Best of Last Week—Evolution in action at Chernobyl, a shortcut for neural networks and benefits of guar gum

October 3 2022, by Bob Yirka

Credit: Unsplash/CC0 Public Domain

It was an interesting week for Earth science and evolutionary history as a pair of researchers with Uppsala University, Pablo Burraco and Germán

Orizaola, found that studying Eastern tree frogs in the areas around Chernobyl prior to the war revealed evolution in action—those frogs with more melanin became more dominant. Also, a trio of researchers at Curtin University, Chuan Huang, Zheng-Xiang Li and Nan Zhang found evidence suggesting that the Pacific Ocean is set to make way for the world's next supercontinent. And an international team reconstructed the genome of the common ancestor of all mammals—dated back to 180 million years ago.

In technology news, a group with members from the Tokyo Institute of Technology, Microsoft Research, the University of Cagliari, Raytheon BBN Technologies and the University of California developed a magneto-optic modulator that could facilitate the development of next-generation superconductor-based computers. And a pair of Ph.D. students at the University of Basel, Julian Arnold and Frank Schäfer, developed a computational shortcut for neural networks that will allow for faster phase transition discovery. Also, a team with members from Korea and the U.S. reported a turning point in lithium-sulfur battery field technology—a porous silica interlayer. And a team at The University of Texas at Austin found that a magnetic field can help thick battery electrodes tackle electric vehicle challenges using a new type of electrode for lithium-ion batteries.

In other news, a team of researchers with members from Duke University, the University of Minnesota and Laboratory Corporation of America Holdings, found that how long older adults will live comes down to 17 often surprising factors. Also, Ehud Pines with Ben-Gurion University of the Negev, after 17 years of research, resolved an enduring mystery of physical chemistry regarding how a proton moves through water. And finally, a team at the University of British Columbia, found that a diet high in guar gum fiber limited inflammation and delayed multiple sclerosis symptoms in mice. Guar gum is found in a wide variety of products ranging from ice cream to yogurt to gravies, sauces,

puddings and cheese.