Come explore with us! A close-up look at these microbes highlights how much we don't know about life on our planet This is a microscopic diatom, a type of protist. It has a hard, porous cell wall. Dennis Kunkel Microscopy/Science Photo Library/Alamy Stock Photo By Susan Milius April 11, 2024 at 6:30 am Gumdrop with an earring. That’s what pops to mind when I look at photos of a creature Sebastian Hess found in a mossy pond in Germany. It’s kind of plump and has only one cell. It’s also violent. This shape-shifting, amoeba-like cell prowls for algal cells to attack. It curls a long strand called a flagellum into an earring-like loop. Holding the loop steady, the cell somehow glides. “They look basically like tiny flying saucers,” Hess says. Hess has been seeking and tending such single-celled wonders since a young age. As a teenager, he kept a zoo of microbes on his windowsill. Now, he’s a biologist at Technical University of Darmstadt in Germany. But he still studies the same type of specimens that filled his zoo: the protists. Free educator resources are available for this article. Register to access: Already Registered?  
 Enter your e-mail address above. Readability Score: 7.1 Protists are a huge, varied group of one-celled organisms. On the traditional “tree of life,” they comprise a whole kingdom, alongside those for animals, plants, fungi, bacteria and archaea. Protists are among the closest microbial cousins to multi-celled life. Like animals, plants and fungi, they wrap their genetic material inside a cell nucleus. Yet they’re often overlooked, drawn in many science textbooks as a lower branch beneath the crown of many-celled life. It’s becoming clear, however, that the small can be mighty. And, they outnumber us — by a lot. In fact, single-celled microbes — protists among them — dominate the planet. A 2018 comparison estimates that Earth’s protists account for twice as many gigatons of carbon (an ingredient of life) as all animals put together. Add in other microbes, and together they hold 40 times the biomass of animals. We may think that what we can see represents much of our world’s life. Yet our eyes capture only a narrow — and rather odd — sliver of life’s variety. As high-tech biology meets old-fashioned boots-in-mud exploration, protists are getting a closer look. What scientists are learning challenges old notions that single cells are simple. The microscopic world is full of breathtaking complexity and diversity. And the tiny protists are giving us a whole new view of what it means to live on Earth. Hess’ flying saucers are just one of an amazing array of protists. The kingdom showcases a wide variety of looks and behaviors. Daimonympha, a new species named just last June, has the one-celled equivalent of a rotating head. The cell itself is roughly shaped like a globe. The top, somehow, spins steadily around without ripping or strangling itself.