

《北极的雪草莓般粉嫩却令人担忧》

导读:新研究发现，雪藻和其他喜冷物种之间发生化学反应导致极地的雪呈现红色，加剧气候变化。



Pink snow was a high-latitude curiosity described by Arctic explorers.

????????????????????

Biologists know now that the red hue is the result of a chemical reaction within the algae *Chlamydomonas nivalis* and other cold-loving species.

????????????????????

These algae are normally green, but as they start to suck up ultraviolet rays, they turn red.

????????????????????

The unusual phenomenon is also found in high altitudes, and sometimes called watermelon snow or blood snow.

????????????????????

According to a new study, the algae cause Arctic melts, which are already happening at an unprecedented pace because of climate change, to worsen.

????????????????????

In their paper published Wednesday in the journal Nature Communications, the researchers examined 40 red-snow samples, representing 16 glaciers and snowfields from four Arctic countries: Greenland, Norway, Sweden and Iceland.

????????????????????40????????????????????16??????????

The red algae darkens the snow, they found, causing it to melt faster than its white counterpart.

????????????????????

Specifically, the European scientists measured the red snow's albedo, the proportion of light reflected from a surface.

????????????????????

It is a property of color: Dark objects, by definition, absorb a higher percentage of incoming light. Because light is energy, objects that take in more light become hotter. Conversely, lighter-colored objects reflect more energy and stay cooler.

????????????????????

The presence of red algae, on average, decreased albedo by 13 percent over the duration of the melting season.

????????????????13%????

"Our results point out that the 'bio-albedo' effect is important and has to be considered in future climate models," Lutz said in a statement.

"????????'?????'????????????????????"Lutz????????

The researchers note that current climate-change models account for details such as black carbon from forest fires and Saharan dust. The scientists suggest algae, too, needs to be considered.

??

Exactly how large or small a role algae plays in melting glaciers is unclear, and the scientists plan to study it in more depth.

??

But the geobiologists are concerned that the decrease in albedo may act like a positive feedback loop.

????????????????????????????????????

As more algae bloom, more snow thaws — and, nourished by the unfrozen water, even more of the microorganisms are able to grow.

????????????????????????——????????????????????????????????

