Abstract Formatting Details

1. Title
2. Author(s)
3. Affiliation(s)
4. Body

1. Title

Please do not capitalize all words;
Use italic and capital letters where appropriate.

2. Authors

1. Underline **presenter's last name**

2. a) Order: ***First*** Name ***Last*** Name;
   b) Separate co-authors' names by **comma**;
   c) Last two co-authors' names are separated with "**and**";
   d) Put **numbers** of corresponding affiliations after the last names;

AUTHORS FORMAT:
First Name *Last* Name *Affiliation* Number, *First* Name *Last* Name *Affiliation* Number and *First* Name *Last* Name *Affiliation* Number

3. Affiliation

Affiliations: for **all** co-authors;
and *e-mail address* for a corresponding author only

AFFILIATION FORMAT:
Affiliation Number *Affiliation* Name, City, Country, *E-mail*; *Affiliation* Number *Affiliation* Name, City, Country; *Affiliation* Number *Affiliation* Name, City, Country.

4. Body

no figures
no tables
less than 250 words

An overview of the ecology of *Aplanochytrium* spp. around the western Pacific Ocean

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Labyrinthuleans (Labyrinthulea, Stramenopiles) are recognized as decomposers in marine ecosystems but their nutrient sources are not fully understood. We conducted two-membered culture experiments with labyrinthuleans and diatoms to discover where labyrinthuleans obtain their nutrients from. The results showed that *Aplanochytrium* strains obtained nutrients by consuming living diatoms. *Aplanochytrium* cells did not release digestive enzymes into the medium, but adhered to diatom cells via the tip of their characteristic ectoplasmic net system to obtain nutrients from them. The chloroplast and cell contents of the diatoms shrank and were absorbed, and then the number of *Aplanochytrium* cells rapidly increased as multiple aplanospores were released. To estimate the effect of labyrinthulean organisms including *Aplanochytrium* on marine ecosystem, we explored the dataset generated by the Tara Oceans Project from a wide range of oceanic regions. The average proportion of all labyrinthulean sequences to diatom sequences at each station was about 10%, and labyrinthulids, oblongichytrids, and aplanochytrids were the major constituent genera, accounting for more than 80% of labyrinthuleans. Therefore, these groups are suggested to greatly affect the marine ecosystem. There were positive correlations between aplanochytrids and phototrophs, green algae, and diatoms. At many stations, relatively large proportions of aplanochytrid sequences were detected in the size fraction larger than their cell size. This implied that *Aplanochytrium* cells increased their particle size by adhering to each other and forming aggregates with diatoms that are captured by larger zooplankton in the environment, thereby bypassing the food web pathway via aplanochytrids to higher predators.