



Phoresis

Greg Egan

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Welcome to Tvbura and Tvburi, the richly imagined twin planets that stand at the center of Greg Egan's extraordinary new novella, *Phoresis*.

These two planets—one inhabited, one not—exist in extreme proximity to one another. As the narrative begins, Tvbura, the inhabited planet, faces a grave and imminent threat: the food supply is dwindling, and the conditions necessary for sustaining life are growing more and more erratic. Faced with the prospect of eventual catastrophe, the remarkable women of Tvbura launch a pair of ambitious, long-term initiatives. The first involves an attempt to reanimate the planet's increasingly dormant ecosphere. The second concerns the building of a literal “bridge between worlds” that will connect Tvbura to its (hopefully) habitable sibling.

These initiatives form the core of the narrative, which is divided into three sections and takes place over many generations. The resulting triptych is at once an epic in miniature, a work of hard SF filled with humanist touches, and a compressed, meticulously detailed example of original world building. Most centrally, it is a portrait of people struggling—and sometimes risking everything—to preserve a future they will not live to see. Erudite and entertaining, *Phoresis* shows us Egan at his formidable best, offering the sort of intense, visionary pleasures only science fiction can provide.

Phoresis Details

Date : Published April 2018 by Subterranean Press

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Author : Greg Egan

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From Reader Review Phoresis for online ebook

The Captain says

Ahoy there me mateys! I received this sci-fi eARC from NetGalley in exchange for an honest review. So here be me honest musings . . .

The cover drew me in and three things convinced me to read this book:

- 1) Like Robert Silverberg, this was another Hugo winning author whose work I have never read;
- 2) It is a Subterranean Press book and they do great work; and
- 3) The story is driven by women characters facing a catastrophe.

What I didn't know before reading this was that the author is known for his hard science fiction. So while I loved the introduction to the story, I quickly became lost in the physics of the first section. I understood enough to know what Freya was trying to accomplish but not how it would work or how the "experiment" she set up convinced people. This section was from 11 to 30%. In this short work, it wasn't too onerous and I was intrigued enough to continue reading.

After that the story picked up pace, and I found it mostly fascinating. The science played a part but then there were fun things like tower building, gilders, and dealing with the challenges of living on a new planet.

The book has three parts and ye follow the women through multiple generations, which was cool. One of the awesome aspects was that the women were always looking at the larger long-term goals. Most projects were on a scale where many generations would pass before results could be determined. The women had to choose between starvation today or the potential possibility of survival of their descendants tomorrow. I enjoyed seeing why they chose to do things, the consequences of their choices, and how time changed perspectives.

The not so cool part was that many of the women felt very similar and interchangeable. I happened to like their take-charge personalities, intelligence, and determination. But perhaps it would have been nice to see other personality types. Or maybe those types were the only possibilities to guarantee survival.

Also the process of reproduction made me less than comfortable. That is where the phoresis title comes in. This biological phenomenon is when one organism transports another. In this book each woman carries three of her brothers inside of her. The brothers' emotions can influence the women's actions as all of them are dependent on each other for survival. The brothers are hardly intelligent and fight with each other for the right to breed. So far, fine with that. It posed some interesting problems in women taking life-risking challenges. It is the how of the breeding that was unappetizing. Basically the brothers emerge from the uterus and . . . um . . . merge with another women for fertilization. This only happened once in this book and was hazy in detail but me mind filled in the blanks.

Ultimately while I enjoyed the story overall and thought the writing style was excellent, this is not one I would re-read. I am also not sure I could read anything else by the author if the physics is like this in everything he writes.

This be the third read in me April BookBum Club Challenge! Much thanks to the BookBum Club for giving me the incentive to finally read this "short and sweet" book (168 pgs). Day three – challenge complete! Next up: i met a traveller in an antique land. Check out that review on Monday!

So lastly . . .

Thank you Subterranean Press!

Check out me other reviews at <https://thecaptainsquartersblog.wordpress.com>...

Douglas Cosby says

4.5 stars -- A three-part novella covering many generations living on paired sister planets that deal with issues of famine by building a very low-tech bridge between the two planets. Not only are the logistics of the massive projects and the details of the science well thought out, but the bravery and vulnerability of the characters bring a level of depth to the story that is missing in many "technical" sci-fi books. At 163 pages, *Phoresis* feels like an epic, but reads like butter. My only gripe is that some of the more complicated scenes really need pictures to explain the full physics of the events that are occurring. I'm sure Egan gets them right, I just can't quite picture what is going on.

Travis says

I thought this was a very interesting book and am a bit confused by the low to middling reviews I see here. It has some really great concepts that it explores to interesting ends, and which are generally well explained; there is one part that gets a bit mathy in a way that somewhat disrupts the flow of the narrative, and my eyes glazed a bit at that point, but that is fortunately only a minor part of the book.

Unlike the novella that I read immediately before this one, this one was really well-paced and constructed. It covers a much longer time period-- several generations, though how long a generation is for the characters is unclear-- but each section is about one character and her role at a pivotal point in an incredibly ambitious plan to connect twin worlds. There is just enough detail about the characters to draw you in, but even if characterization seems a bit light that is besides the point, since it is a story about ideas, not characters. The corollary to that, however, is that the characters' physical appearances and biology is only lightly touched on, which I found a bit frustrating since I'm not sure how to visualize them. And there are many other instances where familiar terms (plants, cats, lizards) are used, but the things given these labels must be far different from Earth norms given that they exist in a biosphere where liquid ethane is referred to as "water". Still, I liked the story a great deal, both for the topics it deals with directly, and the many other interesting ideas it only hints at.

Oleksandr Zholud says

This is a hard SF novella, eligible for Hugo 2019 Award.

Phoresis means in layman terms that a creature uses another solely for the purpose of travel. This is a story of two tidally locked small planets. On the one of them, called *Tvibura* by locals, intelligent life is present. We, the readers, don't get a lot of explicit details about them, akin to an ordinary contemporary fiction doesn't give a lot of details about humans – like you can read tens of novels and never know that there are toes. The planet is covered with thick ice and had a thin atmosphere; the ocean beneath the ice is the source of

minerals and gases, which makes the life possible. Tidal pressures sometimes break the ice and throw minerals up. Also there is a 'tree', Yggdrasil (nice allusion!), which lives below the ice, but branches of which go through the cracks and reach the surface to breathe and photosynthesize. And when the story begins there is a crisis: geysers, which are essential become rare and the population is starving.

The locals are described as female but in reality it seems they are Hermaphrodites similar to garden snails – their biology has some role in the middle of the novella. They have 'usual' Earth names (Fryda, Rosaline, Joan etc) and are extremely curious: a lot of the story at the start is supplied via their dialogue about how the world works. Their solution to the food crisis is to build an ice tower from which they can jump to the other world, which seems more hospitable. It is not a fantasy, but hard science.

The story is a bit heavy with science, compared to most current SF, so it can be not to everyone's taste. I myself liked it even if sometimes science descriptions would be easier with just a link to known physics and math, but this would have broke the alienness of the story

Tim Hicks says

You know how Bach and the like wrote symphonies and stuff? But also wrote études and exercises and fugues that were for teaching or demonstrating, or exploring a concept? This is the concept exploration.

If this is your first Egan, you MUST know going in that this is HARD sf, diamond-hard. There isn't going to be any handwaving or impossibilium. See <http://www.gregegan.net/SCIENCE/Scienc...> for a taste of where he's coming from.

So, we have a thought exercise on "what if this planetary configuration existed somewhere? What challenges would entities living there face?"

Egan was right, I think, to keep it down to novella length and skim across the top of the science. It would have been easy to sink into the details, and lose the plot about struggling for generations to build something that might not work but also might save civilization. And building it in a time of shortages, when many would argue that the resources required should be directed to short-term problems.

You can read present-day allegories into this if you like; I chose not to, because short-term vs long-term and resource allocations are eternal problems. Do you keep hunting field mice, or do you send some hunters across the mountains in search of larger game? Do you keep making arrows as fast as you can, or do you have some people looking into this "gonne" thing?

Sure, I would have liked some diagrams and so on, but I expect they'll turn up on Egan's website in the near future.

I am going to go and read something simple now. My brain hurts.

Bandit says

Where do I even start with this? Subterranean Press normally puts out quality work, things I'd read without doing due diligence, research, etc. This one was an exception, one tragically far from exceptional. What is this...agrarian science fiction? Agra fi? Two twin planets and the starving denizens on one planet are trying to build a way to get to the other. All female cast, although with hermaphroditic qualities, apparently their brothers live inside them and come out (partially, the business end as it were) to reproduce. But primarily it's just hunting for plants and building things and climbing things. In exhaustive exhausting detail. Lots of talk about plant cuttings and such, which is about as much fun as you'd imagine. No idea how this is even a book, albeit a novella length one. The weird thing is the quality of the writing itself is perfectly decent, it's the story itself that doesn't work. Sure, not every book has to be exciting, but I've spaced out studying design configurations in the carpet and had more fun than I did reading this book. Strangely tedious, strikingly uninteresting, superbly unengaging. Literally, the only superlatives to bestow upon this book would be accompanying and highlighting its negative qualities. Not sure if I read the author before (maybe a short story? definitely never a novel) and this wasn't the most auspicious of introduction, its only positive attribute being its brevity. And the title itself, always good to learn a new word. This one refers to a form of symbiosis where one species transports the other. Which I suppose just goes to show that even disappointing lackluster books have something to teach us, other than being more selective in reading choices. Thanks Netgalley.

Bogi Takács says

Review coming (IY'H) but it will be along the lines of "this would have worked well if it was 100 pages longer, but this way it was rather unsatisfying". Interesting worldbuilding and plot, cool science as expected, but so few character interactions that I was gnashing my teeth. (And Greg Egan can write cool character interactions!)

The characters have nonhuman biology including sex and reproduction, but I think adding this to the intersex reviews would be a bit of a stretch, so it will be separate.

Source of the book: Lawrence Public Library

Paul Klinger says

A classic Greg Egan novel: The worldbuilding is immaculate and inventive from a physics/technology point of view, and interesting, but not as well developed, from a biological point of view. Characters and societies are only vaguely sketched. The only adversaries are the laws of physics and the harsh nature of the environments the characters find themselves in. These are overcome using intelligence, scientific reasoning, and prodigious amounts of bravery. Disagreements between characters play only a minor role.

I enjoy Egans books a lot whenever I read them, but I wouldn't want to read a lot of them at once. Phoresis might be a good introduction to his style. It's tightly written and a lot easier to comprehend than e.g. Dichronauts (which is probably impossible to follow without some prior experience with the mathematics of special relativity).

Lou Jacobs says

Another great experience in world building .. provided by the Master . Egan does it again! A weird and fascinating world made not only plausible but probable.

Tvibura, an inhabited world every day orbits a sister world - Tviburi ... mysterious and unknown. Tvibura is slowly floundering with incrementally advancing difficulty in feeding its all female inhabitants. Beneath the immense ice fields resides the gift of life ... roots known as Yggrasils approximate or penetrate the surface resulting in "geysers" which flood the environment with life sustaining nutrients to their soil and crops. Unfortunately they are progressively dwindling in occurrence. The Yggdrasil is like the tree of Norse mythology, extending upward from the ocean bottom to the heavens and sustaining life.

The inhabitants of Tvibura are all female, and yet, reproduction is accomplished by the process of phoresis each female carries in her womb three sentient but unintelligent "brothers" that emerge at appropriate times to allow fertilization with another female tribe member.

Freya, the initial main protagonist, envisions an ingenious solution to their dilemma by joining the two worlds. The story unfolds in a triptych spanning generations of inhabitants determined to bridge the two worlds and thus allow survival ... utilizing fantastic and plausible science.

Written with Greg Egan's superlative world building skills ... and, hopefully suggesting more to come in this unique universe of character. Thanks to Netgalley and Subterranean Press in providing this Advance E Book in exchange for an honest review @SubPress

Ralph Blackburn says

Phoresis by Greg Egan- This was very difficult for me to complete. As to why, I thought the story was okay, lots of expert world-building and complicated inhabitants, with definite survival problems. I found much of the goings on to be laboriously described and very slow moving. Staying with the story was a chore and I found other things that captured my attention better. I've read several Greg Egan novels and short works and always found them to be very engaging and thought provoking. This one not so much. The story is about the inhabitants of one planet trying to build a bridge from their world to a sister planet that orbits close at times. They are slowly starving to death and see this close neighbor as a possible salvation. Kind of a stretch, but made possible by rigorous scientific method and brave endeavors. It's not horrible, just not what I expect from such a talented writer.

Kam Yung Soh says

An interesting story of discovery and survival set in a system where two small worlds circle each other and they orbit a sun together. The worlds are cold and covered by ice but the tidal forces between the worlds ensure their interiors are heated and some heat breaks through the ice in the form of geysers, bringing with it life giving chemicals and material. And there is life living on the worlds.

The story is told in three parts and starts with intelligent life struggling to live on one of the worlds. On that world, no geysers have erupted for ages and the farmers who live on it are struggling to survive. Then one farmer proposes an audacious plan. To grow an ice tower high enough to launch gliders from it and glide to the neighbouring world, where life is known to exist and geysers are still erupting. The first part deals with

the farmer struggling to convince the various communities to come together and build the audacious structure, which will take generations.

The second part starts with the completed tower and the first expedition to launch to cross the gap and land on the other world. It turns out to be a hospitable place but with unexpected difficulties when it comes to trying to grow the crops they are used to instead of eating the native plants. Then comes the problem of sending a message back to the people waiting for a signal that the expedition is a success.

The third and last part deals with a return expedition back to the home planet, hoping to find survivors among those that have decided not to emigrate. It will be a bleak world to return to, yet there may still be hope in parts of the planet that cannot be seen from the other world.

While the story is primarily about how the people there survive and make the journey between worlds, Egan does hint that the people aren't human but have an alien physiology. For one thing, all the intelligent people are females. Males are present, but they aren't intelligent (apart from having instinctive behaviour) and the way the males depend on the females isn't revealed until a mating scene is described in the story. It is then that the alien biological nature of the people in the story is revealed.

An interesting story, set in a believable situation about survival on two worlds.

John says

This is not bad. It's a novella, and has an interesting premise. Though it's heavy on setting and light on character, I still liked it.

Jamie Rich says

Phoresis (Kindle Edition) by Greg Egan

A delightful read! Altho, I think I may have more questions now that I'm done? The characters definetly drive the plot in the novella, and they drive it well. This quick read is really three short stories that are done in succession of each other. I sort of think that our twin planets *may* be an analogue of Enceledous, but maybe not. Also our heroes are all women, but are they? And don't even ask about their brothers and such! The struggles are real, and the obstacles they each overcome are momentous. Yet, I really liked the sensible, yet crazy approach of the characters. A worthy read.

Brian says

This novella makes me believe that I may enjoy Greg Egan. While Dichronauts (the only other book I've read by Egan) did not work for me, the writing in Phoresis was enjoyable. I generally view Egan as a writer that ponders a physics exercise and then builds a story around that. It makes for some complex narrative sections that are not always enjoyable. Phoresis is easy to read in that regard. The story takes place on a planet that is rotating around a twin planet which together rotate around the sun. The inhabitants of Tvbura are in a crisis of famine and set out to try to reach the twin planet Tvburi. The overall story arch is done well

and is a fun read. The story falls apart from there. My frustration comes in with the absolute lack of a believable biome described for Tvbura which most of the story hinges on.

Also of note the ARC I received (thanks NetGalley and Subterranean Press) is very poorly formatted for Kindle.

Michael says

This is a tale of survival and innovation on an icy planet in which the ecology is changing and extinction looms. The people depend on branches from giant “trees” under the perpetual ice on the ocean breaking through to the surface, thereby bringing nutrients up that are essential to soil formation and gas liberation critical to maintaining a breathable atmosphere. We experience one scientist coming round to a theory for harnessing the growth of such penetrating branches to make an ice tower that can let their species reach space and thereby providing a pathway for escape from their dying world and colonization their planet’s twin. And then she has to persuade all her people to follow through on the plan, which will take a big gamble of efforts over several generations and hundreds of years.

Thus, we have a tale of impending apocalypse and an odd take on a space opera scheme for surmounting the threat. What’s different here is that we quickly learn that all the characters are aliens. Two hands and two feet, but little attention paid to what they look like. From the start it dawns on you that all the characters are female. And that they seem to drink ethane. You find out where the males are when you encounter their reproductive behavior. You will undoubtedly be disgusted when it turns up in a matter-of-fact, unemotional scene. But then you likely will chide yourself for judging another species from your own biases.

Like other multigenerational sagas, engagement is hard when the narrative sweeps past so many sets of characters, and in this case compressed within a relatively short novel. But while many sci fi novels suffer from their aliens being too human in their personalities and features, Egan scores some points with me for disorienting the reader with truly alien aliens. The emotional flatness many readers will experience from challenges in getting into their minds and feelings I found to be balanced to some extent by a reasonable amount of quasi-human teamwork or debate about their communal agenda for survival. Egan also fulfills his reputation for applying realistic physics to some creative and strange situations. The principle of the space elevator applies to the ice towers in this tale, as modified by the small size of the planet and associated diminishing mass of objects extending up from the surface. (On the other hand, for twin planets to get close enough for a glider/space plane to make a jump between them seems a bit dubious, as any such tendency in the long course of time would seem likely to lead to a collision).

This book was provided for review by the publisher through the Netgalley.
