

## **From *Gaia Warriors*, by Nicola Davies James Lovelock's Afterword**

*Gaia Warriors* is a wonderfully surprising phrase but it is the right title for this book. Some people see Gaia as the mother of everything alive, allpowerful, with a religious significance as part of God's creation; others as the name of a scientific theory about the Earth system. I see her as something that includes both of these ideas, and if we accept that, despite pretending otherwise, humans are war-loving animals, the words "Gaia" and "warriors" do indeed go together.

Warriors do not march to have a friendly discussion, or even an argument. Warriors march to battle and usually intend to win and make sure that their beliefs prevail. Almost all past human history is made up of brief spells of peace interspersed with long periods of war, and whenever war happened and whatever side we were on, we convinced ourselves that we were in the right and that the war was just.

In this, the 21st century, warriors may be faced with an older and simpler form of conflict: that of fighting for survival.

Unconsciously we set in motion the conditions for this war two centuries ago when we began to take more from the Earth than we could ever pay back. It was not simply by using fossil fuel for energy but also by taking the natural forests and turning them into farmland. These two acts, which made food and medicine abundant, enabled our numbers to grow until we took more from Gaia than she could give. Now we are like the victim of a loan shark, with debts larger than our means to repay them.

Gaia, the Earth system, regulates the planet so it always remains habitable, but to do so she needs the natural forest ecosystems intact. What we humans have done by taking them for ourselves alone is to make the Earth uninhabitable. I think it unlikely that anything we do will alter the course of this change. Nobody—not the cleverest scientist nor even a committee made up of Nobel Prize winners from each of the sciences—can with certainty predict the world of 2030 and tell us how to live peacefully there. Nor can they tell us how to restore the Earth to the lush and habitable state it was in sixty years ago. There are no sure answers, and Gaia, the Earth system, is moving faster than we can respond, still less oppose its motion.

Survival is our only option and, before long, some people will find that their part of the Earth is less harmed by climate change than others. Naturally those whose land becomes desert or is flooded and can no longer provide food and water will move to where there is plenty. Because of our natures, war between these haves and have-nots is inevitable. There will not be food and water enough for both. Sometimes the invaders will win and other times the defenders; what matters is that there are survivors so that there continue to be humans on the Earth. The ultimate survivors will probably include some powerfully effective Gaia warriors, and we will have evolved another step towards a new and perhaps more intelligent species of humans.

What a wicked, wasteful way of progressing, you may think. But war is like this, and never forget that evolution by natural selection is also a blind, cruel process. How else could a feathered monstrosity of the Jurassic evolve into the exquisite perfection of a streamlined swallow? The answer is that countless numbers of less-perfect losers lost in that passage to perfection. To turn the clumsy animals that we are now into streamlined intelligences that can serve as the information system and warriors of our planet will not happen quickly or easily.

Other organisms, more important than we are, started as disastrous mistakes whose unrestrained growth did massive planet-wide damage. Tiny green bacteria heedlessly polluted the air over 2 billion years ago with a poisonous, destructive gas—oxygen. Pollution far more deadly than anything we have done so far. Yet evolution allowed Gaia to adapt and then use oxygen to support life. It took more than a billion years, but from those first polluting bacteria there evolved all planetary life, even giant redwood trees and a world that animals could inhabit.

It has taken Gaia 3.5 billion years, more than a quarter the age of the universe, to evolve humans, a social animal intelligent enough and capable enough to show her how stunningly beautiful she is when seen from space through the eyes of astronauts and when compared with her dead siblings, Mars and Venus. We are a part of Gaia, as are all things alive, whether tigers or slime moulds, and consequently our thoughts are hers. Through us, she begins to understand her history and place in the universe.

Let us look forward to the time when our descendants have evolved to become Gaia's brain—clear in thought and clear in vision—and Gaia's T cells, her warriors, the true defenders serving the first intelligent planet in our galaxy.