

## A Spy in Europa - a short story by Alastair Reynolds

### A Spy in Europa

a short story by Alastair Reynolds

Marius Vargovic, agent of Gilgamesh Isis, savoured an instant of free-fall before the flitter's engines kicked in, slamming it away from the Deucalion. His pilot gunned the craft toward the moon below, quickly outrunning the other shuttles which the Martian liner had disgorged. Europa seemed to be enlarging perceptibly; a flattening arc the colour of nicotine-stained wallpaper.

"Boring, isn't it."

Vargovic turned around in his seat, languidly. "You'd rather they were shooting at us?"

"Rather they were doing something."

"Then you're a fool," Vargovic said, making a tent of his fingers.

"There's enough armament buried in that ice to give Jupiter a second red spot. What it would do to us doesn't bear thinking about it."

"Only trying to make conversation."

"Don't bother - it's an overrated activity at the best of times."

"Alright, Marius - I get the message. In fact I intercepted it, parsed it, filtered it, decrypted it with the appropriate one-time pad and wrote a fucking two-hundred page report on it. Satisfied?"

"I'm never satisfied, Mishenka. It just isn't in my nature."

But Mishenka was right: Europa was an encrypted document; complexity masked by a surface of fractured and refrozen ice. Its surface grooves were like the capillaries in a vitrified eyeball; faint as the structure in a raw surveillance image. But once within the airspace boundary of the European Demarchy, traffic-management co-opted the flitter, vectoring it into a touchdown corridor. In three days Mishenka would return, but then he would disable the avionics, kissing the ice for less than ten minutes.

"Not too late to abort," Mishenka said, a long time later.

"Are you out of your tiny mind?"

The younger man dispensed a frosty Covert Ops smile. "We've all heard what the Demarchy do to spies, Marius."

"Is this a personal grudge or are you just psychotic?"

"I'll leave being psychotic to you, Marius - you're so much better at it."

Vargovic nodded. It was the first sensible thing Mishenka had said all day.

They landed an hour later. Vargovic adjusted his Martian businesswear, tuning his holographically-inwoven frock coat to project red sandstorms; lifting the collar in what he had observed from the liner's passengers was a recent Martian fad. Then he grabbed his bag - nothing incriminating there; no gadgets or weapons - and exited the flitter, stepping through the gasket of locks. A slitherwalk propelled him forward, massaging the soles of his slippers. It was a single cultured ribbon of octopus skin, stimulated to ripple by the timed firing of buried squid axons.

To get to Europa you either had to be sickeningly rich or sickeningly poor. Vargovic's cover was the former: a lie excusing the single-passenger flitter. As the slitherwalk advanced he was joined by other arrivals:

business people like himself, and a sugaring of the merely wealthy. Most of them had dispensed with holographics, instead projecting entoptics beyond their personal space; machine-generated hallucinations decoded by the implant hugging Vargovic's optic nerve. Hummingbirds and seraphim were in sickly vogue. Others were attended by autonomous perfumes which subtly altered the moods of those around them. Slightly lower down the social scale, Vargovic observed a clique of noisy tourists - antlered brats from Circum-Jove. Then there was a discontinuous jump: squalid-looking Maunder refugees, who must have accepted indenture to the Demarchy. The refugees were quickly segregated from the more affluent immigrants, who found themselves within a huge geodesic dome, resting above the ice on refrigerated stilts. The walls of the dome glittered with duty-free shops, boutiques and bars. The floor was bowl-shaped, slitherwalks and spiral stairways descending to the nadir, where a quincunx of fluted marble cylinders waited. Vargovic observed that the newly-arrived were queueing for elevators which terminated in the cylinders. He joined a line and waited.

"First time in Cadmus-Asterius?" asked the bearded man ahead of him, iridophores in his plum-coloured jacket projecting Boolean propositions from Sirikit's Machine Ethics in the Transenlightenment.

"First time on Europa, actually. First time Circum-Jove, you want the full story."

"Down-system?"

"Mars."

The man nodded gravely. "Hear it's tough."

"You're not kidding." And he wasn't. Since the sun had dimmed - the second Maunder minimum, repeating the behaviour which the sun had exhibited in the seventeenth century - the entire balance of power in the First System had altered. The economies of the inner worlds had found it hard to adjust; agriculture and power-generation handicapped, with concomitant social upheaval. But the outer planets had never had the luxury of solar energy in the first place. Now Circum-Jove was the benchmark of First System economic power, with Circum-Saturn trailing behind. Because of this, the two primary Circum-Jove superpowers - the Demarchy, which controlled Europa and Io - and Gilgamesh Isis - which controlled Ganymede, and parts of Callisto - were vying for dominance.

The man smiled keenly. "Here for anything special?"

"Surgery," Vargovic said, hoping to curtail the conversation at the earliest juncture. "Very extensive anatomical surgery."

They hadn't told him much.

"Her name is Cholok," Control had said, after Vargovic had skimmed the dossiers back in the caverns which housed the Covert Operations section of Gilgamesh Isis security, deep in Ganymede. "We recruited her ten years ago, when she was on Phobos."

"And now she's Demarchy?"

Control had nodded. "She was swept up in the brain-drain, once Maunder II began to bite. The smartest got out while they could. The Demarchy - and us, of course - snapped up the brightest."

"And also one of our sleepers." Vargovic glanced down at the portrait of the woman, striped by video lines. She looked mousey to him, with a

permanent bone-deep severity of expression.

"Cheer up," Control said. "I'm asking you to contact her, not sleep with her."

"Yeah, yeah. Just tell me her background."

"Biotech." Control nodded at the dossier. "On Phobos she led one of the teams working in aquatic transform work - modifying the human form for submarine operations."

Vargovic nodded diligently. "Go on."

"Phobos wanted to sell their know-how to the Martians, before their oceans froze. Of course, the Demarchy also appreciated her talents. Cholok took her team to Cadmus-Asterius, one of their hanging cities."

"Mm." Vargovic was getting the thread now. "By which time we'd already recruited her."

"Right," Control said, "except we had no obvious use for her."

"Then why this conversation?"

Control smiled. Control always smiled when Vargovic pushed the envelope of subservience. "We're having it because our sleeper won't lie down." Then Control reached over and touched the image of Cholok, making her speak. What Vargovic was seeing was an intercept; something Gilgamesh had captured, riddled with edits and jump-cuts.

She appeared to be sending a verbal message to an old friend in Isis. She was talking rapidly from a white room; inert medical servitors behind her. Shelves displayed flasks of colour-coded medicines. A cruciform bed resembled an autopsy slab with ceramic drainage sluices.

"Cholok contacted us a month ago," Control said. "The room's part of her

clinic."

"She's using phrase-embedded three," Vargovic said, listening to her speech patterns, siphoning content from otherwise normal Canasian.

"Last code we taught her."

"Alright. What's her angle?"

Control chose his words - skating around the information excised from Cholok's message. "She wants to give us something," he said. "Something valuable. She's acquired it accidentally. Someone good has to smuggle it out."

"Flattery will get you everywhere, Control."

The muzak rose to a carefully timed crescendo as the elevator plunged through the final layer of ice. The view around and below was literally dizzying, and Vargovic registered exactly as much awe as befitted his Martian guise. He knew the Demarchy's history, of course - how the hanging cities had begun as points of entry into the ocean; air-filled observation cupolas linked to the surface by narrow access shafts sunk through the kilometre-thick crustal ice. Scientists had studied the unusual smoothness of the crust, noting that its fracture patterns echoed those on Earth's ice-shelves, implying the presence of a water ocean. Europa was further from the sun than Earth, but something other than solar energy maintained the ocean's liquidity. Instead, the moon's orbit around Jupiter created stresses which flexed the moon's silicate core, tectonic heat bleeding into the ocean via hydrothermal vents.

Descending into the city was a little like entering an amphitheatre - except that there was no stage; merely an endless succession of steeply

tiered lower balconies. They converged toward a light-filled infinity, seven or eight kilometres below, where the city's conic shape constricted to a point. The opposite side was half a kilometre away; levels rising like geologic strata. A wide glass tower threaded the atrium from top to bottom, aglow with smoky-green ocean and a mass of kelp-like flora, cultured by gilly swimmers. Artificial sunlamps burned in the kelp like christmas tree lights. Above, the tower branched; peristaltic feeds reaching out to the ocean proper. Offices, shops, restaurants and residential units were stacked atop each other, or teetered into the abyss on elegant balconies, spun from lustrous sheets of bulk-chitin polymer, the Demarchy's major construction material. Gossamer bridges arced across the atrium space, dodging banners, projections and vast translucent sculptures, moulded from a silky variant of the same chitin polymer. Every visible surface was overlaid by neon, holographics and entoptics. People were everywhere, and in every face Vargovic detected a slight absence; as if their minds were not entirely focused on the here and now. No wonder: all citizens had an implant which constantly interrogated them, eliciting their opinions on every aspect of Demarchy life, both within Cadmus-Asterius and beyond. Eventually, it was said, the implant's nagging presence faded from consciousness, until the act of democratic participation became near-involuntary.

It revolted Vargovic as much as it intrigued him.

"Obviously," Control said, with judicial deliberation. "What Cholok has to offer isn't merely a nugget - or she'd have given it via PE3."

Vargovic leant forward. "She hasn't told you?"

"Only that it could endanger the hanging cities."

"You trust her?"

Vargovic felt one of Control's momentary indiscretions coming on. "She may have been sleeping, but she hasn't been completely valueless. There were defections she assisted in... like the Maunciple job - remember that?"

"If you're calling that a success perhaps it's time I defected."

"Actually, it was Cholok's information which persuaded us to get Maunciple out via the ocean rather the front door. If Demarchy security had reached Maunciple alive they'd have learnt ten years of tradecraft."

"Whereas instead Maunciple got a harpoon in his back."

"So the operation had its flaws." Control shrugged. "But if you're thinking all this points to Cholok having been compromised... Naturally, the thought entered our heads. But if Maunciple had acted otherwise it would have been worse." Control folded his arms. "And of course, he might have made it, in which case even you'd have to admit Cholok's safe."

"Until proven otherwise."

Control brightened. "So you'll do it?"

"Like I have a choice."

"There's always a choice, Vargovic."

Yes, Vargovic thought. There was always a choice... between doing what ever Gilgamesh Isis asked of him... and being deprogrammed, cyborgized and sent to work in the sulphur projects around the slopes of Ra Patera. It just wasn't a particularly good one.

"One other thing..."

"Yes?"

"When I've got whatever Cholok has..."

Control half-smiled, the two of them sharing a private joke which did not need illumination. "I'm sure the usual will suffice."

The elevator slowed into immigration.

Demarchy guards hefted big guns, but no one took any interest in him. His story about coming from Mars was accepted; he was submitted to only the usual spectrum of invasive procedures: neural and genetic patterns scanned for pathologies, body bathed in eight forms of exotic radiation. The final formality consisted of drinking a thimble of chocolate. The beverage consisted of billions of medicines which infiltrated his body, searching for concealed drugs, weapons and illegal biomodifications. He knew that they would find nothing, but was relieved when they reached his bladder and requested to be urinated back into the Demarchy.

The entire procedure lasted six minutes. Outside, Vargovic followed a slitherwalk to the city zoo, and then barged through crowds of schoolchildren until he had arrived at the aquarium where Cholok was meant to meet him. The exhibits were devoted to European biota, most of which depended on the ecological niches of the hydrothermal vents, carefully reproduced here. There was nothing very exciting to look at, since most European predators looked marginally less fierce than hatstands or lampshades. The commonest were called ventlings; large and structurally simple animals whose metabolisms hinged on symbiosis. They were pulpy, funnelled bags planted on a tripod of orange stilts, moving with such torpor that Vargovic almost nodded off before Cholo arrived at his side.

She wore an olive-green coat and tight emerald trousers, projecting a haze of medicinal entoptics. Her clenched jaw accentuated the dourness he had gleaned from the intercept.

They kissed.

"Good to see you Marius. It's been - what?"

"Nine years, thereabouts."

"How's Phobos these days?"

"Still orbiting Mars." He deployed a smile. "Still a dive."

"You haven't changed."

"Nor you."

At a loss for words, Vargovic found his gaze returning to the informational readout accompanying the ventling exhibit. Only half attentively, he read that the ventlings, motile in their juvenile phase, gradually became sessile in adulthood, stilts thickening with deposited sulphur until they were rooted to the ground like stalagmites. When they died, their soft bodies dispersed into the ocean, but the tripods remained; eerily regular clusters of orange spines concentrated around active vents.

"Nervous, Marius?"

"In your hands? Not likely."

"That's the spirit."

They bought two mugs of mocha from a nearby servitor, then returned to the ventling display, making what seemed like small-talk. During indoctrination Cholok had been taught phrase-embedded three. The code allowed the insertion of secondary information into a primary conversation, by careful deployment of word-order, hesitation and sentence

structure.

"What have you got?" Vargovic asked.

"A sample," Cholok answered, one of the easy, pre-set words which did not need to be laboriously conveyed. But what followed took nearly five minutes to put over, freighted via a series of rambling reminiscences of the Phobos years. "A small shard of hyperdiamond."

Vargovic nodded. He knew what hyperdiamond was: a topologically complex interweave of tubular fullerene; structurally similar to cellulose or bulk chitin but thousands of times stronger; its rigidity artificially maintained by some piezo-electric trick which Gilgamesh lacked.

"Interesting," Vargovic said. "But unfortunately not interesting enough."

She ordered another mocha and downed it replying. "Use your imagination.

Only the Demarchy knows how to synthesise it."

"It's also useless as a weapon."

"Depends. There's an application you should know about."

"What?"

"Keeping this city afloat - and I'm not talking about economic solvency.

Do you know about Buckminster Fuller? He lived about four hundred years ago; believed absolute democracy could be achieved through technological means."

"The fool."

"Maybe. But Fuller also invented the geodesic lattice which determines the structure of the buckyball; the closed allotrope of tubular fullerene. The city owes him on two counts."

"Save the lecture. How does the hyperdiamond come into it?"

"Flotation bubbles," she said. "Around the outside of the city. Each one is a hundred-metre wide sphere of hyperdiamond, holding vacuum. A hundred-metre wide molecule, in fact, since each sphere is composed of one endless strand of tubular fullerene. Think of that, Marius: a molecule you could park a ship inside."

While he absorbed that, another part of his mind continued to read the ventling caption; how their biochemistry had many similarities with the gutless tube worms which lived around Earth's ocean vents. The ventlings drank hydrogen sulphide through their funnels, circulating via a modified form of haemoglobin, passing through a bacteria-saturated organ in the lower part of their bags. The bacteria split and oxidised the hydrogen sulphide, manufacturing a molecule similar to glucose. The glucose-analogue nourished the ventling, enabling it to keep living and occasionally make slow perambulations to other parts of the vent, or even to swim between vents, until the adult phase rooted it to the ground.

Vargovic read this, and then read it again, because he had just remembered something; a puzzling intercept passed to him from cryptanalysis several months earlier; something about Demarchy plans to incorporate ventling biochemistry into a larger animal. For a moment he was tempted to ask Cholok about it directly, but he decided to force the subject from his mind until a more suitable time.

"Any other propaganda to share with me?"

"There are two hundred of these spheres. They inflate and deflate like bladders, maintaining C-As equilibrium. I'm not sure how the deflation happens, except that its something to do with changing the piezo-electric current in the tubes."

"I still don't see why Gilgamesh needs it."

"Think. If you can get a sample of this to Ganymede, they might be able to find a way of attacking it. All you'd need would be a molecular agent capable of opening the gaps between the fullerene strands so that a molecule of water could squeeze through, or something which impedes the piezo-electric force."

Absently Vargovic watched a squidlike predator nibble a chunk from the bag of a ventling. The squid blood ran thick with two forms of haemoglobin; one oxygen-bearing, one tuned for hydrogen sulphide. They used glycoproteins to keep their blood flowing and switched metabolisms as they swam from oxygen-dominated to sulphide-dominated water.

He snapped his attention back to Cholok. "I can't believe I came all this way for... what? Carbon?" He shook his head, slotting the gesture into the primary narrative of their conversation. "How did you obtain this?"

"An accident, with a gilly."

"Go on."

"An explosion near one of the bubbles. I was the surgeon assigned to the gilly; had to remove a lot of hyperdiamond from him. It wasn't hard to save a few splinters."

"Forward thinking of you."

"Hard part was persuading Gilgamesh to send you. Especially after Maunciple..."

"Don't lose any sleep over him," Vargovic said, consulting his coffee. "He was a fat bastard who couldn't swim fast enough."

The surgery took place the next day. Vargovic woke with his mouth furnace-dry.

He felt - odd. They had warned him of this. He had even interviewed subjects who had undergone similar procedures in Gilgamesh's experimental labs. They told him he would feel fragile, as if his head was no longer adequately coupled to his body. The periodic flushes of cold around his neck only served to increase that feeling.

"You can speak," Cholok said, looming over him in surgeon's whites. "But the cardiovascular modifications - and the amount of reworking we've done to your laryngeal area - will make your voice sound a little strange. Some of the gilled are really only comfortable talking to their own kind."

He held a hand before his eyes, examining the translucent webbing which now spanned his fingers. There was a dark patch in the pale tissue of his palm: Cholok's embedded sample. The other hand held another.

"It worked, didn't it." His voice sounded squeaky. "I can breathe water."

"And air," Cholok said. "Though what you'll now find is that really strenuous exercise only feels natural when you're submerged."

"Can I move?"

"Of course," she said. "Try standing up. You're stronger than you feel."

He did as she suggested, using the moment to assess his surroundings. A neural monitor clamped his crown. He was naked, in a brightly-lit revival room; one glass-walled side facing the exterior ocean. It was from here that Cholok had first contacted Gilgamesh.

"This place is secure, isn't it."

"Secure?" she said, as if it was obscene. "Yes, I suppose so."

"Then tell me about the Denizens."

"What?"

"Demarchy code word. Cryptanalysis intercepted it recently - supposedly something about an experiment in radical biomodification. I was reminded of it in the aquarium." Vargovic fingered the gills in his neck.

"Something that would make this look like cosmetic surgery. We heard the Demarchy had tailored the sulphur-based metabolism of the ventlings for human use."

She whistled. "That would be quite a trick."

"Useful, though - especially if you wanted a workforce who could tolerate the anoxic environments around the vents, where the Demarchy happens to have certain minerological interests."

"Maybe." Cholok paused. "But the changes required would be beyond surgery. You'd have to script them in at the developmental level. And even then..."

"I'm not sure what you'd end up with would necessarily be human anymore."

It was as if she shivered, though Vargovic was the one who felt cold, still standing naked beside the revival table. "All I can say is, if it happened, no one told me."

"I thought I'd ask, that's all."

"Good." She brandished a white medical scanner. "Now can I run a few more tests? We have to follow procedure."

Cholok was right: quite apart from the fact that Vargovic's operation was completely real - and therefore susceptible to complications which had to be looked for and monitored - any deviation from normal practise was undesirable.

After the first hour or so, the real strangeness of his transformation hit

home. He had been blithely unaffected by it until then, but when he saw himself in a full-body mirror, in the corner of Cholok's revival room, he knew that there was no going back.

Not easily, anyway. The Gilgamesh surgeons had promised him they could undo the work - but he didn't believe them. After all, the Demarchy was ahead of Ganymede in the biosciences, and even Cholok had told him reversals were tricky. He'd accepted the mission in any case: the pay tantalising; the prospect of the sulphur projects rather less.

Cholok spent most of the day with him, only breaking off to talk to other clients or confer with her team. Breathing exercises occupied most of that time: prolonged periods spent underwater, nulling the brain's drowning response. Unpleasant, but Vargovic had done worse things in training. They practised fully-submerged swimming, using his lungs to regulate buoyancy, followed by instruction about keeping his gill-openings - what Cholok called his opercula - clean, which meant ensuring the health of the colonies of commensal bacteria which thrived in the openings and crawled over the fine secondary flaps of his lamellae. He'd read the brochure: what she'd done was to surgically sculpt his anatomy toward a state somewhere between human and air-breathing fish: incorporating biochemical lessons from lungfish and walking-catfish. Fish breathed water through their mouths and returned it to the sea via their gills, but it was the gills in Vargovic's neck which served the function of a mouth. His true gills were below his thoracic cavity; crescent-shaped gashes below his ribs.

"Compared to your body size," she said, "these gill-openings are never going to give you the respiratory efficiency you'd have if you went in for

more dramatic changes..."

"Like a Denizen?"

"I told you, I don't know anything."

"It doesn't matter." He flattened the gill-flaps down, watching - only slightly nauseated - as they puckered with each exhalation. "Are we finished?"

"Just some final bloodwork," she said. "To make sure everything's still working. Then you can go and swim with the fishes."

While she was busy at one of her consoles, surrounded by false-colour entoptics of his gullet - he asked her: "Do you have the weapon?"

Cholok nodded absently and opened a drawer, fishing out a hand-held medical laser. "Not much," she said. "I disabled the yield-suppresser, but you'd have to aim it at someone's eyes to do much damage."

Vargovic hefted the laser, scrutinising the controls in its contoured haft. Then he grabbed Cholok's head and twisted her around, dousing her face with the laser's actinic-blue beam. There were two consecutive popping sounds as her eyeballs evaporated.

"What, like that?"

Conventional scalpels did the rest.

He rinsed the blood, dressed and left the medical centre alone, travelling kilometres down-city, to where Cadmus-Asterius narrowed to a point. Even though there were many gillies moving freely through the city - they were volunteers, by and large, with full Demarchy rights - he did not linger in public for long. Within a few minutes he was safe within a warren of

collagen-walled service tunnels, frequented only by technicians, servitors or other gill-workers. The late Cholok had been right; breathing air was harder now; it felt too thin.

"Demarchy security advisory," said a bleak machine voice emanating from the wall. "A murder has occurred in the medical sector. The suspect may be an armed gill worker. Approach with extreme caution."

They'd found Cholok. Risky, killing her. But Gilgamesh preferred to burn its bridges, removing the possibility of any sleeper turning traitor after they had fulfilled their usefulness. In the future, Vargovic mulled, they might be better using a toxin, rather than the immediate kill. He made a mental note to insert this in his report.

He entered the final tunnel, not far from the waterlock which had been his destination. At the tunnel's far end a technician sat on a crate, listening with a stethoscope to something going on behind an access panel.

For a moment Vargovic considered passing the man, hoping he was engrossed in his work. He began to approach him, padding on bare webbed feet, which made less noise than the shoes he had just removed. Then the man nodded to himself, uncoupled from the listening post and slammed the hatch. Grabbing his crate, he stood and made eye contact with Vargovic.

"You're not meant to be here," he said. Then offered, almost plaintively:

"Can I help you? You've just had surgery, haven't you? I always know the ones like you: always a little red around the gills."

Vargovic drew his collar higher, then relented because that made it harder to breathe. "Stay where you are," he said. "Put down the crate and freeze."

"Christ, it was you, wasn't it - that advisory?" the man said.

Vargovic raised the laser. Blinded, the man blundered into the wall, dropping the crate. He made a pitiful moan. Vargovic crept closer, the man stumbling into the scalpel. Not the cleanest of killings, but that hardly mattered.

Vargovic was sure the Demarchy would shortly seal off access to the ocean - especially when his last murder came to light. For now, however, the locks were accessible. He moved into the air-filled chamber, his lungs now aflame for water. High-pressure jets filled the room, and he quickly transitioned to water-breathing, feeling his thoughts clarify. The secondary door clammed open, revealing ocean. He was kilometres below the ice, and the water here was both chillingly cold and under crushing pressure - but it felt normal; pressure and cold registering only as abstract qualities of the environment. His blood was inoculated with glycoproteins now; molecules which would lower its freezing point below that of water.

The late Cholok had done well.

Vargovic was about to leave the city when a second gill-worker appeared in the doorway, returning to the city after completing a shift. He killed her efficiently, and she bequeathed him a thermally-inwoven wetsuit, for working in the coldest parts of the ocean. The wetsuit had octopus ancestry, and when it slithered onto him it left apertures for his gill-openings. She had been wearing goggles which had infrared and sonar capability, and carried a hand-held tug. The thing resembled the still-beating heart of a vivisected animal, its translucent components nobbed with dark veins and ganglia. But it was easy to use: Vargovic set

its pump to maximum thrust and powered away from the lower levels of C-A.

Even in the relatively uncontaminated water of the European ocean, visibility was low; he would not have been able to see anything were the city not abundantly illuminated on all its levels. Even so, he could see no more than half a kilometre upwards; the higher parts of C-A lost in golden haze and then deepening darkness. Although its symmetry was upset by protrusions and accretions, the city's basic conic form was evident, tapering at the narrowest point to an inlet mouth which ingested ocean.

The cone was surrounded by a haze of flotation bubbles, black as caviar. He remembered the chips of hyperdiamond in his hands. If Cholok was right, Vargovic's people might find a way to make it water-permeable; opening the fullerene weave sufficiently so that the spheres' buoyant properties would be destroyed. The necessary agent could be introduced into the ocean by ice-penetrating missiles. Some time later - Vargovic was uninterested in the details - the Demarchy cities would begin to groan under their own weight. If the weapon worked sufficiently quickly, there might not even be time to act against it. The cities would fall from the ice, sinking down through the black kilometres of ocean below them.

He swam on.

Near C-A, the rocky interior of Europa climbed upwards to meet him. He had travelled three or four kilometres north, and was comparing the visible topography - lit by service lights installed by Demarchy gill-workers - with his own mental maps of the area. Eventually he found an outcropping of silicate rock. Beneath the overhang was a narrow ledge, on which a dozen or so small boulders had fallen. One was redder than the others. Vargovic anchored himself to the ledge and hefted the red rock, the warmth

of his fingertips activating its latent biocircuitry. A screen appeared in the rock, filling with the face of Mishenka.

"I'm on time," Vargovic said, his own voice sounding even less recognisable through the distorting medium of the water. "I presume you're ready?"

"Problem," Mishenka said. "Big fucking problem."

"What?"

"Extraction site's compromised." Mishenka - or rather the simulation of Mishenka which was running in the rock - anticipated Vargovic's next question: "A few hours ago the Demarchy sent a surface team out onto the ice, ostensibly to repair a transponder. But the spot they're covering is right where we planned to pull you out." He paused. "You did - uh - kill Cholok, didn't you? I mean you didn't just grievously injure her?"

"You're talking to a professional."

The rock did a creditable impression of Mishenka looking pained. "Then the Demarchy got to her."

Vargovic wave his hand in front of the rock. "I got what I came for, didn't I?"

"You got something."

"If it isn't what Cholok said it was, then she's accomplished nothing except get herself dead."

"Even so..." Mishenka appeared to entertain a thought briefly, before discarding it. "Listen, we always had a backup extraction point, Vargovic. You'd better get your ass there." He grinned. "Hope you can swim faster than Maunciple."

It was thirty kilometres south.

He passed a few gill-workers on the way, but they ignored him and once he was more than five kilometres from C-A there was increasingly less evidence of human presence. There was a head-up display in the goggles. Vargovic experimented with the readout modes before calling up a map of the whole area. It showed his location, and also three dots which were following him from C-A.

He was being tailed by Demarchy security.

They were at least three kilometres behind him now, but they were perceptibly narrowing the distance. With a cold feeling gripping his gut, it occurred to Vargovic that there was no way he could make it to the extraction point before the Demarchy caught him.

Ahead, he noticed a thermal hot-spot; heat bubbling up from the relatively shallow level of the rock floor. The security operatives were probably tracking him via the gill-worker's appropriated equipment. But once he was near the vent he could ditch it: the water was warmer there; he wouldn't need the suit, and the heat, light and associated turbulence would confuse any other tracking system. He could lie low behind a convenient rock, stalk them while they were preoccupied with the homing signal.

It struck Vargovic as a good plan. He made the distance to the vent quickly, feeling the water warm around him, noticing how the taste of it changed; turning brackish. The vent was a fiery red fountain surrounded by bacteria-crusts and the colourless European equivalent of coral.

Ventlings were everywhere; their pulpy bags shifting as the currents altered. The smallest were motile, ambling on their stilts like animated

bagpipes, navigating around the triadic stumps of their dead relatives.

Vargovic ensconced himself in a cave, after placing the gill-worker equipment near another cave on the far side of the vent, hoping that the security operatives would look there first. While they did so, he would be able to kill at least one of them; maybe two. Once he had their weapons, taking care of the third would be a formality.

Something nudged him from behind.

What Vargovic saw when he turned around was something too repulsive even for a nightmare. It was so wrong that for a faltering moment he could not quite assimilate what it was he was looking at, as if the thing was a three-dimensional perception test; a shape which refused to stabilise in his head. The reason he could not hold it still was because part of him refused to believe that this thing had any connection with humanity. But the residual traces of human ancestry were too obvious to ignore.

Vargovic knew - beyond any reasonable doubt - that what he was seeing was a Denizen. Others loomed from the cave depths. They were five more of them; all roughly similar; all aglow with faint bioluminescence, all regarding him with darkly intelligent eyes. Vargovic had seen pictures of mermaids in books when he was a child; what he was looking at now were macabre corruptions of those innocent illustrations. These things were the same fusions of human and fish as in those pictures - but every detail had been twisted toward ugliness, and the true horror of it was that the fusion was total; it was not simply that a human torso had been grafted to a fish's tail, but that the splice had been made - it was obvious - at the genetic level, so that in every aspect of the creature there was something

simultaneously and grotesquely piscine. The face was the worst; bisected by a lipless down-curved slit of a mouth, almost sharklike. There was no nose, not even a pair of nostrils; just an acreage of flat, sallow fish-flesh. The eyes were forward facing; all expression compacted into their dark depth. The creature had touched him with one of its arms, which terminated in an obscenely human hand. And then - to compound the horror - it spoke, its voice perfectly clear and calm, despite the water.

"We've been expecting you, Vargovic."

The others behind murmured, echoing the sentiment.

"What?"

"So glad you were able to complete your mission."

Vargovic began to get a grip, shakily. He reached up and dislodged the Denizen's hand from his shoulder. "You aren't why I'm here," he said, forcing authority into his voice, drawing on every last drop of Gilgamesh training to suppress his nerves. "I wanted to know about about you... that was all..."

"No," the lead Denizen said, opening its mouth to expose an alarming array of teeth. "You misunderstand. Coming here was always your mission. You have brought us something we want very much. That was always your purpose."

"Brought you something?" His mind was reeling now.

"Concealed within you." The Denizen nodded; a human gesture which only served to magnify the horror of what it was. "The means by which we will strike at the Demarchy; the means by which we will take the ocean."

He thought of the chips in his hands. "I think I understand," he said slowly. "It was always intended for you, is that what you mean?"

"Always."

Then he'd been lied to by his superiors - or they had at least drastically simplified the matter. He filled in the gaps himself, making the necessary mental leaps: evidently Gilgamesh was already in contact with the Denizens - bizarre as it seemed - and the chips of hyperdiamond were meant for the Denizens, not his own people. Presumably - although he couldn't begin to guess at how this might be possible - the Denizens had the means to examine the shards and fabricate the agent which would unravel the hyperdiamond weave. They'd be acting for Gilgamesh, saving it the bother of actually dirtying its hands in the attack. He could see why this might appeal to Control. But if that was the case... why had Gilgamesh ever faked ignorance about the Denizens? It made no sense. But on the other hand, he could not concoct a better theory to replace it.

"I have what you want," he said, after due consideration. "Cholok said removing it would be simple."

"Cholok can always be relied upon," the Denizen said.

"You knew - know - her, then?"

"She made us what we are today."

"You hate her, then?"

"No; we love her." The Denizen flashed its sharklike smile again, and it seemed to Vargovic that as its emotional state changed, so did the coloration of its bioluminescence. It was scarlet now; no longer the blue-green hue it had displayed upon its first appearance. "She took the abomination that we were and made us something better. We were in pain, once. Always pain. But Cholok took it away, made us strong. For that they

punished her, and us."

"If you hate the Demarchy," Vargovic said, "why have you waited until now before attacking it?"

"Because we can't leave," one of the other Denizens said; the tone of its voice betraying femininity. "The Demarchy hated what Cholok had done to us. She brought our humanity to the fore; made it impossible to treat us as animals. We thought they would kill us, rather than risk our existence becoming known to the rest of Circum-Jove. Instead, they banished us here."

"They thought we might come in handy," said another of the lurking creatures.

Just then, another Denizen entered the cave, having swum in from the sea.

"Demarchy agents have followed him," it said, its coloration blood red, tinged with orange, pulsing lividly. "They'll be here in a minute."

"You'll have to protect me," Vargovic said.

"Of course" the lead Denizen said. "You're our saviour."

Vargovic nodded vigorously, no longer convinced that he could handle the three operatives on his own. Ever since he had arrived in the cave he had felt his energy dwindling, as if he was succumbing to slow poisoning. A thought tugged at the back of his mind, and for a moment he almost paid attention to it; almost considered seriously the possibility that he was being poisoned. But what was going on beyond the cave was too distracting. He watched the three Demarchy agents approach, driven forward by the tugs which they held in front of them. Each agent carried a slender harpoon gun, tipped with a vicious barb.

They didn't stand a chance.

The Denizens moved too quickly, lancing out from the shadows, cutting through the water. The creatures moved faster than the Demarchy agents, even though they only had their own muscles and anatomy to propel them.

But it was more than enough. They had no weapons, either - not even harpoons. But sharpened rocks more than sufficed - that and their teeth.

Vargovic was impressed by their teeth.

Afterwards, the Denizens returned to the cave to join their cousins. They moved more sluggishly now; as if the fury of the fight had drained them.

For a few moments they were silent, and their bioluminescence curiously subdued.

Slowly, though, Vargovic watched their colour return.

"It was better that they not kill you," the leader said.

"Damn right," Vargovic said. "They wouldn't just have killed me, you know." He opened his fists, exposing his palms. "They'd have made sure you never got this."

The Denizens - all of them - looked momentarily toward his open hands, as if there ought to have been something there. "I'm not sure you understand," the leader said, eventually.

"Understand what?"

"The nature of your mission."

Fighting his fatigue - it was a black slick lapping at his consciousness -

Vargovic said: "I understand perfectly well. I have the samples of hyperdiamond, in my hands..."

"That isn't what we want."

He didn't like this, not at all. It was the way the Denizens were slowly

creeping closer to him; sidling round him to obstruct his exit from the cave.

"What then?"

"You asked why we haven't attacked them before," the leader said, with frightening charm. "The answer's simple. We can't leave the vent."

"You can't?"

"Our haemoglobin. It's not like yours." Again that awful sharklike smile - and now he was well aware of what those teeth could do, given the right circumstances. "It was tailored to allow us to work here."

"Copied from the ventlings?"

"Adapted, yes. Later it became the means of imprisoning us. The DNA in our bone marrow was manipulated to limit the production of normal haemoglobin; a simple matter of suppressing a few beta-globin genes while retaining the variants which code for ventling haemoglobin. Hydrogen sulphide is poisonous to you, Vargovic. You probably already feel weak. But we can't survive without it. Oxygen kills us."

"You leave the vent..."

"We die, within a few hours. There's more, as well. The water's hot here; so hot that we don't need the glycoproteins. We have the genetic instructions to synthesize them, but they've also been turned off. But without the glycoproteins we can't swim into colder water. Our blood freezes."

Now he was surrounded by them; looming aquatic devils, flushed a florid shade of crimson. And they were coming closer.

"But what do you expect me to do about it?"

"You don't have to do anything, Vargovic." The leader opened its chasmic

jaw wide, as if tasting the water. It was a miracle an organ like that was capable of speech in the first place...

"I don't?"

"No." And with that the leader reached out and seized him, while at the same time he was pinned from behind by another of the creatures. "It was Cholok's doing," the leader continued. "Her final gift to us. Maunciple was her first attempt at getting it to us - but Maunciple never made it."

"He was too fat."

"All the defectors failed - they just didn't have the stamina to make it this far from the city. That was why Cholok recruited you - an outsider."

"Cholok recruited me?"

"She knew you'd kill her - you have, of course - but that didn't stop her. Her life mattered less than what she was about to give us. It was Cholok who tipped off the Demarchy about your primary extraction site, forcing you to come to us."

He struggled, but it was pointless. All he could manage was a feeble: "I don't understand..."

"No," the Denizen said. "Perhaps we never expected you to. If you had understood, you might have been less than willing to follow Cholok's plan."

"Cholok was never working for us?"

"Once, maybe. But her last clients were us."

"And now?"

"We take your blood, Vargovic." Their grip on him tightened. He used his last draining reserves of strength to try and work loose, but it was

futile.

"My blood?"

"Cholok put something in it. A retrovirus - a very hardy one, capable of surviving in your body. It reactivates the genes which were suppressed by the Demarchy. Suddenly, we'll be able to make oxygen-carrying haemoglobin. Our blood will fill up with glycoproteins. It's no great trick: all the cellular machinery for making those molecules is already present; it just needs to be unshackled."

"Then you need... what? A sample of my blood?"

"No," the Denizen said, with genuine regret. "Rather more than a sample, I'm afraid. Rather a lot more."

And then - with magisterial slowness - the creature bit into his arm, and as his blood spilled out, the Denizen drank. For a moment the others waited - but then they too came forward, and bit, and joined in the feeding frenzy.

All around Vargovic, the water was turning red.

© Alastair Reynolds 1996, 2001

This story first appeared in Interzone.

Elsewhere in infinity plus:

fiction - Spirey and the Queen.

non-fiction - Al's first novel, Revelation Space, reviewed by Keith Brooke.

contact - use our forwarding service to e-mail the author.

Elsewhere on the web:

AI's home page now features a cheerful yellow background.

ISFD bibliography.

Let us know what you think of infinity plus - e-mail us at:

[sf@infinityplus.co.uk](mailto:sf@infinityplus.co.uk)

support this site - buy books through these links:

A+ Books: an insider's view of sf, fantasy and horror

[amazon.com \(US\)](#) | [Internet Bookshop \(UK\)](#)

[top of page](#)

[ [home page](#) | [fiction](#) | [non-fiction](#) | [other stuff](#) | [A to Z](#) ]

[ [infinity plus bookshop](#) | [search infinity plus](#) ]