
The Wealth of the Elves

by Dr. Juice

Illustrated by Sergei Arsenev



It was our third day at sea. We were on our way to Grandmother's house when the storm hit. My brother, Lucas, and I had been lucky we were near the raft when the cruiser smashed into pieces. Luckier still, the raft did not fall apart. But that is where our luck stopped.

As the sun rose, it was getting hot again. "Mia, I'm thirsty", Lucas complained, "Really thirsty." I wouldn't let Lucas drink the sea water – it would only dehydrate us more. The storm had pushed us past the sea border, we were floating in the Exclusion Zone – an area outside of our people's lands. Here, all communications were blocked by the dwarves. No human would know we were there or be able to cross the line to save us.



We floated.

We floated some more.

It seemed like forever. We held each other and thought of our parents.



Suddenly, we lurched. A dwarf fishing vessel came out of nowhere at incredible speed and grabbed us in a net full of fish. We were scared at first, then Lucas said, “I don't think they have seen us, but they are dragging our raft toward shore.” I agreed, “We can hopefully get their attention on shore”.

We didn't know much about the dwarves. They keep mostly to themselves to protect their gold. Ever since they put up the Exclusion Zone, humans had left them and the elves behind it to themselves. As we got closer, “Look at that!”, shouted Lucas.

The Dwarf shipyard was even larger and grander than I had imagined.

We knew the dwarves were rich, but it had been decades since the Exclusion Zone went up, cutting off all contact between the dwarves and our people. Our raft started being pulled up to the dock. It didn't look like we were going to get home – but we were not going to die on the vast ocean either.





Surprisingly welcoming, a stocky dwarf said, "Hi, folks. I am Gree – welcome to my shoreline and the Land of the Dwarf Kings!" "Help'em out of that wreck!", he yelled at his servants. Gree continued, "You look'n healthy just a little tired and hungry. Let me take'n you to the guest house. Can't have'n people starv'n on my doorstep.

Gree brags, "We have great meat – you'll be love'n it."

“Mia can you believe how much meat they have?” asked Lucas.

Gree seated us at an over-flowing table. “Have'n as much as you want, we'll trash the rest anyways.” My stomach growled loudly and we dug in gleefully.

After we had finished, Gree said, “Let me show'n you how I pay for this . Everything has a price.”

“Come tour'n my mines.” He wheezed as we climbed the stairs. “Need'm escalator.” he mumbled.





“Look at all my workers going to get'n my gold and my coal. “, Gree boasted.

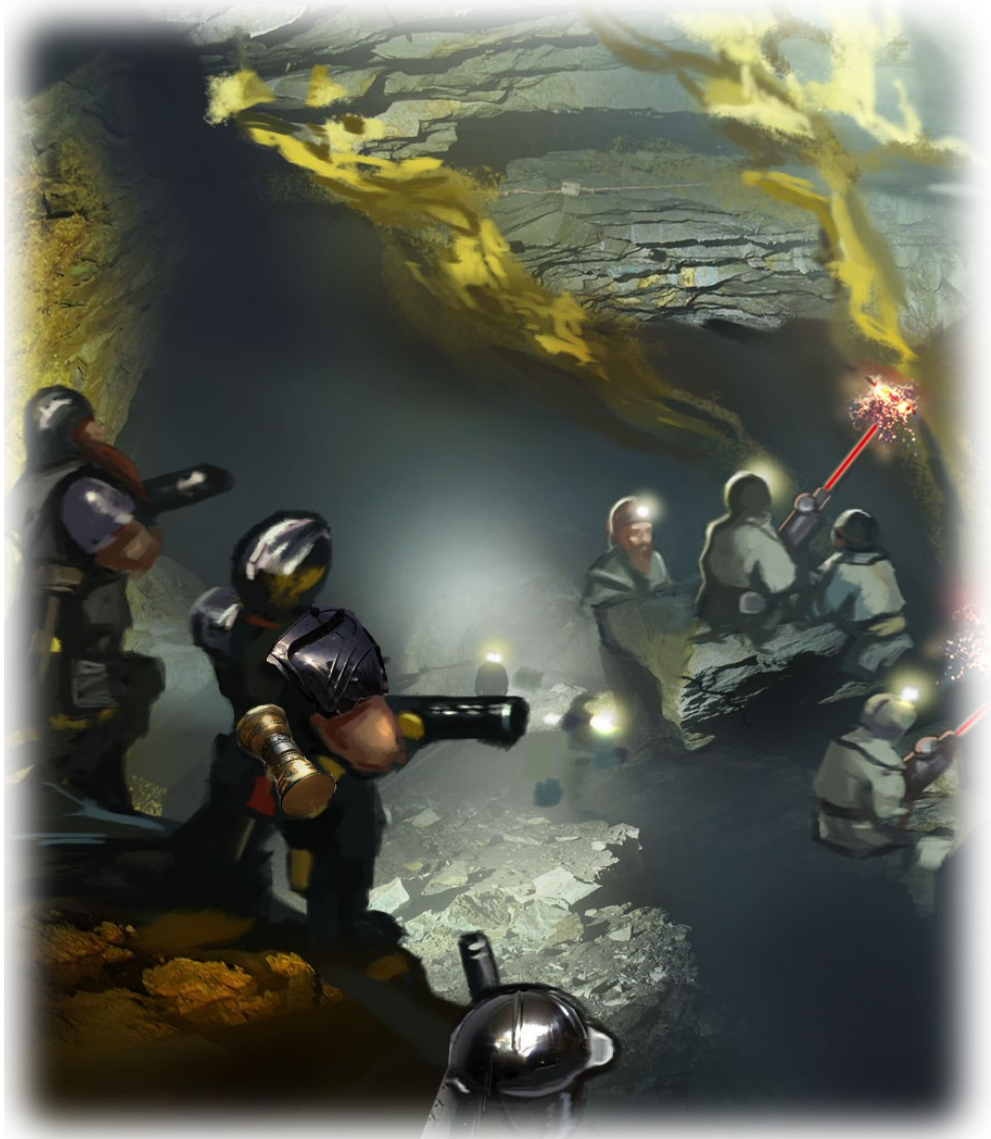
“They work'n for wages, 10 of my gold coins a day. We have guards to protect against the thieves – they are every-where.”

“They worse than those buy-nothing elves! They will ruin everything,” Gree grumbled .

The gold mine was sweltering hot and smelled of chemical wastes that seemed to rise as steam from the deep tunnel. "Work'n harder!!", yelled Gree at the miners. "Need'm more! Need'm more! More!"

A servant called Gree away for his nap and we were thankfully left on our own.

"Why does he need all this gold anyway?" asked Lucas. "I'm not sure," I admitted. It already seemed Gree had more than enough. We followed some worker dwarves who didn't talk to us to the coal mine. The filth of the coal mine was even worse. "Let's get out of here, Mia. It's scary", said Lucas.





We walked out of the dark of the mines back into the street. Lucas said, "Mia, boost me up to see". We both peer over the wall. All the splendor of the great dwarf city seemed to vanish in a few feet.

Decaying buildings leaned against each other to keep from falling down.

"Where is all the gold?" I ask.

Curious, we climbed the wall and started down an alley into the wasteland.

We saw that everyone does not live as well as Gree in the Land of the Dwarf Kings.



Handicapped and elderly workers lined the street, begging for handouts.



We hurried along quietly, trying to avoid eye contact.

As we explored deeper into the ruins, passing the beggars, the smell hit us.

Lucas said "This place stinks." The smell was so bad, my eyes started to water, but I grabbed Lucas' arm just as he nearly fell into a massive landfill.

The smell was overpowering.

Someone grabbed my arm. "There you kids are." said a servant dwarf, "Gree wants you back to your room so you get a good night's sleep before you start work tomorrow."

"If you don't work you don't eat in the Land of the Dwarves. You will get the standard 10 gold coins a day."

The room was a stunning contrast to the street we had just come from. When the servant left, Lucas whispered "I don't understand - why are there so many poor dwarves with so much richness all around? 10 gold coins seems like a lot!"





“I don't know, let's get some sleep now and try to figure it out in the morning.” We laid down in the soft pillows and quickly fell asleep.

In the middle of the night, I was awakened from my sleep with a tug on my ear. “I am Ava – a member of the Light Brigade. I am here to rescue you,” she said.

“ You must get up and leave immediately. The dwarves are not who they appear to be. The rich live well, but all the other dwarves serve them.”

Just as she said this, a white letter slides under the door.

“That would be your bill,” Ava said with disgust.

I held the letter and read in awe. We had been charged for everything!

Ava explained “It will take you years of toil in the mines to pay off the debt to Gree – most never do – they simply become slaves to his company, which now owns most of the Dwarf Kingdom.”

Now I understood why there were so many

homeless dwarves – those that could not work in the mines ended up on the streets.

I woke Lucas and showed him the bill. His face became red as he realized how we had been tricked.

Gree Dwarf Inn and Suites	
Ocean rescue	10,000 gold coins
Food	20 gold coins
Lodging	10 gold coins
Mine tour	10 gold coins
Minibar stocking	1 gold coin
Billing	1 gold coin

Sub-Total	10,042 gold coins
Taxes for King	1,005 gold coins

Total	11,059 gold coins
Due at checkout (Can be paid through wage deductions)	



Ava said, "You must come with me to the Land of the Elves where you will be free of this wage slavery."

We slipped on our clothes and followed the fairy. We followed Ava running as fast as we could.

"It is after curfew. Halt!", shouted a dwarf guard that spotted us.

Ava knocked over the short dwarf with a flash of light and yelled "Run!"

We ran.

The dwarf guards chased us but we made it to the woods. The woods were thick and dark, but we could see Ava's fairy glow.

As we got deep into the woods, we lost them. Ava flew in front of us and did her best to knock away insects as big as she was with her light. They were intent on eating us alive.

As the air cleared, Ava explained, "To keep the privileged dwarves like Gree in luxury, everyone else in the dwarf society must work like slaves until they can no longer work, and then they are discarded. We fairies have sworn to save those that we can – but most dwarves are too far gone with their lust of gold to listen."



"You will like the Land of the Elves much better." she said.

Walking was hard and lasted a long time. Lucas was homesick and I was starting to worry we would never see our parents again. She told us about the great Exclusion Zone the dwarves had built to keep the elves from meeting humans and destroying the dwarves' markets. It was really nice to have Ava to explain things. She assured us the elves could help. "We have finally made it – this is the land of the Elves!" Ava shouted with glee and a flourish of her hands. "Amazing!", Lucas and I said together. From our overlook, we could see that all of the region was bountiful and beautiful. There were no ugly alleys here, just waterfalls, trees and simple, elegant houses with odd rooftops.



Ava took us to a house and knocked quietly on the door, explaining, "This is my friend Sophia's house, She is a great maker." The door opened almost immediately. After happy introductions, Sophia said "Welcome to the Land of the Elves. You must be hungry and tired from your long journey. Won't you come in?"

"I must leave you now," Ava said while giving us each a mini-hug, "and go back to see if I can rescue more souls from the mines."

With a kiss to each of our heads, she flew back into the woods.





“This is my husband, Liam. We were just about to sit down to eat,” Sophia said.

“There is plenty for everyone”, Liam said as he served us vegetable soup in bread bowls. While we eat, they explained how life in Elf-land works.

“Here, we are all **makers** – we encourage creativity and making things.”

“What kind of things?”, asked Lucas.

Liam continued, “Everyone makes and improves things as their interests guide them. We don't operate like the dwarves - rather than sell our work so only a few grow rich, we share our innovations so we can all benefit.”

“This way, we all have abundance. Yes, sharing is the key to elf wealth,” said Sophia.

After lunch, they took us to their garden. "Liam is a bio-hacker, constantly experimenting with new plants like these grapes that keep us from getting sun burned," explained Sophia.

Liam continued, "When I develop a particularly useful plant - or a really yummy one - I share the methods to grow it and the seed DNA so it can be used on the robo-farms that feed and provide free medicine for all elves."

"I like to garden with my hands though - it is more fun!" said Liam. As we listened to Liam in the fantastic garden, Sophia looked closely at us with a raised eyebrow and pointed at my arm. "Were you stung in the swamp?" she asked. I nodded and so did Lucas. "These are infected, we need to get you to the doctor immediately.", Liam said.





“Doctors are expensive how are we going to pay?”, Lucas asked. Sophia and Liam laughed kind-heartedly and said, “He is very old - you will like Dr. Jackson.” Liam added, “But don't worry - there is no money here.”

Dr. Jackson's office was across the street. Sophia explained what had happened. After a quick check with what looked like a magic wand but clearly ran on electricity, Dr. Jackson grabbed a watermelon and began to slice it.

“We found that growing medicine in fruit makes it easier

for the younger children. Here, both of you have a slice and you will be as good as new,” he said with a chuckle.

On the way out, Lucas whispered, "The old dwarves were all homeless. Dr. Jackson seems much happier and he was really helpful. I don't even itch now." Overhearing, Liam said, "Everyone has value – even the very old elves. They have much to teach us and there are always useful, interesting tasks for everyone." On the way outside, I asked, "Who does the work that no elf wants to do?"

Sophia explained, "Well, we make robots and computer programs for tasks we do not want to do ourselves. See the street cleaner. There is not much of that kind of work as we use only what we must, we do our best to avoid waste and recycle most everything else." "Throw your watermelon rinds in the compost pile there", said Liam.



“What powers the robots?” asked Lucas.



As Liam boosted us on his shoulders so we could see, he explained, “That would be the solar cells. They are photovoltaics that turn sunlight directly into electricity. All the rooftops collect the sun's energy, which we can use immediately or store in advanced battery banks and ultracapacitors for later.

The houses also all heat and cool themselves too. We call that *passive solar*. As little energy is wasted as possible.”, explained Liam .



“There is something else I just don't understand. Where do you get all of your raw materials? Do you have mines like the Dwarf mines we saw?” Sophia said “It is ugly.” My heart sank as I pictured elves in a horrible mine. After a short ride in a tube-train, we get out at a dump. Our mouths fall open as we realize we had gone all the way around back to the dwarf garbage pit. Elf recycling robots (recyclebots) scavenged recyclables to turn into feedstock for 3D printers and other digital fabrication tools that run elf society. “We have made more complex machines that provide an abundance of freely-available goods and services to all elves, liberating us from menial labor, debt and servitude. We can now devote our time to non-economic pursuits that interest us. I like design and Liam likes farming. We all share our talents.

“So what do you make?” Lucas asked Sophia.



Liam quickly cut in, “Sophia is a master of CAD – computer aided design. Look at this!” – as he took us to a giant whirring machine.

“This is the 3D printer I use to make my designs.” said Sophia. With pride, Liam said, “Most of the decorations and the Elf knots on the buildings everywhere throughout Elf-land Sophia had a hand in designing.”

“I share my designs and everyone else can use them,” Sophia explained. “They are all structural – it cuts down on material use!” “And everyone agrees

they are pretty as my wife,” said Liam.

Sophia said, “But what I create is nothing compared to what our children do now. Come see.”

She took us to her children's school. Sophia said, “As the children have access to the tools and the knowledge to work on real projects, they do real work. See them testing new bikes, writing computer code to predict the weather, making their own toys, building electronics for their parents or designing and making furniture.”

I said, “At home, this would have been work for adults.” Sophia explained, “Here, learning, play and useful work are all intermingled.” She introduced us to the children, who happily invited us to come and see the wonders they had made.



Suddenly, “It is almost time for the show!,” they cried.



“We have been working with a class in the Southern Realm to make a hologram movie. They did the plot and the motion capture and we worked on the computer graphics and the hologram projector.” “Our class is especially interested in electronics” Liam and Sophia's daughter, Emma, said.

It was simply amazing - we had never seen anything like it.

Lucas said, “Maybe these kids can help us get home.” “Let's ask,” I whispered back.

We thanked Emma and the elf children for a great show and then told them our story about the shipwreck, the dwarves, our escape and how much we loved the Elf-land.



We explained to the elf children that we missed our parents, but didn't know how we could get through the dwarf barrier and the Exclusion Zone to see them again. They promised to help and then eagerly began sharing ideas. We pulled up a link with the other elf schools and suddenly hundreds of elves were dividing up the work to focus on parts of the problem that interested them. This creative commons exploded with ideas that seemed to take on a life of their own.

We decided on a vehicle and our team started in on the electronics. Some of the elf children helped Lucas understand circuit diagrams. Emma 3D printed a pair of safety glasses that matched hers and gave them to me so she could teach me how to solder. I had never done anything like that before, but it was fun to learn new skills and to work together with the elves. Everyone was so excited to try new ideas and to share them with the groups here and on the outer edges of Elf Land. The elves were not afraid to make mistakes. "It's just a learning experience", explained Emma when my first design sparked and left behind a trail of smoke. Finally, I got it and with the help of the elves, Lucas and I designed a guidance system. We were so proud!



After hours of intense work, we finally felt our part was done and Lucas and I went to sleep. With morning, all of our elf friends came running up, laughing and saying, “The northern elves have brought it. Come to the beach.” In the north, they had an even larger printer than Sophia's that could print in millions of materials. The northern elves, dressed in their formal wear, came down the beach holding a gleaming submarine. “This is the submarine that can duck the dwarves' Exclusion Zone and can take you back home to your parents.” We wept with joy to know we would be going home, but were sad that we would be leaving this magical place of sharing, caring, abundance, happiness and friendship. We must have been hugged a hundred times by the elf children as all of our new friends wished us well.



Just as we were getting in the submarine, Sophia said, “Mia and Lucas – Liam, Emma and I are really glad to have met you, but we wish you a safe journey home.



Let me give you this”, as she held out a key in her hand, “It is an electronic key containing a digital wiki of all the knowledge of Elf society. The open gear should remind you to share your ideas and creations. Take it back to your parents and the other humans to help make your world better.”

“We will.”, we replied as we hugged them goodbye and got into the submarine to head home.

~~The End ~~

Parents,

The key to the wealth of the elves is free and open source hardware and software. It is a real concept used every day throughout the world of real humans often called makers.

You can help your child be a maker and learn about how to get involved here:

- Appropedia : collaborative solutions in sustainability appropedia.org
- Arduino : electronic prototyping platform arduino.cc
- Blender: make animated movies blender.org
- Code.org : learn to write software code.org
- Discover an Open Source World opensource.com
- OpenSCAD: script based CAD openscad.org
- Open Source Ecology : Blueprints for civilization opensourceecology.org
- Open Source Hardware Association oshwa.org
- Open Source Laboratory: make science tools appropedia.org/OSL
- Public Lab: DIY environmental science publiclab.org
- RepRap : self replicating 3-D printers reprap.org
- Scratch: create stories, games and animations scratch.mit.edu
- Zooniverse: citizen science zooniverse.org

Have Fun. Learn. Share. Make the World Better.
– Dr. Juice