

A report on the Europeans

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The history of life on Earth is a fascinating story, both from an evolutionary as well as a sociological perspective. However, our story pales to those of the Europeans. As we seek the way forward in light of recent events, it is imperative that we compare our similarities and differences to the Europeans.

Whereas on Earth there are doubts as to the location of life's origin, it is clear that life on Europa first started in the vicinity of hydrothermal vents deep in their ocean. Like on Earth, these hot vents spew out copious amounts of nutrients and metals that are necessary for life. Unlike Earth however, European vents commonly reach several tens of meters high and often form in concentrated clusters. These so-called 'creches' are undoubtedly where the first European life forms emerged, happily taking advantage of redox and electron imbalances in order to generate chemical and electric energies.

At some point, an evolutionary explosion occurred in the history of the Europeans in which simple life forms evolved to multicellular life. How this evolutionary explosion occurred is still a matter of debate. For an ecosystem to evolve from simple microbial life to multicellular organisms, a specific energy barrier must be overcome. Some scientists suggest that photosynthesis on the surface of the icy crust contributed to the evolutionary explosion in the deep European ocean. While it is true that photosynthetic microorganisms akin to cyanobacteria have been discovered there during our initial explorations, imagining the transport of this energy (in the form of organic matter) to the kilometer-deep ocean is quite far-fetched. Instead, current evidences suggest that the Europeans evolved slowly from living in creches (giant concentrated clusters of hydrothermal vents). These creches are thought to be stable for millions if not billions of years, due to the nature of the tectonics in Europa. Thus, while communities around hydrothermal vents on Earth are considered transient, the European vents allow for much longer time for the development of a stable population.

The next stage of evolution continued as European societies develop within and around these creches. Over time, the Europeans develop humanoid-like appearances, with gill-like and fin-like appendages that allow them to breathe and traverse rapidly in water. Their skin is blue-green in color, with different shades depending on their age. Curiously, they are about half as tall as an average human. Their overall appearance caused a lot of confusion for Earth scientists back in the day. Why would they be humanoid (and smaller) in appearance instead of more fish-like? After all, we do not find any human-like creatures living in Earth's ocean today. A humanoid form is not optimal for swim speed at all. However, the Europeans do possess opposable thumbs and independent appendages (i.e. separately controlled legs and arms), allowing them to utilize tools. Thus, it seems that the ability to use tools efficiently is one of the main guiding parameters for the body shape of a member of a civilization. We also think now that their small sizes are likely an adaptation to the high pressure of the deep ocean.

How do we know how they look like? Why, from the Europeans themselves of course. Here, we can provide you with firsthand accounts from the diary of the first European to make contact with us and to reach the surface. Her name is Janet (her real name consists of

syllables that we could not pronounce, but we were all happy to accept Janet as a middle ground). This is an excerpt from Janet's diary, translated and embellished by yours truly:

I have long been fascinated by the twinkle from the ocean above. While slight and rare, occasional bursts do light up above our heads to those with keen eyes. I resolved to undertake this journey alone, to discover what is truly up there.

Using a special breathing equipment, I was able to travel up and up, further than anyone had gone before. The journey was, suffice to say, extremely scary. Up and up I swam, each time with no end in sight. I must have done at least 20 journeys and even my family was starting to think that all my endeavor was in vain. Still I persisted. On my 25th journey, I finally discovered the boundary. A solid ice, from which I could see nothing beyond. I searched for kilometers without finding a way through. I returned home that night dejected. It seems that what the rest said were true. Our world is closed off at the top like a dome, and bounties can only be found by exploring the depths of hell beneath our feet. The thought put me in a drunken stupor for days. One of my dearest friends made fun of me repeatedly, until I could take no more, and I foolishly promised to them that I will find the true surface or die trying.

The next day, as I woke up with a pounding headache, I regretted my outburst. But there was nothing else to be done. Words were said, and I am but a European of my word. I ascended once again, reaching the icy layer. In my chagrin, I closed my senses and laid floating... and somehow, I could feel a small tug. I focused more intently. A current, going to the east. I followed it out of curiosity until it got stronger and stronger. There, there was a crack in the icy layer. When I say this, I don't mean a tiny crack. I meant a crack several tens of meters across in which I could easily fit. I considered for a few seconds before deciding to swim upwards without a second thought. Hours and hours I followed the crack, until, amazingly, there was no more ice. I looked up and the sight froze me to the core. I saw a giant eye, looking back at me angrily. The gods are angry at me. I swam down. I swam down like I have never swam before.

Thus ends the astonishing account of the first ascent of Janet. The giant eye is of course none other than the Big Red Spot on Jupiter. I am glad to say that Janet did eventually overcome her fear. She made it to the surface again, whereupon she met us by chance just as we were preparing to drill into the depths.

At that time, it had only been 1 month since I arrived to Europa. While waiting for the drilling to finish, I was spending my time writing an email to my lovely Fiona, who I hoped was waiting for me back on Earth (she better be. The amount of money I transferred to her bank account from my first paycheck is enough to buy a house, and more is to come when I return to Earth). Janet saw me, and we were both too surprised to do anything other than to stare at each other for a few seconds. Eventually, through a lot of bumbling and considerable courage from both our sides, we were able to determine that we were both intelligent. Thus, the focus of our expedition suddenly shifted from industrial fuel harvesting to becoming the first point of contact with an alien civilization.

Janet, as it turns out, was a very talkative European. We would spend hours exchanging stories while sitting on the icy surface. Communication was difficult at first, but slowly we were able to use sign languages and pictures drawn on the ice to exchange concepts. One of our main confusions at first revolves around the topic of gender. The European gender consists of males and females and also unexpectedly, neutrals. Females tend to be slightly bigger than males and neutrals. As strange as it sounds, it seems that the Europeans are able

to freely change their gender, allowing them to try out different features before settling on their preferred form. Just as we are confused by this, Janet is equally perplexed by our culture's inflexible gender notion.

Upon Janet's insistence and the eventual approval of my superiors, we finally arranged to visit the world of the deep ocean. I remember the first trip as if it was yesterday. Janet guided me and my apprentice (Brian, God bless him) through a maze of cracks and tunnels, through the ice and down into the deep ocean. At first, it was astoundingly dark. The view from the submersible was non-existent and we had to rely on thermal readings to keep track of Janet, who I could hear through the walls was happily chattering about in her non-comprehensible language. As we descent deeper, we started to notice a pinprick of flame, which gradually increase in size to a blaze. We have reached a creche, resplendent with pillars of active fiery vents that are the life force of the Europeans. Upon landing, Brian and I were greeted warmly by a group of Europeans with diverse black and white colorations. The Europeans greeted us in an ever-shifting spiral pattern as part of a show translated roughly by Janet as the 'dance of the vortex', which we later learned was the sign of highest respect that a European tribe can show to another.

Since then, Brian and I have made numerous trips to their creches, where we have learned much.

Within a creche, different types of vents exist. The two most common ones are the acidic black smokers and the alkaline (often white) smokers. Europeans from these two vents are easily distinguishable based on their colorations, which we later learned is a function of their adornments rather than their skin colors. The ones from the black smokers tend to adopt darker coverings with sprinklings of shiny materials. These shiny materials are concentrated from precious ores that are sprayed out from the black vents. In contrast, Europeans from the alkaline smokers prefer to wear lighter colorations with shades of white, green and blue. Janet herself came from the alkaline smokers. Trade and intermingle between these two "tribes" are aplenty. Where these tribes intersect and co-exist, members from these tribes live in harmony, and many individuals are observed to adorn both darker and lighter materials, generating a more sophisticated look. It is of no surprise that this type of clothing has spread to Earth, generating a fashion line marketed as European-style with the catchy slogan "*Living coolly with depth and pressure.*" Of course, I bought a set for Fiona, and she did express her gratitude through an email, to which I was quite happy to hear.

Sociologically, each European is strongly attached to their creche and even more strongly to their specific home vent. Many of these vents are large enough and contain openings (either natural or carved) that can comfortably house a small village of Europeans. These openings are of course no longer active, with minimal contact with hot fluids. Nonetheless, the danger exists, and this behavior is akin to humans building settlements on the base of active volcanoes.

Trade and agriculture arise naturally within a creche, as well as between creches due to the deficit of certain elements. As a simplification, the black smoker tribe typically supplies rare precious metals while the alkaline tribe supplies potash and magnesium to the whole population. Evidences of conflicts over natural resources abound, and the Europeans have a terrifying harpoon that can shoot out its tips to over 100 ft of distance. I have seen this in action as a tribe of Europeans took down a walloon, which is a whale-type creature living in

the European ocean that is at least three times bigger than whales on Earth. Their blubber is particularly useful for construction materials.

After the establishment of trade and agriculture, the age of exploration naturally follows. Going upwards would have meant traversing pressure differential of at least 60 km of water (150 km from some creches), which meant that initial exploration efforts were focused on going laterally and downwards rather than upwards. If European records are to be believed, historical accounts state that there was only one original creche. The other creches were either expanded or formed artificially. We are still conversing with them to find out how exactly these were managed. Some of their words and terms are very much alien to us and not easily translatable. The feat, if true, must have involved some impressive geoengineering. This is not out of the question as we can observe today that the surface of their seafloor is littered with different creches connected by natural (?) “highways” of vortex flows.

Notwithstanding the claim of the “one true creche”, it is abundantly clear that the Europeans have developed a mastery of the simplest element: hydrogen. Hydrogen sourced geothermally is the main energy source throughout their civilization. The European civilization is far from energy-limited, with hydrogen available as a non-exhaustive source of energy that is literally pouring out of the seafloor beneath their feet. Hydrogen is used in everything from farming, cooking, cleaning and even in toys of little Europeans. I have personally played with a hydrogen-powered toy that is capable of generating a small water vortex upon the press of a button. It is quite amusing.

Intriguingly, hydrogen-based lighting also exists in their civilization. When we first met the Europeans, we were surprised that they had eye-like appendages. We later determined that they see in infrared light. This feature seems to be inherent in all Europeans we have met to date, although there is obvious difference in the level of ‘eyesight’ between individuals. We believe that the natural selection for better eyesight is a recent development brought upon due to the popularity of hydrogen-based lighting as a symbol of art among the upper class. The “luxury” of sight is now also slowly becoming more popular among the general population.

Exchanges between our civilization have been mutually beneficial. We are learning more and more about how to apply hydrogen efficiently in our machineries, and their impact on our culture is extensive (including a recent TV series). Just as we are fascinated by their society, the Europeans are amazed by ours. We have journeyed across the ocean of stars, an ocean in which they were not even aware of its existence until recently. With lateral and downward exploration being more or less complete, their focus is now shifting to upward exploration. Their contact with us will surely accelerate their knowledge and technology by leaps and bounds.

Recent events have however led to the necessity of this report. As their civilization grew in size, the Europeans are starting to face many of the same problems that Earth faced in the 20th and 21st century, such as overpopulation, local climate change and pollution of their ecosystems. Skirmishes between creches are increasing in numbers. During our last descent, we were caught up in a crossfire between two creches, presumably fighting over resources. Needless to say that I survived. Brian however, did not. One of the harpoons penetrated straight through our submersible, impaling Brian and effectively ending his life. He did not suffer. I however, will be mentally scarred for the remainder of my life.

This event has emphasized to us the terrifying power of the Europeans. All contact with them has now been halted. At this moment, the Europeans remain bound to their home moon. They still need to pass through multiple barriers before they can achieve spaceflight, although we anticipate that their mastery of hydrogen will shorten the time needed to do so. The question now is – whether to subjugate or to assimilate? This is a decision that I will happily pass to the committee, as I do not wish to be the one who will decide the fate of one entire civilization, maybe even possibly two.

Thus I end my report. I will have to attend to Brian's funeral in a few minutes.