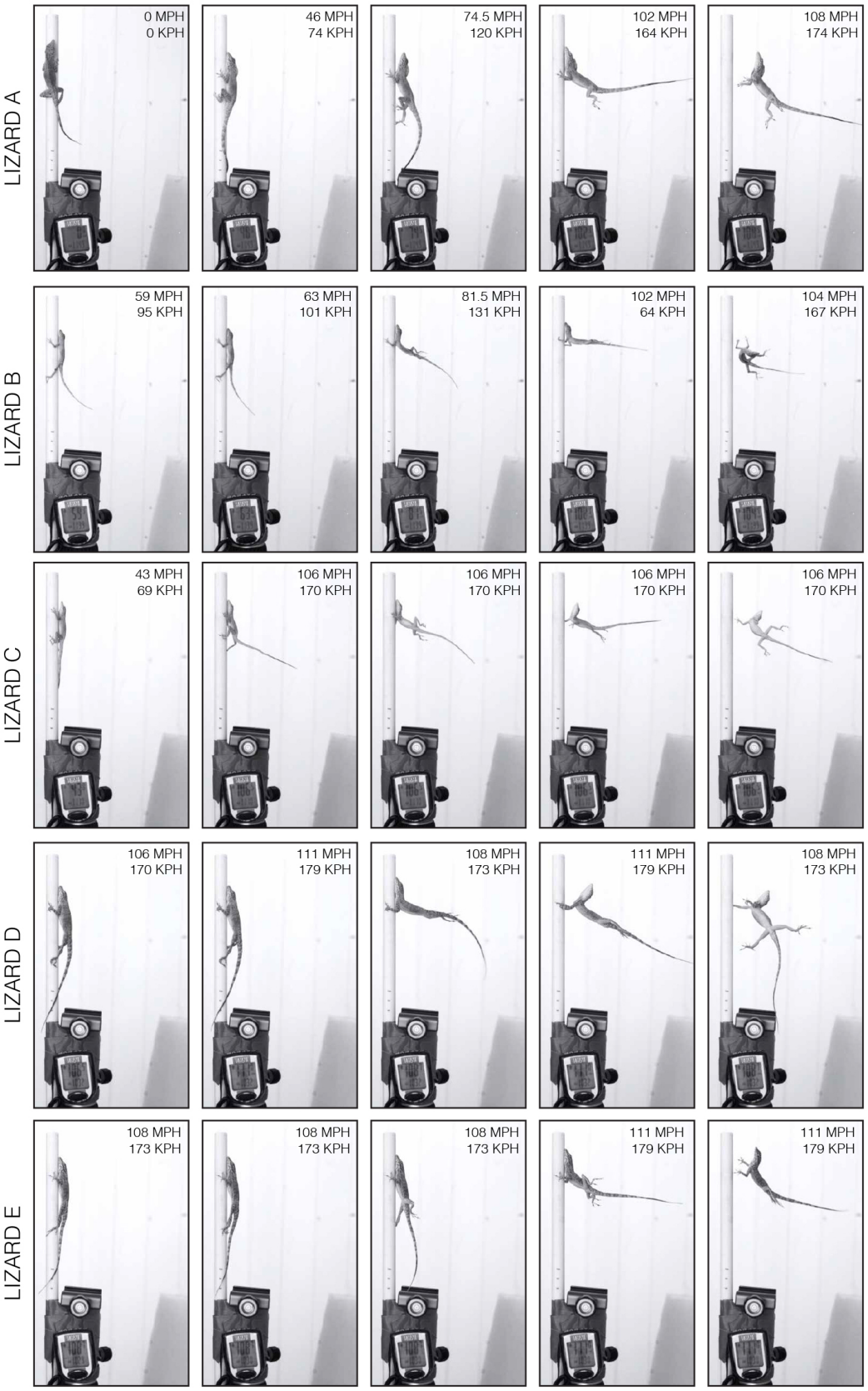
LIZARD A
0 MPH
0 KPH
46 MPH
74 KPH
74.5 MPH
120 KPH
102 MPH
164 KPH
108 MPH
174 KPH
LIZARD B
59 MPH
95 KPH
63 MPH
101 KPH
81.5 MPH
131 KPH
102 MPH
64 KPH
104 MPH
167 KPH
LIZARD C
43 MPH
69 KPH
106 MPH
170 KPH
106 MPH
170 KPH
106 MPH
170 KPH
106 MPH
170 KPH
LIZARD D
106 MPH
170 KPH
111 MPH
179 KPH
108 MPH
173 KPH
111 MPH
179 KPH
108 MPH
173 KPH
LIZARD E
108 MPH
173 KPH
108 MPH
173 KPH
108 MPH
173 KPH
111 MPH
179 KPH
111 MPH
179 KPH

BACKGROUND INFORMATION

In 2017, a team of scientists in the Caribbean was presented with a rare opportunity. The scientists were studying lizard populations on two small islands, Pine Cay and Water Cay, when hurricanes struck. The first hurricane, Hurricane Irma, brought wind speeds of up to 165 mph (miles per hour), or 265 kph (kilometers per hour). The second, Hurricane Maria, had wind speeds over 124 mph (200 kph).

Extreme climate events, such as these hurricanes, can select for certain traits. As the environment changes, selection for or against various traits can change the composition of a population. The scientists could now investigate whether the lizard populations they were studying had experienced any selection from the hurricanes. In other words, did lizards with certain trait variations have a greater chance of surviving the hurricanes?

The scientists focused on one type of lizard, an anole species called *Anolis scriptus*. They thought that the hurricanes might have acted as a selective force on the anole populations of Pine Cay and Water Cay. They hypothesized that the anoles that had survived the hurricanes would have larger toepads (the "sticky" undersides of an anole's toes), longer forelimbs, and longer hindlimbs than the anoles surveyed before the hurricanes.

To further investigate this idea, the scientists conducted an experiment with anoles in the lab. First, they placed individual anoles on wooden rods, which modeled the branches that wild anoles perch on. They then turned on a leaf blower in front of each anole to simulate strong winds, similar to those in hurricanes. The speed of the wind from the leaf blower was slowly increased until the anole let go of the rod and landed, unharmed, in a nearby net. At that point, the leaf blower was turned off. The scientists repeated this process for 47 anoles, then released all of the anoles back into the wild.

The image contains a series of snapshots from the scientists' experiment. It shows five different anoles (labeled Lizards A–E) experiencing strong winds from the leaf blower.