a third of their book to explaining the complex history of climate change science; a laudable effort, though at times my eyelids did begin to droop. To their credit, they enliven the text with asides on the notable figures who first figured out the science at hand (among them the Swedish physicist Svante Arrhenius, whose "ravishing young wife, Sophia" deserted him in 1894 after a year of marriage in the midst of his calculations on planet-warming carbon dioxide).

The book's real focus, though, is a climate fix hatched by Klaus Lackner, now a physicist at the Earth Institute at Columbia University. Lackner's company, Global Research Technologies, announced in the spring of 2007 that it had built a prototype "air-capture technology product" to suck CO_2 out of the atmosphere. When Broecker first heard Lackner talking about his ideas in 1999, he recalled thinking, "This guy is nuts." Lackner, then an associate director of Los Alamos National Laboratory, argued that we should attempt to accelerate the natural chemical breakdown of rocks. The plan: grind up billions of tons of magnesium- or calcium-rich rocks, chemically combine them with carbon dioxide to form another type of rock—a harmless carbonate—and then find a place to put the resulting mountains of the stuff. Later on, Broecker found Lackner's tendency to think big—and his willingness to attack a problem from first principles—"more exciting than crazy," and lured him to Columbia.

In fact, there is nothing all that revolutionary about pulling carbon dioxide out of the air; it is done on every space shuttle and submarine to prevent crews from asphyxiating on their own exhaled breath. Lackner built his prototype on a budget of $5 million from the late Gary Comer, the founder of Lands' End. In this device, crushed rocks have been replaced by a plastic compound that reacts with CO_2 to form sodium bicarbonate: essentially, baking soda. If Lackner's vision comes to fruition, 20-foot-tall carbon-sucking towers—each resembling an erect Tower of Pisa—could be arrayed all over the planet. The final step in this massive cleanup project would be to extract CO_2 from the bicarbonate and inject it into the ground in liquid form.

Each tower would extract about one ton of carbon dioxide a day, so it would take an awful lot of towers to scrub the 80 million tons we emit daily. The sheer scale of the problem dwarfs any single solution, but in Broecker and Kunzig's view, Lackner's invention is "the only hope." Their reasoning is simple: the towers can be placed anywhere—far easier and more practical than attaching a CO_2 scrubber to every car and airplane on the planet. And because CO_2 disperses quickly through the entire atmosphere, removing it in one spot helps the whole world.

By contrast, say Broecker and Kunzig, collecting CO_2 from the flues of power plants would entail transporting the gas perhaps hundreds of miles to a dumping ground. Nevertheless, this too promises to be an important means for steering us from the path of doom, should we manage to make it happen. In January, the Department of Energy scrapped plans for FutureGen, a coal-fired plant that was to collect and dispose of its own CO_2 emissions.

The Norwegian oil company Statoil currently captures CO_2 from its drilling operations at the Sleipner natural gas field in the North Sea, and it then injects a million tons of the gas each year under the seabed. There are

spotlight

Wild Birds of the American Wetlands

BY ROSALIE WINARD, *Welcome Books*, $39.95

To the photographer Rosalie Winard, white pelicans look like synchronized swimmers: "Think Esther Williams with feathers." In perfect unison, they move in circles on the surface of the water, herding the fish beneath them. Storks, by contrast, are wily, shading the water with outstretched wing, luring prey into their shadows. These birds have been Winard's obsession since she was 17; she photographs them as one might a family member caught in an intimate moment—preening, greeting mates, caring for their young. An essay by Terry Tempest Williams accompanies Winard's collection of 100 black-and-white images, including this Sandhill crane in Florida.