



NEW HURDLES

LIVING WITH HEALTH RISKS DURING A VIRAL OUTBREAK

BY TIM O'SHEI

WHEN the coronavirus shut down athletic facilities across the country, Parker Olenick could no longer go to his local hockey rink in San Diego. This was a problem. Parker, 16, was born with cerebral palsy, a condition that messes up his brain's ability to send clear signals to the parts of his body that control balance and posture. He counts on hockey to keep his oft-tight muscles strong and flexible. "For me, it's like medicine," Parker says. "It's something that I need."

Parker's situation is similar to those of other kids and teenagers who manage illnesses and disabilities and must do lots of physical activity to stay healthy: They all had to find new ways to maintain their necessary routines because of the pandemic. Even now, as the country reopens, they may have to remain isolated, because their conditions could make them more vulnerable to the virus. For Parker, that meant setting up a hockey net in the living room and putting on his goalie gear four times a week to practice blocking shots from his family.

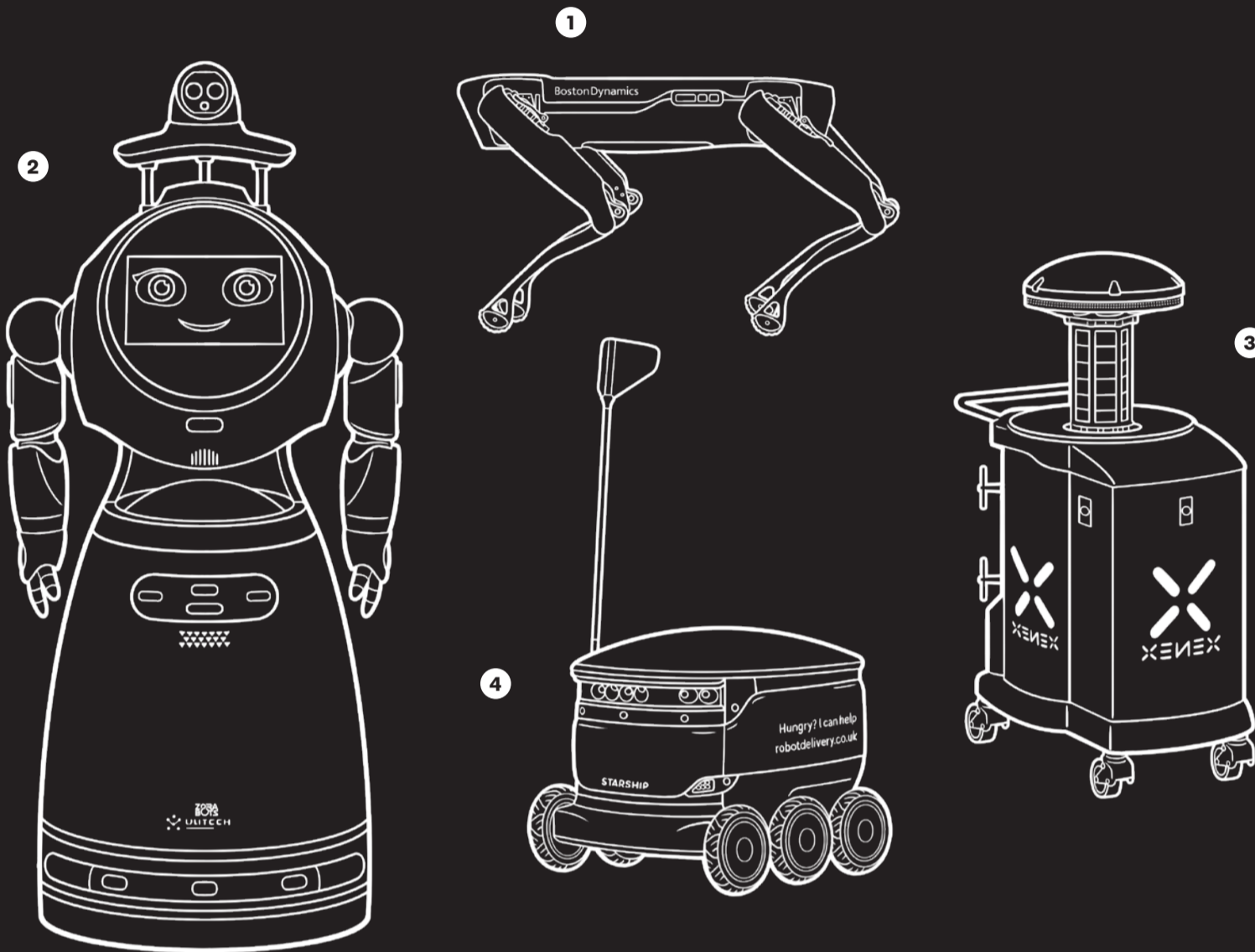
In Maryland, Ryleigh Bradley, 5, and her parents had to come up with at-home ways to manage her acute flaccid myelitis, a rare disease similar to polio that causes weakness and paralysis. Before the pandemic, Ryleigh attended physical and occupational therapy three days each week. Now she builds strength in her core and control in her right arm by doing crafts and participating in dance-offs with her brothers. Her therapy sessions happen by Zoom for one hour each day, Monday through Friday. "I have fun," says Ryleigh, who does activities like "mermaid yoga" and pushing a baby stroller while walking on her knees.

Claire Alexander, a 17-year-old ballet dancer in San Jose, Calif., also had to bring her physical routines closer to home. "I don't hang out with friends, I don't go into stores or touch anything," says Claire, who has cystic fibrosis, a disease that produces a thick, sticky mucus in her lungs and makes breathing feel like sucking air through a straw. To breathe well, Claire danced up to three hours a day, six days a week at her studio. Now her ballet classes are over Zoom, and she has a new location: the garage, where her dad installed a dance floor and a ballet barre. "All the jumping is especially good for keeping your stamina up and the lungs strong," she says. So strong that when Claire recently had her lungs tested, she learned they function better than in many people without cystic fibrosis. ♦

THE PERFECT PANDEMIC ASSISTANTS: ROBOTS!

BY JORDAN DAVIDSON · ILLUSTRATIONS BY KYLE HILTON

THEY'RE HELPING doctors and nurses, disinfecting offices and schools and delivering food and medicine. They're not essential workers — they're robots, and they have taken on new roles as countries manage their coronavirus outbreaks. They're especially suited to the jobs: Robots cut down person-to-person contact, and they can't catch contagious diseases. Here are four proving their worth.



1. THE RULE-ENFORCER

Spot, a bright yellow robotic dog, was originally built by Boston Dynamics to do things like inspect oil rigs for toxic chemicals. Now it has a new job: to remind people of social-distancing guidelines at the Bishan-Ang Mo Kio Park in Singapore. Using cameras and sensors to navigate, Spot walks up to parkgoers and plays a prerecorded message advising them to stay apart. Spot roamed the popular park for two weeks as a trial run, but the government might extend its stay.

2. THE HEALTH AIDES

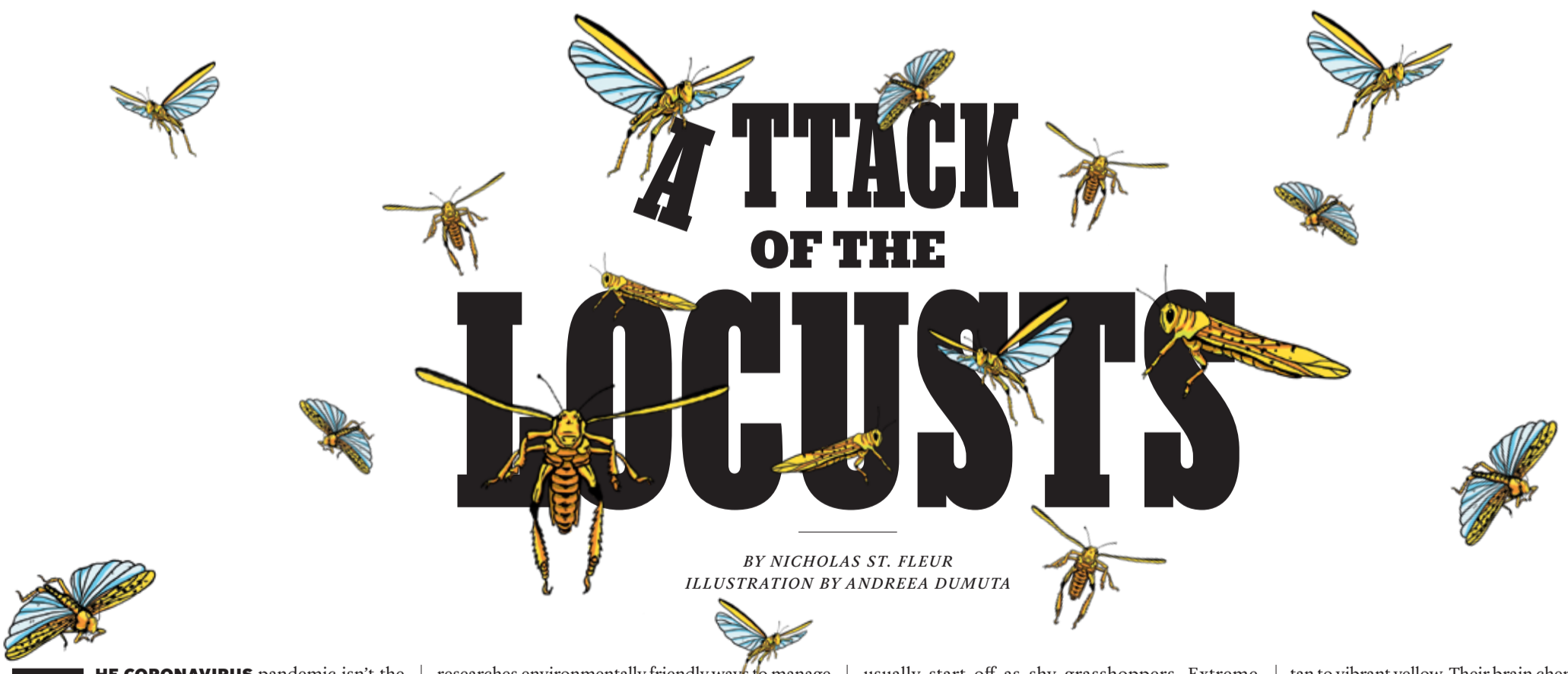
At coronavirus-treatment facilities in Rwanda, five humanoid robots — named Akazuba, Ikizere, Mwiza, Ngabo and Urumuri — are reducing health care workers' exposure to the virus by helping them monitor patients. This kind of robot, which was created by the Belgian company Zorobots, can check temperatures, deliver food and medicine to rooms and alert a doctor if someone looks or sounds sick. It can also let the hospital security staff know if a visitor enters without a mask.

3. THE GERM-ZAPPER

More than 650 health care facilities around the world now use LightStrike robots to disinfect rooms and personal protective equipment like masks. The robot operates by pulsing out powerful ultraviolet light that damages and deactivates the virus. As cities and towns reopen, the company that makes them has had a huge increase in demand. Hotels, schools and restaurants have also started using these virus-destroying robots, because they need only a couple of minutes to disinfect a space, reducing exposure for staff members.

4. THE PIZZA-NIGHT HERO

Starship Technologies' self-driving robots don't have an official name, but they have been delivering food for more than two years in Milton Keynes, a town in Britain. Now other cities are using them, too: The robots have made over 100,000 deliveries since the pandemic started. Stores pack an order (made through an app) in the robot's coolerlike compartment. The wheeled robot uses radar, cameras and ultrasonic sensors to navigate to its destination. When it arrives at the doorstep, customers use the app to unlock the cargo bay. Thanks, bot! ♦



BY NICHOLAS ST. FLEUR
ILLUSTRATION BY ANDREEA DUMUTA

THE CORONAVIRUS pandemic isn't the only plague wreaking havoc in the world. Since June 2019, swarms of billions of hungry desert locusts have been ravaging parts of East Africa and Asia. They are gobbling up crops in gardens and farms, which could leave millions of people without food.

Locust swarms are not a modern phenomenon — they've terrorized civilizations since at least the time of the pharaohs in Ancient Egypt. But this year's infestation is the worst that some countries, like India, Ethiopia and Kenya, have had in decades. "It's extremely scary," says Segenet Kelemu, who

researches environmentally friendly ways to manage pests in Nairobi, Kenya.

Swarms can be about 40 square miles, or large enough to blanket Manhattan nearly twice. They can contain anywhere between four billion and eight billion locusts, who can devour more than 18 million pounds of plants in a day. "For the small farmers, this is very sad news," says Saliou Niassy, who works with Kelemu and saw a horde of locusts down trees and shrubs one morning in a national park in Kenya. "They watch their crops or pastures being eaten by locusts, and there's nothing they can do."

You may be surprised to learn that desert locusts

usually start off as shy grasshoppers. Extreme climate can cause a population explosion — this year's outbreak was fueled by cyclones in 2018 and heavy rainfall and warm weather in 2019. The moist conditions transformed parts of the Arabian Desert into an oasis where the insects could eat and breed. When there are too many grasshoppers in one place, they start bumping into each other, and "if that happens enough, you go through this Incredible Hulk kind of transition," says Rick Overson, who studies insects at the Global Locust Initiative at Arizona State University. The overcrowding triggers the adult grasshoppers to change colors from dull

tan to vibrant yellow. Their brain chemistry switches, too, compelling them to gather and take flight in search of food.

To fight the invaders, governments have sprayed millions of gallons of pesticides from trucks and airplanes. It's not a perfect solution, because these chemicals also kill many beneficial insects. But for now, it's what they can do to try to protect millions of people from potential starvation until drier weather conditions return to calm the outbreak. "There's a cycle to these plagues," Overson says. "Once they've gotten this big and out of control, we're going to need Mother Nature to help us out." ♦