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# A Light In The Darkness: "Is that a Radioactive Golfball in Your Pocket or are You Just Pleased to See Me?"

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This article started life as a discussion between myself and Holly regarding her artwork for this issue's cover. We got talking about what glows are, how and why they act like they do, and how to use them in stories for something other than generic lighting. And that great unanswered question-- why do the Pernese never seem to run out of the things? Curious? Read on...

When the Pernese lost the technology that brought them to the planet, they lost more than just the computers and the genetic engineering equipment. As well as the expensive and the complex, the simplest everyday machinery fell to the slow march of time. And while much of the technology could be lived without, some had a more fundamental effect on the lifestyle of the colonists - how, when you are living in caves, can you cope when all your artificial light sources have failed?

Candles are one option, but they can be messy, smelly and potentially dangerous: open, easily knocked over flames are not an ideal solution in deep caves filled with tapestries and hangings. So while candles are sometimes used, it is mostly for timekeeping: for general lighting the Pernese turned to a much neater and safer native alternative: glows.

Glows appear to be yet another manifestation of the Amazingly Convenient Pernese Ecosystem -- that supposedly alien biology that somehow seems to mesh perfectly with our own.... But ignoring the nonsense of the

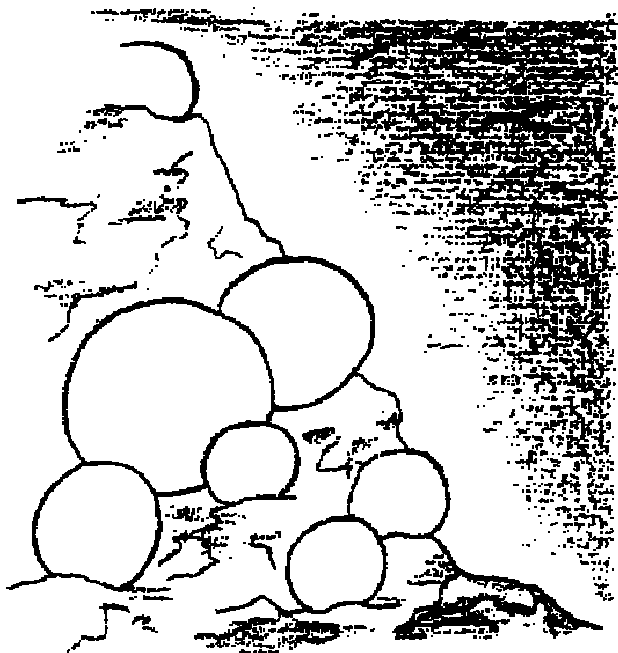
biochemistry (if humans can eat wherries then they're NOT silicon/boron-based life forms) and the just-too-useful-to-be-true plant life such as numbweed and needlethorn. We can generally find a workable explanation for most things.

We are told that glows are a native Pernese life form naturally found in caves in the tropics, first discovered by the team who surveyed the planet for colonization. They can be kept in closeable wall baskets or carried in handlamps. They give out an amazingly large amount of light (to light a cavern the size of a Northern Hatching Ground, they would have to), over a long period of time, apparently without heat, and are available everywhere. But what exactly are they? The books are remarkably uninformative on the subject, so we need to extrapolate further if we want to reach a better understanding of what glows are, where they come from. and how we may more effectively include them in stories.

Glows are described as "fungoid" -- they're not, strictly speaking, fungi as that term describes something that evolved on Earth. and for all the apparent similarities, glows have undergone a totally separate evolution on another planet. Similarly Pernese "fish" are not the same as Terran fish; they just look similar enough that the term has stuck). However, "fungoid" does suggest a definite resemblance to Terran fungi, so we can make certain assumptions about the nature of the Pernese model. We can assume that they are basically immobile organisms, incapable of photosynthesising. which can reproduce by budding or by producing spores. And that they glow! The precise mechanism of their light production is something best passed over and put down to the same evolutionary pressures that produced hypodermic needles -- we have nothing on this planet that can compare to the output of a glow, so we have no simple comparisons.

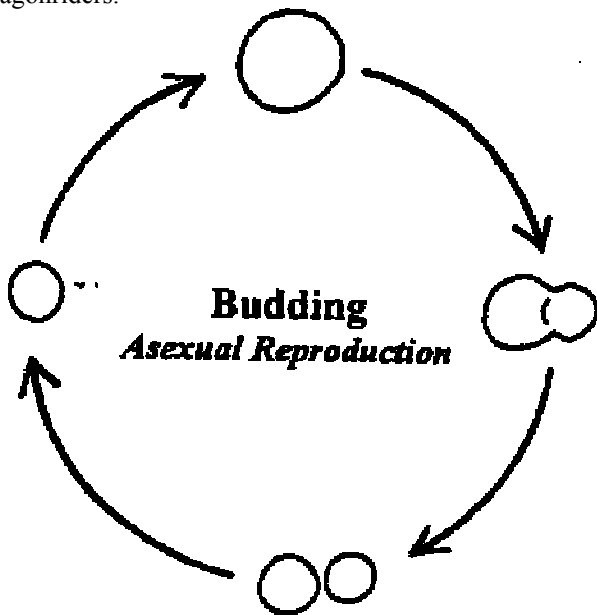
So, what is the natural habitat of the glow? What reason do they have for being so violently luminescent, a biochemical trick that must take a large amount of energy? What did they do before humans arrived and began using them as indoor lighting? This is where we have to start extrapolating from the small amounts of information we are given in the books.

Glows cannot produce their own food and they cannot move to capture any, so they have to somehow attract a food source to themselves. Giving out light is a good way of luring flying crawlies -- but glows are not sticky, they have no way to hold or digest those creatures attracted to them. There has to be an extra step involved. We know that in their wild state, glows are found in caves. We also



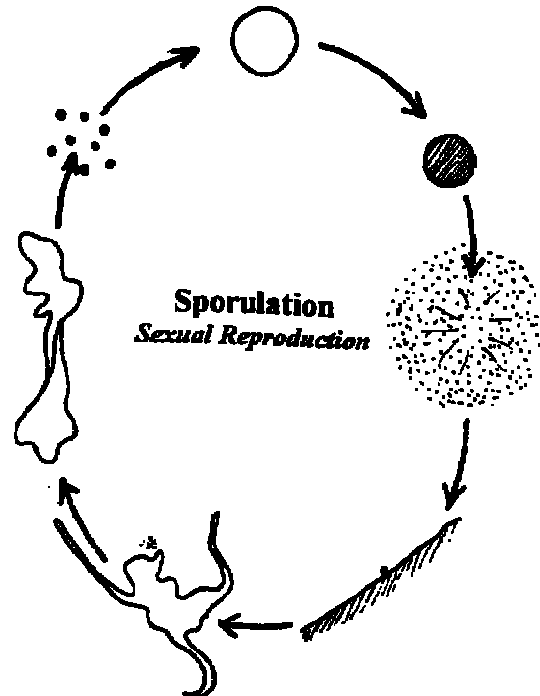
know (from Dragonsdawn) that some species of wherry roost, and presumably breed, in caves, much like many Terran bats and birds, and that many wherries eat crawlers -- but leaving the cave to hunt may expose them to other predators seeking larger prey. Glows, growing within line-of-sight of the cave entrance, attract crawlers into the caverns, making them easy pickings for the cave wherries -- who then, in the manner of bats throughout history, dump their waste matter liberally around the cave and across the glows, providing them with a rich, easily absorbed food source (glows will probably feed on dead animals as well). It is a simple relationship that benefits both parties.

So that explains what they are, where they live, and how they feed. But how do they make baby glows? Well, the usual way will probably be by budding, splitting off small glows from the main body of the original fungoid and letting them drop/roll away to find their own position in the cave. This makes sense, given the spherical shape of the glow: there is probably a point beyond which the absorption capabilities of the surface area cannot adequately supply the body mass with nutrients (given that producing light is a fairly high-energy procedure) and splitting that mass then becomes a physiological necessity. The floors of some "well fed" caverns may well become smothered in budded glows, but it is likely that some creatures consider glows to be food and so prevent the caves filling up too far. Even so, the more successful caves must be sufficiently filled with glows that they could be used as useful reference points by night-flying dragonriders.



If well-fed glows bud off their offspring, what about those not getting enough nutrients? A starved glow cannot maintain its light output and will begin to fade, until it is barely luminescent and does not project any light onto its surroundings. At this point it is still capable of putting out small bursts of light if it detects air movement around it (the guttering old glows in Dragonquest), but this does not

last and before long the glow becomes quiescent. Now the glow's energies are channeled into producing spores, transforming its entire mass into millions of tiny reproductive specks. When a glow is ready to release its spores it stops glowing entirely and waits for a suitable air current (be it caused by a stray breeze or a passing animal) before bursting with some violence. The spores are then carried by wind or by wherry to a new site. They do not grow into the familiar glowing spheres, however - the organisms produced by the spores are visually insignificant, showing up as little more than gelatinous patches on rocks or tree bark, wherever they can find a suitably damp, shaded spot. They are a vital part of the glow life-cycle however, for this is the sexual stage where genetic information is mixed.



This sexual stage is hermaphrodite but cannot fertilize itself; instead it sends out fine "feelers" in an attempt to find others of its kind before it dries out and dies. If another is found, the extended "feelers" connect and genetic information exchanged; the two then separate and begin to produce the next stage in the life cycle. This they do by producing several small, solidly encapsulated cysts which drop to the ground once they have matured. These resemble tiny pebbles and as such are often picked up by small wherries seeking gizzard stones and ingested. They are then carried by the wherry until the creature either passes them through the gut, or regurgitates them with other worn stones, hopefully into a new environment. If the new surroundings are suitable (dark with a good initial food source), then the cysts split open to reveal a minute glow which then proceeds to grow in the usual manner. Unhatched cysts can remain dormant for many Turns, waiting to somehow be delivered to the right environment.

So if that is how glows exist in the wild state, what about the ones found within Holds and Weys. They are

not (one hopes) constantly being dumped on by wherries, so how are they kept fresh?

In the domestic environment, glows are used for general lighting with great effect -- they can be used in everything from handlamps to hanging baskets and their light seems to reach a long way. Their "cold" light (referring to the fact that they don't put out any heat, rather than the nature of the light quality: fannish consensus seems to be that their light is more warmly yellow than anything else) means that they can be kept in a wide variety of containers made of vastly different materials, from metal bowls to paper lanterns or the thin hide shades seen on the cover of this issue. For Gather decorations, single glows may be placed inside baubles of colored glass or within translucent seashells to give a particular effect.

Without feeding, however, a glow's lifespan is definitely finite, which is why "used" glows need to be changed often and replaced with fresh ones. But where are these fresh glows coming from, and what happens to the old ones? They can't be being constantly gathered from the wild - not all Holds are in the regions where they grow naturally. Something more must be happening that we just don't get to see.

Any human settlement will inevitably produce a certain amount of biological waste, and something must be done to dispose of it if disease is to be avoided. It may be dumped into flowing water, but in inland areas this is unlikely to endear you to the next Hold downstream! Some may be used as fertilizer. But more practical, perhaps, is using it to grow and refresh glows.

Glows prefer to feed off native Pernese waste, but this can be mixed with Terran to give an almost equally acceptable substrate. Most Holds have a watchwher or two, and firelizards can be trained to use the glow cavern/hall as a litter box. A Hold that keeps and breeds wherries has another easy source of waste; it may be that many Holds keep a few wherries for glow-fodder as much as they do for eggs or meat. The waste is collected and taken to a specific cavern or building well away from the living quarters, where it is spread out over the glows that line the floor, and probably shelves and wall-baskets as well. Needless to say, it is probably seen as punishment duty unless the person in question has totally lost their sense of smell! Within a Weyr (with its large quantities of vastly suitable waste -- after the Pass it may be a source of revenue for dragonriders to sell their dragon's waste to Holders wanting to improve their glow caverns! At least they can deliver direct....). "middens duty" is a common weyrling punishment.

Once a sevenday, perhaps, the old, "used" glows that are showing signs of losing their light are gathered together and taken to the glow cavern, where they are exchanged for fresh, fat ones. The fresh glows are washed off, then taken back to the Hold to give out light until their own reserves of energy are depleted and they are returned to the cavern to feed and bud.

Given all of this -- how does it make glows any more interesting as potential story props? Well, changing and fetching fresh glows could be a job that characters try to wriggle out of where possible, given the smells involved. And what happens if a used glow is somehow missed when the time comes to change them? If it's left long enough, it will eventually shower some unfortunate soul with millions of spores! It may well be a common game for Pernese children -- taking glows and starving them in a deliberate attempt to get them to spore, a sight that must have some inherent entertainment value, depending on who you can get them to burst over. The spores themselves will probably be enough to set off allergies in some people, and it's possible that they have a mild hallucinogenic effect on firelizards and dragons (although it would take a LOT to have any effect on a dragon and firelizards are so scatter-brained anyway that it would be hard to tell the difference).

And then, of course, there's the timeless question: "Do the glows go out when you close the glowbasket?", the Pernese equivalent of the refrigerator puzzle. The answer is that no, they don't, so closing a glowbasket when you leave a room is a complete waste of time! Not that generations of Pernese children haven't wasted hours cracking open baskets in the hope of catching the glows turning on -- evidently some ideas of the Ancients survived just fine.