



WAS IT DESIGNED?

# The Emperor Penguin's Feather Coat

**T**HE emperor penguin can jet through the water and leap onto an ice shelf at an amazing speed. How?

**Consider:** The emperor penguin traps air in its feathers. Not only does this insulate the bird against extreme cold but it also enables it to move two or three times faster than it otherwise could. How? Marine biologists have suggested that it does so by releasing tiny air bubbles from between its feathers. As these bubbles are released, they reduce friction on the surface of the penguin's plumage, enabling the bird to accelerate.

Interestingly, engineers have been studying ways to make ships go faster by using bubbles to reduce friction against their hulls. However, researchers acknowledge that further investigation is challenging because "the complexity of penguin plumage would be difficult to replicate in a man-made porous membrane or mesh."

**What do you think?** Did the emperor penguin's feather coat come about by evolution? Or was it designed? ■



Emperor penguin feather

Penguin: Paul Nicklen/National Geographic Stock;  
feather: Division of Vertebrate Zoology, courtesy of  
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