the weekly anthropocene

Dispatches From The Wild, Weird World Of Humanity And Its Biosphere

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Plastics

On March 2nd, 2022, the United Nations Environment Assembly held in Nairobi resolved to develop an international legally binding treaty to fight plastic pollution **by 2024**. The resolution was supported by 175 countries, and will kick off an intensive two years of negotiations to develop a treaty addressing the problem of single use plastics through interventions across their entire life cycle, potentially including everything from limits on single-use plastic production to international collaboration on increasing the use of alternatives to plastic. (Pictured: the "Turn Off the Plastics Tap" sculpture outside the Nairobi negotiations venue). A key factor in making progress in the latest talks was that the United States switched from opposing a plastics treaty under Trump to supporting it under Biden. While the details and full effects of the plastics treaty are yet to be determined, this has the potential to be the most important international environmental action since the 2015 Paris Agreement.

"At the end of the day, the scope of a global instrument will be decided by Member States in a multilateral setting." said UN Environment Programme Director Inger Andersen. "We seek rapid, ambitious and meaningful global action to curb the scourge of plastic pollution and this means incorporating different views to arrive at a framing that allows us to meet a range of economic, social and environment objectives. The proposals being deliberated by Member States envision actions, from source to sea, that address all sources of pollution along the whole lifecycle - from production through disposal and reduction of the leakage of existing plastic currently in the global ecosystem."

“Against the backdrop of geopolitical turmoil, the UN Environment Assembly shows multilateral cooperation at its best,” said Norwegian environment minister Espen Barth Eide. “Plastic pollution has grown into an epidemic. With today’s resolution we are officially on track for a cure.”

If all goes well, come 2024 we should see the establishment of a new legal

framework that will set humanity on the road to finally curbing plastic pollution! Great news.

Spiders

The jorō spider, *Trichonephila clavata* (pictured), is a charming, brightly colored little arachnid native to East Asia, associated with mythical shapeshifters in Japanese folklore. In 2014, they were accidentally introduced to the Atlanta, Georgia area, likely via a shipping container. Since then, the species has proliferated and become common in northern Georgia and the Carolinas, with individuals seen as far afield as Tennessee and Oklahoma. (Pictured: a Joro spider in its web eating a caterpillar, with a human hand for scale). These spiders spin their wide yellow-tinted webs very high in the tree canopy, an ecological niche that's not common among North American spiders, which may have contributed to their success. These spiders also practice "ballooning," using their silk to ride the wind to new locations (as made famous by the end of *Charlotte's Web)* so they can expand their range very quickly.Now, a new study from University of Georgia ecologists found that jorō spiders can tolerate below-freezing temperatures due to their rapid metabolism, indicating that they may well eventually survive and thrive as far north as New England. Fortunately, there's no evidence that the jorō spider is having any negative impact on native species, so this isn't particularly worrisome. They're also harmless to humans; their fangs are so short that they can't even break our skin. “People should try to learn to live with them,” said study coauthor Andy Davis. “If they’re literally in your way, I can see taking a web down and moving them to the side, but they’re just going to be back next year.”

Happily, all this might well have a net positive ecological effect, as jorō spiders have been observed eating the brown marmorated stink bug, a serious agricultural pest (also introduced from East Asia) that caused $37 million in damages to apple crops in 2010 alone. Jorō spiders are one of the few spiders that will eat brown marmorated stink bugs, so their advent may well be a boon to American agriculture. Plus, they're beautiful-natural Halloween decorations, as one entomologist described them. A new American "immigrant species"!

Floating Solar

Across population-dense East Asia, **floating solar panels** are increasingly emerging as a solution to finding space for clean energy production where land is at a premium. Pictured above are 92,000 solar panels arranged into the shape of 17 plum blossoms, floating on the Hapcheon reservoir in South Korea, together forming a 41-megawatt installation providing sufficient power for 20,000 homes. In 2021, Thailand opened a 45-megawatt floating solar/hydropower hybrid plant on Sirindhorn Reservoir, and Singapore also opened a60-megawatt floating solar array on its Tengeh Reservoir. India is similarly building a 600-megawatt floating solar panel array on the reservoir behind the Omkareshwar dam, to be finished by 2023. And there's a lot more in the pipeline, with over 15 gigawatts' worth of floating solar projects currently planned from China to Vietnam to Indonesia! The renewables revolution takes many fascinating forms. Great news!

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