参考译文

Cold Snap Shapes Lizard Survivors

寒潮塑造蜥蜴幸存者

In January 2014, an epic cold wave swept across the southeast—a "snowpocalypse" so severe that thousands of drivers in Atlanta abandoned their cars on icy highways and Interstates.

在2014年1月，一场被称为“末日暴雪”的大寒潮席卷了整个东南地区，以至于亚特兰大上千名司机逃离了在高速公路和州际公路上的车子。

"And I'm from the south, I was raised in South Carolina, and I can tell you that in the South we do not do cold—at all."

“我来自南方，我是在南卡罗来纳州长大，我能告诉你，在南方从来没有这么冷过。”

Shane Campbell-Staton was watching it all unfold from Harvard, where he was getting his PhD. He'd just wrapped up his last field season in Texas, studying the green anole lizard. And as he was scanning photos of the storm, he came across something unexpected: a photo that included his research subject.

Shane Campbell-Staton在哈佛看到了这些资料，他取得了哈佛博士学位。Shane刚结束了德克萨斯州野外的绿色变色龙—蜥蜴的研究课题。他在扫描那次风暴的照片时，偶然间发现了这一意料之外的状况：一张照片中竟然出现了他的研究课题。

"There was this one picture of a green anole that was upside down, dead in the snow. And it was sort of a Eureka moment. And I thought to myself, well maybe I should go back out and see if these populations I'd been studying, if they showed any sort of response to this pretty extreme weather event in the south."

“有一张照片中出现了一只死在雪地里的变化蜥蜴。那是一种有着说不出的感觉，我当时想，可能我应该回去看看，我一直研究着的蜥蜴物种，看看它们对南方的极端天气是否有反应。”

And so that's what he did. Because here's the bit of serendipity: he'd actually been studying the cold tolerance of different populations of these lizards. And the cold snap had just delivered the perfect experiment—a chance to see natural selection in action.

然后他就那样做了。因为，这次研究有点意外收获：实际上，他一直在研究这种蜥蜴中不同种群的耐寒性课题。而这次寒流恰巧给了他一次做实验的完美机会——一可以看看自然选择发生作用的机会。

"So I went back in April right after these winter storms had subsided. And I noticed that in the south, the southernmost population, the survivors of the storm were able to maintain function at significantly colder temperatures than the population before the storm. And this ability to maintain function at colder temperatures is something we typically see much farther north."

“因此，当4月份冬季风暴消退后，我马上回那去了。我看到，在南部最南端的种群中，与风暴来临之前相比，经历过风暴的蜥蜴，能够在温度骤降的环境中生存下来。而在更冷的温度下生存的能力，我们通常只有在更偏北的种群里才能见到。”

He did genetic analyses too: and found that the genes switched on in the surviving southern lizards overlapped with genes more typically turned on in their cold-hardy northern cousins. And the survivors also carried variations in their DNA that more closely matched northern lizards. So three things: cold tolerance, gene expression, and even the gene variants the southerners carried, suggested this winter storm had indeed caused selection on the southern lizards. The analysis is in the journal Science.

他还对蜥蜴做了基因分析：他发现，在生存下来的南方蜥蜴身上，其携带的基因与抗寒能力较强的北方蜥蜴的基因相同。而且，活下来的南方蜥蜴还携带了更接近北方蜥蜴的基因变异功能。因此，耐寒性、基因传达、甚至南方蜥蜴所携带的基因变异表明，这场冬季寒潮确实导致南方蜥蜴对自然选择做出反应。这项分析报告发表在《科学》杂志上。

Campbell-Staton, now at the University of Illinois and the University of Montana, is quick to mention that this isn't quite evolution yet. It's just one generation—he hasn't yet seen these traits passed down to another set of lizards. That's his next investigation.

目前在伊利诺伊大学和蒙大拿大学的Campbell-Staton很快就指出，这还没有完全进化完。这种变化只表现在一代蜥蜴身上——他还没有看到其它蜥蜴身上的变化。而这将是他的下一个研究项目。

As for whether this is a good thing, the fact that some lizards were able to summon the ability to survive cold? "The answer is both yes and no potentially." Yes, because if another cold wave rolls through, the surviving southern population will be better prepared—more cold-tolerant.

至于一些蜥蜴有耐寒能力，这是不是一件好事呢?“答案既是肯定的，也是否定的”是的，因为如果再发生一次寒潮风暴，能活下来的南方蜥蜴将会做好防御——因为它们的耐寒性增强了。

But: "We know that selection comes at a cost. Which is death. So the individuals that died during this event may have had genetic variants that would have allowed them to survive a heat wave, or a drought, or some other extreme event. And now those lineages are essentially gone."

但是:“我们知道，自然选择是要付出代价的，代价即死亡。因此，在这次事件中，死亡的那些蜥蜴所携带的遗传变体，是在热浪、干旱或其他极端事件中存留的。而现在这些血统基本上消失了。”

The long term forecast for the 21st century includes more of these extreme events—and more severe ones at that. So species that lose their genetic Swiss army knife of adaptive tools may, again, be left out in the cold.

对21世纪的长期预测中，包含了更多的这些极端事件——并且其中还有更严重的事件。因此，那些失去了基因自适应能力的物种，可能会在下次寒潮中死去。

听力原文

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