

STILL WATERS

(Outline)

Sequel to CENTRAL HEAT

by

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In sealed underground refuges and in space stations and on the moon, life survived. Where else could it have persisted through the loss of the sun and the death of the surface of the earth?

In *Central Heat*, it's mentioned that life has survived in the depth of the oceans: the seas provide a major part of the food supply for the descendants of the lunar colonists. How sea life could survive is not explained in that novel.

There are reasons why this survival is not only plausible but would be inevitable. Water has both high specific heat and high thermal inertia -- in other words, it holds heat tenaciously, and this is especially true of such enormous bodies of water as the oceans. Of course, in time even the oceans would freeze completely, were it not for the insulating layer of ice that formed quickly over their surface after the sun was taken, and the constant supply of heat from the interior of the earth.

For many years, oceanographers have been investigating the vents along the mid-ocean ridges. These vents along the ocean bed are now known to be important sources of a number of complex chemicals, and they even support a great deal of deep-sea life, including a wide range of creatures not seen anywhere else and unknown until recently. These creatures are independent of the life that lives near the surface of the sea; instead, the basis of their food chain is the chemicals spewing from the vents, and they can survive at those depths in part because of the heat from the vents.

The removal of the sun in 2009 resulted in the death of the surface plankton and therefore in the death of the whales and other large animals that grazed on the plankton. (The ice would have killed the whales, anyway, of course, since they are air-breathing mammals. Even without that, the cold alone would have done it.) However, this also meant a steady rain of dead and decaying matter drifting down to the lower levels, where the temperature remained steady, so that life blossomed at mid levels and on the ocean floor even while it died above. And some of the life that survived on the ocean floor was human.

As far back as the 1960's, the United States and other navies, as well as civilian research agencies, were experimenting with underwater habitats. The early ones were all on the continental shelves, but the military habitats moved steadily deeper. The motivation was the usual military paranoia, combined with the increasing importance of deep-ocean weapon and spy device emplacements, beginning in the 1970's. The opportunity was provided by the discovery of the vents along the mid-ocean ridges: for the first time, it became possible to establish an

underwater habitat in the deep ocean that was not dependent on contact with the surface for food and energy.

MARSH was the result: Mid-Atlantic Ridge Submerged Habitat. Inevitably, its inhabitants call themselves Marshans. MARSH was the first of a planned series of such habitats along deep-sea ridges, but there never was another: budget cuts, political changes, international tensions ... and finally, the great and final calamity.

When that calamity happened, when the sun disappeared, MARSH found itself cut off from the surface. No one in the Pentagon had time to concern himself with the fate of some research scientists and naval technicians at the bottom of the sea. The Marshans had no vehicles that could reach the surface (only wheeled and sealed cars for short-range work on the ocean floor) and were therefore truly stranded.

Before the Taking, contact with the surface was by ultra-long-wave radio (a technology in use today by the United States Navy to maintain contact with its nuclear submarines while they are submerged). Thus the Marshans were as aware of the disappearance of the sun and the subsequent chaos on the surface as were the astronomers at Mendeleev. And they suffered the same anguish at not being able to be with their families at the end, and the same resignation to their own deaths followed by the realization that they would survive.

One of the ongoing scientific tasks assigned to MARSH when it was established was the measurement of the precise distance to the sea surface above the habitat and the changes in that distance, both cyclical and irregular. This was done by measuring the time between the transmitting of a radio signal straight upward and the receiving of its reflection from the surface. Other characteristics of the sea surface could be determined from changes in the returned signal.

The equipment performing this task continued to operate automatically during the months following the Taking, in blind, blithe mechanical ignorance of the emotional turmoil of its human masters. One day the computer monitoring the study detected results it was not programmed to interpret and, it called for human help. Old habits were still strong, and humans responded to the computer's alarm. The equipment had detected phase, waveform, and amplitude changes in the reflected signal. After some discussion, the humans reluctantly admitted to themselves what the data meant: the surface of the sea was now a solid; the obvious explanation was that a covering of ice had formed.

The post-Taking history of MARSH followed a course diametrically opposed to that taken by America, Russia, and the other underground habitats depicted in *Central Heat*. Where they shrank and turned inward and sickened socially, MARSH grew and expanded physically, and became nonmilitary and benign. The nearby vents provided heat and oxygen, and also the chemicals needed to power the fuel cells that provided the habitat with electricity. The sea itself provided food directly and the seabed provided the substances needed to expand the linked buildings of the underwater habitat.

America started as nominally under civilian control and quickly became a military-dominated theocracy, but MARSH moved in the opposite direction. From a military establishment, it evolved into a civilian society of great diversity and freedom. The Marshans reinvented democracy after their own fashion, basing it only loosely on the original model of the United States but freely adapting it to their own needs and natures. What they have created, they value highly and guard fiercely.

The year is 2108.

Press Stevens is out by himself collecting biological specimens. "Out" in this case means of course out on the ocean floor, some distance from the nearest airlock entrance to MARSH. Press is wearing a suit which at first glance looks remarkably like those used at Mendeleev. Its purpose, however, is the opposite: to keep pressure and water out, rather than to keep pressure and air in.

He receives a message to return immediately. He does so as quickly as he can (which is not very quickly). When he gets back inside, he finds the entire society abuzz: the ice far above them is breaking up!

The Marshans, of course, have no idea what happened beyond the ocean once the ice formed. Their picture of the earth's condition is identical to that taught Jonathan Holroyd in school in America: an airless, heatless, lifeless surface on a planet coasting through interstellar space alone except for its moon.

At first they assume that the ice breakup is a temporary phenomenon, due to some unforeseen tectonic process or perhaps a major meteorite strike. But when the breakup continues, they decide to release an air-filled probe which will rise to the surface and transmit measurements and pictures back to MARSH. To everyone's astonishment, the probe tells them that there is air above the water's surface and the temperature of the air is high enough for humans to survive with adequate protection; and the probe sends back a picture of a sun shining dimly through the haze in the sky.

After that brief, though electrifying, transmission, however, the probe goes dead. Another probe is manufactured and released with much the same result.

What the reader knows actually happened (the new "solar" system described in *Central Heat*) does not occur to the Marshans. The most popular hypothesis among them is that the wandering earth-moon system has been captured by another star.

Astronomy is understandably a virtually dead science in MARSH, so the Marshans can be excused for being seduced by this charming hypothesis. Evelyn Trevethan, however, knows better. Her primary science is geology, but she's read enough astronomy for pleasure to point out to her companions that such a capture is statistically highly unlikely. Moreover, she tells them, even if the earth had been aimed directly at the nearest star when the sun disappeared (which it never is), the world would take more than 45,000 years to make that trip. And even ignoring that, she maintains, a capture orbit would probably be an hyperbola, meaning that the earth would pass close to the star and then be flung back out into interstellar space. At best the orbit would probably be a highly elongated ellipse, so that the earth would spend most of its long year frozen and then brief periods close to the star and therefore at terribly high temperatures -- possibly even high enough to boil away the seas. This might be the spring preceding the end of their own society.

Evelyn is shouted down. She catches Press' eye and shrugs, with a small, cynical smile.

Their ancestors at the time of the sun's disappearance lacked the wherewithal to reach the surface or shore, but that's not the case with the latter-day Marshans. They vote quickly to construct a vehicle capable of exploring the thawing surface. As a consolation prize, Evelyn Trevethan is urged to accept command of the mission. After some hesitation, she accepts and then asks Press to come along as her chief assistant. "I'll be the brains," she tells him cheerfully,

"and you'll be the mindless muscle." Press laughs and accepts the offer. The middle-aged Evelyn has been in effect his mentor for years, and he's in the habit of doing what she tells him.

Evelyn asks that the group be armed, because the two probes might have been destroyed by hostile life forms. But her fellow Marshans react with horror to this idea and veto it.

Some months pass while the vehicle is built and tested. More probes are dispatched to the surface; some are lost, but others survive, and there seems no rhyme or reason to it. When Evelyn, Press, and their small crew ascend to the surface, however, the reason soon becomes clear. They barely have time to tell their comrades on the sea bed that they are receiving broadcasts from what appears to be a well established radio network, when they are engulfed in a storm of immense ferocity. Such storms are common along the world's coastlines and the seaward edges of the ice caps, and the Marshan expedition has surfaced right at the slowly advancing water-ice boundary.

They are swept rapidly toward the ice shelf. Because of storm damage to their vehicle, they cannot resubmerge; nor can they communicate with home. They can, however, listen to a broadcast speech by Jonathan Holroyd, welcoming the ambassador from the aliens, to whom Jonathan now refers for the first time as "the Draconians." (Jonathan's private joke: "Draconians" not because their star lies in the direction of the constellation Draco, but because of the severity of their treatment of Earth.)

After a harrowing few hours during which they escape collision with floating ice largely through luck, the Marshans are caught by a powerful current which runs westward along the ice shelf. (This current circulates clockwise along the perimeter of the roughly rectangular enclosed sea bounded by South America on the west, Africa on the east, and ice on the north and south. It is a new incarnation of the Gulf Stream.) They are carried by the current for days, always in danger from the ice.

Eventually they come in sight of an ice-free coastline. By now they have managed to repair their craft enough so that they can break free of the great current and make for land. Here, in an isolated spot, they work on repairs to their vehicle and spend much time listening to radio broadcasts, learning about Jonathan's world. Lifelong democrats that they all are, they are horrified by the picture that emerges, and they all agree that they must try to return to MARSH without letting the surface society know of their underwater home's existence: Evelyn's fears of hostile alien life forms were unjustified, but the life that now inhabits the earth is nonetheless hostile -- at least to the ideals the Marshans hold dear. However, they lack the supplies and equipment for the major repairs their vehicle requires; the degree of damage it suffered in the storm was not foreseen when the group set out. They will have to contact someone on the surface for help. (Which decision tells us something else about them: they're not the type of people to take what they need either by force or stealth.)

Press heads out to find civilization. What he finds is a small research station. More precisely, what he finds is the station's administrator, who is out for a solitary walk: Connie Allendorf.

She turns out to be the perfect contact. Over the years, her resentment against Jonathan Holroyd has grown to hatred of him and his rule. She left the moon before Isaac Simkin's death, retreating to this out-of-the-way spot to brood. With time, her brooding grew into a determination to undermine Jonathan and pull him from power. She is now the leader of a determined but small and thus far ineffectual underground resistance group. The existence of the undersea society is a heartening revelation to her. With their resources and manpower to support

her, perhaps she can finally achieve some measure of vengeance. She puts the facilities of her station at Evelyn's disposal, and the Marshans are able to repair their vehicle. The alliance Connie wants is established.

Marshans infiltrate slowly and pseudonymously into the larger society on the surface of the earth. Evelyn and Connie become fast friends, although Evelyn (the older by three years) is disturbed by the well of venom in the younger woman. Marshans may not be saints, but their open, easygoing society produces generally benevolent people with a tendency to talk out their feelings; the intensity of Connie's hatred for Jonathan is something new and distressing to Evelyn. Also new to Evelyn are feelings of sexual attraction. Her life has been celibate and full, and now that her sexuality is awake, it's oriented toward another woman -- Connie.

The upper world is an easygoing one in sexual matters (except when it comes to incest, as we have seen in *Central Heat*), and so Connie, while completely heterosexual and therefore unresponsive to what she senses in Evelyn, is flattered by her new friend's feelings and is not at all upset by them. MARSH, however, started out with a huge preponderance of males over females, and thus after the Taking, male homosexuality became widely practiced and accepted, but female homosexuality became rarer and increasingly disapproved of. Evelyn, the product of almost a century of this social process, is consumed both with desire and shame.

Meanwhile, the human actor who was presented to the world as the Draconian ambassador retires from his imposture with a staged, televised departure from the moon. Jonathan's people have been examining the captured Draconian ship and learning much from it -- and developing much of their own from what they learn. A fleet of ships incorporating the aliens' technology and human extensions of it is under construction on the moon.

We see Jonathan's occasional internal struggle, quickly repressed, with the idealistic young man he once was -- a persona that is still alive somewhere within him.

He also has to cope with his two children.

The older of the two is Cathy, descendant of Cathy Martinson through her mother, Elena. Cathy is Jonathan's pride and joy, his intended heir, and the person closer to him in temperament and outlook than anyone else. But part of that temperament includes an at times grating independence. She's also highly sexually active. This distresses her father because of his puritanical upbringing in America, which still plagues him, but even more because of his plans for her future: he doesn't want her getting romantically entangled with someone and deciding on a different future for herself than the one he has in mind.

Jonathan and Cathy's younger child is Andy, in college at the time of the Draconian ambassador's landing. Andy is the opposite of Cathy: dependent, weak, clinging, and utterly without ambition. His mother adores him; his father struggles often with the question of just how he feels toward him.

Cathy makes a quick trip up to the moon during one of Andy's school vacations, bringing her brother with her. Her secondary purpose is to intercede on Andy's behalf with Jonathan in their current *contretemps*. Her primary purpose is to introduce her parents to her new lover (because *this* time, it's *serious!*). He is Press Stevens.

The similarity between Press' position and Jonathan's own when he first came to the moon does not escape Jonathan, and it amuses him. He would be even more amused if he knew just how far the similarity extends: he came from underground and grew determined to destroy the government he found on the surface; Press comes from under the sea and is secretly intent upon destroying Jonathan's government. Perhaps Jonathan would be even more amused if he

knew that Press was introduced to Cathy and thrown together with her frequently through the efforts of Cathy's "aunt" and friend, Connie Allendorf.

On this and subsequent visits, Press finds it easy to ingratiate himself with Jonathan. Not only did Jonathan like him from the start; Press found that he liked the older man -- to his own annoyance, given his deepseated disapproval of Jonathan's rule. Press is fond of Elena, as well, although he finds her a puzzle: so subservient, so inferior to Jonathan, and yet with embers of someone different still detectable at rare times. He's pleased at Elena's ready acceptance of him in the role of Cathy's companion.

During one of Cathy and Press' visits to the moon, Jonathan tells them of the existence of his fleet of T-jump ships, just completed. This is the first either of them has heard of the fleet. Jonathan tells Cathy that she is automatically among the crew, as his first officer. He offers Press a place on it as well. Cathy jumps at the chance, even without knowing what the purpose of the ships is.

Jonathan takes both of them out to the fleet to show it to them. They see dozens of featureless ovoids arrayed in regular order on the flattened lunar surface. Suited human figures and vehicles moving around the bases of the ovoids show how huge the strange ships are.

Jonathan tells them that the purpose of the fleet is to allow him to pay a return visit to the Draconians. Then why not just one ship, as the alien ambassador himself used for his visit? Jonathan grins. "I travel in style. I'm a much more important fellow than the ambassador was. You see, I want to make a lasting impression on them."

Many of Press' questions go unanswered; many more, unasked. How much time does he have to think over Jonathan's offer? "A couple of minutes," Jonathan tells him. For the first time, Press senses the menace of which Jonathan is capable. He accepts Jonathan's offer with every evidence of eagerness.

Later, Press tries to communicate what he has learned to Connie and Evelyn, but he finds that all communications with the earth have been suspended. He's not sure what the battle is, but he has the feeling that Jonathan has already won it. Unlike the reader, Press is unaware that Jonathan's internal struggle has been intensified by his contact with Press: the similarity of the young man's attitudes to those of the young Jonathan Holroyd is uncanny and unsettling.

Jonathan makes a brief speech which is broadcast on all radio and television stations on the earth and the moon. Its purpose is to announce the existence of the fleet of ships and also to announce its forthcoming trip, with Jonathan in command. As to the reason for the entire undertaking, Jonathan tells his subjects no more than he has already told Cathy and Press. He closes his speech with a pointed reminder that, thanks to T-band radio, he will be in constant contact with the observatory of which he is Director. In other words, he'll still be in control.

Press, meanwhile, has discovered that the ships of the fleet are heavily armed. Just before liftoff, Elena tells him what really happened when the alien ambassador arrived and what Jonathan told her at the time. (This was the closing episode in *Central Heat*). Press is horrified and thinks he knows what all of this means, but he is unable to do anything about it.

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Thanks to T-jump technology, the fleet will only require a few days to travel the thirteen thousand light years to the aliens' home world. The trip will be accomplished with three or four

separate jumps. (The Draconians might be able to do it in fewer jumps, but this is, after all, the first experience humans have had with interstellar navigation.)

After the first jump, which takes the fleet to a distance of six light years from the earth, the ships are too far for radio contact with home to be feasible. All of the T-band radio equipment, which can communicate instantaneously with Earth, is directly under Jonathan's control. Thus Jonathan now feels it is safe to tell his crew the real purpose of their trip.

In a speech to the fleet, he tells them what really happened to the Draconian ambassador and his ship. He also tells them that their ships are armed with more than ordinary weapons. They also carry with them a device capable of generating something analogous to the gray hole the aliens used to remove the sun -- and the human fleet will use its gray hole to remove the aliens' sun and take it back with them. "We will reconstruct the solar system," Jonathan declares, "and let the Draconians experience what our own ancestors had to."

Jonathan has chosen his crew well. Almost all of them support him enthusiastically. Cathy is in ardent agreement with her father. Press, naturally, feels the opposite.

Press doesn't hide his opposition. He argues with Jonathan and Cathy, but to no avail. That is, it seems to him to be to no avail. He can't tell what's raging behind Jonathan's calm facade, how the younger Jonathan is responding to Press' appeals and growing stronger.

Jonathan talks to his crew about battle strategy. There can be no tactics in the old sense, he maintains, because of the ability to jump. An attacker can jump past any defensive line, and the losing side can jump to safety and plan to fight again later. A space battle between fleets equipped to jump will be determined in the first microseconds, or not at all: one side will be destroyed immediately, or the fight will drag on indefinitely, as fleet remnants jump to safety and then jump back for guerilla attacks. "And therefore," he concludes, "we must use deception and surprise. We will approach as if in friendship, let them expose all of their defenders to us, and then attack all of them simultaneously."

This is all a bit disingenuous. Jonathan points out to Press that planets can't jump out of the way of an attacker, and so the defenders of a planet are forced not to use T-jump either in order not to leave their home world undefended. He tells Press quite readily why he lied to the crew of his fleet: "I want these kids in the proper frame of mind. I don't want any of them to hesitate before firing."

He asks Press what Press would do if he were allowed to communicate with the aliens before the attack. Would he warn them? Press knows he wouldn't, because of what the Draconians might then do to Earth in retaliation. He is enmeshed in quite a few dilemmas, and it is Jonathan who has carefully led him into them.

Press is unaware of the moral dilemmas he has led Jonathan into, and he also unaware of something else that has caused Jonathan much inner turmoil. Word has come from Earth *via* T-band of a rebellion against Jonathan's rule. It's nothing that couldn't be put down easily by an army -- if Earth had one. Still, Jonathan's return, his physical presence, would no doubt be enough to end it. What upsets him is that it happened at all. What fills him with fury and grief is that it seems to be led by Elena, Andy, and Connie Allendorf. He has been so sure for so many years that his course was the right one, not only for him, but for the entire human race! And yet the human race -- or at least the part of it that is closest to him -- seems to have disagreed completely with him.

The great confrontation with the Draconian defensive fleet takes place, and the alien ships are destroyed. Now comes what Jonathan had anticipated as his moment of glory and

fulfillment. The viewing screen on the bridge of his flagship fills with the face of an alien. He offers total surrender and pleads with Jonathan not to attack the planetary system before them. Jonathan stares at the Draconian for a long, silent time, mulling over the speech he had prepared for this moment. He had planned to remind the aliens of what they did to the human race and to detail his forthcoming revenge to them. Then he would callously remove their sun and return home with it in triumph.

Press and Cathy, watching him, see the set, firm, almost harsh expression which has characterized his face for years yield to something softer and gentler, a look Cathy has never seen her father wear. Jonathan says to the Draconian, "You will have to revise your description of a Proper One." After a pause, he adds, "And so will I."

He turns to Press and Cathy and says, "Let's go home."