参考译文

Ice Age Temperatures Help Predict Future Warming

冰河时代温度有助于预测未来气候变暖

How much colder was it at the peak of the last ice age? That’s a question scientists have been trying to answer for decades. And now they have a new best guess: 11 degrees Fahrenheit.

最后一个冰河时代的顶峰，气温要低多少?这是科学家们几十年来一直试图回答的问题。现在他们有了一个新的最佳猜测:11华氏度。

That’s a lot, especially considering it’s a global average. Parts of North America were much colder.

这是一个很大的数字，尤其是考虑到这是全球平均水平。北美部分地区更冷。

“First of all, large areas of the northeast were completely under ice. So that would have been pretty chilly; you wouldn’t be living there. But even here in the west, right, where we weren’t covered by an ice sheet, it would have been something like 20 degrees Fahrenheit lower.”

“首先，东北大部分地区完全被冰覆盖。这会很冷;人们就不会住在那里了。但即使在西部，没有被冰盖覆盖的地方，气温也会低20华氏度左右。”

Jessica Tierney, a paleoclimatologist at the University of Arizona. Tierney and her colleagues spent years compiling information about Earth’s climate at the height of the last glacial period, about 20,000 years ago.

亚利桑那大学的古气候学家杰西卡·蒂尔尼说。蒂尔尼和同事花了数年时间收集大约2万年前最后一个冰河时期的地球气候信息。

“We obviously don’t have thermometers in the glacial period, so we have to instead look for these kinds of stand-in indicators.”

“在冰川时期，我们显然没有温度计，所以我们不得不寻找这种替代指标。”

One kind of stand-in is plankton that lived in the ocean and got preserved in marine sediments. Scientists use these fossils to infer past ocean temperatures by studying changes in the chemistry of their shells and in the kinds of fats and other compounds they produced.

一种替代生物是浮游生物，它们生活在海洋中，并被保存在海洋沉积物中。科学家们通过研究化石外壳的化学变化以及它们产生的脂肪和其他化合物的种类，来推断过去的海洋温度。

Tierney and her team then combined these data with a climate model to give a full picture of glacial conditions.

蒂尔尼和团队随后将这些数据与一个气候模型结合起来，给出了冰川条件的全貌。

“It’s actually a technique used every day in weather forecasting. What’s new is we’re using it for the past, not the future. We are actually hindcasting, if you will, rather than forecasting.”

“这实际上是一种每天都在天气预报中使用的技术。新颖之处是我们用它来表示过去，而不是将来。如果你愿意，我们实际上是在倒腿，而不是在预测。”

The study is in the journal Nature.

这项研究发表在《自然》杂志上。

The findings suggest that the last ice age was significantly colder than scientists thought. And that matters today.

这一发现表明，上一个冰河期比科学家们想象的要冷得多。这在今天很重要。

“The reason that we want to know how cold the last ice age is, beyond the fact that it’s just a cool thing to know, is that we can actually use it to understand a quantity called climate sensitivity.”

“我们之所以想知道最后一个冰河世纪有多冷，除了知道这个事实很酷之外，是因为我们实际上可以用它来了解一个气候敏感性。”

Climate sensitivity is a measure of how much the planet warms in response to rising greenhouse gases. In this long-ago case, we know how much carbon dioxide concentrations increased between the last ice age and preindustrial period from air bubbles trapped in ancient ice. And now we have Tierney’s new results on the temperature difference between glacial and interglacial conditions. Together, these data suggest that low-end estimates of climate sensitivity—in which greenhouse gases don’t cause much warming—are unlikely to be correct.

气候敏感性是衡量全球因温室气体增加而变暖程度的指标。在这个很久以前的例子中，我们知道在最后一个冰河时代和前工业时代之间二氧化碳浓度增加，这是由古冰中的气泡造成的。现在我们得到了蒂尔尼关于冰期和间冰期温度差异的新结果。综上所述，这些数据表明，对气候敏感性(即温室气体不会造成太大变暖)的低端估计不太可能是正确的。

“If we had low climate sensitivity, then we would be less worried, you know, about what all the CO2 emissions are going to do. And so we can kind of rule that possibility out—that’s not great news.”

“如果气候敏感性较低，那么我们就不会那么担心，二氧化碳排放会造成什么后果。所以我们可以排除这种可能性——这不是什么好消息。”

听力原文

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