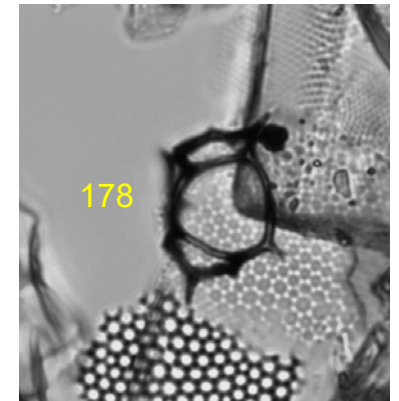
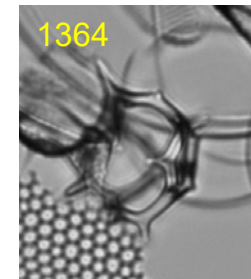
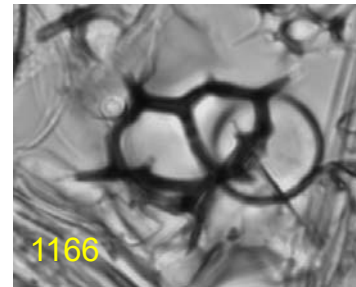
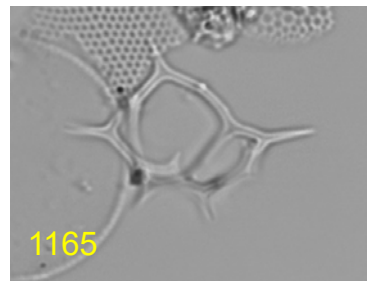
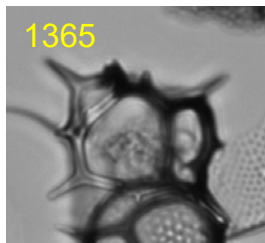
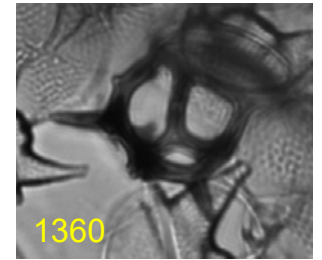
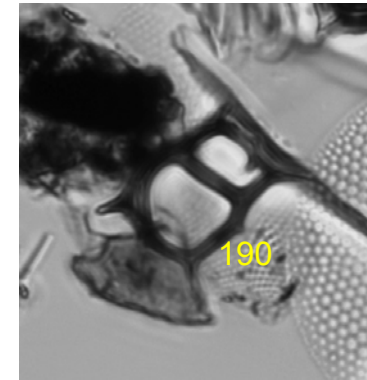
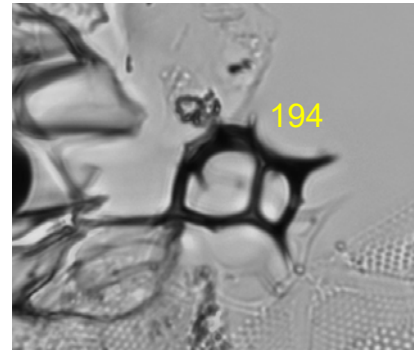
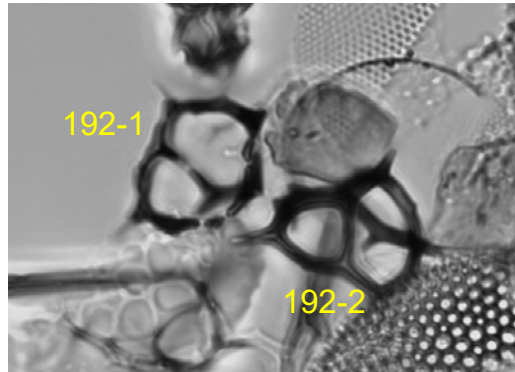
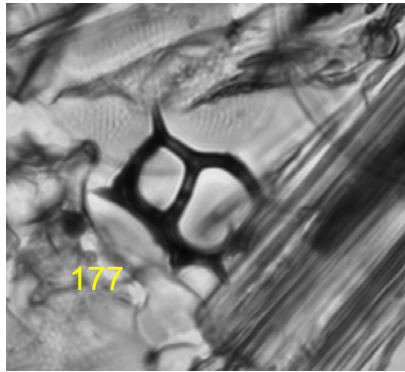
Plate 20

Dictyocha epidon

50 μ m







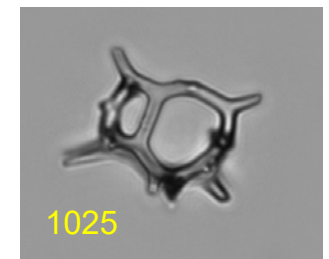
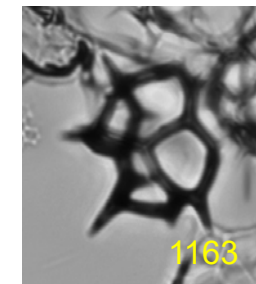
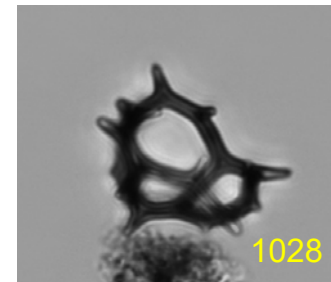
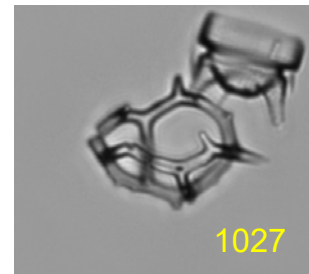
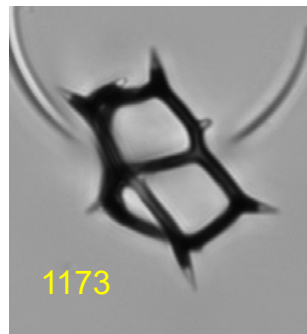
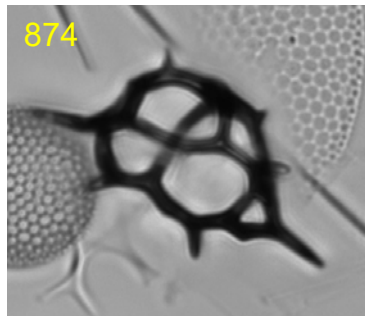
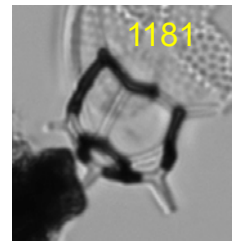
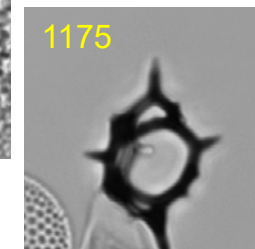
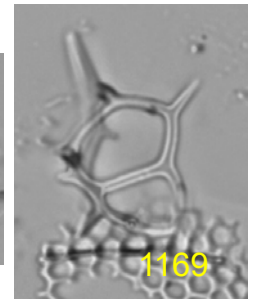
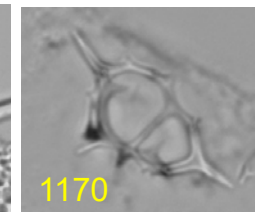
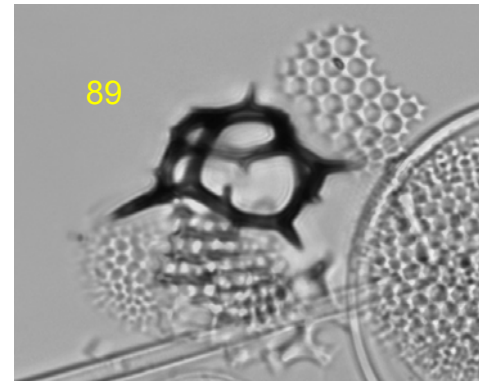
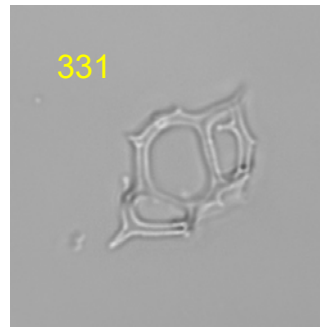
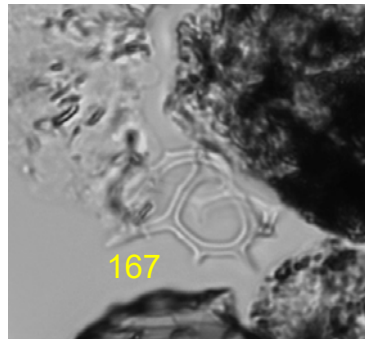
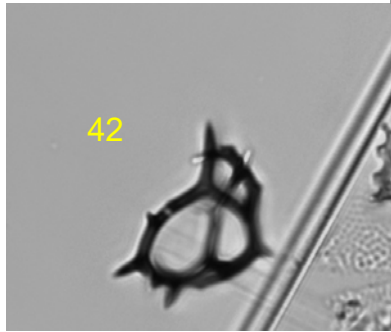
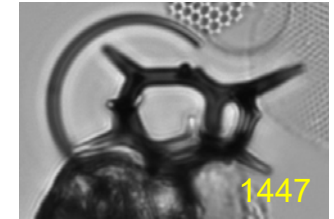
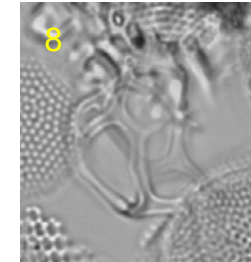
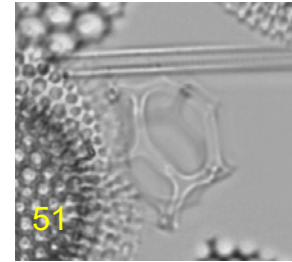
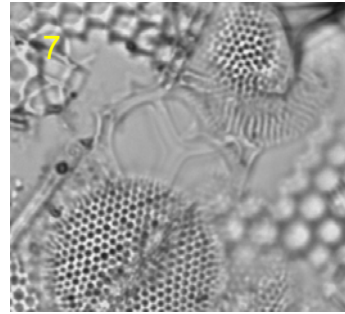
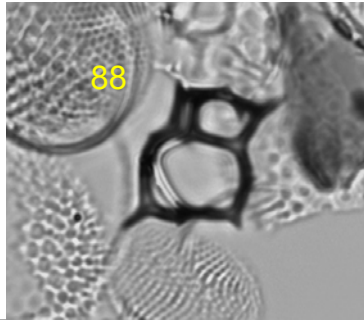
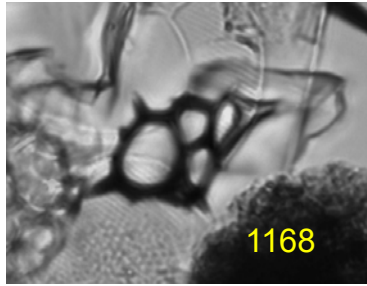


Plate 24

Dictyocha epidon

50 μ m

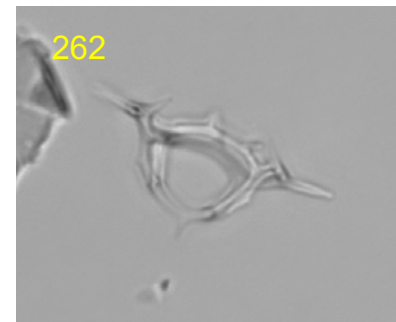
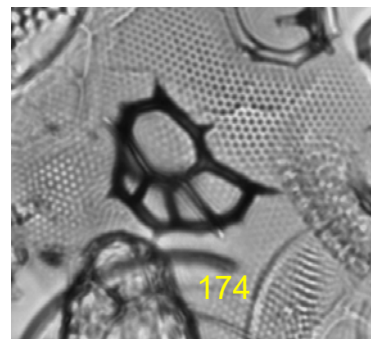
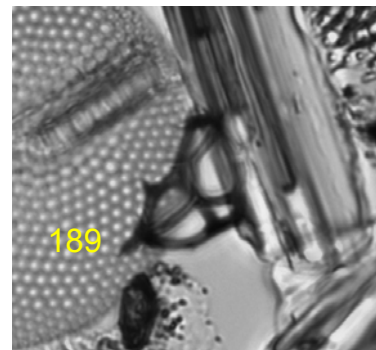
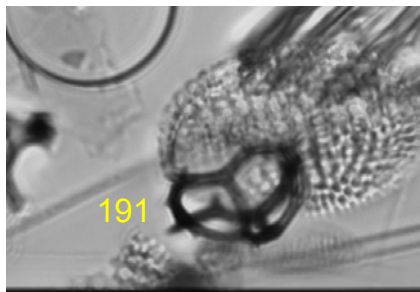
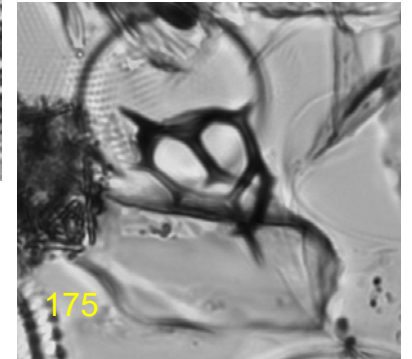
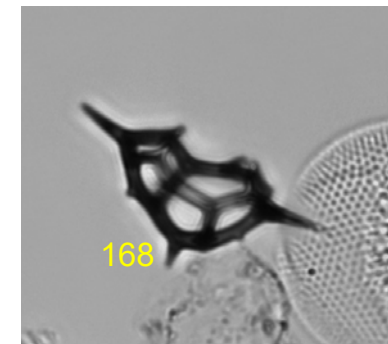
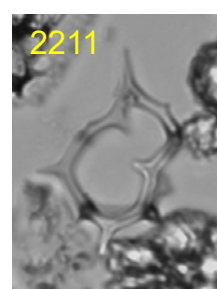
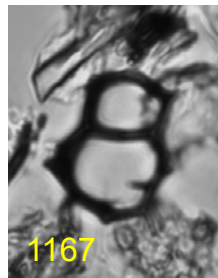
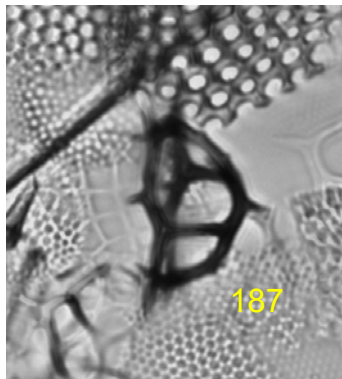
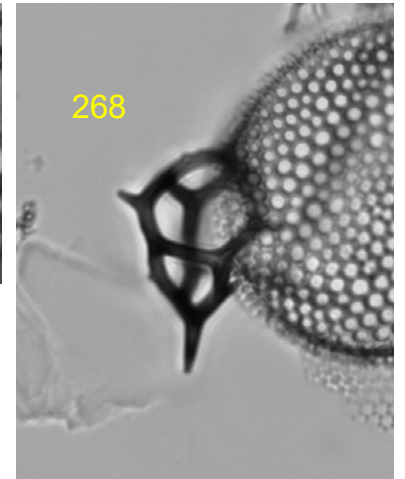
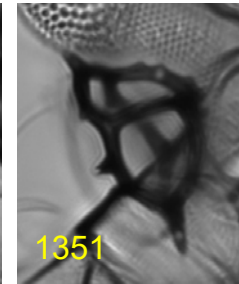
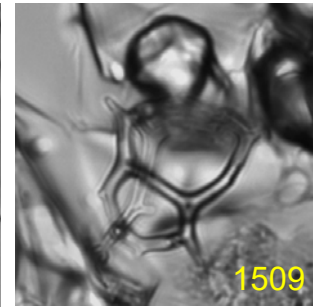
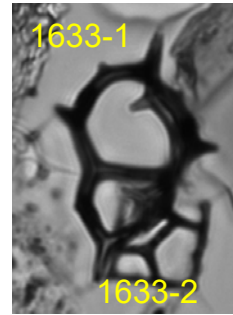
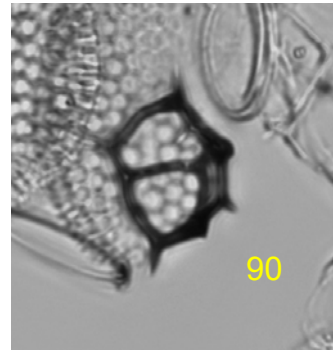
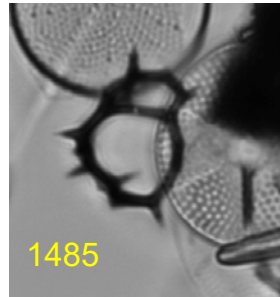
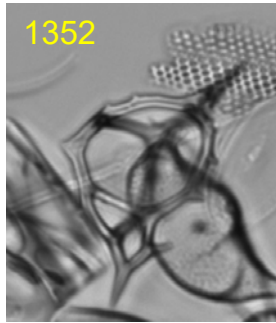


Plate 25

Dictyocha epidon

50 μ m

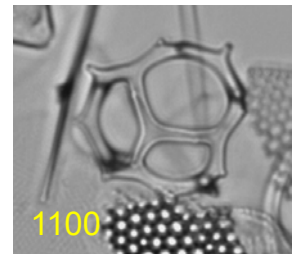
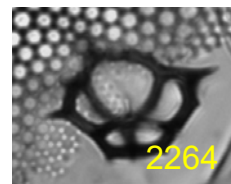
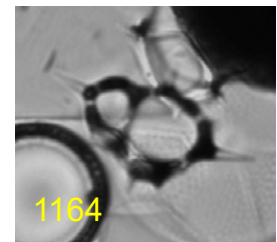
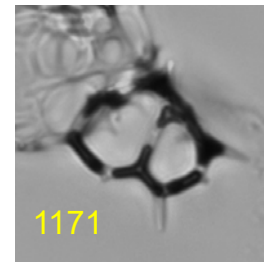
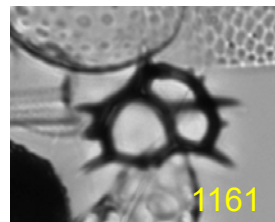
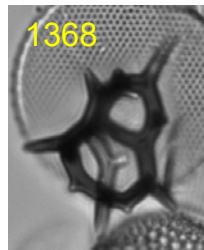
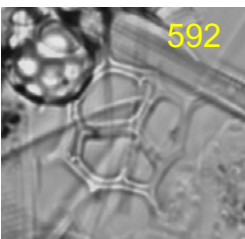
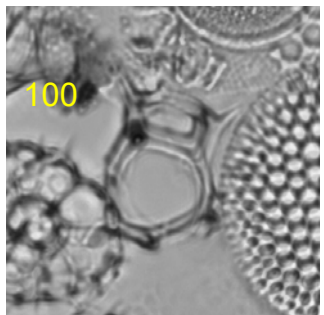
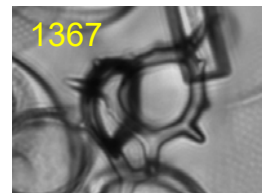
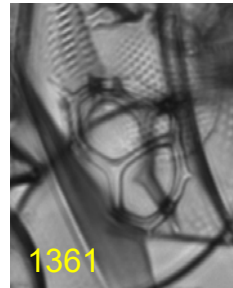
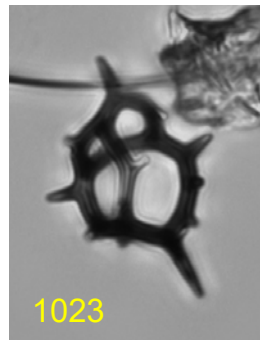
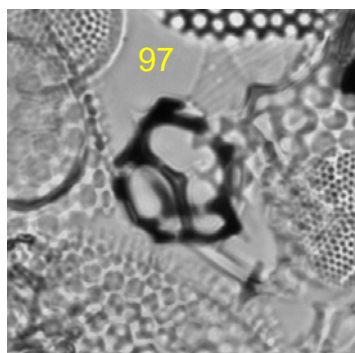
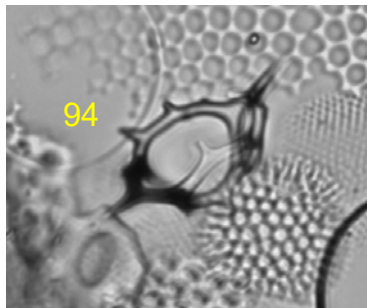
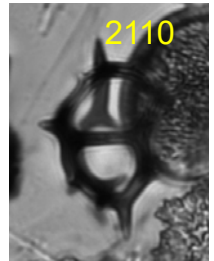
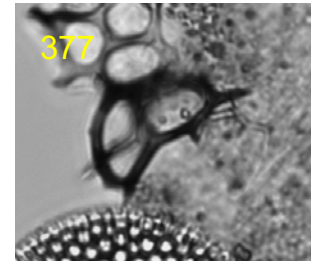
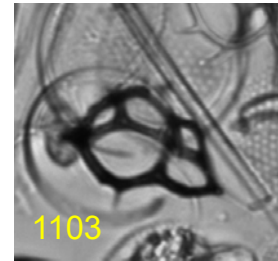
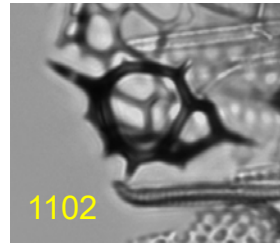
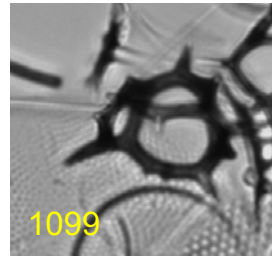
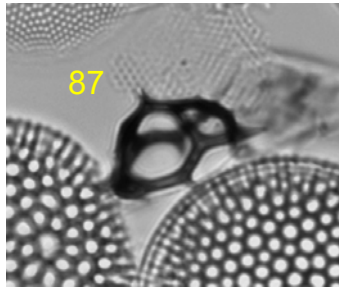
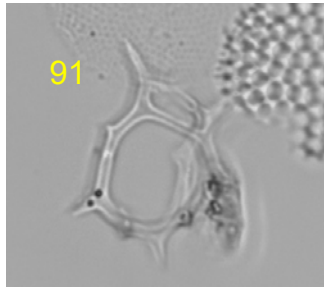


Plate 26

Dictyochoa epiodon

50 μ m

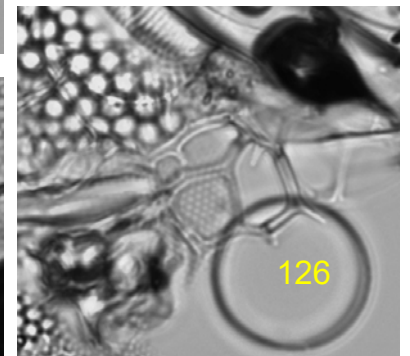
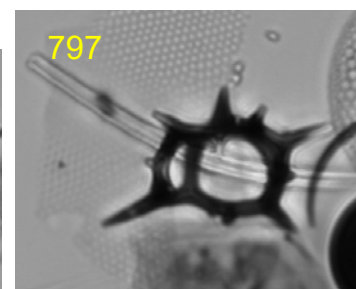
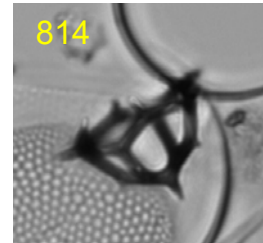
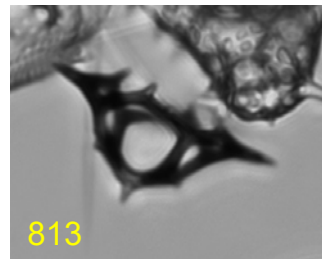
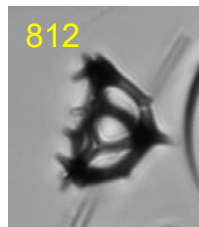
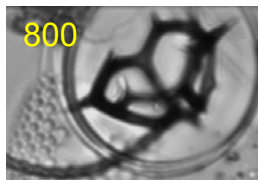
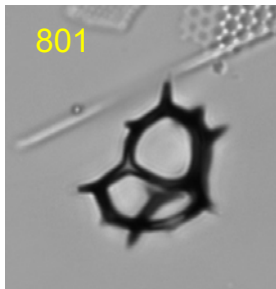
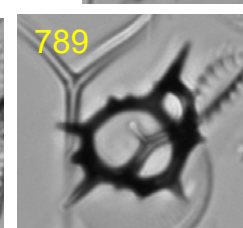
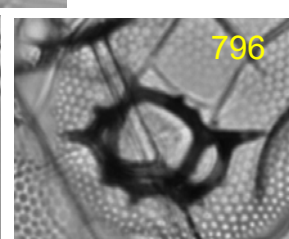
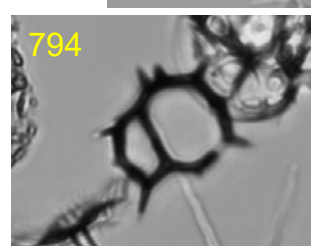
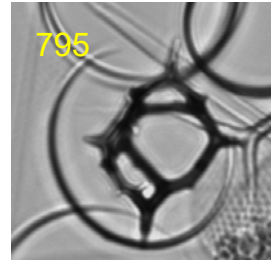
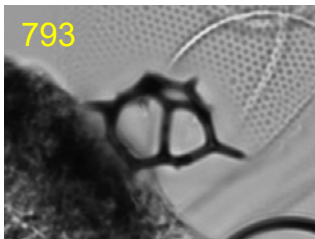
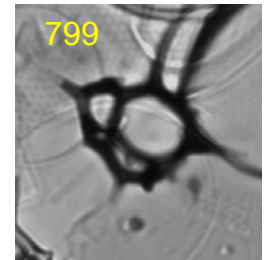
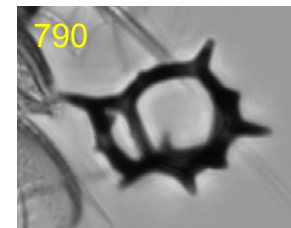
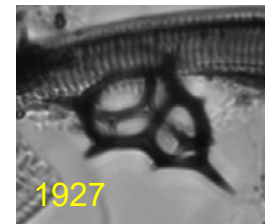
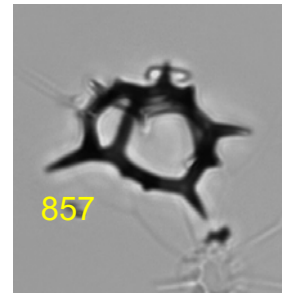
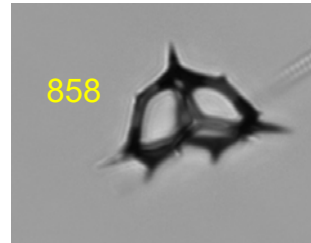
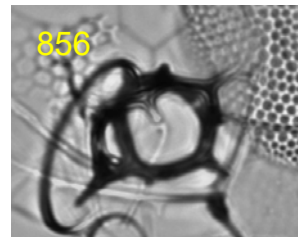
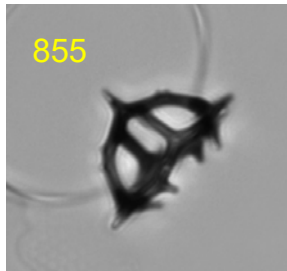
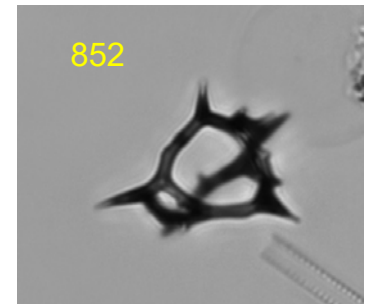
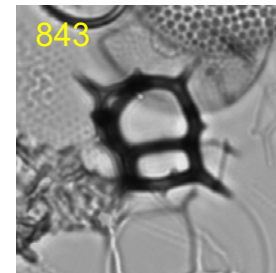
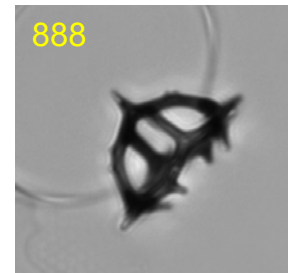
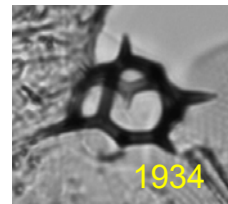
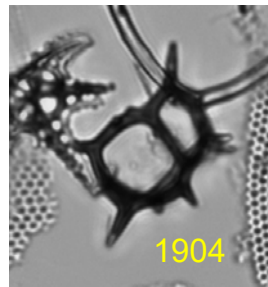
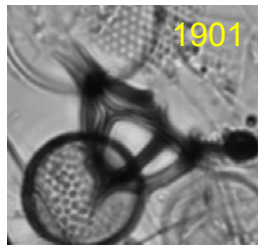
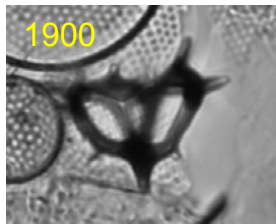


Plate 27

Dictyocha epidon

50 μ m

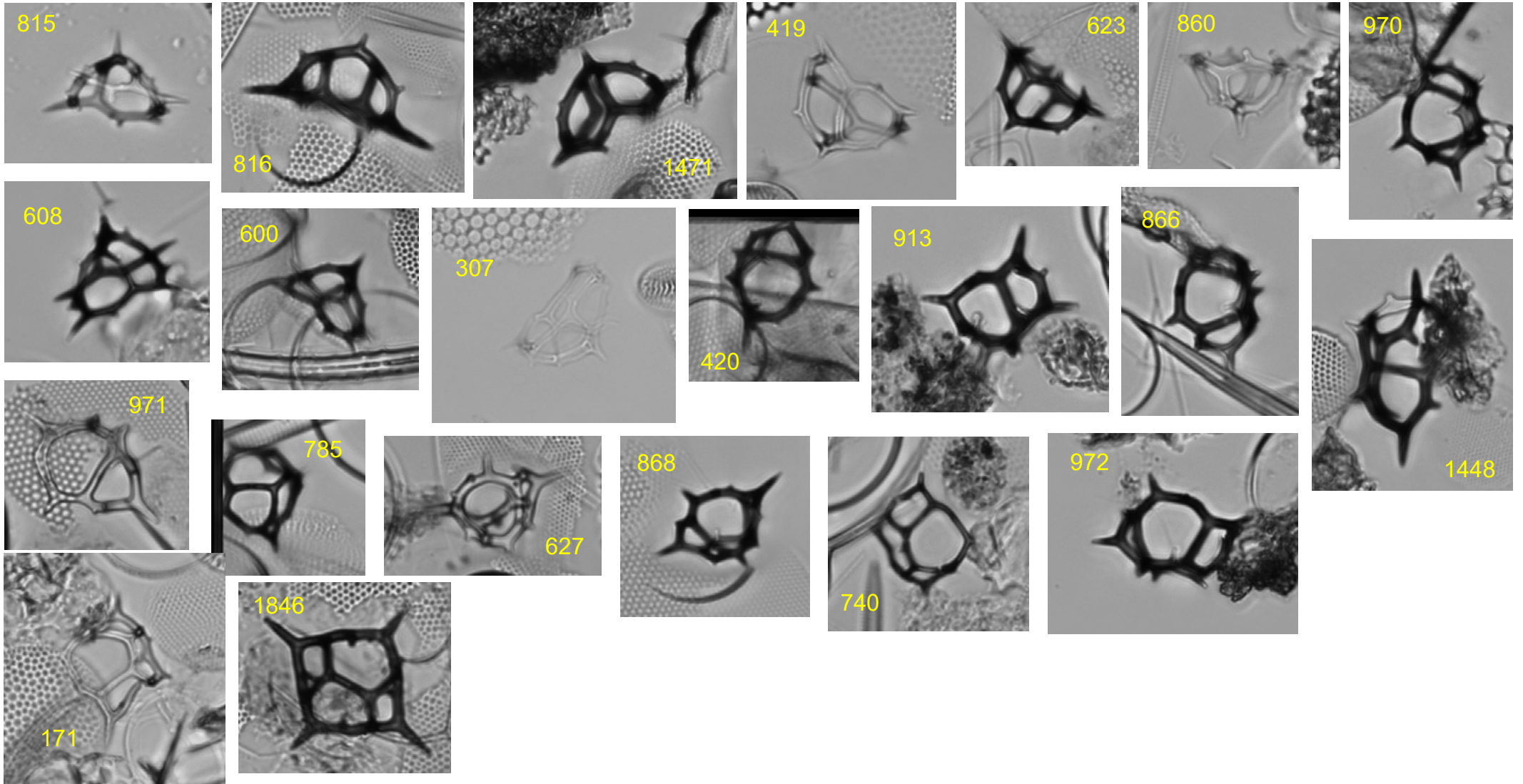


Plate 28

Dictyocha epidon

50 μ m

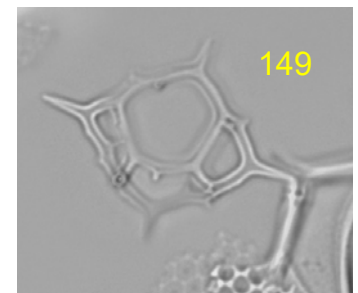
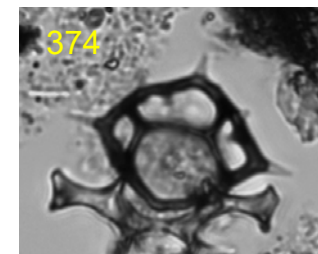
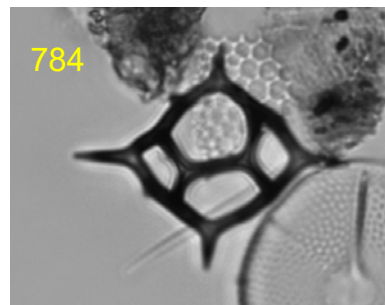
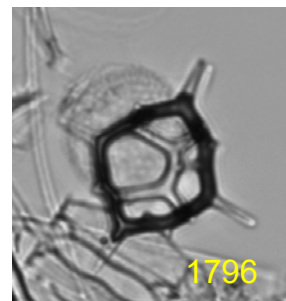
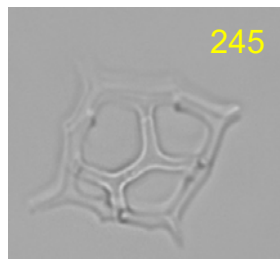
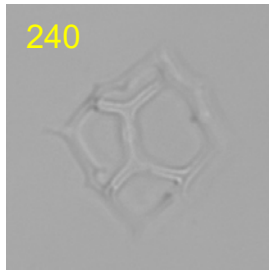
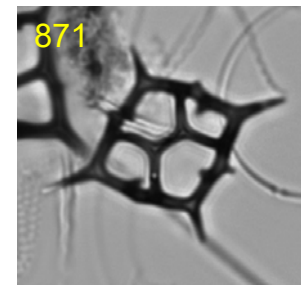
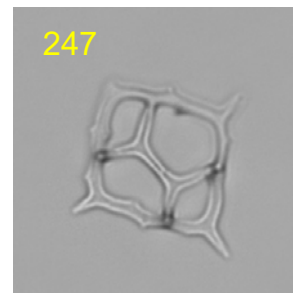
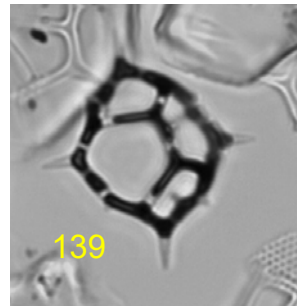
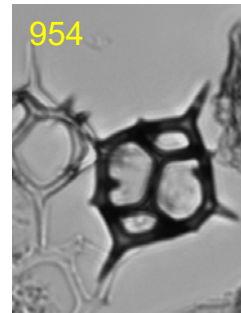
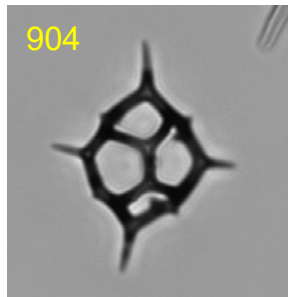
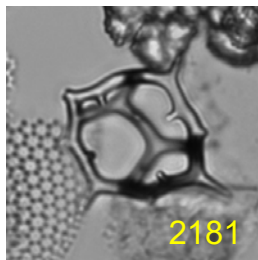
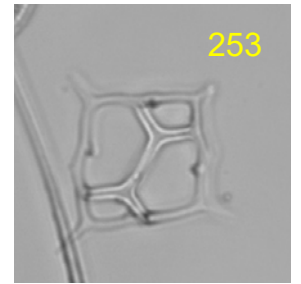
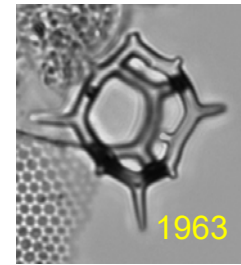
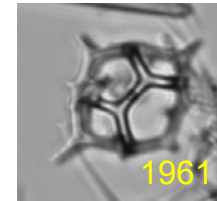
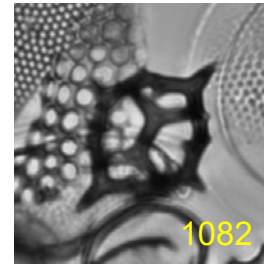
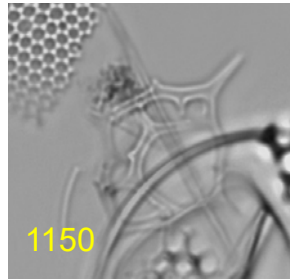
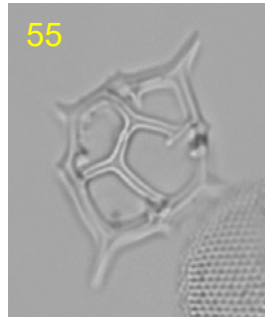
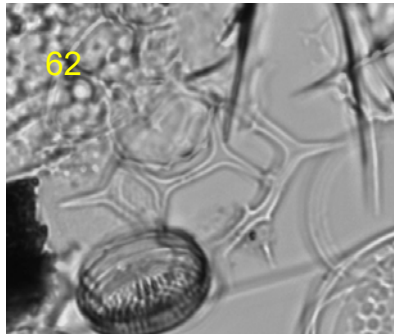


Plate 29

Dictyocha epiodon ?

50 μ m

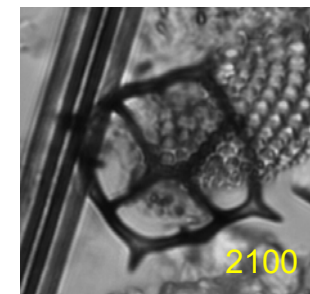
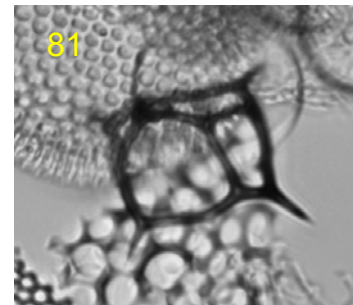
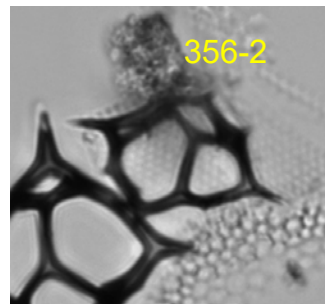
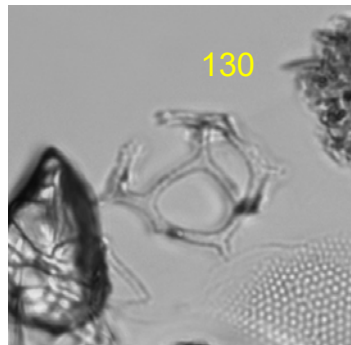
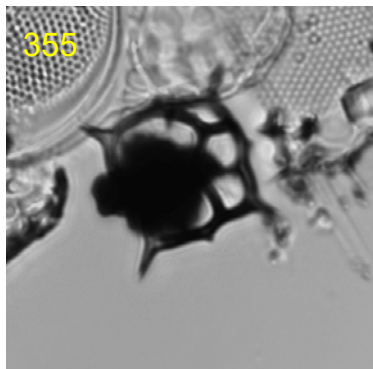
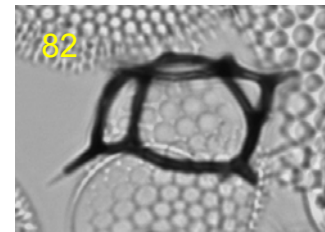
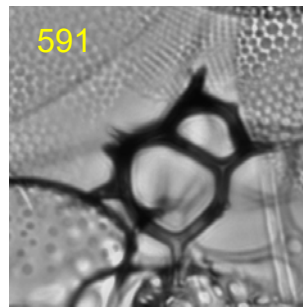
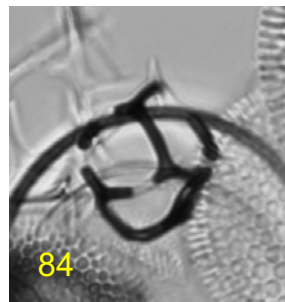
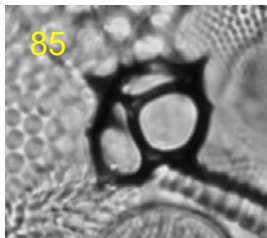
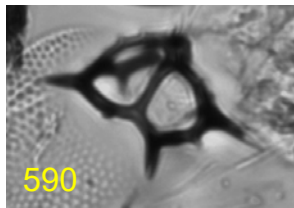
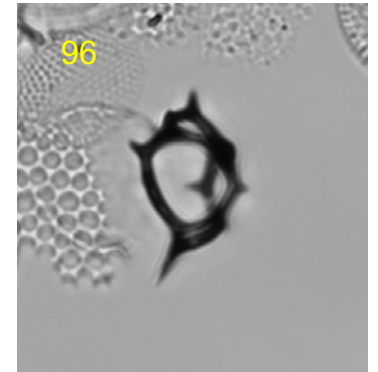
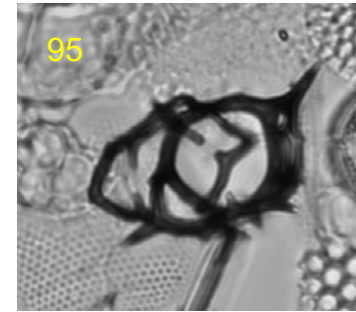
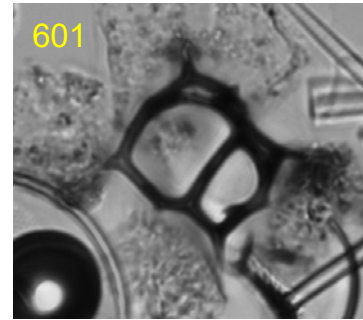
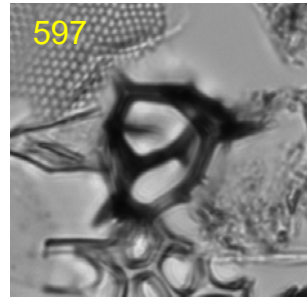
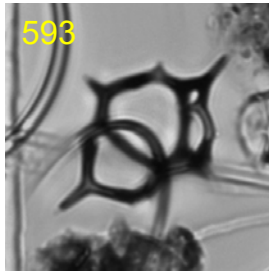
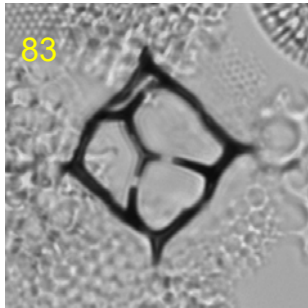


Plate 30

Dictyocha epidon ?

50 μ m

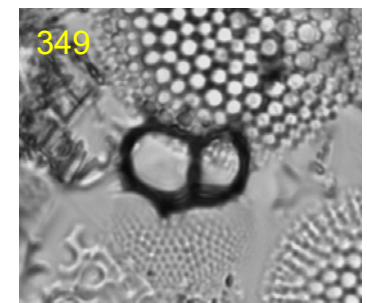
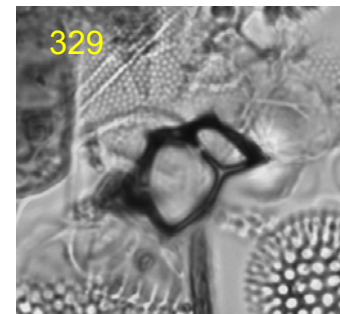
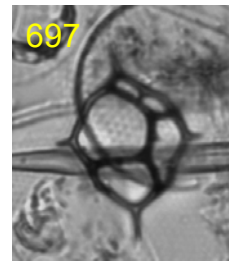
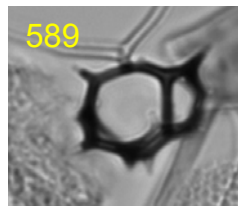
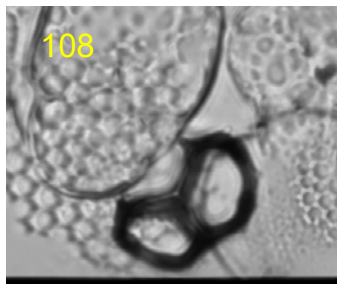
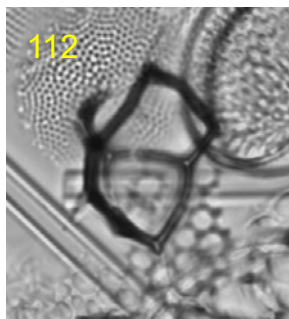
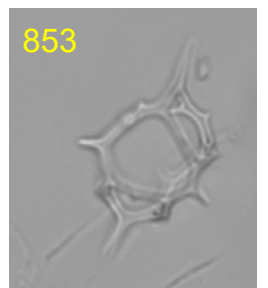
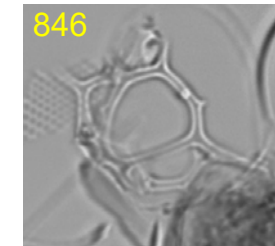
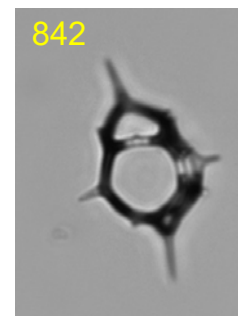
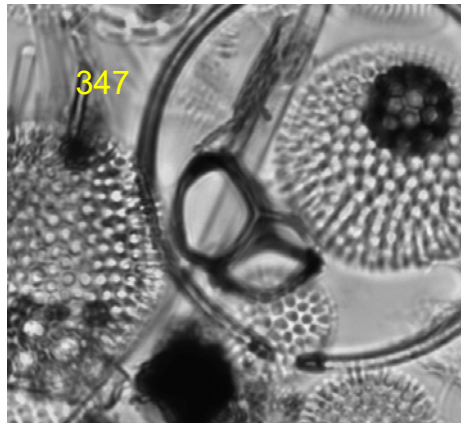
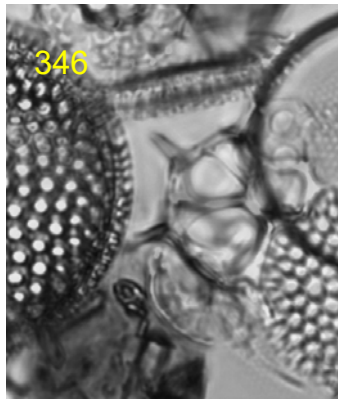
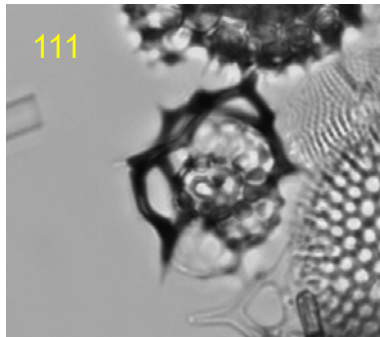
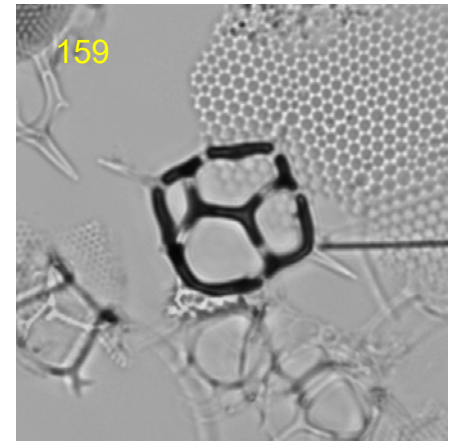
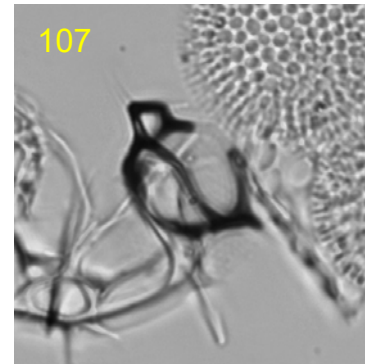
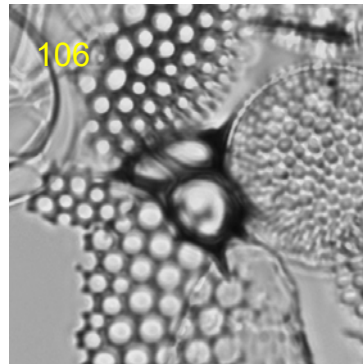
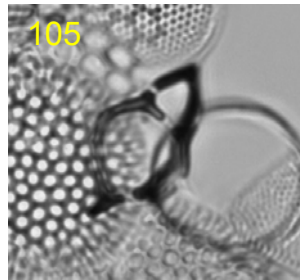
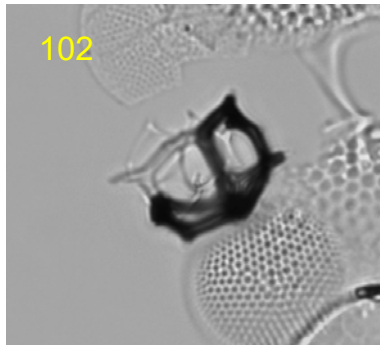


Plate 31

Dictyocha epiodon ?

50 μ m

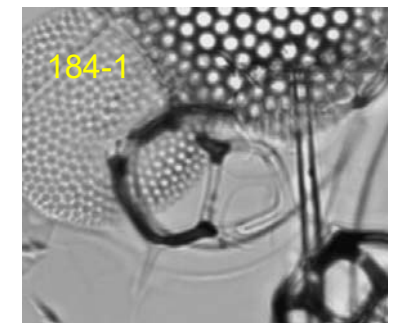
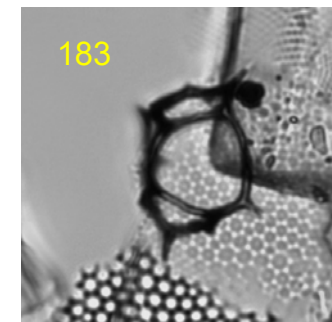
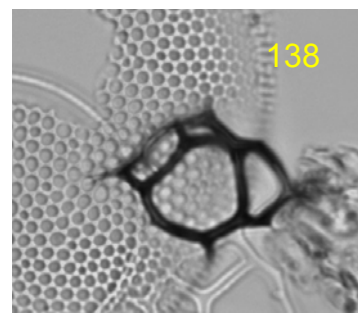
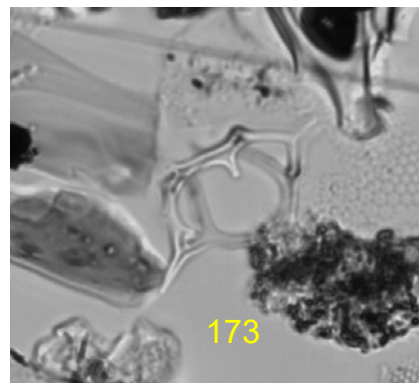
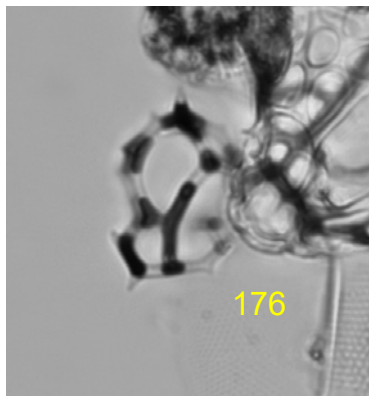
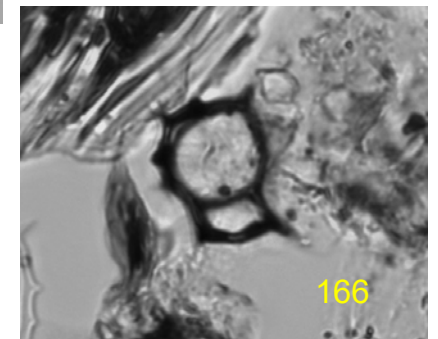
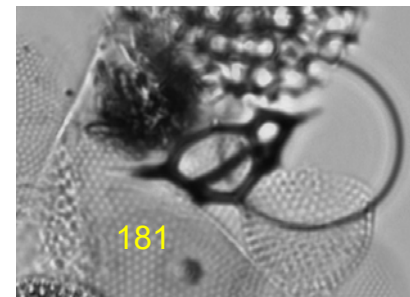
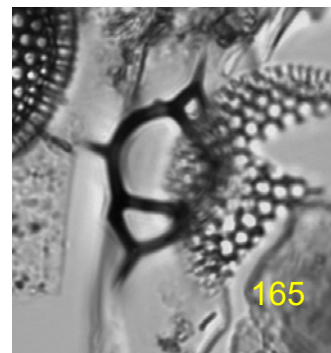
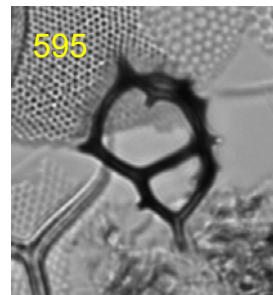
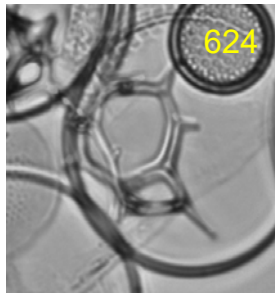
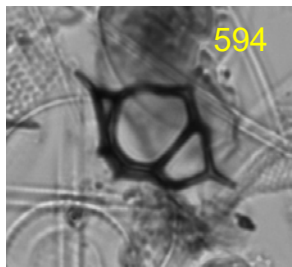
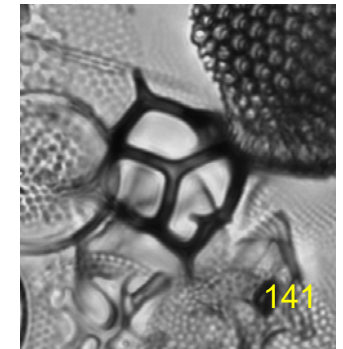
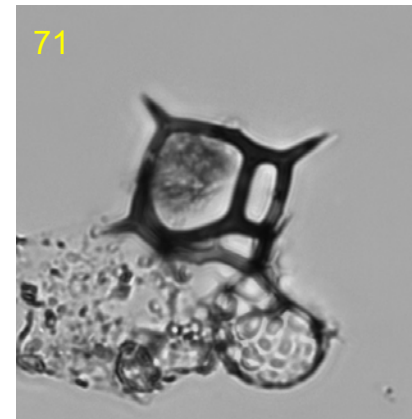
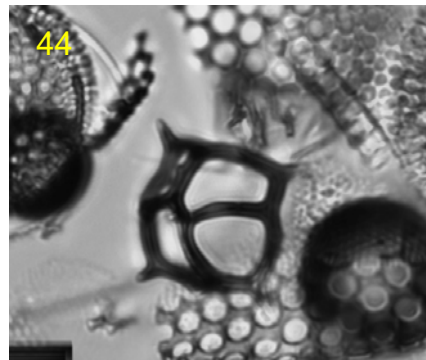
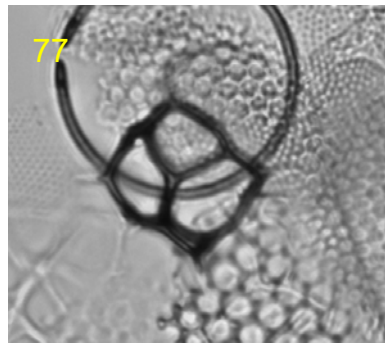
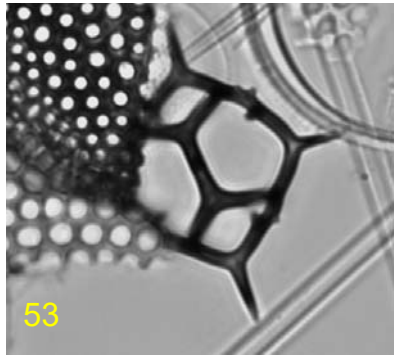


Plate 32

Dictyocha epidon ?

50 μ m

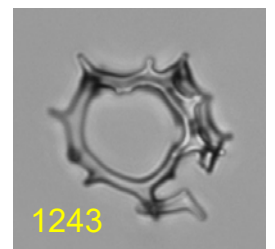
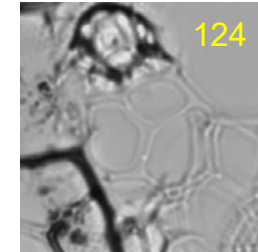
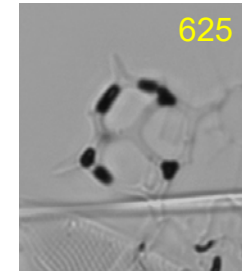
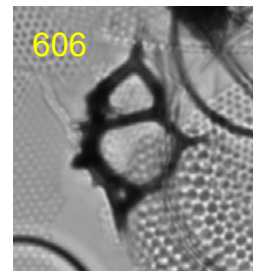
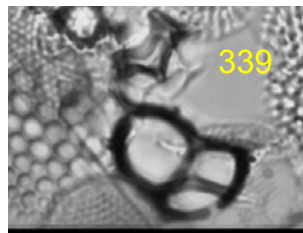
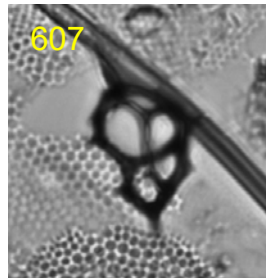
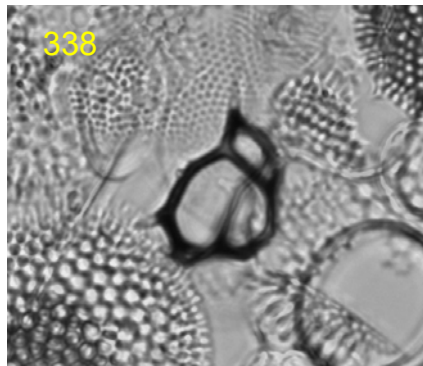
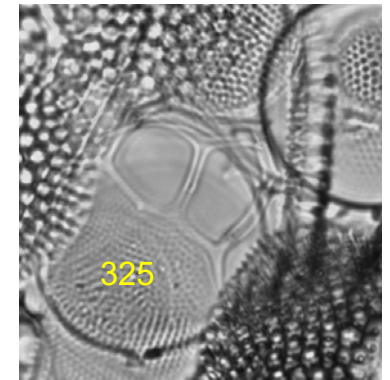
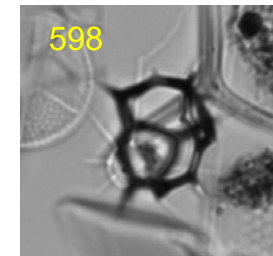
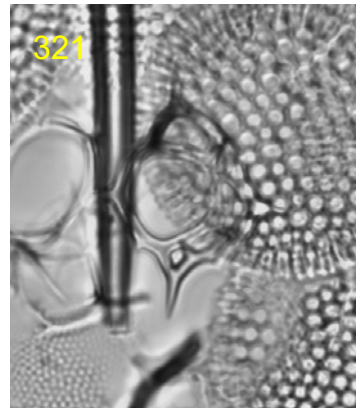
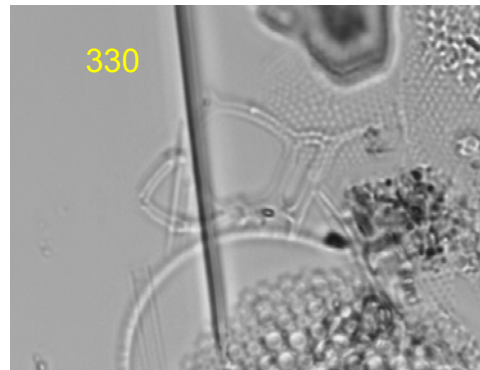
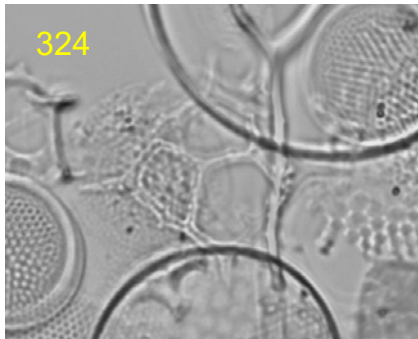
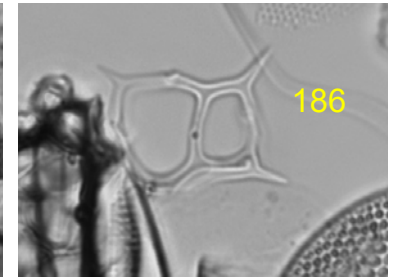
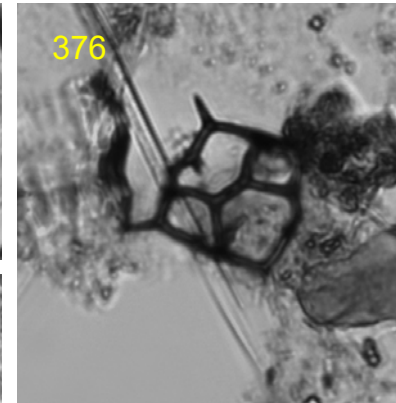
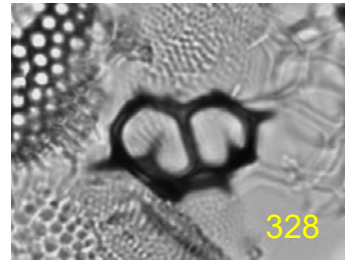
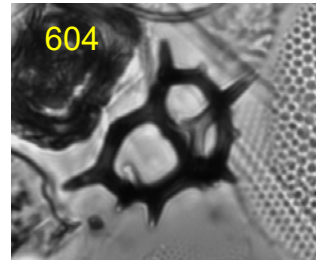
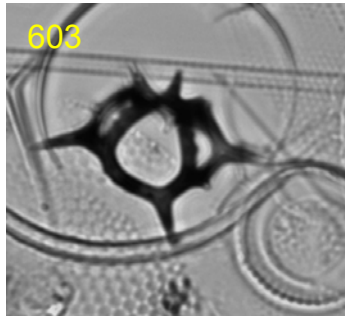
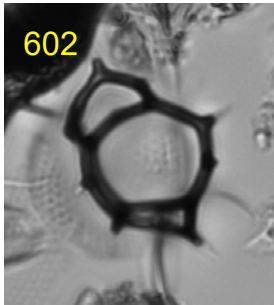


Plate 33

Dictyocha epiodon ?

50 μ m

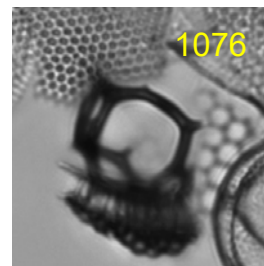
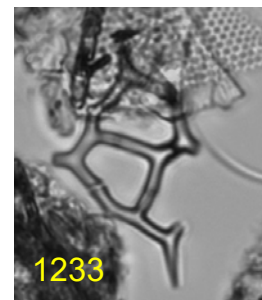
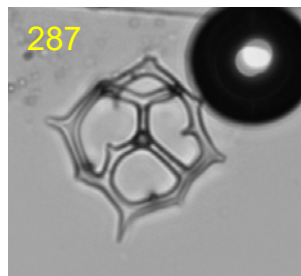
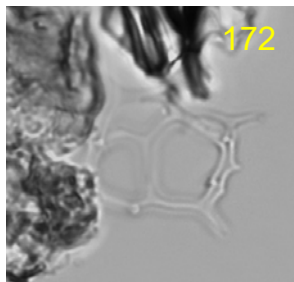
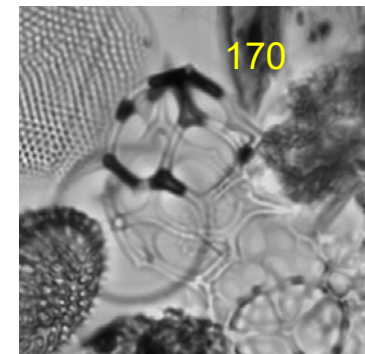
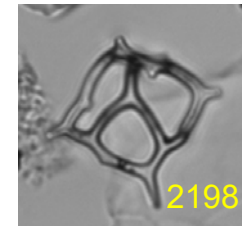
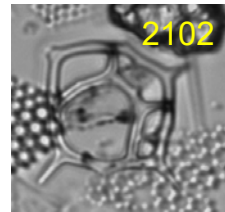
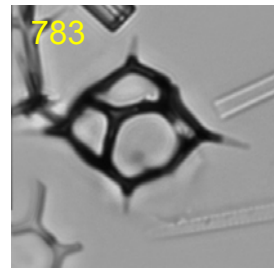
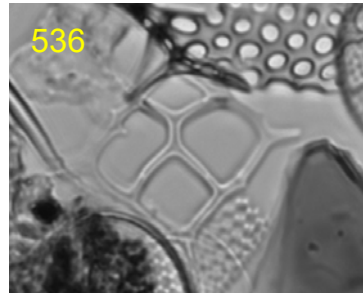
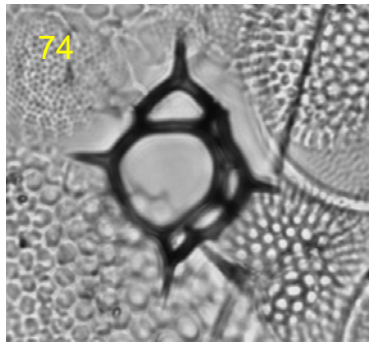
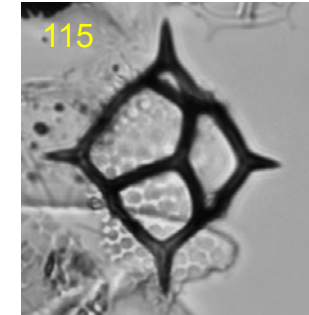
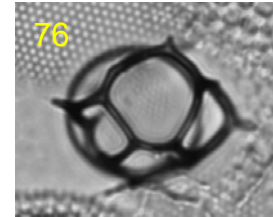
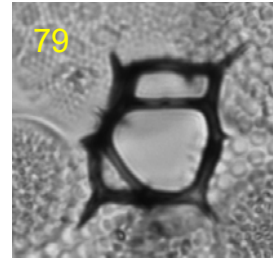
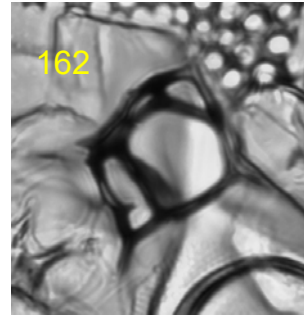
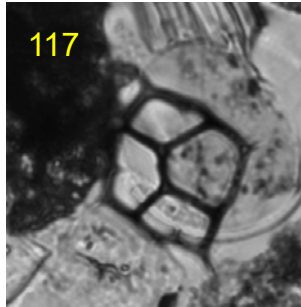
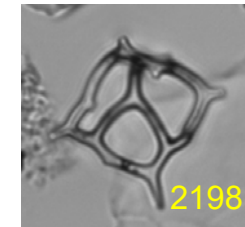
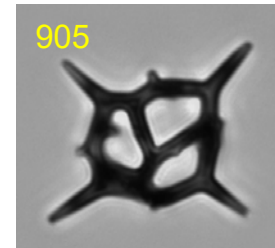
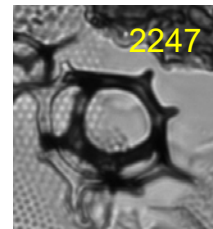
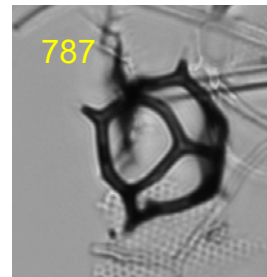
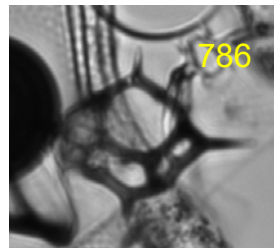
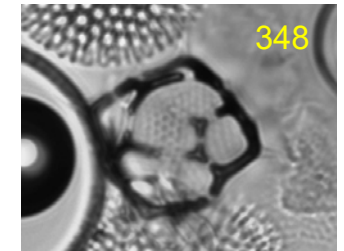
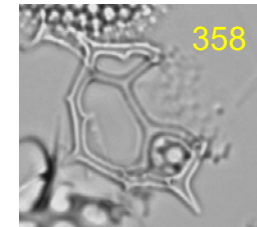
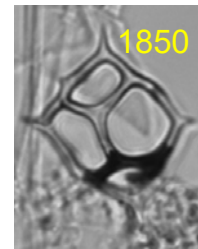
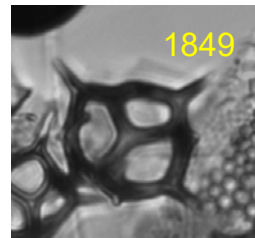
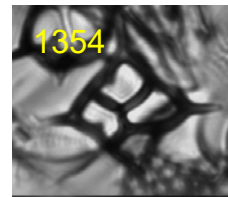
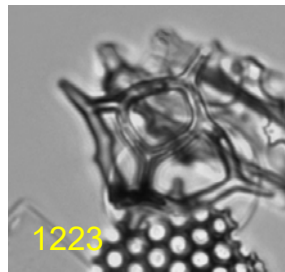
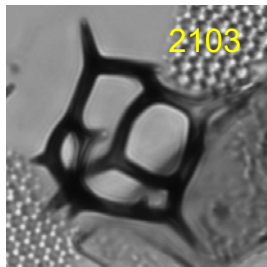
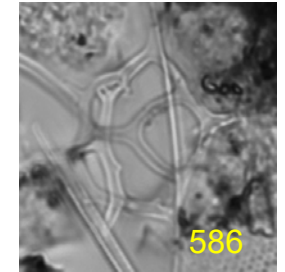
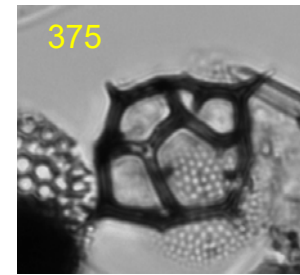
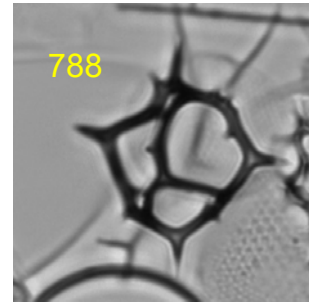
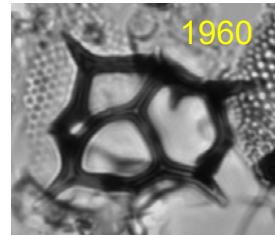
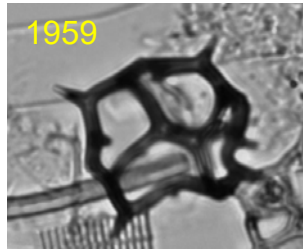
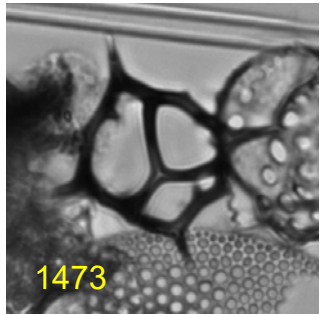
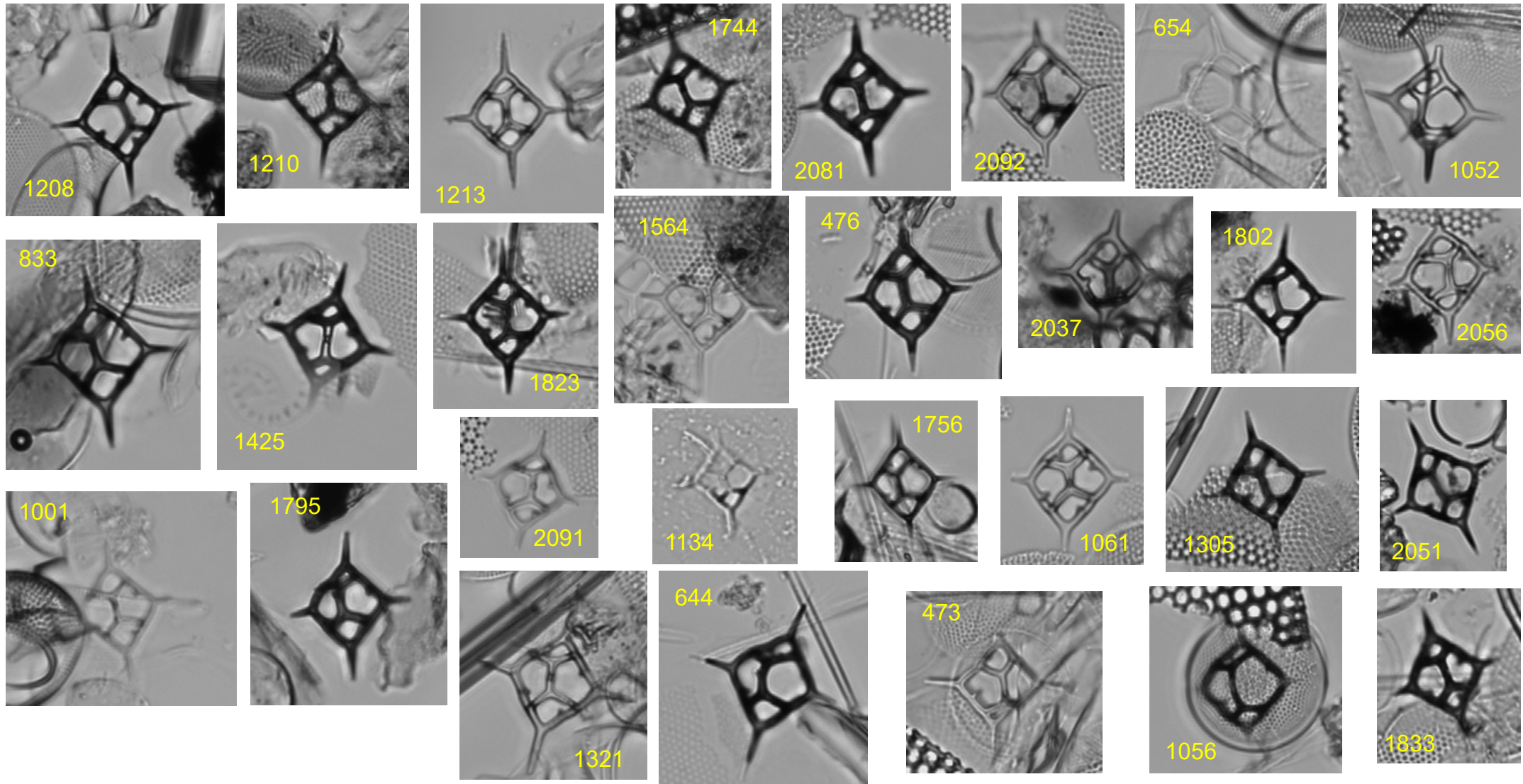


Plate 34

Aberrant and broken skeletons of *Dictyocha epidon*

50 μ m





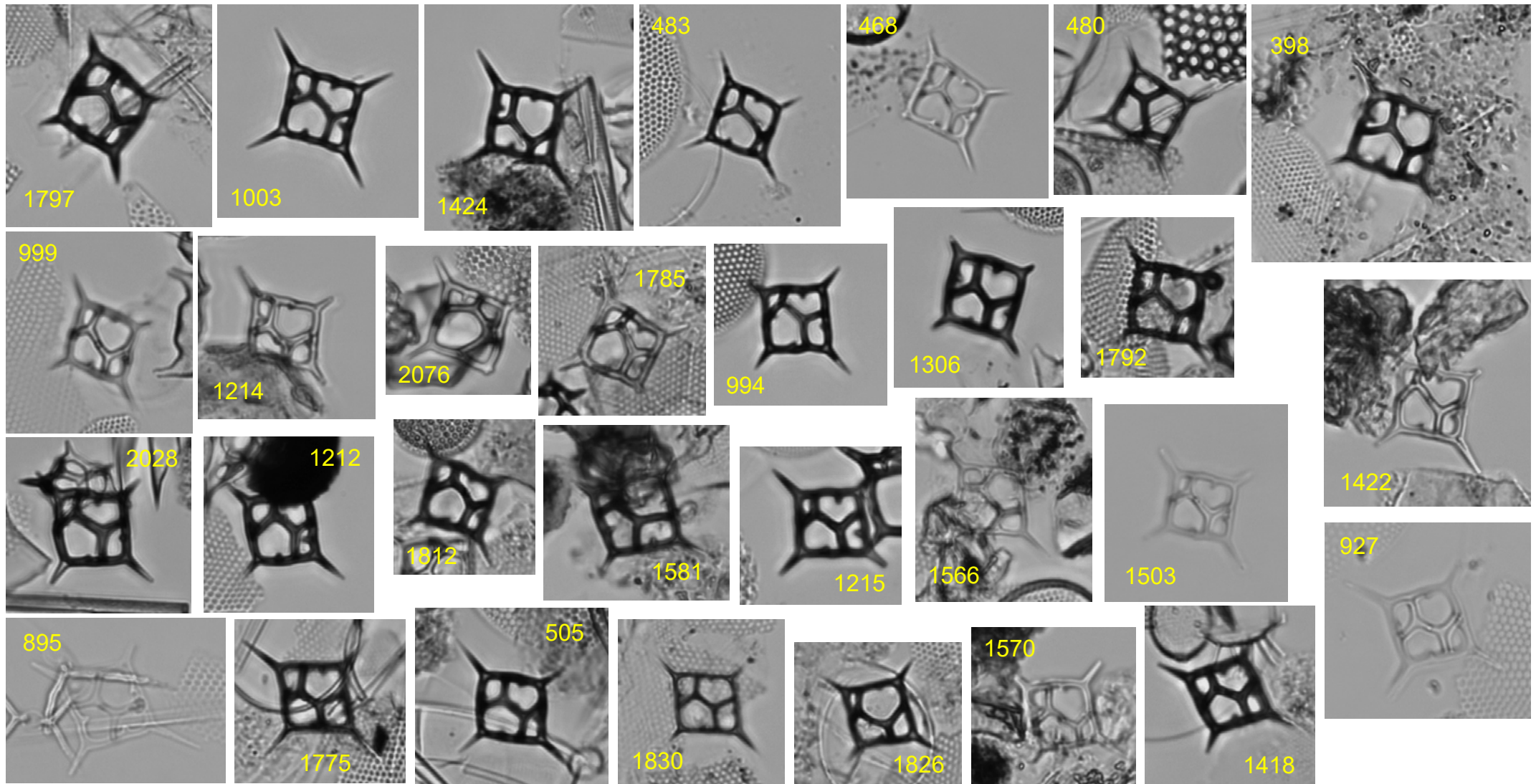
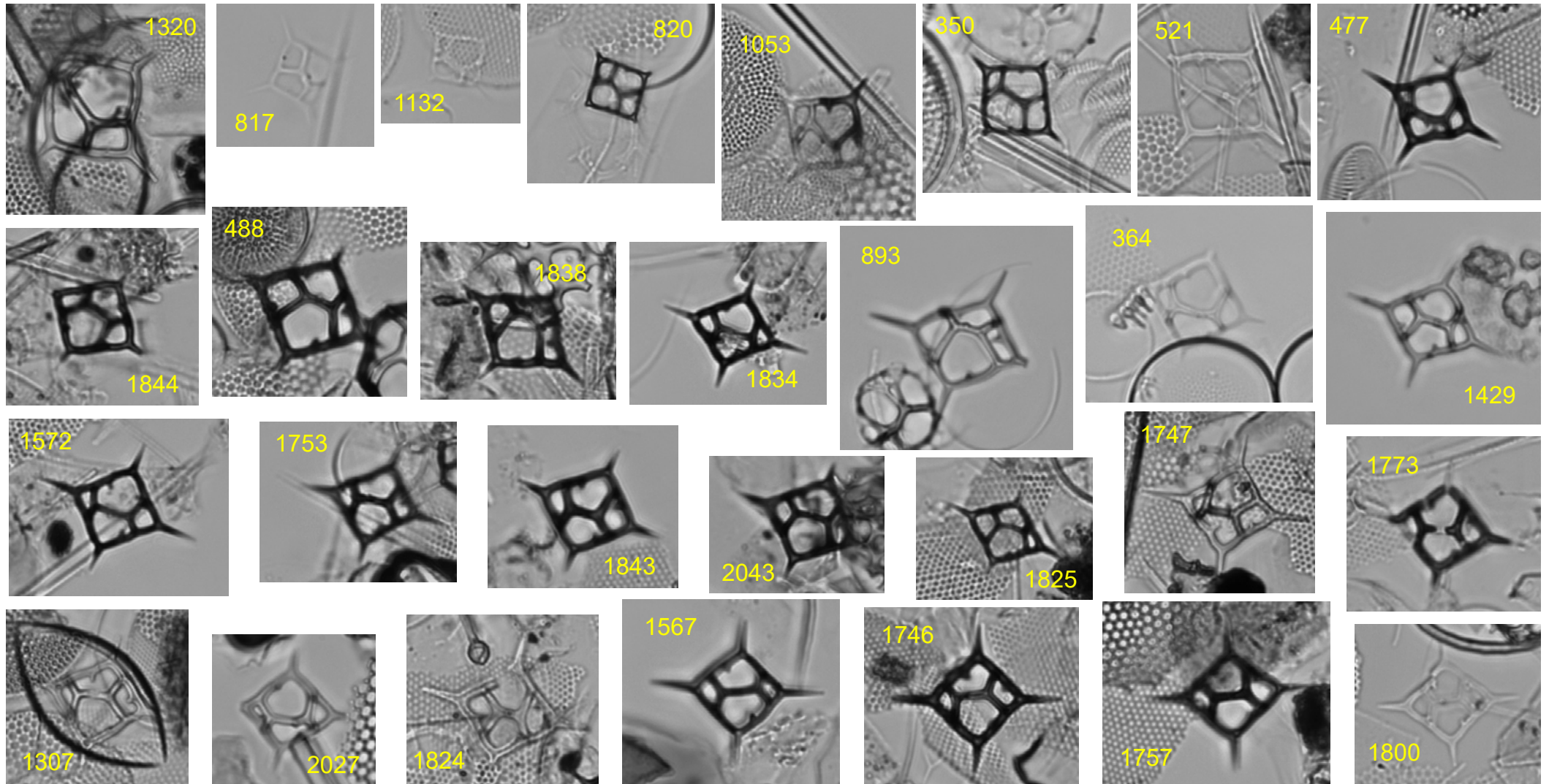


Plate 37

Dictyocha messanensis f. *messanensis*

50 μ m



Dictyocha messanensis f. *messanensis*

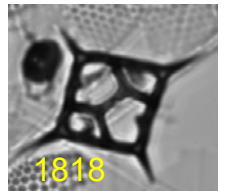
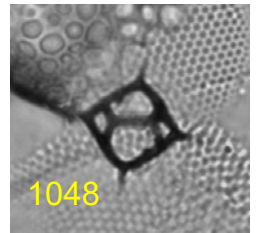
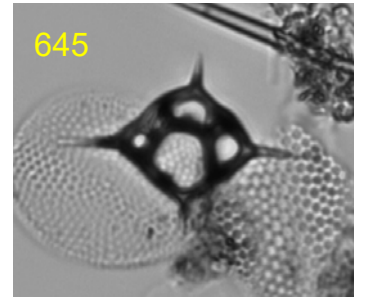
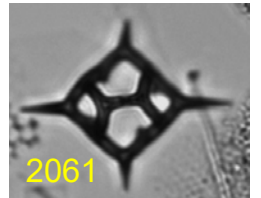


Plate 39

Dictyocha messanensis f. *messanensis*

50 μ m

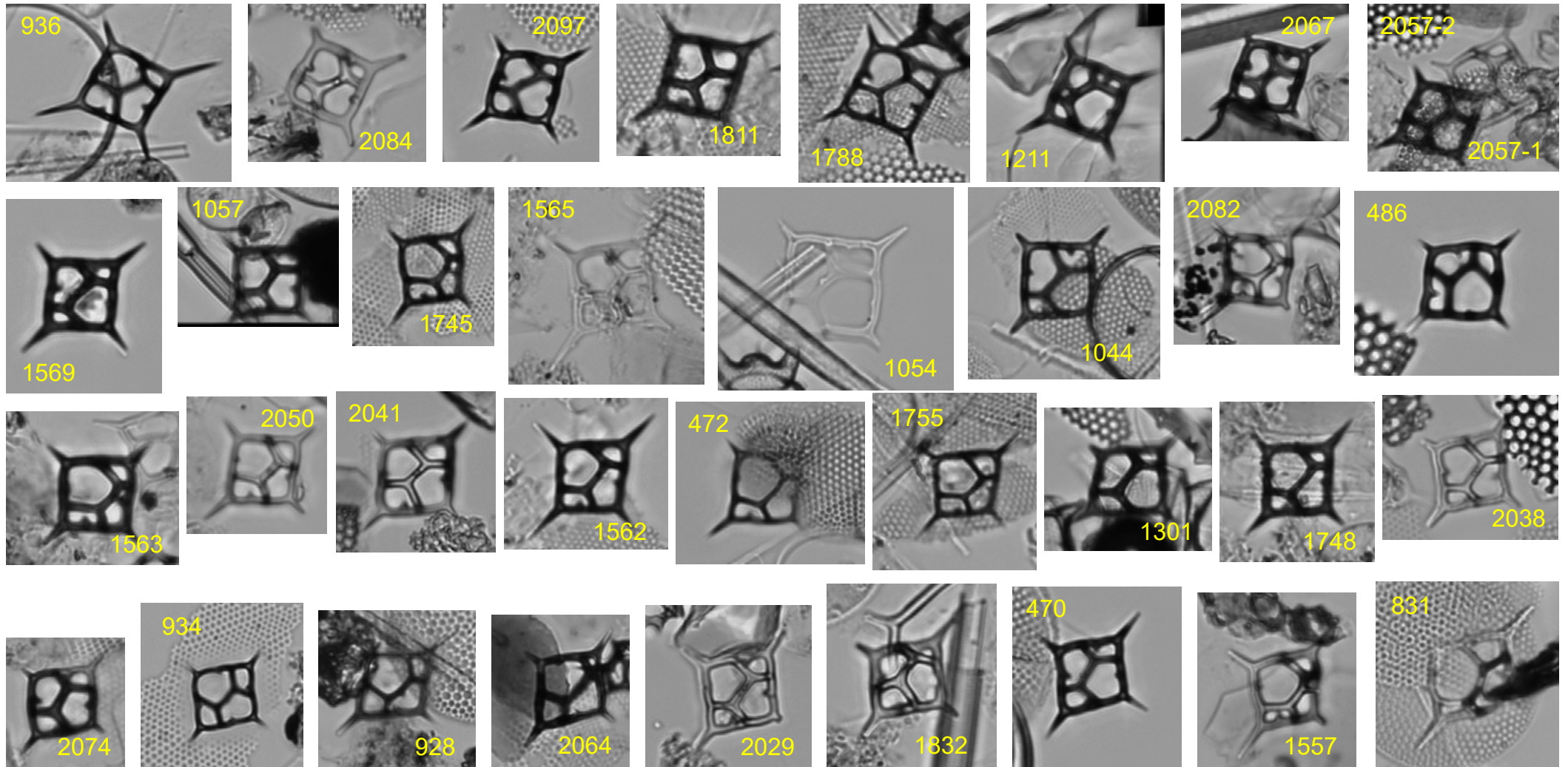


Plate 40

Dictyocha messanensis f. *messanensis*

50 μ m

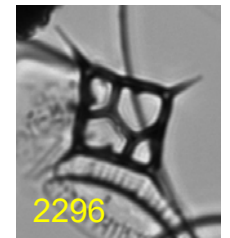
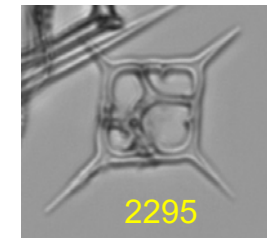
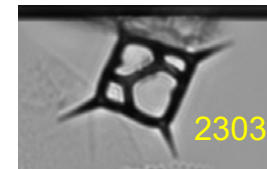
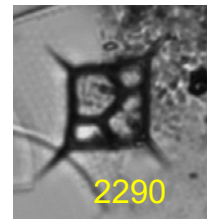
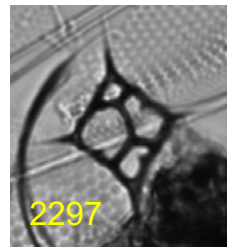
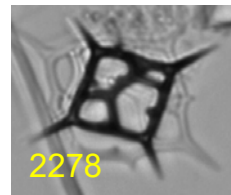
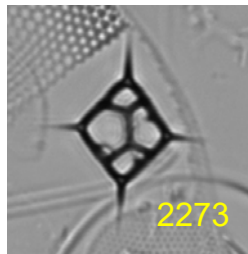
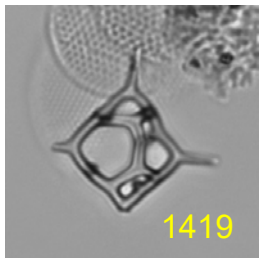
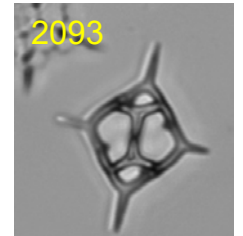
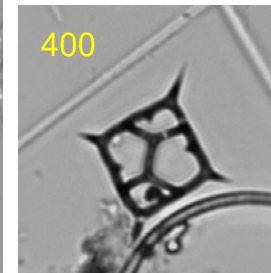
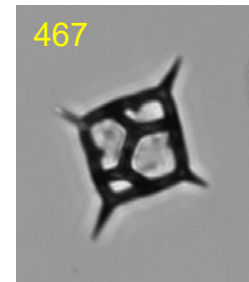
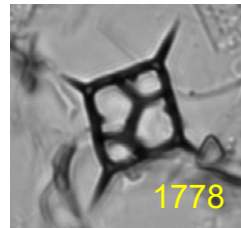
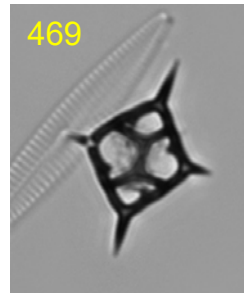
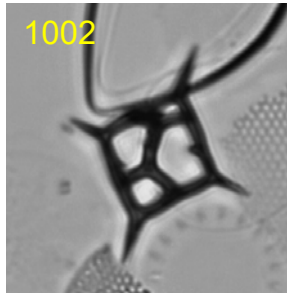
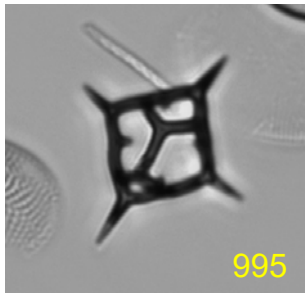
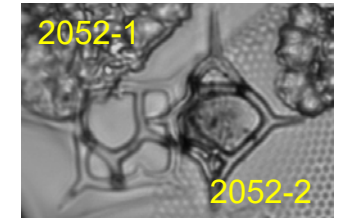
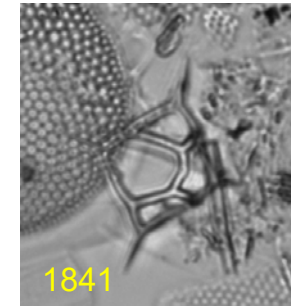
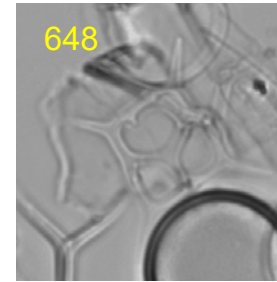
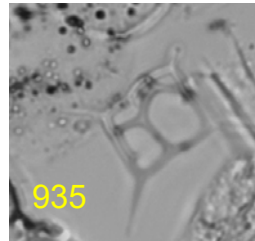
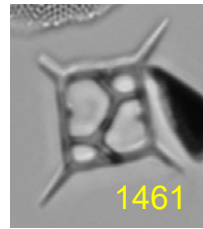
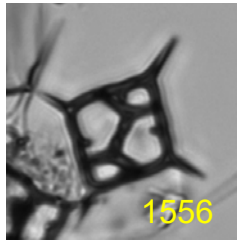
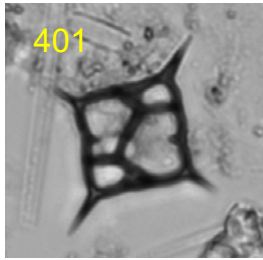


Plate 41

Dictyocha messanensis f. *messanensis*

50 μ m

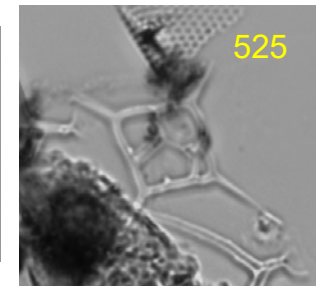
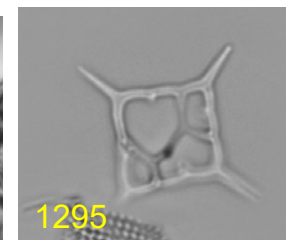
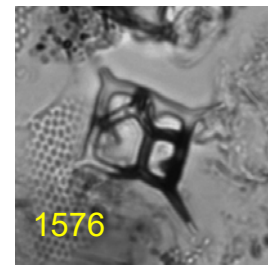
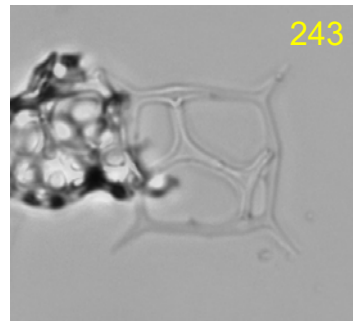
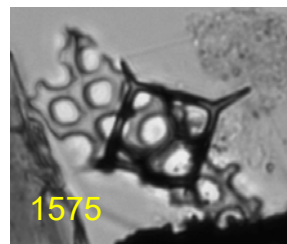
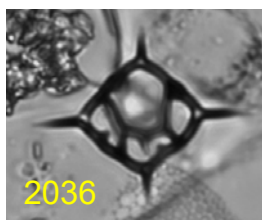
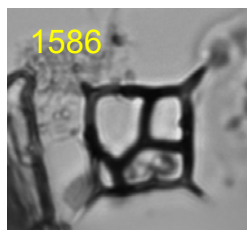
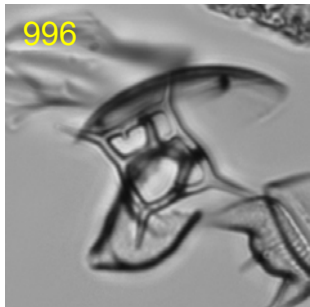
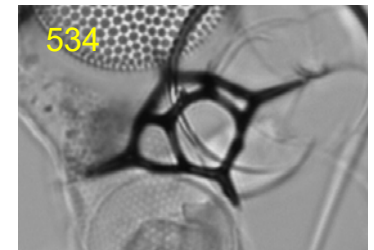
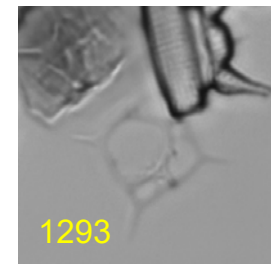
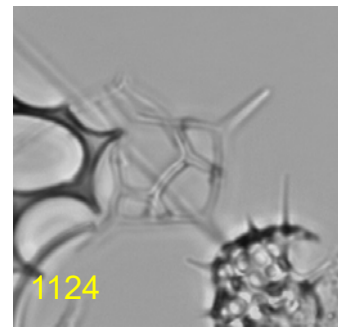
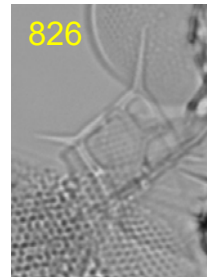
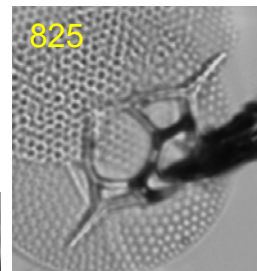
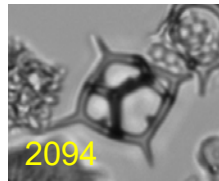
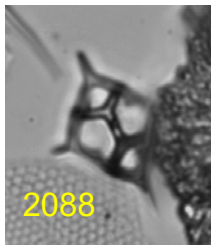
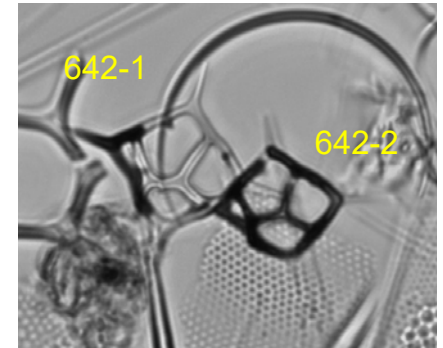
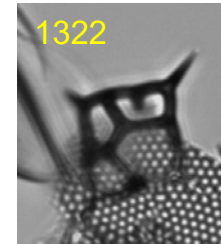
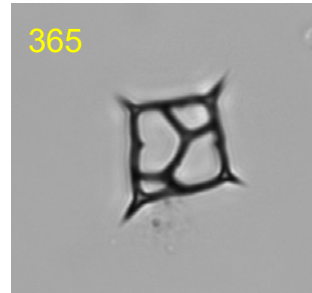
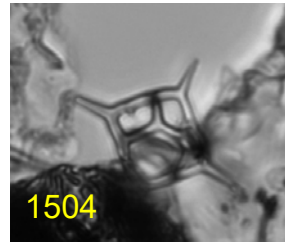
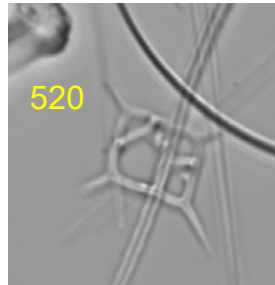
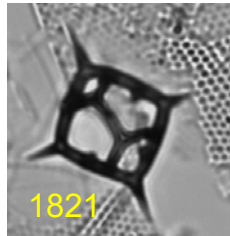
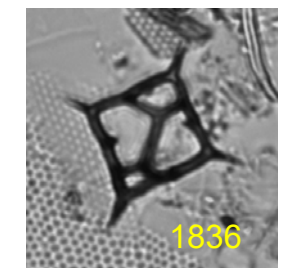
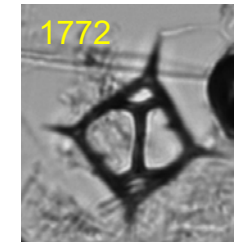
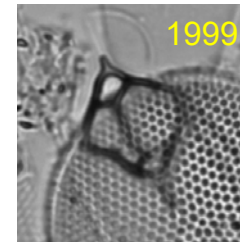
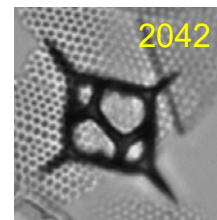
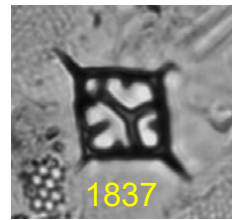
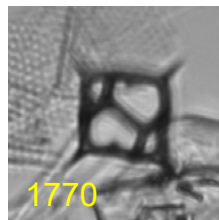
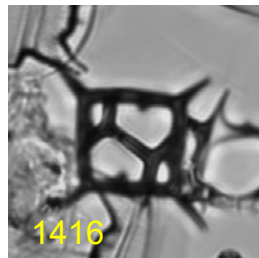
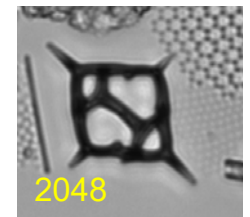
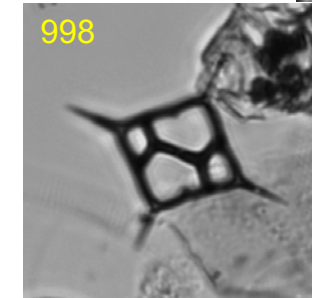
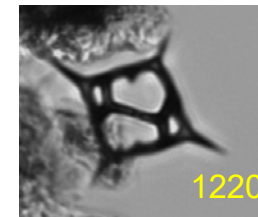
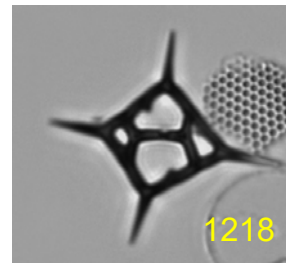
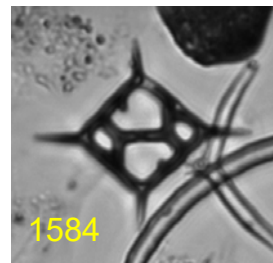
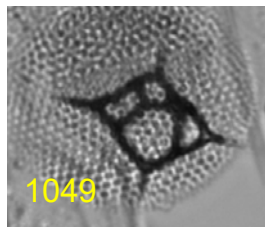
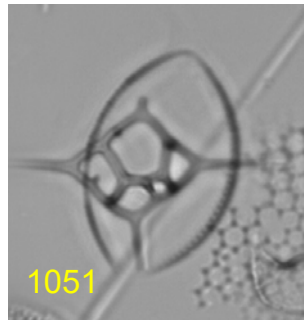
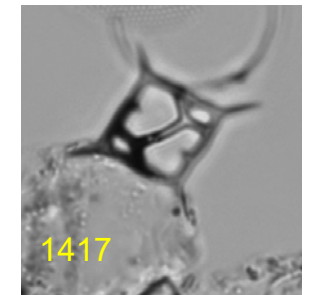
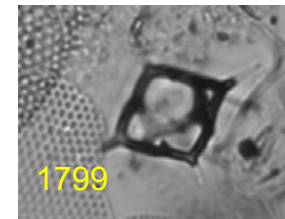
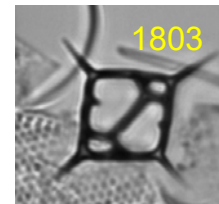
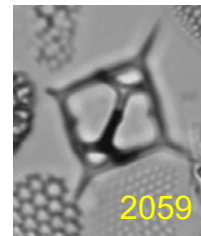
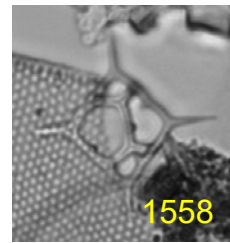
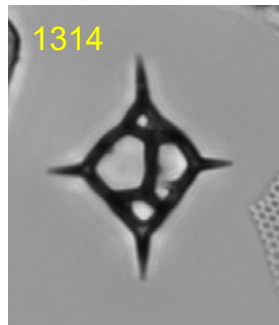
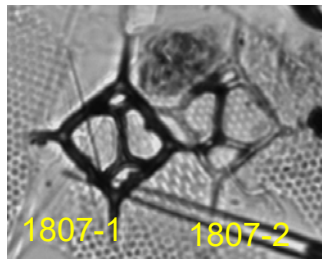


Plate 42

Dictyocha messanensis f. *messanensis*

50 μ m



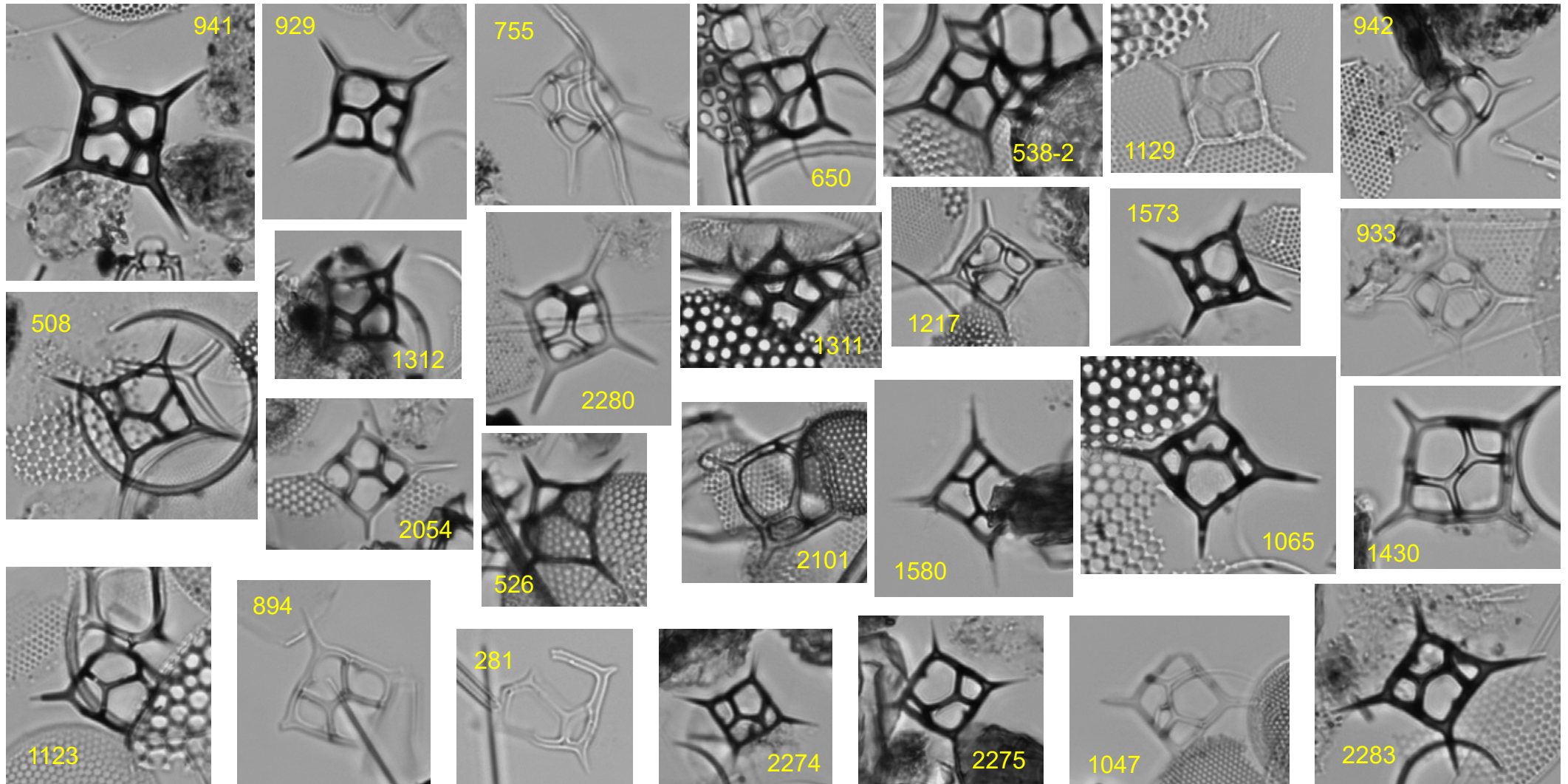
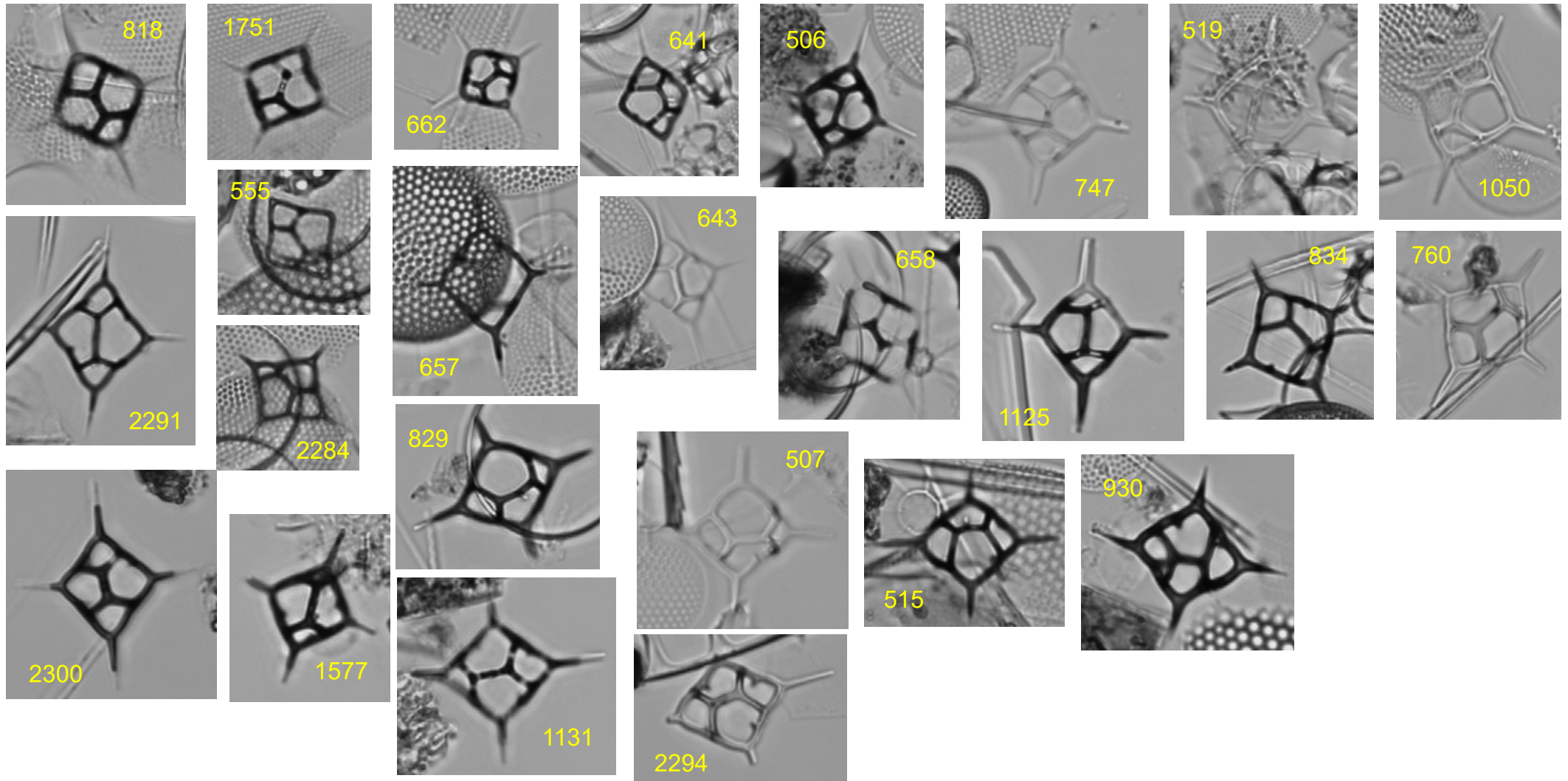


Plate 44

Dictyocha messanensis f. *messanensis*

50 μ m



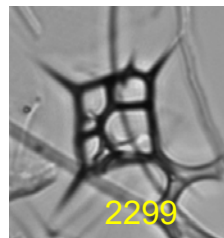
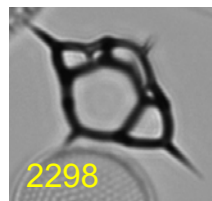
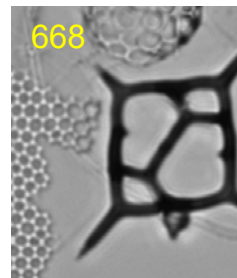
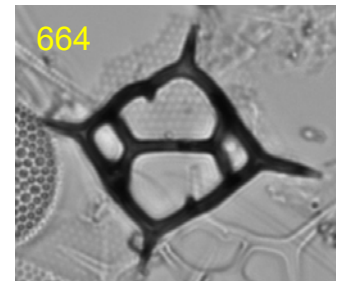
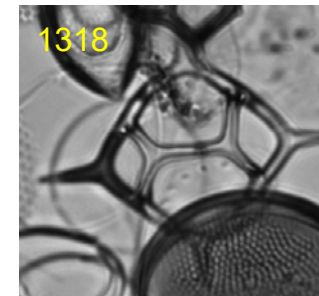
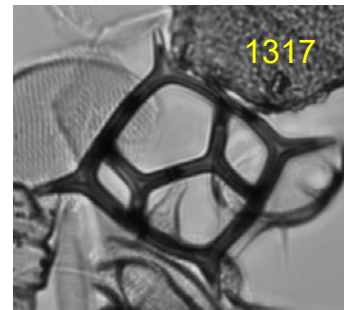
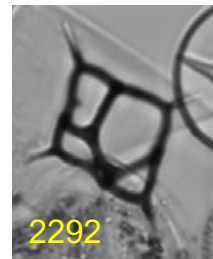
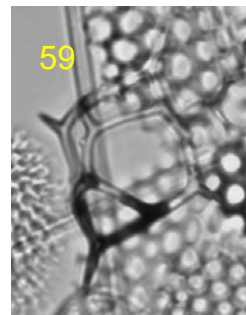
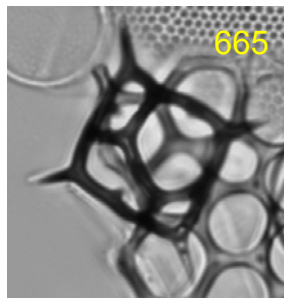
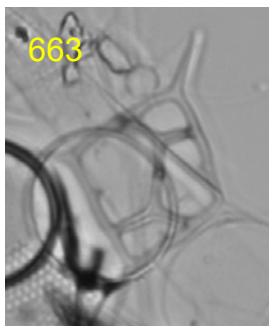
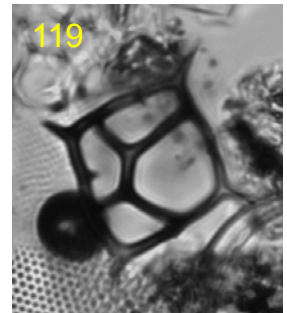
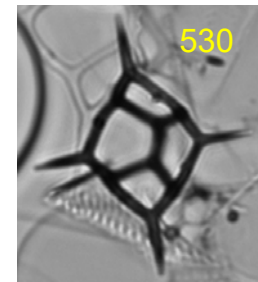
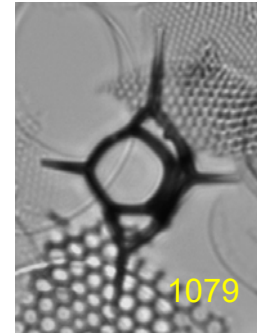
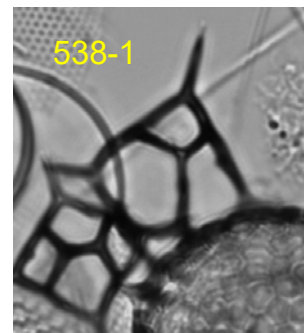
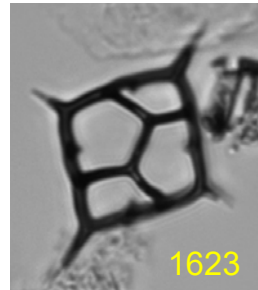
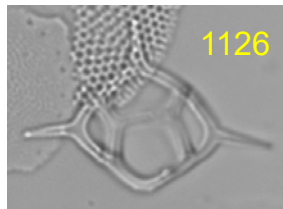
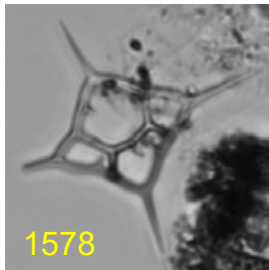
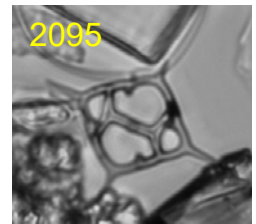
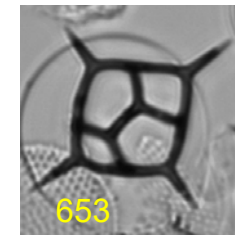
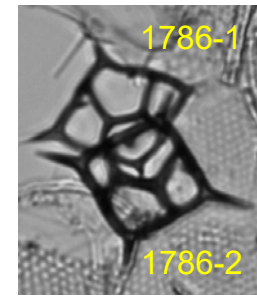
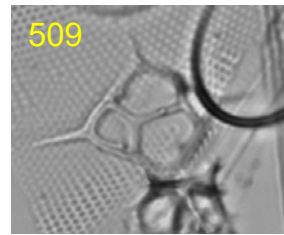
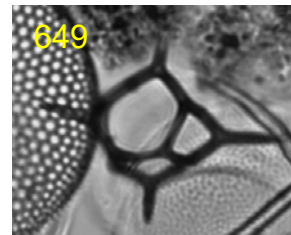
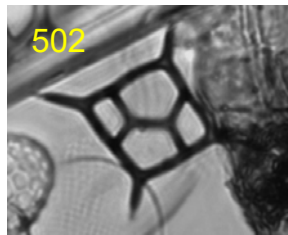
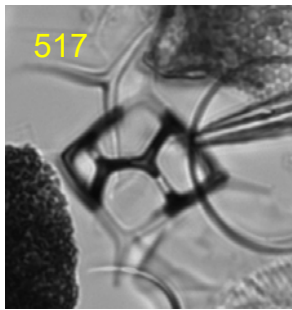


Plate 46

Dictyocha messanensis f. *messanensis*

50 μ m

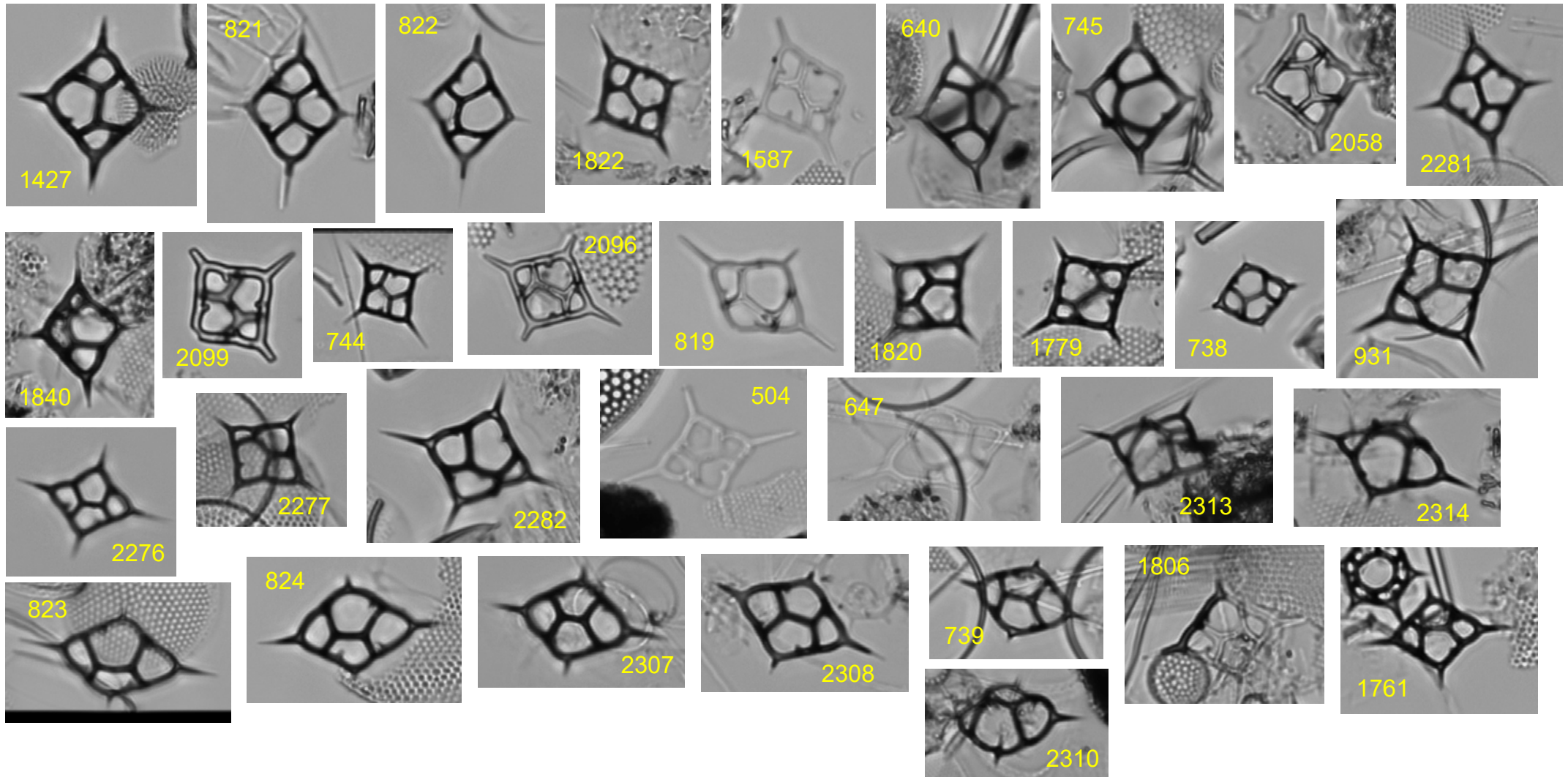


Plate 47

Dictyocha messanensis f. *messanensis*

50 μ m

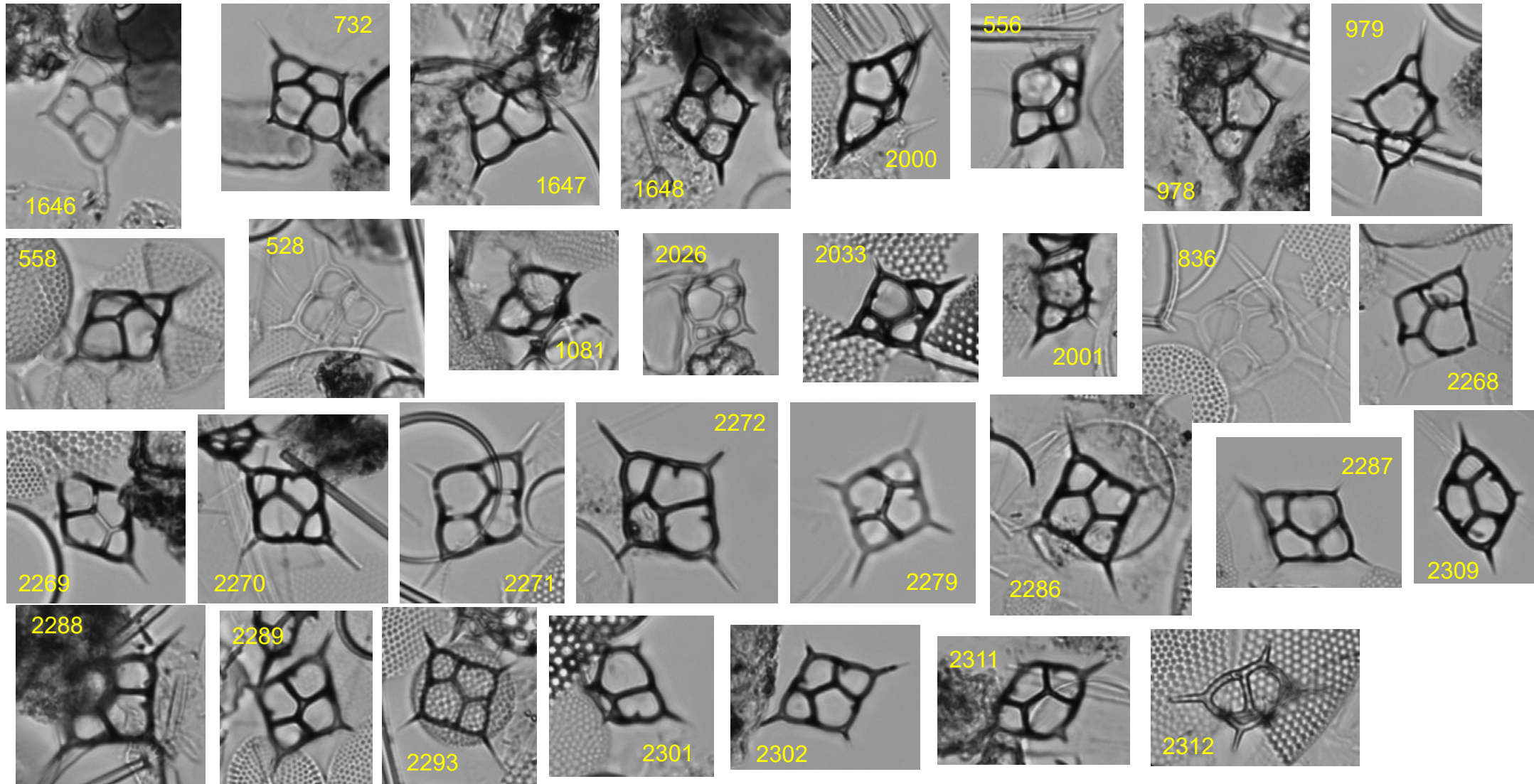


Plate 48

Dictyocha messanensis

50 μ m

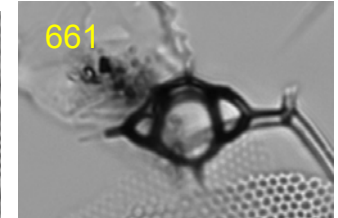
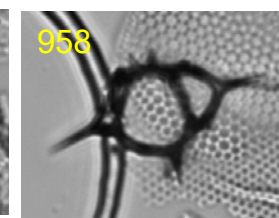
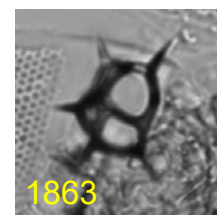
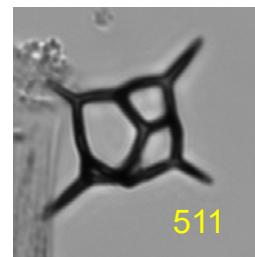
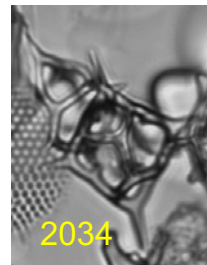
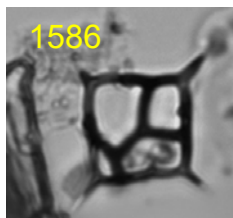
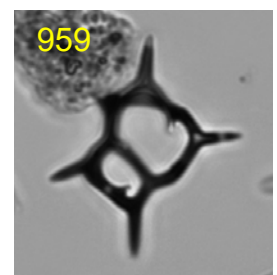
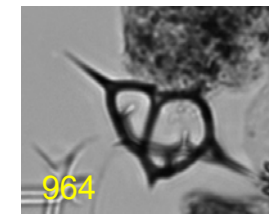
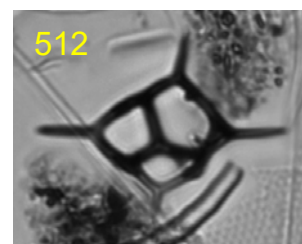
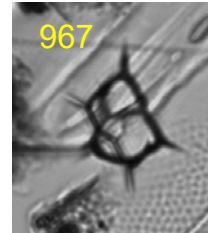
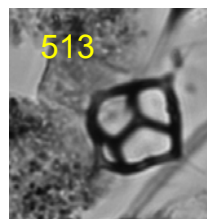
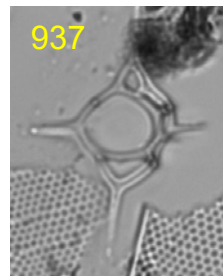
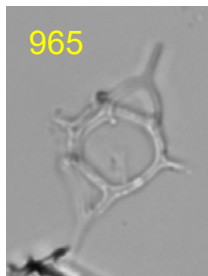
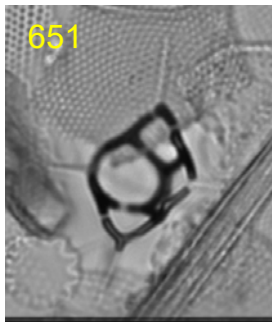
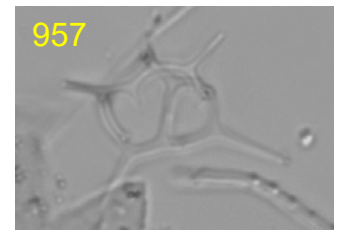
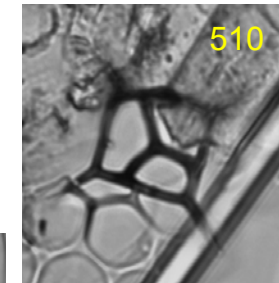
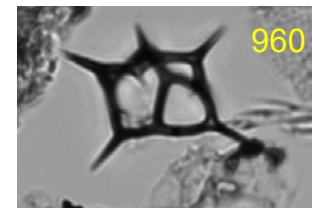
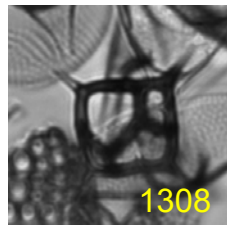
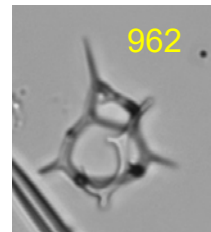
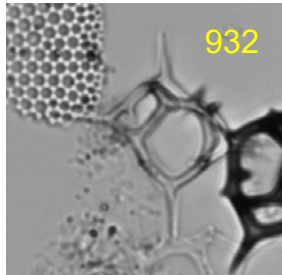
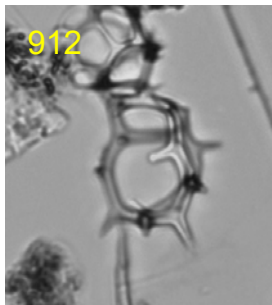
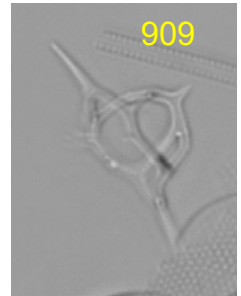
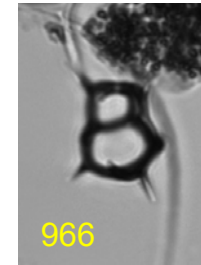
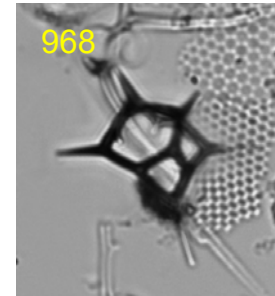
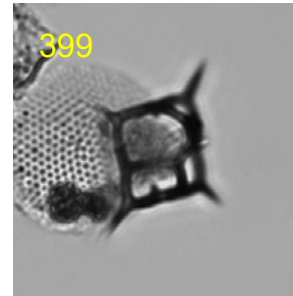
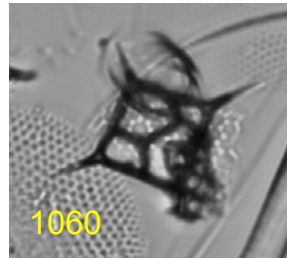
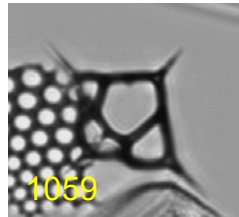
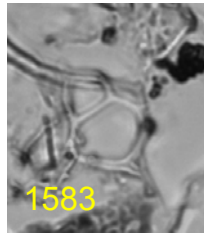
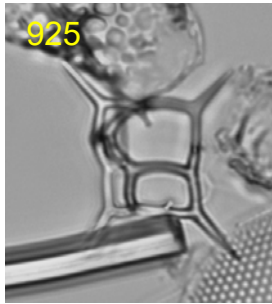
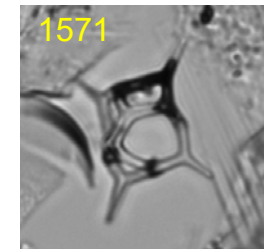
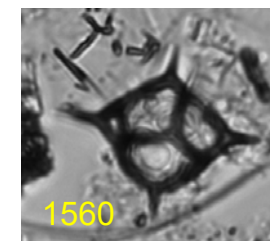
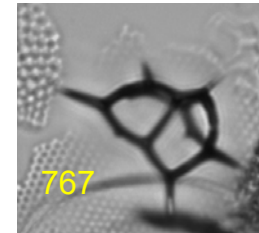
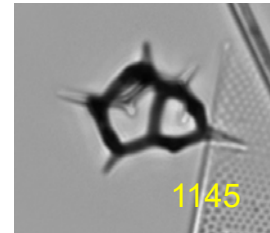
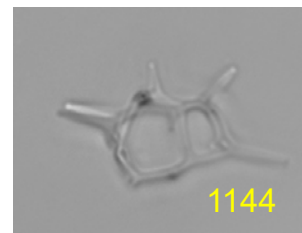
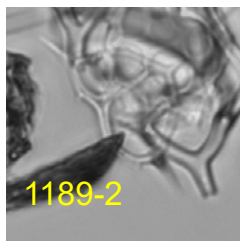
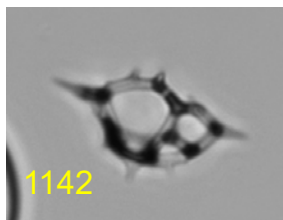
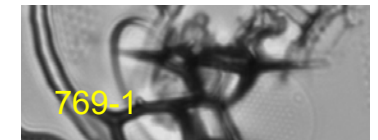
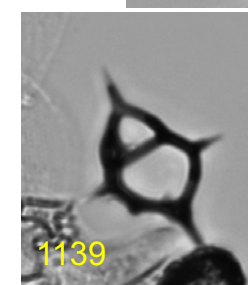
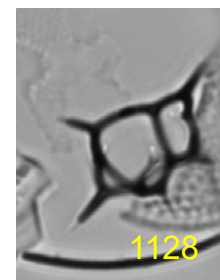
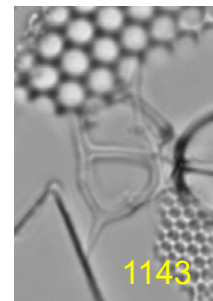
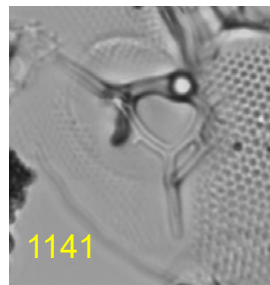
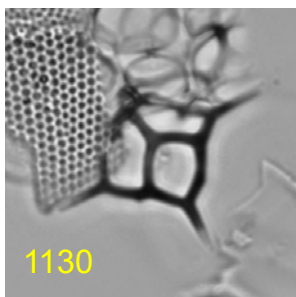
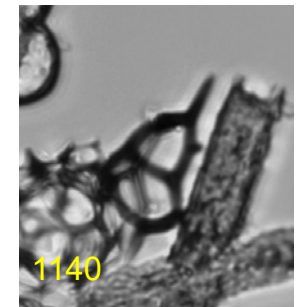
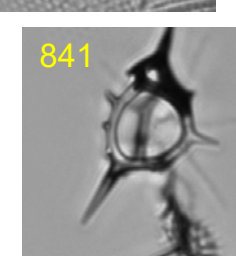
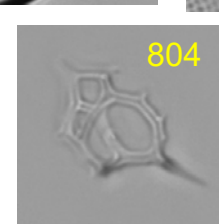
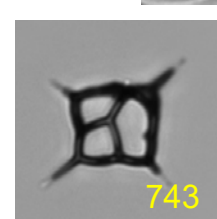
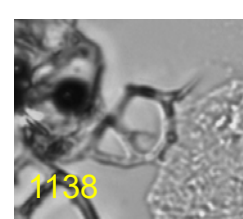
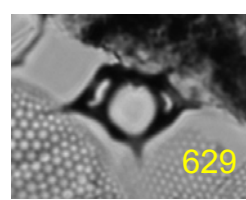
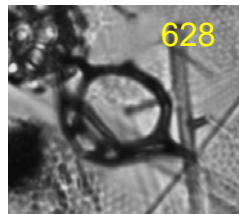
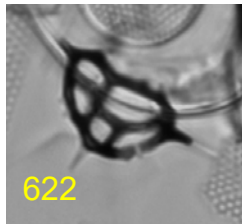
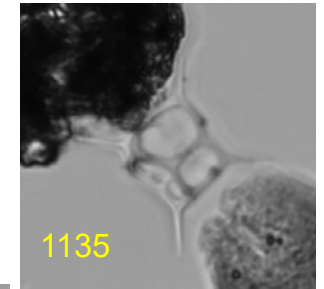
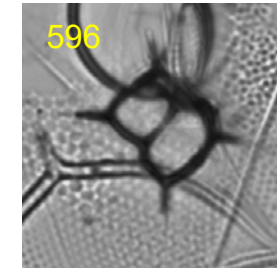
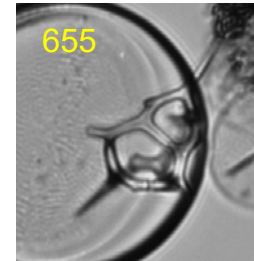
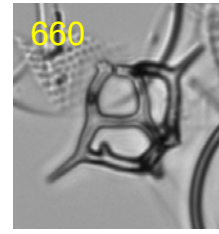
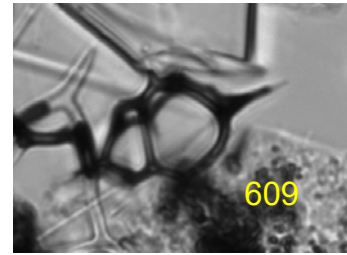
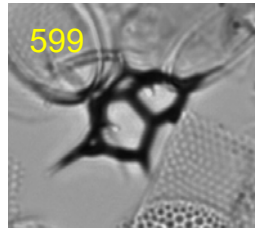
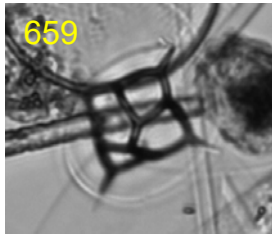


Plate 49

Dictyocha messanensis

50 μ m



Dictyocha messanensis

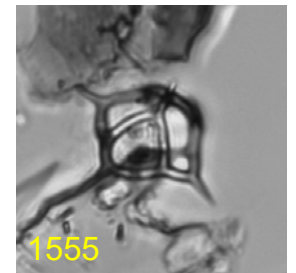
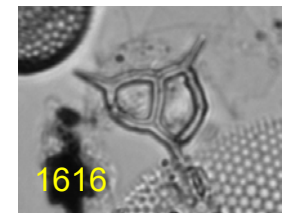
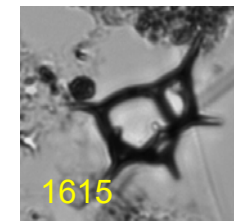
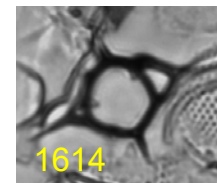
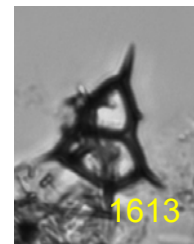
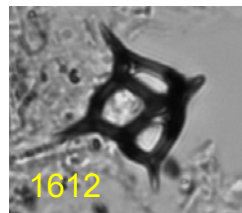
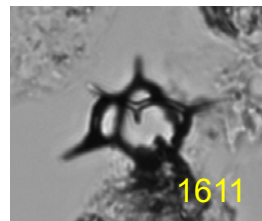
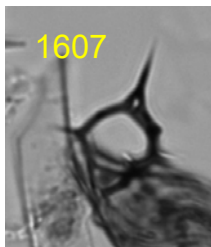
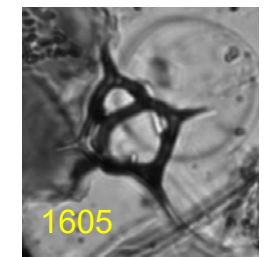
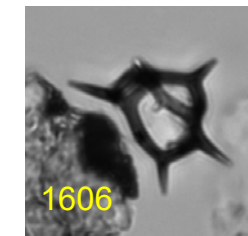
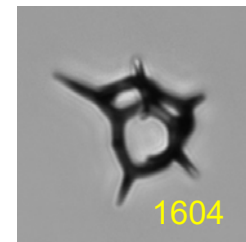
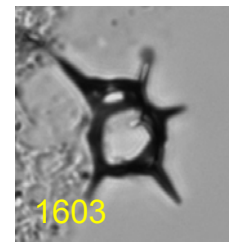
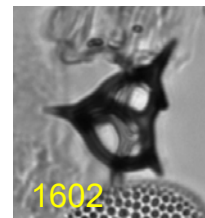
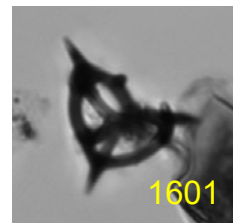
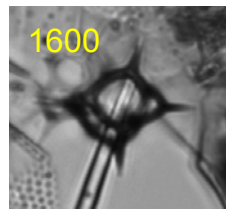
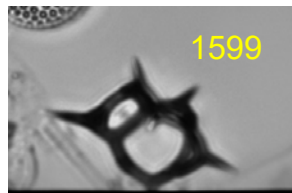
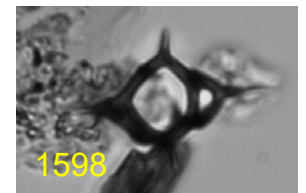
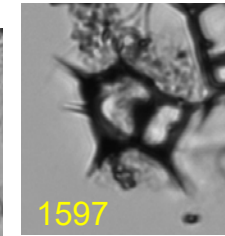
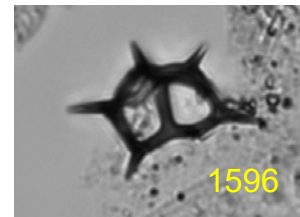
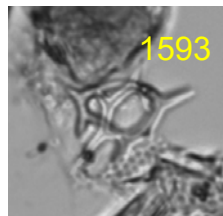
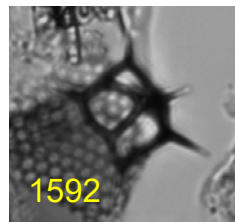
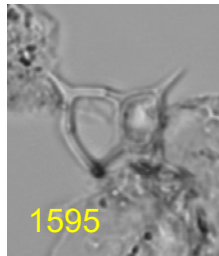
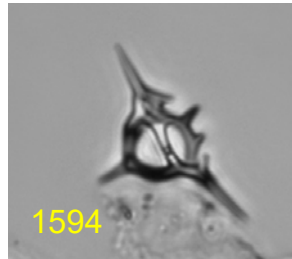
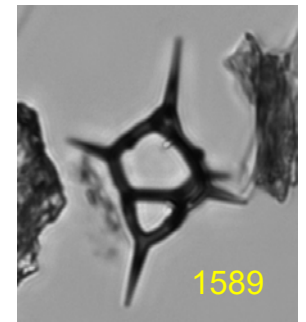
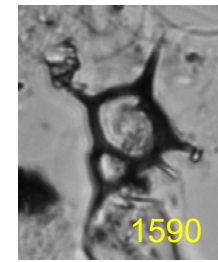
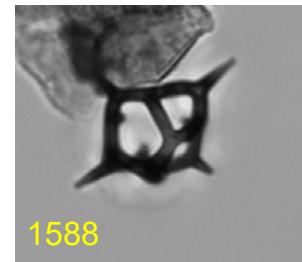
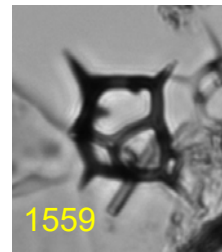
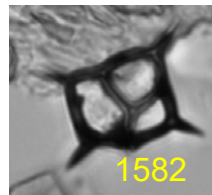
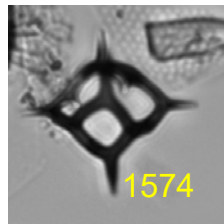
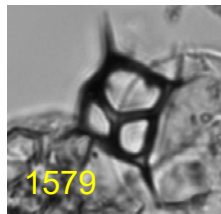
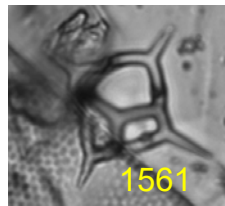


Plate 51

Dictyocha messanensis

50 μ m



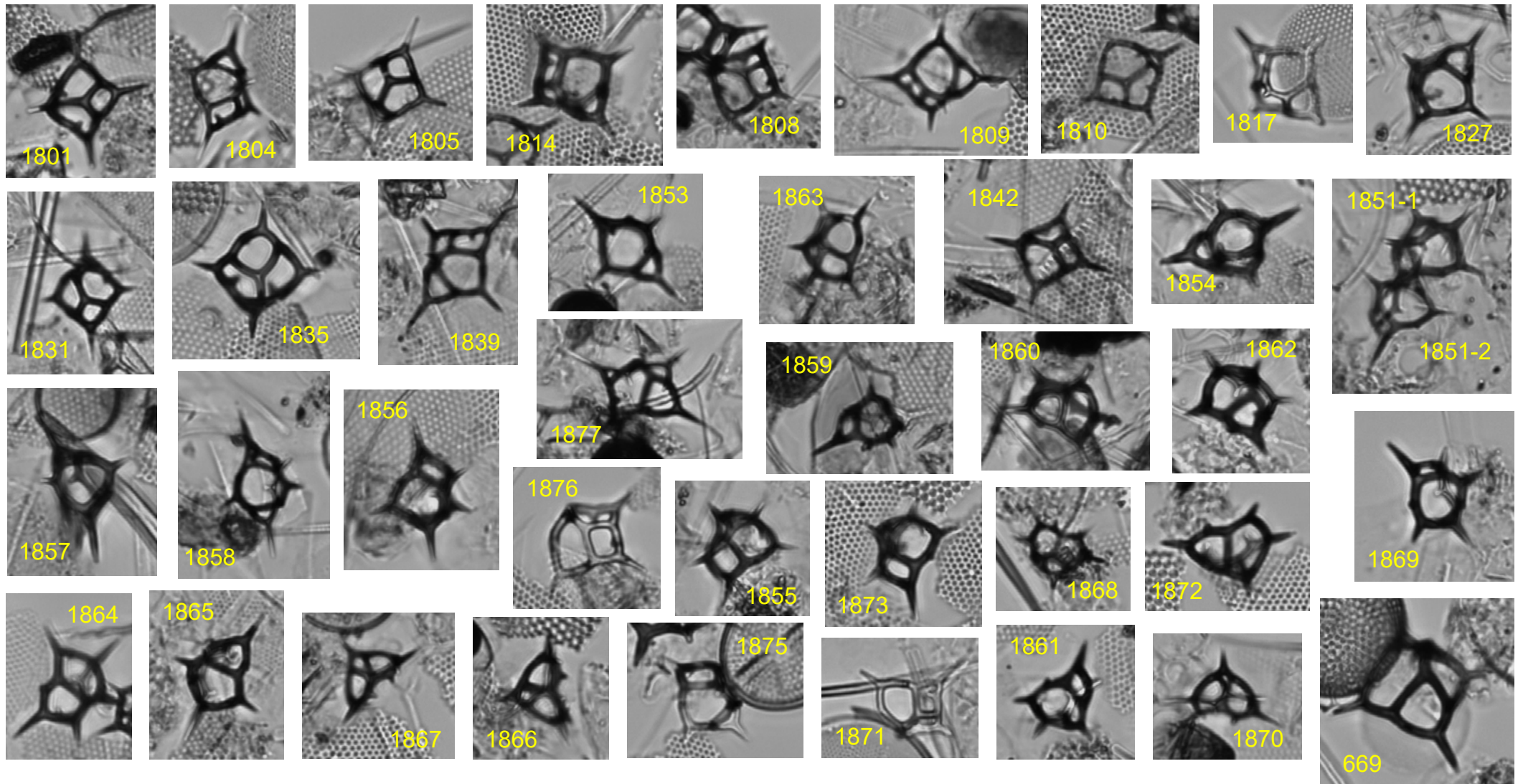
Dictyocha messanensis



Plate 53

Dictyocha messanensis

50 μ m



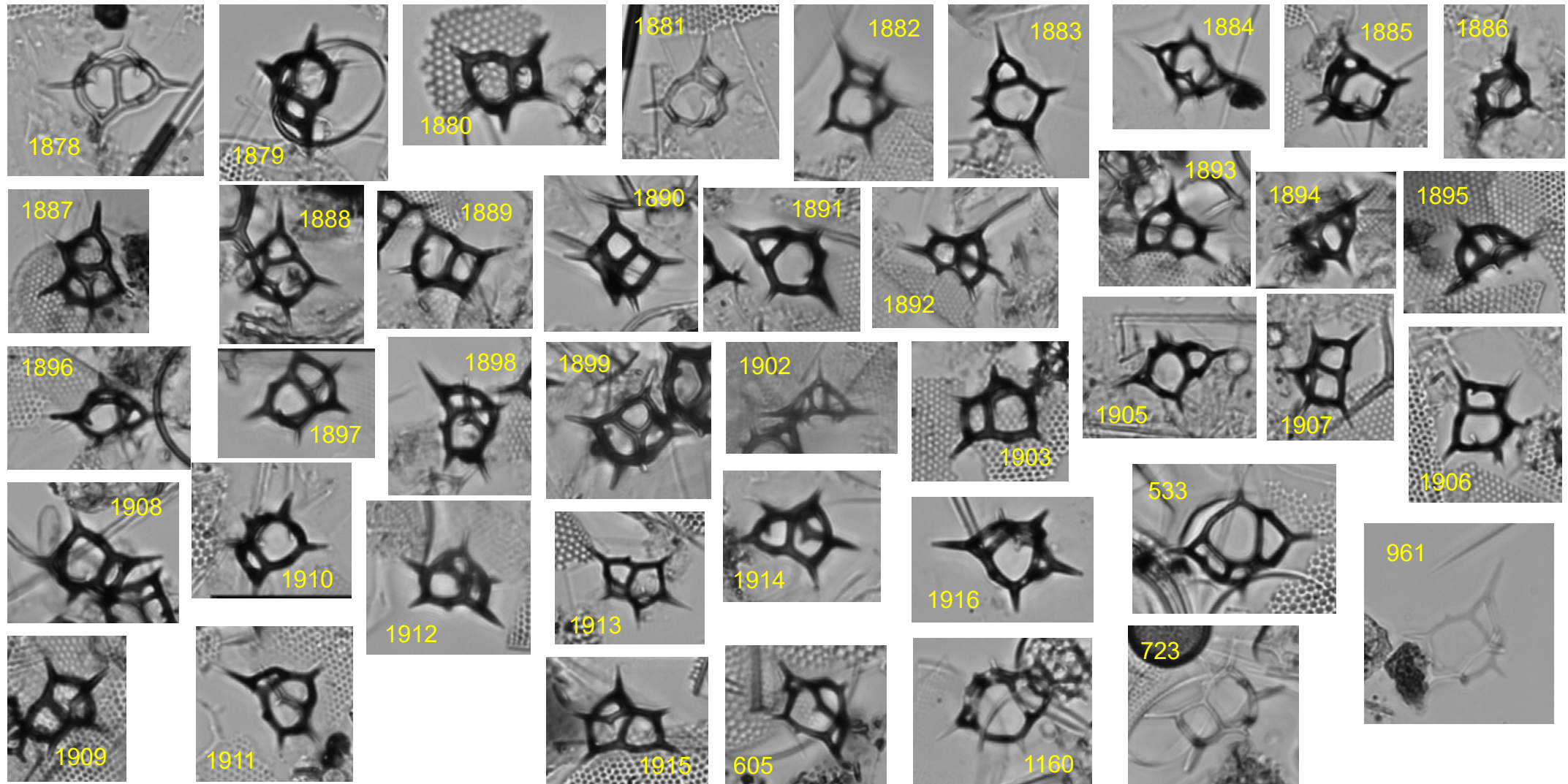
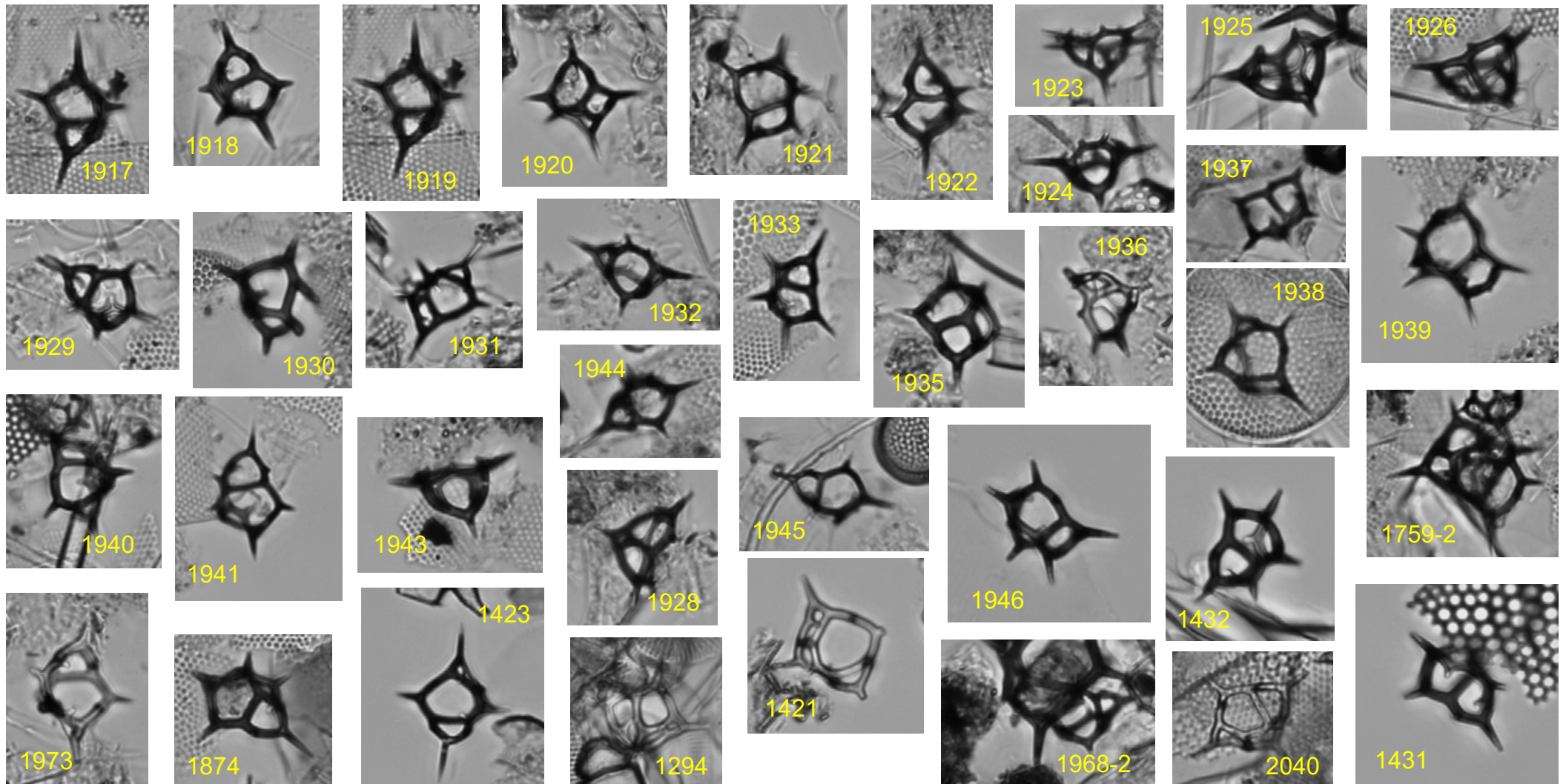


Plate 55

Dictyocha messanensis

50 μ m



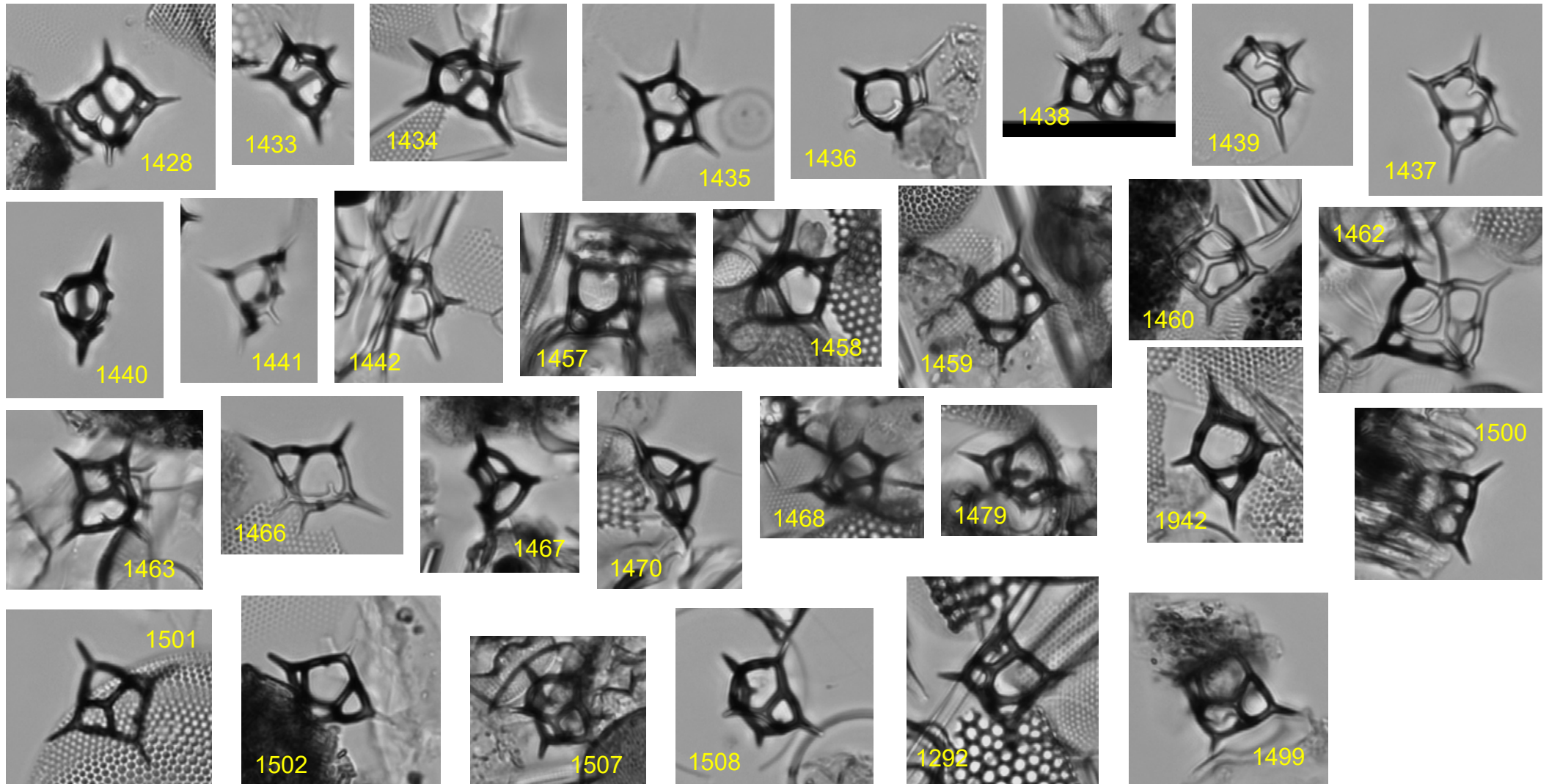


Plate 57

Dictyocha messanensis

50 μ m

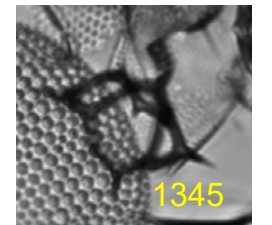
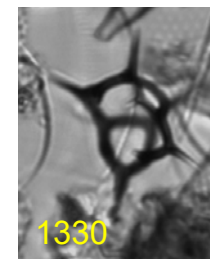
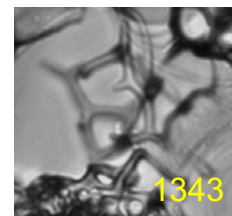
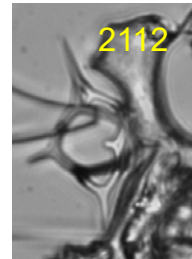
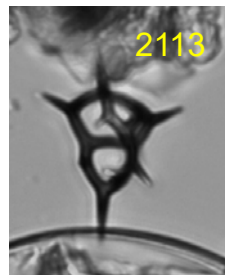
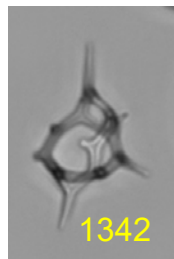
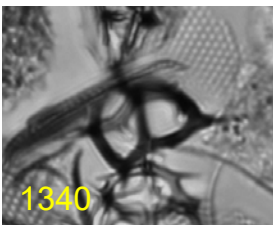
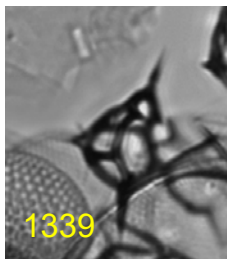
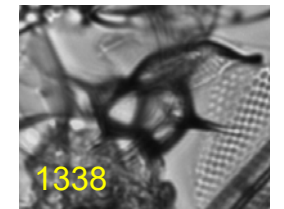
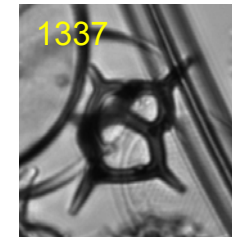
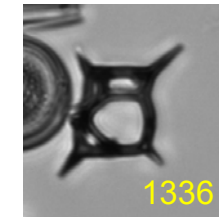
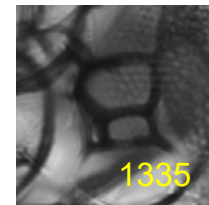
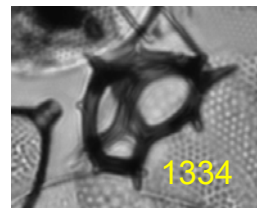
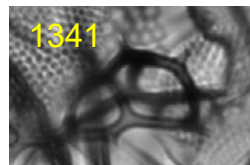
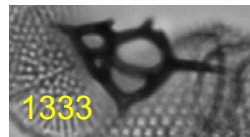
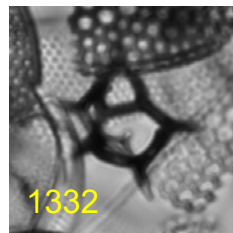
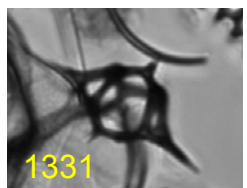
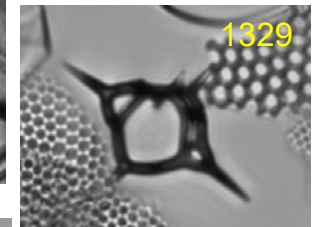
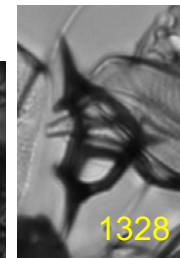
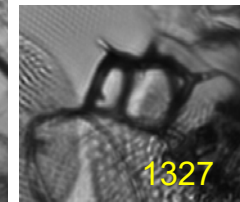
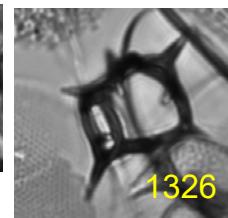
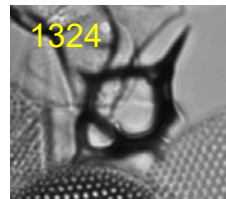
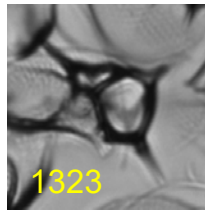
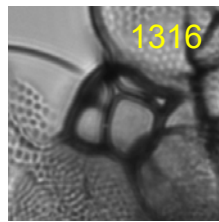
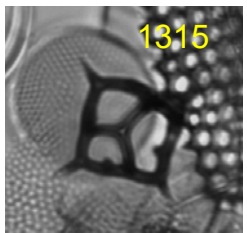
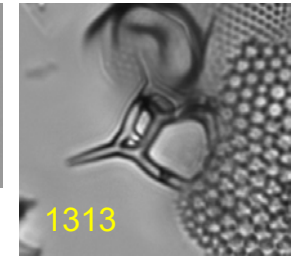
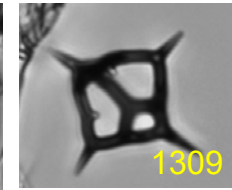
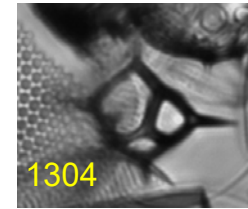
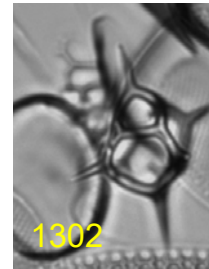
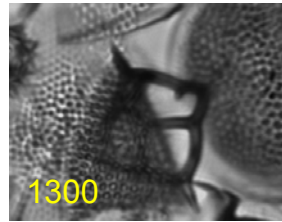
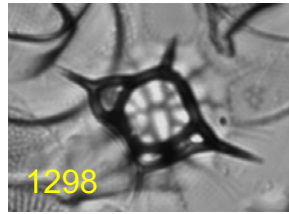
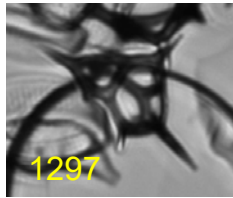
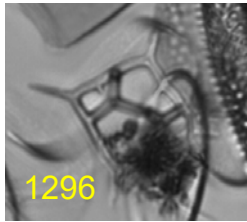


Plate 58

Dictyocha messanensis

50 μ m

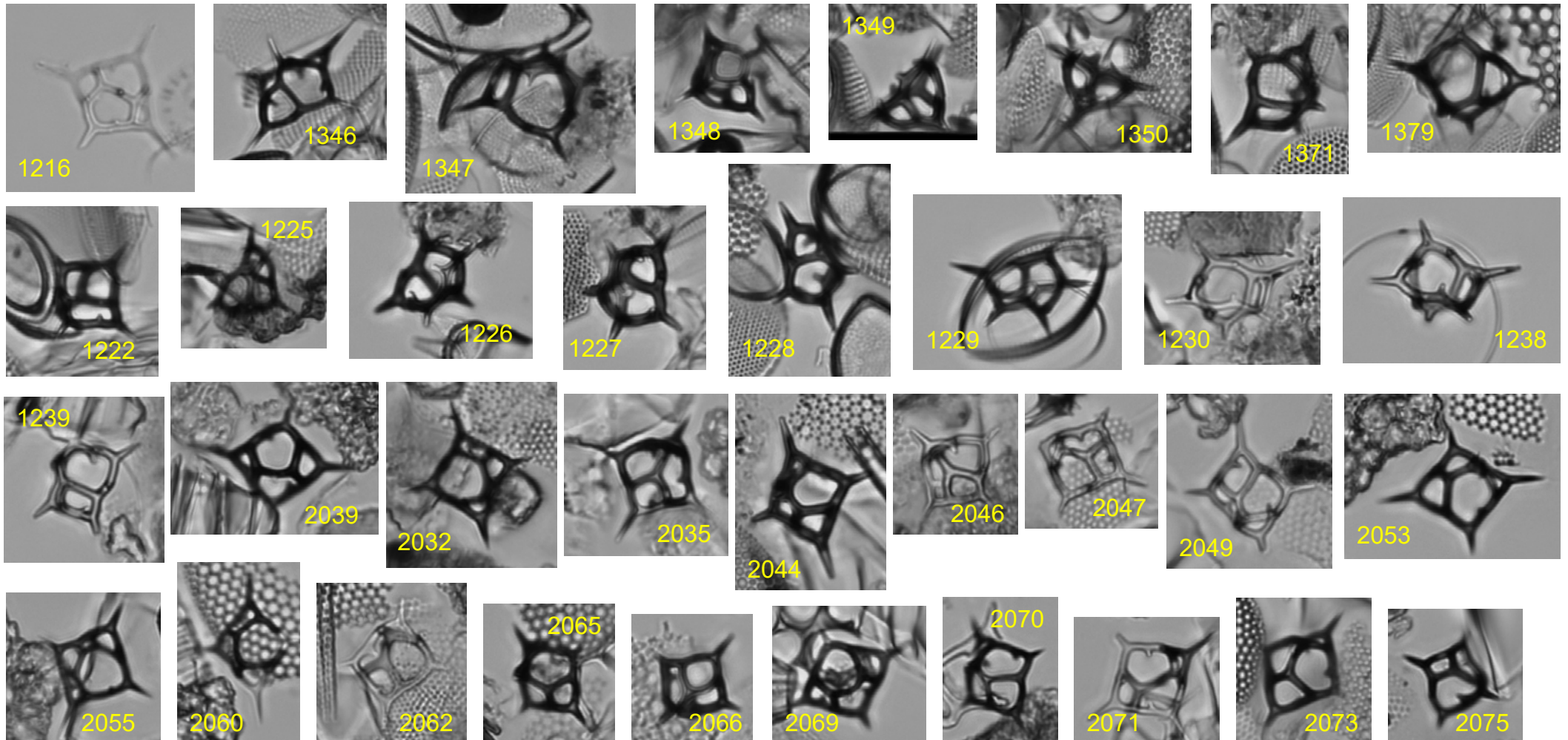


Plate 59

Dictyocha messanensis

50 μ m

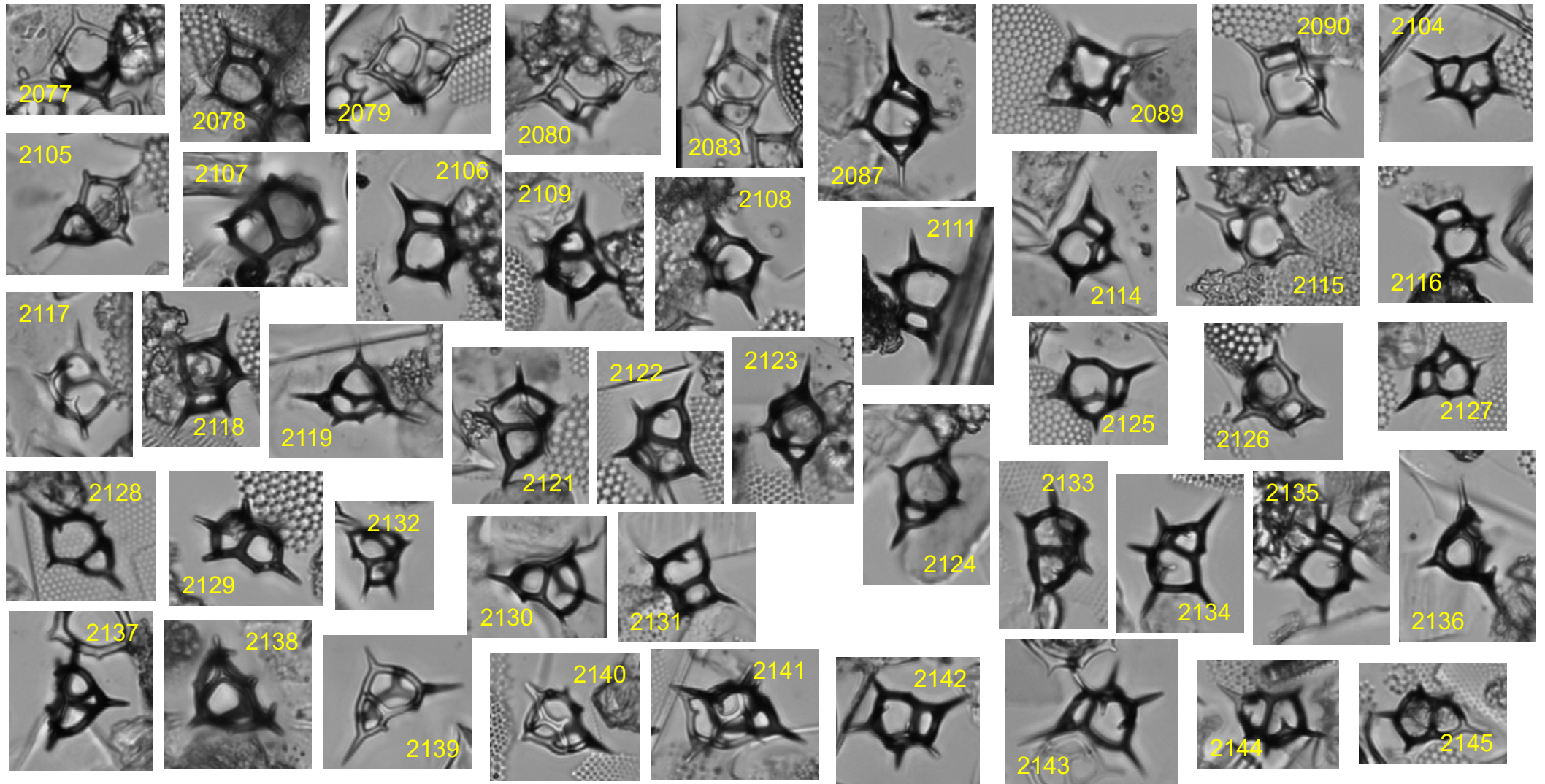
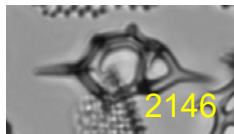


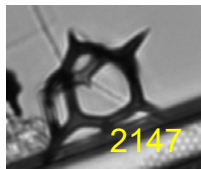
Plate 60

Dictyocha messanensis

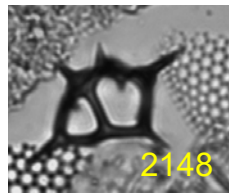
50 μ m



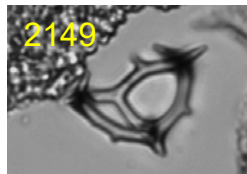
2146



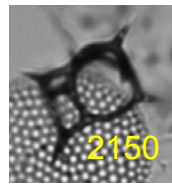
2147



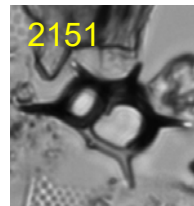
2148



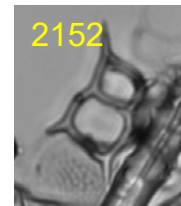
2149



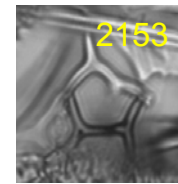
2150



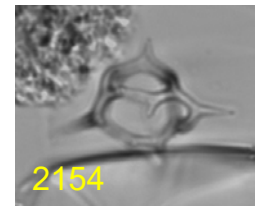
2151



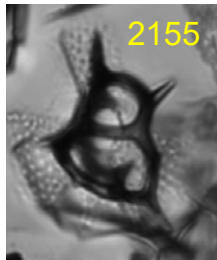
2152



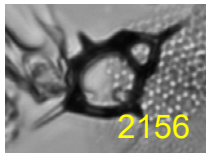
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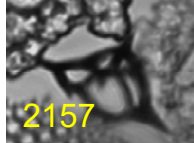
2154



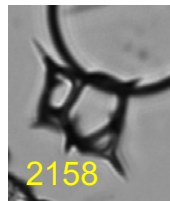
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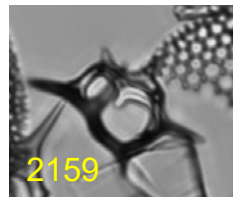
2156



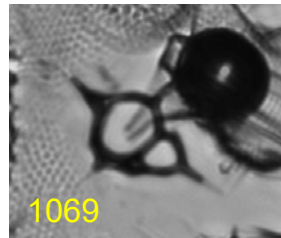
2157



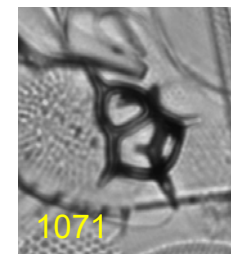
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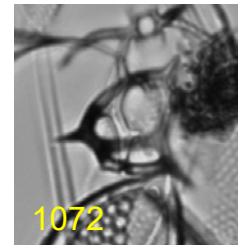
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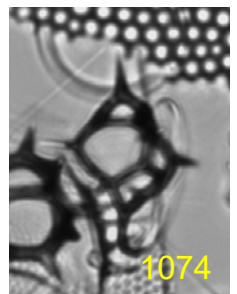
1069



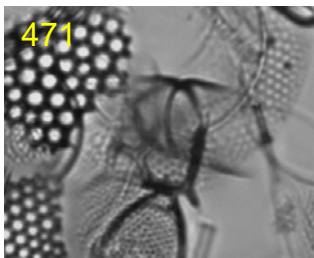
1071



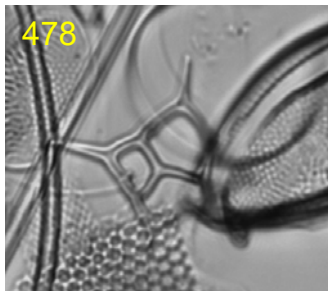
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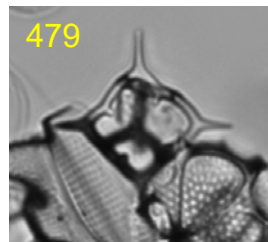
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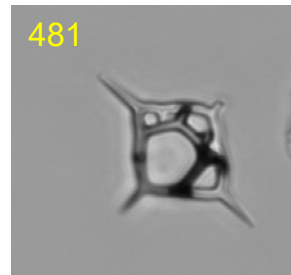
471



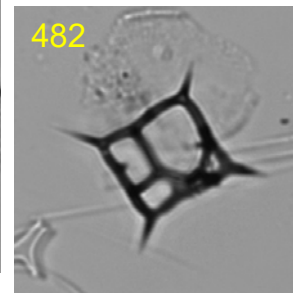
478



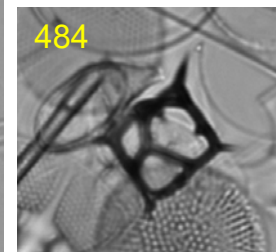
479



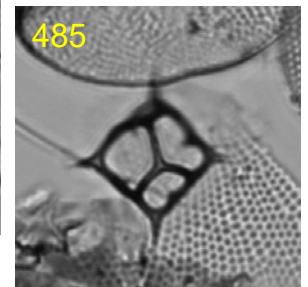
481



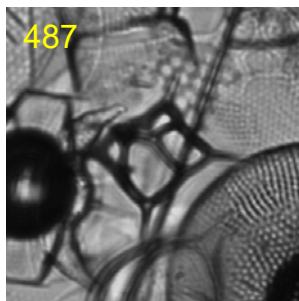
482



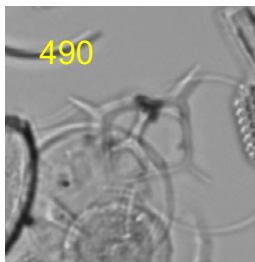
484



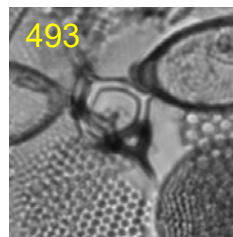
485



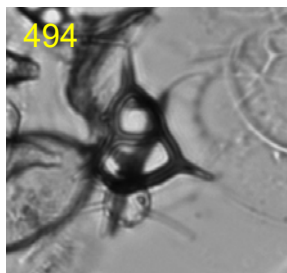
487



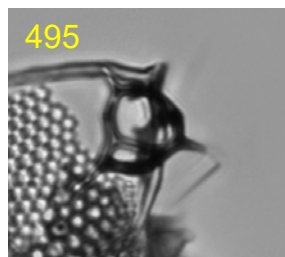
490



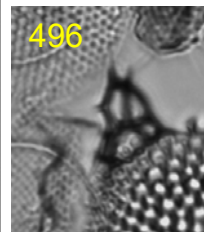
493



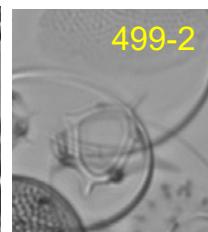
494



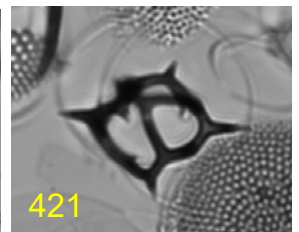
495



496



499-2



421

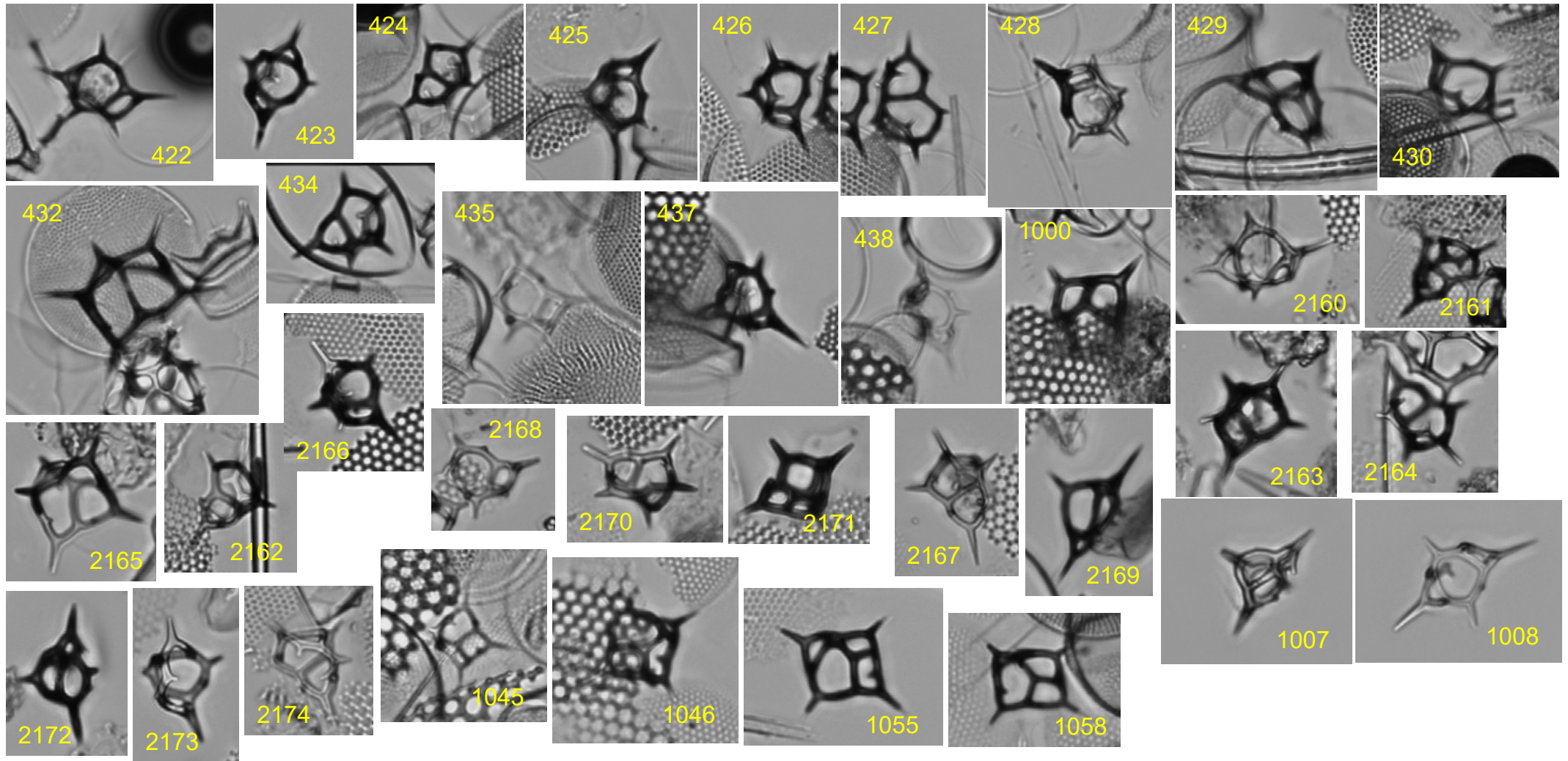


Plate 62

Dictyocha messanensis

50 μ m

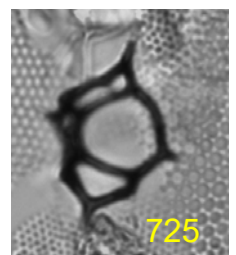
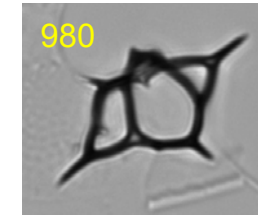
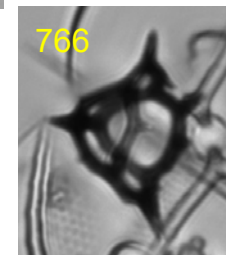
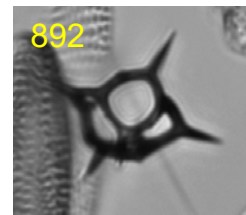
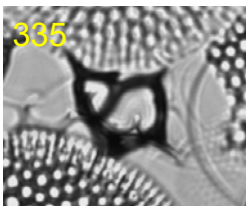
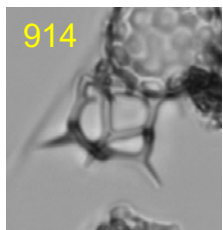
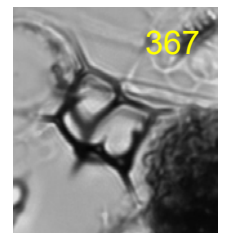
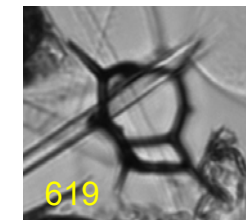
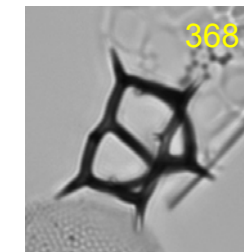
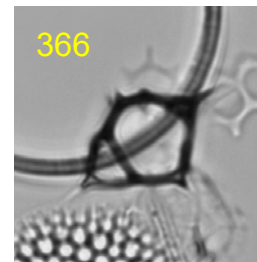
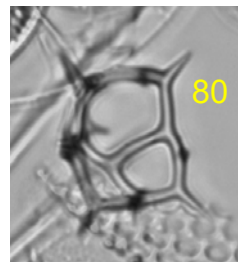
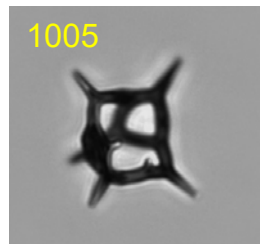
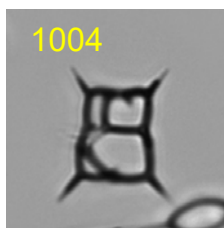
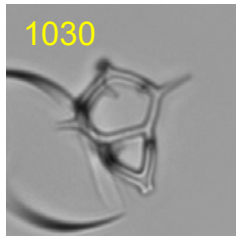
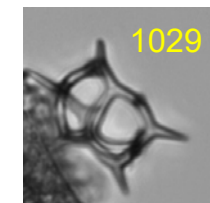
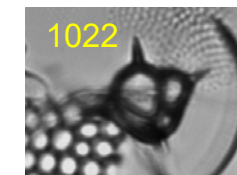
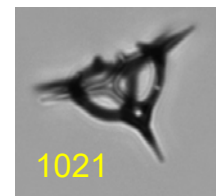
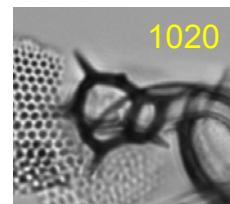
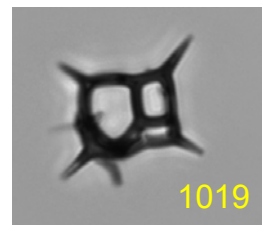
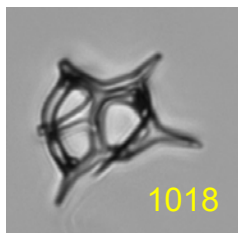
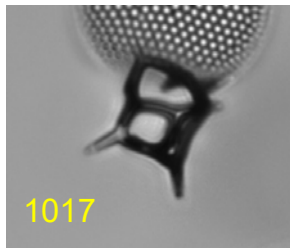
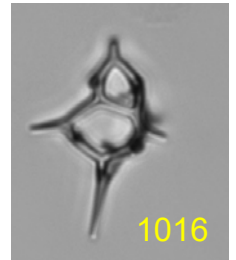
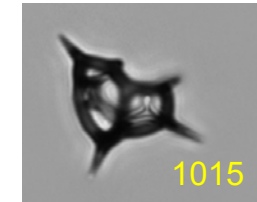
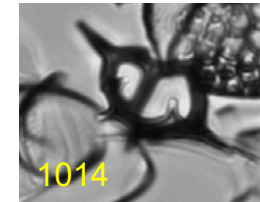
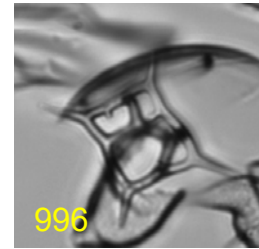
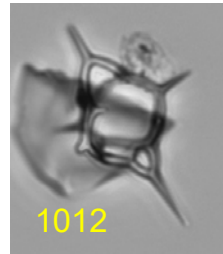
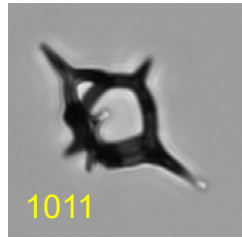
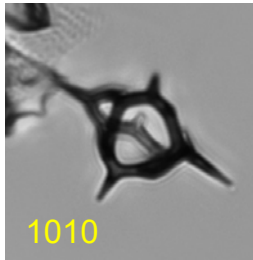
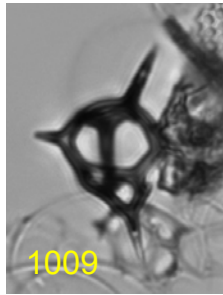
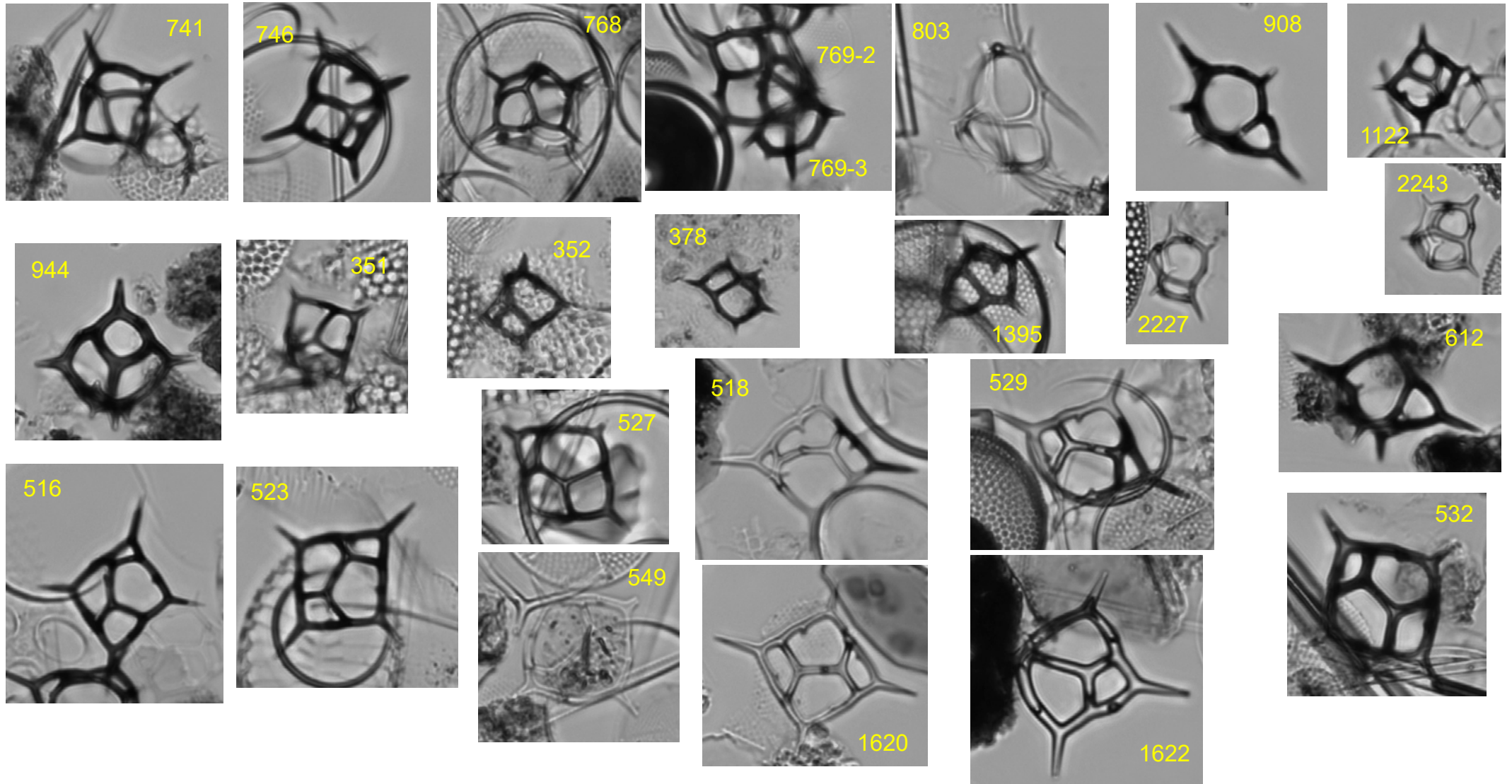


Plate 63

Dictyocha messanensis

50 μ m



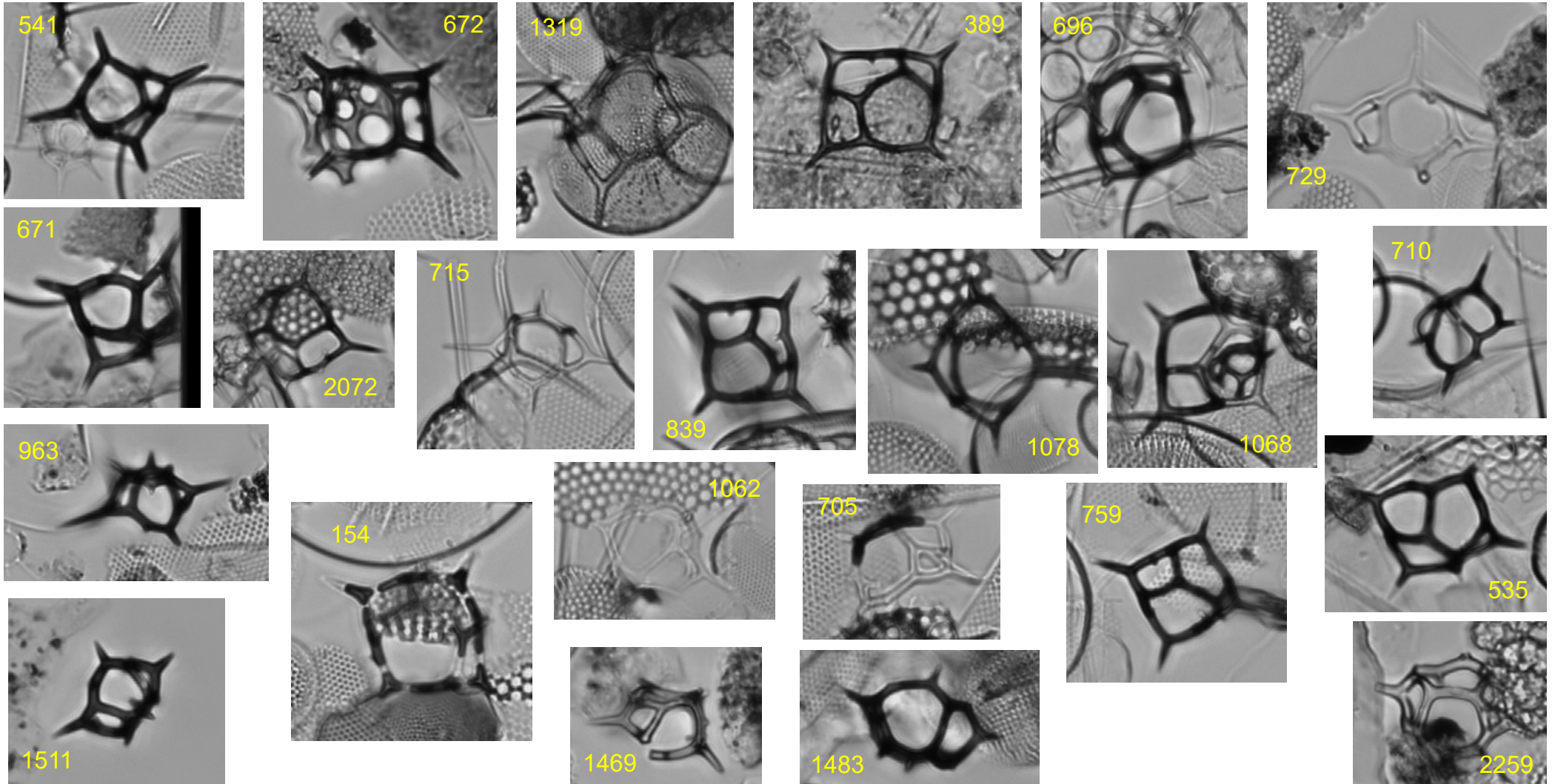


Plate 66

Dictyocha messanensis and *D. messanensis*?

50 μ m

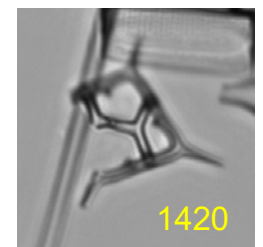
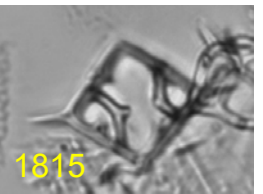
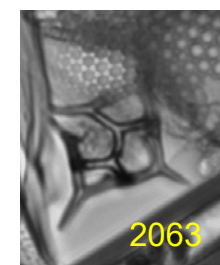
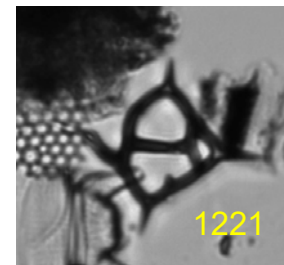
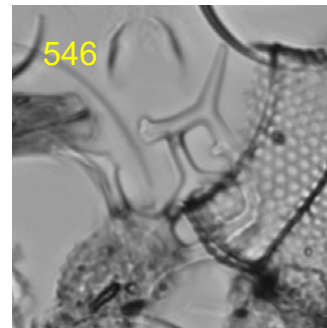
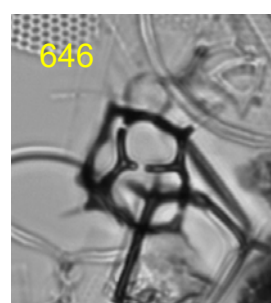
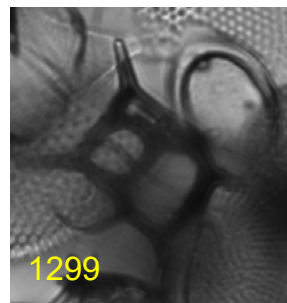
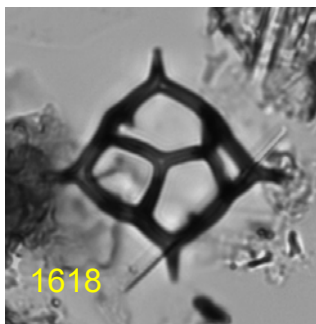
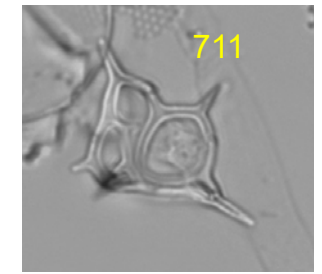
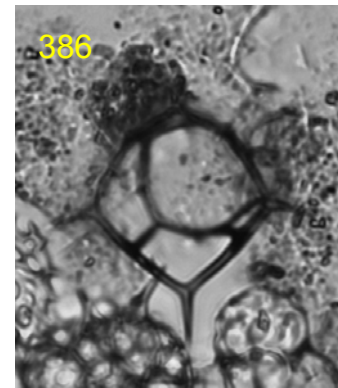
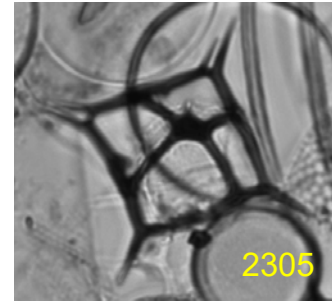
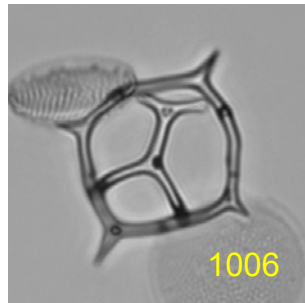
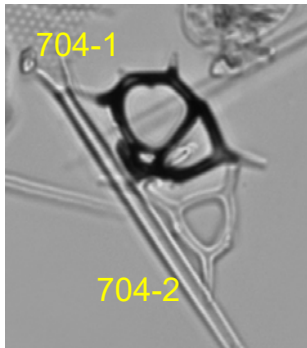
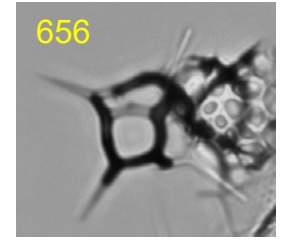
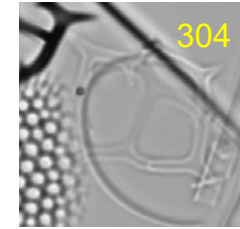
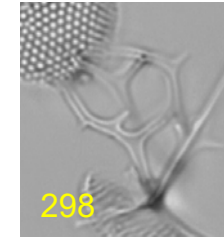
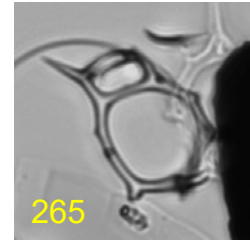
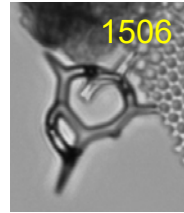
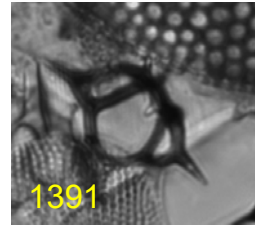
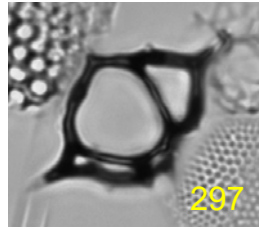
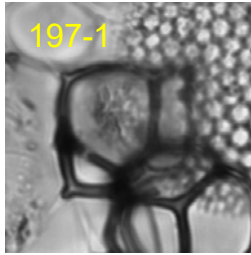


Plate 67

Dictyocha messanensis f. *spinosa*

50 μ m

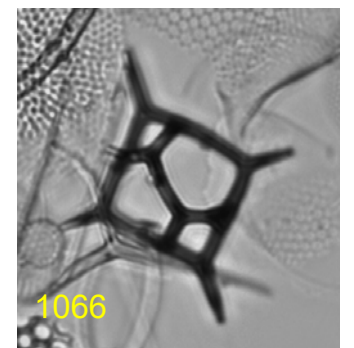
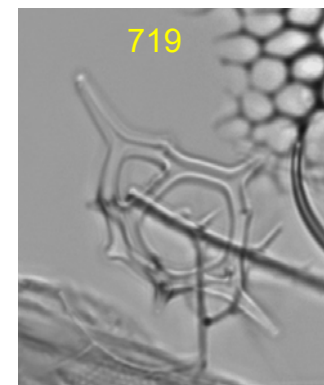
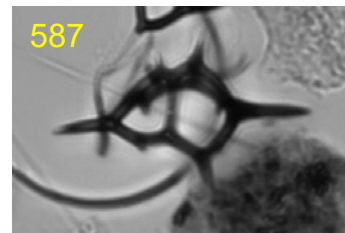
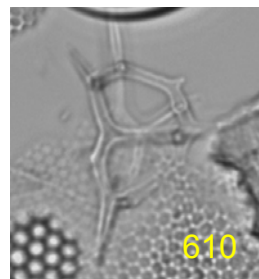
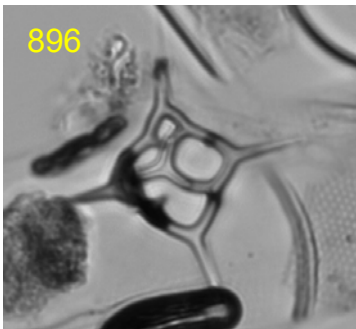
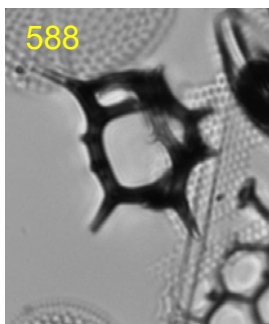
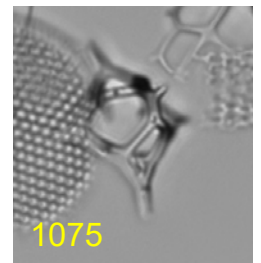
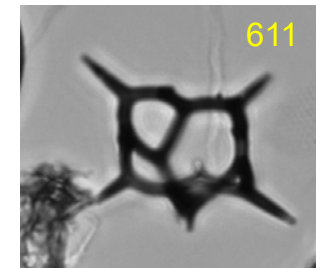
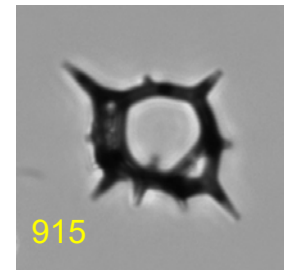
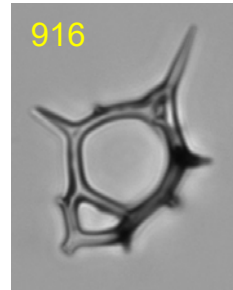
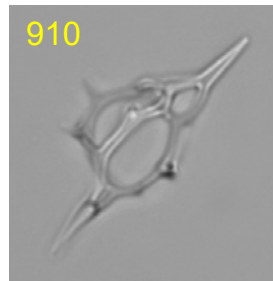
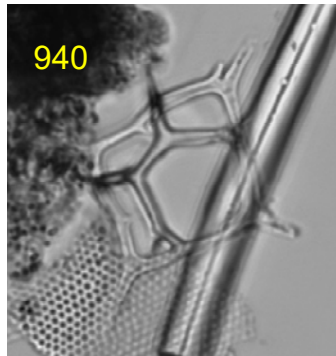
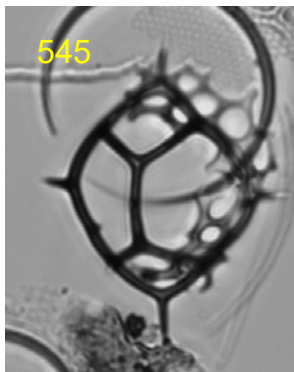
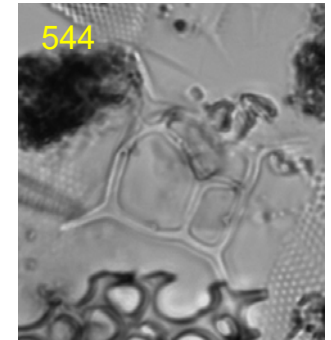
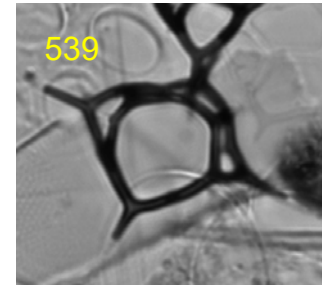
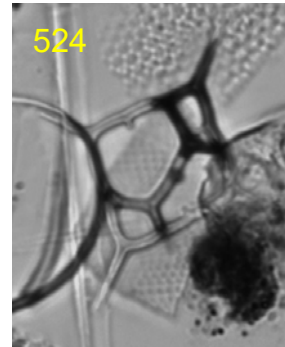
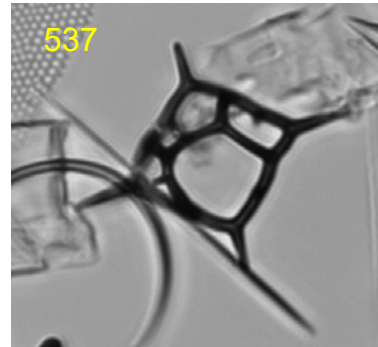
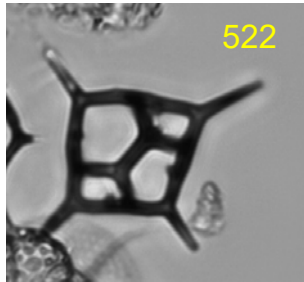
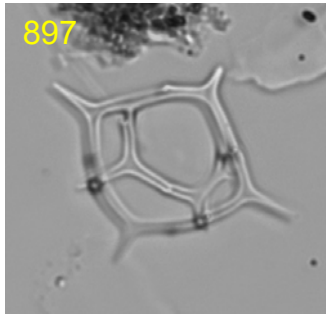
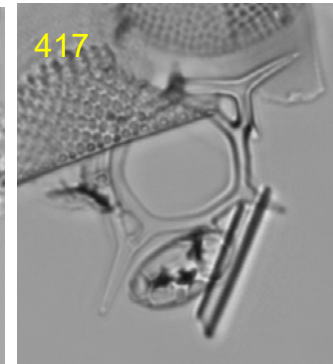
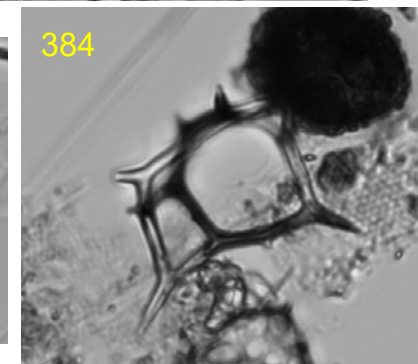
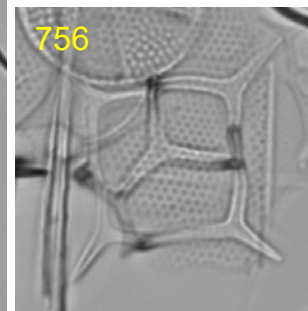
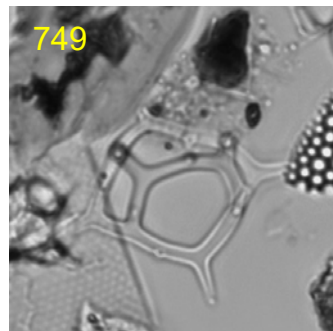
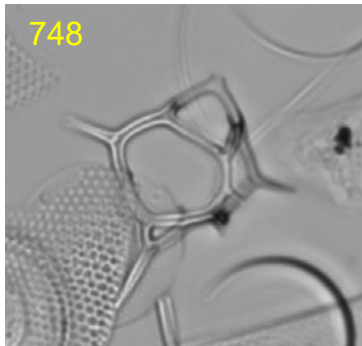
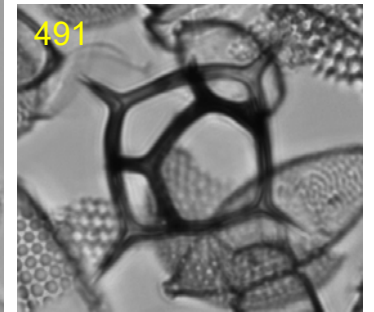
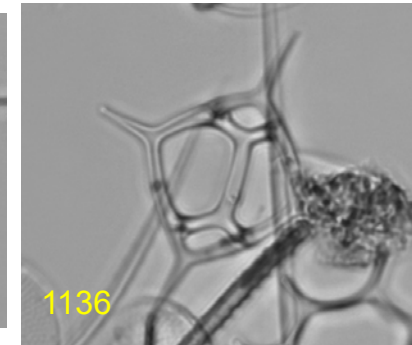
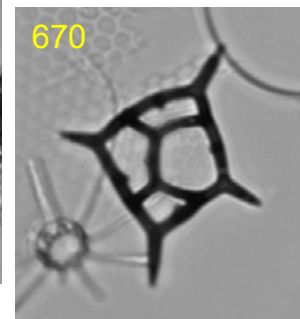
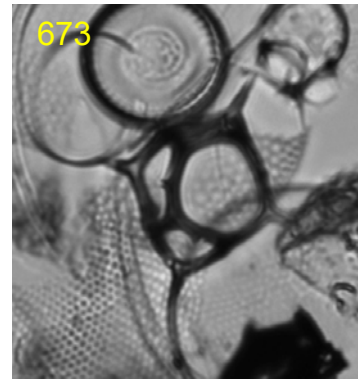
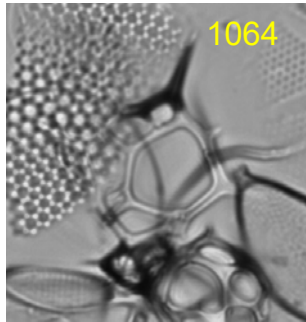
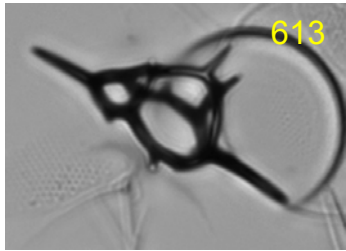
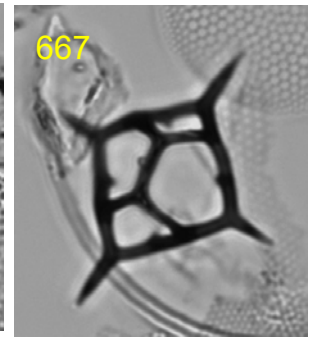
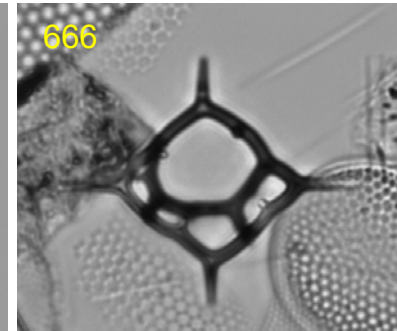
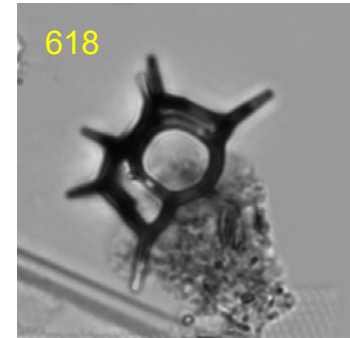
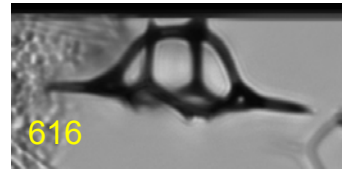
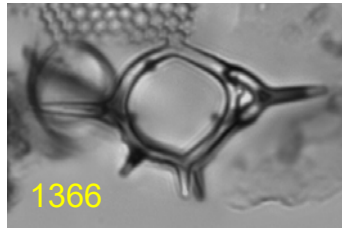
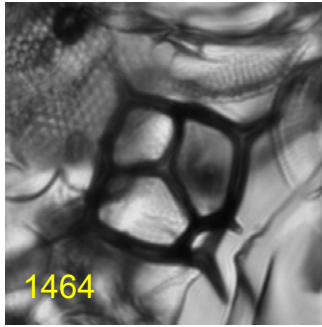


Plate 68

Dictyocha messanensis f. *spinosa*

50 μ m



Dictyocha messanensis f. *spinosa*

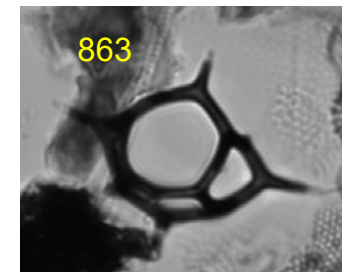


Plate 71

Dictyocha messanensis f. *spinosa*?

50 μ m

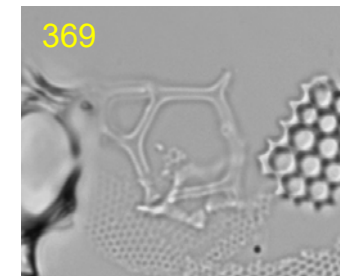
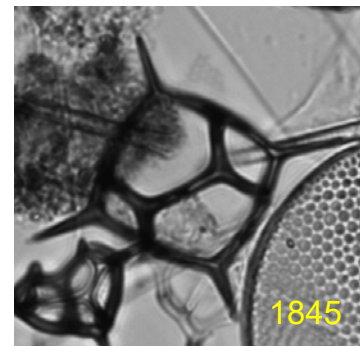
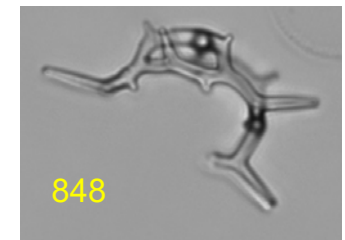
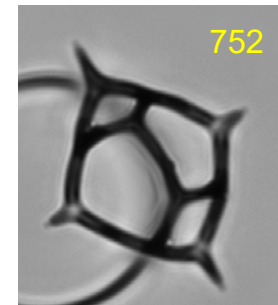
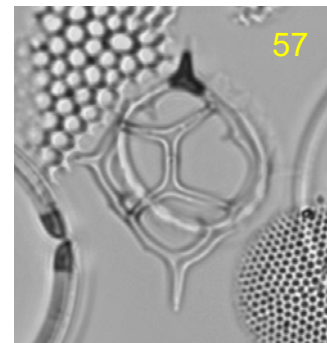
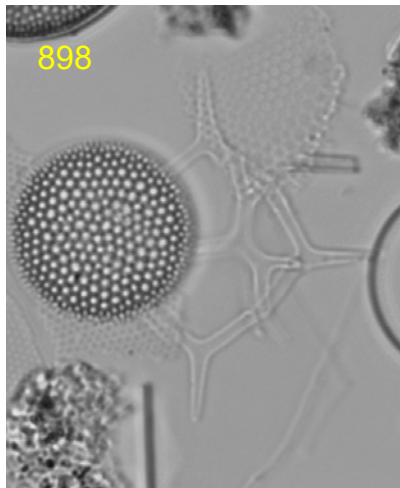
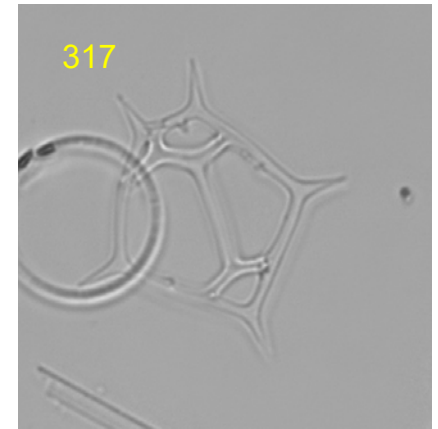
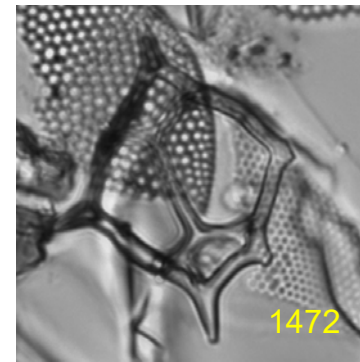
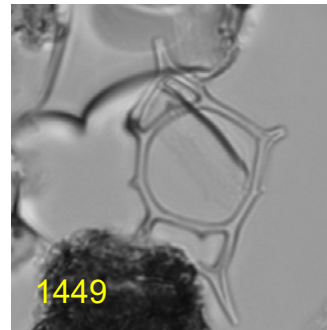
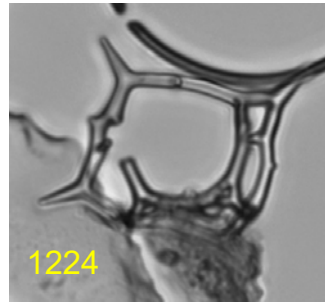
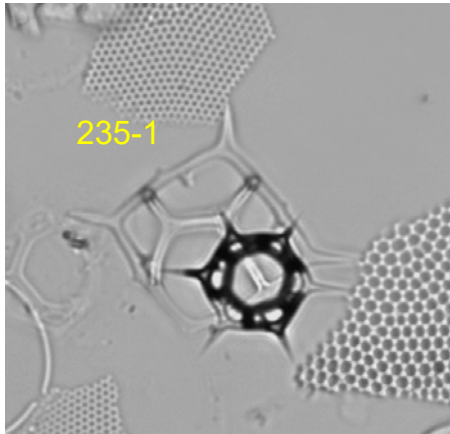


Plate 72

Dictyocha messanensis f. *spinosa* (pentagonal)

50 μ m

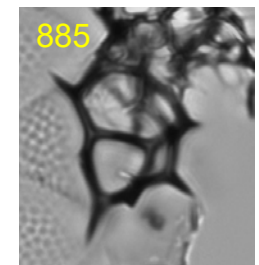
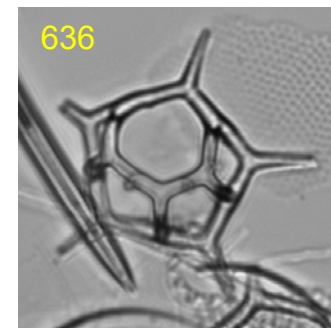
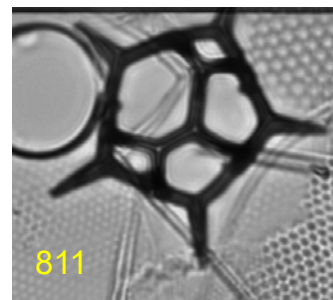
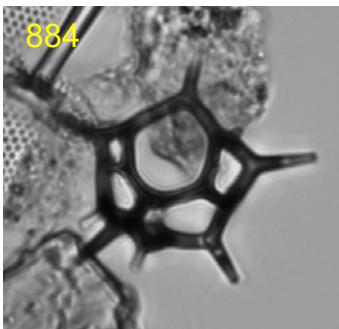
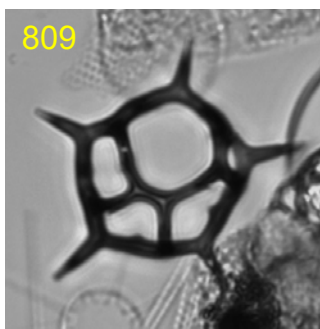
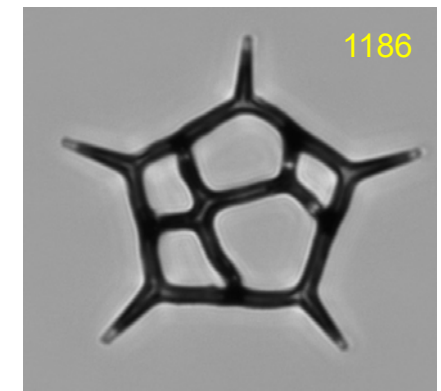
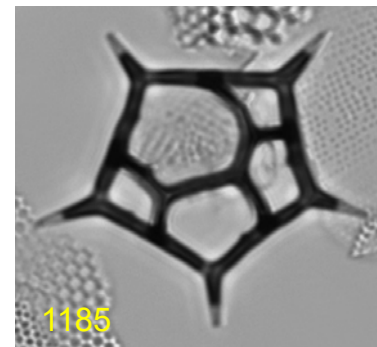
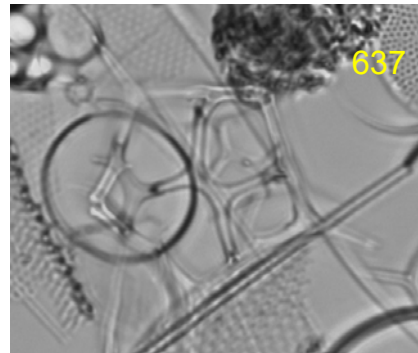
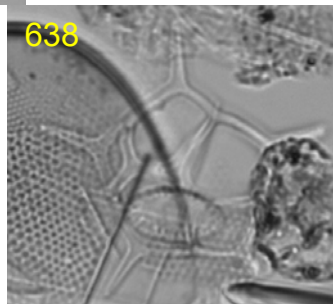
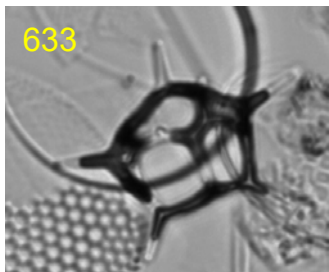
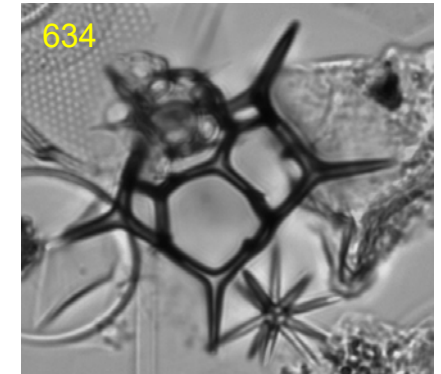
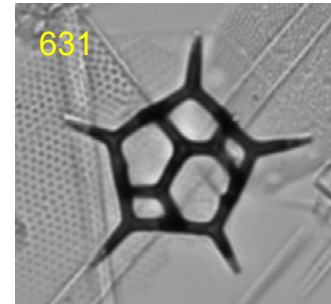
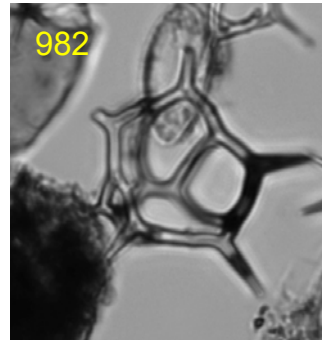
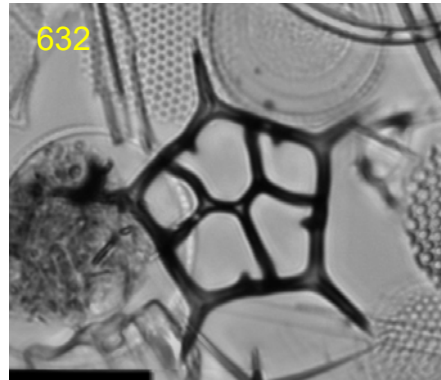
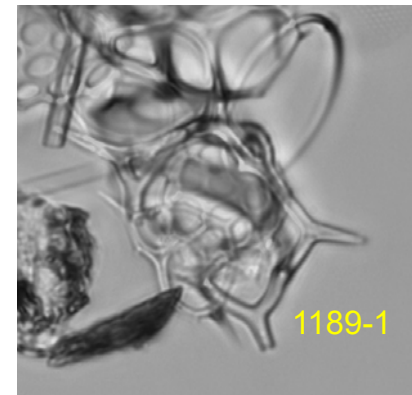
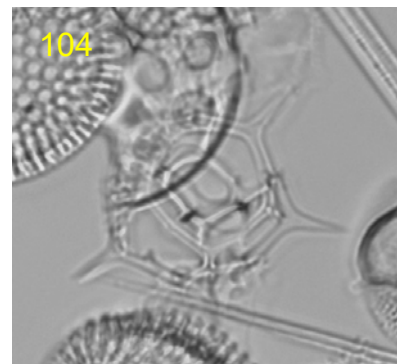
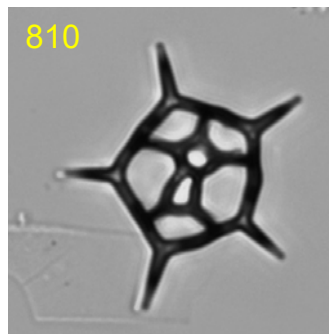
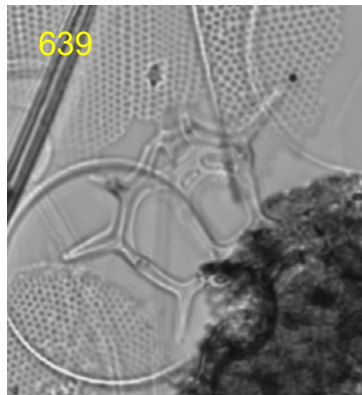
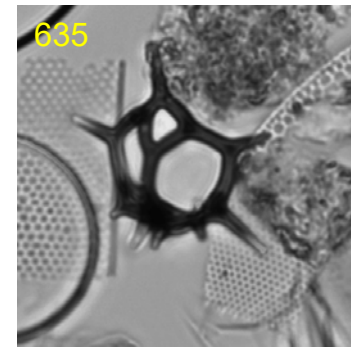
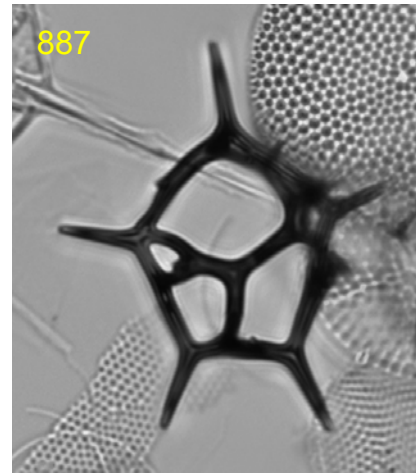
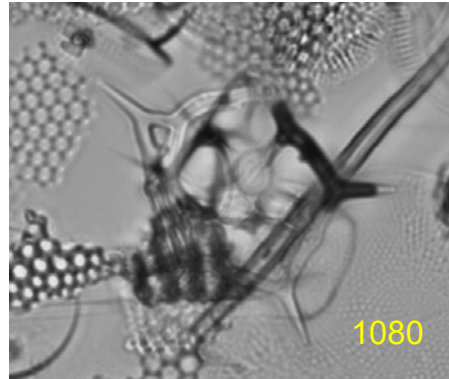
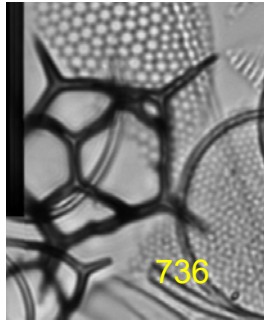
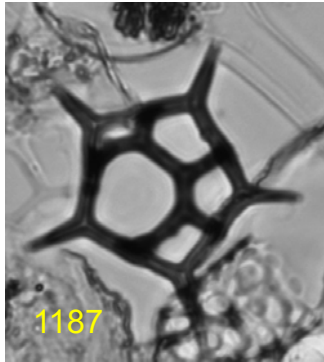
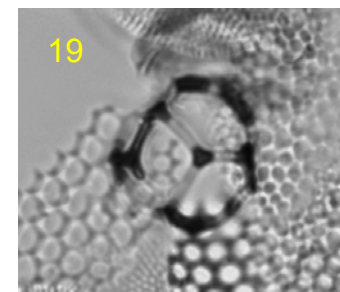
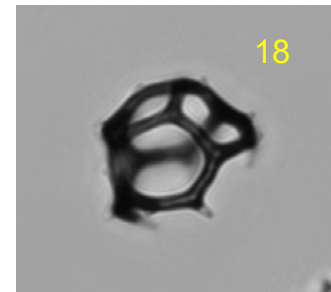
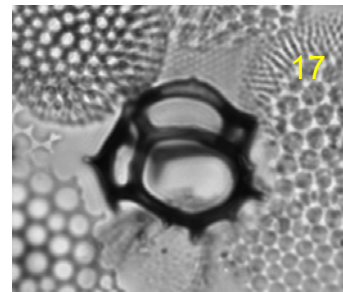
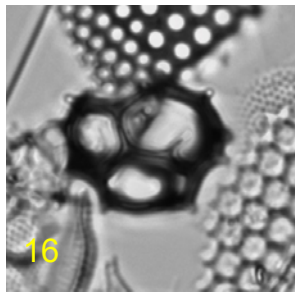
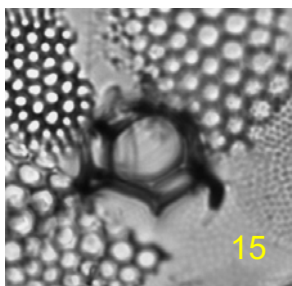
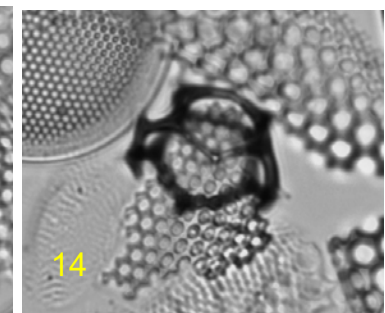
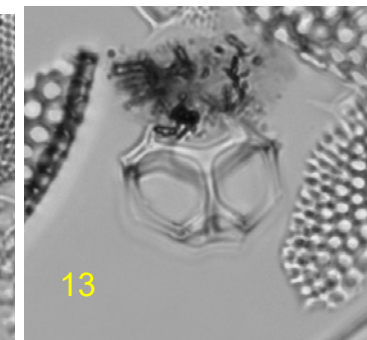
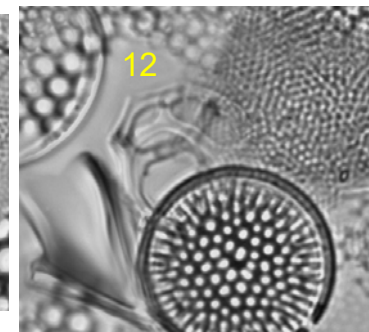
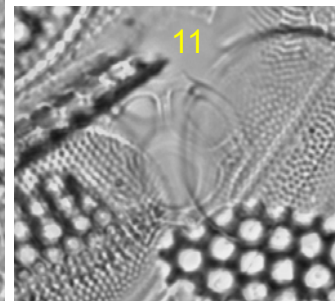
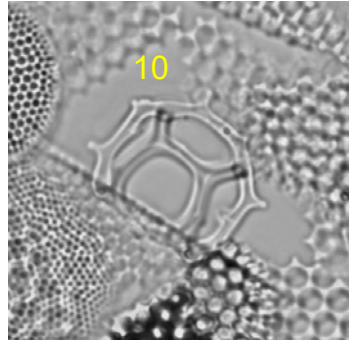
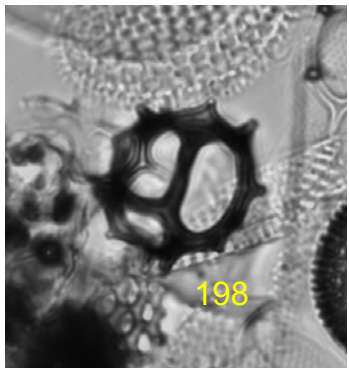
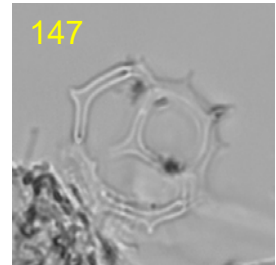
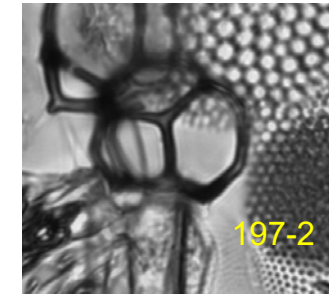
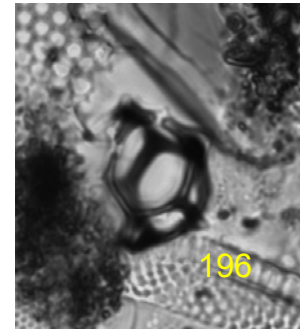
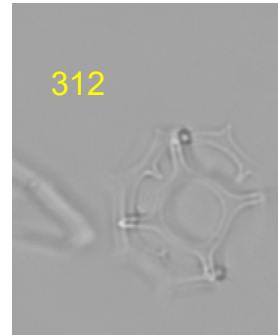
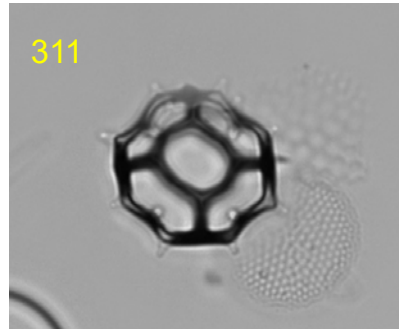
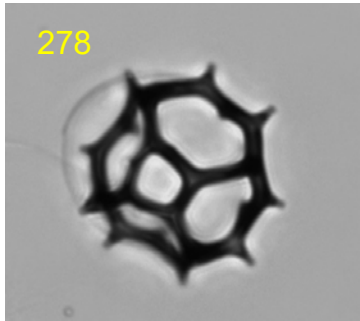


Plate 73

Dictyocha messanensis f. *spinosa* (pentagonal)

50 μ m





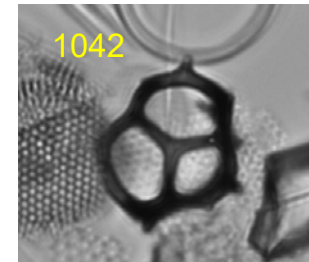
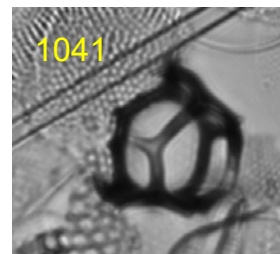
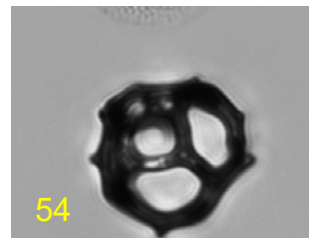
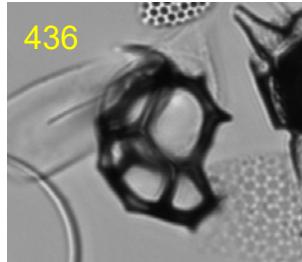
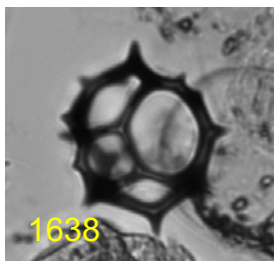
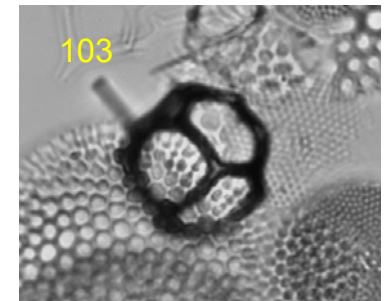
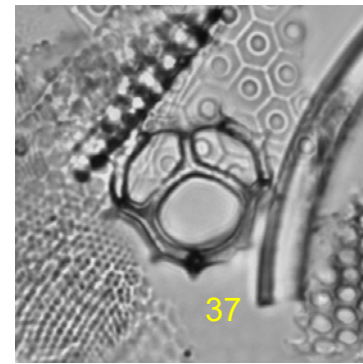
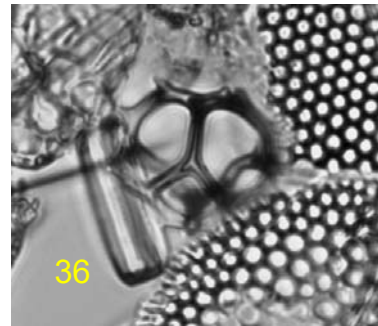
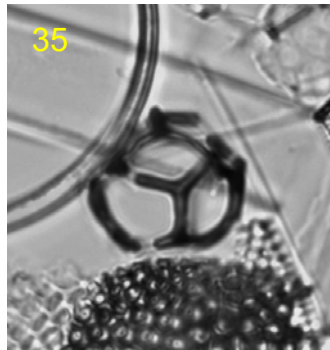
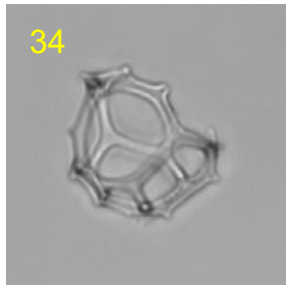
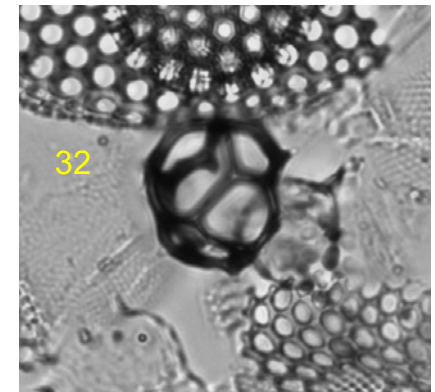
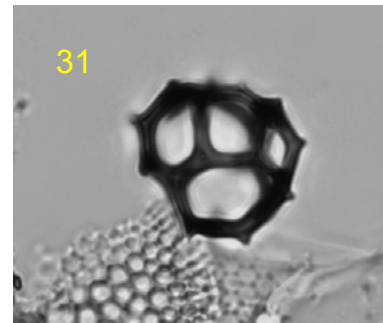
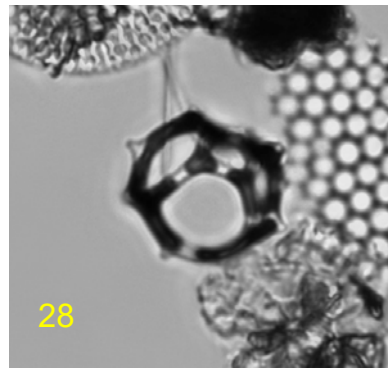
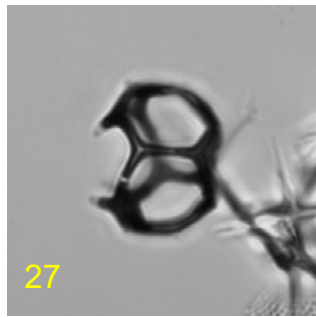
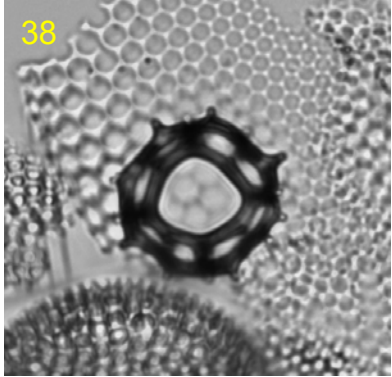


Plate 76

Dictyocha octangulata and *Dictyocha octangulata*?

50 μ m

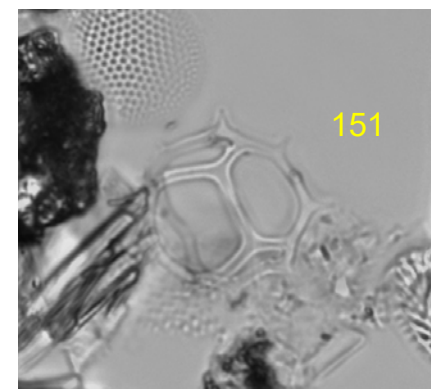
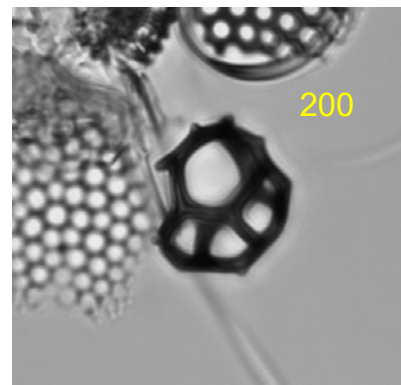
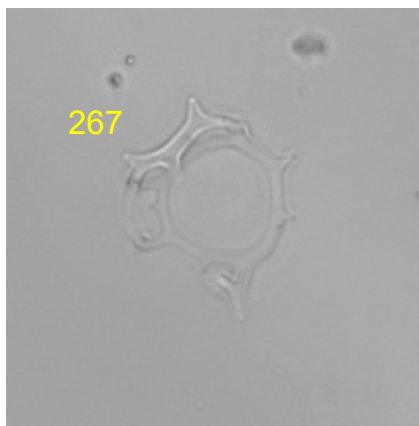
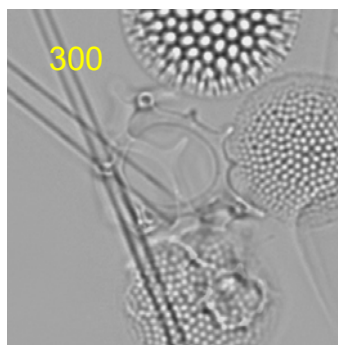
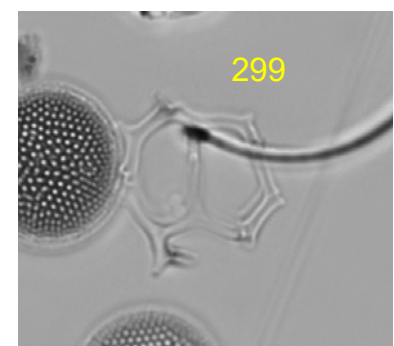
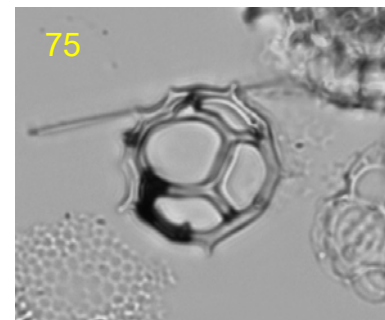
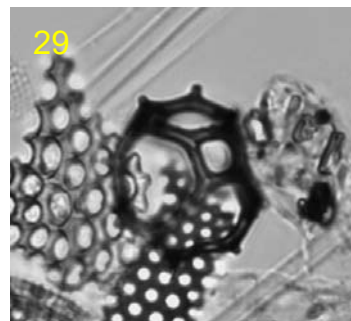
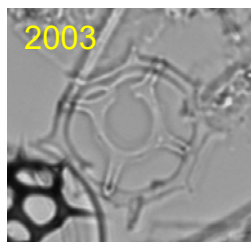
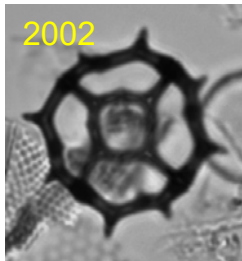
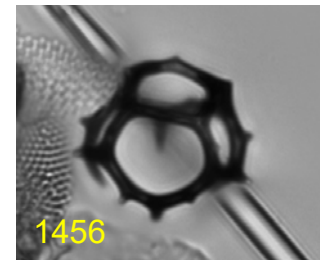
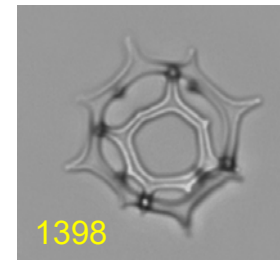
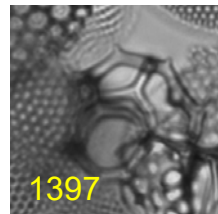
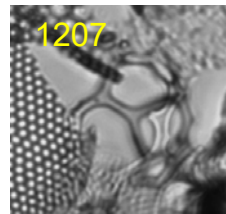
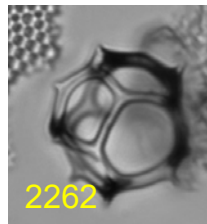
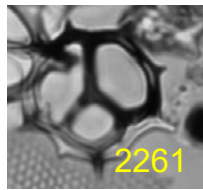
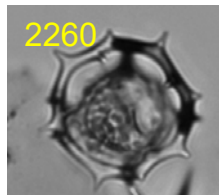
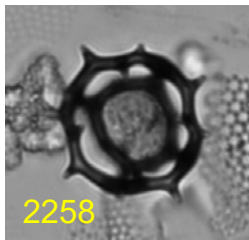
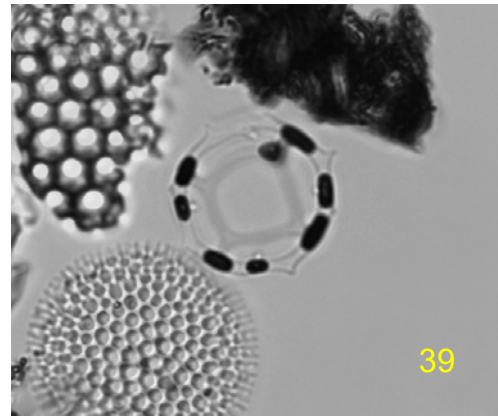
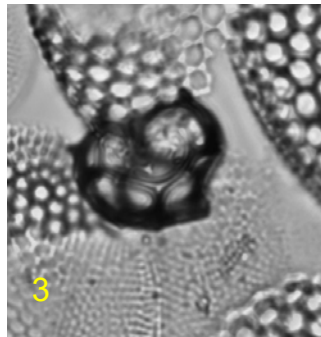
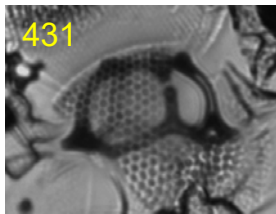
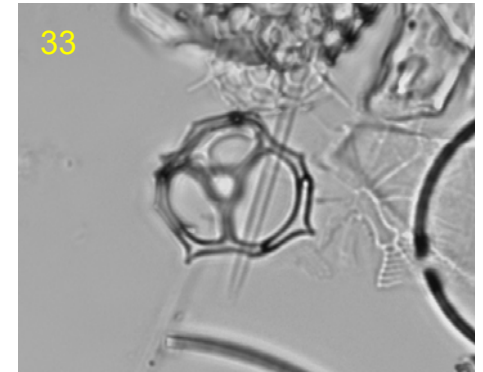
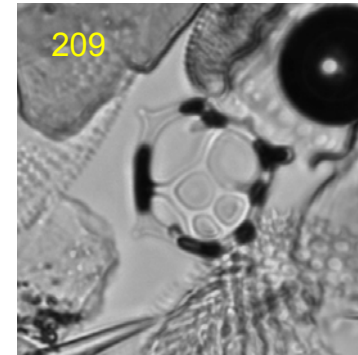
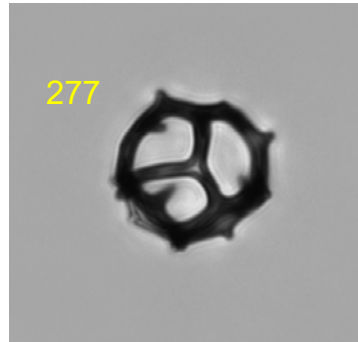
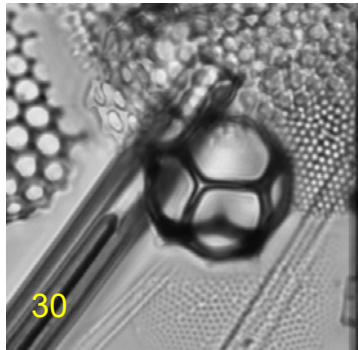
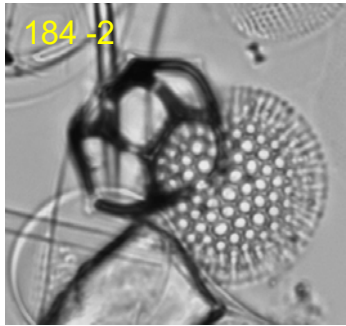


Plate 77 *Dictyocha octangulata* and *Dictyocha octangulata?* (aberrant)

50 μ m



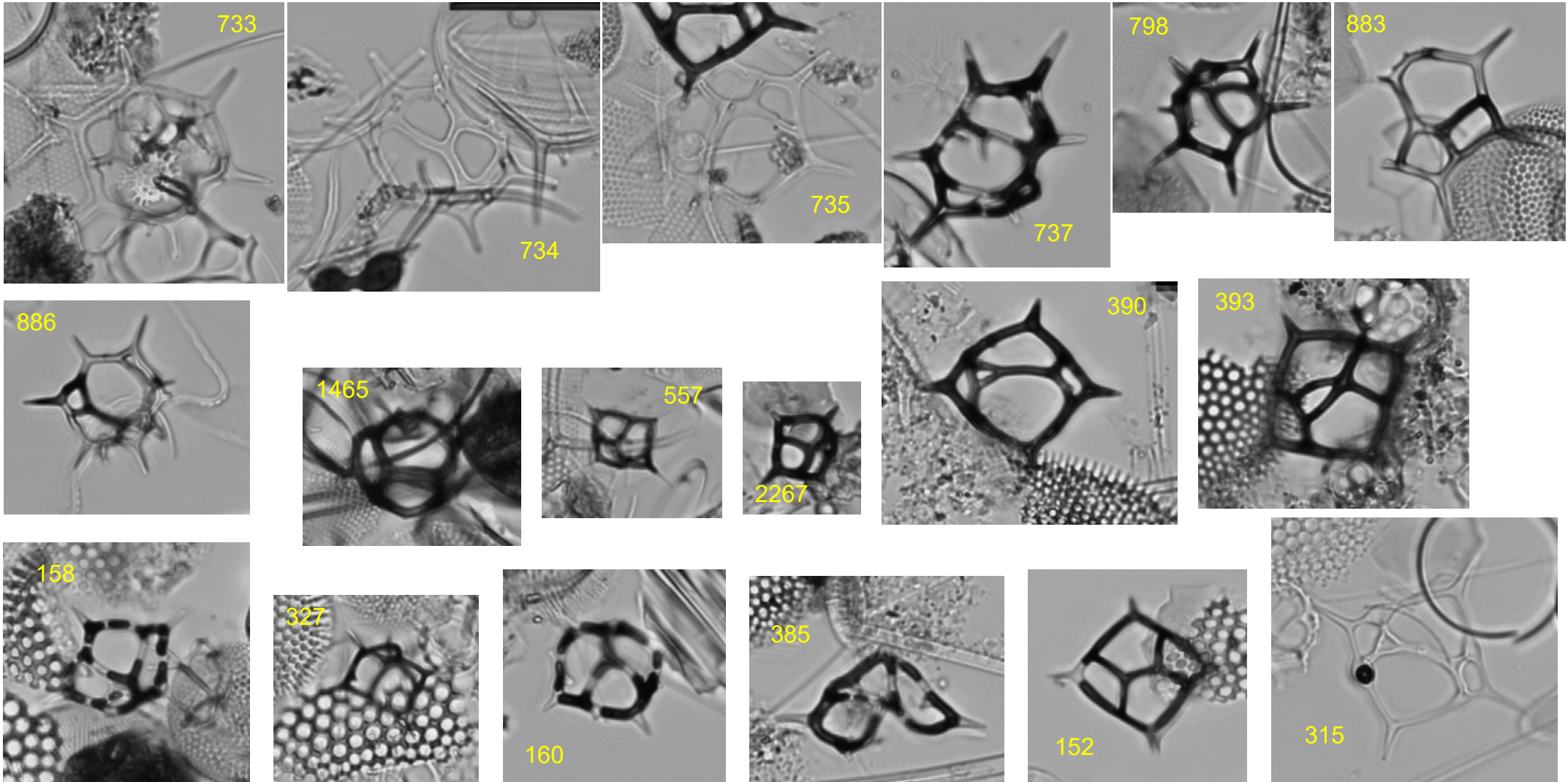


Plate 79

Dictyocha spp.

50 μ m

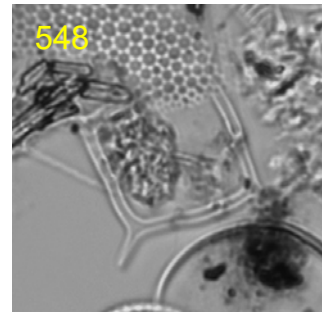
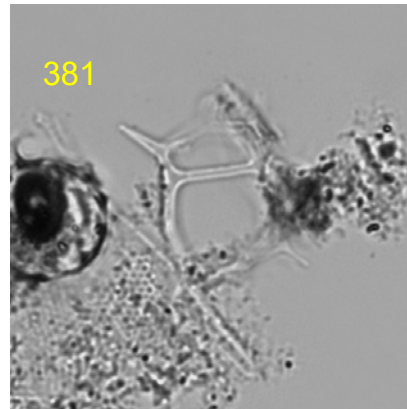
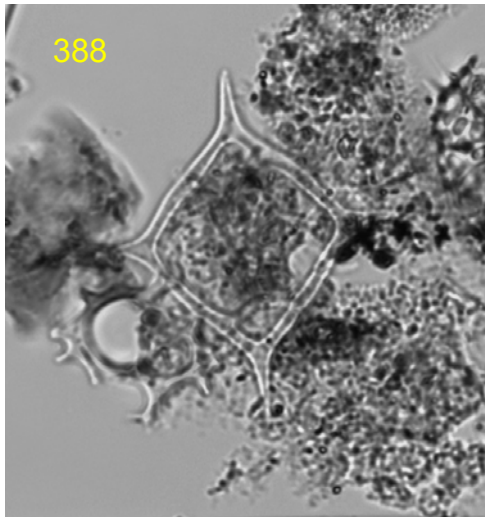
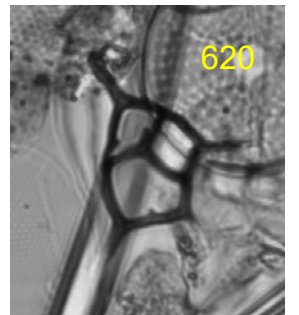
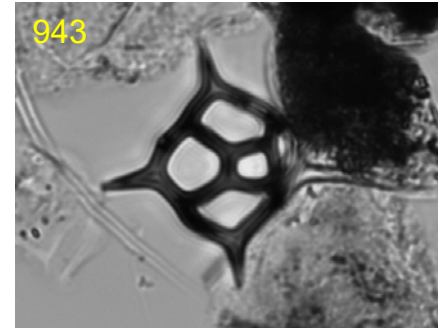
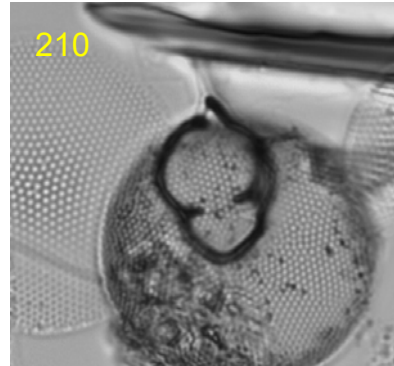
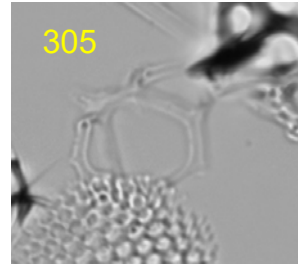
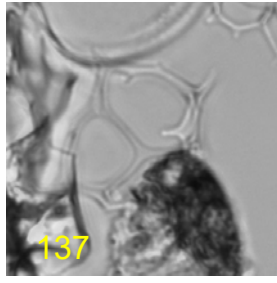
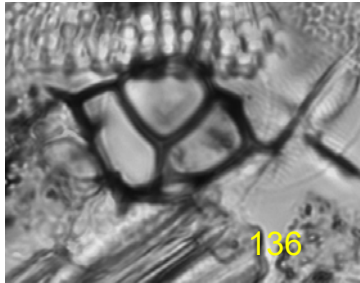


Plate 80

Double skeletons and aberrant skeletons

50 μ m

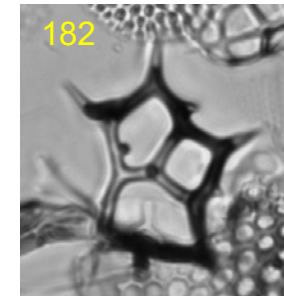
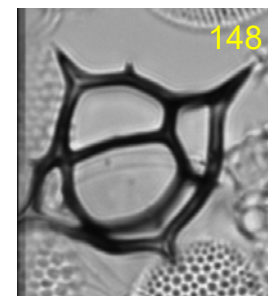
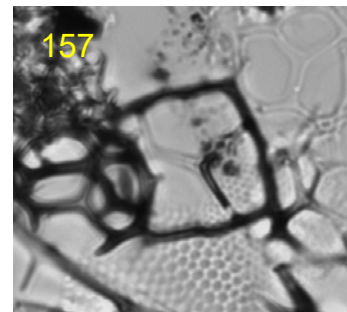
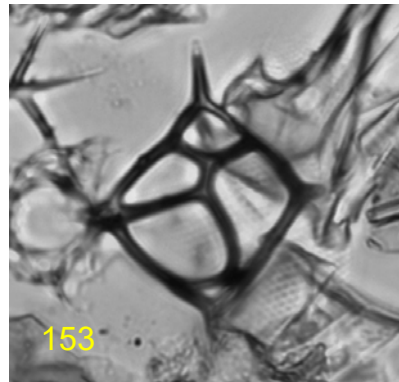
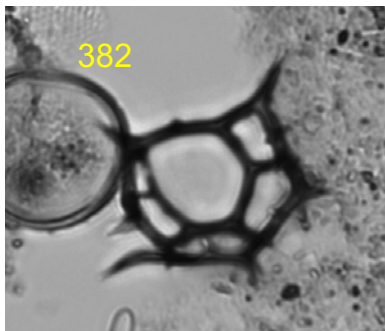
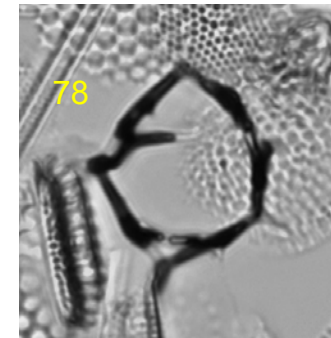
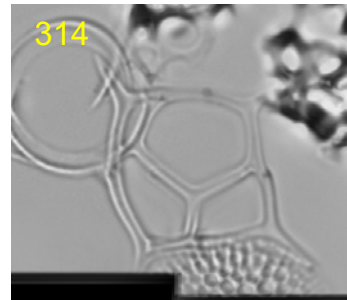
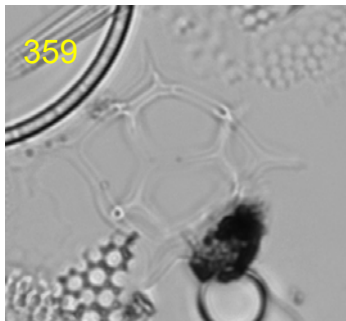
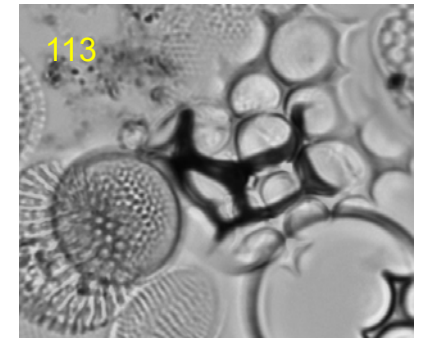
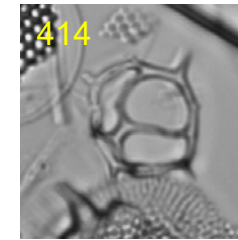
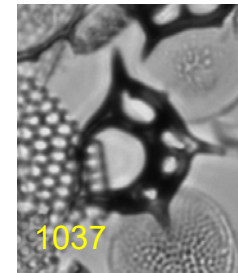
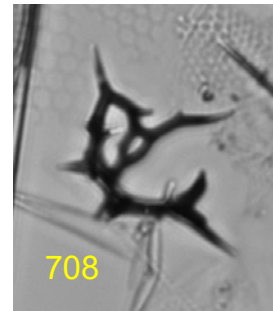
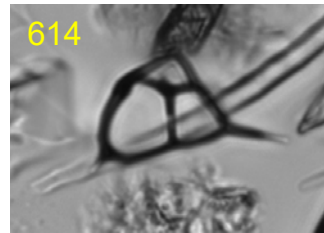
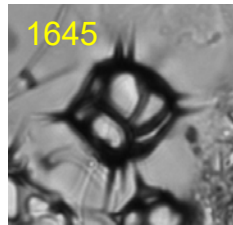


Plate 81

Broken silicoflagellate skeletons

50 μ m

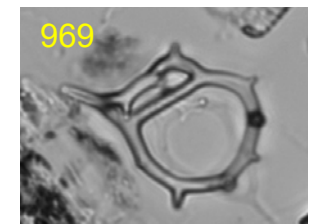
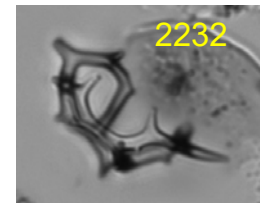
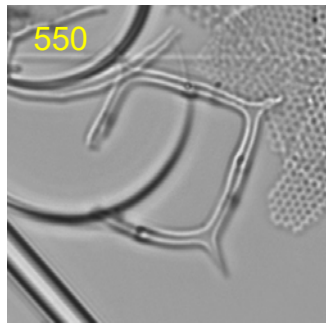
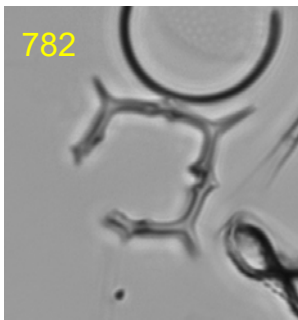
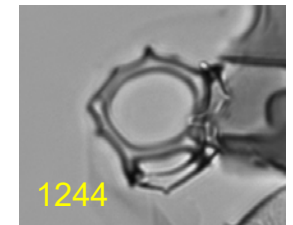
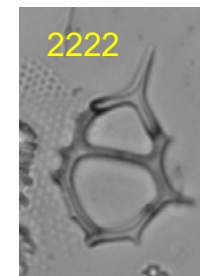
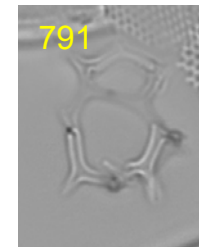
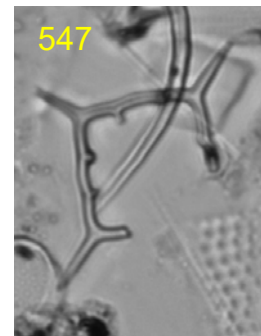
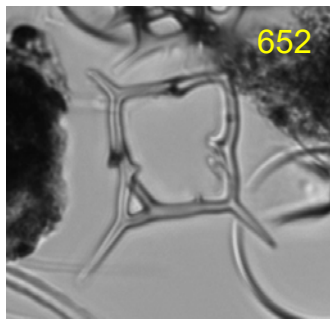
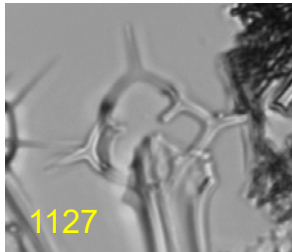
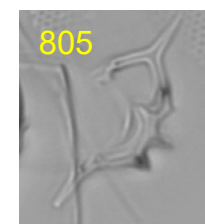
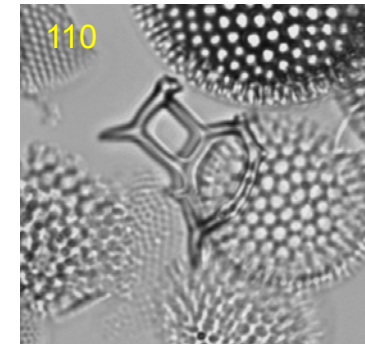
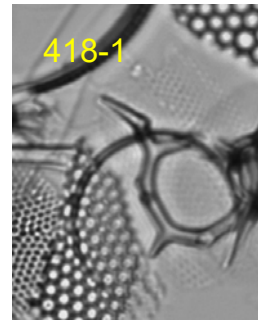
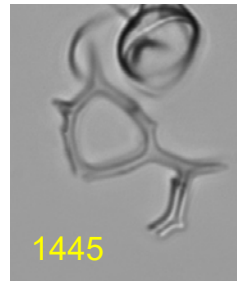
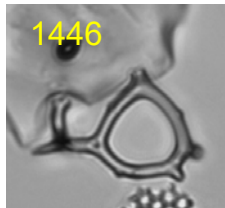
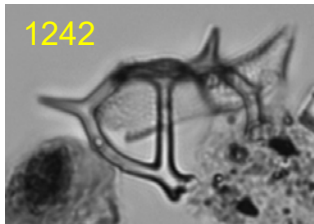


Plate 82

Distephanopsis crux (sensu lato)

50 μ m

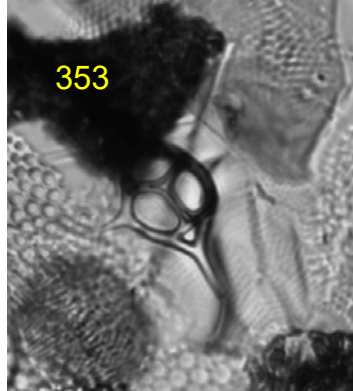
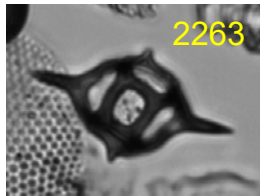
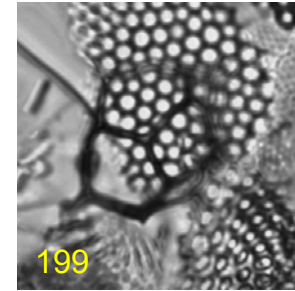
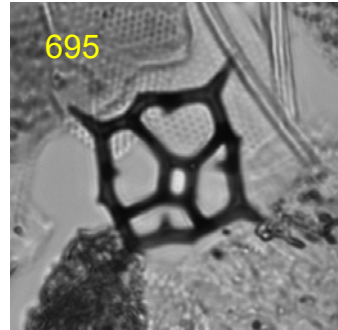
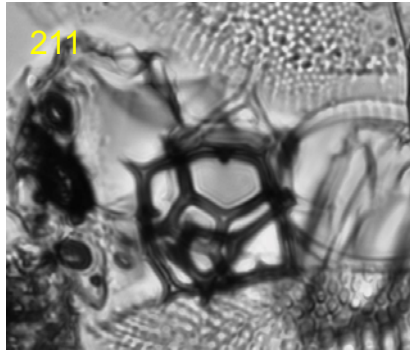
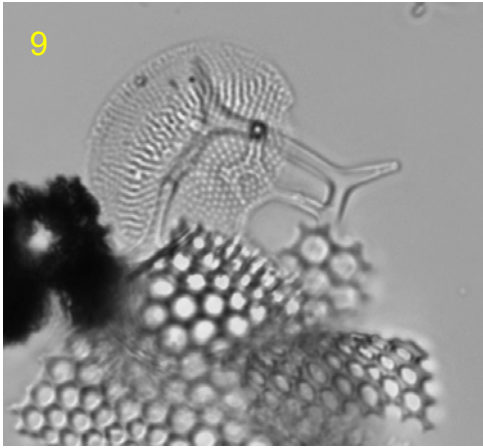


Plate 83

Octactis pulchra

50 μ m

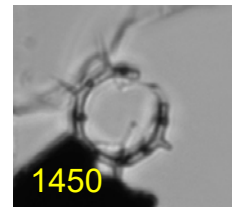
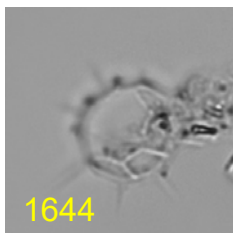
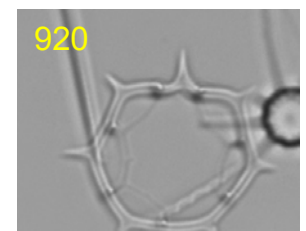
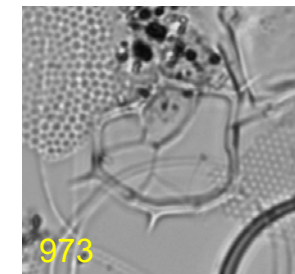
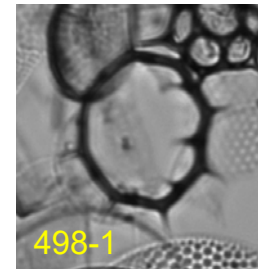
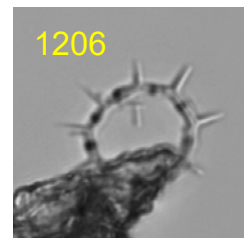
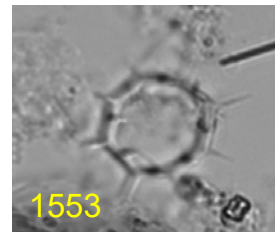
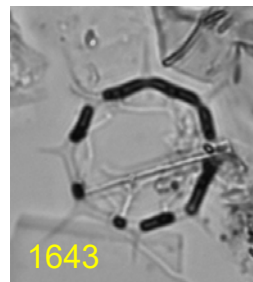
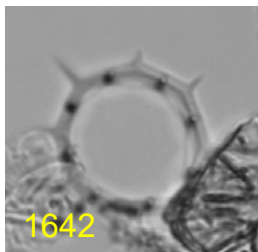
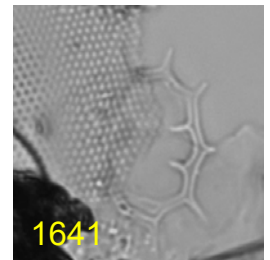
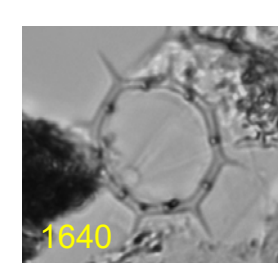
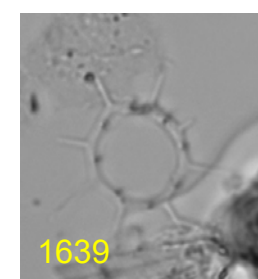
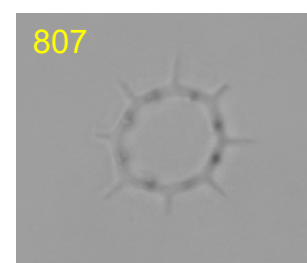
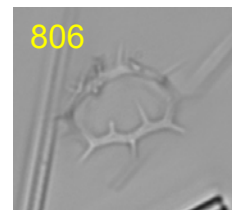
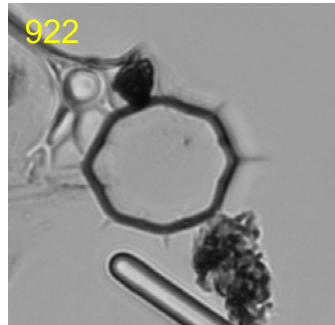
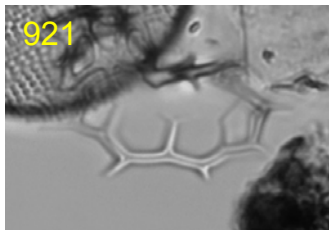
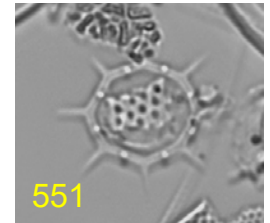
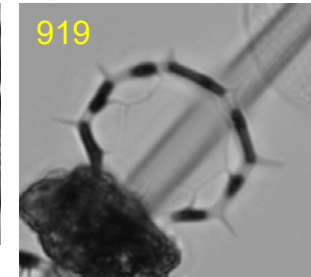
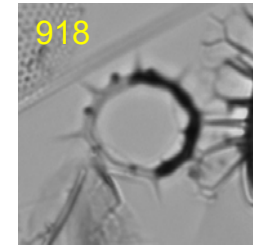
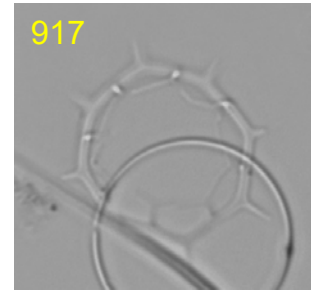
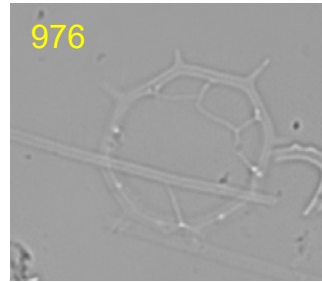
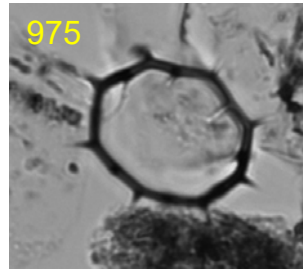
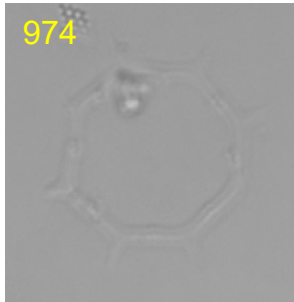
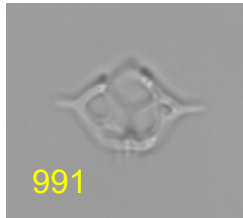
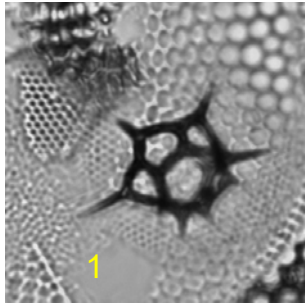


Plate 84

Stephanocha quinquangella ?

50 μ m



Stephanocha speculum

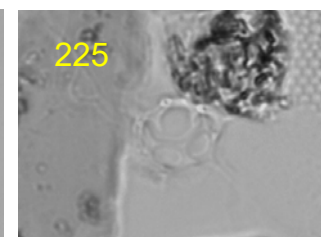
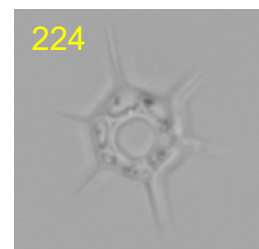
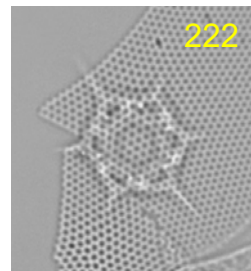
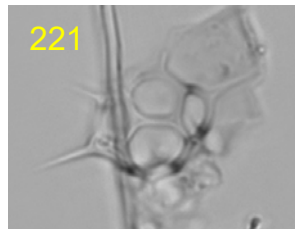
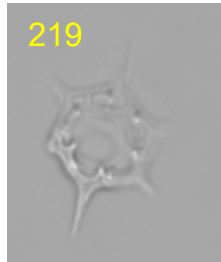
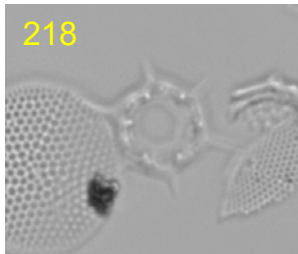
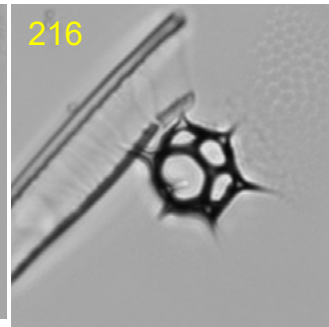
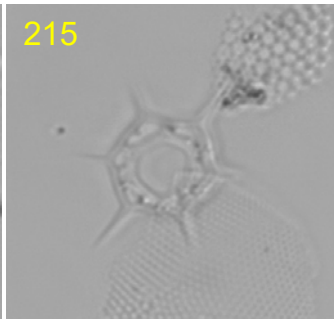
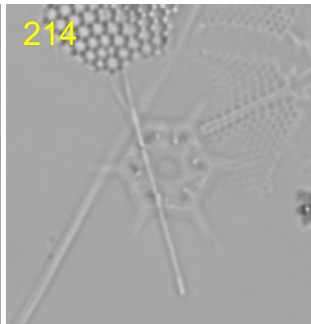
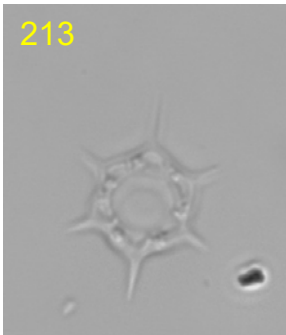


Plate 85

Stephanocha speculum

50 μ m

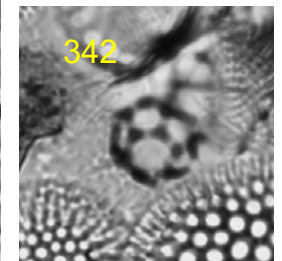
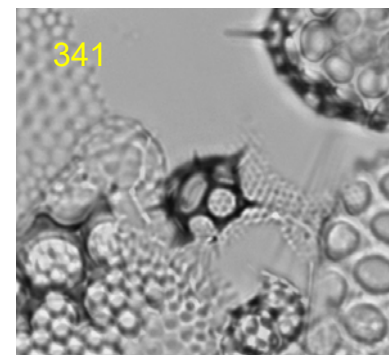
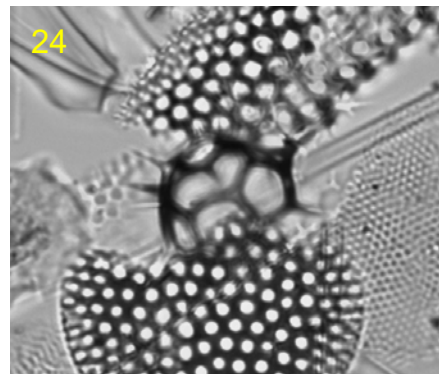
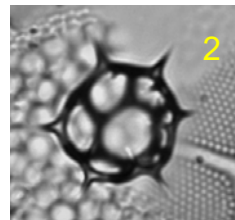
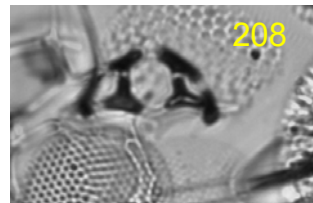
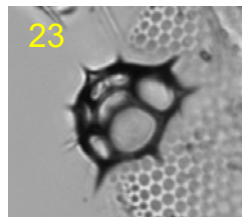
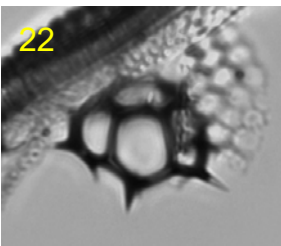
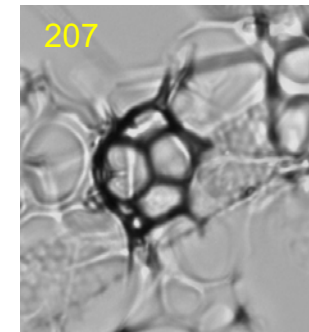
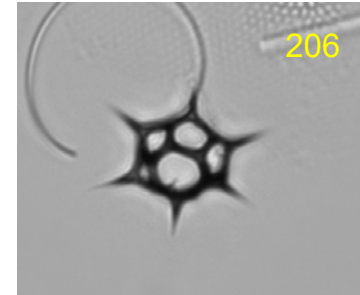
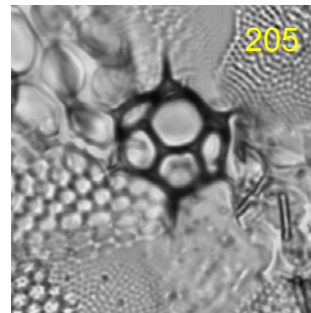
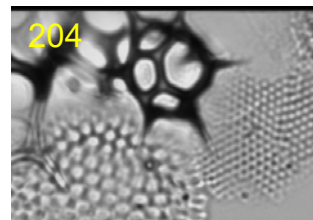
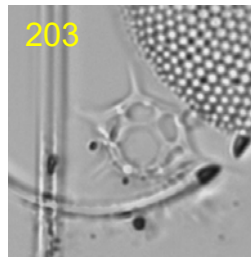
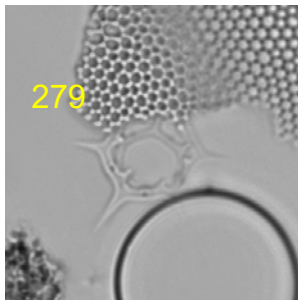
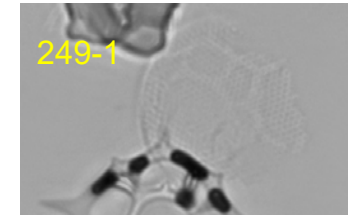
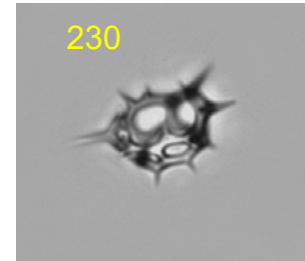
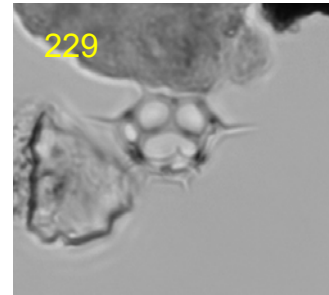
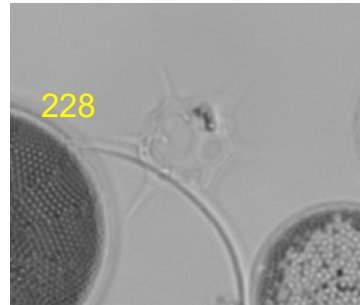
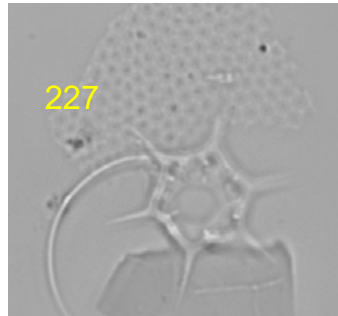
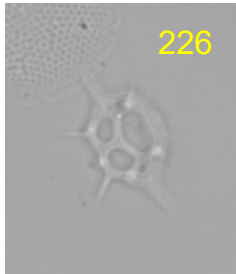


Plate 86

Stephanocha speculum

50 μ m

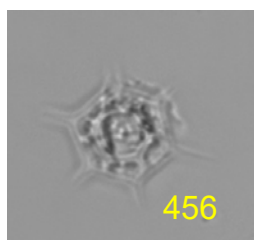
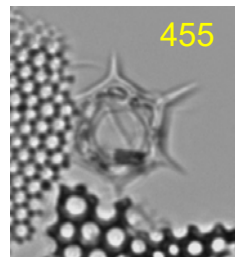
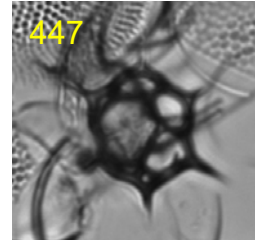
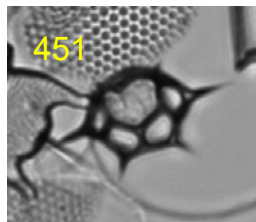
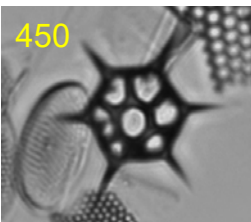
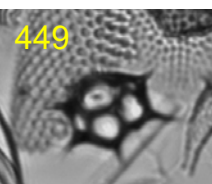
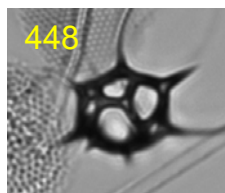
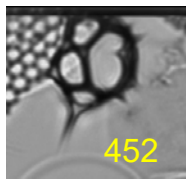
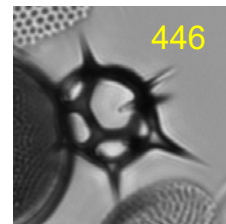
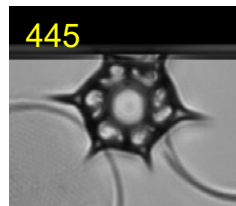
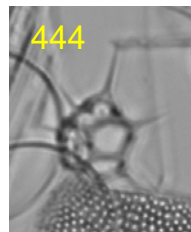
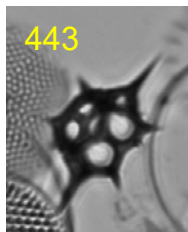
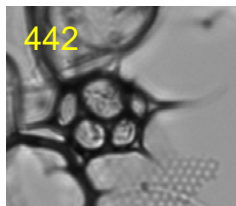
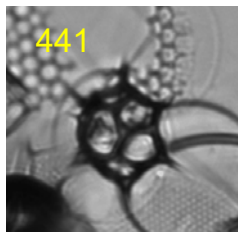
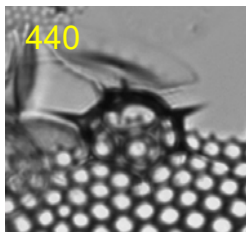
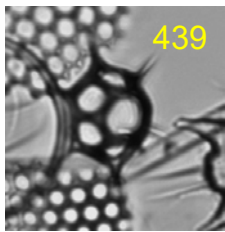
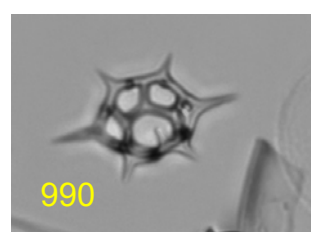
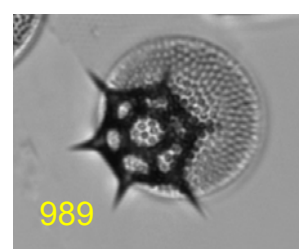
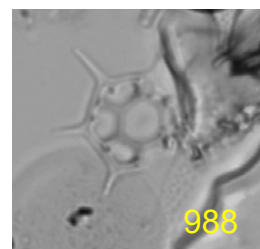
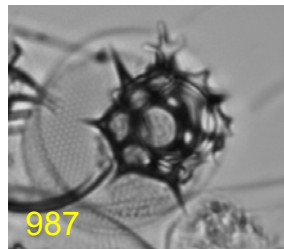
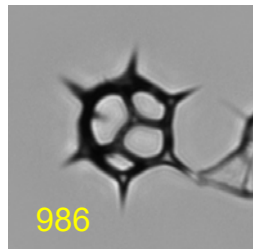
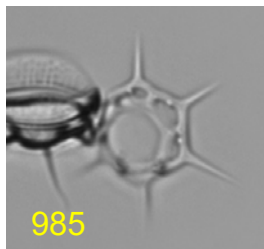
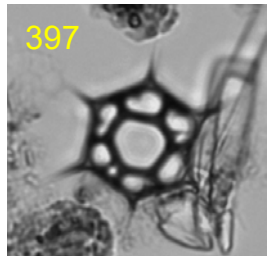
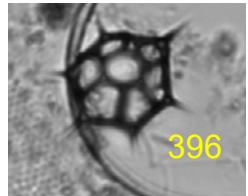
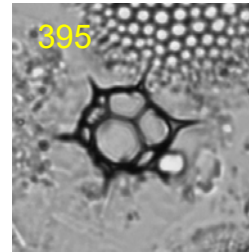
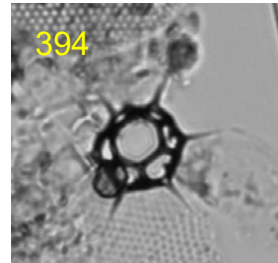
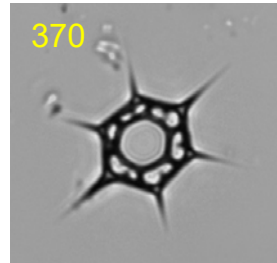
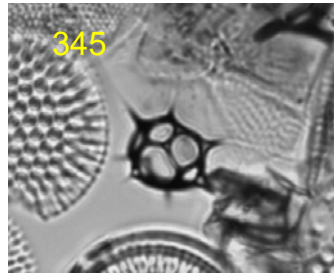
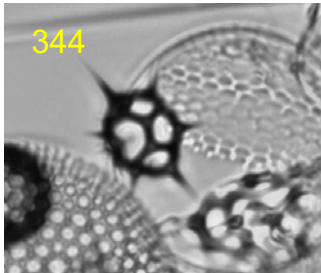
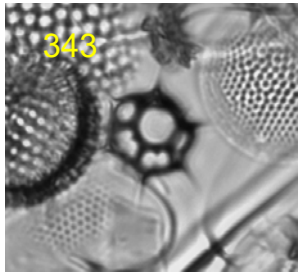


Plate 87

Stephanocha speculum

50 μ m

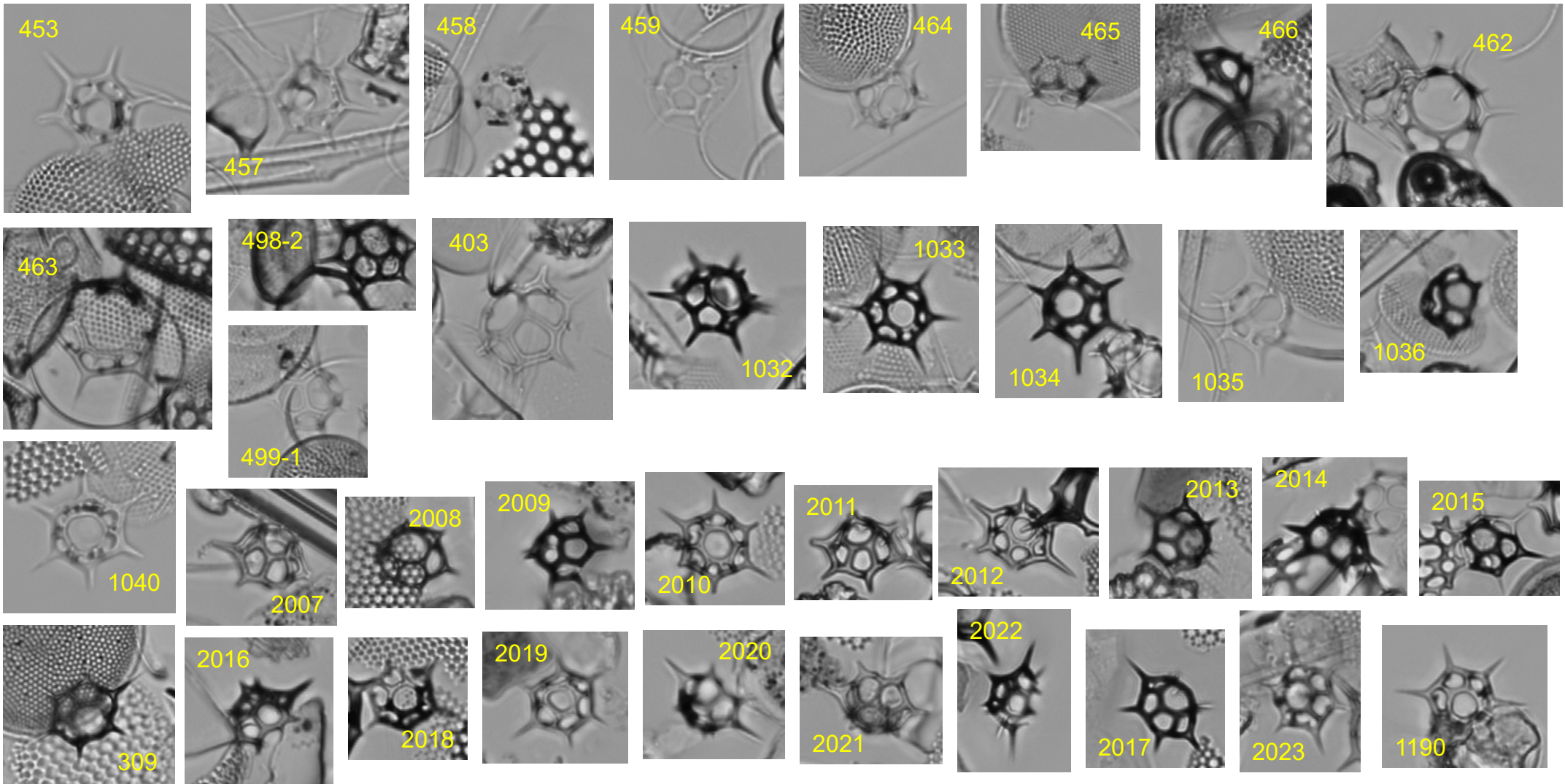


Plate 88

Stephanocha speculum

50 μ m

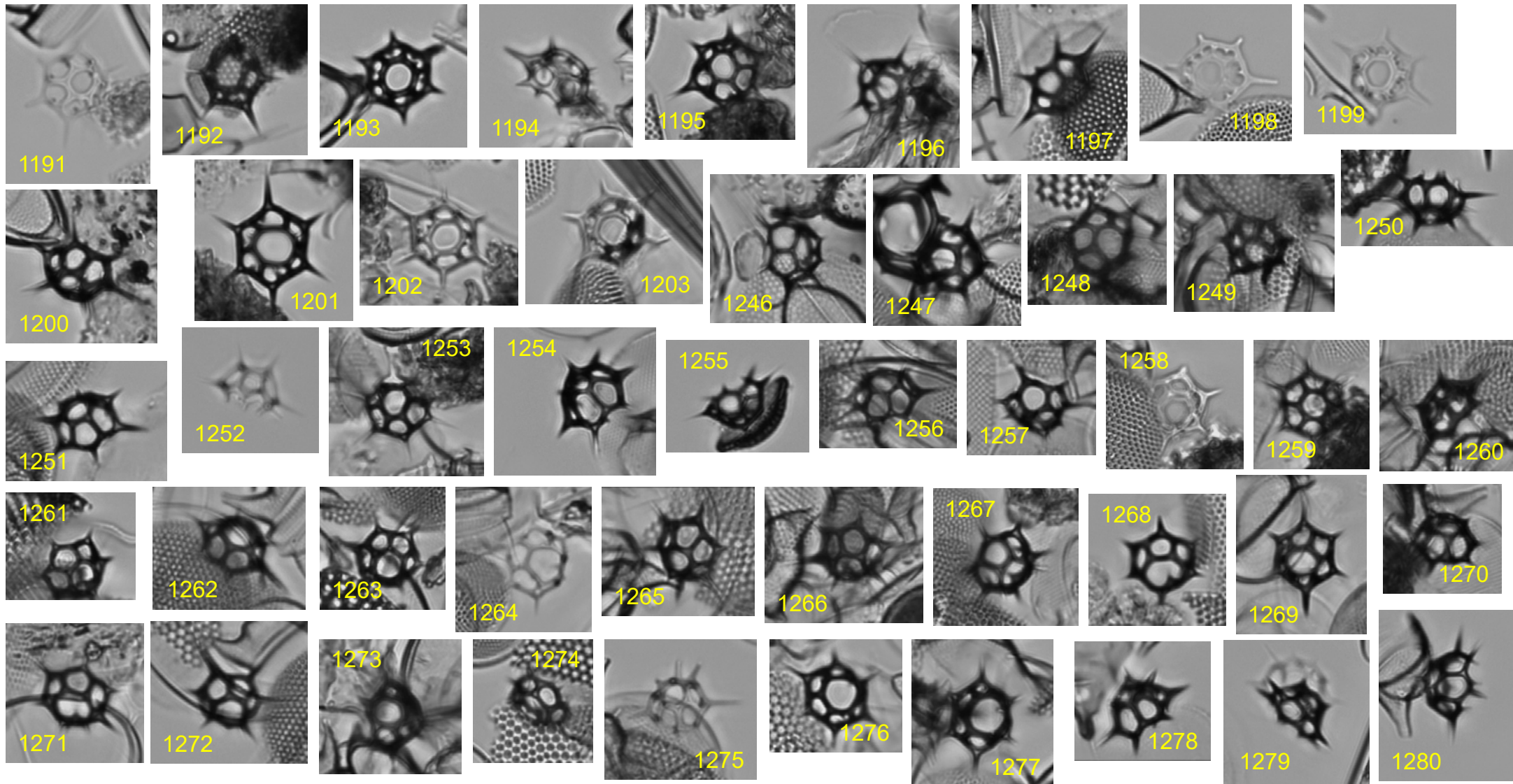


Plate 89

Stephanocha speculum

50 μ m

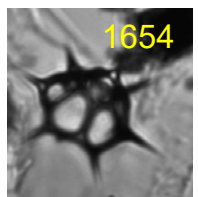
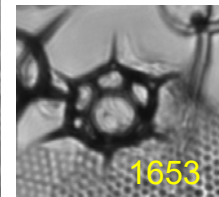
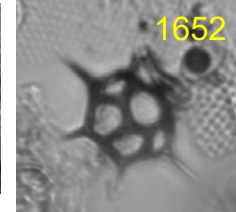
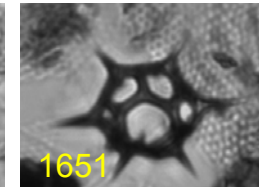
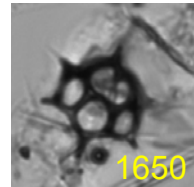
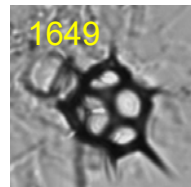
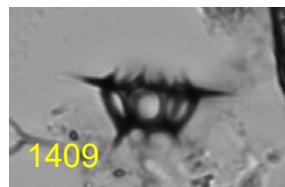
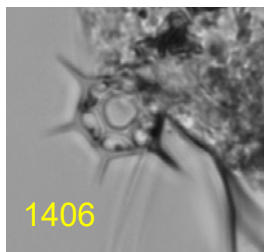
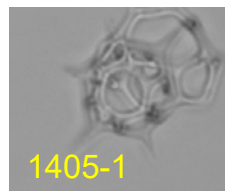
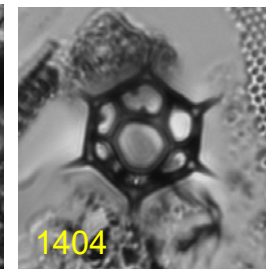
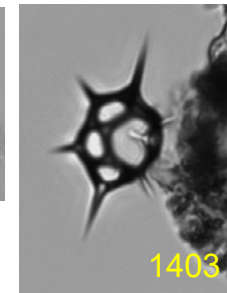
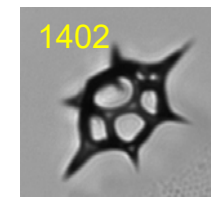
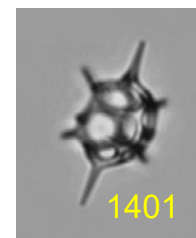
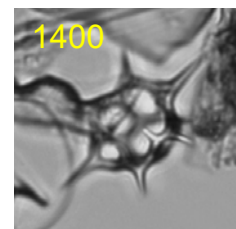
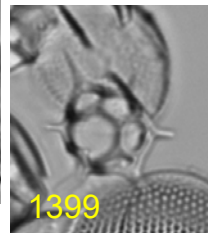
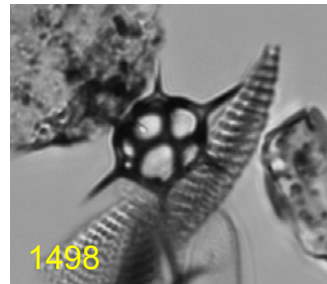
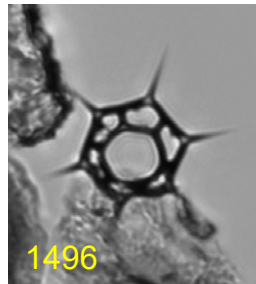
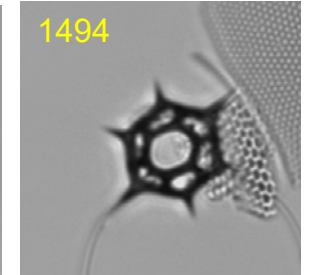
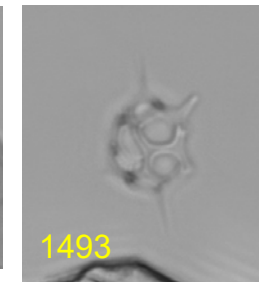
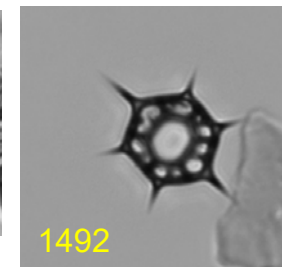
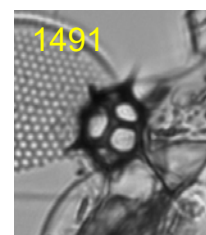
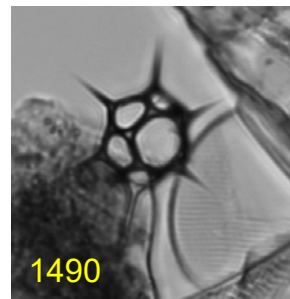
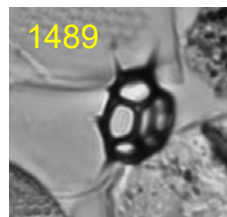
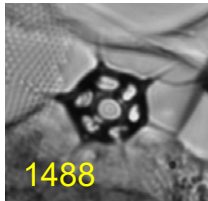
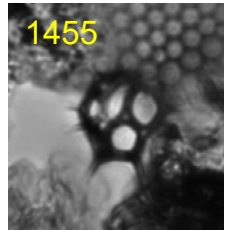
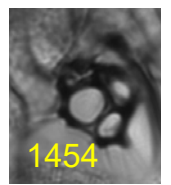
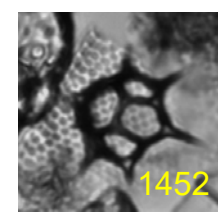
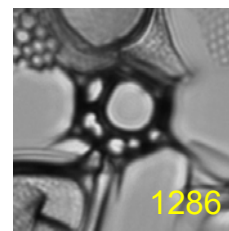
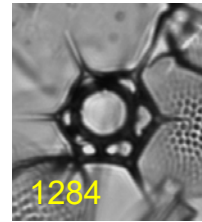
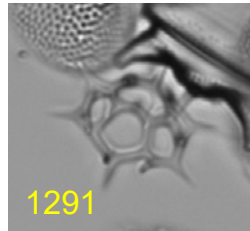
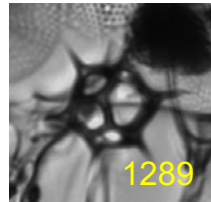
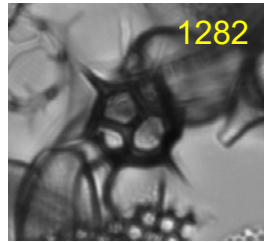
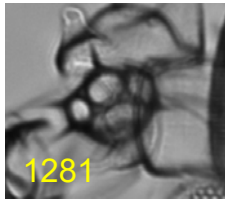


Plate 90

Stephanocha speculum

50 μ m

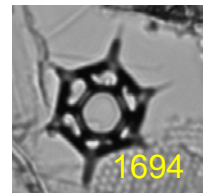
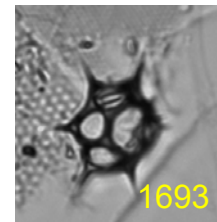
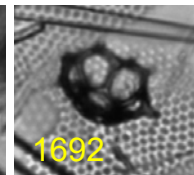
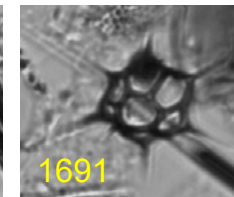
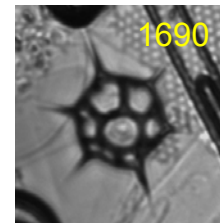
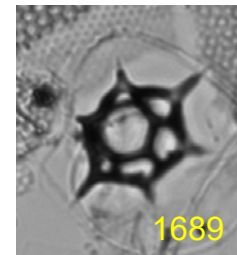
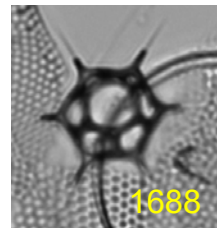
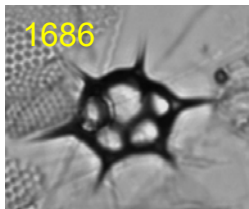
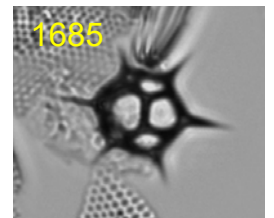
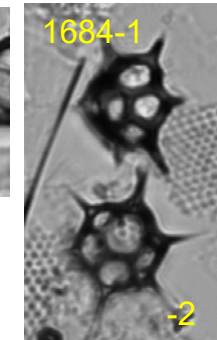
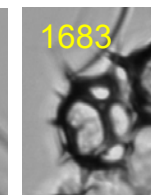
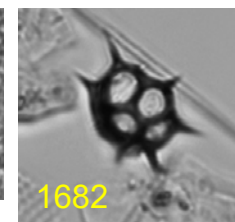
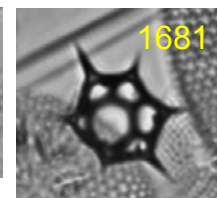
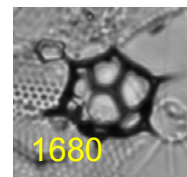
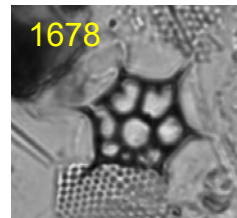
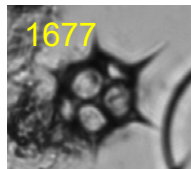
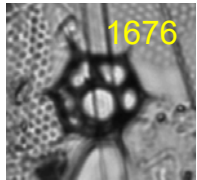
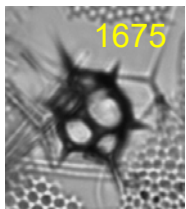
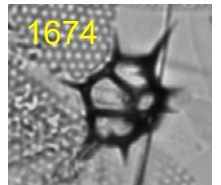
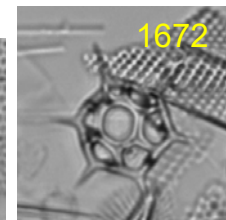
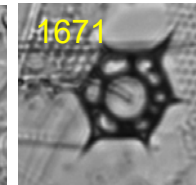
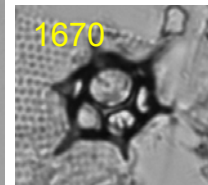
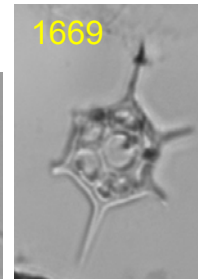
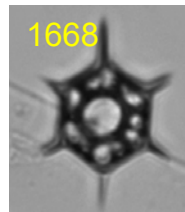
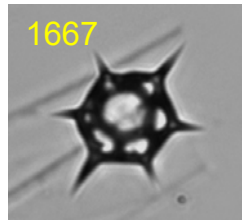
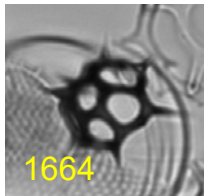
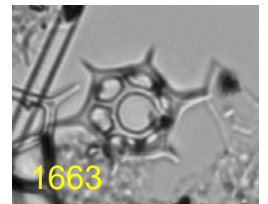
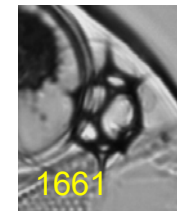
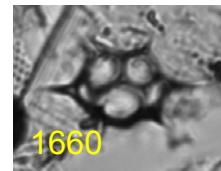
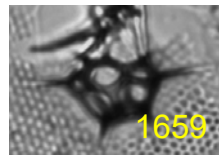
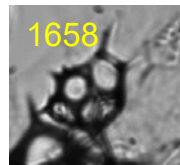
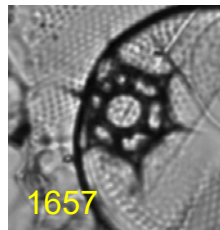
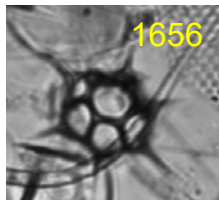
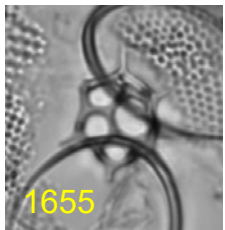


Plate 91

Stephanocha speculum

50 μ m

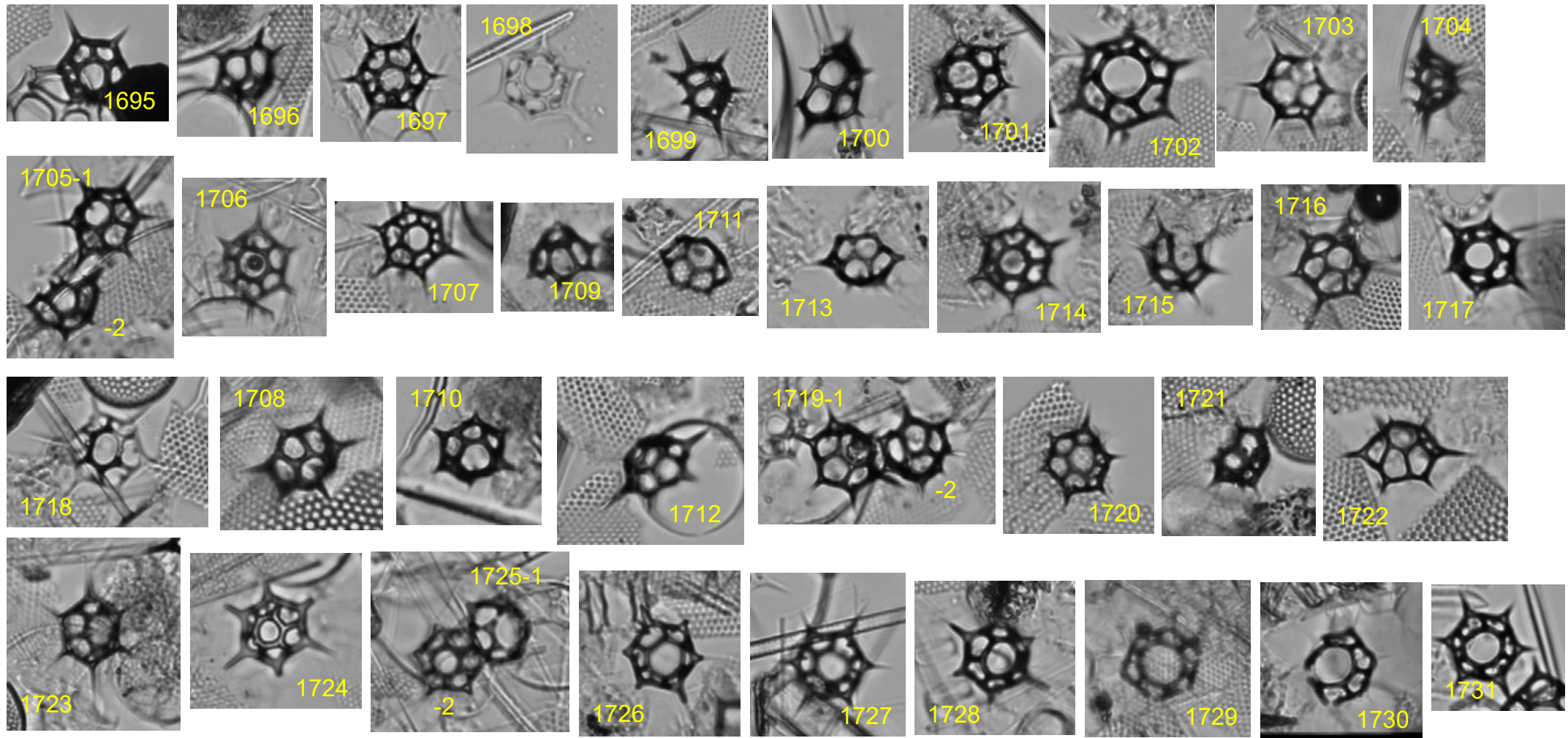


Plate 92

Stephanocha speculum

50 μ m

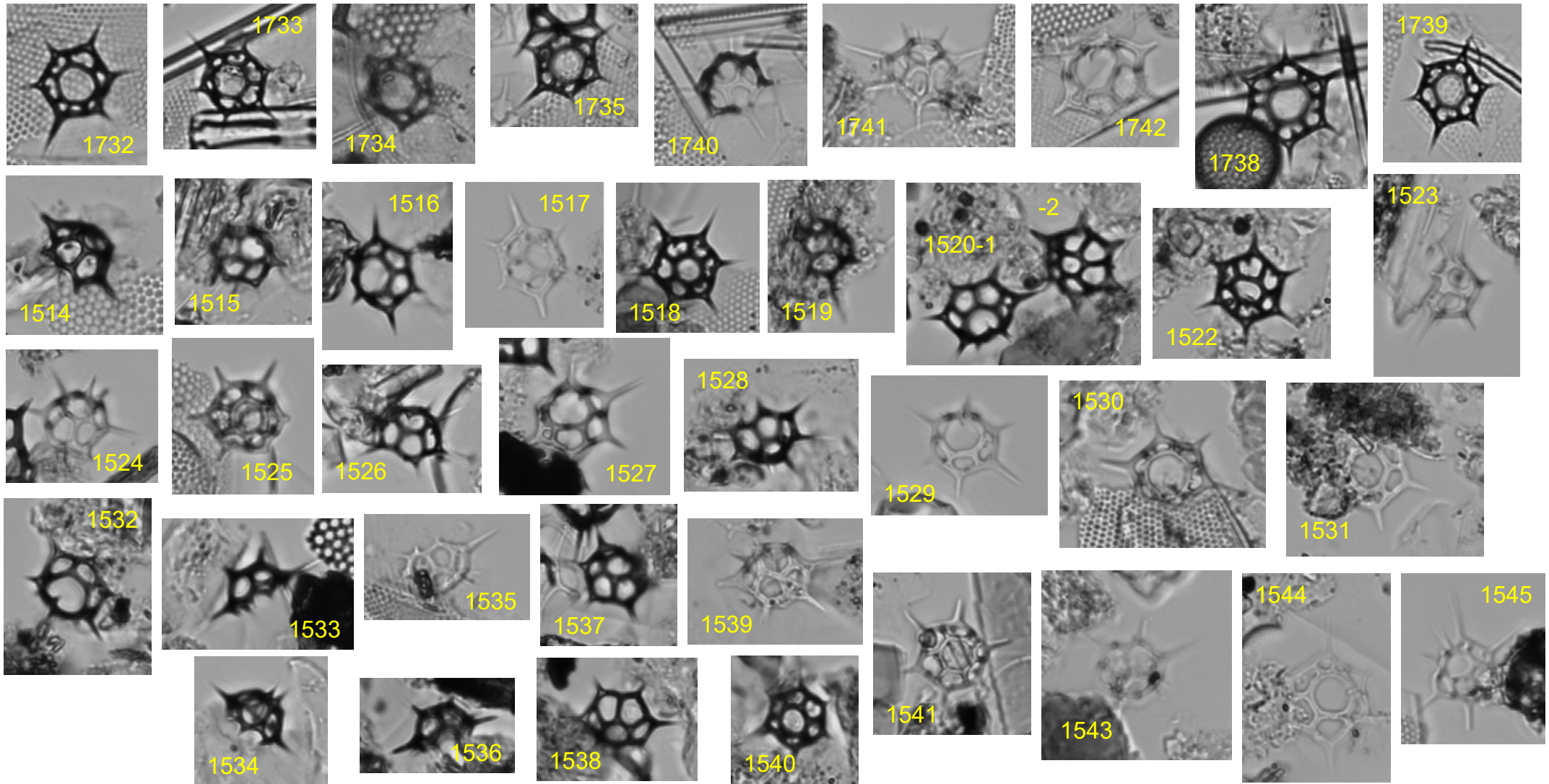
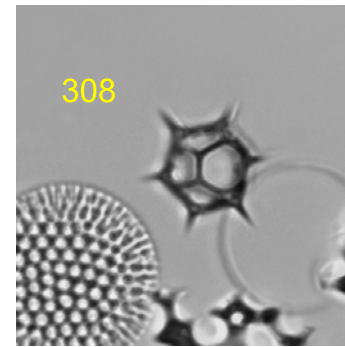
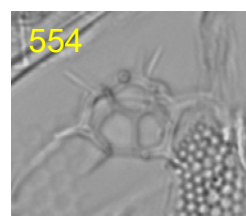
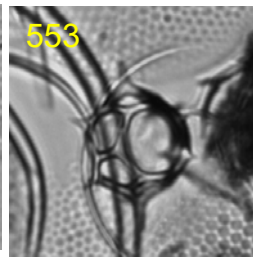
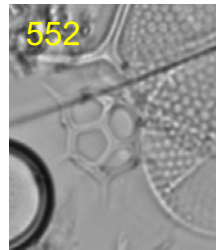
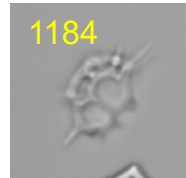
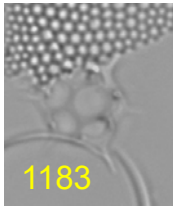
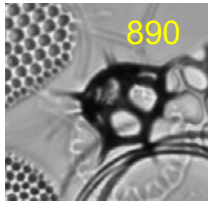
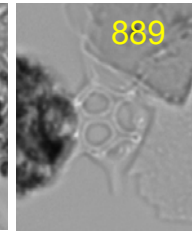
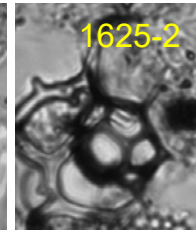
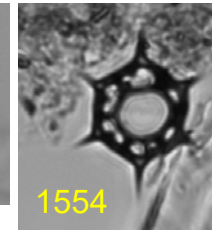
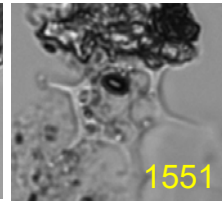
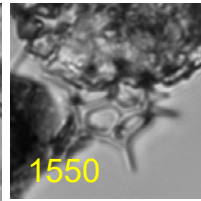
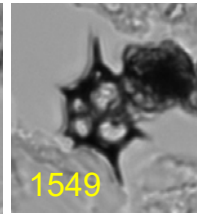
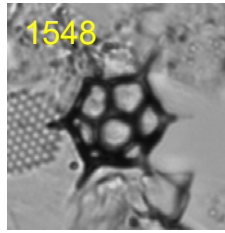
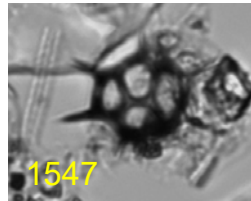
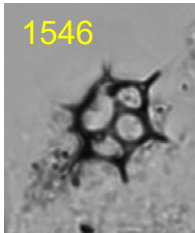


Plate 93

Stephanocha speculum

50 μ m



Stephanocha speculum minuta

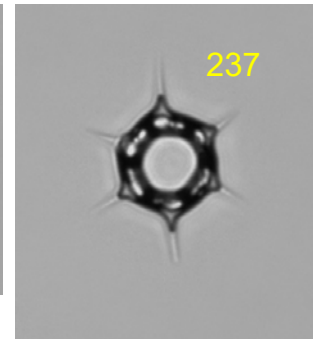
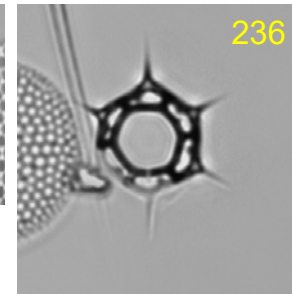
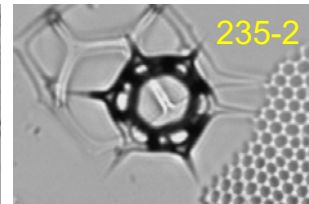
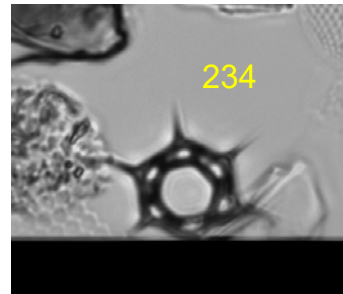
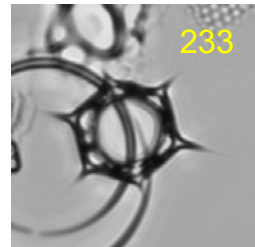
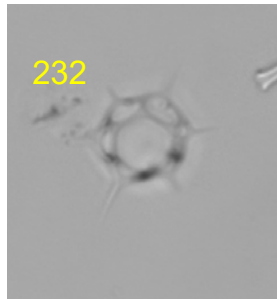
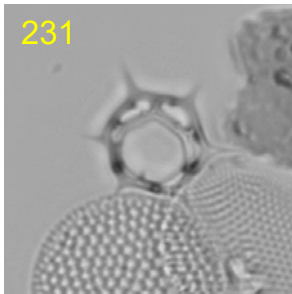
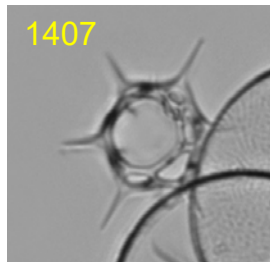
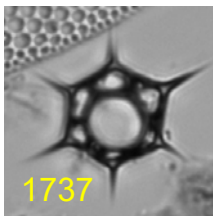
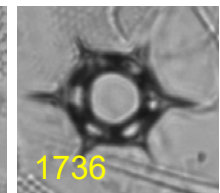
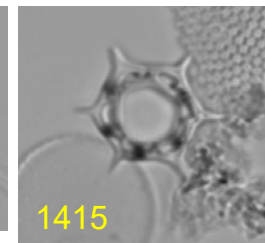
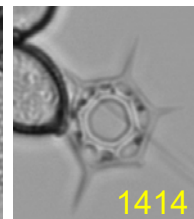
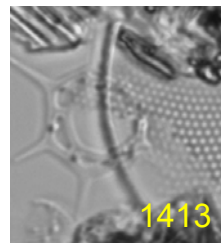
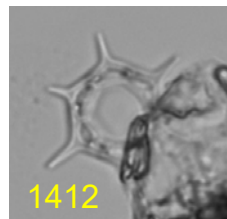
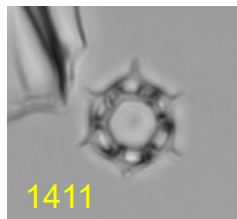
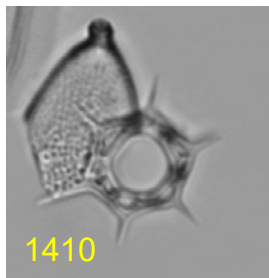
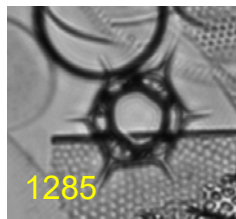
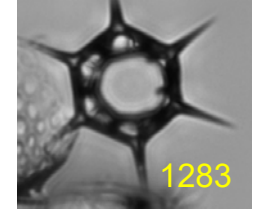
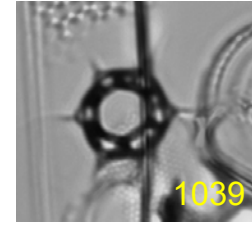
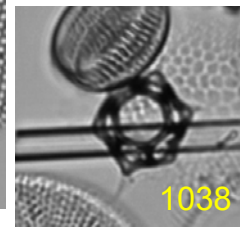
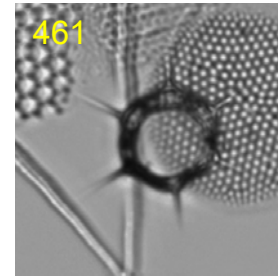
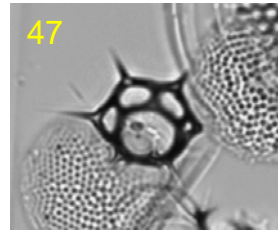
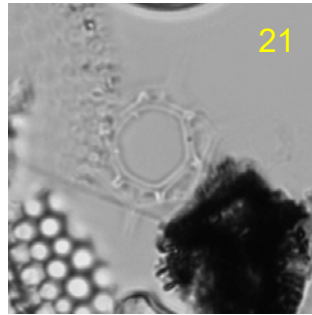
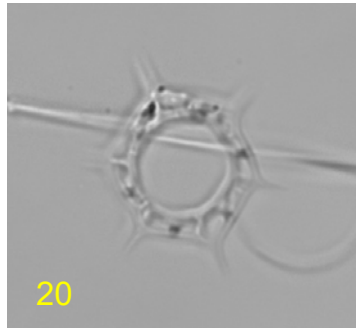


Plate 94

Stephanocha speculum minuta

50 μ m



Stephanocha speculum (heptagonal and octagonal?)

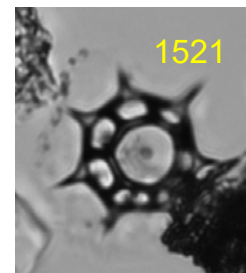
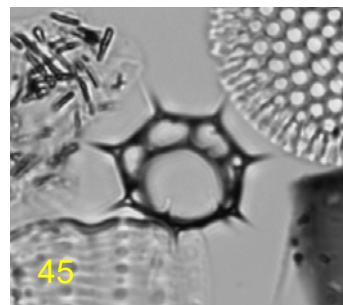
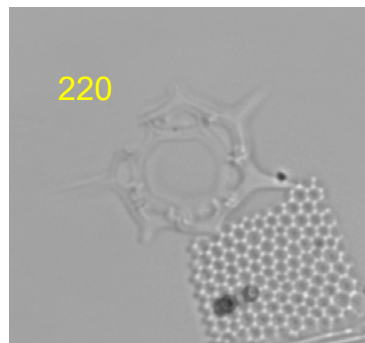


Plate 95

Stephanocha speculum?

50 μ m

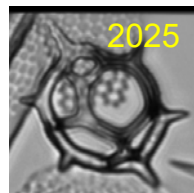
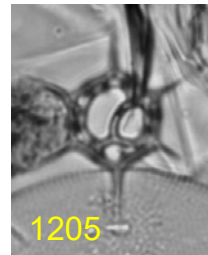
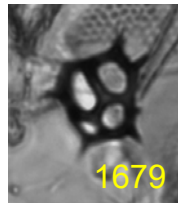
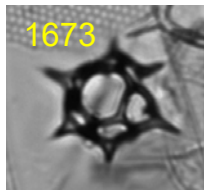
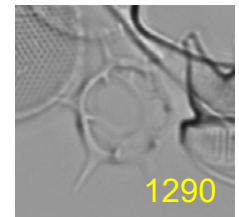
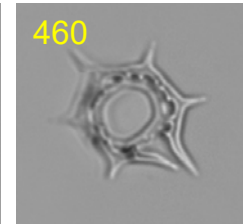
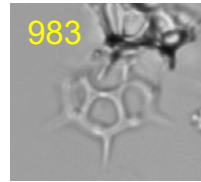
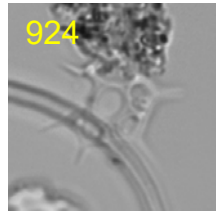
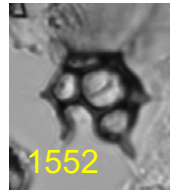
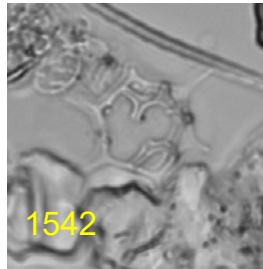
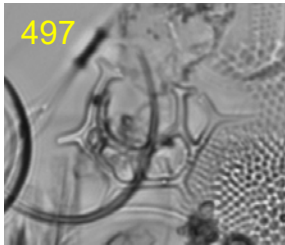
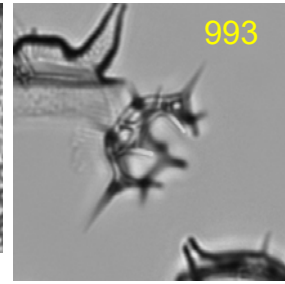
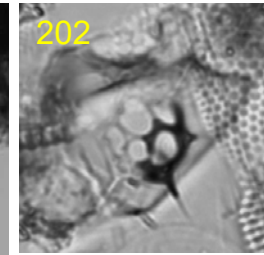
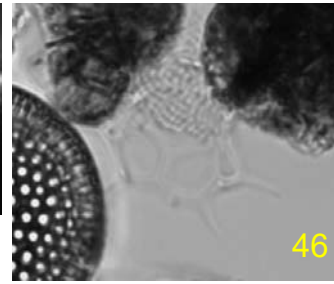
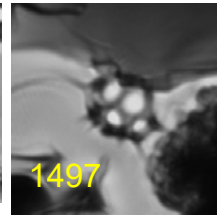
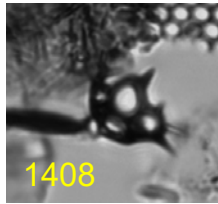
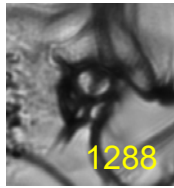
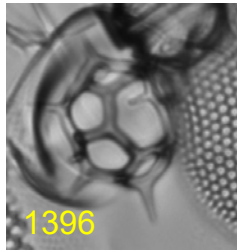


Plate 96

(NOT silicoflagellate skeleton)

50 μ m

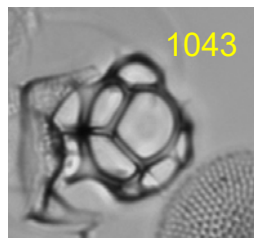
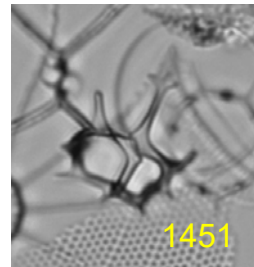
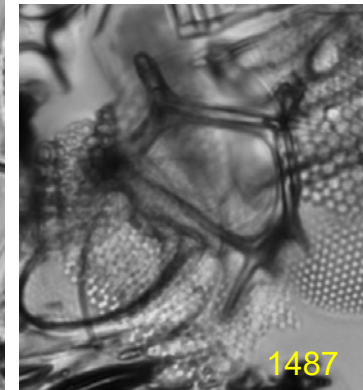
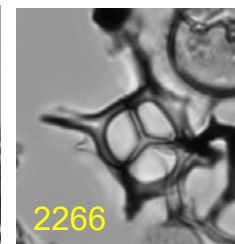
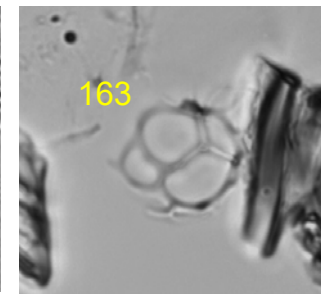
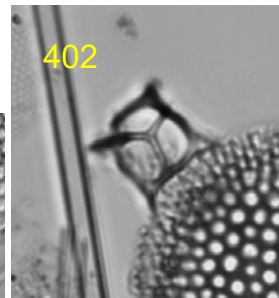
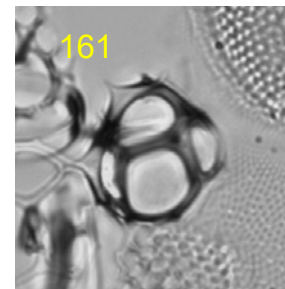
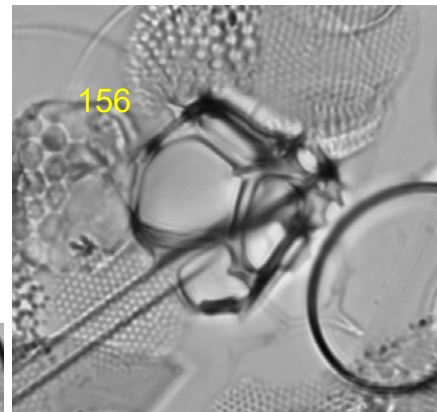
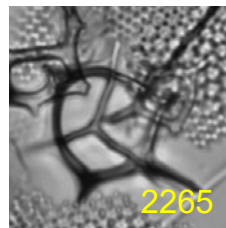
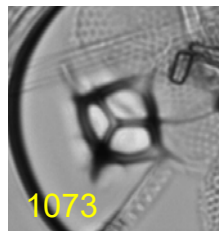
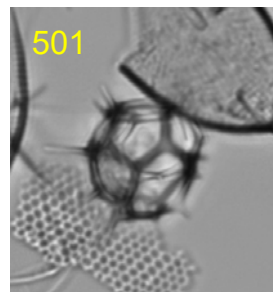
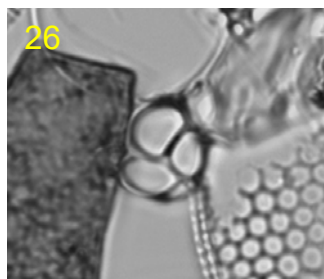
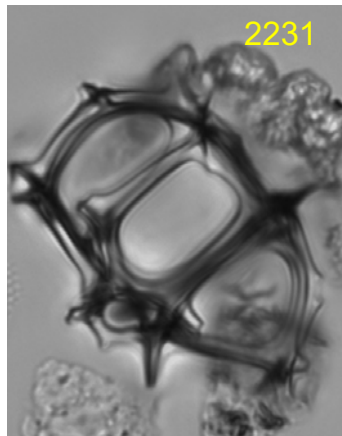
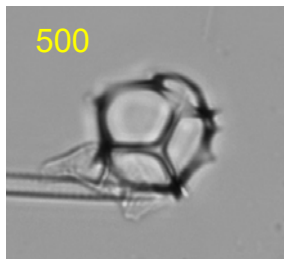
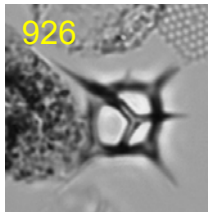
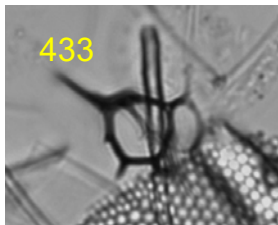
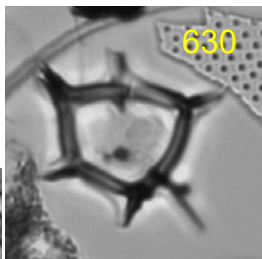
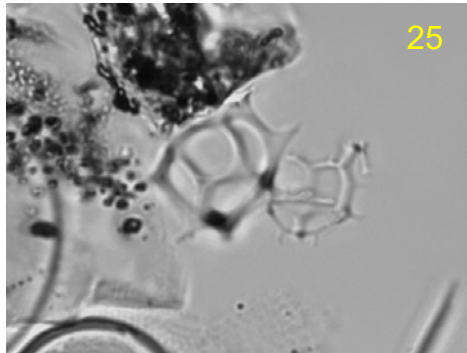
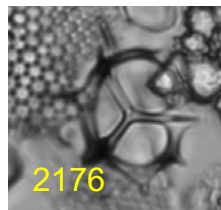
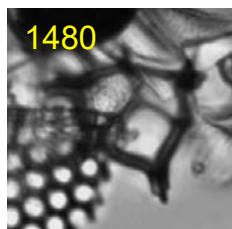
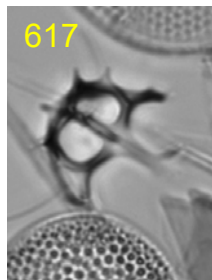
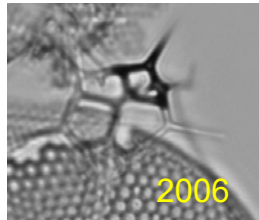


Plate 97 (NOT silicoflagellate skeleton)

50 μ m

