

## Remediators of the Anthropocene by David Bradley

Elouise Sparrowhawk, Dr Sprawk to her students, was proud of her surname. To her imagination, it told of an ancient ancestry, of woodlands and fens, of wildlife and nature, of a time long before now. It told of woodcutters and woodturners of fenland farmers and drovers. It hinted at a long-forgotten time when things were, to put it bluntly, better. Dr Sprawk hankered after those times. Perhaps it was an unrequited nostalgia for events that never happened, places that were not as they seem, and people who never walked this earth.

Whatever the nature of past reality, Elouise knew that in her laboratory there had been an opportunity to remediate the present. Whoever was to blame for the here and now mattered not to those living the nightmare today. It was Arvane, Arvane Tempor, who first spotted the changes. It was a chance discovery, a contaminant in a reaction flask. The serendipity was not lost on the team although no one who lived through the plastic age would ever have dreamt a solution might be found in this chemistry. They could not have imagined that polythene, the scourge of the Anthropocene, would, with a few almost trivial molecular tweaks, become the panacea.

Tempor was almost done with his Master's and was on the verge of writing-up, but one last experiment was needed just for completeness. He had been fastidious throughout, dotting every "i", crossing every "t". His lab-books were meticulous, not for him their digital descendants. He bathed in the ethereal smell the pages absorbed that would take decades to fade. However, this time, it was late. It was a seemingly unimportant experiment. He rushed a little. Contamination happens. Identifying the contaminant and what went wrong, or as it turns out, right, later would only be possible because of Tempor's more usual diligence.

Molecular modification followed by chemical correction somehow generated a structure so reactive and so porous that it could literally draw breath. That porosity gave it the space, or more technically, the surface. Lay it all out flat, Tempor would tell his colleagues, and a single ounce would cover 400 tennis courts. That fact alone was astonishing, four times the area available for absorption of any previous material. But those earlier molecular sponges mopped up useful gases, such as oxygen and hydrogen, for various applications, high-speed reactions, safe storage. This was different. Not so much a useful gas, as a gas of which we could do with a lot less in the air we breathe.

Giving a porous plastic coating to hundreds of tennis courts was not the aim, of course. Once Tempor and Dr Sprawk had figured out the ins and outs of their new material, they were then intent on finding ways to pack it ever tighter into the machine, the remediators.

A lot of raw material was needed to pack the 1000 feet spiral columns that would line Sprawk's towers. But, there was a lot of it to be had, much of it lying dormant in deep mounds on the outskirts of the old cities. The relative ease with which the plastic could be mined from those countless landfills of the twentieth century made sourcing the feedstock incredibly efficient and ironically enough, almost carbon neutral. Moreover, after all these years in the ground even the plastic bags that would last for centuries had degraded to a suitable form ripe for processing into the green strands for Sparrowhawk's columns.

The vast woven myriad within the towers would need nothing more than water and sunlight to do their job. The drains below would catch their sickly sweet rain and this could be tapped and trapped, vitrified and buried again. Carbon, locked away for aeons just as its precursors had been in the liquid black gold on which society so wantonly imbibed in those long-lost days.

Thousands of towers were built across the wide tropical belts. They looked out over broken seas from abandoned coastlines. Pharos ruling the waves, Tempus would joke. Location was irrelevant to the swirling atmosphere, but sunlight and water were key ingredients so the polar north and the desert margins were precluded from this work for their lack of one or the other. Exactly how many towers were needed was a moot point, they ran with high efficiency wherever they were built drawing their hot breath deeply. The analysts tapped their devices assuming malfunction, but as the data accumulated, so evidence of remediation sprang from far and wide like so many green shoots showing in a new world spring. The sceptics tapped their thermometers but could not ignore something of a soothing chill in the air.

Ice was crystallising once more at the poles. The fringes of the equatorial deserts moistened subtly. Tiny islands poked algal crowns from beneath the waves and quickly dried, terrestrials arrived to feast on the marine and the wind planted the seeds it couriered from distant dry lands so that shoots would show and plants would bloom digging deep with anything but hesitant roots. Elsewhere, the new fenlands began to dry, the marsh gas to dissipate. Who would have thought, plastic - the ultimate friend of the earth?