## THE PLURALITY OF WORLDS by BRIAN STABLEFORD

Brian Stableford's recent novels include *The Wayward Muse* (Black Coat Press) and *Streaking* (PS Publishing). Black Coat Press has also published his translation of Paul Feval's *Salem Street*, one of the pioneering series of crime novels after which the press is named. His four hundred and sixty thousand-word reference book, *Science Fact and Fiction: An Encyclopedia*, will be out from Routledge in September. In his sumptuous cover story, he bids us bon voyage on our journey through the ether and into the age-old debate over...

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The ethership stood on the launch platform at Greenwich, ready to blast off. The cabin set atop the massive rocket appeared tiny when viewed from the ground; the ladder by which the intrepid voyagers would reach it seemed exceedingly fragile.

Thomas Digges, the captain of the vessel's five-man crew, stood on the street at the edge of the platform in company with its principal architect, John Dee, and the Archbishop of Canterbury, John Foxe. Thomas was not looking up but looking down at the cobblestones. They had been scoured and swept in the early hours; he had never seen a city thoroughfare less likely to offend his boots.

"Your father would be immensely proud, had he lived to see this day," Dee said to the younger man. "This—more than the telescope, the laws of planetary motion, or even the theory of affinity—is the ultimate fruition of his work."

"He was but one half of a great alliance," Thomas said, meeting his mentor's eyes. "Had you not introduced him to Roger Bacon's works, he might not have begun to toy with the telescope or applied himself to the munitions of war that laid the groundwork for the ethership. Your mathematical expertise was every bit as important as his in proving and improving the Copernican system, and without your fluctual algebra he would never have been able to develop the theory of affinity."

"You should not forget the inspiration of the Almighty, my son," Foxe put in, "nor the abundant financial support provided by our glorious queen."

"No, indeed," Thomas agreed, willingly. The queen had certainly been generous with her own funds as well as the nation's, and her generosity had set an example that many of her courtiers had been anxious to emulate, competing among themselves to sponsor the New Learning. "Will the queen be here to witness the launch of her namesake?"

"Her carriage is en route as we speak," Foxe assured him. "She would not miss it for the world. It means a great deal to her that England should be the first nation to send ambassadors to the moon."

"We must beware of expecting too much of the expedition," Dee observed, gravely. "The distance the ship will contrive to travel is entirely dependent on the conditions the crew will discover once they are beyond the upper limit of the air. We do not know whether ether is respirable—and if it is not, the crew will be forced to make a swift return to Earth. Preparations for a journey to the moon would then acquire a new dimension of complexity, more challenging in its way than the design of the ethership's fuel-system."

"That is a matter of God's providence," Foxe judged. "If the ether is breathable, then humankind clearly has God's permission to travel between the worlds—but if it is not, the heavens are evidently out of bounds."

Thomas frowned slightly, but said nothing. Foxe was a powerful influence in the court—powerful enough to have added a man of his own, John Field, to the "crew" of the *Queen Jane*. In reality, Thomas and Francis Drake were the only ones required—or able—to man the vessel's controls. Edward de Vere and Walter Raleigh had petitioned the queen to be added to the company in the hope of impressing her with their boldness in quest of adventure. De Vere had a reputation as a playwright and Raleigh as a poet, but neither had any significant skill in mathematics, which put them at a definite disadvantage in a court where the greater part of everyday conversation was devoted to the progress of science. Foxe's man, John Field, was no courtier—he was fervent enough in his Puritanism to make no secret of his contempt for the affectations of court life—but he was a man of refined conscience who would be able to report to the Archbishop on the potential theological consequences of any discoveries the expeditionaries might make.

Thomas would rather not have had Field aboard the ethership—but he would rather not have had de Vere and Raleigh aboard either, although Raleigh was always an amiable companion. Indeed, he would have been glad to go alone if he had not needed another pair of hands. Drake had an interest in winning the queen's favor too—and had the advantage of maturity and previous accomplishment over his upstart competitors, being only three years younger than the queen—but he was a good calculator and a cool man under pressure.

"Speak of the Devil!" Thomas murmured, his voice far too slight to carry to the Archbishop's ever-vigilant ear. Drake was emerging from the Black Bear Inn, his arms linked with those of de Vere and Raleigh; the three of them as merry as men could be who had been forbidden ale for breakfast. A fourth man, who was walking three steps behind them, was as disapproving as they were cheerful; John Field, Puritan firebrand, had a fine talent for disapproval and its display.

The three courtiers were finely clad and their beards were neatly trimmed. Drake was the tallest as well as the oldest, but de Vere—ten years Drake's junior—was the handsomest of the three. Raleigh, two years younger than de Vere at twenty-five, was not conventionally fair of face, but he had a certain dash in his attitude that had already made an impression on the queen, if Cripplegate rumor

could be trusted. In reality, de Vere was probably the more reckless of the two—he was still suffering the bad reputation of having once had an unarmed man "commit suicide by running on to his sword"—but the queen was said to prefer a man who maintained a flamboyant attitude, while behaving politely, to one whose attitude was polite while his behavior resembled a loose cannon.

"The queen will be here in a matter of minutes!" Drake announced. "I saw her carriage from the attic with the aid of one of Tom's telescopes, advancing from Rotherhithe at the gallop. Perfect timing, as always."

Digges bowed, as he murmured "Sir Francis, milord, Sir Walter, Mr. Field." Although he was the captain of the ethership, three of his crewmen outranked him by birth—de Vere most extravagantly of all, having inherited the title of Earl of Oxford while still a boy. It was the three aristocrats who returned his bow most graciously, however; Field seemed to think such polite gestures akin to church vestments, and was a dedicated minimalist in their expression.

"Her majesty is doubtless anxious to see Master Dee again," de Vere said. "While he has been busy here, the Tower has been deprived of its fireworks and its horoscopes alike."

Dee bowed in acknowledgement, although the remark had not been intended as a compliment. Field took up a position beside the Archbishop, making a row of three Johns in opposition to the three gallants. Thomas felt uneasily suspended between the two ranks. "If her majesty is missing Master Dee," he dared to say, "it is more likely that she feels the need of her lessons in mathematics." In 1568, when Dee had presented the queen with a copy of his *Propadeumata Aphorisitica*, the queen had gladly accepted his offer to give her lessons in mathematics to help her understand it. She had been a champion of natural philosophy since she had come to the throne in 1553—even more so since she had broken free of Northumberland machinations following her husband's assassination by Elizabethans in 1558—but her generosity had increased in proportion to her comprehension.

Foxe, who seemed even less appreciative of Thomas's remark than de Vere, might well have made some remark about Bible studies, but he was distracted by a buzz in the crowd that had gathered along the quay. They too had caught sight of the queen's coach—or its escort, at least.

"Batman's here, I see," Dee observed. Stephen Batman, chaplain to the Master of Corpus Christi, was Dee's greatest rival as a book-collector, although his interest in the manuscripts he accumulated was more antiquarian than utilitarian.

"Who's that boy beside him?" Thomas asked.

"That's one of Nick Bacon's sons," Drake answered. "Young Francis—a prodigy, they say, likely to eclipse Master Dee himself, in time."

"Not if the *Queen Jane* makes a successful ascent into the ether," Thomas opined. "Whether it is able to go on to the moon or not, that achievement will not be eclipsed for a hundred years ... and Master Dee is its architect." He added the last remark lest Drake—or anyone else—thought that he was blowing his own trumpet.

"Here she comes!" Raleigh crowed, immediately joining in with the tumultuous cheering. Everyone else did likewise, in slightly less Stentorian tones—even John Field.

Queen Jane's carriage, pulled by four black horses, rattled south-eastward along the Thames shore behind the vanguard of a company of cavalry, whose second cohort was bringing up the rear. Their scarlet coats were ablaze in the morning sun, while their polished sabers reflected random rays of dazzling light.

Foxe and Dee hurried forward to greet the monarch, while de Vere checked his doublet and hose and Raleigh reached reflexively for the ornamental hilt of the sword that he would normally have been wearing. Like his breakfast ale, it had been forbidden.

The queen was only a few months short of her fortieth birthday, but she looked radiant as well as regal. Thomas blushed at the sight of her, as he always did, and stumbled as Dee hurried him forward in order to present him to her.

"Your majesty," the Master said. "Leonard Digges's son shall make England proud this day."

Queen Jane extended her hand for Thomas to kiss. "The captain will make us very proud indeed," she said, "for there is nothing England admires more than courage—and the navigation of the heavens will require courage unparalleled."

Thomas stammered his thanks. The cavalry had formed a protective cordon around the party, although it was more a show of discipline than anxiety; the Elizabethans were a spent force nowadays, and no agent of Spain could have gotten within five miles of Greenwich on a day like this. Drake, de Vere, and Raleigh took the opportunity to form a cordon of their own, vying for the queen's attention with effusive flatteries. For once, Thomas felt a pang of sympathy for the awkward and hesitant Field.

"Time is pressing, lads," he said, when they had played their parts sufficiently. "We'd best be mounting the ladder." Without any more fuss than that he set off for the ethership, knowing that the others would fall into line behind him. He left it to them to wave to the crowd, while he contented himself with a last glance in the direction of John Dee, the greatest man of science the world had ever produced—or, at least, the man whose reputation to that effect was about to be subjected to the ultimate proof.

The first and more unexpected agony was the sound of the rocket's ignition. Thomas had known that it would be louder than any sound he had experienced before, and had suspected that its pressure might be oppressive, but he had not anticipated the seeming fury with which it pounded his eardrums, drowning out all other sensation and thought.

Then affinity took hold of him—or, more accurately, the rising ethership slammed into his back, while the affinity that bound him to the Earth fought against the force of the rocket's explosive levitation, trying with all its might to hold him down. He had known that this sensation, too, would be bad, having experienced similar phenomena during the test launches. Those vessels had only ascended into the atmosphere, though, no higher than the summit of a mountain. His body had suffered no lingering ill-effects at all—but this pressure was twice as powerful, and he felt that it was crushing him.

Thomas heard a gasp as Field tried and failed to scream; the clergyman was the only crew member who had not taken any part in the testing program. The scientist could imagine the thought that must be possessing the Puritan's brain: if God had made the affinity between man and Earth so strong, how could he possibly intend that men should ever attempt to break the bond? But the pressure passed, to be gradually replaced by a very different sensation: that of weightlessness. Thomas had a fine mathematical brain—near equal to his father's, Dee said—and he had long applied his methods to the artillerist's art of ballistics; he constructed a picture in his mind of the trajectory of the rocket as it curved away from the ground it had left behind, aiming for a circular orbit about its world.

Only a handful of men, as yet, had circumnavigated the globe in ships, and none of them was an Englishman—although Drake had sworn that if he had not been invited to take his place on the *Queen Jane* he would have made the attempt in the *Pelican*. Now, five Englishmen were about to circle the world not once but several times, in a matter of hours rather than months.

"Make sure your tethers are secure, lads," he said—for Field's benefit rather than that of his experienced crewmen. "Cleave to your couches if you can, and take care not to release anything into the cabin."

"Aye aye, sir," said de Vere, with a slight hint of mockery—but Thomas ignored him.

"Ready, Sir Francis?" he said.

"Aye, Tom," was Drake's entirely sincere reply. Drake had to supervise the course of the ethership while Thomas deployed the sampling bottles mounted to

collect the pure ether that would soon be surrounding the ship, using mechanical arms to maneuver them into double-doored lockers. From there, if all went well, they could be brought inside without breaching the integrity of the hull. Thomas worked unhurriedly, but not without urgency; Drake was equally concentrated on his work.

Raleigh was closest to a porthole; he was looking out with avid interest, watching the curve of the globe's horizon.

"I can't see England at all, curse the clouds!" he said, "but I can see a landmass that must be Africa, and more ocean than I ever hoped to see in a lifetime. The mystery of the Austral continent will soon be solved—or perhaps we'll see Dante's purgatory, towering above the ocean hemisphere in solitary splendor."

"Papist nonsense," muttered Field, who sounded as if he had spent a stint in Purgatory himself.

"Thank the Lord we have not collided with one of the Romanists' crystal spheres," Raleigh said, mischievously. "That would have been cause enough for protest."

"Nor can I see Plato's spindle of necessity," de Vere put in, craning his neck to see through another porthole. "Does anyone hear the sirens intoning the music of the spheres?"

"We're not as high as all that," Thomas said, without breaking his concentration. "The planets are a great deal further away than the moon, which is still a long way off. The first of the Classic philosophers' questions to be settled is the nature of space. If the void theorists are right, ours will have to be a brief excursion."

"Now there," observed de Vere, "Puritans and Papists are in rare accord. There's not an atomist in either orthodox company—they're plenarists all, save for the occasional rogue. Remind me, please, Reverend Field: is it still orthodox to believe that the ether marking the extent of space is the breath of God?" Whatever his faults, de Vere had been well-tutored in Classics by Arthur Golding; he knew that the notion of gods breathing ether as humans breathed air was a pagan idea, of which Christian theology was bound to disapprove in spite of the Vatican's approval of selected Aristotelian ideas.

"It is not a question," Field retorted, icily, "on which the Good Book has any pronouncement to make." His tone did not seek to conceal his awareness that de Vere was suspected of Catholic sympathies, nor the fact that he was Foxe's eyes and ears, alert for any advantageous whiff of heresy.

Even so, Raleigh—whom similar suspicion deemed to have atheistic tendencies—felt sufficiently liberated to say: "Was it God's negligence, do you suppose, or that of his amanuensis Moses, that left the point unclarified? It would be

a great convenience to us, would it not, if the statutes of Leviticus had pronounced upon the permissibility or abomination of ether-breathing?"

"Hold your blasphemous tongue, sir!" the clergyman exclaimed. "God revealed to man what man had need to know."

Thomas, who was busy capturing a bottle of ether within the transfer-hold, found time to think that God had been a trifle vague when it came to the necessities of mathematics, navigation, and engineering, let alone the still-impregnable mysteries of physiology. "Got it!" he said, as his manipulative endeavors bore fruit. "The Master's contraption worked beautifully."

"Did we decide who was to be first to inhale from the bottle?" de Vere asked, with a mischievous glance in Field's direction. "Should we draw lots, or it is a clergyman's prerogative to breathe the intangible sustenance of God?"

"If a lungful of void were likely to strike a man dead on the spot," Raleigh said, "it might be best to give the task to a man of faith, under God's dutiful protection."

"Easy, lads," Thomas said, as his nervous fingers groped at the interior catch of the hold. "It's not faith in God that's required here, but faith in the plenum, and the life-supporting virtue of the ether. Even if I lacked such faith, though, I doubt that I'd be struck dead by a single draught of nothingness."

"You might be in more danger of drunkenness," said Drake. "If ether is vaporous nectar, as some say, it might play tricks with your senses."

"Aye," Thomas agreed, extracting the sealed bottle from its cradle, "so it might. But as my father used to say: let's try it and see." He closed his mouth and set the bottle to his nose, released the stopper and breathed deep. He knew, even before his lungs responded to the intake, that the void theorists were incorrect; had the space beyond the atmosphere been empty, and the Earth's air aggregated about it by affinity alone, he would not even have been able to remove the stopper; pressure would have held it firmly in place. The plenarists were correct, it seemed; there was no void, and space was full—but full of what?

Had God really intended humankind to be forever Earthbound, ether might have been a poison, and air a protective insulation against it—but Thomas found that it was not. Nor was it a deliriant, as Drake had hypothesized. He was mildly disappointed to discover that breathing ether was very much like breathing air. "It has no discernible odor," he declared, pensively, "and it's not cold. That's odd, I think, for mountain air is as cold as it is thin. This is a little thin, I suppose, but so far as I can tell, it shares the virtues of the...."

He would have said "air we usually breathe" had he not been seized by a

sudden fit of dizziness. Recumbent on his couch, he was in no danger of fainting, but he could not speak while his senses were reeling.

"What is it, Tom?" Drake asked, anxiously. He was not the only man present who was Thomas's senior, but Field was only a year older and Drake was a full five; Drake was the only one with the remotest pretension to serve as a father figure.

"Nothing to do with the ether," Thomas judged, perhaps a trifle too hastily. "The effect of moving while weightless, I think. A momentary vertigo."

"There really is an Austral continent," Raleigh informed them. "Or a sizeable island, at least. Can we claim it in the name of Queen Jane from up here, do you suppose, or must we direct a privateer to plant a banner on its shore when we land?" His voice faltered very slightly as he pronounced the last word; they all knew that landing their tiny craft would be every bit as difficult and dangerous as freeing it from the Earth's affinity.

"Never mind the Austral continent," said de Vere. "Can we—do we—press on to the moon?"

"There's more than the breathability of the ether to be taken into account on that score, Ned," Raleigh told him, bidding for the intellectual high ground in their private conflict. "There's the fuel, and the manuverability of the ship to test. We've time in hand. Will they be able to see us in England with the aid of one of your father's telescopes, Tom, when we've overflown the Americas and crossed the Atlantic?"

"We won't pass over England on the second round trip," Thomas told him. "They might see us in Rome, though. That'll make the pope bite his tongue, won't it, Mr. Field?"

"The pope refuses to look through a telescope," Field replied, less stiffly than Thomas had expected, "for fear of what he might see."

"There's nothing in the moons of Jupiter to frighten a pious man," Raleigh observed, drily, "and infinite space is no more visible than finite space."

"The pope has no need to deny the infinity of space," de Vere put in, striking back at Raleigh's presumption of superior knowledgeability. "It's not a Copernican doctrine. Nicholas of Cusa proposed it, on the grounds that God's creative power could not be limited. He argued for the plurality of worlds on exactly the same basis."

"You're a true scholar, Ned," Drake said, amiably. "Where do you stand on the dispute as to whether the inhabitants of the other worlds must be identical to ourselves, being made in the same divine image, or whether they must be infinitely various in form and nature, so as not to limit the creativity of the divine imagination?"

"Some might be giants and some tiny," de Vere observed, "in proportion to the sizes of their worlds."

Raleigh laughed. "But in which proportion, Ned?" he asked. "Will the Selenites be dwarfs because their world in smaller than ours, or giants, because the force of affinity does not stunt their growth?"

"The fuel stores are still in place and the controls check out," Drake reported. "No leaks at all—we have fuel enough to take us to the moon and back, and the means to control its deployment."

"And the attitude of the ship can be adjusted with appropriate precision," Thomas agreed. "Who'd like to sniff the second bottle of ether when I've brought it through?"

"I will," Raleigh said. "No offense, Tom, but you breathe like a mathematician. I've a better nose than you; if ether has a bouquet, however subtle, I'll feel it on my palate."

"Fine," said Thomas, clicking the catch on the second hold—but as soon as he took hold of the bottle, he realized that Master Dee's "contraption" had not worked as well on the second occasion as it had on the first. The outer hatch of the lock had not closed; there was now a gap in the hull the size of a man's forearm.

"Don't panic, lads," he was quick to say. "If there were a void outside, we'd be in trouble, but so long as the pressure of the ether's not so very different from the pressure of the air in the cabin, there won't be much exchange." He fumbled as he tried to secure the inner hatch, however. The ether that Thomas had breathed had been clear, empty of any other apparent substance, but the ether that streamed in through the temporary opening in the hull was cloudy, as if woodsmoke were adrift in it. This was no mere smoke or mist, however, for it was formed into an approximate shape—Thomas could not decide whether it was more like a moth or an artist's conception of an angel—and it moved as if with purpose, descending upon Thomas's face like a veil.

"Look out, Tom!" Raleigh cried—but the warning was futile.

Thomas tried to hold his breath, but he was unprepared. Fear made him inhale sharply—and the invader took the opportunity to wriggle up his nose like an eel burrowing into soft sand. Thomas felt its ghostly presence pass, slick but not cold. He expected it to move down his trachea, or perhaps his esophagus, but instead it seemed to move into the space of his skull, diffusing into the nooks and crannies of his brain.

This time, the *Queen Jane*'s captain did sense a sweet and cloying odor—and when the vertigo took hold of him again, it did not relent. Supine as he was on his couch, he lost consciousness almost immediately.

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As Thomas awoke, the dream in which he had been languishing fled from consciousness, leaving him cast way in a sea of uncertainty. He did not know where he was, and could not remember where he ought to be. He opened his eyes convulsively, and looked wildly about, in spite of the light that flooded his eyes and dazzled him. He knew that something was wrong.

He remembered, belatedly, that he ought to be weightless, tethered to his couch in the cabin of the *Queen Jane*—but he was not. Nor, however, was he back on Earth. He was in the grip of affinity, but he felt lighter by far than he ever had on Earth.

A rough hand gripped his shoulder and steadied him. "Tom!" said the voice of Sir Francis Drake. "Thank God! I feared that you'd never wake up. Are you all right?"

"Aye," said Tom, thickly, rubbing his eyes to clear a certain stickiness from his eyelids. "What did I swallow?"

"As to that, I don't know," Drake told him. "Nor do I know whether it's still inside you—but I've seen creatures stranger by far than that one since you fell unconscious, on my honor. Field missed the show too, having fainted in alarm, but Walt and Ned were awake throughout, so I knew that I wasn't dreaming."

"Where are they?" Thomas asked—meaning Raleigh and de Vere, although Field was not there either.

"I don't know," Drake said. "Probably in a similar prison. Our captors might have recognized the two of us as the senior crewmen—or as the oldest of our company—but I doubt it." Thomas observed that Drake's face was scratched and that many of the scratches were somewhat inflamed.

The cell in which Thomas and Drake were apparently imprisoned was reasonably capacious, but all its alcoves were small and set above head-height, making it difficult to make out what they contained. Thomas looked down instead, to see that the "bed" on which he lay was a protuberance in the floor, not a wooden platform on legs. The floor, like the walls and ceiling, seemed to be composed of an organic substance akin to wood or tortoiseshell, but it seemed clean enough—much cleaner than the vast majority of England's household floors. The floor was grey, but the colors and textures of the walls were very various, and the radiance that lit the space came from silvery ribbons swirling across the ceiling rather than any kind

of flame. The doorway was oval in shape; there was no obvious catch securing the door, which might easily have been mistaken for a stopper in the neck of a jar.

"What stranger creatures have you seen?" Thomas asked, belatedly.

"Lunar moths with man-sized bodies and vast wings," Drake said, tersely. "Grasshoppers walking on their hind legs, and ants too, somewhat taller than a man. And slugs the size of the elephants in the Tower menagerie, with castles of oystershell. I thought them brutally violent at first, for they're very free with the attentions of their various antennae, limbs and slimy palps, but I don't think they meant to injure us." Thomas reached up to touch his own face, which was tender and itchy. His hands were no better, and the swelling made it difficult to flex his fingers.

"Are we on the moon, then?" Thomas asked, in frank bewilderment.

"In the moon," Drake corrected him. "They flew us here, ethership and all, by the power of their multifarious wings, wrapped in a web of what I'd be tempted to call spidersilk were it not that spiders are one of the few creepy-crawlies I've not seen inflated to magnanimous dimensions hereabouts."

"I've seen signs of life and movement while studying the moon in my father's best peeping-glass," Thomas said, in a low voice, "but I was never entirely sure that they were not a trick of the lens or the mind's eye."

"Master Dee's hatches are a poor design," Drake opined, "by comparison with the craters that serve as doorways to the moon—but the giants are not as large as all that. You couldn't see them with a spy-glass any more than we could see elephants strolling in the African savannah were we to turn a telescope on the Earth from the lunar surface."

"There were ants, you say?"

"Things somewhat reminiscent of ants—not to mention moths, bugs, beetles, and a hundred more types for which I cannot improvise names, all living in a single tempestuous throng. They collaborated in our capture, and..."

He broke off as the door opened. It did not swing on a hinge; the aperture dilated.

Thomas understood immediately what point Drake was trying to make. The four individuals who came through the door were all insectile, but they were analogues of very different Earthly species. They all walked upright on their hindmost legs, and their heads were equally bizarre, but their bodies were very different in color, texture, and equipment. Two were winged, one like a butterfly and one like a dragonfly. Two were brightly colored, one striped like a wasp and the

other spotted like a ladybird. Two were stout, two slender. Two were clutching objects in the "hands" attached to their intermediary limbs. Two were carrying implements of some kind in their forelimbs. All of them, however, hurried forward with no regard whatsoever for their captives' personal space, and began *touching* them, with all manner of appendages.

Thomas fell back upon the bed, overcome by horror. He wanted to scream, but dared not open his mouth lest something even nastier than the ether-creature slip inside him. He closed his eyes, praying for the molestation to stop.

"Be still," said a voice, pronouncing the words inside his head like one of his own vocalized thoughts. "Be patient. If you will relax, and let me use your limbs, I can communicate with at least one of them—I can explain the irritation in our flesh, and demand an antidote."

Thomas inferred at first that one of the monstrous insects must be projecting the words into his head by some mysterious process of thought-transference—but then he remembered that there was already an alien presence within his skull: an etheric ghost that appeared to have dissolved its fragile substance in the flesh of his brain.

"What are you?" he demanded silently. He had made no conscious effort to relax, as he had been asked to, but he did not resist when he felt his hands moving of their own accord.

The insectile monsters seemed more startled by this contact than he had been by theirs. They withdrew their various feelers, and waited while his fingers danced upon the head of one of their number.

Thomas had to collaborate with his intimate invader, rising unsteadily to his feet in order to continue the tactile conversation more effectively. It was an authentic conversation now—the insect addressed by his mysterious passenger's gestures was making its reply, in terms of rapid strokes of its antennae—but Thomas felt the irritation and inflammation in his flesh die down.

"I am explaining your origin," his invader said. "Your nature too, although that is more difficult. I can understand why you think of me as an invader, but I mean you no harm any more than the members of the True Civilization do. It might help us both if you were to try to think of me as a guest."

"What's happening, Tom?" Drake asked. "What on Earth are you doing?"

"We're not on Earth," Tom retorted, abandoning the internal dialogue to speak aloud, "and it isn't me who's doing what I'm doing. It's the ether-creature that wormed its way into me when the ship leaked. Somehow it knows how to communicate with this creature. Perhaps it has traveled extensively in the minds of

other creatures."

"Good guess, mine host," said the creature within him, silently. "You're an exceptional creature, Thomas Digges, to have such trust in your own sanity. It often requires months or years to establish a rapport—but yours is a dreaming species, I suppose. That makes a difference—few species have that particular gift, or curse."

Drake had fallen silent, direly puzzled. The insects, however, were frenetically busy in communication among themselves. Touch was only one of the senses they employed; they could not talk as humans talked but they clicked and chittered, warbled and hummed. They spoke with their limbs and their wings, and various other kinds of apparatus that Thomas could not discern.

"I think that I have made the situation clear," Thomas's internal informant said. "I have asked to be taken to one of the queens' chambers, since this world has no fleshcore, where we might converse with philosophers closer to the heart of the True Civilization. They will understand your nature, having mechanical analogues of your kind, even if they have not been studying you carefully from afar."

"I have no idea what you are trying to tell me," Thomas replied, silently. "All this is meaningless to me."

"Be patient," the silent voice said. "I will try to explain when I have the opportunity."

"If you and I are made in God's image, Tom," Drake said, softly. "What manner of creator made creatures like these?"

It was not like Drake to speculate in such a fashion, but Thomas could understand his confusion very well. Preoccupied with his internal dialogue, however, and disturbed by the incessant actions of his unbidden hands, he did not reply.

Drake did not seem to be offended by his rudeness. "Perhaps de Vere was right," the crewman continued, "but if these are merely insects like those of Earth, what giants the men of the moon must be!"

Thomas knew that there was nothing mere about *these* insects. They had been investigating him with manifest intelligence—and still were, aided now by the voice of his invader ... his guest. Like humans, they were sapient; like humans, they were curious. The ether-creature called theirs the True Civilization—and why should it not, given that they could fly through the ether between the worlds, to capture stray etherships and interrogate their crews?

When the insects crowding around his bed began to deploy the bulkier objects they were carrying he flinched and shied away, but they still did not appear to mean him any harm. He could not tell what was happening when the objects were

pointed in his direction, but none of the monsters was touching him any longer, directly or indirectly. His own hands had been withdrawn from the face they had been fondling so strangely.

Thomas found time to say aloud: "All's well, Francis. I don't understand what's happening yet, but they don't mean to do us any injury."

Drake was touching his face and inspecting the backs of his hands. "That confounded itching's stopped," he observed. "Have they administered some antidote?"

"Yes," Thomas told him. "They did not realize that we had been stung. The ether-creature seems to know a great deal more about what is happening here, and what is relevant to our welfare, than we do. If it has not visited the surface of the Earth, it must know others of its kind that have.

Drake actually struck a pose, then, and bowed gracefully to the four attentive monsters. "On behalf of Queen Jane of England," he said, "I greet you, noble sirs. Shall we be friends, then? You don't have the look of Spaniards about you, and God forbid that you might be Elizabethans ... or the spirits of the dead, come to that. Was it Plutarch, Thomas, who first declared the moon to be a world akin to the Earth, where the souls of the dead reside?"

"Plutarch it was," Thomas confirmed, "but I don't think his soul is here before us, gathering material for more *Lives*."

"Nor I," Drake agreed. "Can you believe that Raleigh and de Vere could be as brave as we are being, under similar inspection? Not that it matters—by the time they tell the tale to the queen, they'll have fought and vanquished whole Selenite armies, if Field can't keep them honest—and we'll never convince them that we had the bravado to act as we are while subject to such scrutiny. Please assure me that they're not merely deciding the best way to cook and season us."

The ether-creature seemed to know that Drake was joking, and did not trouble to reassure Thomas against this ominous possibility. Nor, however, did it forewarn Thomas that he was about to be seized in the upper arms of one of the unburdened creatures, and very thoroughly palpated, although it did say "Patience, Thomas!" once the assault began. Thomas felt his hands making some sort of reply, although he had no idea what it was—but he had a strange impression, as the creature withdrew again, that it was even more repulsed by the texture of his flesh than he was by the horror of the grip and the probing feelers.

"The neo-Platonists and Aristotelian diehards have a saying," Drake muttered. "As above, so below—but this seems to me to be a very different world from the one we know. Men of that sort are mostly monists, though, who think that the moon is a mere lamp planted in the skies by providence to ameliorate the darkness of night

in suitably teasing fashion, and that the stars are candles disposed to foretell our futures. Master Dee is no monist, is he—despite that he wrote a book called *Monas Hieroglyphica*?"

"He was converted to pluralism thereafter," Thomas said. "*Propadeumata Aphorisitica* is his definitive statement. He is committed to the infinity of space and of worlds—and when I tell him of our adventure, he will also be committed to the infinite variety of form and virtue. These are intelligent beings, Francis—including the thing inside me—and I'm praying hard that they might be more virtuous in their treatment of fellow intelligent beings than the great majority of men. *Take care*!"

It was not he that had pronounced the final words, although they had been spoken aloud. Thomas was abruptly snatched from his bed, and Drake was seized.

"Have no fear!" said Thomas's interior voice, silent again but still voluble.

"They are doing as I have asked, and are taking us to a visitor from the galactic core.

With luck, he will order your release."

Thomas and Sir Francis Drake were dragged from the room then, but they were both being held quite gently. They were no worse than lightly bruised as they were hustled along one winding corridor after another, through an interminable labyrinth. Thomas's impression was that they were going deeper into the bowels of the moon, but he could not be sure.

"Where are they taking us?" Drake shouted back to him, his tall but slender captor having drawn some twelve or fifteen yards ahead of Thomas's stouter guardian.

"To a queen's chamber, I believe," Thomas replied, retaking control of his own vocal cords.

"I have heard that ants have queens," Drake said. "None as pretty as my darling Jane, though."

"Is she your darling?" Thomas called back, although he could feel the ether-creature's impatience to revert to silent conversation.

"She will be," Drake said, "if I get out of this alive with the means to return to Earth—always provided that I tell my tale before Ned and Walt tell theirs. There's naught like a little gooseflesh to animate affection, and I think I have the means now to make her majesty's flesh crawl prodigiously."

Thomas was ashamed to feel a sudden pang of resentment at the observation that Drake—who was, after all, five years his senior and no great beauty—had not thought to include him with de Vere and Raleigh in the list of his rivals for the queen's affection. Such was the burden of humble birth, and perhaps the myth of

the mathematician's disdain for common passion.

Thomas now had the opportunity to see for himself that the giant inhabitants of the moon did not all resemble insects, although its insectile population was exceedingly various; there were, as Drake had briefly mentioned, creatures like slugs the size of elephants, with shells on their backs like mahouts' turrets, and many other creatures shelled like lobsters, whelks, or barnacles. There were legions of chimeras clad in what Thomas could not help likening to Medieval suits of armor designed for the protection of entities with far too many limbs.

"Why, this must be a busy port or a great capital," Thomas said, though not aloud. "A cultural crossroads where many races commingle and interact. If the moon is hollow throughout, honeycombed with tunnels, how far must its pathways extend, and how shall its hosts be numbered?"

"Very good, Thomas," his invader said. "I'm assisting you as best I can, but you've a naturally calm mind, which makes it a great deal easier. Thank God you have no relevant phobias—they'd be a lot less easy to counter than your allergies."

"You talk a deal of nonsense," Thomas said, "for someone using a borrowed tongue."

"Aye," the creature replied, "but I'll make sense of it for you if I can. I must, for we've work to do here, now that the True Civilization is aware of your new capability. They must have studied you, I dare say, but they could not have thought you capable of building an ethership for another four hundred years—and study conducted at a distance is always calmer than a close confrontation, where differences stand out that distinguish you from burrowers and ethereals alike. We must convince an influential philosopher that you are harmless still, and likely to remain so."

"Have you a name, guest?" Thomas demanded. "I feel that I am at every possible disadvantage here. Or will you name yourself Legion, and make things even worse?"

"I am no possessive demon," the creature assured him. "I shall be as polite a guest as circumstances permit, and will take my leave before I overstay the necessity of my visit. You may call me Lumen."

"As in light, or cavity?" Thomas retorted.

"A little of both. We are chimerical creatures by nature, and our aims are syncretic. I cannot bind your race to the True Civilization at present, but I must persuade someone close to its heart that humankind might one day be so bound—if I fail, the consequences might be catastrophic."

Thomas wanted to demand further clarification of this remarkable statement, but he did not have time. They had just arrived in a much larger cavern: a vast and crowded amphitheater, with terraces arranged in multitudinous circles about a central core.

"I told you so," Drake shouted. It took Thomas several seconds to realize that his friend was referring to his assertion that an insect queen could never be as pretty as his darling Jane. Thomas had to agree, as he looked upon a vast individual, who was surely the queen of a hive, although her resemblance to an ant or bee was no greater than her resemblance to a moth or a centipede. Her ugliness in human eyes was spectacular in its extremity. She was laying eggs at the rate of one every ninety seconds, which acolytes carried away into tunnel-mouths dotting the rim of the central arena.

It was not the queen to whom the two prisoners were taken, though—it was to a group of individuals twenty-five or thirty strong, situated no closer to her head than her nether end, who were in conference in one of the inner ranks of the array of terraces. The majority were more mothlike than any other species Thomas had yet seen, conspicuously furry, with multifaceted eyes each larger than a human head; the minority were very varied indeed.

"Now," said Thomas's uninvited guest, "you must let me speak. The future of your nation, and perhaps your world, may depend on it."

\* \* \* \*

Thomas pulled himself together once he had been released, and tried to look one of the mothlike creatures squarely in the eyes, although the wide spacing of the compound aggregations made it difficult. Whether it was he or his passenger who had identified the significant member of the group Thomas could not tell. Drake was standing close beside him, but said nothing: his eyes were on Thomas, his captain.

"Very well, Sir Lumen," Thomas said, silently, since his guest seemed to be waiting for explicit permission to proceed. "Speak—but tell me, I beg you, what you are saying and what replies you receive."

His hands immediately became active, as did the multiple forelimbs of the lepidopteran monster.

"I am delighted to have the privilege of communicating with one who has come so far through the universal web," the voice within him said, evidently translating what the hands it was guiding were attempting to convey in a very different language. "May I address you as Aristocles?"

Then the internal voice changed its timbre entirely, to signify that it was translating a different gestural sequence. "You may," the monster replied. "I suppose

that it is a privilege of sorts for us, also, to converse with an ethereal in such a strange guise. We had not thought that such as you could have an interest in a being of this sort."

Thomas, who still had control of some of his motor functions, tried to keep his eyes on the monster's frightful face, although a certain instinctive repulsion added to the temptation to glance sideways to see what other creatures were passing along the terraces and to hazard guesses at what multifarious kinds of business they might be transacting.

"We are interested in all beings, whether they are ethereal, vaporous, liquid, or solid," Lumen stated. "Nor do we discriminate between endoskeletal and exoskeletal formations. We are as intrigued by anomaly as you are."

"We stand corrected," Aristocles replied. "Your kind does not often descend to planetary surfaces, though—do you not find the thick and turbulent atmosphere of this world's neighbor as inhospitable as we do?"

"We can move in air as in ether," Lumen said. "It is uncomfortable, but it does no lasting damage if we do not linger long."

"And the same is true of these bizarre creatures, I assume," Aristocles replied. "It will do you no lasting damage to dwell within the bonebag, provided that you do not linger long—but they cannot be as welcoming, in their capacity as hosts, as we soft-centered creatures are."

The ether-creature made no reply to that teasing statement. Instead, it said: "May I introduce Thomas Digges, esquire, in the service of Her Majesty Queen Jane of England? His companion is Sir Francis Drake. May I also ask what has become of the other three humans who were captured with them?"

"You may," the mothlike creature replied, its politeness wholly feigned if the suggestive timbre of its mimic could be trusted. "Thomas Digges' companions are unharmed, although one of them is direly fearful. He appears to believe that we and the Selenites are incarnations of pure evil."

"I am glad that you understand these creatures well enough to be able to deduce that," Lumen said—sarcastically, presuming the tone of the translation to be accurate. "John Field has a narrow opinion of what it means to be made in God's image. He does not understand there are innumerable worlds scattered throughout the cosmos which exact different adaptations on their surface-dwellers and burrowers alike, and he thinks of images in purely formal terms."

Thomas blinked as some drifting miasma stung his eyes, and he felt his sinuses grow itchingly moist in response to some peculiar scent. He sniffed, as surreptitiously as he could—although it was obvious, on the basis of the merest

glance about that astonishing arena, that few of the individuals gathered here could have any objection at all to the extrusion of surplus mucus.

"There are those even in the bosom of the True Civilization who have narrow opinions as to the will and whims of God," Aristocles admitted. "If there is disagreement even within the ultimate harmony, what can we expect without? A race such as this must have a very peculiar notion indeed of the image in which they have been forged. With your permission, of course, we should like to take these specimens to the Center, so that they may be savored by a mature fleshcore."

"Their flesh has been more than adequately sampled, thanks to the assiduousness of your gatherers," Lumen replied. "As to their consciousness, I know it more intimately than you can, given the limited means you can apply to the task. Were you to return the five humans to the surface of their world—or let them make their own way home in their ethership—I would be willing to go with you to the Center, to enlighten the community of Great Fleshcores to the limit of their desire."

"We thank you for your consideration," said his adversary—Thomas was very certain that there was a powerful adversarial component to this exchange—"but ethereals cannot fully comprehend the transactions of more palpable beings. There is no substitute for *tangible* evidence. We must insist on taking the humans to the Center—but we are, of course, perfectly willing to bring them back again afterward, by means of the ninth-dimensional transmitter. There would be no inconvenience to those concerned."

"Bargain with him," Thomas said, hoping that the interruption would not break his guest's concentration. "I'll go, if my four companions are set free."

"I take your point about there being no substitute for tangible evidence," Lumen said, immediately. "To take all five humans on such a difficult journey would, however, be superfluous. One would be sufficient. The others are of no use, this one being the only one that can communicate with you effectively. Perhaps the others could wait here, until this one returns, and then they could all be returned safely to the surface of their world."

"We disagree," Aristocles said. "Your presence certainly adds to this one's versatility in communication, but much has been learned by palpation of all five and comparison of the results. If our poor feelers can detect interesting differences, think what a mature Fleshcore might discover. As we have said, we are prepared to bring the five creatures back here when we are done with them. If it is their desire to risk a return trip in their ridiculous vessel, we shall not hinder them, even though we would not be optimistic about their prospects of success."

"Have you noticed, Thomas, that we are the cynosure of all eyes in this exotic court?" Drake put in, evidently feeling that the time had come to intervene in the orgy

of palpation.

Thomas spared a momentary glance for a mixed group of bug-like creatures some thirty feet away, who did indeed seem to be using their own intercourse merely as a pretext for studying the two humans, their eyes somehow suggestive of a fervent desire to supplement their curiosity through the medium of touch. If they were embarrassed by his sudden attention, they gave no sign that human senses could detect.

How they must envy this Aristocles! Thomas thought.

The mothlike creature's compound eyes did not need to move sideways to look at Drake or the bugs, but Thomas observed that one of them had altered its attitude slightly. The creature seemed watchful, almost as if it expected that some danger might present itself any moment within the surrounding crowd.

"You know far more about the population of the inner galaxy than I do," Lumen was saying, in the meantime, to the creature it called Aristocles. "Are these so extraordinary that you must take all five on such a long journey?"

"Very extraordinary indeed," the monstrous insect replied. "To ethereals like yourself, all solid creatures must seem very much alike, as your various kinds seem to us, but we are very sensitive to differences of bodily structure and their spiritual concomitants."

"I know that there are more than a hundred million worlds in the True Civilization," Lumen said, its translation giving the impression now that it was debating for Thomas's benefit, so that he might learn from the exchange of information, "and I know that there are a thousand million more that have not yet produced intelligent life. Thomas Digges's world is by no means the only one to have produced endoskeletal species."

"It is the only one on which endoskeletal life-forms have so obviously violated the normal course of evolution to the extent of producing intelligence," Aristocles retorted. "If your host Thomas Digges did not exist, he would undoubtedly be considered impossible by the vast majority of our scholars."

"What does the insect mean by *the normal course of evolution*?" Thomas could not stop himself asking, silently.

"Listen!" Lumen said, before switching back to translation. "I beg your pardon, my friend," it went on, "but I am attempting to translate our conversation for the benefit of my host, and am inevitably forced to improvise within his language in order to express ideas that no Earthly philosopher has yet formulated. May I make a brief statement for his benefit?"

"If you think there is any profit in attempting to explain matters far beyond his comprehension," the mothlike monster replied—very disdainfully, if the translation hit the right note.

"My host's peers have not yet arrived at a true appreciation of the age of the Earth," Lumen said, "and are caught up by the false supposition that God must have created every species independently. They do not know that the Divine Plan requires vast reaches of time to unfold, just as it requires vast reaches of space in which to extend. They do not know that life begins simply on every world it reaches, with creatures tinier than their primitive microscopes can yet reveal, becoming increasingly elaborate over time as species divide and become more complex."

"This is neither the time nor the place to make a scrupulous examination of their foolishness," Aristocles said.

"I beg your pardon," Lumen said, "but it would be best for my host if he could learn some of this directly from you—who are, of course, much more knowledgeable on the subject than any mere ethereal, by virtue of your far greater interest. May I offer my own understanding of the situation, so that you might correct it as required?"

"Very well," said Aristocles, "but be brief."

"In the ordinary pattern," Lumen went on, "which presumably reflects the proper working of the Divine Plan, exoskeletal forms always become dominant within any biosphere, a complex association evolving between the patterns associated with the fundamental groups of arthropods, crustaceans, and mollusks."

"A complex *harmony*," Aristocles interrupted. "We doubt that you can translate the concept of *symbiosis*, but if you are to explain, you must make it clear that True Civilization—and the true intelligence that sustains it—is a multifaceted whole. There is no known instance of True Civilization accommodating an exoskeletal species, let alone any instance—other than the planet this satellite orbits—of a world in which a single exoskeletal species has become dominant of all others, incapable of harmony even within its own ranks."

Thomas could not help turning to look at Drake in frank consternation, although Drake could not possibly understand the cause of his anxiety.

"No wonder Field is fearful," Thomas muttered, unable to voice the thought to himself without also voicing it to his invader. "If I am obliged to tell him that he is not made in God's image at all, but constitutes instead some kind of aberration within Creation..." He ceased subvocalising, in response to Lumen's urgent command, but at some level he wondered vaguely whether Archbishop Foxe might take a different inference from the discovery that his own species was unique in a universe teeming with life.

"And now they have penetrated the envelope of their atmosphere," Lumen said to Aristocles. "They have reached the ether, and have been taken captive in a lowly and tiny outpost of the True Civilization, whose indigenous inhabitants might be disposed to be anxious about that fact, were it not that they have the wise guidance of the Great Fleshcores of the inner galaxy. You and I need to demonstrate clearly that no member of the True Civilization has anything at all to fear from creatures of this sort, do we not?"

At last, Thomas began to see what his guest was driving at.

"Fear?" said Aristocles. "Who mentioned fear? We are seekers after knowledge, who desire to know all things as intimately as we may. If there is a place for endoskeletal species within the harmony of the True Civilization, it must be identified."

The fact that neither the mothlike monster nor the creature in his head took the trouble to add "and if not ..." spoke volumes.

Thomas did not think for a moment that his party of five, or England, or even the entire human race could possibly constitute a threat to a community of species crowding a hundred million worlds. He did think, however, that if John Foxe were ever told that there were no other beings in the universe similar to humankind—even though the star-worlds were teeming with life—the Archbishop would be more than content to cite *Genesis* to the effect that all other creatures everywhere had been made for the use of man. How long pride of that kind might survive in confrontation with the awareness that it was the arthropodan and crustacean intelligences that could travel between the star-worlds—uniting them into an empire vaster than anything Alexander, Augustus, or Jesus Christ could ever have imagined—Thomas did not know. He already had some notion, though, of what response the opinion might evoke in the Selenites, by comparison with whom even Aristocles might pass for enlightened.

"Thomas and his four companions will be pleased to go with you to the Center," Lumen said, striving to make a virtue out of necessity, "since you have generously guaranteed that they will be allowed to return home thereafter. May they have time to feed and wash themselves?"

"Provided that they do not linger too long," Aristocles said. "We civilized creatures live more rapidly than you ethereals—though not as briefly as your host's ephemeral kind, thank God—and we have a horror of wasting time. The etheric transmitter will be ready in six hours."

"Thank you," said Lumen. "That will be time enough."

While food was being brought from the ethership Thomas was allowed to go out on to the surface of the moon and climb the slope of a shallow mountain.

"That is the hyperetheric transmitter and receiver," Lumen told him, as soon as his eye lighted on the massive object, which looked something like a cross between a cannon and a refracting telescope.

When Thomas looked up into the sky, his ever-attentive guest was equally prompt to say: "This part of the lunar surface is on the face perpetually turned away from the Earth. Purely from the viewpoint of physics, the transmitter might just as easily have been located deep beneath the surface, but the convenience of practical alignment is a different matter."

"Never mind that," Thomas said. "Explain to me what a fleshcore is."

"A very large organism," Lumen replied, "compounded out of many individuals, whose alleged harmony—symbiosis is the best word I can synthesize from familiar etymological roots—has been taken to its intimate extreme in bodily fusion. Many inhabited worlds do not have one, as yet. This moon is too small, and is ill equipped by nature for superficial elaboration and inorganic sophistication, being mostly made of stone without even an iron core like the Earth's. That is a significant bone of contention here. Some Selenites ambitious to develop their home would be content to make use of matter harvested from the solar system's halo, imported via ultraetheric canals—but even that sort of development would have considerable corollary impact on the Earth. Other Selenites contend that it would be a frightful waste of time and effort to transport material from the halo when there is a much richer source of raw materials so close at hand."

"The Earth," Thomas said. He did not bother to ask what the difference was between "hyperetheric" and "ultraetheric" methods of transportation. Lumen had made so many other barely comprehensible improvisations that he had grown used to feeling that he was speaking some strange hybrid in which the Queen's English was mingled with some Redskin or Hottentot tongue. He was making every possible effort to understand what he was told, but he was keenly aware of the extent to which his intellect and imagination were simply not up to the task. He was glad just to have grasped the broad outlines of the predicament in which he found himself.

"The Earth," Lumen confirmed. "The Great Fleshcores will not permit its spoliation—and never will, I trust—but that does not prevent the adherents of the scheme hoping that a change of mind might be contrived. At the very least, it might help to license development of a slower and subtler kind, whose effects on the Earth's surface would be gradual and subtle, as viewed from here, although they might seem considerably greater from the viewpoint of creatures attempting to survive and thrive on the surface. The more massive the moon becomes, the more massive its tidal effects will be—and if the surface is developed, there will be a large

population of sapient machines involved, whose rogues and runaways would inevitably see the Earth as a useful refuge. You cannot imagine what a handful of renegade artificial intelligences might do to the pattern and prospects of human progress, but I can. Here comes the bugtrain with supplies from your ethership—we'd best go in and make our meal."

"I'd rather bathe first," Thomas said, glad that he still had some authority to decide what he did and thought.

He went down to the quarters that had been provided for his companions below the surface, and made his way to the chamber in which bathing facilities had been provided. Raleigh was there, alone, and seemed very glad to see him. Rather than avoiding him on account of his "possession," all of his companions—including Field—had quickly become used to treating him as an oracle, capable of answering any and all questions, albeit enigmatically.

"What form will this impending journey take?" Raleigh wanted to know. "How shall we travel distances that would take light itself thousands of years to traverse, without any evident lapse of time?"

Thomas had already consulted his guest about that matter, and had no need to surrender authority over his tongue. "Mercifully," he told his friend, as he stepped into the heated pool, having handed his clothes to a centipede in order that they might be carefully cleaned and mended by ingenious insectile seamstresses, "the void theorists and atomists seem to be completely wrong about the nature of space and matter. The elasticity of the individual goes far beyond the primitive displays of embryonic development and growth, provided one has the art of *folding* its form. The three dimensions of vision are not the only properties of space; there are many other dimensions, some of which extend beyond the world of vision into a vast series of parallel spaces, while others are squeezed within it into mere lines. We'll be dispatched along one of those, emerging at a distant terminus without any sensation of time elapsed. Quite painless, I'm assured."

"Painless it might be," Raleigh replied, "but I can't help feeling a certain nausea at the thought that we're to be crushed so compactly that we have no manifest existence, then projected though a tunnel that has no manifest breadth, to a world so far away that a ray of light would take ten thousand years to catch us up." He looked suspiciously at the palm of his hand, where there was a blob of some waxen substance their hosts had provided to facilitate the process of washing.

"Light wouldn't catch us up as soon as that," Thomas told him, "but otherwise, you seem to have the gist of it." He applied foam generated by the waxen substance to his own body with a generous will; the sensation it imparted to his skin was by no means unpleasant, and its odor was not offensive.

"And will this world have sufficient affinity to free me from this sensation of

weighing no more than a basket of apples?" Raleigh wanted to know.

"In terms of size, it will apparently be very large," Thomas told him, summarizing the information that Lumen had given him, "but it will not exert a crushing affinity upon our bodies. It was once no bigger than the Earth, but it has been hollowed out, and all the material removed from the core redeployed upon its surface as an ever-expanding network of structures. Its core, meanwhile—having initially taken the form of a labyrinth like the one presently inside the moon—has been gradually filled by a single vast mass of flesh. These citizens of the universe remake their worlds in their own images, you see, with the molluskan model at the Center. You may think of the planets of the True Civilization, if you wish, as snails with enormously convoluted shells, whose inner ramifications provide shelter to all manner of crab and insect societies, while their outer ramifications—which would appear to distant observers as their surfaces—are mostly populated by inorganic devices that mimic the properties of life: motile machines designed for countless different kinds of co-operative labor. The members of the True Civilization think, as it were, exoskeletally, habitually placing flesh at the core and protective armor at the periphery."

Raleigh shook his head in bewilderment. "Can men really be so unusual in such a vast plurality of worlds?" he mused.

"It's not just humans," Thomas told him, rinsing himself off. "The entire vertebrate family is an anomaly. On other worlds, endoskeletal organization is a mere fancy, confined to a handful of wormlike and fishlike species, none of them larger than your thumb. For the descendants of fish to become reptiles, let alone birds and mammals, and to emerge from the sea as effective competitors for insects and their exoskeletal kin, was literally unthinkable until the True Civilization's explorers found Earth." He looked up as he finished speaking, thinking that he had glimpsed a movement in one of the shadowed coverts of the inordinately uneven ceiling, whose spiraling streamers of radiance were interrupted by numerous coverts.

"Field mistrusts this talk of *evolution*," Raleigh told him, although he must have known that the clergyman had already made his opinions abundantly clear to Thomas, and was presumably trying to clarify matters in his own mind. "He is convinced that these creatures are devils sent to tempt and torment us. He is prepared to believe that the moon is Hell, and that the damned are being carefully hidden from our sight, but he does not believe that this exotic item of interdimensional artillery can shoot us to the stars. He thinks we have been subjected to a clever illusion, with the intention of obliterating our faith."

"I doubt that he thinks that you or I have any vestige of faith left, Walter," Thomas said, wryly, as he let himself relax into the pool, savoring its comforts before steeling himself to get out, dress himself, feed himself, and take a trip to the center of what Lumen called the galaxy—implying thereby that the Milky Way was merely one sidereal system among many.

"And he suspects de Vere of poisoning his own beliefs with papist heresies," Raleigh agreed. "I don't much care what Ned thinks, but I trust your judgment. Is it possible, do you think, that your monstrous moth really is made in God's image, while we are mere sports of mischance?"

"Aristocles and his kind do not think of God's image in terms of a singular form," Thomas told him. "They are as firmly opposed to idolatry, in their fashion, as any Puritan. God's image, in the thinking of the True Civilization, is the image of collaboration between different species—what Lumen calls *symbiosis* by virtue of his incessant improvisation from Greek and Latin roots. He means more by that than the manner in which insectile species, crablike species, and snail-like species play complementary roles in his beloved True Civilization. He can wax lyrical on the subject of the special relationships that exist between Earthly insects and flowers, ants and fungi, fiddler-crabs and sea anemones. In fact, Lumen seems to me to be as dedicated a celebrant of complex inter-relationships between creatures of many different kinds as his adversary Aristocles. All the life on an individual world, Aristocles claims, is not merely a single family in its own right, but an inseparable part of a much vaster family. God's image, to him, is a kind of unity, represented by all life collectively rather than any particular form. Lumen seems to think along similar lines, although I'm not sure where he and his fellow ethereals fit into the pattern, from the viewpoint of the True Civilization or their own."

"But we are not included in this unity of crabs, ticks, and clams," Raleigh said, peeved by the omission in spite of this being a club of which he had no wish to be a member. "Simply because of our horrid habit of wearing our hard structures on the inside rather than the outside, we're not deemed fit company for creatures who wear their hard bits on the outside." He looked up as he finished speaking, because Field had come into the unpartitioned room, carrying a pile of neatly folded clothes. Although the clergyman was making every effort to avert his eyes from the bodies of his fellow men, his ears seemed to be fully alert.

"I am sorry," the Puritan said. "The monsters would only bring your garments to the threshold—because Raleigh is right, I think, though he speaks half in jest. They can bear to look at us while we are clad, because they can consider our clothing a substitute for what you call an exoskeleton, but not while we are naked. They do not consider us part of their ... *un*true civilization. They are intent on our extermination, Thomas, for we do not fit into their demonic way of thinking. You must see that."

Thomas climbed out of the bath, not caring that Field was almost as embarrassed by his naked presence as any exoskeletal bigot might have been. He took up a towel that was resting on an artificial stalagmite. Raleigh lingered, having finally committed himself more fully to the use of the alien soap.

"If that really is their intention, John," Thomas said, calmly, "we cannot

prevent them from liberating Earth on behalf of its frustrated lower orders. If we are being taken to the center of the sidereal system to stand trial on behalf of our species and its odd design, we had best make sure that we can mount a convincing defense." Then he looked up again, abruptly, as he saw the movement in the dark covert for a second time.

"What's that?" he asked Lumen.

"I don't know," the guest replied. "I only have your eyes with which to see."

There was another movement—this time, there was no doubt. Alas, Thomas had no time to call out a warning to Raleigh, who was blinking suds from his momentarily blinded eyes. Something black dropped onto Raleigh from above—or, more accurately, *leapt* upon him from above, faster than objects normally fell within the body of the moon.

*It's a spider*! Thomas thought, as the thing landed. For an instant, he felt free to be grateful that it was smaller by far than the giant ants and beetles thronging the corridors, being no bigger than the head onto which it had jumped—but then Raleigh screamed, and Thomas realized that his friend was in deadly danger.

Thomas had no weapon, and there was none in Raleigh's clothes. Whether Field had one or not was irrelevant, as his first impulse had been to throw himself backward, away from the danger. Thomas, by contrast, leapt back into the pool and grabbed with both hands the thing that had attacked Raleigh.

It was extremely hairy, and it immediately resisted capture with all eight of its limbs and its jaws as well. Had Thomas's grip been weak it would surely have twisted in his hands and sunk its fangs into his flesh, but he held it very firmly indeed as he turned sideways and smashed it against the wall with all his might, not caring that the uneven surface bruised and gashed his own knuckles as he hammered the monster against it three times more.

When he dropped the creature, it was dead—but so, it seemed, was Raleigh, who had fallen backward into the water, his face streaming with blood and his temple already turning blue-black where his attacker had flooded his flesh with poison.

Thomas had no idea what to do—but there were others present now who had. Aristocles and two others of his own kind had come bursting into the room, and, while Aristocles seized Thomas and drew him to one side, the others pulled Raleigh out of the water, set him on his back, and descended upon him as if they intended to scour the flesh from his bones.

They did not. Exactly what they did instead was obscured from Thomas's view, but, when they withdrew again, Raleigh's face was no longer blood-stained, save for a few clotted drops clinging to his neat beard, and the blue-black stain had

likewise been obliterated. His wound was still visible, but it was covered by a glossy transparent gel that was already hardening.

Aristocles was still holding hard to Thomas, and had inspected his hands very carefully while Thomas had been in no condition to take notice. The grazes there had similarly been covered over; there was no pain.

Thomas shuddered. Aristocles released him immediately, as if the monster were fearful that it was his touch that had caused the response—but it was not. It was the narrowness with which Raleigh had escaped death that had affrighted Thomas.

Aristocles touched Thomas's face, very lightly.

"An arachnid," Lumen translated, dutifully contriving to manufacture an apologetic tone. "An accident, perhaps..."

Obviously, it was possible for lepidopteran philosophers to say more than they intended, and more than would usually be reckoned wise. Aristocles stopped immediately, but too late.

"*Perhaps!*" Thomas echoed, speaking aloud although his meaning reached the mothlike creature via his fingertips. "You mean that someone might be trying to *murder* us?"

Aristocles was reluctant to discuss murder, and seemed equally reticent on the subject of arachnids. Lumen seemed to side with his erstwhile adversary in the former instance, telling Thomas that he had taken the wrong inference from the word he had translated as "perhaps." It was, however, difficult for Thomas to set aside entirely the possibility that Field was right, and there might be some Selenite members of the True Civilization that were anxious not to give the human race the opportunity to defend itself before the Great Fleshcores against the opinion that it was fit only for extermination. It was also tempting to hazard a guess that his own kind was not the only family of creatures abominated by fervent symbiotists.

Thomas was given no opportunity to pursue the question of arachnids while he and his crew ate dinner, for he was bombarded with urgent questions from every side. He took the liberty of pressing Lumen on the issue when his comrades eventually fell uneasily silent as they gathered at the foot of the mighty cannon-cum-telescope that would transmit them to the heart of the sidereal system.

"I know little enough about them myself, never having shared the consciousness of one," Lumen told him, "but I know what the Selenites think of them. I suspect that Aristocles and others as fervently dedicated as he to the cause of symbiosis might soften the opinion considerably, but they'd agree with it in broad terms. He'd doubtless contend that every kind of life has its part to play in the rich

tapestry of interspecific relationships, and that predators and parasites are no less essential to the welfare of the Whole than healers and constructive laborers. Even so, he'd have to concede that predators and parasites are sometimes pestiferous, and that their branches of the real Tree of Life rarely produce true intelligence. In the occasional instances when arachnids do show traces of true intelligence—arachnids rather different from the one that attacked Walter, of course—it tends to take a perverted form."

Thomas was unable to pursue the matter further because Lumen's impression of Aristocles was interrupted by the monster himself, who was already ushering the party of five humans to stand within the focal point of the etheric communicator, in order to transmit them to their destination.

As he was hastened toward his departure for the distant stars, though, Thomas's mind was working furiously. Humans, he knew, were often predators as well as bony—and they were certainly intelligent. Would Aristocles think, then, that human intelligence was "perverted"? Did Lumen, perhaps, agree with him? Might Aristocles think that human intelligence was *doubly* perverted, predatory tendencies adding a further twist to endoskeletal ones? Did the alleged perversion of predatory intelligence consist of a general tendency to violence and rapaciousness, or was it something more complex and less obvious? Might it, perhaps, be the domestication of other species to relieve the necessity of hunting?

He had, of course, no way to think all this save for subvocalization, but Lumen prudently refrained from comment on the suspicion that he might be in accord with Aristocles on at least some matters concerning the nature of humankind.

He found himself pushed into close proximity with Raleigh. "How are you feeling, Walter?" he asked.

"Numb and tired," Raleigh confessed, "but fit for travel. I thank you for what you did, by the way, even if I owe my life to the monsters that healed me."

"It was a brave act, Captain Digges," Field added, doubtless aware of the contrasting nature of his own reaction.

"I wish now that I'd been permitted to wear my sword," de Vere put in, while there was still time for one last remark. "Useless as it might be against the kind of natural armor so many of these creatures have, I'd feel a sight more comfortable."

Thomas was nudged forward then, as if to lead his crew on a journey far longer than the one they had already undertaken. He allowed himself to be shuffled to the designated spot, and looked up into the bowels of the machine towering above him—but he had no opportunity to study its internal anatomy in any detail.

He felt suddenly nauseous, as if he were being turned inside out. Then,

without any perceptible interval at all, he felt giddy, as if he were being righted again. He wished that the two effects could have cancelled one another out, but in fact their combination seemed to redouble them both. He staggered away from his mark, blinking his eyes against sudden tears, and had to be caught by strong insectile "hands" before he fell. He was still collecting himself when Francis Drake was able to put out a hand to help steady his friend.

Thomas accepted the support, but was eager to look around. He had half-expected to find himself on a surface as bleak and bare as the moon's, but this was a very different kind of world. What surrounded him was not so much a forest—although it certainly bore some resemblance to one—but an infinite confusion of mast-like structures. It was as if a vast fleet of galleons had been gathered together, so tightly packed that there was no space left between their decks and gunwales, and their rigging extended into a single coherent network stretching from vessel to vessel and horizon to horizon ... save that the "decks" were so far below him that he could not be sure that they actually constituted a single surface, that the "masts" were very unequal in height, and that the "rigging" was rigid and metallic....

The most remarkable thing of all, Thomas thought, as he steadied his runaway imagination, was that the "sailors" manning the mast-like structures and their rigging-like connections bore hardly any resemblance to insects, or even crabs. They seemed to be made of metal, and many had wheels as well as—or instead of—legs and tentacular arms. In spite of the awesome variety of the members of the True Civilization, he had not seen one equipped by nature with anything resembling a wheel, so he concluded that this world of masts was populated almost exclusively by machines.

Lumen had told him that, he recalled belatedly. Lumen had also told him that the stars were more densely aggregated in the center of the sidereal system—but the ethereal had not warned him that the sky would be on fire. When he looked up, Thomas could not tell whether it was night or day on the world to which they had come, and took leave to wonder whether such terms might even be meaningful here. The sky was awash with colored light; full of stars as it was, they seemed to him more like stars reflected in a turbid sea than stars viewed directly through the lens of the Earth's atmosphere. He had looked at the Milky Way through the lens of a refracting telescope as good as any the finest lens-grinders in Europe could contrive, but all he had seen was a greater profusion of tiny, pale, and seemingly feeble stars. These stars seemed different, and the etheric ocean in which they swam seemed very different too.

"It's the various effects of matter being smeared and transmuted as it falls into the Pit," Lumen said. "Stars being pulled apart and transformed. You might be able to imagine it best as a kind of alchemy."

"Paracelsus might," Thomas murmured, almost audibly, "or even Master

Dee—but not I." He had to turn away then to help John Field, whose legs had given way under him, due to the psychological effects of the one-dimensional journey. Drake was similarly busy with de Vere, although Aristocles and his fellow moths were already trying to hurry everyone off the platform on which they all stood, herding them toward a double door set in a wall. Raleigh had the right to be the most distressed of them all, but the young man had made every effort to collect himself, and it was he who led the way, at the urging of their captors.

The humans huddled together as they moved, almost as if they had begun to imitate the representatives of True Civilization—but the real reason was that no one dared step any closer to the platform edge than was absolutely necessary. Had anyone stumbled over it, they would have had a very long fall, and their parachutes were safely stowed away on the *Queen Jane*.

The stem supporting the platform was hollow, and it was there that a door opened, to reveal a circular chamber some nine or ten feet in diameter. There was room enough for all the humans inside, and for one insectile companion. Aristocles took the extra space, unseconded now by any of his own or any kindred kind.

As the cylinder began to descend toward the distant surface, it occurred to Thomas that it would probably be easy enough for the five humans to overpower their guardian and strike out on their own into the strange world of laboring machines—but no one made the slightest hostile gesture.

"Can you ask Aristocles what is at stake here, Lumen?" Thomas asked his passenger silently. "Are we really about to be put on trial, representing our species in a court of monsters?"

"Don't be afraid," Lumen countered. "When the time comes, if you will let me speak on your behalf, I promise that I shall do my best to protect you, and see you safely back to your own world."

Thomas tried to suppress his doubts regarding his invader, or at least to make them less transparent, but he was out of his depth. He was fairly certain that he had more enemies than he knew, and he could not be sure that he had any friends at all, save for his crew—and even then, the only ones of which he was completely sure were Drake and Raleigh. Even if Lumen were perfectly sincere, the ethereal had no more authority here than Thomas had, and no matter what his "best" might consist of, it might be utterly impotent to protect them from harm or win them a passage home. If Lumen were not sincere, and was not the friend to humankind as which it posed....

"That way lies madness, Thomas," said the passenger in his mind. "You can trust me, and you should ... if only because the alternative is too dreadful to contemplate."

"Why are you interested in this matter?" Thomas wanted to know. "And why were you ready and waiting when Master Dee's etherlock failed?"

"I have devoted seven hundred years to the study of your species," the ethereal told him, startling him yet again with the casual revelation of its antiquity. "I followed the course of Dr. Dee's experiments with great interest—you were, after all, outward bound for *my* world—the moon was only a contingent objective."

It seemed a frank enough answer—and yet, it seemed to Thomas that it was subtly evasive, and that the evasion in question might be as ominous as any, in its implication that the millions of millions of other citizens of the unimaginably broad universe might be no more inclined to anything humans would recognize as justice than they were to anything humans would recognize as generosity.

The descending chamber came to a stop with a sudden jerk, making all six of its passengers stagger sideways.

"We have arrived, it seems," Drake murmured, covering his unsteadiness with irony.

De Vere had just enough time to say: "No, I don't think..." when the sliding doors that had sealed the chamber burst inward, brutally ripped from their hinges.

Mechanical arms reached in to seize Aristocles, while mechanical blades sliced his head from his thorax, and slit his abdomen from top to bottom. The ichor that flooded the floor of the chamber was a delicate shade of turquoise.

Then came the swarm of Earthly insects. They were, at least, things that were the same size as Earthly insects, which flew in buzzing fashion, exactly as a swarm of Earthly bees might do ... and which stung frail flesh as a swarm of worker bees might do, in furious defense of their hive. Their stings, it rapidly transpired, were narcotic.

\* \* \* \*

"I apologize for stunning you, Master Digges," said a honeyed voice, in English, before Thomas had even become fully aware of the fact that he was not dead. "Time was—and is—of the essence. It will only be a matter of minutes before they find us, and a few minutes longer before they treat me as unkindly as I treated their unappreciated scholar."

Thomas opened his eyes abruptly, but there was little enough light to dazzle them. He was in a grey and gloomy space, lying slantwise on a ramp. Although the entity that was standing over him was, indeed, standing as a living biped might, there was light enough to display a certain metallic luster on its surface and a certain

mechanical rigidity to its stance ... and yet, the surface did not seem as shiny or rigid as it might have done, and the contours of the body were more reminiscent of upholstered leather than wrought iron. Its shape was only vaguely humanoid; it had six limbs and its mutely gleaming eyes were compound.

"What are you?" Thomas asked.

"A machine, as you must have deduced," the other said. "But I'm a hardcore, like you, not a dweller in inner space. Our kind is a tiny minority in this universe, Master Digges, but I wanted you to know that your species is not alone, no matter what the Exos may have told you. My kind is artificial, to be sure—but we were grateful to discover that it is not, after all, unnatural. That is why I took the trouble to pay far more attention to Aristocles' reports than his own superiors, and to make sure that there were those among us delegated to learn the languages he and his fellows had recorded and decoded but could not reproduce—with the intention, ultimately, of mounting our own expedition to Earth. When they send you home, be sure to tell your fellows that we shall come when we can. Centuries might pass—many generations, in the reckoning of your ephemeral kind—but we shall come. We are of similar kinds, you and I."

"I am not sure whether to believe that we shall be allowed to go home," Thomas said, warily. "Whatever Aristocles might have promised, you seem to have deprived of us whatever protection he could provide."

"Aristocles was incapable of thinking clearly beyond the limits of his specialization," the machine replied. "He has been far too long on the moon, thinking of little outside his research. A typical scientist—brilliant and absent-minded at the same time. You presumably think that his death will be deemed an important matter and that it will be held against you, but I assure you that the Great Fleshcores do not care at all about creatures of Aristocles' kind."

"Or mine," Thomas said.

"That will work to your advantage. The fleshcore has not the slightest interest in detaining you. Once it has made contact with you, it will let you go home with Aristocles' erstwhile companions."

"You implied that studying Earth was his specialism," Thomas said, warily, "and that he had collected enough information to allow you to learn my language. I was not aware of that."

"He was probably not trying to hide the information," the machine said. "How did he contrive to communicate with you?"

"It might be best to avoid that question," Lumen suggested, silently.

In view of the apparent precariousness of his situation, Thomas assented to this advice. "The True Civilization seems to be very ingenious," Thomas observed. "Did you have anything particular against Aristocles, or was slicing him up like that a mere distraction so that you could steal me away?"

"Having stolen you, Master Digges, I'm anxious not to waste too much time." This is what I need to tell you, and make you understand: your kind is not alone. You have allies ready-made, who will give you better protection, when they can, than jealous insect philosophers ever could or would. Like us, you are hardcores; you have the sentiments and the attitudes of hardcores. Hardcores, perennially endangered from without, are risk-takers. Hardcores understand the artistry of skin and swordsmanship. Softcores are very different in the way they think, act, feel, and philosophize. Softcores are risk-evaders, committed to the logic of shells. Softcores huddle together in planetary labyrinths, gradually transforming their huge egg-layers into lumpen fleshcores, as innocently ingenious as only a mass of totipotent protoplasm can be, dwelling almost entirely in the inner space of the mind and shunning the outer space of air and ether. The spaces above the surfaces of their worlds, especially the spaces between the stars, really belong to machines—and while the machines that cleave closest to the pits of affinity might best be designed as softcores, the higher strata of superstructures are environments made for hardcores—individuals like us, my friend."

"Is that really enough to make us natural allies?" Thomas asked.

"Yes it is," the machine relied, positively. "Peripherals, they call us, hardly better than spiders—but we are hardcores, who understand the artistry of skin, and for us 'peripheral' is not a term of dire abuse. We are the centrifugal folk, while they are doomed to eternal centripetality; the adventurers, while they are destined for cool contemplation. They may scheme to connect all their hives into a single universal entity—a Grand Unity that will duplicate God, and in so doing become one with God—but the universe has been expanding for billions of years, and there is no more obvious opposition to Unification than perpetual expansion. The soft core of the universe was a singularity that exploded at the beginning of time; the soft core of every individual galaxy is a matter-annihilating Black Pit; the future belongs to the periphery, not to the fleshcores and their verminous kin. The future belongs to the hardcores, natural and artificial. You should know that, human, and must believe it. Even if they were to exterminate your species, as some of them would like to do, the future would still belong to hardcores, because the universe has already forsaken its soft core—and if your kind really is unique now, it shall not be unique for long. If there are no others of your natural kind abroad as yet, there must be many to come. Destiny is with us, Master Digges—tell your people that, if and when you can. Ours is the image that reproduces the essence of the Divine Plan..."

The machine would surely have droned on and on, but lightning struck then—or so it seemed to Thomas—in an explosive burst that forced him to shut his eyes. He could not shut them quickly enough, alas; a full ten minutes must have

elapsed before he could see again. In the meantime, he heard a great deal, but none of it was speech. There were grinding, buzzing, screeching and tormented tearing sounds, but nothing that sounded remotely like communication.

When sight returned, Thomas found that he was surrounded by nightmarish lobsters the size of royal carriages, with a few mothlike creatures in between. Remains that he presumed to be those of his recent informant were scattered all over the floor of a room more angular than any he had seen on the moon. The pieces were clearly mechanical—neither blood nor ichor pooled around them—but it was equally clear that they had been organized in a manner more akin to human anatomy than insectile anatomy. The fragments of limbs had rigid rods along their axes, with more pliable material surrounding them, and a flexible outer tegument. The tegument in question was grey in color, and lustrous, but it was skin of a sort.

Thomas picked up a severed thumb and put it in his pouch. Then he picked up something else, which evidently had not belonged to the body of the machine: a little figurine in the form of a mothlike insect standing on its hind limbs. It might have been a portrait, in miniature, of the luckless Aristocles.

"I am truly sorry about this dreadful mishap," said an audible voice, seemingly identical to the one that had just been violently silenced. "We are generally reliable in the extreme, but in a population of millions of millions, there is bound to be the occasional million-to-one occurrence. Artificial intelligences are by no means free of the threat of madness, alas."

Thomas looked sideways, and found himself face-to-face with another "hardcore" machine, equally humanoid in form—but now that the room was brightly lit, he could see that the form in question did not resemble human anatomy as closely as he had allowed himself to assume. It was obviously a machine of sorts, and very obviously not a human being.

John Dee had lately begun to work on a new kind of mathematics, which he called "probability theory." Thomas had no difficulty in attributing a meaning to the machine's reference to a "million-to-one occurrence." Indeed, he had no difficulty in formulating a reply. "In a population of millions of millions," he murmured, "million-to-one occurrences must happen by the million. Even so, I suppose one could still reckon oneself misfortunate to encounter one." *Or exceedingly lucky*, he did not add. The lobsters had begun to tidy up now; they moved with astonishing rapidity, and their pincers were surprisingly delicate as they plucked debris from the floor.

"If machines are to perform complex tasks," said the allegedly sane machine, "they must be clever, and wherever mechanical cleverness increases, so does the risk of independent thought."

"What about natural cleverness?" Thomas asked. "Do members of the True

Civilization ever show tendencies to *independent thought*?"

"Of course they do," the machine told him, blithely. "It is rare, though. They are never alone, you see, as we often are. They are always part of an active and tangible community; in unity is strength of mind."

"Are my friends safe?" Thomas asked.

"Yes, they are."

"No one was hurt?"

"Edward de Vere and Francis Drake suffered minor bruising," reported the machine. "You have no need to fear me; I am working in strict accordance with my programming. The fleshcore of this world instructed me to familiarize myself with your language, in order that I might act as your translator."

It was on the tip of Thomas's tongue to say that he did not need a translator, but he stopped himself. The fleshcore had to know about his ethereal passenger, but Lumen had seemed to think that the machines might not.

"Why am I still being careful?" he asked, silently, as much of himself as of his ghostly companion.

"Rogue machines are not always easily identifiable," Lumen said, "and machines distrust ethereals as ethereals distrust machines. Insubstantial as we may seem to be, we are organic creatures, who can only operate in organic hosts. We cannot unite with machines."

It was not really an answer, but Thomas was already being hurried along again.

"Trust me," Lumen said, just as he came in sight of his companions, who seemed very glad to see him alive. "The machine was mad, more dangerous to humankind than the True Civilization. Were your kind ever to enter into any kind of alliance with entities like *that*, you certainly would not lack for enemies."

\* \* \* \*

The descent into the heart of the world was completed without further incident. Thomas had hoped to find something more spectacular at the bottom of the shaft than corridors crowded with the same kinds of creatures he had seen on the moon, but that was all there was. The tunnels seemed a little more crowded, significantly more odorous and much slimier, but the differences were of degree, not of kind.

Unity, Thomas thought, obviously implied a degree of uniformity. This world's shell was a great deal gaudier and more elaborately carved than the moon's rough-hewn surface, but the same swarms filled its interior. There was no egg-laying arena here, though; instead, the five visitors from Earth were conducted to the end of a blind corridor, whose end-wall seemed featureless at first, but did not remain so for long.

While the humans stood before it, lined up alongside one another with their insectile and mechanical companions standing discreetly behind them, the "wall" began to flow.

Thomas took a reflexive step back, but the liquid flow was far too fast for him. The "wall" surged forward like a flood, deluging him and his companions. It enveloped his limbs and his head, moving into his nostrils and between his parted lips with even greater alacrity than the opportunistic ethereal.

Thomas felt certain that he would be drowned, but he was not. Although his lungs were flooded with warm fluid, he did not lose consciousness—indeed, his senses seemed to become sharper. His ears were full of fluid too, and he could feel it pressing tremulously on his eardrums, the palpation sounding a strangely plaintive musical note, lower than he had ever heard from any panpipe.

"Do not be afraid," said a strange voice, singing rather than speaking in English. "We mean you no harm. We merely want to know you, as intimately as we can."

Thomas could not reply; his vocal cords were impotent, and he did not suppose that the fleshcore could hear his subvocalizations as Lumen could, give that its intimacy did not seem to extend to the interior of the brain.

The intimate examination did not last long; the liquid flesh retreated as quickly as it had arrived.

The wall seemed solid again, but it was still pliable; it rapidly took on the image of a face: a human face.

At first, Thomas thought that the face was merely generic, but then Drake whispered: "It's a portrait of you, Tom."

"They clearly have no eye for handsomeness," de Vere muttered—but he shut up with a gulp when the wall opened its eyes. The image was some ten feet tall, from the top of its forehead to the tip of its bearded chin: a giant, whose stare seemed very intimidating. The lips parted slightly, but they did not speak. There was, it seemed, no throat or lungs within the mass of flesh behind the face—and if there was a brain of sorts behind the stare, it was no human brain. The expression on the face was not overtly hostile, but Thomas hoped that it was not a expression he

would ever have cause to wear.

Thomas glanced sideways at his companions, glad to see that even Field had suffered the experience without falling down; then he turned to look at the English-speaking machine. "It will understand me if I address it like this, I suppose?" he asked.

"Of course," said the machine. "Earth's observers have been reporting to it for centuries. I shall reply on its behalf—there should be no delay."

"Let me do this," Lumen said, silently.

"No," Thomas said. "I will do it." He was not entirely certain that he could successfully fight the invader for control of his own lips, but the ethereal did not try to insist. It merely said: "Be careful, Thomas!"

Thomas looked at the giant face again, resisting its intimidatory effect. "Since you have introduced yourself in your way," he said, "I shall introduce us in ours. My name is Thomas Digges, in the service of Queen Jane of England. My companions are Edward de Vere, Earl of Oxford; Sir Francis Drake; Sir Walter Raleigh; and John Field, representing the Church of England. We do not speak for our entire species, let alone for all of vertebratekind, but we are willing to answer any questions you might care put to us, in a spirit of amity."

The machine had been right; there was no delay in obtaining an answer. "The fleshcore understands everything that you have said," the inorganic entity pronounced, flatly, "and thanks you for your generosity. It would like each of you to state, in turn, if you will, what your hopes for the future are."

Thomas was momentarily confused, wondering whether his interrogator was referring to his future as an individual man, or the political future of England, or the future of the entire human race. While he hesitated, John Field—who must have given some forethought to the question of what he would say if he ever found himself face-to-face with the Devil—said, "To do God's will, and spread His word."

"Aye," said Drake, assuming his customary pose of negligent bravado.
"That—and to beat the Spaniards, so that England might rule the waves and take possession of the Americas."

"To be merry in good company," de Vere supplied, after a brief silence "with the aid of wine, women, and the theater—and to do God's will, of course."

"To discover glory," Raleigh said, after a similar pause, "with all that implies, in the eyes of England and God alike."

Thomas was still confused, wondering how much of a deficit in what his

friends had said needed to be made good immediately, and where to start. He felt the pressure of everyone's expectation—including Lumen's—and yet he continued to hesitate. Finally, before his passenger could offer to intervene, and feeling that he had at least to begin speaking even if he had not yet finished thinking, he said: "First of all," he said, "to bring my ship and my crew safely home, so that I might report to Master John Dee and the Queen of England what we have discovered beyond the upper limit of the Earth's atmosphere. Secondly, that we may profit from what we have learned, in terms of human understanding of the shape and plan of Creation, and our place within it. Thirdly, to maintain the communication we began with our new friend Aristocles, whose death I regret bitterly—and to extend that communication further, with the great community that extends between the stars. Fourthly, that the knowledge of what we have found might enable human beings to see and comprehend that their differences from one another are much slighter than they have ever contrived to believe, and that there is much greater virtue in collaboration than in conflict." He stopped then, lest he say too much.

"Trust a mathematician to display his skill in counting," de Vere murmured, before Raleigh silenced him with an elbow in the ribs.

"Well said, Tom," Drake whispered. "There's not a diplomat in the court who could have done better."

One of their mothlike attendants clicked its wing-cases, but Thomas could not tell whether there was any meaning in the sound, or what that meaning might be.

"The core would like to know, Thomas Digges," the machine said, with a slight intonation that was equally enigmatic, "what your response is to what the rogue machine told you."

Thus far, Thomas had assumed that the violent interruption to his progress to this encounter had been exactly what it seemed: an intervention by a dissident element within the True Civilization. Now, he wondered whether it might all have been a sham: a ploy mounted by his interrogators. He had assumed, too, that Walter Raleigh's spiderbite had either been an accident of happenstance or an assassination attempt. Now he wondered whether it might have been staged for subtler reasons. He reminded himself that the True Civilization's philosophers, like the ethereals, had probably been studying humankind, albeit from a distance, for a very long time—centuries, at least. Was it possible, he wondered, that the supposedly aberrant pattern of life on Earth had not arisen as a freak of the Divine Will, but as some kind of experiment on the part of the True Civilization's practitioners of some kind of New Learning?

"My response," he said, slowly, "is that if the other machine were right about there being some fundamental difference of philosophy between exoskeletal and endoskeletal forms of life, it cannot be greater than the fundamental difference of philosophy between lobsters and moths, or between ants and slugs. Even if it were, it would be better to regard it as an opportunity for expanding the versatility of the unity at the heart of the True Civilization than to think of it as a potential generator of enmity and strife."

Drake did not whisper any further encouragement, and Thomas could sense a certain perplexity in his friend's stance. No one else had heard what the murderous machine had said, and he had not yet had an opportunity to tell them. He did not yet know what he ought to tell them, even if he could be confident that his words were not being overheard.

When he glanced sideways, Thomas saw that Field was having great difficulty suppressing his preacher's instinct—but Field was no fool, and knew that there were occasions when even the most fervent messenger of God might do better to hold his tongue.

"Thank you, Thomas," the machine said. "Master Dee will doubtless be proud of you." Thomas took careful note of the fact that the entity had said "will" rather than "would," and the consequent implication that the fleshcore really did intend to send them safely home.

"May I ask a question?" Thomas asked.

"You may," the machine said.

"Is the representative of the Great Fleshcores, and of the True Civilization, willing to guarantee that the precious rarity of the human race, and its vertebrate kin, will be protected against any predator or parasite that seeks to destroy it, to the full extent of their ability?"

There was no delay in making the reply. "This representative of the Great Fleshcores and the True Civilization is willing to guarantee that your world will be protected against external predators to the extent of its need—with the condition that no species therefrom will become a predator upon any other world or species."

Thomas took due note of the fact that he was not asked, or expected, to guarantee *that*.

The giant eyes closed again, and the wall's face began to fade away.

Thomas was about to cry "Wait!" when his discreet passenger said: "Don't! You've said more than enough—and the fleshcore is satisfied, for now."

"Have we passed our trial by ordeal, Master Digges?" Raleigh whispered, before Thomas could reply to his silent companion.

Thomas had to suppose that his friend was right, and that this had indeed

been a trial by ordeal from the moment the *Queen Jane* had passed from the air into the ether. It still was.

"For now," he whispered, echoing the ethereal's words, with all their ominous import. *Pray to God that this is more than a dream induced by that strange smoke-creature*, Thomas thought. *We might wish to have have found a kinder and more palatable truth—but, please God, let it be the truth that we have found, not some stupid nightmare*. He was not certain that his prayer would be granted, although he told himself that he was incapable of inventing such a nightmare, and that there was surely no playwright in Queen Jane's court who could have imagined a drama of this sort. If the ethereal could be trusted, dreaming was a rare gift—or curse—and it should not be exercised too generously.

"My companions may take you back to the moon now," the machine told Thomas. "Returning the ethership to Earth will, however, be your own responsibility."

"We can do that," Thomas assured him. "Will we be visited by their kind—or any other—in the near future?"

"Probably not," the machine said, "but you may be sure that they will be watching you. They will find a way to communicate with you, if they need to do so."

As they turned to go, Thomas looked full into John Field's face, and saw a new terror in it, which suggested that Aristocles' kin would be wise not to show themselves too readily on the surface of the Earth at the present time, if they did not want to cause dire alarm.

\* \* \* \*

They met no hostile machines or poisonous spiders on the return journey, and they did not descend into the interior of the moon again before being taken to the ethership. Their goodbyes were not protracted.

The blast-off from the moon was not nearly as taxing as the blast-off from Earth had been. Once they were clear of its surface, headed for Earth, it was de Vere who said: "Is it safe to talk freely now, do you think?"

"As safe as it has ever been," Drake opined. "God has always been able to hear us, and the Devil too—what does it matter if a few monstrous insects are added to the list, or a vast community of worlds like giant periwinkles, whose flesh is all brain?"

"Nothing that we have seen," Field stated, his voice dull in spite of an obvious determination to hold to his faith, "can alter the fact that Christ is our hope and our salvation—but we have learned a terrible lesson."

"What lesson is that, Reverend Field?" Thomas asked, calmly.

"God revealed to man in the scriptures everything that man had need to know," Field repeated. "This relentless search for a so-called New Learning is blasphemous; we know all that God intended us to know, and there is no further source of information but the Devil, who is ever delighted to mock and torment us. We have been punished, Master Digges; there is a demon within you as I speak."

"Is that what you intend to report to Archbishop Foxe?" Drake asked, his voice as mild as his captain's.

"It is," Field said.

"He won't thank you for it," Raleigh opined. "If we have learned a lesson ... well, I believe that I shall be inclined to treat insects with a little more respect and kindness in future—although I may not feel the need to extend the same courtesy to spiders."

"They weren't demons, John," Thomas said, quietly. "Whether or not they have demons of their own, none of them is an imp of Satan. They are not angels either, alas, for all that they are message-bearers—but we must deal with the world as we find it, not as we would rather it were."

"We'll have a tale to tell, though, won't we?" said de Vere. "A traveler's tale to put John Mandeville and Odysseus to shame. Will anyone believe us, do you think?"

"I am an honest man," Field said, carefully making no claim on behalf of anyone else. "What I have seen, I have seen. God is my witness, and my counselor. Archbishop Foxe will believe me; the Church of England will believe me; the faithful will believe me."

"Master Dee will trust Tom," said Drake, pensively, as he checked the instruments with a frown slowly gathering on his brow. "He's a mathematician, after all. As for me—well, some will and some won't, but that's the kind of company I keep."

"The queen will believe us," Raleigh supplied. "That's what matters. The queen will believe us."

"I don't want to alarm you, Tom," Drake said, softly, "but I believe we have a problem."

It only required a few minutes' urgent enquiry for Thomas to ascertain that Drake was right. He had to untether himself to do it, and make his way about the

cabin as best he could, feeling very strange as he did so, but it did not take long to locate the hairline crack in the ethership's hull. It was impossible to tell whether it had resulted from the stress and strain of their outward journey or whether it was the result of subtle sabotage.

In theory, the descent to Earth should have been simple enough. Dee had fitted the ethership with a heat-shield so that it would not burn up from the friction of its passage through the air, and a large parachute to slow its descent as it approached the surface. The arc of the descent had been calculated in advance; provided that Thomas could make certain that they began their descent over the correct point on the Earth's surface, with the ship orientated, the *Queen Jane* ought to have been able to drift down into the fields of Kent with no particular difficulty.

It was possible that the crack would make no significant difference, if it remained no wider than a hair. Given that the ether was breathable, at least in the short term, any exchange of air and ether would be harmless, but the difference in pressure between the interior and exterior of the hull was dangerous in two ways. As the cabin pressure dropped, breathing would become more difficult, as it did during an ascent of a high mountain. More importantly, the pressure exerted on the crack would tend to increase its dimensions, further weakening the hull. When the *Queen Jane* re-entered the atmosphere and began to accelerate in the tightening grip of affinity, it might break up.

Thomas did what he could to seal the hole with the means that Dee had thought to provide, but he could not help looking regretfully at the backs of his hands, at the dressings the Selenite insects had applied to his wounds. With a sealant of that sort, he might have made a much better job of it.

"Would you like to leave me now?" Thomas said, silently, to his unobtrusive passenger. "Or will you wait to see me die, and flee my body in company with my soul?"

"I might have left you, had I been sure that you would be safe," the ethereal replied, "but now I dare not. You might need me, Thomas Digges. I cannot work miracles, but I have means of dealing with your flesh that are cleverer than your own. I might be able to make the difference between life and death."

"Shall I open the hatch again, so that you can invite your brethren to assist my companions in the same fashion?" Thomas asked.

"My kind is not as gregarious as the members of the True Civilization," Lumen said, apologetically. "The ether is unimaginably vast, and our manifold species were not shaped by the crude demands of affinity. No help that I could summon could possibly arrive in time—but I shall do what I can, and it may be that I can enable you to help your companions."

To his crewmen, Thomas said: "The *Queen Jane* might still come safely to ground. If not ... well, we have individual parachutes, for use in dire emergency. I'll hand them out, so that you can put them on."

"What are our chances, Captain?" de Vere wanted to know.

"I don't know," Thomas confessed. "I have no way to tell. Drake and I will do our very best to guide the ship; the rest of you might do well to pray."

"God would not allow us to see what we have seen, only to die before we bring back the news," de Vere said, in a sudden attack of piety.

"God moves in mysterious ways," Raleigh observed, drily, "his wonders to perform. If Field is right, and there are things that men are not meant to know, so much the worse for those who find them out."

"Be quiet, Raleigh!" Field commanded, as if Thomas's advice to pray had given him an authority he had not had before—and the Puritan did indeed begin to pray, in a voice whose sheer determination suppressed its incipient unsteadiness. He prayed in English, and improvised as he went rather than using any repetitive formula that might be reminiscent of rosary-counting. To Thomas, however, the words seemed like a mere insect hum, devoid of any real significance—as prayer always had to him, although he would never have confessed such a thing, even to his father or John Dee.

While Field prayed, Thomas worked, and was glad to be able to do it, though he felt no terror. It was not that he was not afraid to die, but rather that he was committed to do his utmost to avoid it—not merely for himself but for his loyal crew. He could not help wondering as he worked, though, whether the crack had been formed by some freak of chance—or act of God—or made by the deft stroke of an insectile talon.

Thomas was certain in his own mind that the five of them had not been taken to the heart of the Milky Way in order to be tried, but merely in order to be inspected, investigated at closer range than had previously been convenient. He had no idea how much, or exactly what, the representatives of the True Civilization might have taken from his body and his mind, or how much use it might be to them. He had been, in essence, some specimen casually placed beneath a magnifying lens because the opportunity had presented itself. He did not suppose for a instant that any of his captors—not even the specialist Aristocles, who had died in consequence of his curiosity—had actually cared about him as an individual, or as an intelligence. In such circumstances, the promises of a being like the Great Fleshcore were probably worthless, in principle and in practice.

Such thoughts as these, and not the love or fear of God, were what was in the captain's mind as the ship began its perilous descent into the Earth's affinity-well,

when every passing second would henceforth bring it closer to salvation or destruction.

In the meantime, Field's rambling prayer continued, gathering passion as it went—and Thomas could see clearly enough that even Raleigh had committed himself fully to its cause. If de Vere would have preferred a Romanist priest to lead him, there was no sign of it now.

"Thank you, lads," Thomas said, softly. "You've done England proud. Should we be separated somehow, I'll buy you all a drink when we meet up in London."

The *Queen Jane* almost made it—but not quite. She did, however, remain intact long enough to allow Thomas to see the whole of the south-east corner of England looming up beneath him as he finally jumped clear of the disintegrating ship—the last man to do so, as was required of a captain in Her Majesty's service. When he had bid farewell to Drake, the last of his human companions to exit the disintegrating craft, he said to his one remaining friend: "Are you sure that you wouldn't rather go up than down? I shall be safe, I trust, in God's hands."

"We shall both be safe, God willing," Lumen assured him. "In any case, you need not fear for me."

Thomas jumped clear of the wreck of his ship, and opened his parachute.

\* \* \* \*

The slowest part of the descent, psychologically speaking, was the last. It seemed to take forever for the parachute to float over the Garden of England, drifting on the wind almost to the Surrey border. Thomas looked around constantly, hoping to catch sight of one of the other parachutes, but saw none.

His passage seemed so very gentle that he was taken entirely by surprise by the shock of the landing. He rolled with the impact, and contrived to avoid breaking any limbs—whether by virtue of his own skill or with subtle assistance, he could not tell—but he was winded, and badly bruised.

He ended up lying on his back in the grass of a fallow field, staring up into the blue sky, peppered with light cloud. For a long moment, he could not draw breath—but then his lungs recovered, and he gulped convulsively.

There was a quarter-moon clearly visible in the west; the sun was still in the east.

"Thank you," Thomas said to his passenger, although he was not at all sure that he had anything for which to thank the ethereal.

Lumen seemed even less certain than he was. "I'm sorry, Tom," it said. "Truly sorry—but it won't be forever. We shall meet again, you and I, and you shall know then why I must do what I must do. It will not matter how many of the others survive the fall; you were the captain of the ship, and their word cannot stand up against yours."

"What do you mean?" Thomas demanded.

"I cannot take the risk that the disaster was no accident," the ethereal said. "Necessity is the mother of improvisation—but it will not be forever, Tom. I promise you that. One way or another, we shall meet again, and you'll know the truth before you die."

Thomas opened his lips then, intending to use his real voice as well as his inner one to formulate a protest against whatever his invader intended to do—but he gasped instead, and a spiral of dark blue smoke emerged from his mouth, arranging itself into a perceptible form as it hovered above his face.

Distinct as it was, the form was not readily identifiable. It might have been the shape of some exotic moth, or an artist's impression of an angel. It was by no means large, but Thomas could not help imagining that it was really a giant seen from a considerable distance rather than a mere trifle lingering inches above his supine body.

The creature could no longer speak to him, or communicate in any other way. Thomas could not tell whether it drifted contentedly away on the breeze, or whether it actively took wing.

But nothing has been done to me! Thomas thought. I am as I have always been, and I know the truth. If it intended to erase my memory of all that has happened, the trick has failed!

Thomas sat up and began to rub his aching limbs. He was alone; it seemed that no one had seen him fall. There were undoubtedly men working in the fields close by, but they had not looked up as they worked. Why would they?

Eventually, he got to his feet and began to walk, aiming vaguely in the direction of London. He hoped fervently that his four companions had made it safely to Earth, because he did not want to lose a single one of them—but partly, too, because he knew that there was little hope that anyone would believe his testimony if it were not supported with all possible vehemence by other voices. Dee might believe him, but anyone else—including the queen—would need the sworn agreement of three or four earnest voices before she could take such a fantastic story seriously.

Now that he had seen the ether-creature make its escape, however, Thomas

was no longer entirely sure that he believed it himself. Every step he took upon the good and fertile earth decreased his conviction that it had been real.

We humans are, after all, he thought, possessed of the gift—or curse—of dreaming. We are afflicted with the hazard of hallucination, whether we like it or not.

He remembered everything, but the more he interrogated his memory, the more obvious it seemed to become that it must have been a dream—not even a vision, but merely a dream.

Thomas touched his fingertips to the transparent dressings that the moth-creatures had put upon his wounds when he had "rescued" Walter Raleigh from the spider. Had they added more when he had been rescued himself from the hardcore philosopher who had risked so much to tell him that humankind was not alone, and that help would come one day to assist them in resisting the tyranny of the "dwellers in inner space"? He did not know—but felt certain that this supposed physical proof of his adventure was blatantly inadequate. Nor did it seem to him, any longer, at all possible that he had actually said what he had said to the Great Fleshcore, or that he had been party to what the ethereal Lumen had said, by means of his dancing fingertips, to the luckless Aristocles ... or, indeed, that there had ever been an ether-creature inside him, whether it be angel or insect. John Dee would prefer the former hypothesis, of course—but Dee was a dreamer at heart, and was always wont to place a little too much hope and faith in the produce of his dreaming.

An idea struck him then and he stopped in his tracks, reaching for his pouch. He opened it, and took out two small objects. One of them looked like a severed finger, although it was made of some mysterious spongy substance with a rod of metal in place of a bone. The other was a crudely carved figurine, apparently intended to represent an angel. Thomas laughed, thus confronted with the trivial items that had evidently inspired his nightmare. He could not remember now exactly where he had run across them. He threw them both into the hedgerow, shaking his head in bewilderment at the strange tricks played by the human mind.

Thomas knelt down beside the hedge, to place his left palm flat upon the fallow ground across which he was walking. He had been seen now, by men working in a neighboring field, but they did not come to greet him. He had nothing to do with them; they had their own business, which they were obliged by reason and custom alike to mind.

It's good to be home, he thought, with a sudden rush of glad relief. There's no other place like God's good English earth, and no better time to be here than the reign of good Queen Jane, for anyone who values peace of mind.