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Muse

It seems this issue has a theme (and this came about only half intentionally). Alien life, with its possibilities and threats, has been a staple of science fiction since the bug-eyed monster days. The tendency has been to overdraw — to make the life forms unremittingly hostile to humankind, gobbling an Earth person every chance they get and wiping out whole populations with their exotic microorganisms.

The reality, while (probably) not quite so melodramatic, is, nonetheless, more complex and interesting. Our own world has a staggering variety of life, most of which is "invisible" in terms of everyday consciousness. If your telephone rang at three a.m. and the voice at the other end said, "Name three life forms!" you'd probably reel off lions and tigers and bears — or some other list of common higher mammals (maybe cats, dogs, and chimps). Unless your mind is on an eccentric track, you wouldn't name any sea creatures, insects, plants, microorganisms, or molds. In other words, you'd think of

those kinds of living things that you might have once fantasized about as suitable pets or characters in your own Disney movie.

With only a few exceptions, science fiction writers generally take these familiar life forms, change some of the architecture for the "echh" effect, and call it the Karfoosian Swamp Creature in their straining attempts to inject "wonder" into their stories. It might not hurt them to stick their heads under water for a while. The most exotic and weird looking things live there in the greatest profusion and diversity. The oceans of our planet are where the action is in the life department. Not only does the world sea score big in variety, but so far as wham and bam, the land is left in the dust. Those things down there are fighting and biting all the time. Wet and wild and violent as hell. Few sf stories can match the intensity and straight-out weirdness of our own sea.

Well big deal, you say, I'm not going to throw over my sf for marine biology texts and Jacques Cousteau re-runs. No one expects you to — my point is that, so often, the genre writers we look to for imaginitive intellectual stimus is pretty low wattage when it comes to depicting alien life. Evolution is a better creature-machine than the writer's brain. You don't have to leave earth

to find the most fascinating, stomach-turning, threatening, and beautiful menagerie this side of "The Doors of His Face, The Lamps of His Mouth." A little immersion in this data might do us some good when we go to the typewriter and need to invent a new "thing" to inhabit a chapter or chase counters in a game. — *Redmond*

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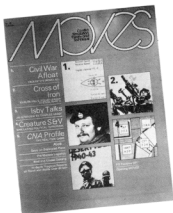
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The Inn at World's End

The barbarians of the far north are the worst, most ruthless savages in the world, for they believe that the gods who are the source of all moral values died in a great battle ages ago. Mankind, they hold, is merely a maggot crawling about a dying world before the ultimate dissolution of all things. As proof of this strange antireligion they claim that there exists a weird and demon-haunted valley in which lie the very bones of the Gods Themselves. Partanmost's *Book of Travels*

When dawn burst over the mountains in a flash of topaz, the young lord of Zadok shouted a cry of pride and relief. The sun meant victory; he would live another day. Last night he and his companions had made camp at the mouth of the Valley of Bones. Something, they knew not what, had come out of the cold night and circled them without ever entering the bright bronze circle of their campfire's light. Once, for a fleeting moment when Druin threw grease on the fire, they caught a glimpse of their stalker. Naked she was, despite the cold that made them bundle up and huddle. Infinitely beautiful she was too, seemingly the most desirable of women. Womanless men long amarch swallowed audibly, and stared. And then her voice came to them on nighted wings. Soft and consummately inviting, it called Barga and he went forth, and then another and he too left his comrades. When Druin and the others, protected by the torches that lit their way, went in search of their missing fellows, they found what remained of them — withered man-husks sucked dry of all bodily fluids.

C. VESS 80

by Richard Lyon & Andrew Offutt

THE NIGHT BECAME an absolute horror. The fire was their only defense. Since there was not enough wood to keep it blazing high, they burned their provisions and did not mind the stench. Even so, she called and one by one men went to her. Nor could they be stopped. Through it all Lord Druin, well wrapped in his black cloak, fought with every resource of wit and cunning. Perhaps his hastily improvised silver-tipped arrows wounded her, perhaps not. Alive or dead, wounded or no, she continued calling good men to her. At last, of the eleven who had made camp, only Druin and Daroeda remained. And she called Daroeda.

As the fat old pirate rose glassy-eyed to walk into the dark, Druin snatched up a stone and knocked him unconscious. Making sure Daroeda was well wrapped, the young nobleman pulled him close to the fire. Then, with his bow and last silver arrows, he sat full upon his companion's unconscious bulk. Behind him, the fire popped and flickered toward its death.

The time came when he loosed his last arrow, and missed, and knew that his life was for the taking. His hope then was that the she-demon would not know he was unarmed. She called, called, and somehow he found the strength to sit unmoving (quietly reciting the twenty-seven Guides for Noble Conduct at a High Wedding). Only when the fire was dying to feeble embers like waning souls did she come toward him. His will to resist crumbled before her beauty as walls to the ram...and the sun rose. She fled at the first appearance of mother-of-pearl in the sky, followed by gold. From everywhere and nowhere her words wafted back to Druin:

"Farewell, my lover, until tomorrow night."

For several moments the survivor drank in the wonder of the rising sun and praised the goddess Theba for his deliverance. Too, he shouted in pride, for he had not merely survived; he had brought the life of one other human being through the cold night of preternatural horror. Would that he could have saved others as well, but at least Daroeda still lived, the fat old rough. Druin turned to place a hand affectionately on the pirate's gross form.

"Come on, Dary, wake up. We're safe now!"

There was no response. Daroeda was cold, as cold as Barga and Ria.

"Damn it, Dary, *No!*" he shouted, shaking the inert form harder. "You can't be dead. I was with you all the time. She could not have gotten to you!" There was no reply and new fear came; had Daroeda frozen?

No. To Druin's renewed horror he found that, like Barga and Ria, the pirate was a desiccated husk. A torrent of emotions swept through Druin only to be replaced by icy cold. Though Daroeda had scarcely deserved saving, the young lord had struggled with all his might to preserve him — and he had failed.

Now, alone in the cold of this land, Druin must either lie down and die or be on his way. He had a long way still to go. Unless he reached his goal before the setting of this new arctic sun, he would be forced to keep that assignation with the she-demon.

As he walked, he reflected bitterly that he had begun this journey to avenge the massacre of his family. Now, the list of those to be avenged had grown to include the names of his followers. Druin had never met his maternal grandfather and until recently had never wanted to. His family had long made a dark secret of the fact that Druin's mother's father was none other than the wizard Mardarin, that fearful mage of legend who dwelt atop Floating Mountain. Throughout his life Druin had wished his grim ancestry — and heritage? — could be forgotten. Recent events had smashed and changed that desire.

In a masterful act of treachery, King Thilloden had arranged the murder of Duke Aradam, Druin's father, and the entire family. By rights Druin, too, should have died. Instead the young lord found that he had some minor but wholly unnatural talents, by use of which he escaped. How his grandfather might now greet him Druin had no notion, but the dread mage was his only hope of gaining vengeance on a king. Thus he had set out for Floating Mountain, bringing with him only ten men.

Now he was nearing the end of that long journey. According to legend, Floating Mountain was just the other side of the Valley of the Bones.

THE SUN WAS FULLY BEGUN on its own daily journey when Druin reached the top of the pass. He stared, blinking into that valley he expected to be sere. Despite its grim name, its appearance was pleasant enough — eerily so. A lush island of green, rolling hills nestled incongruously in the middle of this arctic wasteland. An astonished Druin put back his black hood.

Without pausing to wonder at this miracle, the pilgrim hurried on, loosening his furs. Presently, he was walking among profusely flowering bushes and trees. The grass was a soft carpet beneath his feet and the air lilted with the songs of gaily colored birds in their scores.

Despite grim memories of last night, his empty stomach rumbled while he stripped off furs and leggings. Revenge, he thought with bitter practicality, is no reason to go hungry. A breakfast of fruits and berries would be most pleasant indeed.

He soon discovered that for all the profusion of bright flowers, there was naught to eat on any of the bushes or trees. He just could not believe that....

Druin's eyes narrowed with gathering suspicion. Another damned mystery. Plants that flowered without yielding fruits or berries were the result of human cultivation. A valley filled with such tamely decorous plants

here in the middle of the wilderness was more than improbable. *It's almost as if this whole place is a park,* he mused, and felt a little touch of cold at the base of his spine as he followed that thought to its conclusion. *Parks have owners. Here I am a trespasser, an intruder.*

While topaz sun climbed higher into sapphire sky, Druin moved on, pondering the problem. It was not the only mystery cloaked by the Valley of the Bones. Why did the Northmen believe that the remains of the very gods lay here? Since the gods still lived, of course, it could only be a vulgar superstition. Still...did most superstitions not usually have some basis in fact?

AT MIDMORNING HE topped a small rise and stopped to stare at what he saw below him. The lush grass showed the passage of a large animal — or group of men. Swiftly moving to the track, he knelt to examine it. Within the last few hours, eight men — civilized men, since they wore boots — had come from the far end of the valley and passed this way. Then he discovered the second set of prints: the same men, returning from...somewhere, heavily burdened. For these tracks were deeper, less uniformly straight.

Rising, the young duke pulled thoughtfully at his abbreviated beard. Perhaps this was no business of his, but he was curious and knew well that things he didn't understand could hurt him. Eight men had come into the Valley of the Bones to fetch something, and had returned (somewhere) with that (something). What? Why?

Suppose I don't investigate? The route to my grandfather's home lies through the far end of this improbable valley, which means I shall overtake eight men I know nothing about. Best I find out what's going on, first!

Druin set out through the hills at a steady trot. The miles rolled away while he tried to ignore his rumbling belly. Presently, coming around a hummock, he stopped to stare openmouthed. Before him, he told himself firmly, stood only a building. But that was like saying that a goddess is *only* a woman. He gazed upon a simple, unadorned structure of one story only. Though time and the passing ages had marred its beauty, broken many of the once-proud marble columns, still it retained a grace and clean-cut elegance that held Druin in awe.

Gods, would that I could have seen this marvel when first it was built!

The track of eight men led directly to the main entry. As he followed, the sense of trespass, of intruding where he had no right at all, grew the stronger. Only by considerable effort of will did he persist. The single door, a massive slab of bronze, hung forlornly open. He paused to examine it. He found corrosion, a pitting caused by the passing of he could not guess how many years. *Built time out of mind...and with its hinges in perfect condition!*

The orphan lord stepped inside to find himself in the darkness of a windowless building. While he paused uncertainly, his nose told him of an oil lamp nearby. Within a few moments he had found one and lighted it.

He was surprised to discover that he held one of the Sacred Lamps burned in the worship of Theba. Also, the interior walls of this — temple? — were covered with the holy symbols of the Gentle Goddess, the All-mother of mankind. For a moment Druin thought he was in a shrine. But no. Though Herself had been worshipped here, that great marble stand was no altar in the building's center, but obviously intended to hold a casket. He stood in a tomb.

The floor was covered with dust. In that dust of ages was the disturbance of recent footprints. Examining them, Druin could almost see what had taken place: the eight had piously burned their Sacred Lamps and then and then only they had stepped to the center of the room. They had lifted the coffin from the catafalque — a casket for a human of normal size, judging from the pattern left in the dust on the dais — and had marched out with it.

A band of pious graverobbers, Druin thought, no little puzzled and annoyed. While there seemed little to be learned by closer examination, he moved toward the catafalque — only to have the lamp sputter and die.

Since it still held oil in plenty, it seemed evidently only a matter of readjusting the wick and relighting it. That was fine, except…

I don't have any way to light a lamp!

During last night's grim battle to keep the fire alive, he had burned all the contents of his tinder box and inadvertently discarded his flint, leaving him without the means to make a fire.

Then how in Drood's name was I able to light this lamp in the first place?

Not, surely, in the name of the dark Lord of Deception and Death. Yet it had been easy, natural, an action so casual that he had given no thought to what he was about. Druin reflected, staring huge-eyed at blackness. Fire-raising was a recognized form of the Black Art. For an instant apprehension swept over the young man like a chill breath, and he felt he was becoming a stranger to himself. Then, with cold exultation the thought came, *Truly I am Mardarin's grandson!* As pride soared in him, he touched the lamp's wick and squinted when it burst into flame, all in an instant.

A few moments more in the desecrated tomb convinced Druin he had nothing more to learn here. Besides, time was precious. He quitted the ancient tomb of marble and went striding along the trail left by its robbers. His stomach complained in leonine tones and he chewed leaves he knew to be nonpoisonous, wishing he knew something of edible tubers. Presently he came upon a choice: the robbers, being heavily burdened, had walked around a fairly steep hill. He could follow them, or make the climb, which would be more arduous but faster. Besides, it would give him a good view of the valley.

The ascent proved harder than he had expected. He was puffing mightily when he gained the summit of the greened but stone-strewn knoll. A glance behind showed him the mausoleum. Its beauty was striking, awesome even at this distance, yet still it did not seem a place for the dead. *The noble, the very noble dead,* he mused, noting dozens of marble ruins scattered here and there amid the trees. Corpses, he thought; the corpses of once glorious buildings.

So, the Northmen are partly right. Some great and noble people, ages ago, used this unnatural valley as their cemetery.

Allowing himself only the briefest rest, he began his descent. Time was his enemy, now. If he could reach his grandfather's home before sunset, he could worry then as to what sort of reception his grim forebear might provide. If, however, the setting sun found him short of his destination, last night's she-demon would have another opportunity to work her way with him. Of course, he had brought along the lamp, but he doubted its ability to hold her at bay more than briefly. If only he could be sure of direction, he'd leave those dratted heavy clothes up a tree somewhere.

As the miles slipped by under Druin's hurrying feet, so did the hours. Though the urge to rush, to push himself too hard, was a constant temptation, he withstood it. He did do much worrying.

Mardarin's abode on Floating Mountain was somewhere beyond this valley. How far? If near, he might gain his sanctuary with as much as an hour to spare. If it lay far, then he was surely doomed.

Time passed and the ache in his legs steadily grew. At the valley's far end a dried riverbed came meandering out of the mountains, all white and yellow clay and stone. For a little time Druin dog-trotted along it, flanked by towering cliffs in siena and burnt orange and somber gray. Then he emerged into the sunlit open, and the bottom dropped out of his empty stomach. Before him swept a great blinding plain, an enormous sneering expanse of brilliant white sand. He knew he gazed on the desert across whose undulant wastes the Floating Mountain roamed. It was in plain view now, a towering white-capped pinnacle drifting above sand the color of snow and crystal.

Though distances were hard to judge in the desert, Druin knew he was looking at several days' journey. *Damn. Either I'm going to be very clever or dead.*

Floating Mountain was not at all where the map in the Undead Book had shown his grandfather's keep to be. It was strange — and to be considered later, along with why the sand was so white and sparkly under that vast floating mass of granite. Meanwhile, most of the day he had more or less followed the tracks of the tomb-robbers. Now they were clearly visible ahead, stick-men casting long shadows on the desert. His gaze followed their line to a place well ahead where four tents clustered about…an inn!

Impossible. He rubbed his eyes and squinted. The inn remained.

While a travelers' stop in the middle of this desolate expanse was absurdly unlikely, the large ramshackle building displayed the sign of the pilgrim's staff and was beyond doubt a place of accommodation.

Like as not Drood Himself is the cheerless proprietor, Druin thought, *but it's any port in a storm.* And he trotted across the sands, holding his swordhilt to prevent the scabbard's banging his leg.

The sun was lowering itself gingerly onto the horizon when he neared the inn. Despite its absurd location, business was evidently brisk. In the rope enclosure off to the right was an assortment of horses, mules and a single, bored camel. Men moved about among the tents. He saw several shining blacks wearing only breechclouts; three dusky yellow Narokans in black pajamas, stupidly absorbing sun; and four such as he in the bronze-studded leather that was pretty much standard for the soldiers of a western nobleman.

A TOWERING GIANT IN EBONY, standing some little distance from the front of the inn, saw Druin and waved in a friendly manner. "Welcome, stranger!" he called, between bites of the large haunch of meat in his fist. "Welcome to the Inn at World's End." He smiled. Druin saw to his horror that the man's teeth had been filed to points.

"Hallo," the young noble said, concealing his shock, "I'm Lord Druin of Zadok."

"Chief Bungamin. Why come you here?"

Druin saw that the black even more impressive. He towered over seven feet and his bare chest rippled with powerful muscles. A huge lionskin was slung over his shoulder as an ordinary man would wear a cape. Except for it and a loincloth, Bungamin was naked.

"I've come," Druin said cautiously, "to see the wizard Mardarin."

"So are we all," the huge chief rumbled, "all come here for Mardarin." When Druin looked blank, he continued, "This only place to wait for Mardarin. Floating Mountain drifts all over desert, according to moon. Only place water is, is right here. So, everybody comes here, sits around getting soft, waits for mountain to come close. Lucky you to come just now. Tonight may be the night!"

"Pardon me," Druin said rather tentatively, "but isn't that a human bone you're gnawing on?"

"Oh yes. Was tricky trader. Good meat. You like some? Ho ho, I see you make face! When you hunger, you be glad to eat such good meat. Why you want to see Mardarin?"

Since there was no point either in concealing the truth or telling all of it, Druin replied, "The King of Zadok had my entire

family murdered by treachery and I want revenge."

"Ah, good reason." After taking a big bite of meat and chewing it with obvious relish, Bungamin continued, "I come here because I was big liberal. Had great plan for reform. After war, stopped killing and eating enemies and instead sold to slave traders. Good idea, but didn't work." Another pause while the chief chewed a mouthful of trader. "Traders take captives all right, but tried to cheat; no payment! Big mess. Now Bungamin out of power and need help of Mardarin to get back power. One good thing, though – this trader teached me how to preserve meat by smoking."

This language was not native to Bungamin, Druin mused, and he had been taught by someone either incompetent or with a twisted sense of humor. While they talked, they had been walking to the inn's front door. Bungamin touched the other's arm as they were about to enter, and whispered.

"One thing more. Should warn you – other guests." The mighty black actually shuddered. "They...not good people like you and me."

While Druin wondered what it would take to bring a shudder to a giant cannibal, they entered. The innkeeper proved to be a wizened little man with little black eyes like agates set deep within his skull. A thin fringe of unpleasant white hair circled his misshapen head like a mushroom's collar. Upon Druin's placing a small gold piece in his outstretched hand, he stepped out of the way and bowed with consummate politeness.

"Good my Lord, welcome to my humble abode. You are just in time for supper."

Hoping fervently that his host meant that ambiguous remark in the ordinary way, Druin walked in. The common room seemed ordinary enough; walls of rough-hewn wooden beams and planking, a cheerful fire in a stone fireplace, and a long sturdy table of oak. Of the two who sat at the table, the short man, so broad of shoulder and dressed in the silks and samite of one very well born, rose and bowed politely.

"Count Kainus of Thunland," Bungamin said, "Lord Druin of...Zadok?"

"Zadok, yes," Druin said, returning the bow. "It is the custom of my country, taught me by my father the Duke, to shake hands," he lied, and extended his hand.

After a slight hesitation, the Count accepted the gesture. He had, as the other man had suspected, hairy palms. *And his eyebrows met.* After that clasp Kainus waved toward the seated man, a near skeleton in black robes.

"And this grim fellow is Torguadis, formerly high priest of the Temple of the Great Spider in Shamash."

"Please", the priest snapped angrily, and his hard opaque eyes flashed. "Spare me the introductions. You know I do not wish to converse with unbelievers."

Druin smiled as he seated himself, and replied smoothly, "I find that a great pity, Your Reverence. Though I do not share your faith, I am a man of open mind and ears. There is much I would like to learn from you."

"The proper way to instruct the unbeliever and the heretic," Torguadis replied in a voice like an iron rod, "is by breaking on the rack."

Bungamin, who had seated himself on Druin's right, laughed with his mouth full. He swallowed and said, "Our priest's manners take getting used to. But wait till you see what you get for supper. To be glad I gave you good meat."

A cannibal apologizes for a priest, Druin thought, noting the empty clay bowl and rude wooden spoon before each of the four men seated around the table. In its center a large iron pot squatted unesthetically. A peek within confirmed what Druin's nose had told him – vegetable stew.

"Looks good to me!" he assured, and reached for the pot only to discover that all three of his companions were glaring coldly. He knew that he had just committed a serious social blunder in this gentle company.

"We are," Count Kainus replied in a voice that could freeze salt water, "waiting for Our Lady."

WHAT WOMAN COULD COMMAND the reverence of this weird group was a mystery to Druin, but he spoke in swift contrition. "My apologies, gentlemen. Please remember that I am a stranger among you and had no way of knowing you awaited a lady."

The black nodded and shrugged and the Count said, "Certainly." Torguadis continued his stony silence.

Gods! What incredible company I dine with tonight! A religious fanatic, a friendly cannibal, and, unless I'm much mistaken, a mannerly werewolf. Still, I'm a great deal better off than I was last night – here are four walls around me and a good fire to keep that night-demon at bay.

"While we wait," Druin said, "there is something I'd like to ask you. On my way here I came upon a trail. Apparently eight men left this inn, went to some place in the Valley of the Bones, and returned here bearing a heavy object. Do you know aught of this?"

To his puzzlement, all, with apparent sincerity, denied any knowledge of the event. Outside the sun was setting, and as dusk swallowed the landscape, wolves commenced to howl. The sound was especially eerie as each howl seemed the echo of the previous one, so that ghosts seemed to ride to and fro on the night wind. Darkness and that wind brought swift chill into the inn, despite the fire.

"Druin," Bungamin said as he wrapped himself more tightly in his lion skin, "be glad you inside. Wind-wolves do not come near tents or this building. Anyone caught out in open, man or beast or demon..." He gestured. "*Vvt!* No more."

Good, Druin told himself, while chills ran up and down his spine. *That means my enemy cannot reach me here.* Though he'd heard of wind-wolves, he had always supposed them a mere legend, a scare-tale to frighten the credulous. Now, listening to the uncanny howling that came from everywhere and nowhere, he could believe. Perhaps there were ghost wolves one could

neither see nor fight, wolves whose victims vanished in a single horrific moment, devoured by invisible jaws.

"Ahh, good companions, I hope you will excuse me for being a trifle confused," he began politely, "but as I understand it, the Floating Mountain only comes nigh here at night. How are we supposed to run to it while these wind-wolves are about?"

Bungamin smiled. "Ah, is what our followers are for. You saw them outside. We run in center, they ring us. Maybe lose a few, but they are cheap."

And where am I supposed to run? Druin wondered. He was, he knew, the weakest member of a survivors' club.

"It's nearly full dark," Count Kainus said to no one in particular.

"I shall cover the fire," Torguadis said in an equally offhand manner, and began arranging a black drape in front of the hearth.

As the room was swallowed in darkness, Druin protested. "Gentlemen, would one of you mind explaining this strange preparation?"

The Lady," Kainus gently told him, "never dines until after dark and prefers that the room be dimly lit. Naturally, we honor her preference."

The others nodded in agreement and abruptly Druin's hands were clammy with a chill sweat. His mouth went dry as the sands outside. Now he understood it all. Even while fear gripped him, his mind filled with a strange chilly calmness, and on the instant he knew precisely what he must do to survive. The irony was heavy, ugly. While his fears came under the control of an icily calculating mind, he was tempted to laugh.

Slowly the inn's door opened and a woman entered the common room.

At first, his eyes not yet adjusted to the poor light, Druin could see only that she wore a flowing white gown and moved with a grace denied mortal women. His three companions prostrated themselves before her in an abject adoration that befitted a goddess. And as his eyes adjusted Druin knew that they were right – she in white was divinely beautiful and deserving of worship.

"Greetings, my lady," he said in a flat voice, standing erect. "I rather expected that you would meet me here."

"Did you...really?" Her voice was all golden bells in a sweet breeze.

"T'was logical. You promised to meet me tonight, and since you could deduce that I'd be here, you had your casket carried to this place."

"Well, clever man," she whispered, "true. Since there is no point in postponing what must be, pray follow me."

She turned and was gone. Druin moved swiftly after her, still wearing his long cloak with the little lamp in one of its pockets. When he stepped out onto the desert, she was out of sight but there was no mistaking the tent to which she had repaired. It shone as though filled with moonlight.

When he opened the tent flap and stepped through, he saw her clearly for the first time. His mouth fell open and he could scarcely speak or breathe.

"Please come in," she murmured. "While I do not like the light of sun or fire, I would have you see and know Me. So I arranged this moonlight." She moved with

silken swiftness that he might see her, and hers was a beauty beyond the beauty of woman, beyond the words of the poet.

"You have, I fear," her golden voice said in tones sweeter than wine, "misunderstood what has been happening. True, men come to Me and die, but this 'sacrifice' they make of their own free will. For I am Theba, All-mother of humankind.

"Ages ago a great evil befell. We, the other Gods and I, went into darkness and humankind lost Our guidance and blessing. Since that tragic day men have fought one another blindly, each with his hand raised against his brother. Yet We did not die as mortals do, for We cannot. Now the Stars have turned and are favorable. I can live again, bless the world again...with your help."

She was slipping out of the white gown and despite its beauty she was as a butterfly leaving an ugly cocoon. Eyes bulging, Druin stared at the slimness of Her waist, the glory of Her full breasts, the slim hips.

"Give me your life, Druin, your poor broken life, and I will give you love." The pure white gown of gauze and silk and cobwebbery fell from Her in a shower of liquid ripples, and She stood before him in pearly nudity. With exquisite slowness She — the goddess, the very goddess Theba — moved Her long perfect legs apart in open provocation and offertory.

"Come to Me, Druin," She whispered, smiling twofold.

Druin's heart was a galloping charger and his blood burned with fever. He knew that to touch those breasts, to be prisoned between those legs, would be ecstasy beyond the joy a man might hope for in a dozen lifetimes. His mind swam in a confusion of desire and his manhood swelled, but all the while there was coldness in his orphan's soul like a great block of ice.

Her spell did not prevail. His hand snapped from under his cloak. It held the little oil lamp — Her lamp. In a single swift motion he cracked the lamp and spattered its contents upon Her. While Her ocean-deep eyes widened in dismay, he raised his hand toward Her perfect body.

"Burn, my Lady, burn!" he shouted, and where he touched Her, the oil burst into devouring red flames. Instantly, they enveloped Her.

From her lips Druin heard not a sound but in his mind a silent scream echoed. NO!

She howled, I WANTED SO LITTLE AND COULD HAVE GIVEN SO MUCH. IT IS NOT...

The rest was silent. Her body burned like dry parchment. As he watched, Druin wondered: Had She lied?

Was he destroying a demon, a blood-sucking creature of the night that had impiously pretended to be Herself? Perhaps ... and perhaps the Northmen were right. Perhaps the Gods had all died ages ago, Theba Herself included, and all humankind was merely a noisome worm crawling about a decaying world. If so, he was destroying the last remnant of what had once been a great Goodness.

It did not matter. What he was doing was necessary. The lord of Zadok had vowed to serve no gods save Expediency. Since this one had sucked Her or its lovers dry of their vital fluids, it followed that She Herself was dry, seeking fluid because fluidless...and vulnerable to fire. So he had decided, and he was right. The flames were spreading rapidly, actually roaring. To Druin's right the gold-emblazoned coffin was smouldering and on his left the tent wall was aflame. Heat swept out at him as from an open door to Hell. Druin staggered back, stumbling out of the tent and into the chill night air of the desert.

His comrades were avenged, and others saved. As for his family, the son of a duke and grandson of a wizard was not finished.

HE WAS NOT EVEN THROUGH with this night's activity. Behind him someone shouted and he whirled to face Bungamin, Count Kainus, and Torguadis.

"He has murdered Our Lady!" the black giant screamed. Even as he spoke, his spear-armed warriors were rushing from the tent to rally to their chief. The other two tents were disgorging the Count's men, creaking in their hard leather jackets and brandishing swords, and Torguadis's acolytes, all of whom held ominous black staffs.

Confronted by this armed array, Druin stood smiling ironically. He spoke in a mocking voice, and as he did he pointed past them. "Gentlemen, look to your left. Floating Mountain comes! It is almost here. Which will you choose — to chase me, or it?"

Armed retainers looked to their masters. Though Bungamin continued to glare at Druin like a hungry beast, Torguadis glanced left and stood staring in stark amazement awe. There, enormous beyond belief, so near it seemed one could almost reach out and touch it, was the mountain, drifting a few yards above the desert. Its snowy cap shone in the bright moonlight.

"Come!" the priest screamed. "Never will we have another such chance!"

His eyes never leaving Druin, the black chief took a spear from one of his men. "After this dog lets twitching toward death! Count Kainus?"

The Count, touched by the light of the full moon, was changing. His face crawled with hair and his open lips revealed vulpine fangs. Bent low to the ground, he lifted that hideous head and howled at the moon. Then he was racing away, four-footed, toward the drifting mountain. Instantly the priest was

off and running behind him, holding up his skirts and shouting:

"All of you, follow me!" His own acolytes and Kainus's men obeyed and Bungamin's warriors were swept along willing or no.

Left behind, their gigantic chief cursed, hurled the spear at Druin with haste, and turned swiftly to speed after the others. Druin twisted aside to let the spear hiss harmlessly by. It struck quivering in the sand, plowing deep, and he laughed mightily.

AS HE WATCHED, THE RUNNERS DREW into their planned formation, masters within, servants outside. Though the desert was swept with a wind of arctic coldness, most of Bungamin's warriors wore only loincloths. The howling of the wind-wolves rose to crescendo and one of the blacks, a clean-limbed youth, exploded into a bloody cloud. His naked skeleton ran a pace or two before collapsing on the red-stained sand.

Next a soldier. The snows studs of his leather clothing popped like corks from a host of bottles, the leather itself torn to shreds, while his unprotected arms and legs simply vanished. Another black was skeletonized and the attack focused on one of the black pajama'd, yellow-skinned acolytes. Though his right hand disappeared, he clutched his black rod in the left and smote the empty air with desperate fury. Twice he was rewarded by death shrieks before his throat was torn out and his blood fountained onto the sand. Dead on his feet, he fell headlong. His corpse lay on the ground, twitching side to side while it disappeared.

Despite their horrid casualties, the runners pressed steadily onward. The watching Druin marveled at their courage and their stupidity. How far would they go, he wondered, running through the frigid night while their numbers melted like candle wax, all in pursuit of a goal that retreated one step for every racing pace they took?

For a little he watched them running headlong into the distance, leaving their dead behind like marker stones. Then he turned and walked slowly toward the inn. While he had just tricked a group of fools out of their lives, that was no reason to let them continue to deprive him of supper.

Inside, he seated himself and ladled vegetable stew onto his plate. The diminutive proprietor sat in a dark corner and watched him with burning eyes. When he spoke, it was in a husky whisper.

"I see you didn't go with the others to chase Floating Mountain."

"Of course not," Druin replied between mouthfuls of the green mess. "Only a lackwit would believe that a mountain could actually float. One hardly had to note that it throws no shadow to know that what one sees outside is a mirage."

"True," his unprepossessing host said, dark eyes sparkling. "However, many men cannot use their wits when they confront the supernatural, and so seem lackwit."

"I don't have that problem," Druin replied. After another spoonful of stew he added, "And by the way, grandfather, this wants salt." ∎∎

Child of the Wandering Sea

by Jayge Carr

"I keep thinking of the whales."

"Wails? Are they animal, vegetable, or mineral?" Domino was being facetious. If they had been mineral, she would have known them down to their subatomic structure.

"Were." Honore tightened the mask/filter protecting his face, and gazed unseeing over a Dante's landscape — volcanoes, sulfur springs, plumes of steam and plumes that weren't steam. Even the most sophisticated filter couldn't keep out the reek of brimstone. "Were is the operative word. The whales *were.*"

"So?" Honore had captured only a small fraction of her attention; she was almost surrounded by her equipment. He could see the translucent interface tube pulsing frantically as it fed data from a dozen analyzing mobiles directly into her mind.

"They're all dead now. They lived on old Manholm, the original one. They were sea-dwelling air-breathers, intelligent, huge. They covered the surface of the sea like giant waves, the old stories say. Until man killed them."

"Compete or go under." Her shoulder didn't move; the shrug was in her voice. Then, puzzled, "But there's nothing like that here."
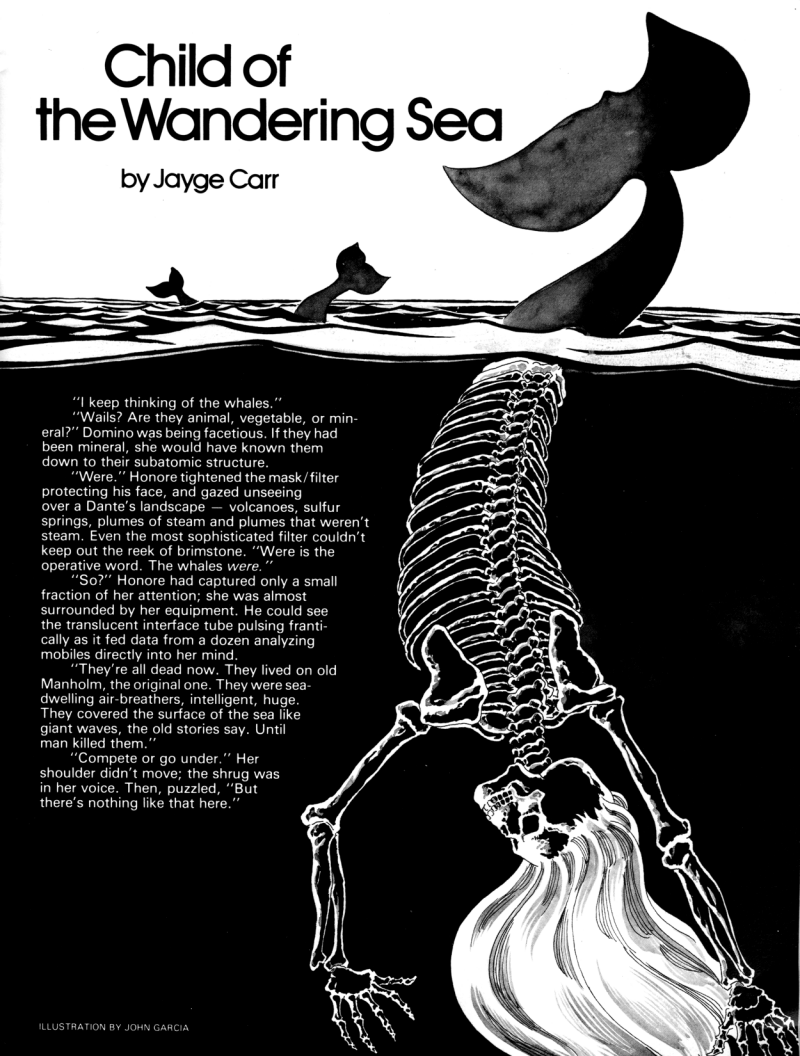
"How do we know?" His voice was bitter. "How much of this world have we surveyed? A thousandth of a percent? A ten-thousandth?"

"As much as we survey on any world."

"I know." If there had been a rock handy, he would have kicked at it moodily; but the hardened lava surface, though irregular, was far too new to have started breaking down to rocks yet. He wondered how many sea creatures were entombed in the not-so-long-ago-molten rock beneath his feet.

"Honore, you've got a skin irritation starting on your neck." The high, child-like tones of Ariel the Generalist came from behind him. She looked like a child, too, small in stature and build, undeveloped body, soft wafts of lint-white hair ringing hips, shoulders, and delicately featured face. But no child could hope to be a generalist; set in that deceiving childish face were a pair of hard, intelligent, thoroughly adult eyes. "Maybe you'd better have Smiling Willow check you out."

"All the way." He turned to glare down at her, hands on his hips.

"Don't you think it's about time?" The childish voice sounded high, whispery, hesitant. He knew better.

"She can check out this irritation." He could feel it now, a dull, raw ache.

"All the way." She echoed his own words back at him. Mouth hard, fists clenching and unclenching, he towered over her, outweighing her two to one, daring her to repeat it, to make it an order, as she had the right to do. It was a silent battle of wills, thoroughly unequal; despite appearances, he knew who had the advantage.

DOMINO ACTUALLY TURNED to look at them, her precious flow of data slowed to a muted minimum. "She's right, you know, Honore. You've been acting like somebody put itching powder under your skin ever since we left that planet — what did they decide to name it? — the one with all those slugs...."

The planet with all those slugs....

It was what he saw instead of this newly made shore and newly moved sulfurous ocean, instead of the holoed walls of his cabin, instead of —

Vast stretches of almost flat plain, covered with thick growth of moss-like plants ... and the slugs. Shapeless blobs of boneless viscous flesh — the size of his finger, the size of his arm, the size of his body, bigger — they crawled over the moss, absorbing it into their skin like amoebas; having vacuoles in their bodies with a chlorophyll analog — common enough — so that they could use air and water and light to manufacture some of their own food, like plants, and a primitive filter-feeding system, so they could use the microbe-sized plant/animals that thickened the atmosphere. Covering the plain, the planet. Of course, if a larger slug oozed over a smaller, junior went to feed senior. It was a biology unusual in its simplicity, three lifeforms supremely adapted and interadapted to their mundane and monotonous world. Supremely adapted ... and correspondingly vulnerable.

That was his job, wasn't it, to terraform planets to conformity, to human usability.

His job, and he had done it well.

So easy. So vulnerable.

Scene: a world of death, a planetary plain covered with dying slugs, translucent flesh rippling, quivering — stilling.

As a solution to the problem, he had been proud of it. Designed bacteria that would kill, that would break down the alien flesh into effective fertilizer, begin the transformation of the plains into useful soil, then die themselves. Then — he wouldn't be there to see it, but he had planned it all — in the stasis fields would break in timed precision, releasing the carefully designed plants and animals. The colonists who eventually arrived would find ever-bearing fruit trees giving soft shade, shallow ponds teeming with edible life — a usable "virgin" world.

A world whose own inhabitants had died to make it usable.

Would it still stink of death when the colonists arrived?

No. His clever, clever little bacteria would even take care of the smell. But he smelled it, death and rot. Even now his nostrils were filled with it. Even the brimstone-reek of this fire-world couldn't cover the stench of dying and decay.

Ariel put her tiny hand firmly on his arm. "Come on, Honore. Before it gets any worse."

He had hoped the scarlet Harlequin mask he had painted on his face and depilated skull would have hidden the reddened eyes. It hadn't. And, she was the boss.

Honore sat on the lava spur, giggling with induced euphoria, and talked to the mermaid. "Immortality and mathematics," he told her, "that's the problem: immortality and mathematics."

The mermaid only continued silently combing her long aquamarine hair with an opalescent mother-of-pearl comb. But the bubbles plopping at the surface of the restless waters seemed to ask the question she didn't.

"Immortality and mathematics," he giggled again. "Limiting factors, prey/predator equations, sigmoid curves...what happens to a species when you remove the natural limits, eh, mermaid? And when you add — it isn't really immortality, but it'll do until something better comes along — you get a geometric expansion, a universe solid with human bodies. Doesn't sound like much fun, eh, mermaid?" A tiny part of him wondered

if perhaps Smiling Willow hadn't overdone the anti-depressant. Not that it mattered; happy day, happy world, happy — happy!

"But that's why we have to take your world, little mermaid. Will you like your world terraformed, I wonder. I think not." She didn't break the easy rhythm of her combing, but he thought her soft curved mouth tightened into a pout.

"Of course not." He was still giggling. "Calm the volcanoes, clean the air and water of their by-products, adjust this world to what it should be to support us, to support humans. And the animals that are adapted to this biome as it is *now*...even the ones that survive won't survive long. The humans'll bring their own biota, all better adapted to a human world. Some of the survivors will cling to life for a generation or two...but you won't leave me, little mermaid, will you?" Tilted almond indigo-dark eyes flirted over the comb.

"No, I'll leave you," he answered his own question. "I'll leave you, after the terra-forming's started. Domino's job, this time. Domino and...this time the killing won't be mine, not directly." He smiled vacuously. "I won't see it, the killing, but then I never do, do I? Except that one time, when it went so *fast*..."

THE NEXT DAY he was back on duty, still carefully dosed to prevent reaction depression, skin a brilliant panorama of stylized flames. He was running an undersurface scoop to collect specimens, personally supervising inside the scoop itself, when he saw the mermaid's face at the porthole, all sad dark eyes and drifting seaweed hair. He surfaced and flipped the top open, remembering at the last second to close his face mask and seam his protecsuit.

She was clinging to one of the antennas, and he gave her a hand up so they could both sit on the curving, wet top of the scoop.

"There's nothing I can do to stop it any more," he replied to the message in her tilted eyes. "It's going to happen."

Little waves splatted at the side of the scoop, sounding almost like words.

"Look at it this way: those specimens I'm taking, they're the *lucky* ones. Isn't it better to die quick and clean than slow and nasty? When the changes start, they'll all die, anyway...."

Infinite sadness in big eyes the color of the abyssal depths.

"No, no, they won't survive. Nothing will. Not anything larger than...not anything. Especially not anything that could be dangerous, or could possible *compete*. My job, to see to that. I take the specimens, test them, analyze them. This world has to be made safe...." He tried to explain it to her, but in the middle of his argument she shook her head and dived suddenly, so that one second she was beside him, the next he saw only a vague blur of sea-foam whiteness, disappearing in the sulfur-yellow depths.

"You haven't given me a report on possible edibility conversion yet." Ariel was waiting when he docked the tiny scoop.

Honore shook his head. "Need more data. Total import or design may be more efficient."

"Converting native is usually quicker and simpler. Is there some special problem here?"

"The environment. The sulfur. All current native biota is adapted to it and has a high percentage of sulfur and sulfur compounds. They smell bad and taste bad. I wouldn't want to say how healthy they'd be, even after treatment. And the treatment would only add more bad smells and taste…"

"Ummmm," she nodded. "I'll think about it. Keep those reports coming."

That off-shift, Domino wouldn't take "No" for an answer. All went well with them until sometime during the sleep period, when he awoke despite the drugs and saw a lock of her short-clipped white hair brushing against his arm. In the dim artificial light, it looked green. He jammed his hand into the bed dispenser so hard it showed bruises the next morning. But the second, extra dose knocked him safely out for the rest of the sleep period.

Considering the smallness of its crew, the survey ship was generously oversized; but that was only psychological common sense. Crowding exaggerated any other problems that might exist, so the ship was large and labyrinthine. Any crew member who wanted privacy had a good chance of getting it, unless another crew member wanted to find him worse. Honore wanted privacy, but the senior ecologist caught up with him before he could sneak into one of the shuttles and zip down for another day's solitary exploration/specimen gathering.

"I wanted to ask you about a report you filed last night, one of the littoral specimens.…"

"Oh?" Honore took the print-out with some surprise; all the specimens so far were of common types, nothing unusual.

The ecologist's long, amber-and-chartreuse herringbone patterned finger tapped the print-out. "I do think you should have flagged this one.…"

Honore stared at his own words in disbelief. "Great grey backs bigger than the waves.…" He shook his head. "My mind must have been wandering. That thing's a pseudotunicate the size of my fist."

"Maybe you ought to spend a little less time specimen gathering, and a little more time resting. Have you had your fatigue levels checked recently?"

"I couldn't be spending more time with Smiling Willow if I were spliced to her."

"Well, maybe you'd better spend a little more time checking over your inputs. And maybe.…" Rainbow striped eyes stared thoughtfully at Honore.

"Any more of that stuff she's been feeding me and I'll spend all my time singing 'Titwillow.' You wouldn't believe what I've been see.…" He slammed his mouth shut, but it was too late.

"Mermaids?" Ariel was amused.

"Mermaids," he repeated sullenly.

"Human-shaped fish?"

"Sea-dwelling humanoids with a fish tail, if you prefer."

"And you've seen them — one of them — twice now?"

"Yes."

"Are you sure one of the hums isn't pulling a cracker? Sometimes a sense of humor.…"

"I know. I animated a skeleton myself once. But not this crew. Rookies pull that sort of bone-brained stunt. But not this seasoned crew."

"Your explanation, then?"

"I'm seeing a mermaid. That's all. This world already has humanoid inhabitants. Maybe it's parallel evolution, maybe it's the descendants of an early crash. During the scattering.…" She snorted. "Who knows. They're here, that's all."

"Here — or in your mind. Did you spot this… specimen before or after Smiling Willow started dosing you?"

"After," he admitted.

"Well, then?"

"Maybe I'd just better crawl back into my bunk and let the rest of you handle this one. What good's a bio whose mind is supplying his specimens?"

He shrugged. "Unreliable data is worse than no data at all."

"Most likely you saw something vaguely humanoid, and your mind — or the drug — supplied the rest."

A man could drown in eyes the color of the ocean's depths.… "Whatever you say. You're the boss."

"Yes." Pause. "The life on this world — it's going to have to go."

"I…know."

"That's what you recommended originally, isn't it."

"Yes."

"But now you've changed your mind. Why?"

"Because we'd be wiping out an indigenous intelligent race, humanoid or not."

"Do you think we haven't done that before?"

"Wiped out *intelligence?*"

A shrug. "Who knows. We spend so little time surveying before we.…"

"Kill. I know."

"Yes, I know, too. And *mine,* the ultimate responsibility. But — have we a choice?"

"Immortality and mathematics. I *know,*" he muttered.

"Yes. You're the biologist. You must also have some familiarity with ecology. What happens to a species that overcrowds its niche?"

"Population follows a sigmoid curve down instead of up."

"And if the population swings too far on the downside?"

"Extinction."

"Yes. Remember that. It's them — or us. Honore, do you want a few days off?"

"No. There's too much to do, and too little time to do it in."

"As always. I'm sorry, Honore. Even if your hallucination were real.…"

FOR A HALLUCINATION, she tipped the scoop pretty sharply as he hauled her aboard, and her hand was wet and warm and pulsing with life.

He told her about it, carefully, about immortality and mathematics, about the slugs and the whales, and she listened, her elfin face dimmed of light and joy, sulfur tears leaving drying dirty yellow smudges down her foam-white cheeks.

"Them or us," he repeated finally, "them or us." Oddly, it was her soft hand that patted his shoulder comfortingly.

"You know," he spoke to the restless sea, "Bios get a little psych, too. And there's a classic experiment, run with rats — an experimental animal — and a maze shaped like a T, a long passage and two side passages leading off it in opposite directions. The rat comes down the long passage and chooses one of the side passages. If he chooses the correct passage — whichever his experimenters want — he gets a reward, food, say; and if he chooses wrong, he gets punished, hurt. But there's a classic experiment; they wanted to see what the rat'd do, if *every* choice it made was wrong. No matter which branch it chose, it got punished. Rats aren't stupid. After a while, the rat'd refuse to choose, just sat there trembling at the branch. So then they punished it if it didn't choose, too.…

"Classic way to drive an animal, or a man, insane. Punish him no matter what he does…whatever he does, he's *wrong.*

"Us or them…I could do it, you know. My lab can produce *all* kinds of bacteria. I could protect you, little mermaid — for today." She wrapped a long strand of hair around her finger and sucked on it, staring at him over the finger, through a veil of hair. "Yes, I could do it — kill my friends, myself, for you and yours."

She tilted her head, looked hopeful.

"But, how long would you be protected? Even if I stopped the terraforming today…tomorrow or the next day another ship would come, survey your world…and kill it. I can stop this one ship. I can't stop humanity, the cancer of the Galaxy." He laughed, and she seemed to be laughing with him, though he heard only the gay plap of wavelets against the hull.

"You know, pretty mermaid, you'll have your revenge, though, sooner or later. This Galaxy's big, but it isn't infinite. And you, and the whales, and all the others.…" An endless flat plain covered with swimming, dying bodies. "You'll have your revenge; and if they learn, before they overrun this Galaxy, how to leap across the intergalactic void — the universe can't be infinite. Or is it? I'll have to ask one of the cosmologists. But sooner or later…sooner or later.…

"Would you like to live, little mermaid, even if only for a little while longer?"

It seemed to him that she nodded, before diving back into the sulfur-yellow/indigo depths. He watched as long as he could, until the foam-white blurred into the tears in his eyes.…

They were waiting for him when he docked, of course. The scoop had been bugged; they'd heard every word he'd said. They had weapons, and surprise. He hadn't a chance.

They doped him unconscious, until they could drop him off at a world with a psych center, to have his brain reworked.

But despite the doping, he dreamed. Oceans of great gray backs, bigger than the waves.… ■ ■

An Exozoological Sampler

by John Boardman, Ph.D.
and James Smolen, Ph.D.
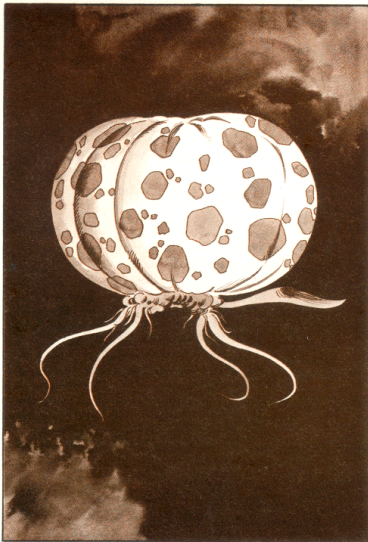
Balloonalo

Habitat: Gas-giant planet similar in size and composition to Jupiter. Balloonalo lives in atmosphere, feeding upon the plankton-like organisms.

Physical Description: Oblate spheroid, approximately 100m. along major axis. Long, tapering food-gathering appendages. Sensory organs located at each end (two sets, each with bilateral symmetry). Brain and other organs located in an inconspicuous ventral bulge.

Comments: The atmosphere of the gas-giant planet has physical and chemical properties which vary considerably with altitude. A rich "primordial soup" has been produced photochemically in the reducing atmosphere; these nutrients sustain a diverse population of primitive photosynthetic organisms ("plankton").

The Balloonalo eats the plankton, roving vertically through the atmosphere to vary its diet. The Balloonalo will change altitude, and thus physical and chemical conditions, to suit its appetite and mood. Altitude changes are achieved by the synthesis or venting of pure hydrogen gas, a metabolic by-product. Buoyancy is also obtained from metabolic energy (waste heat) that warms the gas.

Sarker (Para-plant)

Habitat: Ocean world.

Physical Description: Variable (see below).

Comments: The larval Sarker looks a little like an earth tadpole except for its size. It freely swims its planet's saline oceans and possesses a single eye, a mouth, a heart, and a tail. The Sarker larva has a spinal cord with a protecting rod-like structure. Its bloodstream is surprisingly rich in the rare metal vanadium. The first meal of its life is its own tail, which it ingests from the inside before eating any other food.

Upon maturity, the Sarker drastically changes its way of life. It will glue itself to an underwater rock, and live motionless as a clam thereafter, picking plankton out of the sea water. Although the Sarker technically counts as an animal, the adults grow themselves coverings of a substance similar to cellulose, just as many plants do. The spinal cord is resorbed, and the adult Sarkers look like clusters of seaweed. See note on page 31.
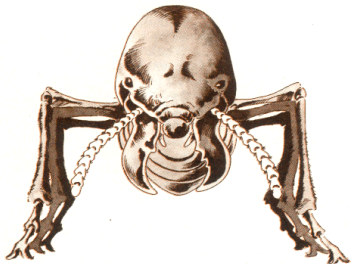
Xylophages

Habitat: Terrestrial planet.

Physical Description: Insect-like symbiont, 1cm. in length.

Comments: The Xylophages lives on fibrous vegetation and have the unusual ability to digest wood fibers (cellulose). This latter capability is attributable to the presence of symbiotic microorganisms residing in the gut of the insect. As is usual with most symbionts, neither the insect nor the microorganisms are capable of independent survival.

The Xylophage has an elaborate social life. Like the bees and ants of Earth, they have a ruling class that produces all the young, and a ruling class that fetches in food. However, this is nothing like a bee hive with one mature female, a number of mature males (drones), and a vast horde of immature female workers. The reproductive class includes both males and females; so do the workers. See note on 31.
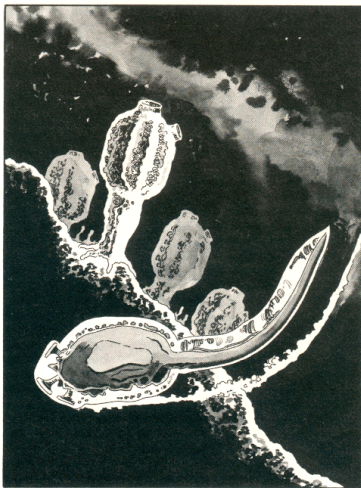
ILLUSTRATION BY JOHN GARCIA

Plumentarian

Habitat: Terrestrial planet.

Physical Description: Intelligent reptile, 2m. in height. Humanoid in structure and build. Brain size (but not structure) similar to human. Four fingers (opposable thumbs) on each hand.

Comments: Plumentarians evolved from the equivalent of terrestrial dinosaurs. Mammals evolved on the planet but never became the dominant animal form. Plumentarians are highly intelligent and omnivorous, although their teeth have not yet accommodated their new diet (molars have not yet evolved).
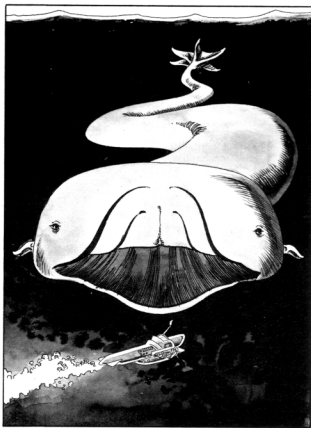
Jasconius

Habitat: Large, low-density planet with extraordinary water content. Very low gravity. Terrestrial temperature. Jasconius is an aquatic animal.

Physical Description: Very large disk-shaped head, about 1km. in diameter, with long tubular body ending in complicated flukes. Most of the organism consists of a large deformable bladder. Sensory and other organs located in a few cubic meters at top of disk.

Comments: The low-gravity oceanic worlds led to the development of extraordinarily large aquatic animals. It uses its muscular bladder to suck up and then expel massive volumes of ocean water. A series of sieves removes all particulate matter in the water, from plankton to sizeable fish, all of which is digested in a central stomach. The Jasconius gets its somewhat limited mobility by expelling processed water. Its body tube contributes steering and some buoyancy control.

Most remarkably, humans actually inhabit Jasconi as parasites. These colonies (originally an accidental result of a daring prison escape) have regressed to the point of simple tribalism, virtually worshipping the host creature.
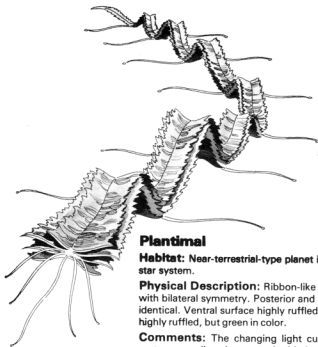
Plantimal

Habitat: Near-terrestrial-type planet in a binary star system.

Physical Description: Ribbon-like organism, 2m. long, with bilateral symmetry. Posterior and anterior ends almost identical. Ventral surface highly ruffled. Dorsal surface also highly ruffled, but green in color.

Comments: The changing light curve of a binary star system as well as the unusual orbital perturbations induced by the two suns insure that the surface of the planet receives a highly erratic solar flux. The unpredictable radiation levels have encouraged the development of motile plants. These plants normally "root" in a single spot for weeks at a time. However, when solar radiation becomes too intense or when climatic conditions are unfavorable, the Plantimal can seek shelter.

The ventral surface of the Plantimal contains rudimentary roots, which will penetrate a few centimeters of soil. The ruffled dorsal surface serves as foliage; a specialized "skins" which contains a primitive musculature propels the organism in a worm-like fashion. The Plantimal is eaten by the dominant species on the planet, a warm-blooded animal.

Alien Life Forms
A Basis for Intelligent Speculation on Varieties of Extraterrestrial Creatures

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Life-Bearing Planets

When the subject of interstellar travel is raised, it is usually assumed there will be somewhere to go, some way to get there, and something interesting to see, discover, or bring back once we arrive. The problems involved in getting there were examined in *Ares #1*, but can we be sure that there is a "there" to get to?

Most science fiction writers assume that there will be life forms of some kind around some stars. Only recently have scientists been able to find hard evidence that there are planets around other suns and that our solar system is not a rare exception in the cosmos.

Until about 40 years ago, astronomers believed that planets were extremely rare in the universe. The solar system was supposed to have been formed when another star passed by the sun. Their mutual gravitational attraction pulled matter out of both stars, which then congealed to form the planets. Since such close approaches are extremely rare, planetary systems were also supposed to be extremely rare. Then Lyman Spitzer in the United States and Otto Schmidt in the Soviet Union separately worked out what would actually happen to such such matter — it would either fall back into the two stars, or dissipate into space.

Our present understanding of the problem sees planetary systems as very common. As a cloud of interstellar gas collapses under its own mutual gravitational attraction to form a star, its rate of spin increases. To maintain stability, it either splits into two or more stars or leaves matter behind as it contracts, or possibly it does both. The material released from the proto-star cools into solid bodies, which attract one another gravitationally. Eventually, the largest of these bodies (among those at about the same distance from the star) sweeps its orbit free of most smaller objects and becomes a planet. This seems to be what has happened in the solar system. One exception was caused by Jupiter, the largest planet, which raised such great tides in some of this matter that it could not congeal into a planet and remains to this day as a large number of rocks in orbit between the orbits of Mars and Jupiter.

Is this process likely to have happened for every star? From spectroscopic analyses of starlight, it is possible to determine how rapidly a star is rotating. The stable stars which are very hot, bright, and massive, and appear white or blue-white to the eye, generally seem to be rotating very fast. The cooler, stable stars rotate much more slowly. Presumably the spin which they once possessed has been transferred to other bodies during the star's development. The sun possesses 99.8% of the mass of the solar system, but only 2% of the angular momentum (momentum of spin). The remainder belongs to the planets, Jupiter alone possessing 60% of the total. It therefore seems that, as a developing star reaches stability, it does or does not form planets according to whether its mass and brightness are below or above a certain critical value. A vast majority of stable stars have, like the sun, low rates of spin. Therefore they presumably have planetary systems. The more massive stable stars can hold together and still spin fast because they have larger gravitational fields; Sirius is the nearest example of this kind of star.

It is a matter of controversy among astronomers as to whether multiple star systems can have planets and whether such planets could have the stable orbits necessary to the development of life. The proto-star may have been able to meet the requirements of rotational stability by splitting up into several stars, making the formation of planets unnecessary. Or each of the component stars might have its own system of planets, whose orbits are perturbed by the other stars.

Elements of Life

It now appears, however, that almost every stable, single star has planets as a necessary part of its development. Not every system, of course, will have habitable planets. On the one known habitable planet, earth, most organisms live on the energy that is obtained from sunlight or by the breaking of the chemical bonds in the molecules of carbon compounds. Plants store solar energy in such compounds. Herbivores eat the plants and extract some of this energy for their own purposes, using oxygen to break up the chemical bonds. Carnivores do the same thing to herbivores.

Extraterrestrial life will most likely have the basic characteristics of life that we recognize on earth. Any biological life form must have a structure which distinguishes it from its environment. It must also have a mechanism which maintains this structure against the opposing "force" of entropy; any such mechanism requires energy. While such energy can be obtained from a variety of chemical sources in the short run, only sustained sources of intense energy, such as stars, will suffice for the creation and maintenance of life in the long run. Thus, we should not expect life forms to abound in areas of low energy flux (e.g., on planets such as Pluto or in interstellar space). Energy plays a critical role in determining the types of life forms which are possible.

Not only does a life form require structure and information which must be maintained against the environment, but this structure must itself be highly diverse so that it can *do* something. In order for information to be passed from one part of an organism to another, there must be a corresponding difference of chemistry and structure. Thus, a perfect crystal or a homogeneous liquid could not be a living organism.

Even the simplest of organisms, such as viruses, have extremely complex biochemical components. Each structural protein, each enzyme, each metabolic intermediate has a specific shape. For these components to interact efficiently and for biochemistry to proceed, the shape of each component must be very carefully "fine tuned." Thus, a reasonable minimum requirement for any type of biological chemistry is that it contain a basic building block which permits an extraordinary degree of chemical diversity.

The wide diversity does not necessarily require that each possible chemical structure actually be used, but it does allow an organism the possibility to optimize the shape of any molecule. The atomic elements which form the basis of a biological chemistry must be able to form not only the widest range of homopolymers (long chains of similar atoms) but also a fertile variety of heteropolymers (long chains containing atoms of different elements). These properties ensure high biochemical diversity.

What atoms, then, can be included in long-chain chemical combinations that can store energy? And what oxidizing medium would be available for releasing this energy? In terrestrial life the complex carbon-based (organic) molecules store this energy, and oxygen from the atmosphere (usually) is the oxidizing medium. This is quite reasonable, since carbon and oxygen are among the most common elements in the universe. For every 1,000,000,000,000 hydrogen atoms in the universe, the next ten most common elements have an abundance as listed in the table on the opposite page.

Helium and neon are chemically inert, and play no known part in biological processes. However, compounds containing hydrogen, oxygen, carbon, and nitrogen are extremely numerous and complex, and form the basis of terrestrial biology.

Carbon is thus almost certain to be the basis of any conceivable life form because it is so common and embodies the necessary principles of diversity more than any other element. Carbon's chief chemical advantage is that it is tetravalent: each atom of carbon can form bonds with up to four other atoms, allowing the construction of multiple, diverse homo- and heteropolymers. The ability of carbon to form heteropolymers is enhanced because it can form stable bonds with many other elements, not only hydrogen, oxygen, and nitrogen, but also sulfur and phosphorus. This last element is particularly important because, of all the atoms usually associated with biochemistry, phosphorus is in the shortest supply in the universe.

Any other element proposed as the basis of a practical biological chemistry must have many of the advantageous properties of carbon atoms. It is for this reason that tetravalent silicon has often been proposed in science fiction as the basis of an alternative biochemistry. However, in spite of silicon's ability to form four (and sometimes six) bonds, it does not partake in anywhere near as vast a range of diverse structures as carbon. Silicon does form an extensive range of homopolymers, but the number of heteropolymers is quite restricted when compared with carbon. Silicon compounds are also too stable at terrestrial temperatures; any organism using this chemistry would be hard-pressed to metabolize these compounds. At much lower temperatures, a silicon-based biological chemistry would be suitably complex; however, those compounds would be unstable in the presence of water, an almost certain constituent of any prebiotic environment. In general, the lack of structural diversity of those compounds makes it extremely unlikely that silicon (or a similar element, such as germanium) could form the basis of an efficient biological chemistry. Furthermore, there is about ten times as much carbon as silicon in the universe.

Earth has a highly atypical composition in comparison with the rest of the universe, though. Next to oxygen, silicon is the most common element on earth, where it is 135 times as abundant as carbon. If, given this lead, silicon has not become the basis of life here, it is doubtful that it could have done so on any planet. Moreover, the energy stored in a carbon-carbon bond is almost twice as great as the energy stored in a silicon-silicon bond. Also, unlike carbon-carbon bonds, silicon-silicon bonds are unstable in the presence of oxygen, water, or ammonia.

Elements other than silicon are even less plausible. Boron, for example, is only trivalent and forms a very restricted range of homo- and heteropolymers. Nitrogen is also trivalent; it is found in an extensive range of heteropolymers, but it forms very few homopolymers. While homopolymer formation would be favored by low temperatures, lack of diversity would still be an extreme restriction for nitrogen.

In summary, carbon is by far the most likely basis of biological chemistry. None of the other elements are suitable replacements, even under extreme conditions. Extraterrestrial life will almost certainly be carbon-based and will exist in a discrete range of temperatures: within this range, carbon compounds could be readily broken down biochemically, but would otherwise be stable.

Water, Water, Everywhere?

What about solvents? In other words, of what compounds will the oceans of biologically active planets consist? A solvent must be compatible with the diverse range of biochemical components with which it must interact. This means that the solvent must, to some extent, accommodate compounds of all electrochemical characters: polar and apolar. This eliminates oceans of methane or ethane, which cannot accommodate compounds that dissociate into ions (atoms or molecules which carry electrical charges). Furthermore, the low temperatures required for the existence of liquid methane are incompatible with efficient carbon-based life. Ammonia is somewhat better in its ability to accommodate both polar and apolar materials, but unfortunately also requires low temperatures. Ammonia has an additional problem in that it is strongly alkaline and would destroy carbon compounds. Water is the only highly abundant solvent with properties compatible with carbon-based life, and it is easily the most likely candidate. Water has one additional advantageous property: ice floats. As frozen matter sinks to the sea-bed, oceans of almost any other solvent could freeze solid, from the bottom up, during the hypothetical planet's "winter." Such a situation would obviously be anathema to any life form. However, water freezes from the top down, shielding the depths from the colder air and making it

more difficult for the body of liquid to freeze solid. Viable conditions could be preserved for life forms during otherwise adverse weather conditions.

Two types of atmosphere would be likely to support life. The first is a chemically reducing atmosphere of methane, ammonia, and water vapor, such as exists on gas giants like Jupiter. A reducing atmosphere was present on earth before and during the initiation of life, and its chemical composition was close to that of the universe as a whole. Hydrogen and helium, though common in the universe, would not be abundant in the atmosphere of the early earth because they would have enough energy to enable their molecules to escape so small a planet. Of the other three molecules, water is the most easily broken. Energy from solar radiation, mineral radioactivity, or lightning could dissociate water, releasing free oxygen into earth's primitive atmosphere. The oxygen would then begin to oxidize partially the methane and ammonia.

The next step in the creation of our present atmosphere was first speculated upon by Aleksandr Ivanovitch Oparin in 1924, and investigated experimentally during the 1950's by Oparin and associates in the Soviet Union, and by Harold Urey, Stanley L. Miller, and others in the United States. The oxidation of methane and ammonia under these circumstances produces the long-chain organic molecules that eventually develop into primitive living organisms.

Unfortunately, while the chemical reactions available in a reducing atmosphere would be sufficient to support primitive life, they would not be energetic enough to support specialized, intelligent life forms. However, as more oxygen is released into the atmosphere, it creates an oxidizing atmosphere such as we have on earth today. Highly energetic chemical reactions become possible in an oxygen atmosphere. Oxygen is the *detritus* of photosynthetic organisms and is extremely toxic to life forms accustomed to operating in a reducing atmosphere. Oxygen is also very corrosive by virtue of its high reactivity: it combines readily with many other chemicals, yielding large amounts of energy (as any fire will attest). Organisms which first become adapted to the presence of oxygen and then manage to incorporate it into their metabolic pathways obtain a selective evolutionary advantage since they have an efficient biochemical source of great energy. It is conceivable that highly specialized intelligent life can only develop in an oxygen atmosphere. With such a potent source of metabolic energy available, it would no longer be necessary for each cell to scrounge around for its own individual survival. Such "extravagant luxuries" as fins, wings, legs, eyes, and brains could be invented and maintained.

As oxygen-using life forms develop, the atmosphere swings over from reducing to oxidizing. The nitrogen in the ammonia gas is oxidized into the elemental nitrogen that constitutes 79% of our present atmosphere. Water is picked up by plants and oxygen is released. If temperatures are sufficiently high so that complex organic compounds cannot be formed, the oxidation continues unabated and instead of a planet with carbon-based life, a dead planet with a car-

INCIDENCE OF ELEMENTS IN THE UNIVERSE
(atoms of elements per 1,000,000,000,000 hydrogen atoms)

Ten Most Common Elements:

Element	Atoms
Helium	80,000,000,000
Oxygen	690,000,000
Carbon	420,000,000
Nitrogen	87,000,000
Silicon	40,000,000
Neon	37,000,000
Magnesium	32,000,000
Iron	25,000,000
Sulfur	16,000,000
Aluminum	3,300,000

Other Important Elements:

Element	Atoms
Phosphorus	390,000
Chlorine	220,000
Fluorine	36,000
Bromine	540
Boron	160
Iodine	44
Gold	5
Uranium	less than 4

bon dioxide atmosphere results. This process seems to have happened on Venus.

Literary Airs

Other oxidizing agents besides oxygen have been popular in science-fiction. A. E. van Vogt's 1947 novelette "Centaurus II" sent a space ship "to boldly go [sic] where no men have gone before" in search of habitable planets, but it discovered only planets whose inhabitants happily breathed chlorine or sulfur. However, the extreme rarity of chlorine and the other halogens, compared with oxygen, makes the venerable chlorine-breathing aliens of science-fiction highly unlikely.

One of the best developed stories about a race that breathes something other than oxygen was Hal Clement's 1953 novel *Iceworld*. Clement's aliens live on a planet which orbits a hot, white star, and are most comfortable at about 800°C (1400°F). They breathe gaseous sulfur, and the plant life of their world turns sulfides into sulfur gas. They regard earth as an incredibly cold world, where the very "air" is solid. The hero discovers that the "rare" light elements are to be found in abundance on the Iceworld, and with difficulty comes to the realization that those huge flat blue areas are vast deposits of liquid hydrogen oxide. The author explains that on the hero's home planet, the light elements are very rare (the low gravity and high temperature of this world have allowed the light gases to escape the atmosphere). But since Clement's book was written, it has been determined that the hot, white stars are not likely to possess planets, and that they burn up their energy so fast that they would begin to die before life could evolve as far as intelligence.

If we make the "willing suspension of disbelief" and assume an atmosphere whose oxidizing agent is a halogen gas, we still have problems. The halogens are more reactive than oxygen, and could conceivably produce more metabolic energy. However, this very reactivity makes it unlikely that they could serve in a life-sustaining atmosphere. Any biological chemistry must be reversible in practice; that is, any chemical bonds which are formed should be breakable. Thus, an organism can both synthesize and degrade almost any compound. The bonds oxygen forms with other elements are quite strong (and thus release a great deal of energy when they are formed) but are not too strong to be broken either chemically or photochemically (by sunlight). Halogen bonds are far stronger and cannot be conveniently broken. While strong ultraviolet light would be sufficient to break halogen bonds, it would also destroy any other bonds involving carbon, hydrogen, nitrogen, or oxygen. Furthermore, this ultraviolet light would have to come from a hot, white star of a type unlikely to have planets in the first place. Since halogen bonds could not be reversed without severe detriment to the rest of the organism, the most likely possibility would be that all the carbon atoms originally found in the life forms would be progressively saturated with halogens. Life would be slowly converted to carbon tetrachloride or to various freons. This would leave us with the halogen equivalent of what complete oxidation by oxygen has done to the atmosphere of Venus.

The example of earth shows us that a single planet's distribution of elements might be far different from the universal distribution. But, considering earth's geological history, such a distribution may not be atypical at all. Earth's atmosphere is quite warm, compared with those of the gas giant planets which have retained their original chemical compositions. Light molecules of atmospheric gas would have such high energies that they could escape earth's gravitational attraction, taking with them much of the hydrogen, helium, carbon, and nitrogen with which the planet started. (The two latter elements would depart when bound in the light molecules of methane and ammonia.) Cold, massive Jupiter could hold these gases.

...And the Third Was Neither Too Hot, nor Too Cold, but Just Right

Since stars vary so widely in temperature and luminosity, planets are likely to show quite a bit of variety in their temperatures. The region around a star, within which planets would have temperatures that allow water to remain a liquid, is called the biosphere. Earth probably lies toward the outer edge of the sun's biosphere, since water exists in the solid state over a sizeable part of its surface. (The last million years have been an unusually cold period in the earth's history. Life on a planet much further out might not be able to pull through a protracted cold spell of this duration.) The majority of stable stars are much cooler than the sun, so their biospheres would be closer to the star, and narrower. Hot, white stars would have very large biospheres, but as we have seen, they probably would not have any planets to go in them.

It would not be enough, however, simply to establish the inner and outer radii of the biosphere on the basis of the star's energy output. The weather of the planet would have an important effect. The mean temperature of the Earth is 17°C (63°F), but on this basis alone the mean temperature of Venus ought to be 69°C (156°F) — torrid by earthly standards, but conceivably able to support things that eat carbon compounds, breathe oxygen, and drink water. In fact, the surface temperature of Venus is in the neighborhood of 480°C (890°F), and the atmosphere is mostly carbon dioxide, with traces of oxygen, nitrogen, chlorine, and their hydrides, and clouds of sulfuric acid. This atmosphere is not just oxidizing, but almost completely oxidized.

The difference in conditions between worlds so close in size as Venus and Earth is not well understood as yet. Earth has a moon, which may be responsible by itself for these great differences. (There is an interesting and plausible speculation that Mercury is an escaped moon of Venus, pulled away by the sun as the "moon's" rotation around Venus slowed down owing to tidal forces.) Could the mere presence of the moon have trimmed Earth's atmosphere down to its present dimensions, while the thick Venereal atmosphere stayed in place, stored up solar heat, and raised the surface temperature to the present level? If this is the case, then our search for life-bearing planets may have to be limited to planets which have large satellites. The moon has over 1.2% of the Earth's mass; no other satellite in the solar system has more than 0.15% of its primary's mass.

When we finally do go out among the stars in search of other life (unless there are some surprises among the gas giants, there don't seem to be any other forms of life in our solar system), we may find that most habitable planets will be, after all, very much like Earth. The life forms, of course, may be spectacularly different. Organisms are the products of tens of millions of years of evolution. They have adapted precisely to the environments in which they evolved. Transplantation to any other environment would also certainly be unsuccessful. Consequently, it is unlikely that any alien species could compete with a native species on any planet. There are too many things which could be wrong for the alien: physical conditions (temperature, atmospheric composition, etc.), chemical conditions (presence of toxic or absence of essential trace elements), or dietary conditions (it is probably a matter of chance whether the carbohydrates and amino acids used by living organisms are dextrorotatory or levorotatory; the difference, however, is critical). * Earthlings are unlikely to fall prey to native bacteria or viruses, since the native organisms should not be capable of infecting a substantially different biochemical system.

Thus, an extraterrestrial species should not necessarily want to "conquer" any other planet for the purpose of *Lebensraum*. It cannot live there indefinitely, eat the food, or mate with the natives. All bets are off, of course, if the aliens want the planet for purposes of economic exploitation or military bases, and are willing to pay the price of importing their own biological needs or changing the surface of the planet to meet their biological needs.

If You Don't Find What You Want...

We may someday be in the position of wanting to change a planet's surface to suit *our* desires. Terraforming (making Earthlike) a planet would present considerable ethical concern if the planet bears native life, even if it's not intelligent. After all, where would we be if, sometime during the Mesozoic, things that breathe sulfur gas and feel comfortable at 800°C had made over the Earth to suit themselves?

Even without life present, terraforming would be a considerable problem. We have seen that three types of atmosphere are likely to exist. Jupiter and the other planets of its type (Saturn, Uranus, and Neptune in our solar system) have atmospheres composed of hydrogen, helium, and the hydrides of oxygen, carbon, and nitrogen. Since this composition is close to that of the universe as a whole, it indicates that not much has hap-

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* The arrangement of atoms in a molecule are either "right-handed" (dextrorotatory) or "left-handed" (levorotatory). These molecules, although identical in constituent elements, act very differently in biological systems; e.g., a creature that subsists on matter with dextrorotatory molecules would be incapable of metabolizing identical food tissue that differs only by the fact that it is built up from levorotatory molecules.

THE WRECK OF THE B.S.M.
PANDORA

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Read This First:

The rules to *Wreck of the Pandora* are organized by major topics arranged in the order in which they occur in the play of the game. Each such major topic is given a number and a name below which is given (usually) a General Rule or Description which summarizes the rules in that section. This is usually followed by numbered paragraphs called Cases, which give the specifics of the rules. Note that the numbering of the Cases is a decimal form of the Major Section number. Players should examine the map and counters and then quickly read the rules (without trying to memorize them). Then the game should be set up to play and a 'trial run' made. *Wreck of the Pandora* is designed to be played solitaire or with up to five players. Because simulation games are richer and more complex than the typical board game, solitaire play can be quite enjoyable (and is certainly one of the best ways to learn the rules).

- 1.0 Introduction
- 2.0 Equipment
- 3.0 Basic Procedure
- 4.0 Attribute Generation
- 5.0 Movement
- 6.0 Specimen Activity
- 7.0 Discovery
- 8.0 Reaction
- 9.0 Combat
- 10.0 Acquiring and Using Equipment
- 11.0 Repairing Equipment
- 12.0 Equipment Capabilities
- 13.0 Specimen Handling
- 14.0 Gaining Control of the Ship
- 15.0 Cold Shutdown
- 16.0 How to Win

Inventory of Game Parts

Each game of *Wreck of the Pandora* should contain the following parts:

One 11″ x 17″ mapsheet

One sheet of die-cut counters (100 pieces)

One rules folder (bound into *Ares* version)

One die (not in *Ares* version)

One game box (not in *Ares* version)

If any of these parts are missing or damaged, notify SPI's Customer Service Department. *Note:* The process used in the manufacturing of the die-cut counters used in SPI games sometimes results in colors from one counter overlapping the color of a neighboring counter, or in the slightly off-center printing of the letters and/or numbers on a counter. SPI cannot replace counters displaying these minor manufacturing inaccuracies. Only counters that are illegible can be replaced by SPI.

Rules Questions

Should you have any difficulty interpreting the rules, please write to SPI, phrasing your questions so that they can be answered by a simple sentence, word, or number. You must enclose a stamped, self-addressed evelope. We cannot guarantee a proper answer should you choose to phone in your question (the right person is not always available — and since SPI has published hundreds of games, no one individual is capable of answering all questions). Write to:

SPI
Rules Questions Editor for
Wreck of the Pandora
257 Park Avenue South
New York, N.Y. 10010

[1.0] Introduction

COMMENTARY:

At coordinate 339317987 714, Biological Survey Mission *Pandora* is in the process of exiting FTL mode. The ship has been out for some time gathering biological specimens in a dozen systems. Now, her mission completed, *Pandora* is homeward bound. The five crew members and their specimens are in stasis. The ship's computer is in control during the series of difficult (and inexact) jumps necessary to reach Kinshasha CABSA.

As *Pandora* enters FTL mode, the nearby blue-white Wolf-Rayt star emits a powerful burst of near ultraviolet radiation. *Pandora's* computer has placed the ship too close to the pulse and the results are catastrophic. All over the ship, electronic components are burned out. Systems begin to fail, first the primaries, then the backups.

The computer's response is rapid but inefficient due to the damage already suffered. Crew and specimens are brought out of stasis, some safely, others in various states of impaired functioning. In some cases, crew and specimens have failed entirely to exit stasis.

Those crew members who survive are disoriented, frightened and not totally aware of what is going on. Most short term memory is gone. There is a certain awareness of being aboard ship and even of the nature of the ship. Emergency systems are obviously on and, equally obviously, malfunctioning. Specimens can be observed wandering freely about the ship, many of them carrying about and curiously examining portable ship's tools.

As the shaken crew members begin to regain consciousness of their surroundings, they can hear the ship's distress beacon playing repeatedly over the intercom:

"BSM *Pandora* calling. Rescue alert. Position approximate at 339317987 714. Autostatus red: Out of FTL. Out of stasis. Power down. Nav down. Envio down. Con down. Comp down. Ship approaching cold shutdown... BSM *Pandora* calling. Rescue..."

REMOVING THE RULES FROM THIS ISSUE:

GENERAL RULE:

The Wreck of the Pandora is a game of discovery and survival for one to five Players. Each Player takes the role of one surviving crew member aboard the *Pandora*. Players must attempt to regain control of the ship, destroy or reconfine the wandering specimens in their restraint pods, restart the ship's systems to avoid cold shutdown, and get the damaged craft home. Each Player in turn moves, acquires tools, and attempts to use and repair ship's equipment. Specimens are moved automatically as they react to the presence of crew members.

PROCEDURE:

The mapsheet is laid out between the Players and backfolded against the machine-made folds to make it lie flat. The playing pieces are then punched out and sorted according to type. The 21 pod markers are mixed and placed face-down on the map, one marker per pod. The 21 tools and the 10 specimens are mixed together and placed in an opaque container from which they are randomly drawn during the game. Each Player then selects a Crew Counter, determines that crew member's attributes as described in 4.0, and places the counter on the map. Two dice are rolled to determine the placement of each crew member. The first die indicates the deck (1, 2 = A; 3, 4 = B; 5, 6 = C) on which the crew member is placed. The second die indicates a placement pod (1 = pod 1, 2 = pod 2, etc.). Crew Status markers are placed on the Crew Status Display to indicate stamina. Other crew attributes are recorded on the Attribute Display. The Players roll a die to determine who moves first (high roller, then second high roller, etc.) and play commences with the first Player-Turn of the first Game-Turn.

[2.0] Equipment

GENERAL RULE:

The game equipment consists of the map, rules, charts and tables (printed on the map or in the rules), and 100 die-cut playing pieces. Two dice are needed to play the game and are included in the boxed version only.

CASES:

[2.1] The game map consists of a floor plan of the three decks of the *Pandora*.

Also included on the map are the following displays for use in keeping track of data affecting play: The Equipment Status Display, Crew Status Display, Ship Status Display, and Cold Shutdown Display.

[2.2] The charts and tables are used to resolve game situations involving variable outcomes and to summarize information for the Players.

They include the Equipment Capabilities Chart, Impair Table, Repair Table, Attribute Generation Table, Restart Table, and Reaction

Open the magazine to the center, bend the staples with a penknife or screwdriver; lift out the rules and close staples.

Table. The use of each item is explained in the appropriate rules section. In addition, the Attribute Display (printed in the rules) may be used to record the randomly generated attributes of crew members and specimens. **Note:** Copies of the Attribute Display must be made for repeated use.

[2.3] The playing pieces include units, equipment, and markers.

Units are of three types: crew members (used to represent the individual Players), specimens (representing randomly encountered, escaped life forms) and bots (a special type of self-actuated ship's equipment). Equipment counters are of two types: tools (portable ship's equipment) and pods (counters used to designate the nature and location of built-in ship's systems). Equipment Status markers are used in conjunction with the Equipment Status Display to indicate the readiness levels of equipment. Crew Status markers are used in conjunction with the Crew Status Display to indicate the current stamina of individual crew members. Ship Status markers are used in conjunction with the Ship Status Display and Cold Shutdown Display to indicate current functioning of ship's systems. The use of Breach/Lock(Lok) markers is explained in the appropriate rules sections.
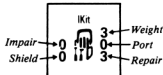
SAMPLE CREW MEMBER COUNTER
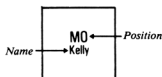
SAMPLE SPECIMEN COUNTER
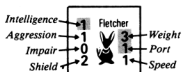
(If an attribute is shaded, that number is subtracted from the die roll.)

SAMPLE EQUIPMENT COUNTER

Five crew member counters are included in the counter mix. All ten specimens are listed above in the counter samples. The 42 pods, locks and tool types (including bots, kits, rigs, weapons and communication devices) are listed with their abilities in the Equipment Capability Chart (10.8).

[3.0] Basic Procedure

The Sequence of Play

The crew members take turns moving, discovering and handling specimens and equipment. Specimens then react automatically to the actions of other units. The order in which these actions occur is described in the Sequence of Play Outline. On completion of the Sequence of Play is called a Game-Turn. Each Game-Turn consists of one to five Player-Turns and separate Stun Removal and Cold-Shutdown Phases. Each Player-Turn consists of four Phases. The Player whose turn is currently in progress is termed the Phasing Player.

The Player-Turn

Step One: Movement Phase

The Phasing Player's crew member and any bots under that Player's control may move between spaces and make discovery checks within the limitations of 5.0 and 7.0.

Step Two: Reaction Phase

Reaction checks are made for all specimens which could react to the presence, movement, or scanning of the Phasing Player's units within the limitations of 6.0 and 8.0.

Step Three: Acquisition Phase

The Phasing Player's units may acquire control of unclaimed equipment and pick up stunned units occupying the same space within the limitations of 10.0.

Step Four: Equipment Phase

The Phasing Player's units may use and repair ship's equipment within the limitations of 9.0, 10.0, and 11.0.

This sequence of events is repeated by each Player until all Players have had an opportunity to move and acquire and use equipment. After all Players have moved, play proceeds to the next Phase:

Stun Removal Phase

The die is rolled once for each stunned unit in the game. On a roll less than or equal to the unit's current Stamina Level (if a crew member) or Shield Level (if a specimen) the unit immediately recovers fully from the effects of stun.

Cold Shutdown Phase

If cold shutdown is in progress, the Cold Shutdown marker is moved one space along the Cold Shutdown Display in the direction of the box marked "All Systems Down." See 14.0 and 15.0.

This concludes the Game-Turn. Play proceeds for any number of Game-Turns until all crew members are dead, the ship is fully under control (according to the provisions of 16.0), or *Pandora* has reached cold shutdown. Victory is then assessed according to the provisions of 16.0.

[4.0] Attribute Generation

GENERAL RULE:

All crew members, specimens and tools and most pods have a series of attributes expressed as numbers. All tool attributes are fixed and are printed on the Equipment Status Display and on their counters. Some pods have fixed attributes which are printed on the Equipment Status Display and on their counters. All other attributes must be generated by a die roll. These include 7 attributes for specimens (Intelligence, Aggression, Impair, Shield, Weight, Port and Speed) and the functioning levels of the five major systems (Nav, Con, Comp, Power, and Envio). As each specimen and crew member attribute number is generated, it is recorded on the Attribute Display.

PROCEDURE:

All attributes are determined by rolling one or two dice, depending on the attribute. The level of the attribute is the level shown after the die roll number generated for that attribute on the Attribute Generation Table. All crew member attributes are determined at the beginning of the game before the commencement of play. A written record of these attributes is kept on the Attribute Display (except for Stamina which is kept track of on the Crew Status Display). Systems levels are determined as part of the Discovery Procedure. The level of a system is determined whenever the pod containing that system is entered (not scanned) or, in the case of Dcon or Comp, when the Comm devices controlling those pods (DconComm and CompComm) are used. The Ship Status Display is used to record the current levels of Major Systems. The attributes of specimens are determined as needed throughout the game and a separate record of those attributes is kept on the Attribute Display.

CASES:

[4.1] Crew members' Stamina Levels and Major Systems Levels are the only Attribute Levels which can be raised above the level those attributes were at when generated.

All other attributes may never be raised higher than their starting level. Specimen Shield Levels may be decreased as a result of combat but may never be raised. Systems may be brought up to Level 9 functioning as a result of repair or restart and crew members may have their Stamina increased to 9 as a result of repair.

[4.2] Specimen attributes are determined by rolling two dice for each attribute as the attribute is needed.

Intelligence and Aggression are determined when a reaction check is necessary; Speed when a unit attempts to exit a space occupied by an unstunned Enemy unit(s); Impair and Shield when the specimen engages in combat; Weight when an attempt is made to carry the specimen between pods; and Port when the specimen is directed to pick up and move with an item. The numbers on the specimen counters are modifiers added to the dice roll when generated. In addition to these modifiers, two is added to the dice whenever there are more than three Players. Shaded modifiers are negative numbers. See 2.0 for the order in which modifiers are given.

[4.3] One die is rolled in conjunction with the Attribute Table to determine crew member Repair and Weight Ratings.

[4.4] Two dice are rolled in conjunction with the Attribute Table to determine Impair, Shield, Stamina, Port and Speed Ratings of crew members.

[4.5] Attribute Generation Table
(see mapsheet)

[4.6] Crew Status Display
(see mapsheet)

[4.7] Ship Status Display
(see mapsheet)

[4.8] Attribute Display
(see charts and tables)

[5.0] Movement

GENERAL RULE:

Units move between contiguous spaces on the Ship Display. These spaces are of three types: pods, tubes and risors. Pods are modular work and living areas. Tubes are the corridors which connect the pods. Risors are lifts providing physical communication between decks. Spaces are connected to each other by locks (loks) which normally open automatically at the approach of a moving object. Locks do not normally inhibit movement. They do inhibit discovery and reaction.

PROCEDURE:

Units move between contiguous spaces via locks at the rate of one space per turn during their individual Movement Phases (or in the case of specimens and berserk bots during the Reaction Phase). Contiguous spaces are defined as spaces of any type(s) connected by a lock.

CASES:

[5.1] A unit may move one space during its Movement Phase.

[5.2] A unit may not normally move more than one space during its Movement Phase.

[5.3] Crew members are never forced to move.

They may remain in place and use other options, or they may do nothing. Unused movement capability may not be transferred or accumulated.

[5.4] All movement takes place between contiguous spaces on the Ship Display.

Units may move between spaces only via locks. Spaces on different decks are not connected except via risors. All risors are contiguous to each other and units inside the ship may move from a risor on one deck to a risor on any other deck in one turn.

[5.5] The presence of other units in a space may affect the movement of units out of but not into that space.

A unit may leave a space occupied by an Enemy unit which is not stunned only if its Speed is greater than or equal to that of each individual functioning, unstunned Enemy unit in the space. See 10.8 for bot Speeds and 10.0 for the definition of Enemy units.

[5.6] All locks adjacent to a breached space are inactive.

Inactive locks do not open automatically and no movement is permitted through inactive locks except EVA. See 12.0.

[5.7] A crew member may scan a space instead of entering it during his Movement Phase.

The act of scanning a space involves physically looking through a view port in the lock connecting the space being scanned with the space current-

ly occupied. A crew member who scans a space executes normal discovery and reaction procedures (see 7.0 and 8.0) as if he had entered the space. The crew member may not move (normally or via Hasty Movement) during the Phase in which he scans an adjacent space. Three is subtracted from the Intelligence Rating of a specimen when checking for a reaction to a crew member scanning the space occupied by that specimen. This subtraction applies only to reaction checks for "scanning;" the specimen's Intelligence Rating per se is not affected.

[5.8] Only the EVA bot, units in rigs or the scapecraft "Epithemeus" may move outside the ship (see 12.0).

[5.9] Crew members may move two spaces per turn by using "Hasty Movement."

A Player must state at the beginning of his move that he is using "Hasty Movement." Whenever a reaction check becomes necessary as a result of action taken by a crew member using "Hasty Movement," both the Intelligence and the aggression of the specimen for which the check is being made are increased by 2. This increase applies only to reaction checks for "Hasty Movement." Discovery and reaction triggered by Hasty Movement through a space not occupied by the crew member at the end of a Movement Phase is executed as if the space had been scanned (see 5.7).

[6.0] Specimen Activity

GENERAL RULE:

Specimens are not treated in the same manner as crew members. Instead, they move, attack, acquire and abandon equipment automatically during the Reaction Phase as mandated by the results of die rolls on the Reaction Table. While the activity in which specimens engage is determined automatically (rather than being within the control of the Players), the activity as implemented is identical to that of crew members. Thus, a specimen directed to move into a crew-occupied pod containing a hull breach would be unable to do so because movement through locks into spaces containing breaches is impossible. When a direction cannot be followed, it is ignored and the specimen remains stationary and does nothing. Specimens may acquire, but may never use equipment.

[7.0] Discovery

GENERAL RULE:

At the beginning of the game the location of all equipment and specimens is unknown to the partially impaired crew. They must discover this information by scanning or physically entering spaces. During this process, they may be detected by wandering specimens.

PROCEDURE:

When a crew member begins the game in a space or when a space is entered or scanned for the first time, the Player entering or scanning the space makes a discovery check. On a die roll of 4, 5, or 6, the space is empty. On a roll of 1 through 3, a number of playing pieces equal to the number rolled are immediately drawn from the opaque container holding the tools and specimens. These counters are placed in the newly scanned or entered space. If the space is a pod, the Pod marker in the space is turned face up and left in the space to identify its function (Crew, Power, Stasis, etc.).

CASES:

[7.1] The discovery process is used only once per space.

No matter how many times a space is entered, the discovery process is used only the first time it is entered or scanned.

[7.2] Crew members immediately gain full knowledge of the contents of all spaces when control of the ship is established.

The normal discovery procedure is executed for each space in any order chosen by the Player whose turn is currently in progress.

[7.3] All discoveries are revealed to all players.

No counters or markers are ever hidden. All information is kept available on the map.

[8.0] Reaction

GENERAL RULE:

Whenever a Phasing unit enters, occupies, exits, or visually scans a space containing a specimen(s), the unit may be detected by the specimen(s). A specimen which detects another unit will react to that unit in one of three ways: fleeing, moving, or making a kill attempt. Each of these reactions may be further modified depending upon whether the number result on the Reaction Table which triggers the reaction is parenthesized in **bold face type**. Reaction checks are resolved during the Reaction Phase.

PROCEDURE:

Whenever there is a possibility, that a specimen will react to another unit, the Intelligence Rating of that specimen is cross-indexed with its Aggression Rating on the Reaction Table and a series of numbers is found at the resulting intersection. Each number represents a possible reaction (flee, move, or kill). A pair of dice are rolled. The specimen reacts in the manner represented by the highest number in the series which is equal to or less than the number result on the dice. The result is applied after any other reaction checks have been made.

Example: A specimen with an Intelligence Rating of 5 and an Aggression Rating of 6 attempts to detect a crew member in the same pod. The numbered sequence at the intersection of "Intelligence-5" and "Aggression-6" on the Reaction Table is "4-5-10". Two dice are rolled and the result is 8, which is greater than 4 or 5, but less than 10. The result is that the specimen "moves." While 4 is less than 8 as well, 5 is the highest number which is less than or equal to 8 and so only the result represented by 5 is applied.

CASES:

[8.1] All reaction checks take place during the Reaction Phase of the Player-Turn in which they were triggered.

No reaction checks take place during any other Phase.

[8.2] All reactions are implemented during the Reaction Phase of the Player-Turn in which they are triggered.

[8.3] Only Phasing units may trigger a reaction.

Non-Phasing units (i.e., those controlled by another Player) may not trigger a reaction, and no reaction checks are necessary as a result of the presence of these units.

[8.4] Non-triggering units may be attacked by reacting specimens executing a "Kill" or "Move-Kill" reaction.

[8.5] Reaction Table Results

Flee. The specimen immediately flees the space by any available exit. If more than one exit is available, the die is rolled for each exit and the specimen exits via the lock receiving the highest die roll. Any carried tools are dropped. If the number for this result is parenthesized in **bold type**, the specimen flees normally except that, instead of dropping the tools, it picks up and carries any or all tools in the space not in the possession of another unit (lightest tools first).

Move. The specimen moves into the space occupied by the crew member who triggered the detection attempt if they do not already occupy the same space. Otherwise there is no effect. If the number for this result is parenthesized in **bold type**, the specimen moves into the same pod with the unit and executes a "Kill" result (see below).

Kill. The specimen immediately attacks and attempts to kill one other unit in the space. If the number representing this result is parenthesized in **bold type**, the specimen makes a *charge attack*; i.e., its Impair Rating is doubled and its Shield Rating is halved for that attack. When more than one Enemy unit occupies a space, the die is rolled to determine who is attacked. On a 1-3 result, the specimen attacks the unit with the lowest Shield Rating. On a 4-6 result, the specimen attacks the crew member with the lowest Shield Rating. If two or more units are tied for low rating, use a die to break the tie (see 9.0, Combat).

[8.6] Reaction Table
(see mapsheet)

[9.0] Combat

GENERAL RULE:

All specimens and crew members and some tools have an *Impair* (attack) *Rating* which may be used to damage other units. They also have a *Shield* (defense) *Rating* which is used to protect against damage. The process of attempting to damage another unit is called combat.

PROCEDURE:

Combat may occur between Enemy units which occupy the same space during an Equipment Phase or a Reaction Phase. The Shield Rating of the defender is subtracted from the Impair Rating of the attacker(s). The result is called the Combat Differential. If this differential is a positive number, it is used to resolve the combat. If the number is negative, no combat occurs. If combat occurs, a column is found on the Impair Table which is the same as the Combat Differential and a die is rolled. The die roll number is cross-indexed with the Combat Differential column and a result is found. Before applying that result, the attacker checks for *damage*. This is done by reversing the attack process (subtracting the attacker's Shield Rating from the defender's Impair Rating and rolling the die as if a new attack were being resolved with the original defender as the attacker). When checking for damage, a negative Combat Differential is treated as a zero for purposes of resolving the check. All combat results affect only the defender. All damage check results affect only the original attacker. Results are applied immediately and simultaneously before resolving any other combat.

CASES:

[9.1] Combat during the Equipment Phase is initiated at the discretion of the Phasing player.

The Phasing Player may attack during an Equipment Phase, using his own Impair Rating or the Impair Rating of any one tool in his possession. Similarly, when checking for damage, he may use his own Shield Rating or he may use the Shield Rating of any one tool in his possession (not necessarily the same tool as he used to attack). Instead of attacking, the Phasing Player may use the tools in his possession in other ways (repair, scanning, restarting systems, etc.) or he may remain inactive. He is never forced to attack unless engaged.

[9.2] Attacking during the Reaction Phase is mandatory for reacting specimens and berserk bots.

During the Reaction Phase, all specimens which have been directed to attack or charge as a consequence of a result on the Reaction Table must attempt to attack where possible. In addition, berserk bots (see 11.0) must attempt to attack as if they were reacting specimens. Bots always attack with their normal ratings; they never charge.

[9.3] The choice of defenders in mandatory attacks is determined by a die roll.

When a specimen or berserk bot is required to attack and there is more than one unit in a space which could be attacked, the defender is determined by a die roll. On a roll of 1 through 3, the defender is the *unit* with the lowest Shield Rating. On a roll of 4 through 6, the defender is the *crew member* with the lowest Shield Rating. In all cases, the Shield Rating used to determine the defender is the rating of the unit being attacked, not of any tools held or rigs worn by that unit.

[9.4] A unit can attack one and only one Enemy unit per Phase.

All specimens and berserk bots are hostile toward each other and toward crew members and non-berserk bots. Crew members are hostile toward specimens and berserk bots, but not toward other crew members. Non-berserk bots are hostile toward the same units as crew members, but they may take no action unless under the control of a crew member. Hostile units are termed "Enemies;" only Enemies may be attacked in any way except via the stun bomb. Only one Enemy per Phase may be attacked regardless of the number of Enemies in a space. Exception: The stun bomb affects *all* specimens and crew members (hostile or otherwise) not wearing rigs in any space in which it is used. It may be used against adjacent spaces by being thrown through a functional lock.

[9.5] A unit may be attacked only once per Phase.

All Enemy units (bots, specimens, or crew members) which are attacking a particular unit during the same Phase must do so in one combined attack. All attacking units have their Impair Ratings combined for purposes of combat resolution. They undergo damage checks separately.

[9.6] Combat results on the Impair Table indicate that the defender (or the original attacker in damage checks) must lose the indicated number of levels of functioning or readiness.

Losses in crew member functioning are subtracted from their Stamina Level. Losses in specimen functioning are subtracted from the Shield Rating. Losses in bot functioning are subtracted from the current Readiness Level. When a crew member's Stamina Level or a specimen's Shield Rating is reduced to zero, the crew member

or specimen is dead. Dead crew members and specimens are removed from play and have no further effect on the game. A bot which has its Readiness Level reduced to "red" is no longer functional. It remains on the map, but it may not be used until repaired. When two or more units engage in combat during a Phase, they remain "engaged" until either the defender or all attackers are stunned or killed. Engaged units may only be involved in combat with the units with which they are engaged. They may not engage in any other activity except to defend if attacked by units with which they were not previously engaged. Units must attack one unit with which they are engaged during their Reaction Phase (if specimens) or Equipment Phase (if crew members) if such an attack is possible.

[9.7] The effects of tools may be enhanced by employing them in Stun Mode.

Tools which have an **s** next to their Impair Rating may be used to "stun" instead of damage a specimen or (in the case of the stun bomb) a crew member (but not a bot). The Impair Rating of a tool is tripled when the tool is used in a Stun Mode. Only results of 2 or 3 on the Impair Table affect a crew member or specimen attacked in this manner. All 2 and 3 results are read as "stun" results. A defender that is stunned may not move, attack or use tools until recovered. The stunned unit is flipped over to indicate that it is stunned. Recovery takes place as described in 3.0.

[9.8] It is possible to combine normal attacks with attacks involving other units using tools in Stun Mode.

In such cases, the defender suffers normal damage of 1, 2, or 3 levels of functioning lost as a result of the normal attack. In addition, if the damage result is a 2 or 3, the defender is stunned.

[9.9] Impair Table

(see mapsheet)

[10.0] Acquiring and Using Equipment

GENERAL RULE:

Ship's equipment is of two types: pods and tools. Pod equipment consists of the built-in, non-portable machinery and consoles used to control ship's systems, make major repairs, stow tools and specimens, etc. Pod equipment is usable only by crew members who physically occupy or are in control of the pod containing the equipment. Tools are the portable equipment of the *Pandora*. They include weapons, kits, comm devices, rigs, and bots (robots). Tools are usable only by crew members who are in physical possession or (in the case of bots) control of them. Tools may be used for purposes of defending against an attack during any Equipment Phase or during the Reaction Phase. Tools may be used for other purposes only during the Equipment Phase of the Player possessing them. The attributes of tools are always fixed. When a tool or pod counter is acquired, two dice are rolled and compared with the list of possible results on the Attribute Generation Table. If the tool or pod is at green, a marker is placed green face-up in the box representing that tool or pod on the Equipment Status Display. If the item is yellow or red, a marker is placed in the box representing that tool or pod on the Equipment Status Display with the appropriate color in the upper half of the box. **Exception:** See 11.3.

PROCEDURE:

A crew member may take possession of a portable tool or the functional areas of a pod if he oc-

cupies the same space with the tool or pod counter during his Acquisition Phase. When possession of a tool or pod is taken, the counter representing that tool or pod is placed under the crew member who has taken possession to denote this fact. The crew member may then use that tool or the facilities of that pod during any succeeding Equipment Phase. Tools may be carried by crew members and specimens within the limits of their Port capability.

CASES:

[10.1] Crew members may never leave a space while in possession of a Pod marker.

Pod equipment is built into the bulkheads and may not be moved. A crew member who wishes to exit a space must leave any Pod marker he currently possesses behind in the space.

[10.2] Only unclaimed tools may be acquired.

Equipment counters currently in the possession or control of another crew member or specimen may not be acquired.

[10.3] The number of tools which may be carried between spaces is limited by the crew member or specimen's Port Capability.

All specimens and crew members and some tools have a *Port Capability*. The Port Capability is equal to the weight of tools, specimens, etc., which may be carried. Any number of tools may be in the possession of a unit during a Reaction, Acquisition, or Equipment Phase. Units may move a number of tools equal in weight to the Port Capability of the unit may be carried during a Movement or Reaction Phase. Units which move during a Phase must drop a number of tools sufficient to bring them in compliance with this rule before moving. Crew members may wear any one rig instead of carrying it. Worn rigs do not count against the wearer's Port Capability. The capabilities of rigs may only be employed when the rigs are worn. It takes one Movement Phase to put on or remove a rig, and no other activity may be engaged in during that Phase.

[10.4] One tool of each type may be used during a Phase.

There are five types of tools indicated by a designation on the back of their counters: weapons, kits, comm devices, rigs, and bots. Only one tool of each type may be used in a Phase (**Exception:** Any number of bots may be controlled and used.) In addition, the capabilities of the pod currently occupied may be employed. Units may not use tools for purposes other than combat during Phases in which they are involved in combat.

[10.5] One capability per tool or pod may be used once during a Phase.

Some tools and pods have several capabilities. Only one such capability may be used per Phase. The capability being employed may only be used once per Phase. Thus, a crew member who occupied DconPod could use the Dcon Repair Capability to repair himself or could use its remote control capability to control the Imrebot or the EVAbot or the Ubot, but not during the same Phase. For a detailed list of pod and tool capabilities, see 10.8.

[10.6] Specimens and bots may carry but not use tools.

Specimens may be directed to pick up unclaimed tools or drop tools in their possession as a result of detecting and reacting to the near presence of crew members. While specimens may pick up and port tools within the limits of their Port Capability, they may not use those tools in

any way. The same is true of berserk bots reacting as specimens. When directed to pick up tools, specimens will attempt to pick up as many unclaimed tools as possible (those with the smallest Weight Rating first).

[10.7] Crew members use the capabilities of tools in lieu of their own capabilities.

When using the capabilities of tools, the tool's rating(s) replace rather than augment the capabilities of the user. Thus, a crew member could not use his own Repair Rating and the Repair Rating of a tool in the same Phase. The crew member could use his own Repair Rating and, say, the Port Rating of a tool in the same Phase without violating this rule.

[10.8] Equipment Capabilities Chart

(see charts and tables)

[11.0] Repairing Equipment

GENERAL RULE:

Some pod equipment and all tools may be in one of three readiness levels: green, yellow, or red. Equipment in condition green is functioning at full capability. Equipment in condition yellow is functioning in an impaired manner and is subject to degradation. Equipment in condition red is nonfunctional. Pods which are not shown on the Equipment Status Display are always presumed to be in condition green.

PROCEDURE:

Once per Equipment Phase, a crew member may attempt to repair a particular item of equipment in conditions yellow or red. The Repair Rating of the crew member or of any one tool being used in the repair attempt is cross-indexed with the result of a die roll and a result is found. The result is applied immediately and the markers on the Equipment Status Display are moved to indicate the equipment's new status.

CASES:

[11.1] Equipment in condition green may be used normally.

[11.2] Equipment in condition yellow is subject to equipment degradation.

Whenever any rating of equipment in condition yellow is used, the die is rolled. If the result is a 1 or 2, the item is degraded to condition red. Reposition the Tool Status marker representing that equipment to indicate this fact. Degradation takes place after tool use.

[11.3] Certain types of equipment in condition red are removed from the Ship Display.

All weapons, comm devices, and rigs which are in condition red are removed from the game. They are replaced in the opaque container and may be drawn again. Bots, kits, and pod equipment remain in place in condition red. They may be repaired.

[11.4] Bots in condition yellow may be berserk.

Whenever a bot is first discovered and found to be in condition yellow or is repaired to condition yellow, or when that bot enters condition yellow as a result of combat, a die is rolled. On a roll of 1 or 2 (only), the bot becomes berserk. Flip the counter over to indicate this fact. It automatically reacts in the same manner as a specimen. Berserk bots have an Intelligence Rating of 9 and an Aggression Rating of 9. Berserk bots

do not roll for degradation like other equipment in condition yellow. Berserk bots may be made non-berserk only if reduced to condition red and then repaired to condition green. Berserk bots which are repaired only to condition yellow continue to be berserk.

[11.5] Results on the Repair Table are given in terms of levels of readiness or functioning regained or additional levels lost.

A number result is equal to the levels of functioning or readiness regained. In the case of crew members, this is the number of points added to the Stamina Rating. A crew member may never have a Stamina Rating greater than 9. Specimens may never have a Shield Rating higher than that with which they began the game. In the case of equipment, this number indicates the number of Readiness Levels regained. A 1 would raise the piece of equipment in condition red to condition yellow. A 2 or 3 would raise it to condition green. A "D" result on the Repair Table means that one level of functioning or readiness is lost.

[11.6] The Repair Ratings or equipment may be used only to repair certain designated functions.

The Equipment Capabilities Chart indicates what functions each tool or pod may repair.

[11.7] The Repair Ratings of crew members may be used to repair any functions.

[11.8] Equipment Status Display

(see mapsheet)

[12.0] Equipment Capabilities

GENERAL RULE:
In addition to the Repair and Impair Capabilities already discussed, tools and pods have certain special capabilities. These include the ability to make breaches, allow Extra Vehicular Activity (EVA), allow scanning of adjacent spaces, etc. In addition, bots have the special capability to act independently under the direction of a controlling crew member.

PROCEDURE:
The capabilities listed herein are all employable within the provisions of and according to the procedures of 10.0 and 11.0.

CASES:

[12.1] The capabilities of bots may be employed by a crew member in control of them at no cost in equipment use or Port Capability.

Bots are acquired in the same manner as other tools or via remote-control. However, once acquired, a non-berserk, functioning bot moves with the Player in possession of it at no cost to that Player's Port Capability (functioning bots accompany the crew member instead of having to be carried). Any one capability of a bot may be used during a Phase at no penalty to the crew member's ability to use the same capability himself. Any number of bots may be controlled and used during a Phase. It is important for Players to grasp that bots are separate entities. They function just like an extra crew member on your side except that they cannot move independently unless under remote control.

[12.2] Bots may be remote controlled from some pods.

Crew members using the Dcon, Scan, Specanal, and Crew Pods may exercise remote-control over bots from those pods. Only the bots listed for each pod on the Equipment Capabilities Chart may be controlled from that particular pod. Remote-controlled bots may move about the Ship Display and employ their capabilities as if they were accompanying a crew member. Remote control is broken when a bot goes berserk or is in condition red or when a controlling Player is no longer in control of a terminal with a "remote" capacity. Remote-control may be established or re-established only if a bot is on the map, in condition green or yellow, non-berserk, and not already controlled by another crew member.

[12.3] A crew member may use the scanner to scan one adjacent space during his Equipment Phase.

Scanning with the scanner is conducted in the same manner as scanning during the Movement Phase. Scanning may be conducted in both Phases. Use of the scanner does not trigger a reaction check.

[12.4] Crew members in rigs and/or specimens in the scapecraft may employ Extra Vehicular Activity (EVA).

Units in EVA are moved across the Ship Display as if they were inside the ship with the exception that movement between decks does not require the use of risors. Instead, the ship must be imagined as a three-dimensional entity stacked with "A" Deck on top of "B" Deck which is on top of "C" Deck. While in EVA Mode, crew members, specimens, and tools may move one deck up or down between pods with the same ship's number or symbol. Thus, a crew member in B3 could move to pod A3 or C3 or along the lock symbol to tube BC. While in EVA, the crew member is considered to be adjacent to all of these.

[12.5] Crew members, specimens and tools may exit the ship via exterior locks or through hull breaches.

Exlok, Landlok, and Scapelok all contain exterior locks. It costs one Movement Phase to exit the ship via an exterior lock or to re-enter via same. A hull breach is automatically opened during the Equipment Phase by any crew member desiring to open a breach using the Turbolaser. It costs one Movement Phase to exit the ship via a hull breach. Re-entry may be accomplished via hull breaches or open exterior locks at a cost of one Movement Phase. The Scapecraft may not enter or exit the ship through hull breaches.

[12.6] All hull breaches and locks remain open until repaired or closed from inside the ship.

Only the EVAbot or the Turbolaser may repair a hull breach. The EVAbot does so automatically during the Equipment Phase of the Player desiring the breach repaired if the EVAbot occupies the breached space and is controlled by that Player. The Turbolaser may automatically repair a hull breach whenever a crew member in possession of the Turbolaser occupies the same pod as the breach during his Equipment Phase. Exterior locks may be left open or closed by a crew member, but the closing operation takes place only from inside the ship.

[12.7] Crew members not protected by rigs or by the Scapecraft and specimens not in the Scapecraft may not employ EVA.

Unprotected crew members and specimens are immediately killed if they occupy a space containing -an open exterior lock or hull breach. Specimens may be placed in the Scapecraft, but may never wear rigs.

[12.8] The locks between spaces do not permit interior movement into or out of spaces containing breaches or open exterior locks.

EVA is permitted between spaces regardless of their status.

[12.9] Units in EVA do not interact with units inside the ship.

Units in EVA are considered to be in different (non-adjacent) spaces for purposes of combat, detection, and acquisition, but not discovery.

[13.0] Specimen Handling

GENERAL RULE:
Specimens are hostile toward crew members, bots, and each other. Being of low intelligence and high ferocity for the most part, they tend to react to the presence of their Enemies by unreasoning flight or violent attack. Specimens may be neutralized in one of three ways: by killing, stunning, or restraining. Stunning is only a temporary expedient. Stunned specimens may regain consciousness and be as dangerous as ever. Killing is accomplished by reducing a specimen's Shield Rating to zero. The specimen is removed from the space. Restraining the specimen also removes the specimen from the game, but does not reduce Victory Levels.

PROCEDURE:
A stunned specimen may be restrained during any Equipment Phase in which the specimen and a Phasing unit (crew or bot) occupy the same Restraint Pod or the Specanal Pod. The crew member may restrain the specimen by using the restraint capability of the pod. If the crew member chooses to use this capability, the stunned specimen is automatically restrained and removed from the game. It has no further effect on play.

CASES:

[13.1] The restraint capability of a pod may only be used to restrain stunned specimens.

A specimen which is not stunned may not be restrained.

[13.2] Any number of stunned specimens may be restrained in a pod in the same Phase.

The restraint capability of a pod is used once per Phase to restrain as many specimens as occupy the pod during that Phase.

[13.3] All stunned specimens occupying the same pod need not be restrained.

A crew member need not restrain any or all of the specimens in a pod. He could restrain some and leave others free.

[13.4] Stunned specimens may be carried like tools between spaces.

[14.0] Gaining Control of the Ship

GENERAL RULE:

Control of the ship is a condition of victory in *Wreck of the Pandora*. Once control is established, the contents of all spaces are known to all crew members. Control is established only by *restarting* (not repairing) the ship's major systems. These systems are five in number: Comp, Nav, Power, Con, and Envio.

PROCEDURE:

A crew member who occupies the Con, Comp, or Nav spaces or who is using the Comp space through the use of the CompComm may attempt to restart ship's systems if all five major systems are at level 4 functioning or higher. A die is rolled and the result is indexed with the current level of each system on the Restart Table. If the die roll number falls within the numerical span necessary to restart every system, all systems are immediately restarted. They are raised to Level 9 functioning. Control of the ship is immediately established. If the die roll does not fall within the proper span for any of the five systems, the attempt fails and all five systems are *reduced* two levels. **Note:** A system which is "Ship Shut Down" may be repaired. Restart may only be attempted once per Phase during Phases in which all 5 systems are at Level 4 or higher. See 14.3.

CASES:

[14.1] One is added to the die roll whenever a "restart" is attempted via the Comp Pod.

[14.2] Two is added to the die roll whenever "restart" is attempted from the Nav Pod.

[14.3] Restart Table

(see mapsheet)

[15.0] Cold Shutdown

GENERAL RULE:

The *Pandora* is designed to shutdown completely in the event of major damage to its most important systems. As the game progresses, Players may become involved in a race to repair major systems and gain control of the ship before cold shutdown takes place.

PROCEDURE:

When the status of the major systems is discovered, the discovering Player finds out the extent to which the cold shutdown procedure has progressed. If either Power or Envio is found to be at Level 4 or less, cold shutdown is in progress. The level of the system (Power or Envio) which is lower indicates the extent to which the procedure is in effect. Multiply the level of the lower of those two systems by 5, and place the Cold Shutdown marker in the box corresponding to that number on the Cold Shutdown Display. At the end of each Game-Turn thereafter, the Cold Shutdown marker is moved one box to the left. When the marker reaches the end of the Track, the ship is completely shutdown and may not be restarted. When only one system level (either Power or Envio) is known, cold shutdown may be presumed to be in progress if that system is at Level 4 or lower. If the other system is later found to be at a lower level than the first system, the Cold Shutdown marker is moved to accord with the level of the second system.

CASES:

[15.1] The movement of the Cold Shutdown marker along the Cold Shutdown Display is only halted at the end of the Phase in which all systems are restarted and at full functioning.

[15.2] Cold Shutdown Display

(see mapsheet)

[16.0] How to Win

GENERAL RULE:

Only crew members can win *Wreck of the Pandora*. In order to win the game, the ship must be in control at the end of a full Game-Turn and the following conditions must be met:

1. All hull breaches must be sealed and all exterior locks closed.

2. All specimens in the game must be restrained or dead.

It is impossible to win the game if the *Pandora* reaches cold shutdown. The game immediately ends when the ship reaches cold shutdown and all crew members and specimens are dead.

PROCEDURE:

Once the game ends in any manner except with the death of all crew members, the Players total up points for successfully engaging in game activities. The Player who has accumulated the most Points wins. In solitaire games, Points are not awarded. Instead, the Player wins if he is still alive at the end of the game.

CASES:

[16.1] The Player who successfully restarts the ship's major systems receives 25 Victory Points.

[16.2] The Player who restrains or kills a specimen receives a random number of Victory Points for doing so.

A die is rolled for each specimen and a number of Victory Points equal to the die roll number is awarded to the Player who restrained that specimen. If the specimen was killed by the Player instead of being restrained, the Player is awarded only half value (rounded down).

[16.3] The total value of all of each crew member's attributes is subtracted from his Victory Point total.

Note: It is possible to win the game with a negative Victory Point total.

[16.4] A crew member who dies during a multi-Player game can win if his Victory Point total is higher than each of the other Players'.

He receives a posthumous citation for bravery and performance far above and beyond the call of duty.

The *Pandora* and Her Crew

The *Pandora* was laid down in 2773 as hull 1728 in the Ares Corporation Belt Yards. The ship design was the by then standard binary LRC (Long Range Crusing). The ship was completely fitted out by 2775, and was towed by the CTT (Commercial Towing Tug) *Sisyphus* to Asteroid Station, where it was launched on its trial cruise to the Tau Ceti system. In 2784, the *Pandora* was made available as a BSM (Biological Survey Mission) ship and entered normal service.

Among the service pods aboard the ship are:

The Power space which contains all the control devices for the FTL and LTL propulsion plants.

The Nav (Navigation) space contains the various equipment (particularly the data processors) that enable the *Pandora* to keep track of its celestial position and to plot the precise movements required for FTL cruising.

The Envio (Environmental) space contains the control equipment for the environmental control systems of the ship, both for the crew and for the specimens.

The Con (Control) is the ship's headquarters. Everything the ship is capable of doing is observed, controlled and monitored here.

The Comp (Computer) space contains the Fuji 5500 Central Processor, the nerve center of the ship. Its operating system is programmed to deal with most emergencies and to take appropriate action to guarantee the safety of the crew and specimens.

The five crew members of the *Pandora* are highly trained individuals, most of whom have risen through Deep Space Fleet service to arrive at GSC (Galactic Survey Commission) service.

The commanding officer of the *Pandora* is Neema Strof who was born on a colonial planet and initially worked on artificial intelligence research. She transferred to the BSM division as a science officer, and for the last two voyages of the *Pandora*, has been the commanding officer.

Science officer L.J. Gepidus is a native of Kinshasha and proud of the fact that he can trace his Kinshasha ancestry back over a thousand years to its African origins. As science officer he is second in command of the *Pandora*. He works with the commanding officer in planning the voyage and is responsible for the detailed planning of how the collection pods are deployed on the surface of an alien planet.

Maintenance Officer Najeb Kelly comes from a home-planet family with a long history of itinerant work and a strong feeling for wanderlust. He is third in command of the ship and is responsible for the functioning, maintenance and repair of all systems.

Blnt Skraaling, the Ground Survey Officer, hails from the planet Germania, which had to be heavily terraformed to make it habitable. His interest in this process led him into the terraforming division of the GSC.

Biology Officer Hesiod Charybdis is another colonial who began work as a technician in a colonial Analysis Center. His main job aboard ship is handling and analyzing the biological specimens before and after they are taken off a planet. He is responsible for selecting unusual or difficult to handle specimens and dealing with them properly.

James F. Dunnigan

Design Credits

[10.8] Equipment Capabilities Chart

Comm

CompComm — Doubles Repair Rating of crew member attempting to repair Major System. May remote-control CompPod.

**Scanner** — May scan one adjacent space per Equipment Phase.

DconComm — May remote control DconPod.

Repair Kits

BotKit — Repairs bots.

CompKit — Repairs CompPod.

WepKit — Repairs weapons.

Kit — Repairs kits.

MepKit — Repairs crew members.

Major System Pods

CconPod — Major System Restart.

CompPod (+1 to die roll)

NavPod (+2 to die roll)

EnvirPod / PowerPod — Malfunction triggers cold shutdown.

Repair Pods

DconPod / StasisPod / MepPod — Repairs crew members.

(Remote controls Imrebot, EVAbot & Ubot.)

BotPod — Repairs bots.

WepPod — Repairs weapons.

StapgPod — Repairs rigs.

MainPod — Repair kits and commtools.

Remote Control Pods

SpecpneriPod — Controls Specibot. Restrains specimens.

ErbtPod — Controls Erobot.

SurvryPod — Controls Specibot, Reconbot & Ambot.

CrecPod

Restraint Pods

RestraintPod 1 — Restrains specimens.

RestraintPod 2 — Restrains specimens.

RestraintPod 3 — Restrains specimens.

Exterior Lock Pods

Extlok — Exterior Lock.

ScapeLok — Exterior Lock. Contains Scapecraft *Epithemus* (Capacity: 1 crew member & two specimens; or 3 crew members).

Lanlok — Exterior Lock.

EVA Rigs

Enverig — Speed = 3.

Exterig — Speed = 5. Repairs all *except* crew and kits.

Armrig

Weapons

Stungun

Stunrod

Turbolase — Breaches and repairs hull.

Stunbomb — Affects all exposed crew and specimens in space. (Replace in container when used.)

Bots

Ambot — Speed = 3.

Erobot — Speed = 3. Impair attempt: On a die roll of 1-4, stuns specimen for one game-turn. (No other damage.)

Fixbot — Speed = 4. Repairs hull breach and PowerPod.

Imrebot — Speed = 4. Repairs all *except* crew and kits.

Ubot — Speed = 4. Repairs all *except* crew and kits.

Reconbot — Speed = 5. Built-in scanner.

Specibot — Speed = 7.

[4.8] Attribute Display

Crew Member	Impair	Shield	Repair	Weight	Port	Speed	
Neema Strof							
L.J. Gepidus							
Najeb Kelly							
Blnt Skraaling							
Hesiod Charybdis							

Specimen	Intel	Agress	Impair	Shield	Wght	Port	Speed
Mother							
Mouse							
Grendel							
The Scrod							
Typhoo							
Shazam							
Mary							
The Blind Pig							
Fletcher							
The Golem							

Players should make photocopies of the Attribute Display for repeated play.

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Alien Life Forms [continued from page 16]

pened to the atmosphere of those planets since their formation. (Possibly the sequence of reactions leading to the formation of life may still be under way.) Venus has a completely oxidized atmosphere; the chemical combination of carbon compounds with oxygen has gone as far as it can go. (Earth has a partially oxidized atmosphere with free oxygen present and would not, of course, need to be terraformed.)

To turn either of the first two varieties of atmosphere into breathable oxygen, vast amounts of energy would be required to release oxygen from water vapor in the former case, or form carbon dioxide in the latter case. Unless practical, appropriate organisms could be adapted to these reactions, it would be easier to find a completely airless planet or satellite and give it a new atmosphere from scratch. Since an originally airless planet or satellite got that way by "leaking" into space any atmosphere it may have had when formed, an artificial atmosphere would have to be replenished. However, this "leakage" is so slow by human standards of time that the replenishment of the atmosphere would become a routine maintenance task.

Designs for Life

The process of terraforming planets is a long-range goal. The first encounters with life forms on other planets will probably be less a matter of conquest or control than simple discovery.

The alien entities of science-fiction have run to a great biological diversity over the past 50 years. In the early days, they were monstrous in structure, particularly if their intentions were unfriendly. The old pulps swarmed with gigantic insects, intelligent octopoids, lumbering reptilian monstrosities, and huge, hairy apes — most of whom had an unbridled lust for human females. (Curiously, despite their long absences from home, the human males who went into space never seemed to lust after female octopoids, giant slugs, or the Queen of the Hornet People.) Later, more reasonable aliens came into vogue. L. Sprague de Camp's planet Krishna, the scene of several adventure stories, is peopled by a race so nearly human that humans can go among them in disguise if they merely put points on their ears, antennae on their foreheads, and green dye on their hair...and if they are careful not to expose their navels, since Krishnans are hatched from eggs. Poul Anderson has also explained much ingenuity in designing alien beings which are both intelligent and can fly.

The physical appearance of any organism we might encounter is almost impossible to predict; the only thing we can predict is that its form would be rational for its environment. Familiar science-fiction organisms which are not rational for their environment are anomalies of scale: giant men, insects, and lizards, or miniature men, submarines, etc. All such scale anomalies are readily debunked by the "square-cube law," a mathematical expression which states that surface area is a function of the square of linear size, while volume is a function of the

cube of linear size. Thus, if a man were somehow doubled in size (proportionally in all directions), he would increase four-fold in surface area and eight-fold in volume (and thus in mass). The cross-sectional surface area of his leg bones would then have to support twice the load per unit area, and would be on the verge of breaking. Tripling or quadrupling his size would make it impossible for his skeleton to bear the load. The giant man would have an additional problem — breathing. The surface area of his double-scaled lungs, which determines the amount of oxygen he can extract from the atmosphere, has only been quadrupled while his weight is octupled. Thus, he can only provide half as much oxygen as his body requires. The scaled-up man would be truly a "pitiful, helpless giant." The monstrous insects which "benefit" by being scaled up from 20 to 100 fold would be clearly impossible. Not only do they have the same problems as the giant man, but they have the additional disadvantage of having no lungs. Because of their present small size, insects use gaseous diffusion rather than movement of masses of air to supply their oxygen requirements. Scaled-up insects would rapidly die of asphyxiation.

Scaling down has the reverse problems, but the consequences are nonetheless lethal. The scaled-down man would have too much surface area for his mass. He would lose heat from his body far too rapidly and would die of cold, since his normal metabolism could not keep up with the proportionally greater supply of food required.

They Think, Therefore They Are

If life is likely to be abundant in the universe, intelligent life may not be. Earth has supported life for at least 3,500,000,000 years. Things reasonably describable as human have existed for less than one-thousandth of this period. The technological revolution is barely 400 years old, and electromagnetic communication has existed for less than a century.

There are, of course, many older stars than the sun, and it may be presumed that life on them has advanced further. Clement has recently speculated on the possibility that an interstellar civilization might exist among the planets of the long-lived, cool red stars. Such a civilization would regard a hot, yellow star like the sun as too hot to support planets with life, and might not even consider inspecting its planetary system for an intelligent species.

In fact, the Earth may even be retarded on a cosmic scale. Some vast biological catastrophe took place here about 65,000,000 years ago. Whole orders of life forms were utterly wiped out, including the dinosaurs, the pterosaurs, shelled octopoids, all of the great sea reptiles except turtles, and many varieties of phytoplankton at the bottom of the food chain. The nature of this catastrophe is still not understood, but it took millions of years for mammals to fill the vacant ecological niches. Among the dinosaurs that died out was a group called the dromaeosaurs — man-sized, warm-blooded, well-coordinated, speedy carnivores with binocular vision and good brains. They might have been on the way to developing into intelligent beings when the

catastrophe struck. If we get into interstellar communication, we may discover that dinosaurian types are the norm, and that we mammals represent a planet with an aberrant history.

But Are We on Speaking Terms?

Whether they are common or rare, intelligent species can be presumed to exist in the universe as a natural consequence of the laws of physics and chemistry, which are the same everywhere. Physical travel in the universe is going to need either a new source of vast amounts of energy or new principles of spacetime that are presently unsuspected. The travel of ideas might be considerably easier. The technology now exists on Earth for the transmission and detection of interstellar messages. As long as 20 years ago, the radio telescope at Greenbank, West Virginia, was set to listen for radio signals from possible planets of two nearby stars, Epsilon Eridani and Tau Ceti. (These were rather poor choices, since both are smaller and fainter than the sun, and would therefore have smaller biospheres. Furthermore, they are further out from the center of the galaxy than the sun is, and would therefore be less likely to be in contact with other civilizations. But the nearer sun-like single stars do not rise above the horizon at Greenbank's latitude.) Still, old as the universe is, it is conceivable that an Interstellar Broadcasting Network does exist, acting to exchange the only item of commerce that it can — information. Humanity ought to consider seriously how we can make our presence known to this network, and get ourselves plugged into it.

There is some cynical speculation that Earthlings might be wise not to let their existence be known to other, far more advanced civilizations. Part of this speculation seems to arise out of guilt over the way European civilization has treated the less technological societies with which it came into contact during the age of exploration. A selection effect may operate which puts only benign cultures in a position to engage in interstellar travel. A species that has enough command of its environment to travel between the stars is a species that commands energies sufficient to wipe itself off its home planet by warfare. Only species which have overcome this problem will survive to engage in interstellar commerce.

A Sober Infinity of Possibilities

Readers of science-fiction should be prepared to use skepticism. The genre does not (nor should it) provide a carte blanche to propose biological or physical situations which insult the intelligence of the reader. While many things are possible in this vast universe, there are also many things which are extremely improbable. (One should understand this to mean, for practical purposes, "impossible.") Since the laws of chemistry and physics do not seem to vary throughout the universe, we can make intelligent speculation about the conditions we will find on other planets, about the biology of their inhabitants, and about the useful contacts which humanity might make with them. Use of cautious skepticism by the reader should make it possible to determine the plausibility of the proposed systems. ∎∎

Conan
Illusion and Reality
by L. Sprague de Camp

Forty-five years ago, Robert Ervin Howard was making a fair but not fancy living as a mass-production pulp writer. No one would be more surprised than he to learn his books are selling in the millions today and have been translated into six or more foreign languages. In the field of fantasy, only J.R.R. Tolkien has outsold Howard. His most popular character, Conan the Cimmerian, appears in many paperbacks, in comic books, and in a syndicated newspaper comic strip. He is to be the hero of at least one motion picture. The publication of the Conan paperbacks touched off the Howard boom, and although as a consequence of this boom most of Howard's other writings have also been reprinted, the Conan stories have far outdistanced the rest of his tales in popularity, notwithstanding the fact that they comprise less than ten per cent of his total output.

During the dozen years of his literary life, Howard was very productive. He had over 160 stories published in his lifetime, and he left eighty to a hundred more unpublished as well as many fragments. But he was more than simply a voluminous writer. In the field of popular adventure fiction, his work has shown a staying power and a capacity for arousing enthusiasm far beyond that of any of his contemporary colleagues, save Edgar Rice Burroughs.

To assay a writer's work, we must consider his background, the times he lived in, and the market he wrote for. Howard flourished at the height of the pulp era, between the two World Wars. Then there were hundreds of magazines printed on cheap wood-pulp paper: Western stories, adventure stories, war stories, sea stories, flying stories, detective stories, horror stories, and so on.

The pulp-paper magazines had certain requirements. Save for the love-story and confessions magazines, they catered to a heavily male readership. They featured fast action; simple, two-dimensional characters; and a plain, straightforward narrative style. Above all, they were meant to entertain, *not* to express the writer's soul, to show off his cleverness, to educate, convert, or uplift the reader, or to expose shameful conditions in (say) the alarm-clock industry.

Some critics have deplored the violence of Howard's stories and the emotional immaturity of his characters. But violent and immature heroes were normal pulp-magazine fare, to which nobody objected at the time. Although drenched in gore, the magazines were extremely wary of profanity, let alone obscenity. *Adventure Magazine,* an aristocrat of the pulps, even printed "My God!" as "My _____!" As for sex, the pulps were as prissy as anything a maiden great-aunt could desire. One could read them for years without suspecting that babies were not, after all, delivered by the stork.

Cover art for *Conan: The Sword of Skelos* courtesy of Bantam Books. Bob Larkin, artist.

Howard's markets were exceedingly formula-ridden. For instance, most magazine stories of that time were what we should now call "racist." Writers used ethnic stereotypes as their stock in trade. They and their readers assumed that Scots were thrifty, Irishmen funny, Germans arrogant, Jews avaricious, Negroes childish, Latins lecherous, and Orientals sinister. The white man's burden and the incompetence of so-called "natives" to run their own affairs were taken for granted.

One may ask: To the extent that Howard followed these formulas, was he consciously adapting his fiction to the demands of his market, or was he simply doing what came

naturally, so that his stories just happened to fit that market's requirements? I know of no way to answer that question; perhaps both factors entered into the result.

Howard did get many ideas from the adventure pulps of his time, notably *Adventure Magazine* itself. There he was influenced by such regulars as Harold Lamb, Talbot Mundy, Arthur D. Howden Smith, and H. Bedford-Jones. His library held books by and his work shows the influence of Edgar Rice Burroughs, Rudyard Kipling, and Jack London.

While Howard tried many times to break into the high-class pulps, such as *Adventure, Short Stories,* and *Blue Book,* his only success was with *Argosy* , to which he sold half a dozen stories. In these magazines he was competing with such finished writers as Lamb and Mundy. Lacking their experience and polish, his work was not up to their standards. Had he lived longer and matured further, both as a writer and as a human being, Howard might well have achieved his aim.

Howard early acquired certain lasting interests, which appear and reappear in his fiction and verse. One, for instance, was reincarnation. This he probably got from his father, who despite his Protestant Fundamentalist background also dabbled in oriental religious philosophy.

Howard also believed in romantic primitivism: the doctrine that primitives are noble savages, whereas civilized men are decadent or degenerate. As one of Howard's characters put it: "Barbarism is the natural state of mankind...Civilization is unnatural. It is a whim of circumstance. And barbarism must always ultimately triumph."

Note, however, that although Howard's heroes Kull and Conan are barbarians, of the approximately thirty stories about them that Howard completed, all but a very few are laid within or on the borders of some civilized land. Civilization, you see, provides so many more threads to be woven into an interesting story than the monotonous, limited life of a true unspoiled primitive.

Being of partly Irish ancestry (although less so than he liked to vaunt), Howard developed an intense interest in the Celts, and also a general fascination with the races of man. The theories on which he based his racial speculations, I need hardly say, are no longer considered valid.

Still another thread in Howard's skein of thought was that of the Little People — the belief that the Picts were dark, dwarfish

aborigines living in Britain before the Celts arrived. This idea, no longer taken seriously in the anthropological sciences, arose from a medieval history of Norway, which described the Picts as small folk living in holes in the ground, much like Tolkien's Hobbits.

Most of Howard's heroes are notably sexless. Kull, we are told several times, was not interested in women. Some of this attitude may be traced to the conventions of the period, but there may be more to the story than that. Around 1933, Howard's characters began to show a more normal interest in the other sex. It may not be a coincidence that in the next year he began regularly dating a young lady.

Another recurring theme is a character motivated by pure hatred — not Conan so much as some of Howard's lesser heroes like Turlogh O'Brien and Cormac Fitzgeoffrey. They hate almost everybody. Howard himself was obsessed by hatreds of people who had once offended him, such as employers who had fired him.

Along with the theme of implacable hatred goes that of universal destruction. Many stories end with the entire cast, save one or two, dead. In one of his last stories he kills off absolutely everybody, leaving none to tell the tale. A psychologist could plausibly argue that such plots foreshadow Howard's own end.

From Boxing to Conan

Robert E.Howard's writing falls into three periods: his boxing period, his fantasy period, and his Western period. Stories of these kinds formed most of his output during these periods, although he wrote in all these genres throughout his career. He also wrote detective stories and tales of historical and oriental adventure.

Howard's boxing period occurred in the late twenties, his fantasy period in the early thirties, and his Western period in the middle thirties, although these periods broadly overlapped. (From 1934 to his death, Howard's production of Westerns rose steeply, until they became his main product. As with his boxing stories, his Westerns fall into two classes, serious and humorous. The serious ones are merely competent hack work — undistinguished standard pulp fare. But his burlesque Westerns, like his burlesque boxing stories, showed that Howard had a lively sense of humor of a broad, slapstick kind. During his last months, Howard spoke of giving up fantasy altogether in favor of Westerns. He hoped, he said, to write "serious" Westerns, presumably like those that later brought success to A.B. Guthrie, author of *The Big Sky*.) His fantasy output, including a couple of attempts at science fiction, formed the largest single part of his writings. He wrote about as many imaginative tales as he did Westerns and boxing stories combined.

Although he sold fantasies every year from 1925 on, his biggest production in this field began in 1931 and '32, when his boxing stories tapered off. At this time, most of the Solomon Kane and King Kull stories were behind him.

While Howard sold only three of the ten Kull stories he completed, they revealed the direction his imagination was taking. The Kull stories showed the possibilities of a completely imaginary milieu, which the writer can make as dramatic as he likes without having to worry about the correctness of geography, climate, fauna, flora, costume, custom, and technology. In his historical stories he was always tripping over such details, for instance by equipping a horseman of the Roman Empire with stirrups. These errors can be blamed on the extreme intellectual isolation in which he lived, without wide travel, professional contacts, or access to big-city and university libraries.

In 1932, Howard rewrote an unsold Kull story, "By this Axe I Rule!" For background, he thought out a detailed pseudo-geography and pseudo-history of an imagined era, the Hyborian Age, between the sinking of Atlantis and the start of recorded history. For his hero he chose a familiar Celtic name, Conan, which he had used before. He added a supernatural element, which the original story lacked. The result was "The Phoenix on the Sword," and Howard was off to the races.

Cover art for *Conan: The Liberator* courtesy of Bantam Books. Bob Larkin, artist.

Conan is a development of Kull, but Conan is a more completely realized character. Actually Howard had more in common with Kull, who is given to mystical broodings on the meaning of it all, than with Conan, who is portrayed as a pure extrovert. Howard said that Conan was a combination of people he had known, and that Conan stalked into his mind and took over his career.

Conan is an obvious idealization of what Howard thought he would have liked to be: a wandering, irresponsible, hell-raising adventurer, devoted to wine, women, and strife. For all his mighty thews, Howard was nothing like that himself. Save for a hot temper and a chivalrous attitude towards women, Howard and Conan were as different as black and white. Howard was upright, moral, conscientious, courteous, compassionate, shy, sensitive, introverted, and — though he denied it — intellectual. He did not attribute many of these qualities to Conan.

Howard, the Writer

The main reasons for the wide appeal of Howard's fiction are, I think, his vivid sense of pace and action and the strong feeling of personal involvement in his plots. As Lovecraft said, he put himself into all his stories.

He also developed a highly individual style. Although his early stories were written in simple, straightforward prose that was indistinguishable from the style of scores of his contemporaries, around 1928 he began to develop a cadenced prose. He had been composing verse for years, and now he began to use some of the elements of verse in his stories. These included rhythm, alliteration, and the use of many color words, as in this sentence: "Palm trees and orange groves smiled in the sun, and the gorgeous purple and gold and crimson towers of castles and cities reflected the golden light."

For adjectives of color, Howard often uses the name of some jewel, such as ruby, amethyst, or emerald. (He liked to include a huge gem in his stories.) On the whole, though, he was sparing of adjectives. The vividness of his narrative depends less on descriptive modifiers than on personification: that is, treating inanimate things and impersonal forces as if they were living beings, as when he wrote: "the slim boat leaped and staggered," or "between the years when the oceans drank Atlantis and the gleaming cities."

A sense of fast-moving action is perhaps the greatest talent accorded the born storyteller. Howard achieved this quality by the use of vivid active verbs and by starting his story off with a bang, in accordance with the pulp maxim: "Shoot the sheriff in the first paragraph." Thus he begins one story: "Hoofs drummed down the street that sloped to the wharfs. The folk that yelled and scattered had only a fleeting glimpse of a mailed figure on a black stallion, a wide scarlet cloak floating out in the wind." By 1932 or 1933, Howard had fully developed the style that makes much of his later work so hypnotically vivid.

We can agree that Robert Howard had a great natural talent for writing action and adventure stories. Like the rest of us, he also had his limitations. His stories contain many errors of fact resulting from inadequate research; inconsistencies caused by haste; unconvincing atmosphere, due to working about places he had never been; weakness in languages, knowing no modern non-English tongue beyond a few words of Spanish; crude use of dialect; repetition of certain plot elements — like the battle with the giant snake, over and over; and overuse of coincidence. He was at his best when he followed his original ideas, as in the Conan stories, and at his worst when he consciously imitated other writers, such as Sax Rohmer in *Skull-Face*, Burroughs and London in *Almuric*, and Lovecraft in "The Children of the Night."

Still, considering his difficulties, his achievement is amazing. His foremost obstacle was his extreme isolation. He was even more of a recluse and bookworm than

Lovecraft. This was partly a result of where he lived and partly his own unsocial nature, which, aside from sporting events, urged him to flee any crowd of more than three or four people.

Howard also worked under severe — in fact fatal — psychological handicaps, which stemmed from his family situation. Lastly, we must remember his youth. He died at an age when many writers are normally just getting into their stride.

Yet, there is still the problem of why Howard's work has enjoyed such a stunning revivial, when the tales of many of his contemporaries — some of them more skillful writers and more traveled and experienced men than Howard — still molder forgotten in the crumbling files of old magazines. What magic button in his readers did Howard push?

Conan, the Noble Savage?

First, let's face the fact that Howard's popularity stems from just one set of stories: the Conan stories. Their publication started the Howard revival; their sales have far exceeded those of all the other Howard collections put together. We can be sure that Howard's non-Conan stories would never have been reprinted had not the Conan stories touched off the Howard boom in the first place.

The popularity of the Conan stories is related in part to the times we live in. During the Second World War, it looked for a while as if fantasy had become a casualty of the machine age. The revival of fantasy began in the 1950's and 60's with the publication of Tolkien's *Lord of the Rings*. By then, much of the reading public had grown tired of anti-heroes, of sociological tracts thinly disguised as fiction, and of experimental narrative forms that leave the reader wondering who did what with what to whom.

The Conan stories not only rose on the forward slope of the wave of revival of fantasy, they were also fantasy of a particular kind. For one thing, they took the place of the old lost-city story, which had been a staple of adventure fiction for half a century. Most of the Tarzan novels, for example, have the hero discover a lost city inhabited by ancient Romans, or Atlanteans, or ape-men left over from the Pleistocene. The airplane, alas, has ruined the lost-city story, since practically every square kilometer of the earth's surface has been, if not explored on foot, at least overflown and photographed; there is no place left where such a lost city could hide. So, to recapture the glamor of such a glittering fictive metropolis, we have to put it in the prehistoric past.

Then, too, Howard exploited his romantic primitivism to the hilt, by making his hero a stalwart barbarian who strides through the civilized world, knocking the decadent-cultured weaklings over like bowling pins.

Here is another puzzle. When someone wants to disparage something — say, capital punishment or bad table manners — he calls it "barbarous." Even Howard used the word in this pejorative sense, as when he spoke of the "barbarous accent" with which Conan uttered Nemedian or Zamorian. If barbarism is bad, why should we make heroes of barbarians?

Some of the barbarophilia comes from the "noble savage" concept of the Romantic Era, which ran approximately from 1790 to 1840. In 1669, John Dryden coined the term "noble savage." In the following century, that weepy Swiss philosopher, Jean Jacques Rousseau, popularized the concept, although he had never known any savages, noble or otherwise.

Cover art for *Conan: The Swordsman* courtesy of Bantam Books. Darrel Greene, artist.

In 1791, a disciple of Rousseau, the French novelist Francois de Chateaubriand, came as a youth to America to see the noble savage in his native haunts. In the Mohawk Valley of upstate New York, he was enchanted by the forest primeval until he heard music coming from a shed. Inside, he found a score of Iroquois men and women solemnly dancing a fashionable French dance to the tune of a violin in the hands of a small, powder-wigged Frenchman. This Monsieur Violet had come to America as a soldier with Rochambeau's army in the Revolutionary War, stayed on after his discharge, and set himself up as a dancing master to the Amerinds. Chateaubriand's disillusionment did not stop him from later writing a noble-savage novel, *Atala*, which became a classic of romantic primitivism.

In the nineteenth century, the windy German philosopher Friedrich Nietzsche, played a similar tune with his talk of the Superman, the "great blond beast" who would appear to smash the Judaeo-Christian "slave morality" and impose proper discipline on Europe. Nietzsche was vague as to how this hero was to be created, save for the interesting suggestion that the mating of German army officers with Jewish women might produce him.

Writers like Rudyard Kipling, Jack London, and Edgar Rice Burroughs embellished the theme with such noble barbarians as Mowgli and Tarzan. Robert E. Howard, who greatly admired these writers, absorbed their romantic primitivism. It is not dead even yet,

as witness the commune movements of the so-called Counterculture of the 1960's.

The Barbarian State

The dictionary defines *barbarism* as a state between savagery — that is, hunting, fishing, and food-gathering for a living — and civilization, with its cities and metals and writing. "Barbarism" denotes a culture in which men have learned farming and stock-raising but do not yet practice them efficiently enough to produce a surplus of food to support the growth of cities. Such societies are usually illiterate, although they may have metallurgy.

This meaning has nothing to do with such virtues as honesty, kindness, or politeness. In these matters, civilized men appear on the whole to be neither better nor worse than barbarians and savages. The distinction of civilized men is that they know more than the barbarians and savages, and therefore have the power that knowledge confers. So "barbarian" has two quite different meanings. One refers to the technology of a culture; the other is used merely to show the speaker's disapproval of some person or act.

In general, real barbarian society was much more conventional and tabu-ridden than civilization. Barbarian cultures varied widely. Some were sexually permissive and promiscuous; others, like the Zulus, punished adultery with the death of both culprits. Some were peaceful; others, like the Comanches, were so obsessed with war that they thought it the only decent, manly occupation.

One reason for the ferocity of Howard's fictional barbarians is that the real barbarians he knew most about, the Comanche Indians of Texas, were one of the most warlike peoples on earth. Having just been promoted from savagery to barbarism by getting horses, they were not about to sit down and learn the techniques of dry farming when murder and robbery were so much more rewarding.

In general, however, most barbarian societies were very rigid, conformist, and resistant to change. The individuals were not at all like the adaptable, uninhibited adventurers of fiction. The reason for barbarians' conventionality is that they did not have our elaborate apparatus of laws, police, and courts to keep evildoers in order. Therefore, the force of custom had to be stronger to make any type of communal life possible. For the real-life prototypes of the fictional adventurers beloved of the pulp magazines, we must seek among civilized men like Eudoxos of Kyzikos, Marco Polo, Miguel de Cervantes, Francis Drake, and Richard Francis Burton.

Occasionally, barbarians do cast off their tribal inhibitions and act in a more Conanic fashion, as when they live near a civilization weakened by civil war, plague, or other disorder. Then population pressure or bad weather may impel the barbarians to seek their fortunes elsewhere. If their military techniques, usually developed as a result of contact with civilization, have become the equal of their more advanced neighbors, the barbarians may conquer the civilization and set themselves over it as the ruling class.

There have been many such overthrows, as when the Aryans overran Iran and India about 1500 B.C., or the Germanic and other barbarians overthrew the West Roman Empire in the fifth century, or the Turks seized control of the Caliphate in the eleventh century, or the Mongolian nomads conquered large parts of China and India on several occasions.

We know that the fall of the West Roman Empire best because it is the most fully documented. It gave rise not only to historical accounts but also to a large legendary literature, as in the tales of Arthur, Sigurd and Charlemagne. From these stories, modern heroic fantasy descends through William Morris and the medieval romances that Morris imitated.

The heroes of these epics differ from real barbarian leaders. Even when the legendary heroes are based upon historical figures, they have been romanticized out of all recognition. They strike noble, self-sacrificing attitudes, go on long solitary quests, and converse with supernatural beings — none of which their real-life prototypes did. But like the real barbarian leaders, they usually come to a violent end. Bellerophon is bucked off Pegasus in flight; Siegfried is stabbed in the back; and Arthur's skull is split by his bastard son.

When Robert E. Howard wished he had been born a barbarian or a frontiersman, he had in mind this anarchic milieu, which is reflected in his stories. In thinking this state of affairs to be typical of all barbarians, he suffered the illusion of romantic primitivism. Actually, this anarchic disorder arises only rarely, in times of conquest and transition, when the barbarians are destroying or being destroyed by other societies. At such times the normal rules of conduct are suspended, and life, in Hobbes' phrase, becomes "poor, nasty, brutish, and short."

Long Live the Barbarian!

What then is the attraction of barbarian heroes? The distinctive trait of the conqueror of another culture is his loss of inhibitions. The barbarian conqueror has left the toilsome, monotonous, dreary, tabu-ridden round of normal barbarian life. He has escaped the prison of his milieu but has not adopted the mores of the conquered, whom he despises because he has beaten them. He feels he can get away with anything, like a bumptious adolescent freed from his parents' control but not yet fitted into the mold of adult life.

We all carry the memories of our emotions as we were at every stage of life through which we passed. This includes the time of adolescent emancipation. Notoriously, we then tend to quarrel with our families and try out deeds of daring and self-assertion to see what we can get away with. So it is no coincidence that many heroes of sword-and-sorcery fiction behave like overgrown juvenile delinquents. Long after we have left adolescence, we still hanker for that time when, for once, we enjoyed a sense of liberation from rules and restrictions.

That feeling was, of course, mostly illusion. We soon learned that the world around us — the laws of nature, our fellow men, and our own limitations — would impose upon us as strict a set of rules as anything our parents applied.

This illusion was especially seductive to Robert E. Howard, who in some ways never did grow up. One reason he became a self-employed writer was that he could never hold a job for long. He tried many jobs, but he so fiercely resented any sort of discipline, correction, or coercion that whenever the boss gave him one order too many or scolded him for some fault, Robert blew up, threatened to beat up the boss, and either quit or was fired.

Still, among Howard's readers, the memory of the emotions aroused by the feeling of emancipation lingers. Hence, millions enjoy, if only vicariously, the uninhibited life of the conqueror, especially the barbarian conqueror of the Siegfried type. So Conan and his colleagues are likely to continue their popularity for a long time to come.

Robert E. Howard was born in the tiny hamlet of Peaster, Texas on January 22, 1906. During his childhood, his family moved to nearby Cross Plains, where he spent the rest of his short life. As an only child with a precocious intellect, young Robert was a misfit in an oil-boom town filled with little more than cowboys, oil field laborers and drifters. He soon turned to reading as an escape from his dismal environs. He especially enjoyed reading histories, though his mother instilled in him a love of poetry and music.

Howard began writing when he was still very young, making his first professional sale to the venerable pulp magazine, *Weird Tales*, while still an adolescent. He soon became a regular contributor to *Weird Tales*, as well as breaking into other markets. Though he wrote Westerns, historical tales, sports and boxing stories, and reams of verse, he is best remembered for his creation of the "sword and sorcery" genre of fantasy.

Today Howard is most widely known for his greatest creation, Conan of Cimmeria. Conan, a mighty-thewed barbarian from the dawn of time, is but the last in a long line of similar characters which include Bran Mak Morn, Solomon Kane, and King Kull of Atlantis.

Howard, always moody and introspective, suffered from bouts of sleepwalking and bleak depressions. His father was a cold, unemotional man, and there was little love lost between him and young Robert. Howard's mother was an over-protective, overbearing woman to whom Robert was nonetheless devoted. Howard often talked of suicide, and when his mother was lying in a terminal coma, he walked out to his car, took the gun he had been carrying against imaginary "enemies" and shot himself in the head. He was 30 years old. A small line of verse was found on his beat-up typewriter after his death.

All fled, all done,
Now lift me on the pyre.
The feast is over and the lamps expire.

Marc Alan Cerasini ■ ■

Books

God of Tarot, Vision of Tarot and **Faith of Tarot,** Piers Anthony
Berkeley Books, $1.95 each
Catacomb Years, Michael Bishop
Berkeley Books, $2.25
The Infinitive of Go, John Brunner
Del Rey Books, $1.95
A Shadow of All Night Falling, Glen Cook
Berkeley Books, $1.95
The Ennead, Jan Mark
Pocket Books, $2.25
Mooncrow, Jack Massa
Berkeley Books, $1.95
The Devil Wives of Li Fong,
E. Hoffman Price, Del Rey Books, $1.95
The Probability Broach, L. Neil Smith
Del Rey, $1.95
Eyes of Amber and Other Stories,
Joan D. Vinge, Signet, $1.95
Wheels Within Wheels, F. Paul Wilson
Dell $7, $2.25
Schrodinger's Cat, Robert Anton Wilson
Pocket Books, $2.50

Science Fiction

The grand pundits of science fiction review occasionally bemoan the precipitate decline in the quality of science fiction since The Golden Age. I don't quite know why they take this attitude — perhaps they are blinkered by an early attachment to gee-whiz prose and the short story — but it seems clear to me that the best and most exciting work in sf is being done now, today. There's almost always something in my book store worth reading, and every couple of weeks I come across a book that is exceptionally good. Surprisingly, many of these books are written by relatively unknown or neophyte writers.

A case in point is Jan Mark's *The Ennead*. The novel is set on Erato, a planet whose inhabitants are determined to avoid the overpopulation and misery of Earth and other planets by severely limiting population and immigration — especially from the densely-populated planet of Euterpe, in the same system. The result is a static and fiercely provincial society. Isaac, one of the main characters, avoids deportation only by serving his adopted brother, who has stolen his birthright. When his brother imports a headstrong and uncompromising sculptor from Euterpe to do a little decoration of the villa, the static society is severely disturbed. The remainder of the novel deals with the interplay of the society, its oppressive customs, and those who are oppressed by them. *The Ennead* is not a nice novel; don't read it to the kiddies. It is, however, cleanly written, witty, and profoundly moving.

Michael Bishop's *Catacomb Years,* too, deals with an oppressive society and those who must live in it. In form, it is a collection of short stories tied together to form a novel. There are dangers in attempting such a structure, but Bishop has pulled it off rather nicely.

The stories are almost universally well-written. The language is sharp and clean; the characters well-rounded; the themes strike a

responsive chord. Each stands on its own as a perfectly-crafted gem. The hype on the cover is almost justified, and yet....

And yet the plot and unifying theme of the book is really rather simplistic. The central premise is that, sometime in the late 20th century, the major cities of the United States began to cover themselves with domes, eventually becoming independent city states, that have little or no contact with the rest of the world. The rationale for this concept is slim indeed; apparently, the cities were domed over simply because it became possible to do so.

In short, Bishop is an excellent *writer*; but not an excellent *science fiction* writer. Although each story is well written, the premise and extrapolation of the series is totally unconvincing.

R. Emmet Tyler, Jr., the self-proclaimed voice of irresponsible conservatism, recently labelled libertarianism "anarcho-science fiction." Whether the label is apt or not, there does seem to be an explicitly libertarian genre of science fiction under development. This is to be expected, since Heinlein and Anderson have always brought a libertarian streak to science fiction.

L. Neil Smith's *The Probability Broach* deals with an alternate universe in which Albert Gallatin, rather than preventing the execution of Washington, took a hand in it — and led the Whiskey Rebellion to overthrow the Constitution and re-establish the Articles of Confederation. The result was a North American Confederation which gradually evolved into the perfect anarcho-capitalist utopia. The premise is, perhaps, a bit dubious, but the novel is a rousing adventure story, the kind daddy Heinlein used to write. The writing is less than sparkling, but serviceable. *The Probability Broach* is entertaining reading, but not recommended for socialists or others of delicate political sensibilities.

F. Paul Wilson's *Wheels Within Wheels* takes place in the La Nague Federation, a minimalist interstellar society. The primary issue addressed by the novel concerns discrimination and whether the goal of liberation of oppressed minorities is best served by free-market capitalism or governmental action. (Since the author is a libertarian, his answer should be obvious.) It's also a good story. In *Wheels Within Wheels*, unlike *The Probability Broach*, the author's politics do not dominate the novel — nonlibertarians can safely read it without danger to their mental equilibrium.

Robert Anton Wilson is one of the wittiest and most interesting writers alive. His previous works, *Illuminatus!* and *Cosmic Trigger*, did not receive much attention, but if there's any justice in the world (which there isn't), he will, one of these days, be recognized as a major writer. Where Kurt Vonnegut fails in his writing, being only repetitive, smarmy and juvenile, Wilson succeeds in *Schrodinger's Cat*. *Schrodinger's Cat* is one of three identical novels, published in three different alternate universes (and thus making each novel different): *Schrodinger's Cat*, published in New York by Pocket Books; *The Universe Next Door*, published in Boston by Rocket Books; and *The Trick Top Hat*, published in Philadelphia by Locket Books. It deals with uncertainty, sub-nuclear physics; Oriental philosophy,

violence, sex and nuclear war. If this description seems confusing to you, you will be more confused after reading the novel. Purchase it; you will either love it or despise it.

Why is it that so many excellent modern sf writers are female? It used to be axiomatic that the genre was a man's field, and women writers were forced to use expedients such as writing under pseudonyms or hiding behind initials. Things have since changed for the better, though it seems that the situation is now reversed — with Ursula Le Guin, Tanith Lee, C.J. Cherryh, Marion Zimmer Bradley, and Racoona Sheldon at work, there hardly seems to be any room for male writers of quality.

Before reading Joan D. Vinge's collection of short stories, *Eyes of Amber*, I had assumed she was a relatively obscure writer. Her novel, *Outcasts of the Heaven Belt*, had struck me as mediocre at best, and her *Fireship* novellas had been unnoteworthy. But some writers are very much more at home in one form than another, and the short story seems to be Vinge's forte.

Vinge's stories are melodious, haunting, and tinged with sadness. At their best, they unify all the elements that make up good science fiction: thoughtful premises, good plotting, spare but descriptive prose, solid characterization, and emotional content.

In a sense, John Brunner's *The Infinitive of Go* is Brunner's answer to Niven's *All the Myriad Ways*. Niven postulates that the existence of infinite alternate universes eliminates the possibility of free will. An inhabitant of a multiverse might as well kill himself, since, after all, in some alternate universe he *is* doing so. Brunner grants this possibility, but also he sees reason for hope in the diversity of the multiverse. The story is well written, as one has come to expect from John Brunner, and his plot is engaging. Let us hope that Brunner's announced retirement from science fiction is at an end with the publication of *Go*. The general reader might have trouble understanding transfinite numbers, the theory of which plays an important role in the novel.

Fantasy

E.Hoffman Price, according to the biography in the back of *The Devil Wives of Li Fong*, is 82, living in San Francisco's Chinatown under the *dharma* name of Tao Fa, and believes that like silk, gunpowder, and the magnetic compass, beautiful women were invented in China — and is willing to meet doubters at dawn, on horse or afoot, with sword or pistol. I have no reason to believe that the biography is fiction; *Devil Wives* is worth buying for that reason alone.

Also, it is a very pleasant fantasy novel with an unusual setting — the pre-contact China of myth and legend. Li Fong's two wives are indeed devils (serpent demons, to be precise) but are certainly not the horrible man-eating monsters the local townspeople seem to believe. The three must fight to survive in the face of common superstition and the evil machinations of the Taoist Chang Lu.

Price is a skilled craftsman. Even if he isn't the next Dostoyevsky, his *Devil Wives* is still much better than ninety percent of the dreck that's being marketed as fantasy these days.

Part of that above-mentioned dreck is Jack Massa's *Mooncrow*. Mooncrow, the

protagonist, is a bird-adept of a school of magicians living in the far north. Against the precepts and advice of his order, he ventures into the world to the south and quickly becomes involved in the struggle against the evil, all-conquering Moldorn Empire. He shouldn't have bothered; the few effective sequences in the book occur in the magicians' citadel. So he destroys the Empire and gets the girl. Ho hum; all in a day's work.

I am firmly of the opinion that fledgling fantasy writers should not attempt to write grand epics, at least not as their first work. Most seem to make such an attempt or try to write sword-and-sorcery without either Howard's graphic imagery or Leiber's talented style. There are exceptions to every rule, however; Glen Cook's *A Shadow of All Night Falling* is one such special case.

Cook has managed to avoid most of the traps into which fantasy writers tend to fall. His language, while striking, is not awkwardly archaic; he communicates some of the awesomeness that is the province of epic fantasy without seeming silly or mundane; his magic is believable and not trivial. He also manages to create sympathetic characters — a difficult task in epic fantasy — and his prose is clear and well-executed. *A Shadow of All Night Falling* is by no means a classic, but it shows great promise.

Piers Anthony started out as a less than impressive writer; a glance through the recently-reissued *Hasan* should confirm this opinion. However, his output over the last few years has been prodigious, and with experience has come expanding talent. His steady improvement has been capped with the *Tarot* series, his best work to date.

It deals with the experiences of Sibling Paul of the Holy Order of Vision on the planet Tarot. On Tarot there exists a peculiar manifestation called Animation; someone caught in Animation is subjected to hallucinatory experiences that cannot be fully controlled. The series deals with Paul's experiences on Tarot, as he explores the question of whether the Animation phenomenon can provide communication with God and also as he explores the nature of the Tarot, with which he is obsessed. The best sequences occur in the middle novel, *Vision of Tarot*, when Paul re-experiences part of his past and his future.

The entire trilogy is a prequel to the *Cluster* trilogy, and ties in quite nicely, although it is not necessary to have read *Cluster* to understand *Tarot*.

Anthony still has some problems with his prose; the only character the reader comes to comprehend fully is the hero. Furthermore, Anthony fails to achieve the universal insight about reality for which he is apparently striving. Nonetheless, *Tarot* is readable and pleasant, no mean feat for a pretty much disconnected series of episodes. Anthony has not yet (I hope) reached his full potential, but *Tarot* is a pleasant way-station in his path of development.

Greg Costikyan

Note for An Exozoological Survey

The Sarker and Xylophage are animals actually found on earth. The Sarker is a tunicate or "sea squirt," and the Xylophage a termite. We had no intention of tricking you — our aim was to emphasize the strangeness of *earth*-based life forms.

Film & Television

THE BLACK HOLE

Producer: Ron Miller
Director: Gary Nelson
Screenplay: Jeb Rosebrook and Gerry Day
**Production Design:** Peter Ellenshaw

Cast:

Maximillian Schell	Dr. Hans Reinhart
Anthony Perkins	Dr. Alex Durant
Robert Forster	Captain Dan Holland
Joseph Bottoms	Lt. Charlie Pizer
Yvette Mimieux	Dr. Kate Macrae
Ernest Borgnine	Harry Booth

Black Holes have already inspired several books and countless magazine articles, both the most scholarly and the most sensational kinds. The Universe is vulnerable. Not even a hopeful ray of light can escape a Black Hole. It is the ultimate engine of destruction: mindless, menacing, inexorable. Taken seriously, this is a topic of conversation which can kill laughs at a party. The morbid appeal of this phenomenon is as compelling to the imagination as its gravity is to the giant suns which are drawn into its irrevocable darkness. And yet, when the folks at the Disney Studio set about to make a film on this weighty subject, they applied to it the same formula they used in making *The Son of Flubber*. *The Black Hole* is rife with cute, childish digressions and precious touches which would make Jiminy Cricket blush. It has been noted that Walt Disney convinced the world that mice, beady-eyed scavenging rodents, are really loveable, furry creatures. The Disney Studio has emasculated Black Holes in much the same way and has produced an awful film.

It must be noted that in its Disney incarnation, a Black Hole is not black. It is, instead, a brightly colored pinwheel of light. (Mickey's idea.) As the film opens, we find a small space probe named the *Palomino* hovering nearby. The ship's robot, VINCENT, an effeminate machine with Orphan Annie's eyes, describes this Black Hole as the largest he's ever seen, implying that this small traveller has seen plenty. Harry Booth, a newspaperman along on the mission for no apparent reason, notes that it "looks like something out of Dante's Inferno." Charlie Pizer remarks that every time he encounters a Black Hole, he expects to find someone "dressed in red, with horns and a pitchfork." These images are significant. They form the philosophical base of the film, revealed in its apocalyptic conclusion. The Black Hole is a metaphor for Hell. (Mickey and Pluto tried to veto this concept but they were overruled. It was felt that the serious science fiction fan would be placated by its inclusion.)

VINCENT discovers a second vessel which he identifies as the *U.S.S. Cygnus*, lost twenty years earlier. Dr. Macrae, whose father was a member of the earlier expedition, says that it had the same mission as the *Palomino*, "to discover habitable life in outer space." We wince, assume she meant to say habitable planets, and push on undeterred.

After a brief, damaging encounter with the Black Hole, the *Palomino* retreats to the larger ship for repairs. Here we are introduced to the *Cygnus* commander, Dr. Reinhart. He is wearing red and his demonic right-hand robot MAX is entirely red, reflecting the prescience of Charlie Pizer's remark noted above. The *Cygnus* is "manned" by robots, Reinhart explains, because his human crew abandoned ship years ago. He stayed behind to continue his investigation of the Black Hole and has developed a new physics to harness its awesome power, thereby ending the energy crisis back home. Only Dr. Durant is impressed by Reinhart's achievements. He even wants to be on hand when the doctor verifies his theory by flying the *Cygnus* into the Black Hole.
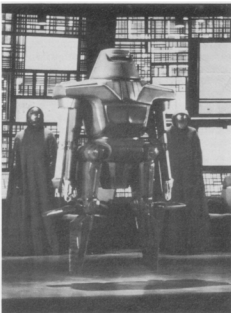
© MCMLXXIX Walt Disney Productions.

Meanwhile VINCENT meets a robot named BOB. BOB speaks with Slim Pickens' voice because he was programmed in Houston. BOB explains that Reinhart murdered several members of his crew and turned the rest into zombies. (Mickey, aghast, covers his eyes with his four-fingered hand. It is agreed that the zombie faces will be masked.) VINCENT passes the news to the *Palomino* crew and they try to escape. Finally, they are all, good guys, bad guys and zombies alike, drawn into the swirling Black Hole. In a painful caricature of the epic last sequence of *2001*, this descent is a rapid montage of grimacing faces and tortured landscapes. Dr. Reinhart and MAX merge and are transformed into Satan. The *Palomino* crew is transformed into a resplendent gossamer angel to make its escape. The zombies, regrettably, remain zombies and are doomed to spend eternity listening to the relentlessly whirring violins which are the aural representation of the Black Hole.

Producer Ron Miller managed to sneak a budget of twenty million dollars past Scrooge McDuck, making this the most expensive project in the Studio's illustrious history. Very good films have been made from less ambitious themes, with less talented casts and with far less money. *The Black Hole*, however, is a series of missed opportunities.

Dr. Reinhart, a Captain Nemo in space, might have been a powerful character. The Black Hole, described accurately throughout the film as "the most destructive force in the Universe," deserves serious attention, as do murder, zombies, Heaven and Hell. The screenplay by Rosebrook and Day is replete with dark themes which are consistently undermined by wooden dialogue and foolishness; robots with silly eyes which babble insufferably and then have extended western-style marksmanship contests (one advertisement for the film describes VIN-CENT as "the shootinist laser gun kid from outer space"). Clearly, no one involved with this production had the necessary *sang froid* to make the horrifying film the materials required. Every bit of terror in the subject has been contravened by patronizing kidstuff.

Director Gary Nelson must bear responsibility for the film's consistently lifeless performances. Maximillian Schell brings some energy to his role as the mad scientist, but like the film, he seems uncommitted to evil. Anthony Perkins seems angry at something, perhaps the quality of the script, and delivers terrible lines with conspicuous reverence. Yvette Mimieux doesn't have much to do besides being yanked through endless chase sequences and Ernest Borgnine is simply miscast as a man of the future. Robert Forster and Joseph Bottoms fare better than the rest in their roles as the flight crew of the *Palomino*.

The special effects of *The Black Hole* are notable in at least one way: they were *not* created by the Oscar-winning team of Dykstra and Turnbull who have held a monopoly through their work on *Star Wars*, *Close Encounters*, *Star Trek*, etc. Some of the Disney effects work adequately, others don't work at all; the best of them lack the dynamic technical brilliance of the Dykstra-Turnbull collaboration. At any rate, they cannot carry a film which is compromised in so many other ways.

In its theme and execution the film is characterized by reticence, a reluctance to commit wholeheartedly to a project and proceed with abandon. On a technical level, the Disney staff displayed an admirable but ill-advised inclination to do things their own way in a genre which was completely new to them. In the final analysis, *The Black Hole* is similar to its natural namesake. Nothing can escape from it either. Not a glimmer of imagination or inspiration. Perhaps if Pluto and Mickey hadn't been involved....

Vincent Misiano

SATURN 3

Executive Producer: Martin Starger
Producer/Director: Stanley Donen
Story: John Barry
Screenplay: Martin Amis
Special Effects: Colin Chivers

Cast

Alex	Farrah Fawcett
Adam	Kirk Douglas
Benson/James	Harvey Keitel
Robot	Hector, The First of the Demi-God Series

Judging by some recently released sf films, it would seem moviemakers believe the

Science fiction audience lacks intelligence and will accept any film, however short of plot, scripting, acting or technical proficiency. Witness *Saturn 3*, a standard B-movie which, save for the robot in it, should be labelled "stf" (sex-tease-farce). The plot, such as it is, concerns two hydroponics engineers, Adam (Kirk Douglas) and Alex (Farrah Fawcett), living an idyllic life out among Saturn's moons. Their paradise is troubled by the arrival of the drug-popping, psychotic Captain James, who immediately develops the hots for Alex. ("You have a beautiful body — may I use it?") Undiscouraged by her refusal, he builds a super robot, Hector, to accomplish his evil purposes. Unfortunately, while programming the robot, he imposes his own psychotic tendencies into it, as well as his seething emotions. The robot kills James and spends the rest of the movie chasing after Adam and Alex. Will the robot succeed or be frustrated? (He's *bound* to be frustrated eventually because even though Hector is well made, he's not well built.) The ending isn't very hard to predict.

La Fawcett has legged it a long way since *Logan's Run* (a new haircut), but she continues to avoid giving any evidence of acting ability since all she does is laugh, simper, talk in a sugar-sweet voice and run through innumerable chase scenes. Kirk Douglas, as Adam, turns in an adequate performance, but he still has trouble with his eye-rolling. Harvey Keitel has already proved he can act, so why he was confined in his performance to monotone statements (pardonable when he "becomes" a robot) is a puzzle.

Although it doesn't particularly follow the events of the film, the soundtrack by

Elmer Bernstein has some interesting synthesizer effects, and it occasionally grows loud enough to save us from hearing some of the dialogue.

Saturn 3 is a sloppy, shoddy production, of the sort that someone out there thinks sf fans just eat up. One hopes the producers and directors working the genre will realize this audience demands more than a leggy blond being chased by a robot. They may have such limited visions, but the audience doesn't.

P.J. Snyder

TELEVISION

Science fiction and fantasy have, at last, struck television with a vengeance. Since the beginning of the year there has been (and will continue to be) a glut of sf/f pieces on the air — most of them ranging from terrible to mediocre. The limitations of the medium do not readily allow for the vastness of scope and vision inherent in science fiction and fantasy; furthermore, the "formula" writing of most teleplays vulgarizes the dangerous ideas of the original writers. In the process of not daring to offend anybody, the television artists stimulate nobody.

Take, for example, *The Aliens Are Coming*, a Quinn Martin production broadcast by NBC in February. Not only did the pilot (hopefully to go no further) rehash the old *Invaders* series (except the aliens now had glowing eyes instead of pinkies that refuse to bend), but it also kept the same tired old xenophobic attitude towards the unknown. *Beyond Westworld* continues the *Westworld* neo-Luddite paranoia, this time with the robots going out to enslave the world. NBC's adaptation of Aldous Huxley's *Brave New World*, on the other hand, totally missed the dystopian vision of the novel. The acting was uniformly awful, the sets unconvincing, and the plot plodding. The show bore a greater resemblance to situation comedy than to a major dramatization of a classic science fiction novel.

Galactica 80 brought Adama and his ragtag fleet back to the public. Instead of worrying about Cylons, the Colonials now worry about a renegade scientist who time trips through Earth's past (maybe he'll meet the chaps from *Time Tunnel* at some temporal intersection).

A more notable failure was NBC's miniseries based on Ray Bradbury's *The Martian Chronicles*. Still suffering from tedious pacing, the series came closest to capturing the author's original vision; but Bradbury's romantic portrait of Mars and humanity's violation of it does not hold up as well in an era in which even small tots know that Mars is nearly airless.

There is a ray of hope in the near future. ABC will air *Return of the King*, an animated two-hour special based on Tolkien's third novel in his *Ring* trilogy. While the animation is not first rate (the characters have a typical Saturday-morning stiffness when they move or talk) and the musical underscore is ludicrous, the film does capture much of the terror and wonder of Tolkien's work. Perhaps a cartoon format is best for the sf/f genres, since it would seem that the majority of "live" renditions offer little more than caricatures after all.

Michael Moore

Media

Three science fiction/fantasy films were among the top ten box office successes in this country during 1979. *Superman* claimed number one position, grossing $81 million; *Alien* took fourth place with $40 million; and *Star Trek — The Motion Picture* rocketed to number six, pulling in $35 million in a few short weeks during December — certainly encouraging figures for the movies' producers. With the additional triumph of *Star Wars'* all time high of $175 million and *Close Encounters'* $77 million grosses, it seems likely that projected science fiction and future fantasy films will garner sizeable budgets as more studios and producers seek to cash in on the phenomenon. Of course, there will also be a host of small budget films trying to ride the same wave of popularity.

Though many were disappointed with the film version of *Star Trek*, the box office figures do not reflect this feeling, since the movie is quickly approaching the $60 million mark and may join the ranks of the all-time, highest grossing films. *The Black Hole* was also deemed a success by the Disney Studio's standards, clearing $18 million to date, and the green light has been given for more films in the genre to be produced.

Opening in several months is *Final Countdown*, directed by Peter Douglas and featuring his father Kirk as the commander of the nuclear carrier *Nimitz*, which enters a mysterious mist off Pearl Harbor in 1980 and reappears on December 7, 1941. It will pit WWII weapons against contemporary arms. The cast also includes Martin Sheen, Katherine Ross and Charles Durning.

Galaxina, expected to be released this summer, portrays the 28th century and includes a six-foot plus leading lady as a most attractive android from another world. William Sachs directs this $10 million Crown International picture. *Virus*, a Japanese-Canadian co-production, portrays Henry Silva (Killer Kane of the recent *Buck Rogers* movie), Glenn Ford, George Kennedy, Bo Svenson and Chuck Connors as the last survivors on earth. Kinji Fukusaku directs the $8 million project.

Other projects in the talking, planning and pre-production stages are: *Starhunt*, adapted from David Gerrold's novel, *Yesterday's Children*; *Sinbad on Mars*, featuring the magic of Ray Harryhausen; *Scanners*, with Patrick McGoohan, concerning "extra-sensory powers" used as weapons of destruction; and *Knights of Eden*, presenting 40th century earth (on a $12 million budget). Stanley Kubrick is working hard to complete *The Shining*. Paddy Chayefsky has teamed with director Ken Russell to film his story of experiments on reverse evolution that backfire on the curious scientists. The most interesting news reports George Lucas producing and Steven Spielberg directing a $40 million secret project for Paramount entitled *Raiders of the Lost Ark*.

An unusual approach is being taken in adapting Roger Zelazny's *Lord of Light* as a movie. A 1000 acre amusement park is planned to be known as Science Fiction Land and is an offshoot of the movie set.

Howard Barasch

This June,
SPI will release
a major new
fantasy role-playing
title
— the leading edge product
of a totally
organized and designed
state-of-the-art
fantasy world
generation system
and
role-play
gaming
rules.

Dragonslayer

Games

Magic Realm

Designer/Developer: Richard Hamblen
Graphics: Richard Hamblen, et al.
Mail order and retail sales
The Avalon Hill Co., $15.00

A wargame whose market shares are being eroded by some newly prominent part of the field it has not yet covered operates in a manner similar to a mythical feudal kingdom being ravaged by a fearsome beast. The Kingdom sends forth its champions to dispatch the monster, while the wargame company charges a designer with the task of delivering a game to meet the challenge. Some otherwise eminently qualified designers can succumb to the pressures of producing a flagship release, or a skilled individual can finish a game worthy of a niche in the marketplace.

Last year's monster for Avalon Hill, the first and largest wargame company, was fantasy boardgaming. Other companies had already hastened to respond to Greg Stafford's *White Bear and Red Moon*, leaving Avalon Hill no choice but to run the gauntlet itself. Good Sir Richard Hamblen became the first champion of that company, inventing the game of the *Magic Realm*.

Each player becomes one of sixteen fantasy protagonists, traipsing through all that remains of a once mighty kingdom. A vast forest has obscured the site of past glories, but there still exist long-forgotten riches which have survived the depradations of time. The forest is now but thinly populated by humans, though monsters roam the countryside. Needless to say, the monsters do not take well to the intrusion of adventurers and will kill those they may.

The topography of *Magic Realm* is described by twenty large hexagonal tiles. Each tile is identified by a legend corresponding to its most salient feature, ranging from the innocuous Maple Woods and Borderland to the Bad and Awful Valleys (obviously not recommended by local tour guides) to the Nut Woods (where hungry society restricts its mentally unhinged to an obscure corner of the land). A tile contains between two and six clearings, which are connected by various paths. The paths also run off the edge of all tiles, so that transit may be effected between clearings on separate tiles. The scheme of paths within a tile varies from its enchanted side to its green face.

The counters represent, among other things, all the living beings in the Realm. Each monster and native has its own counter, with no more than three pieces of information on a piece. An illustration of the monster or native enhances the look of the counter face. Other than a few references to standard wargame terminology — for instance, native leaders are coded "HQ" (headquarters) — these components are clearly intended for a fantasy game system, not an adaptation of a historical system with magical trappings. Dwellings use the largest sized counters. There are three separate sizes of counter, to denote either the importance of the counter or the size of the

monster it represents. A group of "Warning" counters describe aural, olfactory and visual phenomena (e.g., Stink, Smoke, etc.) which alert characters to the presence of monsters and/or treasure locations. These are often used in conjunction with location counters (e.g., Cairns, Lost City, etc.). The rest of the counters are devoted to the characters. The position of a character on the map tiles is marked by his "Attention" counter, which displays that character's symbol. Individual pieces of armor worn by a character also rate separate counters. Finally, the actions a character will perform in combat are printed on several counters also marked with his corresponding symbol.

No fantasy game is complete without magic spells. Each spell is described on a card and elaborated upon within the rules. Magic items, those handy tools of the wayfarer, are described on cards, which are held by the owning character's player. The remaining few cards name the best treasure locations, which may include grisly surprises, such as the Remains of a Thief or a Mouldy Skeleton. The hardboiled players will probably be more worried about the accompanying curse than the reason for the unfortunate's demise. All of these cards and the monsters are keyed to the Warning and Location counters by a well-organized Treasure Set-Up Card. Regrettably, this card is the only readily understandable part of the game.

Since a player controls only one character when the game starts, much of the support material is geared to the actions of that character and his acquisitions. Character cards, those hoary stand-bys of fantasy boardgames, include full-color pictures of the characters. The number of artists employed in the renderings of the characters ensures a variety of styles and competences. If the subjects of the portraits were not fictional, some would sue for defamation of character while others, unwilling to take such a drastic step, would gripe about the preferential treatment given their peers. The backs of the cards detail the meaning of the character symbol, the special "advantages" for that character (though some are disabilities), the levels of development through which the character progresses, and the character's standing *vis a vis* the inhabitants of the Magic Realm. Every player in a multi-player game starts with the depressing thought that his character has already made enemies.

The character cards describe the character's accomplishments before the player assumes his role, while the Personal History Pad becomes a written record of the character's performance during play of the game. *Magic Realm* is a simultaneous movement game; i.e., players must record the activities they wish their characters to undertake, and then execute the activities at the same time. This mechanic hampers play in all but the simplest of wargames (e.g., *Diplomacy*), while the product at hand is assuredly complex. The choice of simultaneous movement is doubly unfortunate because it was not necessary; the game could have used a sequential execution of phases, with each player, in turn, performing the activity of one phase for his character. The Personal History Pad is also used to record all goals achieved

by the character, his victory conditions and his spells, and serves as a combat display on the reverse side.

The late 19th and early 20th centuries were the Age of Invention in America. Rapid strides forward in the arts and sciences created a wholly new technology and introduced many diverse art forms. No society could endure such upheaval in social dynamics and remain stable, and so in reaction came the Age of Imitation: the saleable product no longer necessarily belonged to the original inventor, but rather to the person or firm that refined the product properly. *Charlie's Angels*, for example, was not the first action-combined-with-sex-objects show to appear on television, but it did modify the formula to have an especially wide appeal.

The design of *Magic Realm* tries to be all things to all people, and fails by being far too ambitious. It smacks of the Age of Invention in that there are many original concepts embodied in the mechanics of the game, but it also belongs to the Age of Imitation in that it seeks to improve upon fantasy boardgames and, at the same time, the popular fantasy role-playing game, *Dungeons and Dragons*. If the design had been given a narrower focus, the game could have achieved success within a particular category. As it is now, the game falls apart when it attempts to integrate innovation, fantasy boardgaming and role-playing.

A guided tour of the components, which promises a great game, reveals much of this flaw. The character cards devote a considerable amount of space to the various levels of the characters. An optional rule allows a player to reduce his character's level from fourth (best) and thus cause a corresponding reduction of the goals required to achieve victory. This concept works well in fantasy role-playing, but in lessening a character's ability to perform activities, it disproportionately weakens that character's chance of survival during play. The Search Tables, which must be consulted to find other characters and treasure, are used in conjunction with a die-roll but weighted towards high numbers. The problem is that several results may occur on these tables, but there is no guarantee that the result will have relevance to the character's activity. A character could, for instance, be prevented from discovering another character lying in wait by "good" die-rolls. The game system does try to correct the perversity of resolving these particular activities by letting players use one of several search tables, which alleviates the snag somewhat. Whereas a character is controlled by his player in the other game activities, the search procedure is a completely random method for having the character act. The proliferation of such inconsistencies mars the solid design concepts.

The rules writing also indicates that something is amiss with *Magic Realm*. The rules are explained in a rambling style, making comprehension extremely difficult. Almost every cardinal sin of rules writing is committed within any given four-page span. There are direct contradictions in succeeding cases, loopholes through which a Mack truck can be driven, and vague phrasing where precision is required. Discovering a particular rule is often an adventure in itself; the absence of an index or the burial of an im-

portant rule in a mass of type will frustrate those players who insist on double-checking that a game is being played as written. The butchery of the English language, one of the favorites of the author, is almost incidental in this morass of misinformation.

The above diatribe notwithstanding, the structure of the rules does aid in the assimilation of the design ideas. The rules are presented in seven encounters, with each adventure introducing new rules to play. This variation of the Programmed Instruction rules format, usually ignored by veteran gamers, is necessary for those who do not wish to re-write the rules in personalized note form.

The first encounter gives very little indication of what is to come. The characters simply explore the Magic Realm. Some basic concepts are introduced which will carry through the seventh adventure, if the players get that far. The hex tiles are distributed evenly among the players, and the Borderland tile is placed in the middle of the playing area. Each player connects one tile to those already in play, one at a time until all tiles are in position. This unique procedure virtually guarantees a different "map" each time a game is commenced. All character actions, other than movement, occur within the clearings; nothing may affect a character whilst he moves along a path. The Warning counters are used to signal the presence of various dwellings; the players become familiar with using these counters to bring monster and dwelling counters into play.

The first encounter is a diceless race game. The first character to visit all of the dwellings and return to the Inn (from which all characters started) is the winner. The locations of most of these dwellings are known, so it is largely a matter of strategy to determine the winner. There is some luck when a character discovers one of the hidden dwellings before the others do. However, a character may be blocked from moving along a certain path, so an overly fortuitous adventurer will be stalemated by his opponents until parity can be restored. This scenario is worth one play; it is, as mentioned previously, mandatory for comprehension of the ensuing scenarios, but becomes predictable once it is figured out.

The second encounter introduces battle — along with a rude shock for those who thought the game would be eminently playable. The combat system is diceless, depending instead upon the striking power of the attacker's weapon, the maneuvers employed by the characters, and the vulnerability of the defending character. The maneuver used by attacker or defender affects combat; if the blow by the attacking character is not faster than the defense of the defending character, there is no damage. Since a character can only sustain one blow if he has no armor, and up to three if he does, combat is short and deadly. After a few games, a player will know whether his character can win or lose a battle against another character. Though victory is not based on killing other characters (but a character must survive to win), the strongest character can almost certainly kill at least two of his competitors before he has to worry about a fourth player winning the game. Technically, the strongest character can prevent all characters from leaving the Inn (where play begins), and kill them all, but only the worst rules-stickler will insist upon this short and boring version of the game.

The game balance problem caused by the combat rules beclouds the entire game. Quite simply, certain characters are better than others, and one character will be best, depending on which scenario is being played. Most people who play such games do care who wins, and thus the game's value becomes minimal because the winner can be predicted very soon after the start of play (it remains to be seen whether most of the characters gang up against the strongest). The other problems pale by comparison to this imbalance, but it is interesting to note that a character being struck by a melee weapon can continue to fire a missile weapon.

The introduction of monsters in the third encounter exacerbates the imbalance. The strongest character no longer has the boring task of hounding the other characters to their death. Instead, he can go and hunt the monsters he must kill in order to win. Since the stronger character can kill more dangerous monsters, which are pro-rated by their difficulty in dispatching, he can end the game efficiently and early. Unlike characters, the maneuver of a monster is predetermined, which makes the outcome of combat relatively easy to predict.

Fantasy boardgame rationales maintain that characters lust for booty, and *Magic Realm* is no exception. The fourth encounter brings in treasure. The characters now may concentrate on something besides killing one another or fleeing from a powerful foe. A weaker character can use these treasures to defend himself from his nemesis, if he is fortunate enough to own a defensive item. Treasures are distributed randomly, and are not known to any player until found.

The fifth encounter is probably the most playable of all. The natives, which have been alluded to throughout the previous rules, may now be hired by the characters. This strengthens the position of the weaker characters, in that they can gain cannon fodder to place between them and the stronger characters. However, the odds are that the stronger characters can gain money and thus hire natives at a quicker clip. The players should follow the rules in this section very carefully, for there are some peculiar twists that require interpretation before the start of play.

Magic rears its lovely head in the sixth encounter (the seventh encounter contains some interesting "chrome" rules). The tile in which a spell is to be cast must be enchanted (flipped over) and the color of the magic in the tile must match that of the spell to be cast. On the positive side, the balance of power changes significantly, as some of the magic-users can now wield their might at full strength. The spells themselves are poorly defined, and introduce a new caste system. The Berserker, for instance, one of the better characters in earlier play, is eclipsed by the Witch-King, who can "Absorb Essence" (take possession) of, say, a Tremendous Flying Dragon or a Demon (arguably the two best monsters). The spells require considerable tinkering before they can be smoothly integrated into the game system.

For all its faults, *Magic Realm* contains a wealth of excellent ideas. If the game had been realistically planned and well executed, it would have been one of the best fantasy boardgames ever produced. Unfortunately, the lofty goals set for the game caused it to fall flat on its face. The design remains like the legendary Don Quixote: forever tilting at windmills.
Eric Goldberg

The following games have been received from Game Designers' Workshop for review:
Bloodtree Rebellion, L. Willis/J. Harshman, $12.98
Dark Nebula, M. Miller, $5.98
Mayday, F. Chadwick, $5.98

GAMES RATING CHART

These ratings are taken from *Strategy and Tactics*. *Ares* readers are encouraged to submit ratings for games to enable the creation of a wholly-*Ares*-audience-based chart by completing the special double-sized Feedback questionnaire in this issue.

Title	Pub.	Pub. Date	Price($)	Accept. Rating	% Played	Complex. Rating	Playing Time	Solitaire Playability
1. Freedom in the Galaxy	SPI	6/79	20	7.1	12	7.0	7	5.5
2. GEV	MGC	na	3	7.0	16	5.0	2	6.5
3. Imperium	GDW	na	10	7.0	14	6.1	6	2.5
4. War of the Ring	SPI	11/77	18	6.9	35	5.5	3	4.5
5. Ogre	MGC	5/77	3	6.8	27	4.8	1	6.5
6. Melee	MGC	na	3	6.8	21	5.3	1	6.5
7. Creature Shaboygan	SPI	4/79	4	6.8	19	5.0	1	6.5
8. Wizard	MGC	na	3	6.8	16	5.8	1	6.0
9. Swords & Sorcery	SPI	7/78	18	6.8	13	6.0	3	5.0
10. Traveller	GDW	7/77	12	6.7	14	6.2	5	5.5
11. Death Test	MGC	na	3	6.7	12	5.8	1	1.0
12. Dungeons & Dragons	TSR	12/74	10	6.6	34	6.5	5	1.0
13. John Carter	SPI	5/78	20	6.6	11	6.0	4	5.5
14. Stellar Conquest	MGC	2/75	9	6.5	11	5.8	6	3.0
15. StarGate	SPI	4/79	4	6.4	11	5.5	2	6.0
16. Battlefleet: Mars	SPI	4/77	15	6.4	16	6.8	6	3.0
17. Invasion: America	SPI	12/75	18	6.3	31	5.5	8	4.5
18. War in the Ice	SPI	1/79	12	6.3	9	6.8	5	4.5
19. Objective: Moscow	SPI	3/78	27	6.2	19	5.0	30	50
20. Starship Troopers	AH	7/76	10	6.2	17	5.0	2	35
21. Empire Petal Throne	TSR*	6/77	25	6.2	11	7.4	9	10
22. Vector 3	SPI	4/79	4	6.2	11	5.8	2	3.0
23. Starweb	FB	na	5	6.2	6	5.5	na	na
24. Starforce	SPI	10/74	12	6.1	26	6.0	4	4.5
25. Gondor	SPI	11/77	12	6.1	6	5.5	4	6.0
26. Sorceror	SPI	10/75	9	6.1	25	6.0	2	6.0
27. Titan Strike	SPI	4/79	4	6.1	12	6.0	3	5.5
28. Ice War	MGC	na	3	6.1	12	5.0	2	6.5
29. White Bear Red Moon	TC	na	10	6.1	7	5.0	3	6.0
30. Warp War	MGC	na	3	6.1	18	4.5	1	5.0
31. Outreach	SPI	11/78	9	6.0	22	6.0	5	4.0
32. Black Hole	MGC	na	na	6.0	8	5.0	2	6.0
33. Alpha Omega	BL**	7/77	13	6.0	6	na	na	na
34. Nomad Gods	TC	na	na	6.0	5	na	na	na
35. Triplanetary	GDW	9/73	8	6.0	9	5.7	2	4.8
36. Double Star	GDW	8/79	10	6.0	4	5.5	5	5.0
37. Sauron	SPI	11/77	5	5.9	25	6.6	4	5.5
38. After the Holocaust	SPI	1/77	12	5.9	16	7.5	7	7.0
39. Rivets	MGC	na	na	5.9	13	na	na	na
40. Olympia	MGC	na	3	5.9	11	na	na	na
41. Sticks & Stones	MGC	na	3	5.9	9	5.0	2	6.5
42. Godsfire	MGC	na	na	5.8	7	na	na	na
43. Magic Realm	AH	8/79	na	5.7	6	na	na	na
44. Star Soldier	SPI	1/77	10	5.6	22	7.1	2	3.5
45. Dune	AH	8/79	na	5.6	8	na	na	na
46. Lankhmar	TSR	8/76	12	5.6	8	na	na	na
47. Cosmic Encounter	EP	na	na	5.4	5	na	na	na
48. Star Lord	FB	9/73	7	5.4	5	6.0	4	4.5
49. Metamorphosis: Alpha	TSR	na	5	5.3	9	6.0	9	1.0
50. Monsters Monsters	MGC	2/77	7	5.3	8	6.0	9	1.0
51. Elric	TC	na	na	5.2	5	na	na	na
52. Rift Trooper	AW	7/76	7	5.1	4	na	na	na
53. Formalhaut II	AW	na	7	5.1	3	na	na	na
54. Stalk-1	C-C	4/76	12	5.1	3	na	na	na
55. Venerable Destruction	EG	na	6	5.1	2	na	na	na
56. Atlantis	EG	7/76	4	5.0	3	na	na	na
57. Dixie	SPI	1/76	5	4.9	68	na	na	na
58. Star Probe	TSR	na	na	4.8	5	na	na	na
59. Bunnies & Burrows	FGU	na	6	4.7	3	na	na	na
60. War of Star Slavers	AW	na	13	3.9	2	na	na	na
61. Warlocks and Warriors	TSR	na	na	3.4	3	na	na	na

KEY TO ABBREVIATIONS: AH=Avalon Hill; AW=Attack Wargaming; BL=Battleline; C-C=C-in-C Metalcasting; DC=Dave Casciano Co.; EG=Excalibre Games; EP=Eon Products; FB=Flying Buffalo Inc.; FGUI=Fantasy Games Unlimited Inc., GDW=Game Designers' Workshop; MGC=Metagaming Concepts; OSG=Operational Studies Group; SPI=Simulations Publications Inc.; TC=The Chaosium; TFG=Task Force Game; TSR=Tactical Studies Rules; TYR=Tyr Gamemakers; YP=Yaquinto Publications; ZE=Zocchi Enterprises. *Acceptability Rating* is the game's overall popularity. *% Played* is the percentage of readers who have played the game within the last 12 months. *Complexity Rating* is the relative complexity of the game on a scale of 1 (simplest) to 9.

*Has been taken over by Zocchi Enterprises.
**Has been taken over by Avalon Hill.

Feedback

Reader Survey, Ares nr. 2

Your opinions directly effect the editorial content of *Ares* Magazine. We invite you to participate in this, our regular survey of readers.

How to use the Feedback Response Card: After you've finished reading this issue of *Ares*, please read the Feedback questions below, and give us your answers by writing the answer-numbers on the card in the response boxes which correspond to each question number. See centerfold for card. Please be sure to answer all questions (but do not write anything in the box for question-numbers labelled "no question"). Incompletely filled-out cards cannot be processed.

What the numbers mean: When answering questions, "0" always means NO OPINION or NOT APPLICABLE. When the Question is a "yes or no" question, "1" means YES and "2" means NO. When the question is a rating question, "1" is the WORST rating, "9" is the BEST rating, "5" is an AVERAGE rating, and all numbers in between express various shades of approval or disapproval.

SECTION A

1-3. No question

The following questions ask you to rate the articles in this issue on a scale of 1 (poor) through 9 (excellent); 0 = no opinion.

4. Wreck of the Pandora (game)
5. Conan: Illusion and Reality (non-fiction)
6. The Inn at World's End (fiction)
7. Child of the Wandering Sea (fiction)
8. Alien Life Forms (science)
9. An Exozoological Sampler (science)
10. Games (review)
11. Books (review)
12. Film and Television (review)
13. Media (review)
14. Muse (editorial)
15. This issue overall

16. Was this issue better than the last one? 1 = Yes; 2 = No.

17. Assume that you don't subscribe to *Ares*. Would the quality of this issue alone motivate you to subscribe? 1 = Yes; 2 = No.

18. Your age: 1 = 13 years old or younger; 2 = 14-17; 3 = 18-21; 4 = 22-27; 5 = 28-35; 6 = 36 or older.

19. Your sex: 1 = Male; 2 = Female.

20. Education: 1 = 11 years or less; 2 = 12 years; 3 = 13-15 years; 4 = 13-15 years and still in school; 5 = 16 years; 6 = 17 years or more.

21. How long have you been playing conflict simulation games? 0 = less than a year; 1 = 1 year; 2 = 2 years . . . 8 = 8 years; 9 = 9 or more years.

22. What is the average number of hours you spend playing simulation games each month? 0 = none; 1 = 1 hour or less; 2 = 2-5 hours; 3 = 6-9 hours; 4 = 10-15 hours; 5 = 16-20 hours; 6 = 21-25; 7 = 26-30; 8 = 31-40; 9 = 40 or more hours.

23. How many simulation games (of all publishers) do you possess? 1 = 1-10; 2 = 11-20; 3 = 21-30; 4 = 31-40; 5 = 41-50; 6 = 51-60; 7 = 61-70; 8 = 71-80; 9 = 81 or more.

24. What level of complexity do you prefer in games? Rate your preference on a 1-9 scale, with higher numbers indicating increased complexity. Use the following games as guidelines. 4 = *WorldKiller*; 7 = *BattleFleet: Mars*; 9 = *Air War*.

25. How many conflict simulation games have you purchased in the last twelve months? Do not include games received by subscription. 1 = one to three; 2 = four to six; 3 = seven to nine; 4 = ten to fifteen; 5 = sixteen to 25; 6 = 26 to 30; 7 = 31 to 40; 8 = 41 to 50; 9 = 51 or more.

26. How many games do you plan to buy in the next twelve months (not including *Ares* subscription games)? 1 = one to three; 2 = four to six; 3 = seven to nine; 4 = ten to fifteen; 5 = sixteen to 25; 6 = 26 to 30; 7 = 31 to 40; 8 = 41 to 50; 9 = 51 or more.

27. What percentage of the games you buy do you expect will be SPI games? 1 = 10%; 2 = 20%; 3 = 30%; . . . 9 = 90%.

28. How much money do you plan to spend on conflict simulation games in the next twelve months? 1 = less than $10; 2 = $10-25; 3 = $25-50; 4 = $50-75; 5 = $75-100; 6 = $100-200; 7 = $200-300; 8 = $300-400; 9 = $400 or more.

29. How much have you spent on conflict simulation games in the last twelve months? 1 = less than $10; 2 = $10-25; 3 = $25-50; 4 = $50-75; 5 = $75-100; 6 = $100 -200; 7 = $200-300; 8 = $300-400; 9 = $400 or more.

30. Pick the one area of science fiction that you must enjoy reading: 1 = Space opera/science fantasy; 2 = "Hard" science fiction adventure; 3 = Problem-solving hard science fiction; 4 = Extraterrestrial societies; 5 = Future societies (utopia/dystopia); 6 = Alternate history; 7 = Time-travel; 8 = Soft science fiction (a.k.a. "new wave"); 9 = Other (please write in the category description).

31. Pick the one area about which you would most like to see science fiction games done: 1 = Strategic space conflict; 2 = Tactical space conflict (ship against ship); 3 = Strategic planet-bound conflict (army against army); 4 = Tactical planetbound conflict (man against man); 5 = Alternate history conflict; 6 = Conflict in a contemporary setting; 7 = Role-playing adventure; 8 = Economic/ sociological/political conflict; 9 = Other (please write in the category description).

32. How many science fiction games do you own (including the game in this issue)? 1 = 1; 2 = 2; 3 = 3; 4 = 4; 5 = 5 to 10; 6 = 11 to 15; 7 = 16 to 20; 8 = 21 to 25; 9 = 26 or more.

33. How much did you spend on science fiction books in the last twelve months? 1 = under $10; 2 = under $20; 3 = under $30; 4 = under $40; 5 = under $50; 6 = under $60; 7 = under $70; 8 = under $80; 9 = $81 or more.

34. What percentage of the money spent on science fiction books was spent on hard-cover books? 1 = 10%; 2 = 20%; 3 = 30%; 4 = 40%; . . .9 = 90%.

35. Pick the one area of fantasy that you most enjoy reading: 1 = Sword and Sorcery; 2 = Mythological fantasy; 3 = Quest adventure; 4 = Classically-based fantasy (e.g., Arthurian legend); 5 = Fantasy in a contemporary setting; 5 = Superhero/heroic adventure; 7 = Anthropomorphic fantasy (e.g., *Watership Down*); 8 = Horror/occult; 9 = Other (please write in the category description).

36. Pick the one area about which you would most like to see fantasy games done: 1 = Strategic sword and sorcery boardgames (army against army); 2 = Tactical sword and sorcery boardgames (hero against evildoer); 3 = Quest/adventure boardgames; 4 = Sword and sorcery role-playing; 5 = Classically-based fantasy; 7 = Anthropomorphic societies; 8 = Horror/occult; 9 = Other (please write in the category description).

37. How much money did you spend on fantasy books in the last twelve months? 1 = under $10; 2 = under $20; 3 = under $30; 4 = under $40; 5 = under $50; 6 = under $60; 7 = under $70; 8 = under $80; 9 = $81 or more.

38. What percentage of the money spent on fantasy books was spent on hard-cover books? 1 = 10%; 2 = 20%; 3 = 30%; 4 = 40%; . . . ; 9 = 90%.

39. How many fantasy games do you own? 0 = none; 1 = 1; 2 = 2; 3 = 3; 4 = 4; 5 = 5 to 10; 6 = 11 to 15; 7 = 16 to 20; 8 = 21 to 25; 9 = 26 or more.

40. How did you first learn of *Ares*? 1 = A friend told me about it; 2 = I saw an ad in a science fiction magazine; 3 = I saw an ad in a wargaming magazine; 4 = I saw an ad in another kind of magazine; 5 = I saw a copy at a hobby store; 6 = I saw a copy at a toy store (retail or wholesale); 7 = I saw a copy at a bookstore; 8 = I read an article about *Ares* in a newspaper or magazine; 9 = Other.

The following questions concern other magazines. Pick one statement that is most true about each magazine. 1 = I have never seen a copy; 2 = I almost never buy a copy from a newstand; 3 = I occasionally buy a copy, but I do not have a subscription; 4 = I did have a subscription to this magazine in the past, but I do not read it anymore; 5 = I did have a subscription to the magazine in the past, but I only buy it on a newstand now; 6 = I have a subscription to the magazine for one year or less; 7 = I have subscribed to this magazine for two years or less; 8 = I have subscribed to this magazine for 3 to 5 years; 9 = I have subscribed to this magazine for over 5 years.

41. Strategy and Tactics
42. MOVES

Rate the following game proposals on a scale of 1 to 9, with 1 indicating very little inclination to buy the game if published up through 9 indicating a definite intention to purchase it.

57. *Blows Against the Empire.* A closer look at the Star Rebellions, first chronicled in our popular game, *Freedom in the Galaxy*. The Erwind-Varu-Wex complex of star systems was bitterly fought over for the duration of this grand conflict. Here, the rebels first made contact and mastered the hit-and-run tactics that got the rebellion rolling. As the diverse populations in the area heard of their courageous exploits, public outcry against the empire grew snowballed into dramatic revolt, toppling local imperial control. This once peaceful sector of the empire developed into one of its grisliest battlegrounds, as masses of inexperienced rebel troops died learning how to fight the elite military machine of the empire in open warfare. The game would have a folio-sized map presenting these three star systems, showing not only the seven inhabited planets in *FITG*, but many minor planets and moons, as well as artificial installations. Each major planet would have its own mini-map detailing all items of geographical and political interest. Yet another set of maps would provide the players with tactical displays on which their characters and armies may do battle on planets and in space. A host of new rebel and imperial characters will be introduced. Each one's attributes will be presented in greater detail, with a system for improvement of skills through experience. The problems of developing planetary and space-borne military forces, employing the technology best suited to the environment at hand, will be highlighted. One military unit in *FITG* will become a set of integrated task forces, each with its own special function. As in *FITG*, cards will be used extensively to keep the game exciting and unpredictable. Scenarios will allow the players to create every type of struggle undertaken in the rebellion. To sell for $20.

58. *Planet Warrior: Man-to-Alien Combat in the Future.* The charge began. A long ragged line of Light Lancers on lizard mounts descended the ridge, claws thumping against raw Rrith gravel. The Company was not about to give into Rrith terrorist demands, and had hired the Light Lancers to recapture the power plant; but the Band-of-Necessity were not to surrender their vital position, by order of the Hierarch. The 20cm lasguns opened up on the charging Lancers, but were ineffective against reflective mylar barding and goggles; coming into range, the Lancers opened up with their submachineguns. Men and Rrith fell as the charge met the huge Rrith defenders, mounts knocked aside by claws. The defenders' primitive rifles took a heavy toll among the attackers, but Terra's Manifest Destiny — and superior technology — won the day. *Planet Warrior* incorporates the weapons of the future in a tactical game based on the *Commando* system. With rules for dozens of alien races and scenarios ranging from intra-human wars in the next century to combat aboard spaceships to operations on Jovian worlds. To sell for $20.

59. *StarGods.* A role-playing game in which the participants are the "gods" of various planets (actually superbeings, products of genetic and electronic engineering). Players begin the game by purchasing various characteristics from a menu of attributes. Object of the game is to control other planets and reduce the influence of the other gods. Play takes place on two levels: god to population; and god to god.

60. *Jack the Ripper: When London Walked in Terror.* In the Autumn of 1888, the Whitechapel district of London was the scene of a series of mysterious, brutal murders that have not been solved as of the present day. These crimes were the work of the infamous Jack the Ripper — "Bloody Knife" to criminologists all over the world, who have hypothesized time and time again over the identity of the killer and the rationale behind his killings. This game would be a simple simulation of this series of bizarre events in which Players attempt to solve the mystery of the murders through a number of clues provided at random. Will the Ripper prove to be the Duke of Clarence? Perhaps Montague Druitt? Or maybe even Dr. Gull, Queen Victoria's personal physician? A boxed capsule to sell for $6.

61. *The Crypt of the Elder Gods.* Intrepid explorer Neville Kensington-Smythe stood in front of the long-lost tomb of the Andaris, the tabled rock which preceded even the venerable Watusi. "Kimosabe, do not enter, I beg of you!" pleaded his loyal native bearer. "There is great and evil juju waiting to kill even those protected by the Great White Father if you enter there!" "Nonsense, old bean," retorted his fearless leader, "damned if I believe all this rubbish about ancient spooks." The reader need only have seen one of innumerable Hollywood "documentaries" to know the sad fate of Mr. Kensington-Smythe. For those who are unfamiliar with these films, suffice to say that the explorer's face in death showed an expression of unspeakable horror. *The Crypt of the Elder Gods* is a role-playing adventure game in which the players are explorers seeking to gain the riches of long-lost races (and the favors of the surprisingly nubile high priestess). The players know that they must seek the favor of the good gods, who will grant them objects of power with which to combat the minions of the evil elder gods. If they succeed against the supernatural terrors and the mundane perils of the jungle, they shall return in glory to Olde England. A player's performance is rated according to the Glory, Riches and Love (or Respect) he garners. Or undoing agony a thousand times worse than death....Boxed Capsule. $9.

62. *The Mentat War.* In the Twenty-first Century, war and violent conflict have been abolished. But there is the Mentat Machine: a conflict simulator which works through the telepathic and telekinetic powers of the combatants. When plugged into Mentat, a player must rely solely on his mental abilities. Only time and gravity are fixed. All else is created by the will and imagination of the combatants. At the start of play, each contestant receives a certain amount of mental energy. He may expend this in the creation of weapons and men and terrain, or anything else he may deem useful against his enemy. But some things take longer to create than others, and victory may go to something as simple as a wooden club, as complex as The Third Space Marine Division, or as unique as Mongol Cavalry riding dinosaurs. The game is utterly unpredictable, and it is to the death. *The Mentat Wars* will be a boxed capsule game, with map, rules, and 100 counters. To sell for $7.

63. *Ophiuchi Rush.* The Terran Trade Commission has opened the Ophiuchi star-system for commercial exploitation. Four independent development companies send scout teams to report on the five planets in the system that show most promise. Soon the companies are struggling to establish bases on the planets in order to discover, gather and export the new resources. *Ophiuchi Rush* would be a colorful 2 to 4 player simulation of the exploration and commercialization of a star system. Each player controls one company and its exploration ships, intrepid pioneers and scientists, building and manufacturing supplies, and the capital to purchase unexpected necessities (such as weapons to battle any hostile life forms, and industrial spies and saboteurs to impair rival operations). 11"x17" map of the Ophiuchi system; 100 counters that give the planets unknown and variable attributes, and also represent the players' forces. A possible *Ares* game. To sell for $7.

64. *Metal War.* Two families control the backwater planet of Drust — the Lawsons who operate a massive agricultural complex which provides protein supplies for ships that warp through the system, and the Pooles who administer the mining networks with their robots. When new warp routes are discovered that bypass Drust's sun, the long-standing feud between the families breaks out into open warfare. Hungry for food denied them, the Pooles send their powerful rock-blasting robots out to seize the Lawson Farms. Only the fragile adaptoids with their sophisticated data processing systems (necessary to the cultivation on the unfriendly planet) stand between the Lawsons and certain death; it is a battle of brains against brawn. *Metal War* would be a two-player game recreating this wild, electronic slugfest. The game would include an 11"x17" map; 100 counters to represent the individual robots (each machine being rated for a variety of attributes). A possible *Ares* game. To sell for $7.

65. *Conquest of the Gaean Reach.* Humanity has become the overlord of the known universe. Centuries of colonization and discoveries of only a few technologically inferior races have caused the Confederation of Human Planets to adopt the role of benevolent tyrant to the alien races. The newly discovered M'Ruven, an intelligent, space-faring species with their own colonies, are reluctant to be placed under the aegis of the humans, thus leading the Confederation to pacify the "unenlightened" M'Ruven. The war is fought on two levels — militarily, in which the mighty Confederation is limited by the vast distances between bases, and politically, in which the M'Ruven try to convince humanity of their right to an autonomous existence. *Conquest of the Gaean Reach* would use *jumplines*, showing the hyperspacial routes that the task forces and ships must follow between given planets. Each player is aware of his opponent's forces as of the previous turn, but not of the present composition or whereabouts of those forces. A simple political system reflects the current standings of the players in terms of victory. Would include a 22"x34" map, 200 counters, rules, and displays. To sell for $10.

66. *Moondust.* The major powers have been operating bases on the moon for almost thirty years. The US, USSR, European Economic Community and Japan have separate bases within 300 kilometers of each other. Due to long-standing competition on Earth, they have developed independent systems of transport and supply. This shaky harmony is shattered when an invasion fleet is sighted heading towards the Solar System. The Avatars, an alien race left homeless when their sun went nova, sends out a scouting party to test the strength of their opponent. Before attacking Earth proper, they must establish a stronghold on the moon. The lunar settlers must overcome their differences and attack the scout ships before the aliens destroy the lunar bases. *Moondust* will feature a map accurately portraying the settled portion of the moon's surface; conventional and sf weaponry are used by both sides in this operational/tactical level shootout. One 22"x34" map, 200 counters. To sell for $9.

67. *Night of the Androids.* They are the super-soldiers of the future, fighting the wars of the 21st century. But, they are not men. They are androids — stronger, faster, and perhaps smarter than men. They are considered mere tools by humans, the expendable defenders of a society which does not recognize them as citizens. Even the great Gamma Series androids, charged with the planning of wars and the movement of troops and supplies, are considered by their masters as little more than animated circuitry. The revolution has begun; there are androids who would seek equality with humans by seizing the seat of hemispheric government until their rights are recognized. *Night of the Androids* would simulate the planning and execution of this coup, with one player taking the role of the NAU (North American Union) Security Police and the other player becoming the "General Staff" of the android revolution. Special rules for recruitment, betrayal, deprogramming, street fighting, assassination, cyborgs, and propaganda. Includes an 11"x17" (or larger) map, 100 counters. To sell for $7.

68. *Rescue from the Hive.* The Znons, insectile space marauders, have kidnapped a Terrestrial ambassador and his daughter. The Space Marines, charged with rescuing the pair, monitor the movement of the Znon's hive-ship and determine that it will make a hyperspace jump near Canopus. An intercept mission is launched. Marine darter ships bring in small teams of humans from several directions in an attempt to slip by the hive's outer defenses. Each team that survives the outer gauntlet must break-in to the hull and then weave through the strange interior in their rescue attempt. There is one hitch — all Znons (and their prisoners) wear the same battle suits, and there are a variety of Znon sexes on each hive-ship. The queens, defenseless themselves, control the ships; the drones are harmless; workers are a slight threat; but the army Znons are the real menace. The marines do not know whom they are facing until battle occurs.-If they are not careful, they might try the ambassador for else fall into an ambush. *Rescue from the Hive* uses a new "untried unit" system; the Znon units are initially unknown until revealed in battle. 100 counters, an 11"x17" map of the hive ship and surrounding space. A possible *Ares* game. The boxed version would sell for $7.

69. *Return of the Stainless Steel Rat.* Something is wrong on Stanyan VI. First, a life support malfunction costs the lives of eleven crew members. Then an Epsilon Series MK III navigational computer goes faulty, resulting

in the loss of a landing shuttle and 37 passengers. Now, the vast Einstein Class Control Center, which oversees the operation of Stanyan VI's computer network, has gone berserk and trapped the entire crew and over 300 passengers. Three agents have died trying to penetrate the computer's defenses. Only one man can possibly hope to get close enough to the functional elements of Einstein to destroy it without the concurrent loss of the station and hostages. That man is James Bolivar ("Slippery Jim") diGriz, the Stainless Steel Rat. *Return of the Stainless Steel Rat* would be a solitaire role-playing game in which a player takes the part of diGriz and tries to save the hostages. The game would be based on Harry Harrison's Stainless Steel Rat novels and, Mr. Harrison willing, would include a short story describing one possible diGriz solution to the aforementioned situation. An 11"x17" plan of the Stanyan VI space station; 100 counters. A possible candidate for *Ares*, but with availability subject to contract agreement with the author. To sell for $7.

70. *Voyage of the Pandora.* This simulation would be a prequel to the *Wreck of the Pandora* and would recreate events prior to the *Pandora's* disaster. The system would be entirely different, but the characters would remain the same. *Voyage of the Pandora* would be primarily concerned with the activities of the ship and her crew in pursuit of their mission — to seek out and collect alien life forms. Emphasis would be placed upon coping with extreme planetary environments and handling unrestrained specimens in their natural habitat. Also included would be rules for "first contact" with sentient life forms other than man. In addition, the new specimens in *Voyage of the Pandora* would be used in *Wreck of the Pandora* (and vice versa, of course). The game would include an 11"x17" map, 100 counters, and would be compatible with *Wreck of the Pandora*. A possible *Ares* game. To sell for $7.

71. *Once and Future King.* Two game systems in one package, using the same game-map and counters. In the character game, the Knights of the Round Table wander around the kingdom of Camelot in search of the Holy Grail, jousting whenever they chance to meet. Each success improves their ability and renown. The campaign game posits a battle between the kingdoms of Camelot and Cornwall, ruled by the evil King Mark. It's Lancelot vs. Sir Tristan, as they lead their armies into battle. Based on the popular *War of the Ring* game-system, each knight will have a character card giving his various strengths; jousting, sword swinging, leadership, virtue, etc. The 22"x34" map will portray the area of southwest Britain where Camelot is believed to have existed. Will include 400 counters, 56 cards, rules and legendary information. To sell for $18.

72. How many science fiction and fantasy magazines do you regularly buy or receive by subscription? 1 = 1; 2 = 2; 3 = 3; 4 = 4...9 = 9 or more.

73. How many science-fact magazines (*Omni, Science Digest*, etc.) do you regularly buy or receive by subscription? 1 = 1; 2 = 2; 3 = 3; 4 = 4...9 = 9 or more.

Please rate the following games on a 1 to 9 scale, with "1" indicating a particularly strong dislike for a game and "9" an especially favorable opinion. Please rate only those games which you have played (against an opponent or solitaire) at least once in the last twelve months. If you have not played in the last twelve months, please do not rate it (respond "0" in the space). All games listed are SPI published, unless otherwise specified.

74. Mayday (YP)
75. Quazar (EG)
76. Villains and Vigilantes (FGUI)
77. Annihilator/One World (MGC)
78. Divine Right (TSR)
79. Arms Race (DC)
80. Battle of Five Armies (DSR)
81. Bushido (FB)
82. Cerebus (TFG)
83. Dark Nebula (GDW)
84. Gamma World (TSR)
85. Hot Spot (MGC)
86. The Iliad (GDW)
87. IT (DC)
88. Spellmaker (BL)
89. StarFleet Battles (TFG)

90. Starships & Spacemen (FGUI)
91. Stomp! (TC)
92. Warriors of the Dark Star (TSR)
93. The Ythri (MGC)
94. Wizard's Quest (AH)
95-98. No questions.

SECTION B

Section B of Feedback is a continuation of Section A, asking you to rate games on the scale of 1 to 9.

101-103. No questions.
104. Freedom in the Galaxy
105. GEV (MGC)
106. Imperium (GDW)
107. War of the Ring
108. Ogre (MGC)
109. Melee (MGC)
110. Creature that Ate Sheboygan
111. Wizard (MCG)
112. Swords & Sorcery
113. Traveller (GDW)
114. Death Test (MGC)
115. Dungeons & Dragons (TSR)
116. John Carter of Mars
117. Stellar Conquest (MGC)
118. Stargate
119. Battlefleet: Mars
120. Invasion: America
121. War in the Ice
122. Objective: Moscow
123. Starship Troopers (AH)
124. Empire of the Petal Throne (TSR)
125. Vector 3
126. Starweb (FB)
127. Starforce
128. Gondor
129. Sorcerer
130. Titan Strike
131. Ice War (MGC)
132. White Bear & Red Moon (TC)
133. Warp War (MGC)
134. Outreach
135. Black Hole (MGC)
136. Alpha Omega (BL)
137. Nomad Gods (TC)
138. Triplanetary (GDW)
139. WorldKiller
140. Double Star (GDW)
141. Sauron
142. After the Holocaust
143. Rivets (MGC)
144. Olympia (MGC)
145. Sticks and Stones (MGC)
146. Godsfire (MGC)
147. Magic Realm (AH)
148. Star Soldier
149. Dune (AH)
150. Lankhmar (TSR)
151. Colony Delta (FGUI)
152. Cosmic Encounter (EP)
153. Star Lord (FB)
154. Metamorphosis: Alpha (TSR)
155. Elric (TC)
156. Holy War (MGC)
157. Rift Trooper (AW)
158. Formalhaut II (AW)
159. Stalk-1 (C-C)

160. Venerable Destruction (EG)
161. Atlantis (EG)
162. Monsters Monsters (MGC)
163. Dixie
164. War of the Wizards (TSR)
165. Star Probe (TSR)
166. King Arthur's Knights (TC)
167. Bunnies & Burrows (FGUI)
168. War of the Star Slavers (AW)
169. Warlocks and Warriors (FGUI)
170. Asteroid Zero-Four (TFG)
171. Belter (GDW)
172. Bloodtree Rebellion (GDW)
173. Chitin: 1 (MGC)
174. Snapshot (GDW)
175. Starquest (OSG)
176. Invasion of the Air Eaters (MGC)
177. Lords of the Middle Sea (YP)
178. Time War (YP)
179. Beast Lord (YP)
180. Chivalry & Sorcery (FGUI)
181. Demons
182. Deathmaze
183. Lords & Wizards (FGUI)
184. Runequest (TC)
185. Dragon Lords (FGUI)
186. Space Quest (TYR)
187. StarFall (YP)
188. Star Fighter (BL)
189. Starfire (TFG)
190. Strange New Worlds (BL)
191. Tunnels & Trolls (FB)
192. Panzergruppe Guderian
193. Commando
194. China War
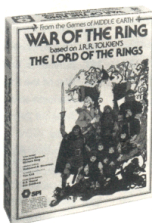**195-198.** No questions.

CONVENTIONS
Up and Coming

NOTE: *Ares* will gladly publish notice of gaming and science fiction/fantasy conventions and related events in this column. There is no charge for this service, but information on the event — including name, place, time, and whom to contact — must be in our hands at least 4 months in advance. Address such information to Michael Moore, c/o *Ares* Magazine, 257 Park Avenue South, New York, N.Y. 10010.

Pandora Counter Section Nr. 1 (100 pieces): Front

Quantity of Sections of this identical type: 1. Total quantity of Sections (all types) in game: 1.

CO Strof	SO Gepidus	MO Kelly	GSO Skraaling	BIO Charybdis	CO Strof Status	SO Gepidus Status	MO Kelly Status	GSO Skraaling Status	BIO Charybdis Status
3 0 1 3 Mother 2 3 0	3 2 0 Mouse 3 3 1	1 3 3 Grendel 0 2 1	3 3 3 Golem 3 2 1	1 2 3 Typhoo 3 3 2	1 3 1 0 Shazam 2 2 3	3 0 0 1 Mary 2 1 3	0 1 2 Blind Pig 3 0 0	1 1 0 Fletcher 3 3 1	0 0 3 Scrod 1 0 0

Power Level	Envio Level	Comp Level	Con Level	Nav Level	CompPod	ConPod	EnvioPod	NavPod	PowerPod
				Ship Status	Restraint Pod 1	Restraint Pod 2	Retraint Pod 3	CrewPod	Survey Pod

Exlok	Scapelok	Landlok	Specanal Pod	MaintPod	BotPod	WepPod	MedPod	StagePod	StasisPod
				0 0 0 5	0 0 0 5	0 0 0 5	0 0 0 7	0 0 0 5	0 0 0 3
DconPod	Ambot	Erobot	EVAbot	Imrebot	Reconbot	Specibot	Ubot	Enviorig	Armorig
0 0 0 2	0 9 9 Ambot 9 0 0	0 0 Erobot 9 0 0	4 7 EVAbot 9 0 6	2 5 Imrebot 9 2 7	3s 7 Reconbot 9 3 0	5s 9 Specibot 9 3 0	1 5 Ubot 9 4 5	0 3 Enviorig 4 6 0	2 7 Armorig 9 8 2

CompComm	DconComm	Scanner	BotKit	CompKit	IKit				
0 0 CompComm 2 0	0 0 DconComm 2 0	0 0 Scanner 2 0	0 0 BotKit 4 6	0 0 CompKit 3 4	0 0 IKit 3 3				
MedKit	WepKit	Turbolaser	Stungun	Stunrod	Stunbomb				
0 0 MedKit 3 5	0 0 WepKit 3 7	9 0 Turbolaser 3 2	2s 0 Stungun 1 0	3s 0 Stunrod 2 0	4s 0 Stunbomb 1 0				

BIO Charybdis	GSO Skraaling	MO Kelly	SO Gepidus	CO Strof	BIO Charybdis	GSO Skraaling	MO Kelly	SO Gepidus	CO Strof
Down	Down	Down	Down	Down	Stunned	Stunned	Stunned	Stunned	Stunned

Scrod	Fletcher	Blind Pig	Mary	Shazam	Typhoo	Golem	Grendel	Mouse	Mother
Stunned	Stunned	Stunned	Stunned	Stunned	Stunned	Stunned	Stunned	Stunned	Stunned

					Nav System Down	Con System Down	Comp System Down	Envio System Down	Power System Down
					Ship's Systems Down				

Rig	Rig	Ubot Berserk	Specibot Berserk	Reconbot Berserk	Imrebot Berserk	EVAbot Berserk	Erobot Berserk	Ambot Berserk	

			Kit	Kit	Kit	Com	Com	Com
			Wpn	Wpn	Wpn	Wpn	Kit	Kit

THE WRECK OF THE B.S.M. PANDORA

All Systems Down	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	All Systems Go

[11.8] Equipment Status Display

Turbolaser	Stungun	Stunrod	Stunbomb	CompComm	DconComm	Scanner	MedKit	BotKit	WepKit	CompKit	IKit	Enviorig	Armorig

Specibot	Reconbot	Ambot	Ubot	EVAbot	Imrebot	Erobot	MaintPod	BotPod	WepPod	MedPod	StagePod	StasisPod	DconPod

[4.5] Attribute Generation Table

	Die Roll								
	1-3	4	5	6	7	8	9	10	11-12
Attribute Level	1	2	3	4	5	6	7	8	9
Equipment Status	R	R	R	Y	Y	Y	G	G	G

When modifying the dice roll, a dice roll of less then "1" is treated as "1" and a dice roll of greater than "12" is treated as "12". R = Red, Y = Yellow, G = Green.
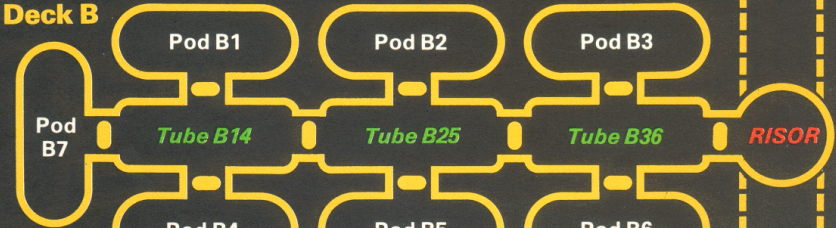
Deck A

Pod A1 — Pod A2 — Pod A3
Pod A7
Tube A14 — Tube A25 — Tube A36 — RISOR
Pod A4 — Pod A5 — Pod A6

Internal Lock

Deck B

Pod B1 — Pod B2 — Pod B3
Pod B7
Tube B14 — Tube B25 — Tube B36 — RISOR
Pod B4 — Pod B5 — Pod B6

Deck C

Pod C1 — Pod C2 — Pod C3
Pod C7
Tube C14 — Tube C25 — Tube C36 — RISOR
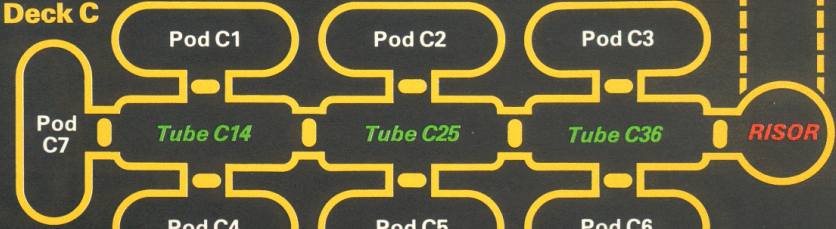Pod C4 — Pod C5 — Pod C6

Sequence of Play

PLAYER-TURN
  Step One: Movement Phase
  Step Two: Reaction Phase
  Step Three: Acquisition Phase
  Step Four: Equipment Phase
STUN REMOVAL PHASE
COLD SHUTDOWN PHASE

[4.6] Crew Status Display

Crew Down	1	2	3	4	5	6	7	8	9

[4.7] Ship Status Display

Ship Down	1	2	3	4	5	6	7	8	9

[14.3] Restart Table

	System Level					
Restart	4	5	6	7	8	9
Die Roll ▶	1	1,2	1...3	1...4	1...5	1...6

[9.9] Impair Table

	Impair Rating							
Die	0	+1	+2	+3	+4	+5	+6	+7
1	–	–	–	1	1	1	1	2
2	–	–	1	1	1	1	2	2
3	–	1	1	1	1	2	2	2
4	–	1	1	1	2	2	2	3
5	1	1	1	2	2	2	3	3
6	1	1	2	2	2	3	3	3

1, 2, 3 = The number of levels which the object of an impair attempt loses as a result of the attempt. – = No Effect. **Ratings higher than + 7 are treated as + 7.**

[11.9] Repair Table

	Repair Strength								
Die	1	2	3	4	5	6	7	8	9
1	D	D	–	–	–	–	1	1	1
2	D	–	–	–	–	1	1	1	1
3	–	–	–	1	1	1	1	2	2
4	–	1	1	1	1	2	2	2	2
5	–	1	1	1	2	2	2	3	3
6	1	1	1	2	2	2	3	3	3

– = No Effect: The repair attempt fails without further effect. **D** = Down System: The repair attempt fails with collateral damage of one Readiness Level (three Functioning Levels for Major Systems). **1, 2, 3** = Repair Successful: The number listed is the number of Readiness Levels or Functioning Levels the unit or system is raised. This number is multiplied by 2 when repairing Major Systems. **Strengths higher than 9 are treated as 9.**

[8.6] Reaction Table

Aggression Rating	Reaction	Intelligence Rating								
		1	2	3	4	5	6	7	8	9
1	Flee	10	9	(8)	(7)	(6)	(5)	(4)	(3)	(2)
	Move	11	11	11	11	11	11	11	10	9
	Kill	12	12	12	12	12	12	12	12	12
2	Flee	9	8	8	(7)	(6)	(5)	(4)	(3)	(2)
	Move	10	10	10	10	9	9	9	8	8
	Kill	12	12	12	12	12	11	11	11	11
3	Flee	8	7	7	6	(6)	(5)	(4)	(3)	(2)
	Move	9	9	9	8	8	8	7	7	7
	Kill	12	12	12	12	11	11	11	10	10
4	Flee	7	7	6	6	5	(5)	(4)	(3)	(2)
	Move	8	8	8	7	7	7	6	6	6
	Kill	12	11	11	11	11	10	10	9	9
5	Flee	6	6	5	5	4	4	(3)	(3)	(2)
	Move	(7)	7	7	7	6	6	6	5	5
	Kill	(11)	11	11	10	10	10	9	9	8
6	Flee	5	5	5	4	4	4	3	(3)	(2)
	Move	(6)	(6)	6	6	5	5	5	4	4
	Kill	(11)	(11)	10	10	10	9	9	8	7
7	Flee	4	4	4	4	3	3	3	3	(2)
	Move	(5)	(5)	(5)	5	4	4	4	4	4
	Kill	(11)	(10)	(10)	9	9	8	8	7	6
8	Flee	3	3	3	2	2	2	2	–	–
	Move	(4)	(4)	(4)	(3)	3	3	2	2	2
	Kill	(10)	(10)	(9)	(9)	8	8	7	6	5
9	Flee	2	–	–	–	–	–	–	–	–
	Move	(3)	(3)	(3)	(3)	(3)	2	2	2	2
	Kill	(10)	(9)	(9)	(8)	(8)	7	5	5	4