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# Science Fiction 

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## DAWN

a new novelet by

## ROGER ZELAZNY

BRIAN W. ALDISS ISAAC ASIMOV

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Roger Zelazny's latest accomplishment is the rendering of Hindu and Buddhist mythology into a tremendously entertaining science fiction story around which the sf reader can easily wrap his scrutable Western arms. Sometime around the 5th Century b.c., the Buddha, Prince Siddhartha Gautama, attained nirvana, the state of enlightenment and blissful detachment from the world. Here, the prince drops in on things Earthly again and finds some drastic changes in the old-time religion. For instance, applicants for rebirth must submit to the gods for psychprobes, and a bit of bad karma can mean a rather uncomfortable new body. (For more on this story, another to come, and Mr. Zelazny, see "In this issue," page 43.)

## DAWN

## by Roger Zelazny

One time a minor rajah from a minor principality came with his retinue into Mahartha, the city that is called Gatcway of the South and Capital of the Dawn, there to purchase him a new body. This was in the days when the thread of destiny might yet be plucked from out a gutter, the gods were less formal, the demons still bound, and the Celestial City yet occasionally open to men. This is the story of how the prince did bait the one-armed receiver of devotions before the Temple, incurring the disfavor of Heaven for his presumption . . .

Few are the beings born again among men; more numerous are those born again elsewhere.

Anguttara-nikaya (I, 35)

Riding into the capital of dawn at mid-afternoon, the prince, mounted upon a white mare, passed up the broad avenue of Surya, his hundred retainers massed at his back, his adviser Strake at his left hand, his scimitar in his sash, and a portion of his wealth with his pack horses.

The heat crashed down upon the turbans of the men, washed past them, came up again from the roadway.

A chariot moved slowly by, headed in the opposite direction, its driver squinting up at the banner the chief retainer bore, a courtesan stood at the gateway to
her pavilion, studying the traffic, and a pack of mongrel dogs followed at the heels of the horses, barking.

The prince was tall, and his mustaches were the color of smoke. His hands, dark as coffee, were marked with the stiff ridges of his veins. Still, his posture was erect, and his eyes were like the eyes of an ancient bird, electric and clear.

Ahead, a crowd gathered to watch the passing troop. Horses were ridden only by those who could afford them, and few were that wealthy. The slizzard was the common mount-a scaled creature with snake-like neck, many teeth, dubious lineage, brief lifespan, and a vicious temperament; the horse, for some reason, having grown barren in recent generations.

The prince rode on, into the capital of dawn, the watchers watching.

Passing, they turned off the avenue of the sun and headed up a narrower thoroughfare. They moved by the low buildings of commerce, the great shops of the great merchants, the banks, the Temples, the inns, the brothels. They passed on, until at the fringe of the business district they came upon the princely hostel of Hawkana, the Most Perfect Host. They drew rein at the gate, for Hawkana himself stood outside the walls, simply dressed, fashionably
corpulent and smiling, waiting to personally conduct the white mare within.
"Welcome, Lord Siddhartha!" he called in a loud voice, so that all within earshot might know the identity of his guest. "Welcome to this well-nightingaled . vicinity, and to the perfumed gardens and marble halls of this humble establishment! To your riders welcome also, who have ridden a goodly ride with you and no doubt seek subtle refreshment and dignified ease as well as yourself. Within, you will find all things to your liking, I trust, as you have upon the many occasions in the past when you have tarried within these halls in the company of other princely guests and noble visitors, too numerous to mention, such as
"And a good afternoon to you also, Hawkana!" cried the prince, for the day was hot and the innkeeper's speeches, like rivers, always threatened to flow on forever. "Let us enter quickly within your walls where, among their other virtues too numerous to mention, it is also cool."

Hawkana nodded briskly, and taking the mare by the bridle led her through the gateway and into his courtyard. There he held the stirrup while the prince dismounted, then giving the horses into the keeping of his stable hands, and dispatching a small boy through the gateway to clean
the street where they had waited.
Within the hostel, the men were bathed, standing in the marble bath hall while servants poured water over their shoulders. Then did they annoint themselves after the custom of the warrior caste, put on fresh garments, and pass into the hall of dining.

The meal lasted the entire afternoon, until the warriors lost count of the courses. At the right hand of the prince, who sat at the head of the long, low servingboard, three dancers wove their way through an intricate pattern, finger-cymbals clicking, faces bearing the proper expressions for the proper moments of the dance, as four veiled musicians played the traditional music of the hours. The table was covered with a richly woven tapestry of blue, brown, yellow, red, and green, wherein was worked a series of hunting and battle scenes: riders mounted on slizzard and horse met with lance and bow the charges of feather-panda, firerooster and jewel-podded command plant; green apes wrestled in the tops of trees; the Garuda Bird clutched a sky demon in its talons, assailing it with beak and pinions; from the depths of the sea crawled an army of horned fish, clutching spikes of pink coral in their jointed fins, facing a row of kirtled and helmeted men who bore lances and torches to oppose their way upon the land.

The prince ate but sparingly. He toyed with his food, listened to the music, laughed occasionally at the jesting of one of his men.

He sipped a sherbet, his rings clicking against the sides of the glass.

Hawkana appeared beside him.
"Goes all well with you, Lord?" he inquired.
"Yes, good Hawkana, all is well," he replied.
"You do not eat as do your men. Does the meal displease you?"
"It is not the food, which is excellent, nor its preparation, which is faultless, worthy Hawkana. Rather, it is my appetite, which has not been high of late."
"Ah!" said Hawkana, knowingly. "I have the thing, the very thing! Only one such as yourself may truly appreciate it. Long has it rested upon the special shelf of my cellar. The god Krishna had somehow preserved it against the ages. He gave it to me many years ago because the accommodations here did not displease him. I shall fetch it for you."

He bowed then, and backed from the hall.

When he returned he bore a bottle. Before he saw the paper upon its side, the prince recognized the shape of that bottle.
"Burgundy!" he exclaimed.
"Just so," said Hawkana. "Brought from vanished Uratha, long ago."

He sniffed at it and smiled.

Then he poured a small quantity into a pear-shaped goblet and set it before his guest.

The prince raised it and inhaled of its bouquet. He took a slow sip. He closed his eyes.

There was a silence in the room, in respect of his pleasure.

Then he lowered the glass and Hawkana poured into it once again the product of the Pinot noir grape which could not be cultivated in this land.

The prince did not touch the glass. Instead, he turned to Hawkana, saying: "Who is the oldest musician in this house?"
"Mankara, here," said his host, gesturing toward the white-haired man who took his rest at the serving table in the corner.
"Old not in body, but in years," said the prince.
"Oh, that would be Dele," said Hawkana, "if he is to be counted as a musician at all. He says that once he was such a one."
"Dele?"
"The boy who keeps the stables."
"Ah, I see. Send for him."
Hawkana clapped his hands and ordered the servant who appeared to go into the stables, make the horse-boy presentable, and fetch him with dispatch into the presence of the diners.
"Pray, do not bother making him presentable, but simply bring him here," said the prince.

He leaned back and waited then, his eyes closed.

When the horse-boy stood before him, he asked:
"Tell me, Dele, what music do you play?"
"That which no longer finds favor in the hearing of Brahmins," said the boy.
"What was your instrument?"
"Piano," said Dele.
"Can you play upon any of these?" He gestured at those instruments which stood, unused now, upon the small platform beside the wall.

The boy cocked his head at them.
"I suppose I could manage on the flute, if I had to."
"Do you know any waltzes?" "Yes."
"Will you play me The Blue Danube?"

The boy's sullen expression vanished, to be replaced by one of uneasiness. He cast a quick glance back at Hawkana, who nodded.
"Siddhartha is a prince among men, being of the First," stated the host.
"The Blue Danube, on one of these flutes?"
"If you please."
The boy shrugged.
"I'll try," he said. "It's been an awfully long time . . . Bear with me."

He crossed to where the instruments lay and muttered something to the owner of the flute he selected. The man nodded his head. Then he raised it to his lips and
blew a few tentative notes. He paused, repeated the trial, then turned about.

He raised it once more and began the quivering movement of the waltz. As he played, the prince sipped his wine.

When he paused for breath, the prince motioned him to continue. He played tune after forbidden tune, and the professional musicians put professional expressions of scorn upon their faces, but beneath their table several feet were tapping in time with the music.

Finally, the prince had finished his wine. Evening was near to the city of Mahartha. He tossed the boy a purse of coins and did not look into his tear-streaked face as he departed from the hall. He rose then and stretched, smothering a yawn with the back of his hand.
"I retire to my chambers," he said to his men. "Do not gamble away your inheritances in my absence."

They laughed then and bade him good night, calling for strong drink and salted biscuits. He heard the rattle of dice as he departed.

The prince retired early so that he might arise before daybreak. He instructed a servant to remain outside his door all the following day and to refuse admission to any who sought it, saying that he was indisposed.

Before the first flowers had opened to the first insects of morning, he had gone from the hostel, only an ancient green parrot witnessing his departure. Not in silks sewn with pearls did he go, but in tatters, as was his custom on these occasions. Not preceded by conch and drum did he move, but by silence, as he passed along the dim streets of the city. These streets were deserted, save for an occasional doctor or prostitute returning from a late call. A stray dog followed him as he passed through the business district, heading in the direction of the harbor.

He seated himself upon a crate at the foot of a pier. The dawn came to lift the darkness from the world, and he watched the ships stirring with the tide, empty of sail, webbed with cables, prows carved with monster or maiden. His every visit to Mahartha brought him again to the harbor, for a little while.

Morning's pink parasol opened above the tangled hair of the clouds, and cool breezes crossed the docks. Scavenger birds uttered hoarse cries as they darted about loop-windowed towers, then swooped across the waters of the bay.

He watched a ship put out to sea, tent-like vanes of canvas growing to high peaks and swelling in the salt air. Aboard other ships, secure in their anchorage, there was movement now, as
crews made ready to load or unload cargoes of incense, coral, oil, and all kinds of fabrics, as well as metals, cattle, hard woods and spices. He smelled the smells of commerce and listened to the cursing of the sailors, both of which he admired, the former, as it reeked of wealth, and the latter because it combined his two other chief preoccupations, these being theology and anatomy.

After a time, he spoke with a foreign sea captain who had overseen the unloading of sacks of grain and now took his rest in the shade of the crates.
"Good morning," he said. "May your passages be free of storm and shipwreck, and the gods grant you safe harbor and a good market for your cargoes."

The other nodded, seated himself upon a crate, and proceeded to fill a small clay pipe.
"Thank you, old one," he said. "Though I do pray to the gods of the Temples of my own choosing, I accept the blessings of any and all. One can always use blessings, especially a seaman."
"Had you a difficult voyage?"
"Less difficult than it might have been," said the sea captain. "That smouldering sea mountain, the Cannon of Nirriti, discharges its bolts against heaven once again."
"Ah, you sailed from the southwest!"
"Yes. Chatisthan, from Ispar-
by-the-Sea. The winds are good in this season of the year, but for this reason they also carried the ash of the Cannon much further than any would think. For six days this black snow fell upon us, and the odors of the underworld pursued us, fouling food and water, making the eyes to weep and the throat to burn. We offered much thanksgiving when we finally outran it. See how the hull is smeared? You should have seen the sails-black as the hair of Ratri!"

The prince leaned forward to better regard the vessel.
"But the waters were not especially troubled?" he asked.

The sailor shook his head.
"We hailed a cruiser near the Isle of Salt, and we learned of it that we had missed by six days the worst dischargings of the Cannon. At that time, it burnt the clouds and raised great waves, sinking two ships the cruiser did know of, and possibly a third." The sailor leaned back, stoking his pipe. "So, as I say, a seaman can always use blessings."
"I seek a man of the sea," said the prince. "A captain. His name is Jan Olvegg, or perhaps he is now known as Olvagga. Do you know him?"
"I knew him, but it has been long since he sailed."
"Oh? What has become of him?"
The sailor turned his head to better study him.
"Who are you to ask?" he finally inquired.
"My name is Sam. Jan is a very old friend of mine."
"How old is 'very old'?"
"Many, many years ago, in another place, I knew him when he was captain of a ship which did not sail these oceans."

The sea captain leaned forward suddenly and picked up a piece of wood, which he hurled at the dog who had rounded a piling at the other side of the pier. It yelped once and dashed off toward the shelter of a warehouse. It was the same dog which had followed the prince from the hostel of Hawkana.
"Beware the hounds of hell," said the captain. "There are dogs and there are dogs-and there are dogs. Three different kinds, and in this port drive them all from your presence." Then he appraised the other once again. "Your hands," he said, gesturing with his pipe, "have recently worn many rings. Their impressions yet remain."

Sam glanced at his hands and smiled.
"Your eyes miss nothing, sailor," he replied. "So I admit to the obvious: I have recently worn rings."
"So, like the dogs, you are not what you appear to be-and you come asking after Olvagga, by his most ancient name. Your name, you say, is Sam. Are you, perchance, one of the First?"

Sam did not reply immediately, but studied the other as though waiting for him to say more.

Perhaps realizing this, the captain continued. "Olvagga, I know, was numbered among the First, though he never spoke of it. Whether you are yourself among the First, or are one of the Masters, you are aware of this. So I do not betray him by so speaking. I do wish to know whether I speak to a friend or an enemy, however."

Sam frowned. "Jan was never known for the making of enemies," he said. "You speak as if he has them now, among those whom you call the Masters."

The seaman continued to stare at him. "You are not a Master," he finally said, "and you come from afar."
"You are correct," said Sam, "but tell me how you know these things."
"First," said the other, "you are an old man. A Master, too, could have upon him an old body, but he would not-any more than he would remain a dog for very long. His fear of dying the real death, suddenly, in the manner of the old, would be too great. So he would not remain so long as to leave the marks of rings deeply imprinted upon the fingers. The wealthy are never despoiled of their bodies. If they are refused rebirth, they live out the full span of their days. The Masters would fear a rising up in arms among the followers of such
a one, were he to meet with other than a natural passing. So a body such as yours could not be obtained in this manner. A body from the life tanks would not have marked fingers either.
"Therefore," he concluded, "I take you to be a man of importance other than a Master. If you knew Olvagga of old, then you are also one of the Firstlings, such as he. Because of the sort of information which you seek, I take you to be one from afar. Were you a man of Mahartha you would know of the Masters, and knowing of the Masters you would know why Olvagga cannot sail."
"Your knowledge of matters in Mahartha seems greater than my own-oh, newly arrived sailor."
"I, too, come from a distant place," acknowledged the captain, smiling faintly, "but in the space of a dozen months I may visit twice as many ports. I hear news -news and gossip and tales from all over-from more than a double dozen ports. I hear of the intrigues of the palace and the affairs of the Temple. I hear the secrets whispered at night to the golden girls beneath the sugarcane bow of Kama. I hear of the campaigns of the Khshatriya and the dealings of the great merchants in the futures of grains and spices, jewels and silk. I drink with the bards and the astrologers, with the actors and the servants, the coachmen and the tailors.

Sometimes, perhaps, I may strike the port where freebooters have haven and learn there the faring of those they hold to ransom. So do not think it strange that I, who come from afar, may know more of Mahartha than you, who may dwell perhaps a week's faring hence. Occasionally, I may even hear of the doings of the gods."
"Then you can tell me of the Masters, and why they are to be numbered as enemies?" asked Sam.
"I can tell you something of them," replied the captain, "since you should not go unwarned. The body-merchants are now the Masters of Karma. Their individual names are now kept secret, after the manner of the gods, so that they seem as impersonal as the Great Wheel which they claim to represent. They are no longer merely body-merchants, but are allied with the Temples. These too, are changed, for your kinsmen of the First who are now gods do commune with them from Heaven. If you are indeed of the First, Sam, your way must lead you either to deification or extinction, when you face these new Masters of Karma."
"How?" asked Sam.
"Details you must seek clsewhere," said the other. "I do not know the processes whereby these things are achieved. Ask after Jannaveg the sailmaker on the Street of the Weavers."
"This is how Jan is now known?"

The other nodded.
". . . And beware the dogs," he said, "or for that matter, anything else which is alive and may harbor intelligence."
"What is your name, captain?" asked Sam.
"In this port, I have no name at all or a false one, and I see no reason for lying to you. Good day, Sam."
"Good day, captain. Thank you for your words."

Sam rose and departed the harbor, heading back toward the business district and the streets of the trades.

The sun was a red discus in the heavens, rising to meet the Bridge of the Gods. The prince walked through the awakened city, threading his way among the stalls displaying the skills of the workmen in the small crafts. Hawkers of unguents and powders, perfumes and oils moved about him. Florists waved their garlands and corsages at the passerby; and the vintners said nothing, sitting with their wineskins waiting for their customers to come to them as they always did. The morning smelled of cooking food, musk, flesh, excrement, oils and incense all churned up together and turned loose to wander like an invisible cloud.

Dressed as a beggar himself, it did not seem out of place for him to stop and speak to the hunchback with the begging bowl.
"Greetings, brother," he stated. "I am far from my quarter on an errand. Can you direct me to the Street of the Weavers?"

The hunchback nodded and shook his bowl suggestively.

He withdrew a small coin from the pouch concealed beneath his tattered garments. He dropped it into the hunchback's bowl and it quickly vanished.
"That way." The man gestured with his head. "The third street you come upon, turn there to the left. Then follow it past two streets more, and you will be at the Circle of the Fountain before the Temple of Varuna. Coming into that Circle, the Street of the Weavers is marked by the Sign of the Awl."

He nodded to the hunchback, patted his hump, and continued on his way.

When he reached the Circle of the Fountain, the prince halted. Several dozen people stood in a shifting line before the Temple of Varuna, most stern and august of all the deities. These people were not preparing to enter the Temple, but rather were engaged in some occupation which required waiting and taking turns. He heard the rattling of coins and he wandered nearer.

It was a machine, gleaming and metallic, before which they moved.

A man inserted a coin into the mouth of a steel tiger. The machine began to purr. He pressed
buttons, cast in the likenesses of animals and demons. There came then a flashing of lights along the lengths of the Nagas, the two holy serpents who twisted about the transparent face of the machine.

He edged closer.
The man drew down upon the lever which grew from the side of the machine, cast in the likeness of the tail of a fish.

A holy blue light filled the interior of the machine, the serpents pulsed redly, and there, in the midst of the light and a soft music which had begun to play, a prayer wheel swung into view and began spinning at a furious pace.

The man wore a beatific expression. After several minutes, the machine shut itself off. He inserted another coin and pulled the lever once more, causing several of those nearer to the end of the line to grumble audibly, remarking to the effect that that was his seventh coin, it was a warm day, there were other people waiting to get some praying done, and why did he not go inside and render such a large donation direct to the priests? Someone replied that the little man obviously had much atoning to do. There then began some speculation as to the possible nature of his sins. This was accompanied by much laughter.

Seeing that there were several beggars waiting their turn in line, the prince moved to its end and stood there.

As the line advanced, he noted that while some of those who passed before the machine pushed its buttons, others merely inserted a flat metal disc into the mouth of the second tiger on the opposite side of the chassis. After the machine had ceased to function, the disc fell into a cup and was retrieved by its owner. The prince decided to venture an inquiry.

He addressed the man who stood before him in line:
"Why is it," he asked, "That some men do have discs of their own?"
"It is because they have registered," said the other, without turning his head.
> "In the Temple?"
> "Yes."
> "Oh."

He waited half a minute, then inquired: "Those who are unregistered, and wish to use it-they push the buttons?"
"Yes," said the other, "spelling out their name, occupation, and address."
"Supposing one be a visitor here, such as myself?"
"You should add the name of your city."
"Supposing one is unlettered, such as myself-what then?"

The other turned to him. "Perhaps 'twere better," he said, "that you make prayer in the old way, and give the donation direct into the hands of the priests. Or register, and obtain your own disc."
"I see," said the prince. "Yes, you are right. I must think of this more. Thank you."

He left the line and circled the fountain to where the Sign of the Awl hung upon a pillar. He moved up the Street of the Weavers.

Three times did he ask after Janagga the sailmaker, the third time of a short woman with powerful arms and a small mustache, who sat cross-legged, plaiting a rug, in her stall beneath the low eave of what once might have been a stable and still smelled as if it were.

She growled him directions, after raking him upwards and down again with oddly lovely brown-velvet eyes. He followed her directions, taking his way up a zigzagging alley and down an outer stair which ran along the wall of a five-story building, ending at a door which opened upon a basement hallway. It was damp and dark within.

He knocked upon the third door to his left, and after a time it opened.

The man stared at him.
"Yes?"
"May I come in? It is a matter of some urgency

The man hesitated a moment, then nodded abruptly and stepped aside.

The prince moved past him and into his chamber. A great sheet of canvas was spread out over the floor, before the stool upon
which the man reseated himself. He motioned the prince into the only other chair in the room.

He was short and big in the shoulders, his hair was pure white, and the pupils of his eyes bore the smoky beginnings of cataract invasion. His hands were brown and hard, the joints of his fingers knotted.
"Yes?" he repeated.
"Jan Olvegg," said the other.
The old man's eyes widened, then narrowed to slits. He weighed a pair of scissors in his hand.
"It's a long way to Tipperary," said the prince.

The man stared, then smiled suddenly. ". . . If your heart's not here," he said, placing the scissors on his workstand.
"How long has it been, Sam?" he asked.
"I've lost count of the years."
"Me too. But it must be forty-forty-five?-since I've seen you. Much beer over the damn dam since then, I daresay?"

Sam nodded.
"I don't really know where to begin . . ." said the man.
"For a start, tell me-why 'Janagga'?"
"Why not?" asked the other. "It has a certain earnest, working class sound about it. How about yourself? Still in the prince business?"
"I'm still me," said Sam, "and they still call me Siddhartha when they come to call."

The other chuckled.
". . . And 'Binder of the Demons'," he recited. "Very good. I take it, then, since your fortunes do not match your garb, that you are casing the scene as is your wont."

Sam nodded.
". . . And I have come upon much which I do not understand."
"Aye," sighed Jan. "Aye. How shall I begin? How? I shall tell you of myself, that's how. -I have accumulated too much bad karma to warrant a current transfer."
"What?"
"Bad karma, that's what I said. The old religion is not only the religion: it is the revealed, enforced, and frighteningly demonstrable religion. But don't think that last part too loudly. About a dozen years ago the Council authorized the use of psych-probes on those who were up for renewal. This was right after the Accelera-tionist-Deicrat split, when the Holy Coalition squeezed out the tech-boys and kept right on squeezing. The simplest solution was to outlive the problem. The Temple crowd then made a deal with the body sellers, customers were brainprobed and Accelerationists were refused renewal, or . . . Wellsimple as that. There aren't too many Accelerationists now. But that was only the beginning. The god-party was quick to realize that therein lay the way of power. Having your brains scanned has be-
come a standard procedure, just prior to a transfer. The body merchants have become the Masters of Karma and a part of the Temple structure. They read over your past life, weigh the karma, and determine your life that is yct to come. It's a perfect way of maintaining the caste system and insuring Deicratic control. By the way, most of our old acquaintances are in it up to their haloes."
"God!" said Sam.
"Plural," Jan corrected. "They've always been considered gods, with their Aspects and Attributes, but they've made it awfully official now. And anyone who happens to be among the First had bloody well better be sure whether he wants quick deification or the pyre when he walks into the Hall of Karma these days.
"When's your appointment?" he finished.
"Tomorrow," said Sam, "in the afternoon. - Why are you still walking around, if you don't have a halo or a handful of thunderbolts?"
"Because I do have a couple friends, both of whom suggested I continue living-quietly-rather than face the probe. I took their sage advice to heart and consequently am still around to mend sails and raise occasional hell in the local bistros. Else-" He raised a calloused hand, snapped his fingers. "-Else, if not the real death, then perhaps a body shot full with
cancer, or the interesting life of a gelded water buffalo, or-"
"A dog?" asked Sam.
"Just so," Jan replied.
Jan filled the silence and two glasses with a splashing of alcohol.
"Thanks."
"Happy hellfire."
He replaced the bottle on his workstand.
"On an empty stomach yet You make that yourself?"
"Yep. Got a still in the next room."
"Congratulations, I guess. If I had any bad karma, it should all be dissolved by now."
"The definition of bad karma is anything our friends the gods don't like."
"What made you think you had some?"
"I wanted to start passing out machines among our descendants here. Got batted down at Council for it. Recanted, and hoped they forgot. But Accelerationism is so far out now that it'll never make it back in during my lifetime. Pity, too. I'd like to lift sail again, head off toward another horizon. Or lift ship
"The probe is actually sensitive enough to spot something as intangible as an Accelerationist attitude?"
"The probe," said Jan, "is sensitive enough to tell what you had for breakfast eleven years ago yesterday and where you cut yourself shaving that morning, while hum-
ming the Andorran national anthem."
"They were experimental things when we left-home," said Sam. "The two we brought along were very basic brain-wave translators. When did the breakthrough occur?"
"Hear me, country cousin," said Jan. "Do you remember a snotnosed brat of dubious parentage, third generation, named Yama? The kid who was always souping up generators, until one day one blew and he was so badly burned that he got his second body-one over 50 years old-when he was only sixteen? The kid who loved weapons? The fellow who anesthetized one of everything that moves out there and dissected it, taking such pleasure in his studies that we called him deathgod?"
"Yes, I recall him. Is he still alive?"
"If you want to call it that. He now is deathgod-not by nickname, but by title. He perfected the probe about forty years ago, but the Deicrats kept it under wraps until fairly recently. I hear he's dreamed up some other little jewels, too, to serve the will of the gods. -Like a mechanical cobra capable of registering encephalogram readings from a mile away, when it rears and spreads its fan. It can pick one man out of a crowd, regardless of the bodv he wears. There is no known antidote for its venom. Four seconds, no
more. -Or the fire wand, which is said to have scored the surfaces of all three moons while Lord Agni stood upon the seashore and waved it. And I understand that he is designing some sort of jet-propelled juggernaut for Lord Shiva at this moment.-Things like that."
"Oh," said Sam.
"Will you pass the probe?" Jan asked.
"I'm afraid not," he replied. "Tell me, I saw a machine this morning which I think may best be described as a pray-o-mat-are they very common?"
"Yes," said Jan. "They appeared about two years ago-dreamed up by young Leonardo over a short glass of soma one night. Now that the karma idea has caught on, the things are better than tax collectors. When mister citizen presents himself at the clinic of the god of the church of his choice on the eve of his sixtieth year, his praver account is said to be considered along with his sin account, in deciding the caste he will enter-as well as the age, sex, and health of the body he will receive. Nice. Neat."
"I will not pass the probe," said Sam, "even if I build up a mighty prayer account. They'll snare me when it comes to sin."
"What sort of sin?"
"Sins I have yet to commit, but which are being written in my mind as I consider them now."
"You plan to oppose the gods?"
"Yes."
"How?"
"I do not yet know. I shall begin, however, by contacting them. Who is their chief?"
"I can name you no one. Trimurti rules: that is, Brahma, Vishnu and Shiva. Which of these three be chiefest at any one time, I cannot say. Some say Brahma . . ."
"Who are they-really?" asked Sam.

Jan shook his head. "I do not know. They all wear different bodies than they did a generation ago. They all use god names."

Sam stood. "I will return later, or send for you."
"I hope so. -Another drink?"
Sam shook his head.
"I go to become Siddhartha once more, to break my fast at the hostel of Hawkana and announce there my intent to visit the Temples. If our friends are now gods then they must commune with their priests. Siddhartha goes to pray."
"Then put in no words for me," said Jan, as he poured out another drink. "I do not know whether I would live through a divine visitation."

Sam smiled.
"They are not omnipotent."
"I sincerely hope not," replied the other, "but I fear that day is not far off."
"Good sailing, Jan."
"Skaal."

Prince Siddhartha stopped on
the Street of the Smiths, on his way to the Temple of Brahma. Half an hour later he emerged from a shop, accompanied by Strake and three of his retainers. Smiling, as though he had received a vision of what was to come, he passed through the center of Mahartha, coming at last to the high, wide Temple of the Creator.

Ignoring the stares of those who stood before the pray-o-mat, he mounted the long, shallow stairway, meeting at the Temple entrance with the high priest, whom he had advised earlier of his coming.

Siddhartha and his men entered the Temple, disarming themselves and paying preliminary obeisances toward its central chamber, before addressing the priest.

Strake and the others drew back a respectful distance as the prince placed a heavy purse in the priest's hands and said, in a low voice:
"I'd like to speak with God."
The priest studied his face as he replied, "The Temple is open to all, Lord Siddhartha, where one may commune with Heaven for so long as one wishes."
"That is not exactly what I had in mind," said Siddhartha. "I was thinking of something more personal than a sacrifice and a long litany."
"I do not quite follow you. . ."
"But you understand the weight of that purse, do you not? It con-
tains silver. Another which I bear is filled with gold-payable upon delivery. I want to use your telephone."
"Tele . . .?"
"Communication system. If you were of the First, such as I, you would understand my reference."
"I do not
"I assure you my call will not reflect adversely upon your wardenship here. I am aware of these matters and my discretion has always been a byword among the First. Call First Base yourself and inquire, if it will put you at ease. I'll wait here in the outer chamber. Tell them Sam would have words with Trimurti. They will take the call."
"I do not know . . ."
Sam withdrew the second purse and weighed it in the palm of his hand. The priest's eyes fell upon it, and he licked his lips.
"Wait here," he ordered, and he turned on his heel and left the chamber.

Ili, the fifth note of the harp, buzzed within the Garden of the Purple Lotus.

Brahma loafed upon the edge of the heated pool, where he bathed with his harem.

His eyes appeared closed, as he leaned there upon his elbows, his feet dangling in the water.

But he stared out from beneath his long lashes, watching the dozen girls at sport in the pool,
hoping to see one or more cast an appreciative glance upon the dark, heavily-muscled length of his body. Black upon brown, his mustaches glistened in moist disarray, and his hair was a black wing upon his back. He smiled a bright smile in the filtered sunlight.

But none of them appeared to notice, so he refolded his smile and put it away. All their attention lay with the game of water polo in which they were engaged.

Ili, the bell of communication, buzzed once more, as an artificial breeze wafted the odor of garden jasmine to his nostrils.

He sighed.
He wanted so for them to worship him-his powerful physique, his carefully molded features. To worship him as a man, not as a god.

But though his special and improved body permitted feats no mortal man could duplicate, still he felt uneasy in the presence of an old war horse like Lord Shiva who, despite his adherence to the normal body-matrix, seemed to hold far more attraction for women. It was almost as if sex were a thing which transcended biology, and no matter how hard he tried to suppress the memory and destroy that segment of spirit, Brahma had been born a woman and somehow was woman still. Hating this thing, he had elected to incarnate time after time as an eminently masuline man, did so, and still felt
somehow inadequate, as though the mark of his true sex were branded upon his brow. It made him want to stamp his foot and grimmace.

He rose and stalked off toward his pavilion, past stunted trees which twisted with a certain grotesque beauty, past trellises woven with Morning Glory, pools of blue water lilies, strings of pearls swinging from rings all wrought of white gold, past lamps shaped like girls, tripods wherein pungent incenses burnt, and an eight-armed statue of a blue goddess who played upon the veena when properly addressed.

Brahma entered the pavilion and crossed to the screen of crystal, about which a bronze Naga twisted, tail in teeth.

He activated the answering mechanism.

There was a static snowfall, and then he faced the high priest of his Temple in Mahartha. The priest dropped to his knees and touched his caste mark three times upon the floor.
"Of the four orders of gods and the eighteen hosts of Paradise, mightiest is Brahma," sang the priest. "Creator of all, Lord of high Heaven and everything beneath it. A lotus springs forth from your navel; your hands churn the oceans; in three strides your feet encompass all the worlds. The drum of your glory strikes terror in the hearts of your enemies. Upon
your right hand is the wheel of the law. You tether catastrophes, using a snake for rope. Hail! See fit to accept the prayer of your priest. Bless me and hear me, Brahma!"
"Arise—priest," said Brahma, having forgotten his name. "What thing of mighty importance moved you to call me thus?"

The priest arose, cast a quick glance upon Brahma's dripping person and looked away again.
"Lord," said the priest, "I did not mean to call while you were at bath, but there is one among your worshippers here now who would speak with you, on a matter which I take to be of mighty importance."
"One of my worshippers! Tell him that all-hearing Brahma hears all, and direct him to pray to me in the ordinary manner, in the Temple proper!"

Brahma's hand moved toward the shutoff switch, then paused.
"How came he to know of the Temple-to-Heaven line?" he inquired. "And of the direct communion of saints and gods?"
"He says," replied the priest, "that he is of the First, and that I should relay the message that Sam would have words with Trimurti."
"Sam?" said Brahma. "Sam? Surely it cannot be . . . that Sam?"
"He is the one known hereabouts as Siddhartha, Binder of the Demons."
"Await my pleasure," said Brahma, "singing the while vari-
ous appropriate verses from the Vedas."
"I hear, my Lord," said the priest, and he commenced singing.

Brahma moved to another part of the pavilion and stood awhile before his wardrobe, deciding what to wear.

The prince, hearing his name called, turned from the contemplation of the Temple's interior. The priest, whose name he had forgotten, beckoned him up a corridor. He followed, and the passage led into a storage chamber. The priest fumbled after a hidden catch, then drew upon a row of shelves which opened outward, door-like.

The prince passed through this doorway.

He found himself within a richly decorated shrine. A glowing view-screen hung above its altar/ control panel, encircled by a bronze Naga which held its tail in its teeth.

The priest bowed three times.
"Hail, ruler of the universe, mightiest of the four orders of gods and the eighteen hosts of Paradisc. From your navel springs forth the lotus; your hands churn the oceans, in thrce strides -"
"I acknowledge the truth of what you say," replied Brahma. "You are blessed and heard. You
may leave us now."
"Lord?"
"That is correct. Sam is doubt-
less paying you for a private line, is he not?"
"Lord-!"
"Enough! Depart!"
The priest bowed quickly and left, closing the shelves behind him.

Brahma studied Sam, who was wearing dark jodhpurs, a sky-blue khameez, the blue-green turban of Urath, and an empty scabbard upon a chainbelt of dark iron.

Sam, in turn, studied the other, who stood with blackness at his back, wearing a feather cloak over a suit of light mail. It was caught at the throat with a clasp of fire opal. Brahma wore a purple crown, studded with pulsating amethysts, and he bore in his right hand a scepter mounted with the nine auspicious gems. His eyes were two dark stains upon his dark face. The gentle strumming of a veena occurred about him.
"Sam?" he said.
Sam nodded.
"I am trying to guess your true identity, Lord Brahma. I confess that I cannot."
"This is as it should be," said Brahma, "if one is to be a god who was, is, and always shall be."
"Fine garments, those you wear," said Sam. "Quite fetching."
"Thank you. I find it hard to believe that you still exist. Checking, I note that you have not sought a new body for half a century. That is taking quite a chance."

Sam shrugged.
"Life is full of chances, gambles, uncertainties
"True," said Brahma. "Pray, draw up a chair and sit down. Make yourself comfortable."

Sam did this, and when he looked up again, Brahma was seated upon a high throne carved of red marble, with a matching parasol flared above it.
"That looks a bit uncomfortable," he remarked.
"Foam-rubber cushion," replied the god, smiling. "You may smoke, if you wish."
"Thanks." Sam drew his pipe from the pouch at his belt, filled it, tamped it carefully, and struck it to fire.
"What have you been doing all this time?" asked the god, "since you left the roost of Heaven?"
"Cultivating my own gardens," said Sam.
"We could have used you here," said Brahma, "in our hydroponics section. For that matter, perhaps we still could. Tell me more of your stay among men."
"Tiger hunts, border disputes with neighboring kingdoms, keeping up the morale of the harem, a bit of botanical research-things like that, the stuff of life," said Sam. "Now my powers slacken, and I seek once more my youth. But to obtain it again, I understand that I must have my brains strained. Is that true?"
"After a fashion," said Brahma.
"To what end, may I ask?"
"That wrong shall fail and right prevail," said the god, smiling.
"Supposing I'm wrong," asked Sam. "How shall I fail?"
"You shall be required to work off your karmic burden in a lesser form."
"Have you any figures readily available as to the percentage which fails, vis-à-vis that which prevails?"
"Think not less of me in my omniscience," said Brahma, "if I admit to having, for the moment, forgotten these figures."

Sam chuckled.
"You say you have need of a gardener there in the Celestial City?"
"Yes," said Brahma. "Would you like to apply for the job?"
"I don't know," said Sam. "Perhaps."
"And then again, perhaps not?" said the other.
"Perhaps not, also," he acknowledged. "In the old days there was none of this shilly-shallying with a man's mind. If one of the First sought renewal, he paid the body price and was served."
"We no longer dwell in the old days, Sam. The new age is at hand."
"One would almost think that you sought the removal of all of the First who are not marshalled at your back."
"A pantheon has room for many, Sam. There is a niche for you, if you choose to claim it."

## "If I do not?"

"Then inquire in the Hall of Karma after your body."
"And if I elect godhood?"
"Your brains will not be probed. The Masters will be advised to serve you quickly and well. A flying machine will be dispatched to convey you to Heaven."
"It bears a bit of thinking," said Sam. "I'm quite fond of this world, though it wallows in an age of darkness. On the other hand, such fondness will not serve me to enjoy the things I desire, if it is decreed that I die the real death or take on the form of an ape and wander about the jungles. But I am not overly fond of artificial perfection either, such as existed in Heaven when last I visited there. Bide with me a moment while I meditate."
"I consider such indecision presumptuous when one has just been made such an offer."
"I know, and perhaps I should also, were our positions reversed. But if I were God and you were me, I do believe I would extend a moment's merciful silence while a man makes a major decision regarding his life."
"Sam, you are an impossible haggler! Who else would keep me waiting while his immortality hangs in the balance? Surely you do not seek to bargain with $m e$ ?"
"Well, I do come from a long line of slizzard traders-and I do very badly want something."
"And what may that be?"
"Answers to a few questions which have plagued me for awhile now."
"These being . . .?"
"As you are aware, I stopped attending the old Council meetings over a century ago, for they had become lengthy sessions calculated to postpone decision-making, and were primarily an excuse for a Festival of the First. Now, I have nothing against festivals. In fact, for a century and a half I went only to drink good Earth booze once more. But, I felt that we should be doing something about the passengers, as well as the offspring of our many bodies, rather than letting them wander a vicious world, reverting to savagery. I felt that we of the crew should be assisting them, granting them the benefits of the technology we had preserved, rather than building ourselves an impregnable paradise and treating the world as a combination game preserve and whorehouse. So, I have wondered long why this thing was not done. It would seem a fair and equitable way to run a world."
"I take it from this that you are an Accelerationist?"
"No," said Sam, "simply an inquirer. I am curious, that's all, as to the reasons."
"Then, to answer your questions," said Brahma, "it is because they are not ready for it. Had we acted immediately-yes,
this thing could have been done. But we were indifferent at first. Then, when the question arose, we were divided. Too much time passed. They are not ready and will not be for many centuries. If they were to be exposed to an advanced technology at this point, the wars which would ensue would result in the destruction of the beginnings they have already made. They have come far. They have begun a civilization after the manner of their fathers of old. But they are still children, and like children would they play with our gifts and be burnt by them. They are our children, by our long-dead First bodies, and second, and third, and many after-and so, ours is the parents' responsibility toward them. We must not permit them to be accelerated into an industrial revolution and so destroy the first stable society on this planet. Our parental functions can best be performed by guiding them as we do, through the Temples. Gods and goddesses are basically parent-figures, so what could be truer and more just than that we assume these roles and play them thoroughly?"
"Why then do you destroy their own infant technology? The printing press has been rediscovered on three occasions that I can remember, and suppressed each time."
"This was done for the same reason. They were not yet ready
for it. And it was not truly discovered, but rather it was remembered. It was a thing-legend which someone set about duplicating. If a thing is to come, it must come as a result of factors already present in the culture and not be pulled from out the past like a rabbit from a hat."
"It seems you are drawing a mighty fine line at that point, Brahma. I take it from this that your minions go to and fro in the world, destroying all signs of progress they come upon?"
"This is not true," said the god. "You talk as if we desire perpetually this burden of godhood, as if we seek to maintain a dark age that we may know forever the wearisome condition of our enforced divinity!"
"In a word," said Sam, "yes. What of the pray-o-mat which squats before this very Temple? Is it on par, culturally, with a chariot?"
"That is different," said Brahma. "As a divine manifestation, it is held in awe by the citizens and is not questioned, for religious reasons. It is hardly the same as if gunpowder were to be introduced."
"Supposing some local atheist hijacks one and picks it apart? And supposing he happens to be a Thomas Edison? What then?"
"They have tricky combination locks on them. If anyone other than a priest somehow opens one, it will
blow up and take him along with it."

And I notice you were unable to suppress the rediscovery of the still, though you tried. So you slapped on an alcohol tax, payable to the Temples."
"Mankind has always sought release through drink," said Brahma. "It has generally figured in somewhere in his religious ceremonies. Less guilt involved that way. True, we tried suppressing it at first, but we quickly saw we could not. So, in return for our tax, they receive here a blessing upon their booze. Less guilt, less of a hangover, fewer recriminations-it is psychosomatic, you know-and the tax isn't that high."
"Funny though, how many prefer the profane brew."
"You came to pray and you are staying to scoff, is that what you're saying, Sam? I offered to answer your questions, not debate Deicrat policies with you. Have you made up your mind yet regarding my offer?"
"Yes, Madeleine," said Sam, "and did anyone ever tell you how lovely you are when you're angry?"

Brahma sprang forward off the throne.
"How could you? How could you tell?" screamed the god.
"I couldn't, really," said Sam.
"Until now. It was just a guess, based upon some of your mannerisms of speech and gesture which I remembered. So you've finally
achieved your lifelong ambition, eh? I'll bet you've got a harem, too. What's it feel like, Madam, to be a real stud after having been a gal to start out with? 'Bet every Lizzie in the world would envy you if she knew. Congratulations."

Brahma drew himself up to full height and glared. The throne was a flame at his back. The veena thrummed on, dispassionately. He raised his scepter then and spoke:
"Prepare yourself to receive the curse of Brahma . . ." he began.
"Whatever for?" asked Sam. "Because I guessed your secret? If I am to be a god, what difference does it make? Others must know of it. Are you angry because the only way I could learn your true identity was by baiting you a little? I had assumed you would appreciate me the more if I demonstrated my worth, by displaying my wit in this manner. If I have offended you, I do apologize."
"It is not because you guessedor even because of the manner in which you guessed-but because you mocked me, that I curse you."
"Mocked you?" said Sam. "I do not understand. I intended no disrespect. I was always on good terms with you in the old days. If you will but think back over them, you will recall that this is true. Why should I jeopardize my position by mocking you now?"
"-Because you said what you thought too quickly, without thinking a second time."
"Nay, my Lord. I did but jest with you as any one man might with another when discussing these matters. I am sorry if you took it amiss. I'll warrant you've a harem I'd envy, and which I'll doubtless try to sneak into some night. If you'd curse me for being surprised, then curse away." He drew upon his pipe and wreathed his grin in smoke.

Finally, Brahma chuckled.
"I'm a bit quick-tempered, 'tis true," he explained, "and perhaps too touchy about my past. Of course, I've often jested so with other men. You are forgiven. I withdraw my beginning curse.
". . . And your decision, I take it, is to accept my offer?" he inquired.
"That is correct," said Sam.
"Good. I've always felt a brotherly affection for you. Go now and summon my priest, that I may instruct him concerning your incarnation. I'll see you soon."
"Sure thing, Lord Brahma." Sam nodded and raised his pipe. Then he pushed back the row of shelves and sought the priest in the hall without. Various thoughts passed through his mind, but this time he let them remain unspoken.

That evening, the prince held council with those of his retainers who had visited kinsmen and friends within Mahartha, and with those who had gone about through the town obtaining news and gos-
sip. From these he learned that there were only ten Masters of Karma in Mahartha, and that they kept their lodgings in a palace on the southeastern slopes above the city. They made scheduled visits to the clinics, or reading rooms, of the Temples, where the citizens presented themselves for judgment when they applied for renewal. The Hall of Karma itself was a massive black structure within the courtyard of their palace, where a person applied shortly after judgment to have his transfer made into his new body. Strake, along with two of his advisers, departed while daylight yet remained, to make sketches of the palace fortifications. Two of the prince's courtiers were dispatched across town to deliver an invitation to late dining and revelry to the Shan of Irabek, an old man and distant neighbor of Siddhartha's, with whom he had fought three bloody border skirmishes and occasionally hunted tiger. The Shan was visiting with relatives while waiting his appointment with the Masters of Karma. Another man was sent to the Street of the Smiths, where he requested of the metal workers that they double the prince's order and have it ready by early morning. He took along additional money, to insure their cooperation.

Later, the Shan of Irabek arrived at the hostel of Hawkana, accompanied by six of his relatives, who were of the merchant
caste but came armed as if they were warriors. Seeing that the hostel was a peaceable abode, however, and that none of the other guests or visitors bore arms, they put aside their weapons and seated themselves near the head of the table, beside the prince.

The Shan was a tall man, but his posture was considerably hunched. He wore maroon robes and a dark turban reaching down almost to his great, caterpillar-like eyebrows, which were the color of milk. His beard was a snowy bush, his teeth shown as dark stumps when he laughed, and his lower eyelids jutted redly, as though sore and weary after so many years of holding back his bloodshot orbs in their obvious attempt to push themselves forward out of their sockets. He laughed a phlegmy laugh and pounded the table, repeating, "Elephants are too expensive these days, and no damn good at all in mud!" for the sixth time, this being in reference to their conversation as to the best time of year to fight a war. Only one very new in the business would be so boorish as to insult a neighbor's ambassador during the rainy season, it was decided, and that one would thereafter be marked as a nouveau roi.

As the evening wore on, the prince's physician excused himself so as to superintend the preparation of the dessert and introduce a narotic into the
sweetcakes being served up to the Shan. As the evening wore further on, subsequent to the dessert, the Shan grew more and more inclined to close his eyes and let his head slump forward for longer and longer periods of time. "Good party," he muttered, between snores and finally, "Elephants are no damn good at all . . ." and so passed to sleep and could not be awakened. His kinsmen did not see fit to escort him home at this time, because of the fact that the prince's physician had added chloral hydrate to their winc, and they were at that moment sprawled upon the floor, snoring themselves. The prince's chief courtier arranged with Hawkana for their accommodation, and the Shan himself was taken to Siddhartha's suite, where he was shortly visited by the physician, who spoke to him in a soft, persuasive voice.
". . . Tomorrow afternoon," he was saying, "you will be Prince Siddhartha and these will be your retainers. You will report to the Hall of Karma in their company, to claim there the body which Brahma has promised you without the necessity of prior judgment. You will remain Siddhartha throughout the transfer, and you will return here in the company of your retainers, to be examined by me. Do you understand?"
". . . Yes," whispered the Shan. "Then repeat what I have told you."
". . . Tomorrow afternoon," said the Shan, "I will be Siddhartha, commanding these retainers

Bright bloomed the morning, and debts were settled beneath it. Half of the prince's men rode out of the city, heading north. When they were out of sight of Mahartha they began circling to the southeast, working their way through the hills, stopping only to don their battle gear.

Half a dozen men were dispatched to the Street of the Smiths, from whence they returned bearing heavy canvas bags, the contents of which were divided into the pouches of three dozen men, who departed after breakfast into the city.

The prince took counsel with his physician Narada, saying, "If I have misjudged the clemency of Heaven, then am I cursed indeed."

But the doctor smiled and replied, "I doubt you misjudged."

And so they passed from morning into the still center of day, the Bridge of the Gods golden above them.

When their charges awakened, they administered to their hangovers. The Shan was given a posthypnotic and sent with six of Siddhartha's retainers to the Palace of the Masters. His kinsmen were assured that he remained sleeping in the prince's quarters.
"Our major risk at this point," said the physician, "is the Shan.

Will he be recognized? The factors in our favor are that he is a minor potentate from a distant kingdom, he has only been in town for a short period of time, has spent most of that time with his kinsmen, and he has not yet presented himself for judgment. The Masters should still be unaware of your own physical appearance-"
"Unless I have been described to them by Brahma or his priest," said the prince. "For all I know, my communication may have been taped and the tape relayed to them for identification purposes."
"Why, though, should this have been done?" inquired Narada. "They should hardly expect stealth and elaborate precautions of one for whom they are doing a favor. No, I think we should be able to pull it off. The Shan must pass a probe, of course, but he should pass surface scrutiny, accompanied as he is by your retainers. At the moment, he does believe he is Siddhartha, and he could pass any simple lie-detection test in that regard-which I feel is the most serious obstacle he might encounter."

So they waited, and the three dozen men returned with empty pouches, gathered their belongings, mounted their horses, and one by one drifted off through the town, as though in search of revelry, but actually drifting slowly in a southeasterly direction.
"Good-bye, good Hawkana,"
said the prince, as the remainder of his men packed and mounted. "I shall bear, as always, good report of your lodgings to all whom I meet about the land. I regret that my stay here must be so unexpectedly terminated, but I must ride to put down an uprising in the provinces as soon as I leave the Hall of Karma. You are aware of how these things spring up the moment a ruler's back is turned. So, while I should have liked to spend another week beneath your roof, I fear that this pleasure must be postponed until another time. If any ask after me, tell them to seek me in Hades."
"Hades, my Lord?"
"It is the southernmost province of my kingdom, noted for its excessively warm weather. Be sure to phrase it just so, especially to the priests of Brahma, who may become concerned as to my whereabouts in days to come."
"I'll do that, my Lord."
"And take special care of the boy Dele. I expect to hear him play again on my next visit."

Hawkana bowed low and was about to begin a speech, so the prince decided upon that moment to toss him the final bag of coins and make an additional comment as to the wines of Urath-before mounting quickly and shouting orders to his men, in such a manner as to drown out any further conversation.

Then they rode through the
gateway and were gone, leaving behind only the physician and three warriors, whom he was to treat an additional day for an obscure condition having to do with the change of climate, before they rode on to catch up with the others.

They passed through the town, using side streets, and came after a time to the roadway which led up toward the Palace of the Masters of Karma. As they passed along its length, Siddhartha exchanged secret signs with those three dozen of his warriors who lay in hiding at various points off in the woods.

When they had gone half the distance to the palace, the prince and the eight men who accompanied him drew rein and made as if to rest waiting the while for the others to move abreast of them, passing carefully among the trees.

Before long, however, they saw movement on the trail ahead. Seven riders were advancing on horseback, and the prince guessed them to be his six lancers and the Shan.

When they came within hailing distance, they advanced to meet them.
"Who are you?" inquired the tall, sharp-eyed rider mounted upon the white mare. "Who are you that dares block the passage of Prince Siddhartha, Binder of Demons?"

The prince looked upon himmuscular and tanned, in his mid-
twenties, possessed of hawklike features and a powerful bearingand he felt suddenly that his doubts had been unfounded and that he had betrayed himself by his suspicion and mistrust. It appeared from the lithe physical specimen seated upon his own mount that Brahma had bargained in good faith, authorizing for his use an excellent and sturdy body, which was now possessed by the ancient Shan.
"Lord Siddhartha," said his man, who had ridden at the side of the Lord of Irabek, "it appears that they dealt fairly. I see naught amiss about him."
"Siddhartha!" cried the Shan. "Who is this one you dare address with the name of your master? I am Siddhartha, Binder of-" With that he threw his head back, and his words gurgled in his throat.

Then the fit hit the Shan.
He stiffened, lost his seating, and fell from the saddle. Siddhartha ran to his side. There were little flecks of foam at the corners of his mouth, and his eyes were rolled upward.
"Epileptic!" cried the prince. "They meant me to have a brain which had been damaged."

The others gathered round and helped the prince minister to the Shan until the seizure passed and his wits had returned to his body.
"Wh-what happened?" he asked.
"Treachery," said Siddhartha.
"Treachery, oh Shan of Irabek!

One of my men will convey you now to my personal physician for an examination. After you have rested, I suggest you lodge a protest at Brahma's reading room. My physician will treat you at Hawkana's, and then you will be released. I am sorry this thing happened. It will probably be set aright. But if not, remember the last seige of Kapil and consider us even on all scores. Good afternoon, brother prince." He bowed to the other, and his men helped the Shan to mount Hawkana's bay, which Siddhartha had borrowed earlier.

Mounting the mare, the prince observed their departure, then turned to the men who stood about him, and he spoke in a voice sufficiently loud to be heard by those who waited off the road.
"The nine of us will enter. Two blasts upon the horn, and you others follow. If they resist, make them wish they had been more prudent. For three more blasts upon the horn will bring the fifty lancers down from the hills, if they be needed. It is a palace of ease, and not a fort where battles would be fought. Take the Masters prisoner. Do not harm their machineries nor allow others to do so. If they do not resist us, all well and good. If they do, we shall walk through the Palace and Hall of the Masters of Karma like a small boy across an elaborate anthill. Good luck. No gods be with you!"

And turning his horse, he headed on up the road, the eight lancers singing softly at his back.

The prince rode through the wide double gate which stood open and unguarded. He set immediately to wondering concerning secret defenses which Strake might have missed.

The courtyard was landscaped and partly paved. In a large garden area, servants were at work pruning, trimming, and cultivating. The prince sought after weapon emplacements and saw none. The servants glanced up as he entered but did not halt their labors.

At the far end of the courtyard was the black stone Hall.

He advanced in that direction, his horsemen following, until he was hailed from the steps of the palace itself, which lay to his right.

He drew rein and turned to look in that direction.

The man wore black livery, a yellow circle on his breast, and he carried an ebony staff. He was tall, heavy, and muffled to the eyes. He did not repeat his salutation but stood waiting.

The prince guided his mount to the foot of the wide stairway.
"I must speak to the Masters of Karma," he stated.
"Have you an appointment?" inquired the man.
"No," said the prince, "but it is a matter of importance."
"Then I regret that you have made this trip for nothing," replied the other. "An appointment is necessary. You may make arrangements at any Temple in Mahartha."

He then struck upon the stair with his staff, turned his back and began to move away.
"Uproot that garden," said the prince to his men, "cut down yonder trees, heap everything together and set a torch to it."

The man in black halted, turned again.

Only the prince waited at the foot of the stair. His men were already moving off in the direction of the garden.
"You can't do that," said the man.

The prince smiled.
His men dismounted and began hacking at the shrubbery, kicking their way through the flowerbeds.
"Tell them to stop!"
"Why should I? I have come to speak with the Masters of Karma, and you tell me that I cannot. I tell you that I can, and will. Let us see which of us is correct."
"Order them to stop," said the other, "and I will bear your message to the Masters."
"Halt!" cried the prince. "But be ready to begin again."

The man in black mounted the stairs, vanished into the palace. The prince fingered the horn that hung on a cord about his neck.

In a short while there was move-
ment, and armed men began to emerge from the doorway. The prince raised his horn and gave wind to it twice.

The men wore leather armorsome still buckling it hastily into place-and caps of the same material. Their swordarms were padded to the elbow, and they wore small, oval-shaped metal shields, bearing as device a yellow wheel upon a black field. They carried long, curved blades. They filled the stairway completely and stood as if waiting orders.

The man in black emerged again, and he stood at the head of the stair.
"Very well," he stated, "if you have a message for the Masters, say it!"
"Are you a Master?" inquired the prince.
"I am."
"Then must your rank be lowest of them all, if you must also do duty as doorman. Let me speak to the Master in charge here."
"Your insolence will be repaid both now and in a life yet to come," observed the Master.

Then three dozen lancers rode through the gate and arrayed themselves at the sides of the prince. The eight who had begun the deflowering of the garden remounted their horses and moved to join the formation, blades laid bare across their laps.
"Must we enter your palace on horseback?" inquired the prince.
"Or will you now summon the other Masters, with whom I wish to hold conversation?"

Close to eighty men stood upon the stair facing them, blades in hand. The Master seemed to weigh the balance of forces.

He decided in favor of maintaining things as they were.
"Do nothing rash," he stated, "for my men will defend themselves in a particularly vicious fashion. Wait upon my return. I shall summon the others."

The prince filled his pipe and lit it. His men sat like statues, lances ready. Perspiration was most evident upon the faces of the foot soldiers who held the first rank on the stairway.

The prince, to pass the time, observed to his lancers, "Do not think to display your skill as you did at the last seige of Kapil. Make target of the breast, rather than the head.
"Also," he continued, "think not to engage in the customary mutilation of the wounded and the slain -for this is a holy place and should not be profaned in such a manner.
"On the other hand," he added, "I shall take it as a personal affront if there are not ten prisoners for sacrifice to Nirriti the Black, my personal patron-outside these walls, of course, where observance of the Dark Feast will not be held so heavily against us-"

There was a clatter to the right, as a foot soldier who had been
staring up the length of Strake's lance passed out and fell from the bottom stair.
"Stop!" cried the figure in black, who emerged with six others - similarly garbed-at the head of the stairway. "Do not profane the Palace of Karma with bloodshed. Already that fallen warrior's blood is-"
"-Rising to his cheeks," finished the prince, "if he be conscious-for he is not slain."
"What is it you want?" The figure in black who was addressing him was of medium height, but of enormous girth. He stood like a huge, dark barrel, his staff a sable thunderbolt.
"I count seven," replied the prince. "I understand that ten Masters reside here. Where are the other three?"
"Those others are presently in attendance at three reading rooms in Mahartha. What is it you want of us?"
"You are in charge here?"
"Only the Great Wheel of the Law is in charge here."
"Are you the senior representative of the Great Wheel within these walls?"
"I am."
"Very well. I wish to speak with you in private-over there," said the prince, gesturing toward the black Hall.
"Impossible!"
The prince knocked his pipe empty against his heel, scraped its
bowl with the point of his dagger, replaced it in his pouch.

Then he sat very erect upon the white mare and clasped the horn in his left hand. He met the Master's eyes.
"Are you absolutely certain of that?" he asked.

The Master's mouth, small and bright, twisted around words he did not speak.

Then, "As you say," he finally acknowledged. "Make way for me here!" and he passed down through the ranks of the warriors and stood before the white mare.

The prince guided the horse with his knees, turning her in the direction of the dark Hall.
"Hold ranks, for now!" called out the Master.
"The same applies," said the prince to his men.

The two of them crossed the courtyard, and the prince dismounted before the Hall.
"You owe me a body," he said in a soft voice.
"What talk is this?" said the Master.
"I am Prince Siddhartha of Kapil, Binder of Demons."
"Siddhartha has already been served," said the other.
"So you think," said the prince, "served up as an epileptic, by order of Brahma. This is not so, however. The man you treated earlier today was an unwilling imposter. I am the real Siddhartha, oh nameless priest, and I have come to
claim my body: one that is whole and strong, and without hidden disease. You will serve me in this matter. You will serve me willingly or unwillingly, but you will serve me."
"You think so?"
"I think so," replied the prince. "Attack!" cried the Master, and he swung his dark staff at the prince's head.

The prince ducked the blow and retreated, drawing his blade. Twice, he parried the staff. Then it fell upon his shoulder, a glancing blow, but sufficient to stagger him. He circled around the white mare, pursued by the Master. Dodging, keeping the horse between himself and his opponent, he raised the horn to his lips and sounded it three times. Its notes rose above the fierce noises of the combat on the palace stair. Panting, he turned and raised his guard in time to ward off a temple blow which would surely have slain him had it landed.
"It is written," said the Master, almost sobbing out the words, "that he who gives orders without having the power to enforce them, that man is a fool."
"Even ten years ago," panted the prince, "you'd never have laid that staff on me."

He hacked at it, hoping to split the wood, but the other always managed to turn the edge of his blade, so that while he nicked it and shaved it in places, the grain
held and the staff remained of a piece.

Using it as a singlestock, the Master laid a solid blow across his left side, and the prince felt his ribs break within him.

He fell.
It was not by design that it happened, for the blade spun from out his hands as he collapsed; but the weapon caught the Master across the shins and he dropped to his knees, howling.
"We're evenly matched, at that
." gasped the prince, "My age against your fat..."

He drew his dagger as he lay there, but could not hold it steady. He rested his elbow on the ground. The Master, tears in his eyes, attempted to rise and fell again to his knees.

There came the sound of many hooves.
"I am not a fool," said the prince, "and now I have the power to enforce my orders . .."
"What is happening?"
"The rest of my lancers are arrived. Had I entered in full force, you'd have holed up like a gekk in a woodpile, and it might have taken days to pull your palace apart and fetch you out. Now I have you in the palm of my hand."

The Master raised his staff.
The prince drew back his arm.
"Lower it," he said, "or I'll throw the dagger. I don't know myself whether I'll miss or hit, but I may hit. You're not anxious to
gamble against the real death, are you?"

The Master lowered his staff.
"You will know the real death," said the Master, "when the wardens of Karma have made dog meat of your horse soldiers."

The prince coughed, stared disinterestedly at his bloody spittle.
"In the meantime, let's discuss politics," he suggested.

After the sounds of battle had ended, it was Strake-tall, dusty, his hair near matching the gore that dried on his blade-Strake, who was nuzzled by the white mare as he saluted his prince and said, "It is over."
"Do you hear that, Master of Karma?" asked the prince. "Your wardens are dog meat."

The Master did not answer.
"Serve me now and you may have your life," said the prince. "Refuse, and I'll have it."
"I will serve you," said the Master.
"Strake," ordered the prince, "send two men down into the town - one to fetch back Narada, my physician, and the other to go to the Street of the Weavers and bring here Jannaveg the sailmaker. Of the three lancers who remain at Hawkana's, leave but one to hold the Shan of Irabek till sundown. He is then to bind him and leave him, joining us here himself."

Strake smiled and saluted.
"Now bring men to bear me within the Hall, and to keep an eye on this Master."

He burned his old body, along with all the others. The wardens of Karma, to a man, had passed in battle. Of the seven nameless Masters, only the one who had been fat survived. While the banks of sperm and ova, the growth tanks, and the body lockers could not be transported, the transfer equipment itself was dismantled under the direction of Doctor Narada and its components were loaded onto the horses of those who had fallen in the battle. The young prince sat upon the white mare and watched the jaws of flame close upon the bodies. Eight pyres blazed against the pre-dawn sky. The one who had been a sailmaker turned his eyes to the pyre nearest the gate: the last to be ignited, its flames were only just now reaching the top, where lay the gross bulk of one who wore a robe of black, a circle of yellow on the breast. When the flames touched it, and the robe began to smoulder, the dog who cowered in the ruined garden raised his head in a broken
howl that was near to a sob.
"This day your sin account is filled to overflowing," said the sailmaker.
"But, ah, my prayer account!" replied the prince. "I'll stand on that for the time being. Future theologians will have to make the final decision though, as to the acceptability of all those slugs in the pray-o-mats. Let Heaven wonder now what happened here this day -where I am, if I am, and who. The time has come to ride, my captain. Into the mountains for a while, and then our separate ways, for safety's sake. I am not sure as to the road I will follow, save that it leads to Heaven's gate and I must go armed."
". . . Binder of Demons," said the other, and he smiled.

The lancer chief approached. The prince nodded to him.

Orders were shouted.
The columns of mounted men moved forward, passed out through the gates of the Palace of Karma, turned off the roadway and headed up the slope that lay to the southeast of the city of Mahartha, comrades blazing like the dawn at their back.

Larry Eisenberg has written for Harper's, Cavalier, Rogue, and Playboy; and one of his sf stories appeared in Judith Merril's 10th Annual of the Year's Best SF. He writes: "Ben Coulter may be somewhat autobiographical since, as far as I know, I designed the first radio frequency transistorized pacemaker to successfully stimulate the heart of a human patient, back in 1961 at Rockefeller University." From considerable firsthand research and accomplishment, then, comes this delightful exercise of the imagination.

## the two lives of ben coulter

## by Larry Eisenberg

The greatest disappointment of Ben Coulter's life was his inability to play the violin well. As a child he had practiced for hours every day, fired by dreams of being a great concert artist. But his fingers were never supple enough and his performances never caught fire.

His violin teacher broke the news to him when he was sixteen. He confirmed what Ben already knew, that he could never be anything but second rate in his playing. He went about numbed for months thereafter, and almost
as an afterthought turned to electronics, where his mathematical skills could be woven into creative designs. But, although he enjoyed his work, he found himself thoroughly disillusioned fifteen years later, carrying out repetitive designs of tapered waveguides for military radar sets.

Although his parents had died during his early teens, he remembered his father very clearly, an excitable, volatile man who as first desk cellist had drawn the most exquisite sounds from his instrument. Evenings had always
been filled with music, with his father's colleagues joining in the performance of little known chamber works as a labor of love. These memories were still treasured by Ben Coulter.

Outside of his music, Ben found little to interest him. When he tried in his off hours to interest himself in ballet or even in the dramatic theater, he found his mind drifting toward themes from his beloved chamber music recordings. Once, in the midst of making love, he had stopped to retune the girl's drifting FM radio. She had thrown him out of her apartment in a fit of pique, and he was never quite sure why.

But now, at thirty-one, he found himself one grey morning with a terrible sense of urgency gnawing at his vitals and a feeling of total dissatisfaction with his life. He went to his closet and removed his violin case, wiping the dust from the sloping sides with great care. He put on a recording of the Bach Concerto in D (minus the solo part) and began to play his violin with all the brio he could manage. But halfway through, he was appalled at his own ineptness and he turned off the record player and put away his instrument.

He wanted to telephone his supervisor and say that he was too ill to come in that day. But he'd always found it difficult to lie and against all of his inclinations,
he went into the office. His concentration was tenuous, and he found himself dozing off at vital conferences. His colleagues began to eye him with intermingled pity and hostility and finally, his section chief took him aside and warned him of how things stood.

He decided to make a clean break with the world of missiles and greatly relieved, he took a job at a small research institute where he ran a poorly equipped electronic laboratory and designed instrumentation for research workers in neurophysiology. Occasionally he was slowed down by bouts of depression, but in the main the social values of what he was doing carried him through.

His most fruitful contribution developed about the need for a miniature radio transmitter to stimulate tissues electrically through the intact skin. To better understand the application, Ben began to read works on neurophysiology with great intensity, dwelling with particular care on the electrical properties of nerve and muscle cells. When he felt that he had some insight into the values of parameters required, Ben set to work designing a tiny radio frequency unit which could transmit a programmed set of high frequency impulses through the intact skin of an experimental animal. A tuned coil under the skin received these impulses and, with the aid of a rectifying diode,
converted them into the direct current necessary to stimulate the tissues.

Within a few months, Ben had developed a reliable device to stimulate the hearts of surgically prepared animals. All that was required was to implant the receiving coil under the skin with fine electrodes running through plastic tubing to the heart muscles, and the external transmitter did the rest.

The use of the stimulator on human patients with ailing hearts followed next with striking success. Ben received accolades from his colleagues and a garbled write-up in the Sunday supplements. It did not completely dispel his internal malaise, but he was very much gratified.

He was even more pleased when his older brother, Abe Coulter, an inveterate horse player whom he rarely saw, came to his apartment and began to heap praises on Ben's heart stimulator. But soon after, he began to realize that Abe had other motives for his visit. He challenged his brother on this point and Abe flushed.
"All right," he said sheepishly. "But what's wrong with an idea that can make both of us rich men?"
"How?" said Ben skeptically.
"Why can't you design me a pacer to stimulate horses by radio waves?"

At first Ben was stunned, then
terribly hurt, and finally, amused.
"Of course I could do it," he said.

But he wondered what his colleagues would think of such a sordid misapplication of his device. Still, the money might give him greater freedom to do the things he wanted to do.
"There are several obstacles, as I see it," said Ben to his brother. "You'd have to find the owner of a horse who would let you implant a coil under his animal's hide. Then you'd have to find a capable vet who would be willing to do the surgery. And finally, you'd have to avoid being caught by the race stewards."
"I've got an owner who's just dying to let you operate on his horse and the vet who'll do the operation," said Abe. "Fooling the stewards is something I'm not sure of. But that's part of your job."

Abe convinced Ben that he was serious about his offer and so, willy-nilly, Ben had to make good on his word, too. The electronic design was not the basic problem. The main obstacle lay in concealing the transmitting coil on the jockey in such a way that even after an intensive search, a steward could not discover that electrical stimulating techniques had been used.

After weeks of preoccupation, Ben solved this part of the puzzle. He had a tattooed coil of conducting ink placed on the inside of the
jockey's left calf. He then placed a microminiaturized transmitter directly over the tattoo and held it in place with a tiny bandaid. This coil was the antenna, radiating the stimulating r.f. waves. When the jockey placed his thigh next to the slight bulge made by the implanted receiving coil under the horse's hide, a rectified shock would send the animal off at extraordinary bursts of speed.

Ben was too nervous to attend the first race in which the stimulator was used, or even the second. But when all went as planned, he came thereafter to see his horse take commanding leads right from the starting gate and finish many lengths ahead of the field.

After ten such races, Ben's share of the winnings climbed to almost ninety thousand dollars, enough to permit him to open his own freelance laboratory where he could work alone during the evening and on weekends. And it was around this time that he was given a second extracurricular job that was ultimately to have enormous consequences for him. The owner of the race horse who had been so successfully stimulated came to see him one evening in a state of conspiratorial agitation.

Albert Field, owner of the horse, was a prominent sportsman and a man with a huge personal fortune. Paradoxically, he had come into the betting coup not out of desire to make more money, but
solely because of a pervading need to win at any cost. The ten successive victories of his horse, formerly a cheap and unproductive plater, had elated him beyond anything that had ever happened to him before.

Therefore he now sought Ben's help in realizing a dream that had dogged him all of his adult years. He wanted desperately to win the National Dressage Championships. Since dressage required the horse to go through an extremely complex set of maneuvers in response to the slightest knee pressures and body signals from the rider, only the most patient and skilful of riders, working for years with painstakingly trained animals, could hope to even place in this event.

Albert Field was a mediocre rider. He was also an impatient man, lacking the temperament to work the long, difficult years that might bring him some order of competence at dressage. But he coveted the trophy with all his heart and soul. He offered Ben a huge fee to develop a new transmitting unit which, when operated from a distance, could provide the devilishly complex set of stimuli necessary for the animal's maneuvers.

Ben was intrigued because of the possibilities latent in this effort. He was also aware that the electronic design was again the most trivial part of the problem.

Somewhere he would have to find a truly outstanding surgeon, capable of working out the anatomical sites for proper stimulation, using muscle signals to close feedback loops. And they would have to fabricate electrodes which would not destroy the nerve fibers when used to stimulate on a chronic basis.

With the assistance of one of his former colleagues at the research institute, he located a brilliant but unconventional surgeon who had lost much of his practice after an unfortunate lawsuit involving an uncounted surgical sponge. Adrian Pennington had the imagination and the style that Ben wanted, and he made an admirable collaborator since he, too, became fired by the enormous challenge of what had to be done.

For nineteen months, despite the impatience and overt anger of Albert Field, they spent tedious hours working out the physiology of the problem. And after two and a half years, the job was done.

There was a single chilling moment when Field, near the conclusion of the Finals, almost fell off his horse. But earlier, he had carried out such incredibly subtle maneuvers of his horse that the judges could not withhold the cup from him. A stunned audience of blueblood sportsmen sat mutely as Albert Field accepted the trophy which had once seemed totally out of his reach.

Afterward, at a lavish party given for a select few at the Field estate, the sportsman carried on in such an unseemly manner that both Ben and Adrian Pennington drifted outside to the lawn, to look at the Spring constellations.
"I think it has become clear to you," said Ben. "You know what I've really been after all along. This dressage business was just a preliminary exercise."
"I know," said Adrian Pennington. "But to work with humans is insane at this point. And no matter what that jury of twelve yahoos said about me, I'm a careful and fastidious surgeon. It'll take us another couple of years of chimpanzee work before I could even attempt to program human motor activity."
"Adrian," said Ben, his voice so choked with emotion he could barely recognize it, "I've waited a good many years, and I'm capable of waiting even longer. But I know that with our techniques I can become a truly great violinist. And now I've got the money to finance your time in helping me."
"If I pursue this problem further," said the surgeon, "it won't be because of the money alone, although my fee will be consider-able-out of deference to the code of my medical brethren."

It was not two but three years before Pennington learned how to implant multiple coils in the
skulls of chimpanzees with separate pairs of leads running to sharply demarcated regions of the cortex. Concurrently, Ben Coulter was working out the fine detail of all the muscular activity involved in playing the violin.

The culmination of this exhausting study took place when Maybelle, the nimblest of their chimpanzees, preprogrammed off a tape recording of Joseph Szigeti playing the Bach Concerto in D, gave a commendable rendering of the violin part on an instrument rented for the occasion.

Ben Coulter and Adrian Pennington pounded one another, embraced, and went into an impromptu jig that terrified poor Maybelle. When they had calmed down, plans were tentatively put forward to carry out a similar operation on Ben Coulter.
"Remember," said Adrian Pennington. "The risks are great. A good deal of experimentation should have been carried out on human volunteers."
"I'm your human volunteer," said Ben, and there the situation rested.

With the vital moment now almost at hand, Ben was seized by agonizing doubts about tampering with his own brain, but he simply refused to turn back. He spent all of the preoperative time working on his programmer, synthesizing all over again the manual and esthetic elements which he had
garnered by analyzing hundreds of recordings of the finest violinists, and interviews with leading musicologists.

The operation went well. Adrian Pennington's only regret was that he had given Ben his solemn word not to publish the results of the surgery. And when Ben had recovered from the post surgical trauma, he set about cultivating his new career as a concert violinist. For his debut before the open microphone of his tape recorder, he chose the Paganini Caprices, a difficult set of pieces and a splendid vehicle for his newly heightened talents.

He dressed carefully in formal attire, took his A from the piano and slowly tuned his violin. Then, with just the barest advance in his pulse rate, he turned on his r.f. transmitter. His fingers began to flow along the strings with a life of their own, his vibrato consummate. His bowing arm flashed at blinding speed in smooth strokes. Notes took form one after another with a lightness and grace he had never before achieved, and the music swelled into every corner of his room.

When he had finished, he turned off the transmitter and played back the recording. He sat for long moments with head cupped in his hands, intent on every nuance of the music. When the recording had run through, he rewound the tape and played it
once again. It was very good, better than he had ever sounded before, but it was not good enough.

His disappointment was sharp, intense. He went to his wall cabinet and took out the reel of Maybelle's recording. He set it on the recorder and started the playback cycle. It was terribly painful to acknowledge, but objectivity compelled him to admit that the chimpanzee sounded better than he did!

Quickly he telephoned Pennington, who hastened to his apartment even though it was almost two thirty in the morning. The surgeon listened to the two recordings. When it was over, he sighed.
"What went wrong?" said Ben.
"I always questioned whether simply directing the fingers was enough. There's a very special ingredient that must come from inside the violinist."

When Ben Coulter dropped out of sight, Adrian Pennington was quite disturbed. He contacted Abe Coulter and was assured that Ben was all right, although Abe indicated that his brother preferred to be left alone. Pennington now felt free to openly pursue the more conventional aspects of tissue stimulation and plunged into applications involving paraplegics, with results that won him universal recognition.

About a year later, as Adrian
strolled along West Fifty-seventh Street in New York City, just beyond Carnegie Hall, he spied Ben Coulter, resplendent in a fine dark grey overcoat with velvet collar. He wore a wide brimmed felt hat and strode along the street vigorously, cheeks ruddy, eyes sparkling, full of joie de vivre.
"Ben!" cried Adrian, taking hold of his old comrade's arm.

After the first warm, emotional exchange, they went into the Russian Tea Room for cocktails, borscht, and conversation. Ben insisted on ordering for both of them.
"I've become quite adept at this art," he said genially.
"What have you done? Where have you been this past year?" said Adrian Pennington, unable to contain his curiosity any longer.

Ben brushed the bread crumbs off the snow white table cloth and then looked up at Pennington with great affection.
"I'm at peace with myself, now," he said. "I was crushed at first. I had hoped to make my second life as a virtuoso in the musical world. When I realized that my hopes were futile insofar as the violin was concerned, I decided that I had to enter the musical world in some other capacity."
"And that was?" said Adrian Pennington, willingly supplying the straight line.
"As an impresario," said Ben Coulter. "I had all the cash I
needed. I found a willing artist with whom I have just completed a successful tour of Argentina, Brazil, Paraguay, and Uruguay, and seventeen other countries on the European continent."
"And your client?" said Pennington, knowing full well what the answer had to be.

Ben smiled.
"Who else?" he said. "My star is Maybelle, our chimpanzee."

## IN THIS ISSUE . . .

Roger Zelazny's novelet on page 4, while written as a complete story for magazine publication, is part of a longer work, a novel which will be published by Doubleday this Fall under the title lord of light. A sequel to this story (also complete) is in our inventory and is scheduled for our June issue. A project blending Eastern religions and science fiction is one likely to generate a bit of polite conversation-switching among publishers of commercial sf. Luckily Mr. Zelazny doesn't bother with queries; he just goes ahead and writes 'em, and they're good. Since lord of light, Mr. Zelazny has completed one novel ("bloody experimental") and is 40,000 words into another, this one called nine princes in amber. "I think it may be the beginning of my first series," he writes. "I feel about a quarter million words of story here (maybe much more), and I don't think of it as one book."

The book review column is not in this issue, but Judith Merril will be back at her usual spot next month.

## CDMING NEXT MONTH...

... a long and fascinating novelet by Phyllis Gotlieb, PLANETOID IDIOT, about a team of scientists sent to help a dying civilization.

## CLOUD SEEDING

## by Ted Thomas

Weather control by seeding the atmosphere is having a difficult time. Knowledge is hard to come by. It isn't even possible to count the number of ice-forming nuclei in the atmosphere with an acceptable degree of accuracy. If you don't know how many nuclei are there, you cannot tell how many nuclei are needed to bring about a given result.

Recent work has begun to show promise. Air samples are drawn through a fine filter to strain out particulate matter. Careful cooling and treatment of the filter finally produce ice crystals that can be counted. Each ice crystal represents an ice-forming nurcleus. It may be possible in the future to make good counts high in the atmosphere from an airplane, something that could not be done before.

Then there's the matter of the best material with which to seed the clouds once you know the number of nuclei to use. Silver iodide is popular these days, and it has
much to recommend it as a seeding agent. Theory indicates that about 100 pounds of it will overseed a moderate-sized thunderstorm. But the highest temperature at which silver iodide will work at all is minus 5 degrees C. Dry ice will work to some extent when the temperature is zero.

The study so far has concentrated only on materials that will cause condensation, and this is probably appropriate. Perhaps the time has come to broaden the scope of the search for nucleating materials. We should seek a material that will cause rainfall and also fertilize the fields; each drop of rain would carry its own fertilizer. Or if insects are a problem, each drop would carry a pesticide; mosquitoes could be eliminated. An antibiotic rain might be beneficial. Dyes could be used. A black snow would speed melting. A brown field could be changed to green. Everything bathed by snow or rain could thus be given any desired treatment.

"Now I think you'll find this one is something rather special, sir."

Birdie Ludd was young, and he was in love, and he was lonely, and there wasn't a thing he could do. Birdie didn't really believe in failure, not as a permanent condition, but this was the 21st Century, and the system was running smoothly

## PROBLEMS OF CREATIVENESS

## by Thomas M. Disch

There was a dull ache, a kind of hollowness, in the general area of his liver, the seat of the intelligence according to the Psychology of Aristotle-a feeling that there was someone inside his chest blowing up a balloon, or that the balloon was his body. Sometimes he could ignore it, but sometimes he could not ignore it. It was like a swollen gum that he must incessantly probe with his tongue or finger. Perhaps it was filled with pus. It was like being sick, but it was different too. His legs ached from sitting.

Professor Offengeld was telling them about Dante. Dante was born in 1265. 1265, he wrote in his notebook.

He might have felt the same way even if it weren't for Milly's coldness, but that made it worse. Milly was his girl, and they were in love, but for the last three nights she had been putting him off, telling him he should study or some other dumb excuse.

Professor Offengeld made a joke, and the other students in the auditorium laughed. Birdie ostentatiously stretched his legs out into the aisle and yawned.
"The hell that Dante describes is the hell that each of us holds inside his own, most secret soul," Offengeld said solemnly.

Shit, he thought to himself. It's all a pile of shit. He wrote Shit in his notebook, then made the
letters look three dimensional and shaded their sides carefully.

Offengeld was telling them about Florence now, and about the Popes and things. "What is simony?" Offengeld asked.

He was listening, but it didn't make any sense. Actually he wasn't listening. He was trying to draw Milly's face in his notebook, but he couldn't draw very well. Except skulls. He could draw very convincing skulls. Maybe he should have gone to art school. He turned Milly's face into a skull with long blond hair. He felt sick.

He felt sick to his stomach. Maybe it was the Synthamon bar he had had in place of a hot lunch. He didn't eat a balanced diet. That was a mistake. For over two years he had been eating in cafeterias and sleeping in dorms. Ever since high school graduation in fact. It was a hell of a way to live. He needed a home life, regularity. He needed to get laid. When he married Milly they were going to have twin beds. They'd have a two-room apartment all their own, and one room would just have beds in it. Nothing but two beds. He imagined Milly in her spiffy little hostess uniform, and then he began undressing her in his imagination. He closed his eyes. First he took off her jacket with the Pan-Am monogram over the right breast. Then he popped open the snap at her waist and unzipped the zip-
per. He slid the skirt down over the smooth Antron slip. The slip was the old-fashioned kind with lace along the hem. Her blouse was the old-fashioned kind with buttons. It was hard to imagine unbuttoning all those buttons. He lost interest.

The carnal were in the first circle, because their sin was least. Francesca de Rimini. Cleopatra. Elizabeth Taylor. The class laughed at Offengeld's little joke. They all knew Elizabeth Taylor from the junior year course in the History of Cinema.

Rimini was a town in Italy.
What the hell was he supposed to care about this kind of crap? Who cares when Dante was born? Maybe he was never born. What difference did it make to him, to Birdie Ludd?

None.
Why didn't he come right out and ask Offengeld a question like that? Lay it on the line. Put it to him straight. Cut out the crap.

One good reason was because Offengeld wasn't there. What seemed to be Offengeld was in fact a flux of photons inside a large synthetic crystal. The real flesh-and-blood Offengeld had died two years ago. During his lifetime Offengeld had been considered the world's leading Dantean, which was why the National Educational Council was still using his tapes.

It was ridiculous: Dante, Flor-
ence, the Simoniac Popes. This wasn't the goddamn Middle Ages. This was the goddamn 21st Century, and he was Birdie Ludd, and he was in love, and he was lonely, and he was unemployed, and there wasn't a thing he could do, not a goddamn thing, or a single place to turn in the whole goddamn stinking country.

The hollow feeling inside his chest swelled, and he tried to think about the buttons on Milly's imaginary blouse and the warm, familiar flesh beneath. He did feel sick. He ripped the sheet with the skull on it out of his notebook, not without a guilty glance at the sign that hung above the stage of the auditorium: PAPER IS VALUABLE. DON'T WASTE IT. He folded it in half and tore it neatly down the seam. He repeated this process until the pieces were too small to tear any further, then he put them in his shirt pocket.

The girl sitting beside him was giving him a dirty look for wasting paper. Like most homely girls, she was a militant Conservationist, but she kept a good notebook, and Birdie was counting on her to get him through the Finals. One way or another. So he smiled at her. He had a real nice smile. Everybody was always pointing out what a nice smile he had. His only real problem was his nose, which was short.

Professor Offengeld said: "And now we will have a short compre-
hension test. Please close your notebooks and put them under your seats." Then he faded away, and the auditorium lights came on. A taped voice automatically boomed out: No talking please! Four old Negro monitors began distributing the little answer sheets to the five hundred students in the auditorium.

The lights dimmed, and the first Multiple Choice appeared on the screen:

1. Dante Alighieri was born in (a) 1300 (b) 1265 (c) 1625 (d) Date unknown.

As far as Birdie was concerned the date was unknown. The dog in the seat beside him was covering up her answers. So, when was Dante born? He'd written the date in his notebook, but he didn't remember now. He looked back at the four choices, but the second question was on the screen already. He scratched a mark in the (c) space and then erased it, feeling an obscure sense of unluckiness in the choice, but finally he checked that space anyhow. When he looked up the fourth question was on the screen.

The answers he had to choose from were all wop names he'd never heard of. The goddamn test didn't make any sense. Disgusted, he marked (c) for every question and carried his test paper to the monitor at the front of the room. The monitor told him he couldn't leave the room till the test was
over. He sat in the dark and tried to think of Milly. Something was all wrong, but he didn't know what. The bell rang. Everyone breathed a sigh of relief.

334 East 11th Street was one of twenty identical buildings built in the early 1980's under the Federal Government's first MODICUM program. Each building was 21 stories high (one floor for shops, the rest for apartments); each floor was swastika-shaped; each of the arms of the swastikas opened onto four 3 -room apartments (for couples with children) and six 2 -room apartments (for childless couples). Thus each building was able to accommodate 2,240 occupants without overcrowding. The entire development, occupying an area of less than six city blocks, housed a population of 44,800 . It had been an incredible accomplishment for its time.

SHADDUP, someone, a man, was yelling into the airshaft of 334 East 11th Street. WHY CAN'T YOU ALL SHADDUP? It was half past seven, and the man had been yelling into the airshaft for forty-five minutes already, ever since returning from his day's work (three hours' bussing dishes at a cafeteria). It was difficult to tell whom precisely he was yelling at. In one apartment a woman was yelling at a man, WHADAYA MEAN, TWENTY

DOLLARS? And the man would yell back, TWENTY DOLLARS, THAT'S WHAT I MEAN! Numerous babies made noises of dissatisfaction, and older children made louder noises as they played guerrilla warfare in the corridors. Birdie, sitting on the steps of the stairwell, could see, on the floor below, a thirteen-year-old Negro girl dancing in place in front of a dresser mirror, singing along with the transistor radio that she pressed into the shallow declevity of her pubescent breasts. I CAN'T TELL YOU HOW MUCH I LOVE HIM, the radio sang at full volume. It was not a song that Birdie Ludd greatly admired, though it was Number Three in the Nation, and that meant something. She had a pretty little ass, and Birdie thought she was going to shake the tinselly fringes right off her street shorts. He tried to open the narrow window that looked from the stairwell out into the airshaft, but it was stuck tight. His hands came away covered with soot. He cursed mildly. I CAN'T HEAR MYSELF THINK, the man yelled into the airshaft.

Hearing someone coming up the steps, Birdie sat back down and pretended to read his schoolbook. He thought it might be Milly (whoever it was was wearing heels), and a lump began to form in his throat. If it were Milly, what would he say to her?

It wasn't Milly. It was just
some old lady lugging a bag of groceries. She stopped at the landing below him, leaning against the handrail for support, sighed, and set down her grocery bag. She stuck a pink stick of Oraline between her flaccid lips, and after a few seconds it got to her and she smiled at Birdie. Birdie scowled down at the bad reproduction of David's Death of Socrates in his text.
"Studying?" the old woman asked.
"Yeah, that's what I'm doing all right. I'm studying."
"That's good." She took the tranquilizer out of her mouth, holding it like a cigarette between her index and middle fingers. Her smile broadened, as though she were elaborating some joke, honing it to a fine edge.
"It's good for a young man to study," she said at last, almost chuckling.

The tune on the radio changed to the new Ford commercial. It was one of Birdie's favorite commercials, and he wished the old bag would shut up so he could hear it.
"You can't get anywheres these days without studying."

Birdie made no reply. The old woman took a different tack. "These stairs," she said.

Birdie looked up from his book, peeved. "What about them?"
"What about them! The elevators have been out of commission
for three weeks. That's what about them-three weeks!"
"So?"
"So, why don't they fix the elevators? But you just try to call up the MODICUM office and get an answer to a question like that and see what happens. Nothing -that's what happens!"

He wanted to tell her to can it. She was spoiling the commercial. Besides, she talked like she'd spent all her life in a private building instead of some crummy MODICUM slum. It had probably been years, not weeks, since the elevators in this building had been working.

With a look of disgust, he slid over to one side of the step so the old lady could get past him. She walked up three steps till her face was just level with his. She smelled of beer and Synthamon and old age. He hated old people. He hated their wrinkled faces and the touch of their cold dry flesh. It was because there were so many old people that Birdie Ludd couldn't get married to the girl he loved and have a baby. It was a goddamned shame.
"What are you studying about?" Birdie glanced down at the painting. He read the caption, which he had not read before. "That's Socrates," he said, remembering dimly something his Art History teacher had said about Socrates. "It's a painting," he explained, "a Greek painting."
"You going to be an artist? Or what?"
"What," Birdie replied curtly.
"You're Milly Holt's steady boy, aren't you?" He didn't reply. "You waiting for Milly tonight?"
"Is there any law against waiting for someone?"

The old lady laughed right in his face. Then she made her way from step to step up to the next landing. Birdie tried not to turn around to look after her, but he couldn't help himself. They looked into each others' eyes, and she laughed again. Finally he had to ask her what she was laughing about. "Is there a law against laughing?" she asked right back. Her laughing grew harsher and turned into a hacking cough, like in a Health Education movie about the dangers of smoking. He wondered if maybe she was an addict. Birdie knew lots of men who used tobacco, but somehow it seemed disgusting in a woman.

Several floors below there was the sound of glass shattering. Birdie looked down the abyss of the stairwell. He could see a hand moving up the railing. Maybe it was Milly's hand. The fingers were slim, as Milly's fingers would be, and the nails seemed to be painted gold. In the dim light of the stairwell, at this distance, it was difficult to tell. A sudden ache of unbelieving hope made him forget the woman's laughter, the stench of garbage, the scream-
ing. The stairwell became a scene of romance, like a show on television.

People had always told him Milly was pretty enough to be an actress. He wouldn't have been so bad-looking himself, if it weren't for his nose. He imagined how she would cry out "Birdie!" when she saw him waiting for her, how they would kiss, how she would take him into her mother's apartment

At the eleventh or twelfth floor the hand left the railing and did not reappear. It hadn't been Milly after all.

He looked at his guaranteed Timex watch. It was eight o'clock. He could afford to wait two more hours for Milly. Then he would have to take the subway back to his dorm, an hour's ride. If he hadn't been put on probation because of his grades, he would have waited all night long.

He sat down to study Art History. He stared at the picture of Socrates in the bad light. With one hand he was holding a big cup; with the other he was giving somebody the finger. He didn't seem to be dying at all. His Midterm in Art History was going to be tomorrow afternoon at two o'clock. He really had to study. He stared at the picture more intently. Why did people paint pictures anyhow? He stared until his eyes hurt.

Somewhere a baby was crying.

SHADDUP, WHY DON'T YA SHADDUP? ARE YA CRAZY OR SOMETHIN? A gang of kids impersonating Burmese nationals ran down the stairs, and a minute later another gang (U.S. guerrillas) ran down after them, screaming obscenities.

Staring at the picture in the bad light, he began to cry. He was certain, though he would not yet admit it in words, that Milly was cheating on him. He loved Milly so much; she was so beautiful. The last time he had seen her she'd called him stupid. "You're so stupid," she said, "you make me sick." But she was so beautiful.

A tear fell into Socrates' cup and was absorbed by the cheap paper of the text. The radio started to play a new commercial. Gradually he got hold of himself again. He had to buckle down and study, goddamnit!

Who in hell was Socrates?
Birdie Ludd's father was a fat man with a small chin and a short nose like Birdie's. Since his wife's death he'd lived by himself in a MODICUM dorm for elderly gentlemen, where Birdie visited him once a month. They never had anything to talk about, but the MODICUM people insisted that families should stick together. Family life was the single greatest cohesive force in any society. They'd meet in the Visitor's Room, and if either of them had
gotten letters from Birdie's brothers or sisters they'd talk about that, and then they might watch some television (especially if there was baseball, for Mr. Ludd was a Yankee fan), and then right before he left, Birdie's father would hit him for five or ten dollars, since the allowance he got from MODICUM wasn't enough to keep him supplied with Thorazine. Birdie, of course, never had anything to spare.

Whenever Birdie visited his father, he was reminded of Mr. Mack. Mr. Mack had been Birdie's guidance counsellor in senior year at P.S. 125, and as such he had played a much more central role in Birdie's life than his father had. He was a balding, mid-dle-aged man with a belly as big as Mr. Ludd's and a Jewish-type nose. Birdie had always had the feeling that the counsellor was toying with him, that his professional blandness was a disguise for an unbounded contempt, that all his good advice was a snare. The pity was that Birdie could not, in his very nature, help but be caught up in it. It was Mr. Mack's game and had to be played by his rules.

Actually Mr. Mack had felt a certain cool sympathy for Birdie Ludd. Of the various students who'd failed their REGENTS, Birdie was certainly the most attractive. He never became violent or rude in interviews, and he al-
ways seemed to want so hard to try. "In fact," Mr. Mack had told his wife in confidence one evening (she was an educational counsellor herself), "I think this is a splendid example of the basic inequity of the system. Because that boy is basically decent."
"Oh you," she'd replied. "Basically, you're just an old softie."

And, in fact, Birdie's case was not that exceptional. Congress had passed the Revised Genetic Testing Act (or REGENTS, as they were known popularly) in 2011 , seven years before Birdie turned eighteen and had to take them. By that time the agitation and protests were over, and the system seemed to be running smoothly. Population figures had held steady since 2014.

By contrast, the first Genetic Testing Act (of 1998) had altogether failed its hoped for effect. This act had merely specified that such obvious genetic undesirables as diabetics, the criminally insane, and morons were not to be allowed the privilege of reproducing their kind. They were also denied suffrage. The act of 1998 had met virtually no opposition, and it had been easy to implement, since by that time civic contraception techniques were practiced everywhere but in the most benightedly rural areas. The chief, though unstated, purpose of the Act of 1998 had been to pave the way for the REGENTS system.

The REGENTS were tripartite: there was the familiar StanfordBinet intelligence test (short form); the Skinner-Waxman Test for Creative Potential (which consisted in large part of picking the punch lines for jokes on a multiple choice test); and the O'RyanArmy physical performance and metabolism test. Candidates failed if they received scores that fell below one standard deviation in two of the three tests. Birdie Ludd had been nervous on the day of his REGENTS (it was Friday the 13 th, for Christ's sake!), and right in the middle of the Skinner-Waxman a sparrow flew into the auditorium and made a hell of a racket so thát Birdie couldn't concentrate. He hadn't been at all surprised to find that he'd failed the I.Q. test and the Skinner-Waxman. On the physical Birdie got a score of 100 (the modal point, or peak, of the normal curve), which made him feel pretty proud.

Birdie didn't really believe in failure, not as a permanent condition. He had failed third grade, but had that kept him from graduating high school? The important thing to remember, as Mr. Mack had pointed out to Birdie and the 107 other failed candidates at a special assembly, was that failure was just a point-of-view. A positive point-of-view and self-confidence would solve most problems. Birdie had really believed him then, and he'd signed up to be re-
tested at the big downtown office of the Health, Education, and Welfare Agency. This time he really crammed. He bought How You Can Add 20 Points to Your I.Q. by L. C. Wedgewood, Ph.D. (who appeared on the bookjacket in an old-fashioned suit with lapels and buttons) and Your REGENTS Exams, prepared by the National Educational Council. The latter book had a dozen sample tests, and Birdie worked all the easy problems in each test (the only part that really counted, the book explained, were the first thirty questions ; the last thirty were strictly for the junior geniuses). By the day of the retesting, Birdie had a positive point-ofview and lots of self-confidence.

But the tests were all wrong. They weren't at all what he'd studied up on. For the I.Q. part of the test he sat in a stuffy cubicle with some old lady with a black dress and repeated telephone numbers after her, forward and backward. With the Area Code! Then she showed him different pictures, and he had to tell her what was wrong with them. Usually nothing was wrong. It went on like that for over an hour.

The creativity test was even weirder. They gave him a pair of pliers and took him into an empty room. Two pieces of string were hanging down from the ceiling. Biride was supposed to tie the two strings together.

It was impossible. If you held the very end of one string in one hand, it was still too short, by a couple feet, to reach the other string. Even if you held the tip of the string in the pliers, it was too short. He tried it a dozen times, and it never worked. He was about ready to scream when he left that room. There were three more crazy problems like that, but he hardly even tried to solve them. It was impossible.

Afterwards somebody told him he should have tied the pliers to the end of the string and set it swinging like a pendulum. Then he could have gone over and got the string, come back with it, and caught the string that was swinging like a pendulum. But then why had they given him pliers!

That bit with the pliers really made him angry. But what could he do about it? Nothing. Who could he complain to? Nobody. He complained to Mr. Mack, who promised to do everything in his power to help Birdie be reclassified. The important thing to remember was that failure was just a negative attitude. Birdie had to think positively and learn to help himself. Mr. Mack suggested that Birdie go to college.

At that time college had been the last thing Birdie Ludd had in mind for himself. He wanted to relax after the strain of P.S. 125. Birdie wasn't the college type. He wasn't anybody's fool, but on the
other hand he didn't pretend to be some goddamn brain. Mr. Mack had pointed out that $73 \%$ of all high school graduates went on to college and that three-quarters of all college freshmen went on to take their degrees.

Birdie's reply had been, "Yeah, but . . ." He couldn't say what he was thinking; that Mack himself was just another goddamn brain and that of course he couldn't understand the way Birdie felt about college.
"You must remember, Birdie, that this is more now than a question of your educational goals. If you'd received high enough scores on the REGENTS you could drop out of school right now and get married and sign up for a MODICUM salary. Assuming that you had no more ambition than that

After a glum and weighty silence, Mr. Mack switched from scolding to cajoling: "You do want to get married don't you?"
"Yeah, but
"And have children?"
"Yeah, of course, but . . ."
"Then it seems to me that college is your best bet, Birdie. You've taken your REGENTS and failed. You've taken the reclassification tests and gotten lower scores there than on the REGENTS. There are only three possibilities open after that. Either you perform an exceptional service for the country or the national economy, which is hardly
something one can count on doing. Or else you demonstrate physical, intellectual, or creative abilities markedly above the level shown in the REGENTS test or tests you failed, which again poses certain problems. Or else you get a B.A. That certainly seems to be the easiest way, Birdie. Perhaps the only way."
"I suppose you're right."
Mr. Mack smiled a smile of greasy satisfaction and adjusted his massive stomach above his tootight belt. Birdie wondered spitefully what sort of score Mack would have got on the O'RyanArmy fitness test. Probably not 100.
"Now as far as money goes," Mack went on, opening Birdie's career file, "you won't have to be concerned over that. As long as you keep a $C$ average, you can get a New York State Loan, at the very least. I assume your parents will be unable to help out?"

Birdie nodded. Mr. Mack handed him the loan application form.
"A college education is the right of every United States citizen, Birdie. But if we fail to exercise our rights, we have only ourselves to blame. There's no excuse today for not going to college."

So Birdie Ludd, lacking an excuse, had gone to college. From the very first, he had felt as though it were all a trap. A puzzle with a trick solution, and everyone had
been shown the trick except Birdie. A labyrinth that others could enter and depart from at will, but whenever Birdie tried to get out, no matter which way he turned, it always led him back to the same dead end.

But what choice did he have? He was in love.

On the morning of the day of his Art History test Birdie lay in bed in the empty dorm, drowsing and thinking of his truelove. He couldn't quite sleep, but he didn't want to get up yet either. His body was bursting with untapped energies, it overflowed with the wine of youth, but those energies could not be spent brushing his teeth and going down to breakfast. Come to think of it, it was too late for breakfast. He was happy right here.

Sunlight spilled in through the south window. A breeze rustled the curtain. Birdie laughed from a sense of his own fullness. He turned over onto his left side and looked out the window at a perfect blue rectangle of sky. Beautiful. It was March, but it seemed more like April or May. It was going to be a wonderful day. He could feel it in his bones.

The way the breeze blew the curtain made him think of last summer, the lake breeze in Milly's hair. They had gone away for a weekend to Lake Hopatcong in New Jersey. They found a grassy spot not far from the shore but
screened from the view of bathers by a windbreak of trees, and there they had made love almost the entire afternoon. Afterwards they just lay side by side, their heads reclining in the prickly grass, looking into each other's eyes. Milly's eyes were hazel flecked with gold. His were the blue of a cloudless sky. Wisps of her hair, soft and unmanageable after the morning swim, blew across her face. Birdie thought she was the most beautiful girl in the world. When he told her that she just smiled. Her lips had been so soft. She had not said one cruel thing.

He remembered kissing her. Her lips. He closed his eyes, to remember better.
"I love you so much, Birdie, so terribly much." She had said that to him. And he loved her too. More than anything in the world. Didn't she know that? Had she forgotten?
"I'll do anything for you," he said aloud in the empty dorm.

She smiled. She whispered into his ear, and he could feel her lips against his earlobe. "Just one thing, Birdie. I only ask one thing. You know what that is."
"I know, I know." He tried to twist his head around to silence her with a kiss, but she held it firmly between her two hands.
"Get reclassified." It sounded almost cruel, but then she had let him go, and when he looked into her golden eyes again he could see no cruelty, only love.
"I want to have a baby, darling. Yours and mine. I want us to be married and have our own apartment and a baby. I'm sick of living with my mother. I want to be your wife. I'm sick of my job. I only want what every woman wants. Birdie, please."
"I'm trying. Aren't I trying? I'm going to school. Next year I'll be a junior. The year after that I'll be a senior. Then I'll have my degree. And then I'll be reclassified. We'll get married the same day." He looked at her with his woundedpuppydog look, which usually stopped all her arguments.

The clock on the wall of the dorm said it was $11: 07$. This will be my lucky day, Birdie promised himself. He threw himself out of bed and did ten pushups on the linoleum floor, which somehow never seemed to get dirty, though Birdie had never seen anyone cleaning it. Birdie couldn't push himself up from the last pushup, so he just rested there on the floor, his lips pressed against the cool linoleum.

He got up and sat on the edge of the unmade bed, watching the white curtain blow in the wind. He thought of Milly, his own dear beautiful lovely Milly. He wanted to marry her now. No matter what his genetic classification was. If she really loved him, that shouldn't make any difference. But he knew he was doing the right
thing by waiting. He knew that haste was foolish. He knew, certainly, that Milly would have it no other way. Immediately after he'd failed the reclassification test, he had tried to persuade her to take a refertility pill that he had bought on the black market for twenty dollars. The pill counteracted the contraceptive agent in the city water.
"Are you crazy?" she shouted at him. "Are you off your rocker?"
"I just want a baby, that's all. Goddamnit, if they won't let us have a baby legal, then we'll have a baby our own way."
"And what do you think will happen if I have an illegal pregnancy?"

Birdie remained stolidly silent. He hadn't thought, he didn't, he wouldn't.
"They'll give me a therapeutic abortion and I'll have a black mark against my record for the rest of of my life as a sex offender. My God, Birdie, sometimes you can be positively dumb!"
"We could go to Mexico . . ."
"And what would we do there? Die? Or commit suicide? Haven't you read any newspapers in the last ten years?"
"Well, other women have done it. I've read stories in the papers this year. There was a protest. Civil rights and stuff."
"And what happened then? All those babies were put in federal orphanages, and the parents were
put in prison. And sterilized. God, Birdie, you really didn't know that, did you?"
"Yeah, I knew that, but . . ."
"But what, stupid?"
"I just thought-"
"You didn't think. That's your problem. You never think. I have to do the thinking for both of us. It's a good thing I've got more brains than I need."
"Uh-huh," he said mockingly, smiling his special movie-star smile. She could never resist that smile. She shrugged her shoulders and, laughing, kissed him. She couldn't stay angry with Birdie ten minutes at a time. He'd make her laugh and forget everything but how much she loved him. In that way Milly was like his mother. In that way Birdie was like her son.

11:35. The Art History test was at two o'clock. He'd already missed a ten o'clock class in Consumer Skills. Tough.

He went to the bathroom to brush his teeth and shave. The Muzak started when he opened the door. It played WHAM-O, WHAM-O, WHY AM I SO HAPPY? Birdie could have asked himself the same question.

Back in the dorm he tried to telephone Milly at work, but there was only one phone on each Pan-Am second-class jet, and it was busy all through the flight. He left a message for her to call him, knowing perfectly well she wouldn't.

He decided to wear his white sweater with white Levis and white sneakers. He brushed whitening agent into his hair. He looked at himself in front of the bathroom mirror. He smiled. The Muzak started to play his favorite Ford commercial. Alone in the empty space before the urinals he danced with himself, singing the words of the commercial.

It was only a fifteen minute subway ride to Battery Park. He bought a bag of peanuts to feed to the pigeons in the aviary. When they were all gone, he walked along the rows of benches where the old people came to sit every day to look out at the sea and wait to die. But Birdie didn't feel the same hatred for old people this morning that he had felt last night. Lined up in rows, in the full glare of the afternoon sun, they seemed remote. They did not pose any threat.

The breeze coming in off the harbor smelled of salt, oil, and decay, but it wasn't a bad smell at all. It was sort of invigorating. Maybe if Birdie had lived centuries ago, he might have been a sailor. He ate two large bars of Synthamon and drank a container of Fun.

The sky was full of jets. Milly could have been on any one of them. A week ago, only a week ago, she'd told him, "I'll love you forever and a day. There'll never be anyone but you for me."

Birdie felt just great. Absolutely.

An old man in an old-fashioned suit with lapels shuffled along the walk, holding on to the sea-railing. His face was covered with a funny white beard, thick and curly, although his head was as bare as a police helmet. He asked Birdie for a quarter. He spoke with a strange accent, neither Spanish nor French. He reminded Birdie of something.

Birdie wrinkled his nose. "Sorry. I'm on the dole myself." Which was not, strictly speaking, true.

The bearded man gave him the finger, and then Birdie remembered who the old man looked like. Socrates!

He glanced down at his wrist, but he'd forgotten to wear his watch. He spun around. The gigantic advertising clock on the facade of the First National Citibank said it was fifteen after two. That wasn't possible. Birdie asked two of the old people on the benches if that was the right time. Their watches agreed.

There wasn't any use trying to get to the test. Without quite knowing why, Birdie Ludd smiled to himself.

He breathed a sigh of relief and sat down to watch the ocean.
"The basic point I'm trying to make, Birdie, if you'll let me finish, is that there are people more qualified than I to advise you. It's been three years since l've seen
your file. I've no idea of the progress you've made, the goals you're striving for. Certainly there's a psychologist at the college. . . ."

Birdie squirmed in the plastic shell of his seat, and the look of accusation in his guileless blue eyes communicated so successfully to the counsellor that he began to squirm slightly himself. Birdie had always had the power to make Mr. Mack feel in the wrong.
". . . . and there are other students waiting to see me, Birdie. You managed to pick my busiest time of day." He gestured pathetically at the tiny foyer outside his office where a fourth student had just taken a seat to wait his three o'clock appointment.
"Well, if you don't want to help me, I guess I can go."
"Whether I want to or not, what can I possibly do? I still fail to see the reason you missed those tests. You were holding down a good C-average. If you'd just kept plugging away . . ." Mr. Mack smiled weakly. He was about to launch into a set-piece on the value of a positive attitude, but decided on second thought that Birdie would require a tougher approach. "If reclassification means as much to you as you say, then you should be willing to work for it, to make sacrifices."
"I said it was a mistake, didn't I? Is it my fault they won't let me take make-ups?"
"Two weeks, Birdie! Two weeks without going to a single class, without even calling in to the dorm. Where were you? And all those midterms! Really, it does look as though you were trying to be expelled."
"I said I'm sorry!"
"You prove nothing by becoming angry with me, Birdie Ludd. There's nothing I can do about it any more-nothing." Mr. Mack pushed his chair back from the desk, preparing to rise.
"But . . . before, when I failed my reclassification test, you talked about other ways to get reclassified besides college. What were they?"

Exceptional service. You might want to try that."
"What's it mean?"
"In practical terms, for you, it would mean joining the Army and performing an action in combat of extraordinary heroism. And living to tell about it."
"A guerrilla?" Birdie laughed nervously. "Not this boy, not Birdie Ludd. Who ever heard of a guerrilla getting reclassified?"
"Admittedly, it's unusual. That's why I recommended college initially."
"The third way, what was that?"
"A demonstration of markedly superior abilities." Mr. Mack smiled, not without a certain irony. "Abilities that wouldn't be shown on the tests."
"How would I do that?"
"You must file intention with
the Health, Education, and Welfare Agency three months in advance of the date of demonstration."
"But what is the demonstration? What do I do?"
"It's entirely up to you. Some people submit paintings, others might play a piece of music. The majority, I suppose, give a sample of their writing. As a matter of fact, I think there's a book published of stories and essays and such that have all achieved their purpose. Gotten their authors reclassified, that is. The great majority don't, of course. Those who make it are usually nonconformist types to begin with, the kind that are always bucking the system. I wouldn't advise-"
"Where can I get that book?"
"At the library, I suppose. But-"
"Will they let anyone try?"
"Yes. Once."
Birdie jumped out of his seat so quickly that for an unconsidered moment Mr. Mack feared the boy was going to strike him. But he was only holding his hand out to be shaken. "Thanks, Mr. Mack, thanks a lot. I knew you'd still find a way to help me. Thanks."

The Health, Education, and Welfare people were more helpful than he could have hoped. They arranged for him to receive a federal stipend of $\$ 500$ to help him through the three month "develop-
mental period." They gave him a metal ID tab for his own desk at the Nassau branch of the National Library. They recommended several bona fide literary advisors, at various hourly consultation rates. They even gave him a free copy of the book Mr. Mack had told him about. By Their Bootstraps had an introduction by Lucille Mortimer Randolphe-Clapp, the architect of the REGENTS system, which Birdie found very encouraging, though he didn't understand all of it too clearly.

Birdie didn't think much of the first essay in the book, "The Bottom of the Heap, an Account of a Lousy Modicum Childhood." It was written by 19 -year-old Jack Ch --. Birdie could have written the same thing himself; there wasn't a single thing in it that he didn't know without being told. And even Birdie could see that the language was vulgar and ungrammatical. Next was a story that didn't have any point, and then a poem that didn't make any sense. Birdie read through the whole book in one day, something he had never done before, and he did find a few things he liked: there was a crazy story about a boy who'd dropped out of high school to work in an alligator preserve, and an eminently sensible essay on the difficulties of budgeting a MODICUM income. The best piece of the lot was called "The Consolations of Philosophy," which was written by a girl who
was both blind and crippled! Aside from the textbook for his ethics course, Birdie had never read philosophy, and he thought it might be a good idea, during the three month developmental period, to try some. Maybe it would give him an idea for something to write about of his own.

For the next three or four days, however, Birdie spent all his time just trying to find a room. He'd have to keep his expenses to a bare minimum if he was going to get along those three months on only $\$ 500$. Eventually he found a room in a privately-owned building in Brooklyn that must have been built a century ago or longer. The room cost $\$ 30$ a week, which was a real bargain spacewise, since it measured fully ten feet square. It contained a bed, an armchair, two floor lamps, a wooden table and chair, a rickety cardboard chest-of-drawers, and a rug made of genuine wool. He had his own private bathroom. His first night there he just walked around barefoot on the woolen rug with the radio turned up full volume. Twice he went down to the phone booth in the lobby in order to call up Milly and maybe invite her over for a little house-warming party, but. then he would have had to explain why he wasn't living at the dorm, and (for she certainly must be wondering) why he hadn't called her since the day of the Art History test. The second time he came down to the
lobby he got into a conversation with a girl who was waiting for a phone call. She said her name was Fran. She wore a tight dress of peekaboo plastic, but on her body it wasn't especially provocative since she was too scrawny. It was fun to talk to her though, because she wasn't stuck up like most girls. She lived right across the hall from Birdie, so it was the most natural thing in the world that he should go into her room for a carton of beer. Before they'd killed it, he'd told her his entire situation. Even about Milly. Fran started crying. It turned out that she'd failed the REGENTS herself-all three parts. Birdie was just starting to make out with her when her phone call came and she had to leave.

Next morning Birdie made his first visit (ever) to the National Library. The Nassau branch was housed in an old glass building a little to the west of the central Wall Street area. Each floor was a honeycomb of auditing and microviewing booths, except for 28 , the topmost floor, which was given over to the electronic equipment that connected this branch with the midtown Morgan Library and, by relays, with the Library of Congress, the British Museum Library, and the Osterreichische Nationalbibliothek in Vienna. A page, who couldn't have been much older than Birdie, showed him how to use the dial-and-punch system in
his booth. A researcher could call up almost any book in the world or listen to any tape without needing to employ more than a twelve-figure call-code. When the page was gone, Birdie stared down glumly at the blank viewing screen. The only thing he could think of was the satisfaction it would give him to smash in the screen with his fist.

After a good hot-lunch Birdie felt better. He recalled Socrates and the blind girl's essay on the "The Consolations of Philosophy." So he put out a call for all the books on Socrates at senior high school level and began reading them at random.

At eleven o'clock that night Birdie finished reading the chapter in Plato's Republic that contains the famous Parable of the Cave. He left the library in a daze and wandered hours-long in the brilliantly illuminated Wall Street area. Even after midnight it was teeming with workers. Birdie watched them with amazement. Were any of them aware of the great truths that had transfigured Birdie's being that night? Or were they, like the poor prisoners of the cave, turned to the rockface, watching shadows and never suspecting the existence of the sun?

There was so much beauty in the world that Birdie had not so much as dreamt of! Beauty was more than a patch of blue sky or the curve of Milly's breasts. It
penetrated everywhere. The city itself, hitherto that cruel machine whose special function it had been to thwart Birdie's natural desires, seemed now to glow from within, like a diamond struck by the light. Every passer-by's face was rife with ineffable significances.

Birdie remembered the vote of the Athenian Senate to put Socrates to death. For corrupting the youth! He hated the Athenian Senate, but it was a different sort of hate from the kind he was used to. He hated Athens for a reason. Justice!

Beauty, truth, justice. Love, too. Somewhere, Birdie realized, there was an explanation for everything! A meaning. It all made sense.

Emotions passed over him faster than he could take account of them. One moment, looking at his face reflected in a dark shopwindow, he wanted to laugh aloud. The next, remembering Fran sprawled out on her shabby bed in a cheap plastic dress, he wanted to cry. For he realized now, as he had not on the night before, that Fran was a prostitute, and that she could never hope to be anything else. While Birdie might hope for anything, anything at all in the (now suddenly so much wider) world.

He found himself alone in Battery Park. It was darker there, less busy. He stood alone beside the sea-railing and looked down at the
dark waves lapping at the concrete shore. Red signal lights blinked on and off as they proceeded across the night sky to and from the Central Park Airport. And even this scene, though it chilled him in ways that he could not explain, he found exhilerating, in ways that he could not explain.

There was a principle involved in all this. It was important for Bridie to communicate this principle to the other people who didn't know of it, but he could not, quite, put his finger on just what principle it was. In his newlyawakened soul he fought a battle to try to bring it to words, but each time, just as he thought he had it, it eluded him. Finally, towards dawn, he went home, temporarily defeated.

Just as he went in the door of his own room, a guerrilla, wearing the opaque and featureless mask of his calling (with the ID number stenciled on the brow), came out of Fran's room. Birdie felt a brief impulse of hatred for him, followed by a wave of compassion and tenderness for the unfortunate girl. But he did not have the time, that night, to try and help her; he had his own problems.

He slept unsoundly and woke at eleven o'clock from a dream that stopned just short of being a nightmare. He had been in a room in which two ropes hung down from a raftered ceiling. He had stood between the ropes, trying to grasp
them, but just as he thought he had one in his grasp, it would swing away wildly, like a berserk pendulum.

He knew what the dream meant. The ropes were a test of his creativeness. That was the principle he had sought so desperately the night before. Creativeness was the key to everything. If he could only learn about it, analyze it, he would be able to solve his problems.

The idea was still hazy in his mind, but he knew he was on the right track. He had some cultured eggs and a cup of coffee for breakfast and went straight to his booth at the library to study. Though he had a slight fcver, he seemed to feel better than he had ever felt in his whole life. He was free. Or was it something else? One thing he was sure of: nothing in the past was worth shit. But the future was radiant with promise.

He didn't begin work on his essay until the very last week of the developmental period. There was so much that he had had to learn first. Literature, painting, philosophy, everything he had never understood before. There were still many things, he realized, that he couldn't understand, but now he firmly believed that eventually he would. Because he wanted to.

When he did begin working on his essay, he found it a more difficult task than he had anticipated. He paid ten dollars for an hour's
consultation with a liscensed literary advisor, who advised him to cut it. He was trying to cram in too many things. Lucille Mortimer Randolphe-Clapp had given more or less the same advise in By Their Bootstraps. She said that the best essays were often no more than 200 words long. Birdie wondered if future editions of By Their Bootstraps would contain his essay.

He went through four complete drafts before he was satisfied. Then he read it aloud to Fran. She said it made her want to cry. He did one more draft of it on June 8th, which was his 21 st birthday, just for good luck, and then he sent it off to the Health, Education, and Welfare Agency.

This is the essay Birdie Ludd submitted:

## PROBLEMS OF CREATIVENESS

By Berthold Anthony Ludd

> "The conditions of beauty are three: wholeness, harmony, and radiance."
> Aristotle.

From ancient times to today we have learned that there is more than one criteria by which the critic analyzes the products of Creativeness. Can we know which of these measures to use. Shall we deal directly with the subject? Or "by indirection find direction out."

We are all familiar with the great drama of Wolfgang Amadeus Goethe-"The Faust." It is not possible to deny it the undisputed literary pinnacle, a "Masterpiece." Yet what motivation can have drawn him to describe "heaven" and "hell" in this strange way? Who is Faust if not ourselves. Does this not show a genuine need to achieve communication? Our only answer can be "Yes!"

Thus once more we are led to the problem of Creativeness. All beauty has three conditions 1, The subject shall be of literary format. 2, All parts are contained within the whole. And 3, the meaning is radiantly clear. True creativeness is only present when it can be observed in the work of art. This too is the philososphy of Aristotle.

The criteria of Creativeness is not alone sought in the domain of "literature." Does not the scientist, the prophet, the painter offer his own criteria of judgement toward the same general purpose? Which road shall we choose, in this event?

Another criteria of Creativeness was made by Socrates, so cruelly put to death by his own people, and I quote: "To know nothing is the first condition of all knowledge." From the wisdom of So-
crates may we not draw our own conclusions concerning these problems? Creativeness is the ability to see relationships where none exist.

The machine that did the preliminary grading gave Berthold Anthony Ludd a score of 12 and fed the paper into the Automatic Reject file, where the essay was photostated and routed to the OUTMAIL room. The OUTMAIL sorter clipped Birdie's essay to a letter explaining the causes which made reclassification impossible at this time and advised him of his right to seek reclassification again 365 days from the day on which his essay had been notarized.

Birdie was waiting in the lobby when the mail came. He was so eager to open the envelope that he tore his essay in two getting it out. The same afternoon, without even bothering to get drunk, Birdie enlisted in the US. Marines to go defend democracy in Burma.

Immediately after his swear-ing-in, the sergeant came forward and slipped the black mask with his ID number stenciled on the brow over Birdie's sullen face. His number was USMC100-7011D07. He was a guerrilla now.
"The name, 'Julian Fogg Grow,' is real; I am homme-de-plume," says Mr. Grow. "Born in New Jersey long enough ago to have been the rosiest-cheeked ensign in WW II. Dartmouth '48, erstwhile boilermaker's helper now editorial writer for Worcester (Mass.) Telegram \& Gazette. Shift in emphasis largely." Here's Mr. J. Fogg Grow with a funny yarn about the unlikely adventures of Farquhar Orpington-Pell, Dr. Hiram Pertwee, Tabitha Susan MacCorrister, and Bushrod-four of the gamiest and most colorful characters we have come across in some time.

# THE SWORD OF PELL THE IDIOT 

## by Julian F. Grow

Bushrod ain't smart, by a long shot. But he's able within his limits; all you got to do, if you tell him to do something, is stand there and watch and holler at him now and again.

So him and me hit it off well enough, considering he's a certified ninny and I been practicing medicine here since before the Territory come to be a State. We got along. As long as I did the talking for us both, and he listened, we got along capital.

Must of been eight, ten years ago the two of us was at the Owl

Hoot when the swinging door squawks and in comes this dude. Oh , he was a striking sight.

Tall, he was, and broad shouldered, but the first thing you noticed was his eyes. They was gray and wide apart and shot right through the shadows. The nose between them was straight, the mouth under them was generous, and the sandy moustache in the middle framed a faint, reckless smile. He had a clean-cut, fighter's chin, and he wasn't a man to sweat much, you could see that.

Coming in out of the heat of the
street in his speckledy knickerbocker suit, he swung his derby hat off graceful and combed sure fingers through thick russet hair, parted in the middle and wavy as a washboard. He strode silent to the bar, took hold of the heavy stoneware jug on the pine planking, swung it up and drunk deep.

He set the jug down and we watched him. He didn't gag nor flinch, not him, not a lot, but his jaw muscles bulged and his nostrils flared, and he went a mite pale.
"I say, that's good," he said, steady. A deep voice. "A trifle warm, but good. Now if I could have a spot of water to wash it down?"
"Hoo haw!" said Bushrod. "That there was the water!"
"It's kind of alkali," I explained. "The whiskey's in them bottles."

The tall man stared at Bushrod rolling around on the floor, laughing. Then he swallowed hard, smoothed his moustache, and said to me, "I say, this will hardly do, will it. Rum go, to bash into a pub in search of some of your Western adventure and come a cropper first crack off the bat. Bad form. Frightfully bad form, visitor to your country and all that. Do accept my apology."
"Shucks, Frenchy," I told him, "pay it no mind. Any greenhorn fool can make a stupid mistake. I knowed you for a foreigner soon's you come in."

He swallowed again. "Yes," he said. "Permit me. I am Farquhar Orpington-Pell, late a subaltern in Her Majesty's Own Midlothian Dragoons."
"Glad to know you, Frenchy," I said. "Name's Doctor Hiram Pertwee, native of East Randolph, Orange County, Vermont. I do the physickin' and stitchin' in these parts. This here's Bushrod." Bushrod got up grinning, and started swatting sawdust off his buckskins.
"Now we made our manners," I said, sliding the water jug over so's he could have another jolt, "they anything we can do for you, Frenchy?"

He kind of winced. "I wonder," he said, "if I might ask you please not to call me that?"
"Oh shaw, Stranger," I told him, "sure thing. Just that this here's a stage crossroads, and I get plumb tired a calling people Stranger. You got some kind of nickname or anything?"

He got pink. "Well, actually," he said, "at Harrow they did call me Poodle, though I could never fathom why. Would 'Poodle' do?"

Bushrod begun to screech so I booted him one. "I don't believe it would," I said. "How about 'Limey'?" The big man's face started to set up hard, so I guessed not. "Well," I said, "just what exactly was that name again?"
"Farquhar Orpington-Pell," he said, "late a subalt-" I stuck out my hand. "Glad to know you,

Pell," I said. "Bushrod, this here's Pell."
"Glad to know ye, Poo-" Bushrod begun to say, so I booted him again, "Pell." He cut short when Pell froze still, his face like the muzzle of a cannon toward the back of the saloon.
"Hist," Pell hist. "Someone mucking about back there." His hand went to his waistband and came back with something you don't see much any more, a singleshot caplock duelling pistol. In a pinch it'd do for driving nails with, all the cartridge repeaters we got in these parts. Pell drew back the hammer intent as a panther, and started around the bar. "Hist," he said.

He didn't hear the batwing doors squawk open and a little jasper in buckskins come panting in out of the sun. But when the jasper made out Pell he jabbed his hand into his pants and heaved up a Merwin \& Hulbert .42, which he trained on Pell's rear. Pell, moving quiet as a cat toward the door back of the bar, never noticed.

Just then that door opened and Jubal Bean, the swamper at the Owl Hoot, stuck his head out. He seen Pell looming and two gunbores looking his way, and snapped back in right smart, like to slammed the door on his own head. Pell, his face soothed up and he turned around, and spied the kid with the Merwin \& Hulbert behind him.

Pell had spunk, you got to give him that. When he dropped his pistol and it went off, he never even quivered. He just stood there and smiled a tight little smile. "Very well, sir," Pell said, "your advantage, I believe." Right plucky.
"Gracious," the kid with the gun said, in a high voice. He dropped his gun too, but he hadn't cocked it so it didn't go off. Then he fainted dead away.

We toted him up to the bar and stretched him out on it, and then we come to see it was a girl, a real bitty mite of a thing. Her hat fell off so her hair fanned out, pretty as field mouse fur, and she didn't breathe quite like a man would. Before I saw what he was up to, Bushrod sloshed his beer glass into her face to bring her to, and she roused.
"Gracious," she said again, looking around wild. She yipped when she saw Pell hovering, and grabbed me around the neck, which was okay except she was wet and kind of stunk of Bushrod's beer.

Then the words come flying. She hoped nobody got the wrong idea of her because she was wearing men's clothes because she was raised real genteel and not the sort of person who'd do that sort of shameless thing, and she was glad her poor dear mother in Heaven wasn't there to see her daughter in disgracefull attire, which wouldn't have been the case if it wasn't a
most dreadful dire emergency, which it would've had to of been to make her resort to that sort of bold behavior for she'd been raised real genteel.

Some of the landmarks of the conversation was beginning to look familiar and anyways I had commenced to strangle with her wrapped around my neck, so I stretched and got her with the rest of Bushrod's beer. "Gracious," she said, and gasped, but she stopped and that was the main thing.

She was a short bitty tyke, all straggle-haired with beer and still hanging on my neck like she planned to stay. I got over to a chair and sat on it, swinging her up into my lap. "What's your name, missy?" I asked her.
"Tabitha Susan MacCorrister," she said. "I'm Doctor Hiram Pertwee," I told her, "and pleased to make your acquaintance. Where you from, Tabitha Susan MacCorrister?"
"Tabbysue," she said. "Everybody calls me Tabbysue. From Steubenville, Ohio. Me and Father ." she gulped and started to cry, so I gentled her down against my shoulder. It turned out her father and her were headed alone for The Dalles, up to Oregon, and not a bit more'n a thousand miles down the wrong trail. When they was breaking camp this morning her old man stomped on the wrong end of a diamondback, and got bit.

She done all she knew to do for
him, which wasn't much. Then she got into Father's spare clothesshe couldn't ride straddle in a skirt -and pounded off down the old wagon tracks on the nigh mare, hoping for some sort of settlement near. She'd packed Father's big pistol because sick as he was he told her to, knowing all about the West from Wild Bill penny-dreadfuls. When she come in on Pell stalking Jubal Bean she hauled it out to have something to hang onto, she was that scared.
"Poor bitty thing," I said soft. Pell, he muscled up and swept his derby off that russet hair, in a deep bow.
"Permit me, Miss MacCorrister," he said, smoothing back his curls. "I could scarcely help but overhear your tragic recital, and feel deepest sorrow for your plight. Allow me to present myself. Farquhar Orpington-Pell, late a subaltern in Her Majesty's Own Midlothian Dragoons. If you would not think me presumptuous, may I have the honor and signal privilege of offering to you my services in this melancholy time of-"
"Tell that man to hush up," Tabbysue told my collar.

Pell shut his jaw so hard it rattled. I turned to Bushrod and told him to hitch up my buggy straight way. "We're going to your daddy," I said to Tabbysue, and hollered to Jubal to get my toolbag.

Jubal come lumbering back
from my office over the stage depot about the time Bushrod clattered up out front with the buggy, so I unbraided Tabbysue from off my neck and gave her a businesslike pat on the gluteus maximus toward the door.

Pell got in the way, all forgiveness and understanding and with his derby still off. "With your leave, ma'am, or without it, really must insist on accompanying you," he said. "Dangers of the unknown, a defenseless young lady amid the terrors, perhaps in gravest jeopardy from the cruel savage of these parts

I offer you my services in this melancholy-" Tabbysue looked up at me pleading, so I flagged Pell down. "Come on along," I said, "her daddy'll have time for cholera and typhus too if you make a speech."

He bowed, and we went out to the rig. For once Bushrod done something right without being told: there already was a shovel in back. All the time it'd been, her paw would have to be powerful lucky to be doing as good as poorly.

Pell, it turned out, was riding a gray gelding around the size of the First Baptist Church, eighteen hands anyway. He had a dinky little pack mule tied on behind, and damned if he didn't have a fourfoot cavalry saber hanging off what looked the bare beginnings of a McClellan saddle on the gray. He clumb up easy enough, like he'd been ahorse before, but I figured
he'd wish for a saddlehorn to hang onto and slide off that pad besides, before we was done trail-riding. He did, too.

So with Tabbysue and me on the front seat and Bushrod in back, the MacCorrister mare following and Pell astride his steed with the sumpter mule on drag, we set off the way Tabbysue pointed, up into the Ombligo de Dios country.

Ombligo de Dios is a great shallow basin about half a day northeast of town, near a mile across and maybe five hundred foot deep, like a caved-in sand well. The Indians call the neighborhood cursed, and no prospector ever found anything there but rocks, so nobody goes near the crater much. After I told Tabbysue this, she asked me, "What does Obble-that name mean?"

I kind of stammered, even being a medical man, because there's things you don't discuss in front of a lady, particularly a young'un like Tabbysue.
"Means 'God's Bellybutton'," Bushrod hollered. I cut at him with the buggywhip but he ducked, the ninny. "Spaniards called it that," I told her, while Pell, who'd fell a ways back, come crashing along through the loose rock like a whole troop of yellow leg cavalry. "Indian name was along the lines of Great-Evil-Star-that-Shakes-the Mountains, or like that. Dude couple of years ago calculated it was a dead volcano. Keen sobby.

Anyways, if we follow this here trail we won't be more'n five mile away from it. Tchup," I said to my Morgan.

So we kept on till we come to the MacCorrister camp, and sure enough her daddy needed burying. Tabbysue cried while Bushrod and me laid him under, and we started back with her and me in the buggy, Bushrod driving the MacCorrister outfit, and Pell falling off regular at drag. I asked her what she was going to do now.
"I-I don't know," she said, snuffling. "Father was the only kin I h-had. I can't go back to Steubenville all b-b-by mys-self-f ." and she set to blubbering again. I hauled her over to my shoulder and said "Hyuh, hyuh," or whatever.

Pell come clattering up. "If you'll allow me, Miss MacCorrister," he began, "you have my solemn oath you shall never lack protection whilst I draw breath. I pledge you my word of honor that so long as I live . . ." He didn't get to finish this speech neither, because right then Bushrod, who'd pulled round past us and was riding point, said soft: "Hoo-ee." We all stopped.

About a hundred-fifty yards down the trail was an Indian. He was an Agency buck from the reservation, well enough, a government ward, but he sat his scrubby little pony like he'd been into some rotgut hootch and was ornery.

Another showed up behind him, then another, all hefting long guns. I craned around, and maybe two hundred yards up our back trail, three more mounted bucks was coming up slow, and purposeful.

Pell saw what was what, and I suppose it was what the numskull had been hoping for all along, a real Wild West adventure. He grabbed for his caplock tack hammer, but like fools we'd left even that back at the Owl Hoot with old MacCorrister's Merwin \& Hulbert. Jubal Bean'd probably already sold them both. So I heard a noise like a tin can being stepped on and there Pell was, the saber raised over his head, his russet hair flying and eyes just slits of fire.
"Put that silly thing away before you fall off your horse onto it," I told him.
"Bushrod," I said, "there's a dry wash yonder, to the right. Head for it." Bushrod, he didn't fidget, he flogged his team into a standing jump and ducked up the wash like a jackrabbit with us and Pell, who was hollering something about circling the wagons and making a stand, right behind. The bucks yelped and started after us.

Once in the wash it was a mite too lumpy underfoot for even Indians to do much shooting, so we racketed along unmolested for a spell. They was bound to close up, though; over the catowse I yelled at Bushrod to pull up on the far
side of the next narrow bend. I was afraid the old lunatic'd have to try two or three on for size, but he picked a good one. Coming into it I reined left real sharp. The Morgan twisted cruel between the thills and went down kicking in a storm of rocks and dirt, and the buggy skittered over on its hubs.

I hadn't dast warn Tabbysue for fear she'd tense up and bust something when she fell. As it was she lit on the wide part of her daddy's buckskins and only got knocked out a little. I scooped her up over the tailgate of the MacCorrister wagon, heaved my toolbag in after her, and bellowed to Bushrod to move out.

Well, he did and I damn near got left, of course. I lost my hold on the tailgate and was standing there trying to think of friendly things to say to drunk savages when Pell appeared from someplace, hauled me up and over his Baptist Church horse, and went pounding after Bushrod with me flopping rump in the air. That was one time I rejoiced he didn't pack a regular saddle, for I'd've been spitted on the horn and lived out my years with an extra navel.

Any rate, the Agency bucks must of stopped at the buggy and got to arguing over the downed Morgan, for while I couldn't hear much except my bones breaking, they didn't catch us. Then we come to the end of the arroyo and both fell off.

Tabbysue was peering over the tailgate like a scared little prairiedog and sniffling, but there wasn't time for Hyuh or whatever. "Bushrod," I said, "grab up any food smaller'n a flour barrel out that wagon and tie it up into two bundles in whatever blankets you run across. Axe too, if you see one. Pell, tether that Percheron to a wheel. We walk from here on out. Tabbysue, honey, shut up and heave all the clothes you can find as far as you can, ever which way. And don't fret."

I went backtrail a piece and heard arguing, not yipping, so the bucks was still haggling over the Morgan. Pell's Baptist Church horse was too big to be fetching to a redskin and I guessed they'd probably eat it along with his mule, but the MacCorrister team would stop 'em again when they got this far, and so would the duds Tabbysue was strewing. Redskins like duds.

Still and all, there wasn't what you'd call a lot of time for lollygagging. If we was gone when they finally come up they might forget about us, but they surely wouldn't if we was still standing around talking. I took stock: Bushrod was just tying off the second bale of provisions, and I saw he'd not only found an axe but a double-barrel muzzle loading shotgun besides. Good. Pell was there with that damn long sword of his in his hand. I couldn't see Tabbysue.
"Where in thunder . . ." I said, and commenced charging around in circles. "If yore lookin' fer the filly," Bushrod said, "she's yonder," waving toward the shallow canyon wall. I growled at him and started scrabbling up the slope with the axe, and had just about made it through the loose rock when she shrieked, "Now just you wait a minute!"

Trouble with climbing loose rock is, if you stop you go back where you started. By the time I dug out from under the avalanche she appeared on the rim just above me. I could scarce believe it. She'd switched out of her daddy's buckskins into a proper dress, bonnet and all, and looked like a real pretty little lady.

She even smelt of lemon verbena. "Don't you think we should be going, Doctor Pertwee?" she asked.

We sort of stared at her. Then Pell said, "I say," and Bushrod said something I hoped Tabbysue didn't hear. Myself, I couldn't think of nothing that quite fit, so I just tucked the axe under my belt, picked up MacCorrister's scattergun and my toolbag, motioned to Bushrod and Pell to each bring a food sack, and started up the slope again after her.

She took me by the arm. "I didn't want you should think I wasn't reared genteel," she explained. I nodded. Pell come scrambling over the rim after Bushrod, sword
in one hand and bundle in the other-a wonder he didn't hack off his own head-and we set out for home.

Well, we went up ridge and down gully for a spell, and then all of a sudden it was all downhill, for as far as you could see in the near dark. We'd been saving our wind for puffing with, generally, but I spoke up low: "Good break, we're in God's Bel-Ombligo de Dios. Injuns think it's haunted, won't come in after us." Just then there was a yip, and the lead redskin come into sight a quarter mile behind us. Yips answered him from both flanks, the damn irreverent savages.
"Do believe we'd best run," I said, and ran dragging Tabbysue. We ran and we ran, the drunk Agency bucks getting louder behind us, downslope toward the center of the crater. We kept running, bunched up tight, until we charged up a little knoll right in the middle, and found out that there was a hole in the knoll, and that we were falling down the hole.

I can't recollect much about that fall, beyond the slow twisting and turning and choking for breath, and thinking that we were falling an awful long time. What happened, we'd tumbled into a chimney with a powerful updraft from deep under, and we wasn't falling so much as sinking through that updraft. So when it finally let us go, Lord only knows how far
down, we truly "fell" only a few feet.

I'd been worried about landing on Tabbysue, I do recall, and avoided it, but forgot about somebody maybe landing on me. Pell done it, of course. First thing I noticed when I come to was I could see: there was light, which was odd, and the roaring I heard wasn't all in my head, the place was noisy. Stunk like a furnace, too.

We were in a good-size cave, with what looked like a bunch of tunnels opening into it. Tabbysue stopped trying to yank out of my hand when she saw I'd come around, so I got up creaking a mite and we headed together toward one of the openings. Near its mouth a blast of hot, smoky air caught her skirts and would have kited her clear up the chimney, I swear, if it wasn't for me. I dragged her back down and gave her to Pell to hold whilst I scouted the others.

Only one didn't have any hot wind in it, about ten foot across, round, lit by the same spooky light as the cave. There didn't seem to be anyplace else to go, so we went into it, slow. After a few paces the roaring died away, which, with not even Bushrod feeling like talking, made it kind of quiet. I felt like a bug at a buffalo dance.

The tunnel stretched straight as a rifle barrel, always with that spooky light. Only way we could
tell we'd moved was to look back and see that the dark circle of the opening had grown smaller-and we looked back a good bit, even though there wasn't any place somebody could've snuck up on us from.

Then a bright pinprick appeared in the middle of the pewter dish of the tunnel ahead, and as we went on, it got larger. Finally it was what had to be the entrance into another, and better lit, cave. Without discussing it we slowed down, for it somehow felt like a good time to stop a while, and meditate, and confer on various matters of importance. Like how to keep from hollering, for example.

Well, just then Pell hauled that fool saber out of its scabbard with a thunderous echoing iron squawk, for no good reason, and we all like to died of fright, him included. He froze, pale as a ghost, and Tabbysue and Bushrod both screeched. I got mad, which was a nice relief.
"Pell," I said, turning on him slow, "you are taller'n me. But if you do not stop waving that Barlow around every fifteen, twenty minutes I am going to take it away from you, put you over my knee, big as you are, and fan your butt with the blade till it's wore down to a hatpin. Now you holster it, and don't go making no more damn noise!"

I guess subalterns in the Queen's

Own Whatevers must be real lowly, for he done it with his mouth shut. But at least it busted up the mood some, made things more natural. Tabbysue turned to me. "What are we going to do now, Doctor Pertwee?" she asked, standing close and smelling of lemon verbena.

Half of medicine is seeming sure when you ain't by a long shot. "Why," I told her, "we're just going to find out what's up ahead. I'll go first, with the gun here, and you follow right behind with my bag. It ain't heavy. Pell, you take the packs from Bushrod and follow Miss MacCorrister. Bushrod," I held out the axe I'd stuck in my belt and which for a miracle hadn't chopped anything off in the fall, "you guard the rear with this. Don't hit Pell with it. And Pell, anything comes at Tab-at Miss MacCorrister, then you can pull out that knife and play with it. Not until. Now let's go."

We come to the end of the tunnel, all right, went through and stopped dead. Tabbysue gasped and grabbed my arm hard. Pell said "I say" soft, and Bushrod dropped the axe. It was something to see.

We was on a little balcony maybe halfway up the curved wall of a hulking great round cavern, so big you could scarcely see the far side. Right opposite us, in the middle of the air, was a light that didn't bear looking at, just hang-
ing there, shimmery blue-white. It was better than a mile away, or maybe half a mile or maybe ten, for the cavern was that big and the distances that hard to judge.

Down below there was houses, pueblo-style Indian houses like I'd seen down to Colorado, but without roofs. My eyes hadn't got enough used to the light to be sure if the things moving around down there was people or what, but something was moving sure enough. I turned to talk to the others about it but never got the words out.

In a hollow over the tunnel mouth behind us was a monster.

Hell, I know "monster" ain't a very technical word for a scientific person with a bona fide mailorder medical degree. Man is the only monster, I recollect somebody saying-but this here specimen was knobbly pale green, with no face worth talking about except the two hollow yellow eyes it was looking at us with. So say it wasn't a monster. Say it was just an eightfoot pickle wearing an opera cape and no tall hat.

A round hole opened up about where a pickle's navel would be.
"How do you do," it said.
'Tweren't loud, and it sounded pretty normal considering a pickle said it, but it sure raised a ruckus at the time. Tabbysue looked over her shoulder at the strange voice, shivered once and fainted dead away. Bushrod, who'd stooped over
to pick up the axe, peered up from a crouch and I vow he did a standing somerset: his legs was running before they touched ground, and he blurred out back the way we come.

Tabbysue had hauled me off balance when she keeled over, so from the balcony floor I heard that old familiar cat screech of Pell's scabbard and saw him start for the pickle waving that fool sword. He had grit, even if he weren't bright. The pickle watched him come for a moment, then almost too quick for the eye to see shot out kind of a strand from its opera cape, wrapped onto the blade, and flicked that sword out of Pell's fist easy as pie.

It held the sword up in front of its eye holes, studying the thing, while Pell made up his mind to mount an assault barehanded and begun to. In a flash the pickle pounded Pell once on the head with his own sword pommel, and Pell lay down sighing.

I shielded Tabbysue and thought about her daddy's fowling piece, which at the moment I was lying on. The pickle's mouth opened again, and it raised another tentacle up alongside its, well, head.
"How," it said. Then it said, "Buenas dias." Then it said, "Guten Morgen. Bienvenue. Welcome. Language speak which you do in?"
"American," I answered, which
is sort of hard to do with your mouth hanging open a foot. "American," I said better, getting to my feet. "Who the blue hell are you?" I said, best yet.

I should tell you now that while he spoke clear enough, by and large, his grammar was real lousy and so I'll say what he meant to say and not what came out, necessarily.

I might as well mention too that while he was built along the lines of any ordinary eight-foot light green pickle, like I said, his cape was really a mantle of individual tentacles that fanned out on both sides from his back. They could work separate and independent, or in groups like long fingers of a hand, or all to once. He stood on the bottom ones, used bunches of them like legs to walk on, and could extend the full sets on each side into wings and fly. At the moment he was just using one tentacle to hold Pell's sword and still had the other one up like some cigar store Indian.
"I am the friend of the son of Mahar," the pickle said with his navel. "Pecos Billy Mahar."
"You don't mean it," I said. "Why, I know Pecos Billy. Short Irish feller with a black moustache."
"I also the friend of Pecos Billy, tender, very good. I like him much, good in pot. My name, Gonik."

Now, me and this Gonik might be on a fine flourishing first-name
basis, but I was commencing to get pensive with all this talk about tender and pots. Not being no missionary, I begun inching toward a useful grip on the fowling piece, but Gonik said, "Pardon me. I go, fetch your friend." Before I could think twice he'd launched out of his hollow, twisted in midair, and gone flapping down the tunnel after Bushrod like a great green hummingbird.

Old Bushrod had covered a smart piece of distance just while we been talking, Gonik and me. Still, Gonik soared over him and lit in no more than two shakes. Bushrod stopped, and after a bit they started back toward us looking amiable enough.

So I tended to Tabbysue, noting out of the corner of my eye that Pell was starting to stir. Truth to tell, the little bitty thing looked so peaceful and pretty lying there-I mean Tabbysueeven with her mouth open, that I just looked at her a spell, quite a spell, before rummaging a phial of aromatic spirits out of my black bag and poking it under her nose. Her eyelids begun to bat, and her lips moved, and her cute little chest heaved. "Hiram?" she said, sleepy like, and damn if that didn't sound nice.

Forty-odd ain't so old. I cradled her head while her eyes opened, and she smelt of lemon verbena. "It's okay, honey, I'm right here," I told her. "You just fainted be-
cause of Gonik, but I truly don't believe he aims to eat us yet," I soothed her.

Meantime Pell had staggered to his feet and was crashing every which way around the balcony, I suppose looking for that fool saber Gonik still had. He like to went over the edge but caught himself and come reeling back, blood dripping out of his russet hair. He near stepped on Tabbysue.
"Mind your feet, you jackass," I told him. "Tabbysue, don't you fret. Everything's going to be all right." She looked up at me trusting and I cuddled her skull, while Pell gave up searching for his sword and sank down against the cavern wall, holding his head and groaning. "Everything's going to be just fine," I told poor little Tabbysue.

There didn't seem to be anything much to talk about that talking about would help, so we waited for Bushrod and Gonik. As they come closer I could make out they seemed to be chatting-Gonik would nod sometimes like a saguaro cactus in a high wind, and Bushrod would sometimes cackle that maniac laugh of his, midway between a rutting elk and a barn door hinge.

Pell was back on his feet by the time they arrived, and Tabbysue was quietly trying to hide in my vest. Gonik stood silent while Bushrod, dignified as a drunk circuit judge, took off his hat for the
first time in his life and held it over his heart. "Mister Doc an' Mister Poodle," he said, "an' you there too, little missy, Ah's like fer you to make the acquaintance of Mister Gunk. Damn if he don't talk with his bellybutton."
"How do you do," Gonik said again, with his bellybutton. He stood easy while Pell, straight and wary, stared at him eye-to-eye as steely as he could manage, considering Pell had to look up into yellow holes two feet over his head.
"I trust you fully realize, sir," Pell said, stiff as a house hound with a stray, "that I would gladly settle our differences here and now were it not that the closeness of these confines might result in grievous harm to the innocent young lady I have the honor to escort." Under my coat I heard the young lady mutter something about dumb old ox. "While I cannot know what code of conduct you subscribe to, sir," Pell went on, "I nevertheless take the liberty to-"

Gonik cut in. "You are Poodle," he said.
"Pell," I told the pickle, quick. "Farquhar Orpington-Pell, late of the Queen's Own Loathsome Dragons," I said.
"I remove this from you," Gonik said, and handed-as it werePell back his sword. The blade in the tentacle was all pitted, like it'd been dipped in strong acid. "I regret snacking on it, returning
with my friend Bushrod. I have a sweet-finger, and find the flavor of carbon irresistible. I am sorry."

Pell took the poor thing and looked at it bugeyed. Turned out that . . . well, I'll tell about that later. By now Tabbysue was peeking at Gonik from under my coat, and he looked at me like he was waiting for a formal introduction. I wasn't about to be courtly as Bushrod, but Widder Charity Pertwee didn't rear no savages: I hawked and spit and said, "Miss Tabitha Susan MacCorrister, leave me to present Mr. Gonik. Mr. Gonik, this here's Miss MacCorrister, and if you was to eat anybody I'd as soon it weren't her. She's an orphan."

Tabbysue never turned a hair. She curtsied, in fact. "I am truly pleased to make your acquaintance, sir," she said. "And I'm sure that you have no intention of permitting harm to come to any of us -to Dr. Pertwee, or Mr. Bushrod, or even to . . . what's his name, there."

Gonik tilted toward her in a bow. "Hell, Doc," Bushrod bawled, "he ain't a-gonna eat nobody. Gunk here eats dirt, and stuff like that sword a Poodle's, an' like that. Ain't it so, Gunk?"

Gonik tilted again and said, "I assure you, is so, Miss MacCorrister and sirs. My people have not means nor desire, absorb you of the Yellow Sun. We do not subsist as you do. Truth, much of our
energies are to cultivate suitable food for you who come to us from above. I fear, insufficient success. Come, I show you new home."

For the moment there wasn't much to do but go along, so we gathered our gear and started down the kind of goat trail that led to the cave floor. Nobody with wings and any sense at all would've walked that trip, though-Gonik flew. He'd soar on down a ways, wait politely for us to catch up, and then fly some more.

Seemed like it took us about a week to climb down but it didn't, something less than four hours, strictly speaking, by my keywinder. We'd come in a long curve, and looking back I could just make out the tunnel mouth as a little bitty speck halfway up in what passed for sky hereabouts, too close for easy looking to that spooky shimmer that was their sun.

It was like we was coming off a mountain to a village in the foothills: the stone pueblos scattered on a smooth slope, a big round stone building in the bottom further down, and the slope starting upwards again on the far side. I even saw a buffalo-hide hogan, but the skins was falling apart and it was deserted just like all of the other houses we could see.

We'd got kind of bunched up for solace, nobody talking, and when Pell yanked that infernal sword screeching out of its scabbard I nigh to had pups.
"Gol-durn it, Pell!" I hollered, and rounded on him. He was all braced for combat, waving that wrecked blade that wouldn't open a can of peaches at an animal humping toward us from the left. "Gol-durn it, Pell, that there's an armadillo, and a sick one at that! They don't attack without you provoke them, so hide that consarned knife before you make the poor critter mad an' it bites you on the foot!"

Having Tabbysue along was a comfort, but it sure was hampering hell out of my opinions. That armadillo was mortal sick, though. Gonik said softly, "Some creatures of the Yellow Sun, only a few short sleeps before their long sleep." We walked by it without saying nothing more.

Finally we saw another human being, more or less: a gaunt hairless one that looked to be a thousand years old, huddled under a raggedy blanket in a doorway near the amphitheater in the basin bottom. "How do you do, Mrs. Ames," Gonik said, and my jaw dropped. Not only a woman, if I took Gonik right, but a white one at that. The rickety old hag just watched us pass.

There was a pickle in the amphitheater gate when we got there, only the second of Gonik's people we'd seen the whole time, counting him. Gonik went up to it and instead of talking, twined one of his tentacles around one of the
other's for a couple seconds, after which they untangled and the other flapped off toward the tunnel mouth, I expect to do sentry duty. Gonik led us through a passageway into the building.

It was hollow with no roof, like stereopticon slides of the Colosseum at Rome, Italy. The inside walls was honeycombed with compartments open toward the middle. Most of the compartments looked empty, but in some pickles was sitting like Saint Louis bawdy house girls, looking out over the courtyard below and sometimes soaring over to squat with another for a chat holding hands.
"I want you to meet Jorm, the son of Pecos Billy Mahar," Gonik said, and set out between the low walls that divided the courtyard like a checkerboard.

I was, to tell the truth, kind of looking forward to another human voice. The general picture so far was sort of melancholy, and even Pell had been thinking about it. "I say," he said, "I don't wish to alarm Miss MacCorrister," and he bowed to Tabbysue, his long russet hair waving down, "but I find this place disquieting. I venture to say all may not be entirely well, y'know. Absolutely no need for concern, of course, Miss MacCorrister," he said, bowing again.

Bushrod had noticed too. He whispered in a locomotive hiss, "He's right, Doc, Poodle is." It made me wonder if maybe things
was even worse than I thought. Tabbysue was more to the point: "I'm scared half to death," she said, soft. "Please let's us get out of here right away, Hi -Doctor Pertwee."

Pell looked around scowling and spoke low, so's a deaf-mute billygoat'd know he was plotting murder. "It can scarcely have escaped your observation, sir," he said, "that by nature and training I am a finely-honed fighting man. An occasion like this, if I may say so, brings out my best qualities of resourceful leadership.
"Now," he went on, "the monster disabled my weapon in cunning fashion but left you the fowling piece, and your man still has his hand-axe. Shockingly careless of him, I must say.
"I propose that Bushberry engage the monster in disarmingly genial conversation while I protect Miss MacCorrister and you find a stone of suitable composition, and with it quietly sharpen my sword. Once I am again armed in a manner appropriate to my social position, I propose that we three form a square around Miss MarCorrister and hack our way out of here."

Pell started to bow again to Tabbysue, but-stopped in mid-air. "An honest British square would be best, but perhaps the situation calls more for a triangle around Miss MacCorrister," he said. "Are we agreed?"
"Hell no," I told him. "For one thing, nobody's done nothing to us we got to hack them up about it. For another, Gonik could thrash the three of us by himself, if that knob on your skull's any indication. And besides we got no place else to go. So don't you be a pipwit."

Gonik come back to see what was keeping us. "Please hurry," he said, "I am anxious for you to meet Jorm, my joy and great pride. His pot is only a little way." So we trailed on until he stopped at one of the walled-in squares of the courtyard. There was a wrinkled little Oriental sitting on the wall, looking tired.
"Ah, Mr. Tsao," Gonik said, doing one of his bows. And he begun sputtering what could of been Chinese, or Choctaw, or ancient Chaldean for all of me. Mr. Tsao said back a couple things in the same lingo, his voice old and tired, sick sounding.

Gonik turned to us. "Mr. Tsao reports Jorm is very fine. I fear, though, that Mr. Tsao is still changing, and sleeps long soon. I would not discuss this except he speaks only Cantonese. He has been my friend since Pecos Billy Mahar . . ." and he paused, sadly. I'd already figured I was wrong about him eating Pecos.

Then Gonik fluttered up to the top of the wall. "This is my own pot, in which I was planted and grew," he told us. "Now Jorm, the
son of my friend, lives here. I know you of the Yellow Sun have pets for whom you care strongly, and whose being is pleasure to you - you even have tenders for them as we do: grooms, you call them, though we have only once seen a horse such as they tend.
"Jorm offers such companionship to me, and I would like all of you, Miss MacCorrister, Doctor Pertwee, Mr. Bushrod, Mr. Poodle, to be his friend. This is Jorm," he said, beckoning us to the wall. Inside was filled with dirt, like a windowbox.

Jorm was a mushroom.
He was a handsome enough mushroom, I guess, as such things go. I never been able to get too worked up about them. Oh, we all made some sort of polite admiring noise, even Bushrod, but Gonik didn't hear us no more than any dithering parent hears what you say about his kid, which is generally just as well.

Gonik hopped down and led us to the shore of a pond in the center of the courtyard, where flat stones for sitting on was laid out. It was the first chance we'd had to unlimber and we was ready, though I wished I didn't have to ask some questions I figured I already knew answers to. Tabbysue sat close and that was fine. Bushrod dropped his bundles of plunder from the wagon and flopped flat on his belly groaning, and Pell sat stern with that fool sword hilt
up under his chin like King Richard the Lion Heart on a potty chair.
"Perhaps," Gonik said, "you are curious to know something of my people.
"We are seedlings of the survivors of an expedition to your world from our own, which is far away. Their ship experienced propulsion failure when it was gripped by your gravity and crashed. Its protective force shield bored the long hole through which you, like others of the Yellow Sun, fell. Finally the overloaded powercomplex of the vessel burst; its several components shot through the rock and formed the radiating tunnels at the end of the long hole.
"One sub-engine made the tunnel where we met. It exploded, forming this bubble in your world's rock. A remnant of the energy remains active in the center of the blast sphere, held in equilibrium by elements of the compressed envelope of the bubble. It is the sun you see overhead. The other subengines intercepted subterranean volcanic fissures, releasing the forces that cushioned your fall."

Far as I was concerned, he was talking Choctaw again. He kept on. "This much, and only this, our legends tell us. We do not have the close family contact and transfer of lore between generations that you animals of the Yellow Sun have, since I am, more or less, a tree."

Gonik wiggled his tentacles. "These are, in your terms, roots. Thus it is we do not obtain our metabolic materials as you do, by putting things in a gut. We are sustained by thrusting these in earth during our sleep periods.
"We dine largely on unrefined minerals, and only rarely are subjected to a treat tempting as your steel blade, sir," and he nodded to Pell, who gaped at him, "which I shamelessly nibbled on in the tunnel.
"The water that seeps in, the minerals of the surrounding rock, and the energy radiated by our little sun-similar in miniature to that of our home planet-are sufficient for our needs. Exposure to your Yellow Sun is, sad experience has shown, fatal to us, and so we stay. So must you, though I fear our environment is no more beneficial to you than your own is to us."

That sounded just grand. "How long ago'd your people come here?" I asked him.
"We do not know," Gonik answered. "We have no way of measuring duration here. I am aware it is important to you, and that you have 'timepieces' that tell you about it, but I still do not understand exactly what time is. It seems to me that the moment that is, is, and the one that is past, was-how you divide the difference between 'is' and 'was' confuses me."
"Sure enough," I said. "Well, when did some of the other humans come? Your Mr. Tsao, for instance."
"There is no way for me to say," Gonik answered, sounding a little impatient. "In your world, I am told, the Yellow Sun disappears regularly, and there is a thing called season. Our light is constant, and one moment is very like another except that one might be before, and the other after.
"All I can tell you is that my friend Pecos Billy Mahar was the tender of my pet Tarl, son of Mr. Alexander Buxton, and that Pecos Billy Mahar changed and went into his long sleep and I planted him. Then Jorm, the son of Pecos Billy Mahar, was born over him and Mr. Tsao is his tender, and is changing. Just as Mr. Alexander Buxton was the tender of Purn, who was before Tarl, and just as Mr. Bushrod will tend my new pet who will be after Mr. Tsao is planted, and who will be his son.
"Being a tender occupies the interests without draining the energies of you of the Yellow Sun. Our legends say that many plantings ago the fashion of the copper people of your world was to throw others of themselves to us, a religious matter, and there were many, and they built the villages and fought each other, which amused them. Now there are few, of different kinds, and they become listless with so few to fight."

Bushrod, who might of liked to know his future was secure but I doubt it, snored on his rock. Tabbysue was holding harder and harder onto my arm, and Pell was frowning. Thinking back, I decided it'd been two, three years since I'd last heard tell of Pecos Billy. We wasn't close. I asked Gonik, "What'd Mr. Tsao look like when he come here?"
"Taller," Gonik said. "His arm was heavier and could lift more, and his middle was bigger, and his head round like Mr. Poodle's, and he had white teeth."

Young and strong when he come, weak and old now. I remembered the bald old hag, Mrs. Ames. "What did Mrs. Ames look like when she come?" I asked. "Like Miss MacCorrister," Gonik answered, "but more fat and with shinier hair."

And then I remembered something else. A Diane Ames was kidnapped on her wedding night by drunk renegades. Half the state posse'd up looking for her, but they never found her. That was ten months, a year ago.

Tabbysue was right, it was high time for us to think about leaving.

Wasn't any point beating about the bush over it, neither. "See here, Gonik," I said, "you got anything against us going home?"
"I regret to see you try," Gonik began. Pell growled and started to his feet, grabbing for that fool saber. Scarcely looking at him, Go-
nik flipped out a tentacle and rapped him one between the eyeballs; Pell sat back easy and kept on going in a slow somerset onto his shoulderblades, behind his rock. "The other tunnels go nowhere but to volcanic fissures," Gonik continued. "This I myself have seen. The long hole through which you fell from your world is wide and smooth-walled, and you do not fly. I do, but would die of your world before I could carry you there.
"No, departure from this place was tried, many tried, but each failed. It is impossible. This is your home."

Tabbysue begun to cry, soft. I pulled at my whiskers while she sobbed, and I thought of her growing rickety and shriveled in a matter of months, and I thought of her teeth and hair falling out, and her face wrinkling up and her chest caving in, and I tell you, I debated some blubbering mvself. To put it off I said to Gonik, "What do us humans eat around here?"
"Lichens," he said. "No other food grows under our sun."
"Food!" blared Bushrod, coming to like a sunset gun. "Let's have some a thet grub Ah brung. Ah'm migh starved!"

Damn if we didn't have all that food from the MacCorrister wagon. Passeled out smart, it might last a few weeks and hold off the scurvy that long, anyways. We
opened up the bundles and laid out two sides of bacon only just beginning to go green, and a small cask of salt pork, and three cans of stewed tomatoes and four of peaches, and two big jars of gooseberry preserves, and flour, and some female undergarments that Tabbysue grabbed up, and what looked to be a ton and a half of navy beans.

Tabbysue had just said, "Start a fire," and I'd just said, "What with?" when all hell broke loose. We got invaded. Every holloweyed, sunken-cheeked, toothless old wreck in the place stormed onto us like Grant into Richmond -Mr. Tsao was there, and I swear I saw Mrs. Diane Ames hare off with the salt pork keg. When we got untangled and on our feet again, every last bit was gone except four navy beans, one of them stepped on.

Bushrod was for sicking Pell on the whole bunch, but I didn't have the heart to try to get victuals back from poor souls that'd been living on lichens, and besides Pell was still unconscious. At best it was only a matter of weeks.

I bent over and picked up the four dry beans, gave one to Tabbysue, one to Bushrod, and offered mine to Gonik. He hauled back like it was missionary meat. I put the stomped-on one on Pell's rock, and when he come to he peered crosseyed over the edge at his bean chunks. "Pitch in," I said.

Later, Gonik had gone to look in on Jorm and I was sitting there mooning. I was looking at my uneaten bean and wondering why it seemed to tickle someplace in my skull, when Tabbysue took my hand and stood up sharp. "Let's take a walk, Hiram," she said, "I can't sit still a moment longer." But her grabbing from above like that reminded me of when the hot wind in the first cave had like to of swept her . . . "No!" I hollered, hopping to my feet: "A kite! No, a sail! Let's us take a sail, Miss Tabitha Susan MacCorrister!"
"His mind has went," Bushrod said mournfully. "Club him down, Pell, afore he hurts hisself."
"Don't you do it, Pell," I said, loud and shaky. "Remember that up-draft in the chimney we fell through? It was strong enough to near take Tabbysue right back to the top, though a course she's just a little bitty thing.
"I bet if we was to rig a kind of sail out of something-the blankets, maybe, or better yet that buffalo-hide tepee we seen on the way down here-why, I bet you that old up-draft'd take us clear up the chimney and halfways to Sacramento besides!"

Well, to cut a long yarn short, we done it. We repaired the tepee with fringes from Bushrod's buckskins, and we twisted strips of blanket into harness. Gonik helped us, too; there wasn't a mean bone in his body-nor any bone
at all, come to think of it. Anyway, he gave us a hand, or whatever, lugging the whole shooting match back up that long way to the first cave.

Bushrod went first, pretty much on the same principle that they lower a canary into a mine to test the air, instead of a miner. After I reminded him six times to wrap the sail around a big rock and heave it back down, Gonik took the top of the tepee and flapped up into the draft until it took hold. Bushrod ballooned yowling up into the flue.

Then we waited. We waited a tarnation long time. Pell got a chunk of rock and whetted his saber till I took his rock away from him. He was peering up the chimney when a boulder half the size of the State of Maryland come thundering down within inches of him, trailing the rig behind it. Bushrod had done fine.

Tabbysue was to go next with me to hold her, though Pell insisted he ought to go first in case those Agency bucks was still hanging around. I hollered him down and he went off pouting, to hone his damn blade some more.

While I was lashing me and Tabbvsue in, I said to Gonik, "Gonik, you and your people speak amongst yourselves by touching each other. So how come you're able to talk out loud like us at all, even if it is with your navel?"

He hesitated, and said, "It is
true my people do not converse aloud, and make audible noise only rarely. Some of us, however, have adapted that body noise to form what you call a voice.
"Like your own trees, we take nourishment in through our roots. Unlike your trees we have no leaves, and thus transpire our waste vapors in the manner I adapt to talk to you. I wish to carry the comparisons no further.
"I am sad to see you go, friend Pertwee and Miss. Jorm too is sad. You are ready?"

We were, and so we went up into the draft, and after a long, choking climb, were up out of the Bellybutton and under the Yellow Sun again. Bushrod fell all over us like a puppydog. We rolled the sail around a good-size rock and sent her down to Pell.

Maybe Pell was lightheaded, what with them volcanic gases, but more likely he just couldn't get it out of his pea-brain that those Indians was around still. First the tepee come whooshing up out of that hole, and then Pell. We saw the flash of steel over his head, and then he got that fool sword snarled in the rigging. The whole kit sailed over us, tepee, Pell, sword and all, and crashed down in a clump of cactus with a noise like a cannon hitting a steeple.

Bushrod galloped over to the clump and peered in, and let out a great yip. "Well, he done it," Bushrod hollered back. "He scalped
hisself with his own sword!"
Damn if he hadn't. I took the blame saber and flung it down the hole for Gonik to picnic on, then we wrapped wet rags around Pell's head and set out for home. When we got there a couple days later I stitched a flap of skin from Pell's barkside onto where his hair used to be.

Bushrod, he's gone now. I don't mean he's dead, nor even ailinghe hit paydirt, a real rich borax find, and went back to the Tidewater where his pappy come from. Understand he may run for Congress. I miss him sometimes.

Tabbysue . . . well, she went off to England with Pell, bald as he was, and rich too, it turned out. I still smell lemon verbena, sometimes.

Me, I keep up my practice, sewing up careless miners and clumsy gamblers. Ever once in a while I tell this story. Only thing is, I don't recollect that Gonik ever said what the name was of that cave where he lived. Bushrod used to call it where "Pell losed his ha'r." The old son of a gun.

I called it that when I told the yarn to a young feller name of Eddie, Edgar something, store clerk up Idaho way. Burroughs it was. He took a bunch of notes, swore he was going to be a story-writer someday, but I seen that he wrote the name down as "Pellucidar" and I bet he got the rest of it wrong too.

Someone once complained to us that too much science fiction came down to the same thing: a malfunction in some piece of important machinery which is eventually repaired by a husky mechanic. Now, this is somewhat like saying that string music comes down to plucking or drawing a bow across a stretched string. To tie together this aside about music and sf, here is Patrick Meadows with an entertaining variation on a theme, which demonstrates that repairmen are not necessarily mechanics.

## "VIRTUE. 'TIS A FUGUE!"

## by Patrick Meadows

Professor Tom Gunn read omnivorously. Whenever he found a passage which struck him as particularly good, he copied it on a three-by-five card and carried it in his pocket until he remembered that it was there. Then, usually capriciously, he would leave the card where someone would find it and, he liked to imagine, would read it with a mystified look, holding it between hands glued to the thought to keep it still for examination.

Leaving the campus coffee shop, he chuckled to himself and pulled out one of these cards. Since he was passing the bulletin board used for announcements of school sports activities, and since
he liked contrast, he removed a thumbtack from a sign posted there and fixed the card in the corner. He continued his way toward class with a gravelly humming deep in his throat.
"The experience a great artist communicates may belong to an order of consciousness that very few men have attained but, in that case, it must be in the line of human development; we must feel it as prophetic." Sulli$v^{1}{ }^{1}$

The thin fingers holding the free edge of the card hesitated, snapped the corner once with a fingernail, and then they let it fall back and swing in small arcs
toward the door of the coffee shop.
The scope showed a rocket falling at dangerous acceleration through the thick atmosphere of the planet. The speed increased until it seemed that the friction must rub the metal to flaming incandescence. Seconds away from touchdown, the tubes fired once, full, and a helichute dragged. The roar reached them in the observation room. Abruptly, the screen no longer showed any sign of a ship.
"I thought for a minute she was going to make it." Captain Hans Brinner continued staring as the scanner searched the sky for the vanished blip. The third time the sector was crossed, he sighed heavily and turned to Roy Lawrence, his communications aide.
"Did you pick up anything that time, Roy?"
"The same as before. As soon as the rocket fired, a force wave began on the ground. It seems to be a kind of supersonics effect; probably the engines are thrown out of phase and the vibration shakes the hull into fragments."
"Source?"
"It's the damnedest thing. There's no sign of a transmitter anywhere; the waves originate from all over the compass in small emissions and gather intensity as they apex at the ship. But we got a few fixes."
"All right. Follow the tracers and see what's out there. I won't
hold my breath, though. Meanwhile, try to raise the orbiting Uranus. Tell them to think up a new one. Order continuance of the splash-down technique for supplies. Use magnetic relay; we don't want to take any chances."
'Yessir."
"Might as well tell them that I'm on my way to meet the Vosk leaders again. I'll mag a report when I return."
"Right, sir. Should I mention anything about the brandy lost on the flivver?"
"Yeah. Tell them to double the order and put it on the first splash cap. We need it."
"Very good, sir."
Brinner left the compound without stopping in at HQ. In the narrow cobblestone streets he twisted and turned dodging other pedestrians, none of whom seemed any more disposed to look at him than he was to look at them. The whining and grumbling of their conversation irked him more than usual. He tried to drown it out with his thinking.

He wondered why the Visk had refused membership in the Spiral Confederation of Planet States. Not for the first time, he considered their reluctance to receive any assistance from his team's engineers. And he was rankled all over again as he thought about their superior attitude, and aggravated the feeling by recalling that their leaders had learned

English, though the computer had not been able to formulize their tongue.

As he passed a blacksmith shop, the fine, almost glass-like ring of the anvil served as an accompaniment to the steady sing-song of the smith swinging his hammer. Although he had often marvelled during his first months here at the musical sounds those shoes gave the horses in the strects, this time the sound disgusted him. The Visk refusal of transport consignments from SCPS had been the last straw.

The temple rose at the end of the narrow passage, gleaming blue and gold among the dull stone houses circling it. There were none of the clinking sounds of the almost continuous repairs which were the norm a year ago. The elders had consented to have the building sprayed inside and out with clear sculpmetal. It would be decades before the thick glaze permitted any part of the structure to weaken. A small enough success.

He entered the temple and began winding through the labvrinth of color stained shadows and pillars, ticking off in his mind the major events in the history of the Vosk-Earth intercourse. In this outer rim of the galaxy with its sparse star population, the explorer team was overjoved to find an earth-type planet. The reconnaissance party had not been able to make radio contact with inhabi-
tants, but infrared patches showed large concentrations of life, indicating cities. Captain Brinner brought down the first outpost group six months later, bringing with him the usual complex for initial negotiations with aliens. After his installation was raised, no other ship had made it to the ground. Every cat and airjeep became inoperable; sometimes the radio transmission was so badly scrambled nothing got through. Fully aware that the Visk had no technology farther along than forging metal and greased bearings, Brinner still knew that they were responsible for his problems. Why was something else again. The Visk had remained at least overtly friendly the whole time; they simply refused to allow a permanent waystation to be built on their planet. Simply was the word, all right. Thev had no army, no weapons, nothing. But even if Earth policy would allow the use of unprovoked violence, Brinner suspected that he could predict the outcome.

He came to the massive door to the conference room and pulled the handle which activated the wood rapper on the other side.

The elders sat around a solid wood table in the room, their hands spread before them on the many-coated varnish in the customary symbol of honesty. Brinner had never learned to read their facial expressions accurately; they
seemed able to display on their features what would be several emotions on a human face.
"We welcome you, Captain. Please sit down."

As usual he had difficulty understanding individual words at first. Their uncanny inflection of English set his teeth on edge. But he knew the form and answered.
"I am pleased to sit at the table of the elders." He sat and placed his hands palms down on the glossy surface.
"We have many things to attend to in our proceedings today, so we have set the timer for your portion. Have you anything to ask of us before we come to the issue at hand?"

This is backwards, he thought. But everything has been this way.
"Nothing new, sire. We have the same desire to earn your acceptance of our friendship and your permission to plant a small colony here; yours is the only suitable planet for such a colony on the way to the next quadrant of exploration. We offer in payment all the fruits of our science." Brinner studied their faces; no change was evident from the usual polite listening attitude. "We lost another ship today." He would like to shake their complacency just once.
"We have told you that the destruction of your machines is a matter of freedom of thought. That is all we know to say."

Yes, you have said that before,
he thought. But what the devil do you mean? He glanced at the sand glass; almost empty already.
"In our citizens' meeting last night, your various proposals to us were discussed, most of them for the second time. There is no change in the general opinion. The consensus was that you should be allowed to remain two more months as you are. Then you may leave unhampered. We hope in the meantime to learn from you something of value which you could give us in return for the establishment of your station here. At present we can see no advantage to us, which is to say that it would be a disadvantage." His face set in one of those paradoxical expressions, something like a triumphant gleam in his eyes combined with a rueful mouth.

The last of the sand moved through the neck in the glass. Brinner stood up.
"We are pleased that you have given us two months. We will begin preparations suitable for staying or leaving. Good sun to you, elders." With the traditional parting phrase, he turned and walked stiffly through the door and out of the temple. He had a distinct urge to take the tail from between his legs.

Back in his office, Brinner relayed the transcript of the meeting and included the tape secretly made of the citizens' meeting the night before. This done, he
gave the order to begin packing up, leaving the communications equipment until the last days. No one seemed surprised at the order, but Brinner felt as though he had failed at his only important task with the team and read accusation in every glance.

Wrinkled and more than a little twisted, the hands cupped both edges of the card, moving it back and forth in front of unmoving eyes.
the first thing which the Chinese painter must acquire is the capacity to grasp the immediately apprehended aesthetic factors in the immediately experienced, aesthetic continuum in their purity and all alone, without any reference to the postulated three-dimensional, common-sense, external object of which they are the sign." Northrop ${ }^{2}$
As a professor of musicology, Tom Gunn had spent most of his adult life listening to music and talking about it. There was no one in the western hemisphere who knew any more about the music of that half of the world. And the Orient, as he had been told by old Chou himself, had no more than two men, one Chinese, the other Indian, who could even approach Gunn's understanding of the music of the East. Africa and the hinterlands of the world were something else, though he could
by no means be considered ignorant of the melodies of any portion of the Earth. Since the 1900's when so many culture gatherers had circled and recircled the globe with tape recorders, there was really no excuse for aural ignorance. He had heard tapes enough to wrap our Mother Erde up like a tan mummy, he had said once.

Gunn's study began with music that was considered new and great in his youth. When he was in high school, it was a mark of the intellectual to listen to the quartets of Schoenberg and Webern, the operas of Alban Berg-Menotti and Floyd were already considered out of date when they pre-miered-and the electronic music of Stockhausen, whose work appeared doomed to herald the birth and demise of a great new potential in the art of sound. Like most men devoted to their field, his interest went ever back in time and always forward as well, though there never seemed to be as many new works being written that held up under repeated listening as could be desired.

One thing leads to another. So the quarter tone music of Barth, played on a double keyboard of the usual black and white kevs under another one of red and blue keys, with the music written in black and red, enabled Gunn to listen more intelligently to the music of the East. The wide Rus-
sian vibrato recorded by Piatagorsky and Kipnis cultivated his ear for the quavers in Turkish and other near-eastern vocal music. The solo sonatas of Bach helped him to appreciate the rambling classics for kemenche alone.

Briefly, then, Tom Gunn became so familiar with the music of all ages that he could identify even small fragments, and he became as capable as it is possible to be in translating the statement of the music into the more pedestrian language of common exchange.

Gunn's perspective on musicology required a penetrating knowledge of the related fields of history and linguistics. He came to harbor certain ideas about these related fields which were tolerated in conversation but ridiculed more often than not by specialists in informal comment.

Nevertheless, even they had to concede a kind of cogency to his theories. He asserted that the tonal and rhythmic complexity of a man's music was a direct index of his degree of 'humanization'. As a corollary, the same measure could be made of the 'humindex' of society. Also, he asserted that when a language first was capable of dealing with the nuances of thought, with its attendant complex declension, conjugation, and modifier agreement, it could only lose accuracy as it later became simplified. Experts held that since
primitive tongues had been used by primitive peoples, and since the tongues had evolved simpler syntax as civilization developed, simplified grammar must have been part of the civilizing process of their descendants. Gunn would use charts to prove that the opposite might be true. He claimed further that while all the other aspects of the humindex declined after the historical peak of the society, its music remained at the highest level until the next surge of civilization.

A full statement of his theories had never been published since it was tantamount to saying that the ancient Greeks, the English of Sir Thomas Morley's age, the Chinese before the West had even heard of bronze, and the Arabic world had all reached a higher degree of civilization than the complex industrial nations of the year 2000. And such a statement was all but sacrilegious.
"You're joking, of course." The outraged speaker was J.C.G. Bellamy, newly appointed head of the history department.
"Pay no attention, J.C. Tom's been trying to shock us with his iideas since time immemorial." Dean Oelschlager of Modern Languages stoked his pipe carefully and watched Gunn from beneath his thick eyebrows.

But Bellamy was still new enough on the faculty to want to impress his colleagues with his
openness to dialogue. "How do you account with this theory for Bartok and the other great twen-tieth-century composers?"
"Bartok was certainly atypical, don't you think? In Algiers, even a dock-worker can sing the difficult melodies of his forbears. Can you sing Bartok? No, the evidence is incontrovertible in my mind. Have we come even close in the last centuries to the plays of Shakespeare, Jonson, or Ford? What about the Greek tragedies? The scrolls and pottery of ancient China? Or the masks and fetishes still produced in Africa? Those things all live and breathe, sir, as nothing we make does." Gunn liked to play the stereotyped professor. He talked in a dull monotone. His clothes were in premeditated disarray. The wildly assymetric hair gave him an oracular appearance.
"What were the technical achievements? Nothing, measured by our standards."
"On the contrary. Practically all we have is set on foundations they built. We've merely refined them to the nth degree. We've done with synthetics and metal what they couldn't do with stone and wood. We haven't improved on the Roman's arch and dome, the glazes of the Orient, improved the atomic view of matter of the Greeks; we have been able to verify and clarify, but we haven't become more civilized by so doing.

Is human life any more revered today than it ever was?" This was the fulcrum of Gunn's argument, and the dean watched to see what tack Bellamy would take from it.
"I don't see that the peasant of the middle ages was any better off than the common man of today."
"Ah, but the lack of humanity in one age doesn't prove the lack of it in all other ages. There have been times in history when the individual was deemed much more important than he is today. Those epochs also produced the finest in music and art; and, more to the point, they produced geniuses in the philosophy of ethics. Their thinking culminated nearly a century ago in the works of Kierkegaard, and subsequently, existentialism. No, you would be hard put to prove that man has progressed from the animal savant by virtue of his prowess with tools."

He illustrated. The multi-metered folk dances of Greece. The almost infinitely close tones of the Levantine melodies carried from ancient Indian and Hebrew origins. The songs short in compass but remarkably varied in rhythmic configurations of the Elizabethans. The vibrant grief in the difficult dolorosos of Spain and Portugal.

In October of 2000 A.D., Tom Gunn printed a modest reduction of his ideas in an obscure journal. He attached little importance to the paper and went on inciting
mild disgust in his colleagues at the faculty gatherings.

The corners of the card were wedged under nails painted brilliant red, still drying.
". . . the Chinese language gains a superlative degree of fluidity, a capacity to convey the unique particularity, nuance, and precisely refined richness of the specific, individual experience which probably no other mature language in the world today achieves." Northrop ${ }^{3}$
"Hughes, get a group of specialists on these tapes. I want that language broken and learned in one week. Then send a man to Vosk. If we don't set up a station there, we might as well forget the worlds on the limb of the galaxy beyond it."
"Right, Mr. Secretary." The aide Hughes was accustomed to receiving impossible directives from the Logistics Secretary of the Confederation. He was also used to success in dealing with the orders. He notified all language departments to cease academic activities until further notice. The salaries of the professors were stopped until the Vosk tongue was mastered. Hughes knew that under those conditions either the job would be done quickly or could not be done.

Sliding a Coke bottle off the card, dishwater fingers held it.
"A Chinese who does not have a good ear can hardly speak his own language." Northrop ${ }^{4}$

As it happened Gunn was in Dean Oelschlager's office when the president of the university dropped the box of tapes on his desk, read him the order and stalked out in disgust, muttering something about control of academia. Oelschlager sat stunned for a few moments and stared at the box. When he finally put one of the cartridges into the machine and started it up, he gave a howl like a wounded animal and dropped his head into his hands.

He was still sitting like that when Gunn finished listening to the last tape, repacked the box, clapped his hat on, and left for Confederation headquarters in Geneva, carrying a copy of the obscure journal with his article.

Trembling only slightly, Oelschlager's hands held the card left on his desk.
"Because the forms of human feelings are much more congruent with musical forms than with the forms of language, music can reveal the nature of feelings with a detail and truth that language cannot approach." Langer ${ }^{5}$

Brinner was pacing violently back and forth in his office, dodging the packing cases. "Don't ask
me what's going on. All I know is that we have five days, five days, to get through to these people that they need us. All I know is that while time is slipping away from us we have to meet a cultural missionary and persuade the elders to listen to him." He ran his fingers over his scalp. "Don't ask me what happens if they decide to set up that blasted hourglass with fifteen minutes' worth of sand in it. Don't ask me." He spewed the words into the face of Lieutenant Lawrence, who turned away almost imperceptibly from the onslaught.
"All right, get out the reception crew. Be at point Red Dot when he hits. I'll try to arrange things at the temple. And don't look so badgered! You know damn well it's not you. It's . . . it's everything on this crazy planet!"

Lawrence tried to walk out, but managed only what is best described as a brave slink.

In the transport orbiting Vosk, hands skilled in gliding over the button panels held a three-by-five card just inches above the instruments.
"Even in such non-linguistic arts as music or pure design, where the element of assertion is apparently absent, it is, I should hold, only apparently so." Urban ${ }^{6}$

Professor Gunn was pleased.

The sea rising and falling beneath the craft was brilliant green with areas of all the colors of stained glass where the water was shallow near the shoreline. The blue and mauve hills lining the coast might have been those of Samos or Mitilini. Villages of whitewashed cubes showed in the lower wrinkles of the mountains, and small curls of smoke rose toward the bluest sky he had ever seen. Even with the waves breaking at the prow and the intermittent splash of oars inexpertly handled, he could hear vari-toned bells that could mean only one thing: flocks of some animal grazed on the hillside. Clouds were piling up in the distance with real grandeur. Happy indeed that he had come, Gunn hugged his case to him and made the peculiar grinding noise in his throat which for him denoted content.

Brinner met the professor at the dock. They exchanged greetings and walked together toward the droshky.
"The natives, ah, prefer that we use only horse-drawn vehicles of their manufacture. It's not too comfortable, but it's better than walking."
"Quite all right. I prefer buggies myself."

Brinner looked askance at him and quelled an urge to break into hysterical laughter. He would snap on this forsaken world yet.

Lurching through the cobbled
streets on ringing steel rims, Gunn gazed at the Visk with obvious delight. They were indeed a handsome people. Not much taller than the average Europeen, with extremely thin bodies. Large, alertlooking eyes were set wide under a broad forehead, but there was only a suggestion of a nose. Yet the faces did not look grotesque. Full lips set vertically in the lower half of the face more than balanced the composition of their features, though admittedly more on the order of a Picasso rather than a Velasquez.

The village was laid out with exquisite care to detail. He couldn't quite put his finger on it, but somehow the proportions of the very stones in the walls and streets seemed to fit exactly. The contours and colors of the surrounding hills were imitated in the buildings. A jewel of a place.

At the doors of the temple they were stopped. Several citizens were around the entrance and began twittering and growling at them, pointing to Gunn's case. Brinner was anxiously watching for one of the elders who spoke some English to notice the row and come to their aid. But when it became apparent to Gunn what was troubling the crowd, he began making placating remarks, greatly exaggerating his inflection the way one does with a small child or a much disturbed adult. To Brinner's surprise, the Visk opened a
way for them to continue on their way.
"Just how did you manage that?"

In his normal monotone, Gunn answered simply. "The Elizabethans." As if that explained everything, he smiled.

During the greeting the elders eyed the case nervously. The sandman was clearly anxious to turn the glass over. At a nod from one of the elders he did so, and Gunn began.
"Sires, with your permission, we would like to say this to you, by way of gaining your attention." His voice ran through practically the whole range of human speech in those few words. The elders were agape, with an expression Brinner had never observed on their faces; still he would have called it rapt attentiveness.

Flipping the top of the case back, Gunn closed a switch on the tape recorder it housed and sat back, swallowing a canary. Three quick repeated notes, followed by a sustained tone a major third lower; a pause; then three quick ones again, followed by a sustained tone a minor third down. The short motif was taken up and handed back and forth among various registers of the orchestra as the piece gained momentum. Brinner squirmed as other themes were introduced and developed, and became more uncomfortable before the movement ended with a grand
reversal of the motif. The elders listened as though they were receiving survival instructions before a dangerous mission. When the last note had sounded, the sand had emptied into the bottom of the glass, but none of the elders initiated the dismissal routine.
"I'm sure that you agree." The last word trailed off into the stratosphere of his range. "Now this," said Gunn.

Strings alone, excruciatingly slow, as simple as a sunrise, mused, expostulated, mulled it over; others stretched, climbed, pulled the reeds and forced them up. In all their investigating, there were never any doubts. The fullthroated voices merely breathed a 'yes' from time to time until they joined at the end in a cosmic sigh of beautiful acceptance.

The tape stopped and the Visk sat in silence for a long time.
"We would like to exchange live, er, conversations of this sort for your permission to use Vosk as a station planet." Gunn watched them with his underbrush eyes.
"What you have just heard is a reproduction, a poor one from this small machine, of the driving ambition of certain men to communicate ideas only partially conveyed by words. Unlike you, who speak among yourselves in a form of this language, not all earthmen know it. But it has been highly regarded by some for centuries, and it continually is expanded and broad-
ened in scope as these men search for ways of saying what is in the hearts of all men."

The Visk elders put their heads together and sang a while. They were clearly excited, for this was the first time that Brinner had seen them break their own protocol and not use English in his presence.
"We believe that now we will be able to negotiate terms. But the people must hear for themselves and decide." The elder's voice was still on a roller coaster, but Brinner understood this time.
"And so they will," said Gunn, "if you can see to it that one more ship lands safely."
"Now listen, Lawrence, and the rest of you. You're to see that lighter down, unload it on the double, and follow the professor's instructions. No questions asked. If I told you what's going on, you wouldn't believe it anyway. Stations!" Brinner glowered over the desk until they were gone. Then he turned to Gunn, who was still smiling blissfully to himself, humming like a senile tomcat. Under Brinner's gaze he harumphed and stopped the sounds in his throat.
"I suppose you are aware, professor, that all of this will be a sheer waste of time if we can't get some sort of guarantee from the Visk themselves that our ships will all get down safely in the future."
"Humm, yes. We'll have to talk
about that. But first things first. How long before the Orpheus will be down?"
rifif she makes it, about three hours." Brinner drummed his fingers on the desk top. "You hope to turn the whole trick with this one sally, then?"
"Captain, I believe the Visk will be mere canon-fodder before this weapon." Gunn whickered at his own pun and got up. "I'm going to check preparations at the temple."

Gunn went to communications to watch the descent.

An exact copy of the Luneberg organ had been built and shipped to them, that organ having the best set of specifications for the temple. Gunn and some confused technicians spent several days assembling the instrument and making adjustments. Acoustics were improved with heavy drapery on the walls. In the open center of the building, a small dais was built for the members of the string quartet also brought by the Orpheus.

Gunn began the concert himself with a simple prelude of Bach, employing the vox humana. Then he cut in the programs made from recordings of E. Power Biggs and joined the audience. For the first few numbers the listeners remained absolutely quiet, intent. When the program was relayed to a Schweitzer interpretation of Mendelssohn's Sonata, the piece seemed much fuller than Gunn re-
membered it. He realized with a start that the Visk were improvising with the organ, picking up fragments and expanding them in obbligatos over and through the original. Everything they did added to the music, nothing of the mood was lost or disfigured. They were carrying on a dialogue.

The program ended with two string quartets by Beethoven, his last, the ones that broke through to superhuman observations on the universe. The musicians were good, and they played as though they had known the piece all their lives but had never really played it or heard it before. Their joy showed in every note.

In the days that followed, while Gunn was making final preparations for his return home, he heard bits and pieces of Bach and Beethoven in the streets, like anecdotes being exchanged.

Brinner was all smile and cigar. "I'll have to hand it to you, Professor. The elders have signed."
"Once they learned that we had something that they wanted to hear, they were eager to talk. Till now, they had considered us to be merely intelligent animals. They sing in their speech, a highly stylized sort of communication. They've managed to preserve the simplest, most obvious amenity of pre-industrial society: the unimportance of quick, efficient, unequivocal communication.

Whereas we have, for instance, twenty-six letters in English, and perhaps thirty-two different sounds, and our music consists of ingenious arrangements of twelve tones, or twenty-four tones in the East, their language employs ingenuity in manipulating the standard configurations of tones and overtones in their voices; like a code, a crostic, perhaps, in a way, like a chess game. The speaker estimates the degree of sophistication of his listener and compliments him by taxing his analytical powers. What an insult to intelligence must English seem to them by comparison!" Gunn was still enthralled by the possibilities. This world with its millenium of peace in its history, the apparent high humindex on all counts, would be impressive evidence for his theories.
"As for the equipment you've offered them, they have no use for it. You might as well offer pistols to penguins. First of all, the noise offends them; second, the time saved isn't important. Our furniture makers can turn out a table in minutes; but there's no hint of individuality or the touch of human labor applied with love to the object."
"I'm glad you told me about the racket, by the way." Brinner was twirling the cigar in the air, scarcely listening to Gunn. "Spend your life around machines, you get deaf to them after a while." He sat
back and contemplated the end of his cigar. "Anyway, I think we can work it out with subsonics, what they call 'white noise'. Might be a popular idea back at the Earth ports, too." He started a daydream about all the uses an equipment silencer could be put to.
"The way we figure it, the Visk who heard the rockets roaring didn't like the noise and several hundred of them would combine their voices to produce vibrations which knocked the ships' rockets out of phase and broke them up. They must have tremendous projection. Or maybe they feed the tones over the engines' own reverberations from the surface. The splash-down method worked because there was no noise."

Gunn was thinking of the other agreements made. Since music was inherent in the Visk speech, they had never developed any formal styles of composition, only improvisation. They were interested and required a conservatory to be formed. Instruments of all kinds would have to be adapted for their use. Orchestras, chamber groups, soloists would make the first interplanetary tours. A renaissance of style would doubtless take place as soon as Visk influence filtered back. A whole new concept of sounds would be born. Music history would be made here. He felt, for the first time in years, the well of vouthful energy and purpose rise in him.
"Captain Brinner, cancel plans for my return." He stood up, surging with new life. Brinner removed his cigar from his mouth, stared with disbelief for a long moment, and reached for the intercom.
"Roy, the professor is staving. Arrange for quarters." He closed the switch.
"I'm an old man, Captain, but I wouldn't miss this for a first edition of the Brandenberg Concerti." Turning to leave, he fished a card
from his pocket and pitched it to Brinner.

The door closed behind him, the card settling on the blotter in front of Brinner, who sat in wonder that he could still experience surprise. He replaced the cold cigar in his teeth and squinted at the cribbed script, lying before him.
". . . music articulates forms which language [sic] cannot set forth." Langer ${ }^{7}$

## THE QUOTES

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## SCIENCE

## A MATTER OF SCALE

## by Isaac Asimov

Every time i attend a large science fiction convention, I spend at least a couple of hours wandering through the exhibitions of old science fiction magazines and books. I rarely buy anything-alas, my library is not geared to this particular luxury - but I harvest a rich crop of nostalgia.

Old magazine issues rise before my eyes in the flesh, the names of old revered authors return (with even occasional line drawings of such immortals as Edmond Hamilton, Jack Williamson, and P. Schuyler Miller caught in unbelievable boyishness). Old stories, old plots, old styles bring back a whiff of youthful star-shine and soft retrospective sighs.

A few months ago in Cleveland, for instance, I came across one of the "Posi and Nega" stories by Joseph W. Skidmore. For those too young to know, they were tales of the adventures and misadventures of two subatomic particles. Posi was the positively-charged proton and Nega the negatively-charged electron (get it?). To complicate matters, Posi was a male and Nega a female, and Skidmore combined romance and melodrama with points of elementary chemistry.

Believe me, when I started studying chemistry in earnest, it was hard for me to think of subatomic particles impersonally, thanks to these stories. It was even harder for me to abandon another science-fictional treatment of the atom - a chestnut of the 1920's and 1930's in which the atom was viewed as a tiny solar system.

In these stories, our hero reduced himself in size, went visiting on an electronic planet circling a protonic Sun, found a Zenda-like world of romance, and a beautiful girl in flowing, diaphranous draperies. Eventually, he had to return to our own world and the girl was lost, but the attempt to find her again was always good for a sequel.
(I took this quite seriously for a few years and was convinced the Solar
system was a fluorine super-atom because it contained nine planets. I ignored the asteroids.)

Actually, this atomic solar system was not a science fictional invention at all. In 1904, when scientists were trying to fit the newlydiscovered subatomic particles into the atom, a Japanese physicist, H . Nagaoka, suggested a structure that was something like the Solar system. This caught the fancy of those sections of the lay public that were interested in such matters. It went out the window once Niels Bohr worked out the first quantum-view of the atom in 1913, but the outmoded Nagaoka version persisted for at least a quarter-century more in the minds of s.f. writers-a neat (if specialized) example of cultural lag.

But science itself has chestnuts and cultural lags, too. For instance, I suppose that one could easily work one's way through elementary astronomy books for the layman and find a dozen in the first dozen minutes which contain a passage that begins: "Imagine the Sun to be the size of a basketball-"

There is very often an attempt to give a notion of the scales of the Solar system in understandable terms, you see, and invariably we have the Sun as a basketball, Jupiter and Saturn as oranges, Uranus and Neptune as plums, Earth and Venus as grapes-all scattered over a level field.

This is bad on two counts. First, it isn't quantitative and fixes the thought that planets are pieces of fruit, which is even worse than presenting them as electrons. Secondly, it is useful only for giving a notion of the scale of the Solar system.

This sort of Solar-system-centered scale dates back to the eighteenth century attitude that only the Solar system counted and that the stars could be dismissed in a final chapter with some constellation pictures.

By the first half of this century, Solar system studies almost vanished into oblivion*, while the stars and galaxies took the center of the stage. But did the basketball with its circling fruit change? You can bet your parallax it didn't. Writers kept right on using it with blind automatism. That's cultural lag, too.

But now I have finally come across an interesting scale model of another sort altogether, one that takes into account the Universe rather than the Solar system. You'll find it on page 34 of a brand-new book entitled "Intelligent Life in the Universe" by I. S. Shklovskii and Carl Sagan: the product of a most unusual (perhaps even unique) collaboration by

[^0]mail between two first-class astronomers, one Soviet and one American. I recommend it with all my might to everyone within sight of these words. I've read it through twice with the greatest of pleasure, though ordinarily it is hard for me to find time to read even the most necessary books once.

The passage on the scale set my mind jumping restlessly, so now I would like to toy with the notion of scale models of astronomical objects in this article.

We can begin in the usual fashion, except that I scorn basketballs. Instead, let's make the Sun one foot in diameter rather than the $41 / 2$ billion feet it actually is; a scale reduction of $4,500,000,000: 1$ which we can call the "foot-scale." On the basis of this foot-scale, we can present the diameters of the various planets and the distance of each from the Sun:

| Planet | Diameter <br> (inches) | Mean Distance from <br> Sun (feet) |
| :--- | :--- | :---: |
|  | 0.043 | 41 |
| Mercury | 0.105 | 78 |
| Venus | 0.110 | 107 |
| Earth | 0.058 | 163 |
| Mars | 0.0062 | 300 |
| Ceres | 1.2 | 560 |
| Jupiter | 1.0 | 1,000 |
| Saturn | 0.42 | 2,050 |
| Uranus | 0.41 | 3,200 |
| Neptune | $0.06(?)$ | 4,250 |

We have a rather dramatic picture of the Solar system, out of which we can pick a few salient points. Saturn, for instance, comes out oddly even. If the sun is pictured as a globe a foot across, Saturn is a globe an inch across and a thousand feet away.

Earth is only $1 / 9$ of an inch across and about 100 feet away. What's more, on this scale, our Moon is about $1 / 30$ of an inch across and is about 61/2 inches from the Earth.

But Jupiter is not only 1.2 inches across but it has a satellite system that stretches outward enormously. On the foot-scale the farthest known satellite from Jupiter is 17 feet away. The Jovian system of satellites requires a total space of 34 feet to move around in.

Pluto is nearly a mile from the Sun on the foot-scale and the Solar
system (counting out only to Pluto's orbit and ignoring comets and undiscovered planets) is 1.6 miles across, from side to side of the farthest orbit.

To put it another way, the area swept out by all the planets as they circle the Sun would, on this foot-scale, be just two square miles or about one-tenth of the island of Manhattan.

Suppose, for instance, we picture our foot-wide globe in the center of Manhattan's Central Park (and I hope that my readers from other sections of the country forgive my provincialism). All the planets out to Saturn would have their orbits entirely within the park. The three outermost would venture outside the eastern and western boundaries of the park, but even Pluto would remain within Manhattan and not reach either the East River or the Hudson River.

This is indeed a convenient way of picturing the Solar system, but it breaks down completely, if we try to move on to the stars.

If the Sun is a foot across, an astronomical unit (the mean distance of the Earth from the Sun) is just over a hundred feet, but a light-year is 1,300 miles, a parsec is 4,200 miles and the nearest star is 5,500 miles away.

In other words, if we place our foot-scale Solar system in Central Park, the nearest star (the Alpha Centauri system) is in Jerusalem.

Maybe this gives you some idea of the distance of the stars, but it is still inadequate for at best it can deal with only the very nearest ones. For anything beyond, we run out of the Earth's surface and must venture into space.

Thus, instead of imagining Alpha Centauri at a distance that can be reached by trudging along Earth's surface, we can imagine it out in the direction of the Moon. On the foot-scale, Alpha Centauri would be about $1 / 40$ of the way to the Moon. There would be only about 8,000 stars between the Central Park Solar svstem and the Moon's orbit, and this doesn't even begin to take care of the billions of stars in our Galaxy.

In other words, the foot-scale leaves us in astronomic distances outside the Solar system itself and we will have to do better.

Let's reduce our scale by a factor of 100,000 or so and make the total diameter of Pluto's orbit just one inch. The Sun on this scale would be less than $1 / 8000$ of an inch across. It would, in fact, be roughly the size of one of the larger bacteria. On this "bacterial-scale," stars would be microscopic in size for the most part and only the larger red giants would remain visible to the naked eye. (The giant star, Antares, would be about $1 / 16$ of an inch in diameter.)

On the bacterial-scale, a light-year would be equal to just about 800 inches. Here, then, is a list of the distances of some familiar bright stars on this scale:

## Star

Alpha Centauri

## Distance (miles)

Sirius
0.555
0.11

Procyon
0.14

Altair
Vega
0.20

Pollux
0.34

Arcturus
0.42

Capella
Canopus
Betelgeuse
Rigel
0.51
0.54
1.25
3.5
6.9

In visualizing these distances, keep firmly fixed in mind that you are dealing with separations between bacteria-sized objects. If the Sun were only as large as a bacterium, Arcturus (also as large as a bacterium) would be half a mile away. - Actually, the stars listed in the table are the particularly large bright ones so they would be somewhat larger than bacteria, but this is quite exceptional. The large majority of stars would be bacterial in size on this scale.

Or let's put it another way. There are 39 star systems, counting the Sun itself, known to exist within seventeen light-years of ourselves. (Eight of these systems are double stars and two are triple stars so that there are 51 stars altogether.)

If we consider these stars as strewn within a sphere which is 17 light-years in radius and has the Sun at the center, we have a sphere with a volume of just about 20,000 cubic light-years. The amount of space per star system is 500 cubic light years and the average distance between star systems in the neighborhood of the Sun is therefore the cube root of 500 or roughly eight light-years.

If we transfer everything to the bacterial-scale, we see that the stars about us can be pictured as bacteria-sized objects (often in isolation, sometimes in clusters of two or three) separated by an average distance of 530 feet.

If you imagined Central Park covered by a roof one-third of a mile
high at all points, the volume of space included under that dome would equal, on the bacterial-scale, the 17 -light-year-radius sphere I have just mentioned. In this stretch of space overlying Central Park, imagine 51 bacteria floating (a few in groups of two or three) and nothing else. There is your picture of starry space.

In the real Universe, the Sun is moving through space at the velocity of about 12 miles per second relative to the other stars of the neighborhood. On the bacterial-scale, this would represent a motion of $1 / 20$ of an inch a year.

Very well, then; imagine these bacteria, separated by an average distance of 530 feet, moving in random directions at a velocity of $1 / 20$ of an inch a year (relative to the center of mass of the group) and try to estimate the chances of one of these bacteria just happening to collide with another. How long would it take for such a collision to happen.Eons of time, obviously.

It was this sort of argument that gave the old theory of the origin of the Solar system through the collision, or near collision, of two stars a special significance. The likelihood of such an event was so small that in all our Galaxy in all its existence, only perhaps ten stellar systems might have formed in this manner. It was easy to believe that in only ten stellar systems, the planet Earth might be the only one comfortably suited for life, and Earth might therefore be the only life-bearing world in all the Galaxy. It would just about certainly be the only intelligence-bearing one.

I'm glad the collision theory broke down. The thought of all those hundred billion stars of the Galaxy shining upon empty lifeless space was too wasteful a picture to be endured.

Although the bacterial-scale is fine for giving us a picture of our stellar neighborhood, it isn't really useful if we want to consider the galaxies.

Our own Milky Way Galaxy is a lens-shaped object, about 100,000 light-years across. Our Solar system is some 30,000 light-years from its center, and therefore about 20,000 light-years from one side of the lens. The Galaxy has, at its center, a nucleus containing some nine-tenths of all its stars, a nucleus that is roughly a sphere some 16,000 light-years in diameter.

Outside that nucleus are the flat spiral-arms in which stars are more sparsely strewn than in the nucleus. In the neighborhood of our Sun, these arms are some 3,000 light-years thick. The Galactic plane is an imaginary plane slicing the Galaxy in half flat-wise, and our Sun is only about 45 light-years from this plane.
(And here I take the liberty of imposing on the Genial Editor with one of my very rare diagrams.)

## THE GALAXY



If we want to picture the Galaxy on the bacterial-scale, we find that its full diameter is 1,250 miles across and the nucleus is 200 miles thick. We ourselves would be 375 miles from the center, and the thickness of the spiral arms at our position would be about 37 miles.

The cross-sectional area covered by the Galaxy on the bacterial-scale (if we imagine it laid down flat on the Earth's surface-and ignore the curvature of that surface) is some $1,400,000$ square miles or just about half the area of the 48 contiguous states. All that area you can imagine as crawling with bacteria, over a hundred billion of them, extending dozens of miles up into the air and dozens of miles down into the ground.

Yet this is too large an object, perhaps, to picture conveniently. It gets worse if you try to visualize the neighboring galaxies on the bacterialscale. The largest one (the Andromeda galaxy) would be no less than 25,000 miles away.

Let us therefore contract the scale still further, and imagine the Sun merely the size of a hydrogen atom, say about $1 / 250,000,000$ of an inch across. On this "atomic-scale," a light-year is not more than 0.0274 inches, or just a bit more than $1 / 40$ of an inch long. The nearest star on the atomic-scale would be about an eighth of an inch away.

This atomic-scale pictures the stars as atom-sized object separated by an average distance of 0.22 inches. If we pretend that each star is a double star (which doesn't introduce any significant astronomical difference) it is very tempting to try to compare the atomic-scale galaxy with a sample of hydrogen gas, which is made up of hydrogen molecules that are in turn pairs of hydrogen atoms.

At ordinary atmospheric pressure, and at a temperature of $0^{\circ} \mathrm{C}$., we can calculate the number of molecules of hydrogen in a given quantity of the gas and, from that, calculate the average separation of molecules. Without giving you the pain of the calculation, I can tell you that the average separation is 0.00000013 inches.

In other words, if we shrank our Galaxy to the point where the stars making it up were the size of hydrogen atoms, the separation between them would be more than a million times as great as between the molecules in a sample of ordinary hydrogen gas. The Galaxy, on the atomicscale, is an example of a very good vacuum.

But that's just our neighborhood and we are in the sparseness of a spiral arm. What about a globular cluster? Such a cluster is a spherical volume, about 200 light-years across, where as many as 100,000 individual stars are concentrated. Seen in photographs, such clusters resemble heaps of talcum powder, with stars so thickly-strewn as to melt together into a uniform blaze. One has the picture of stars jostling each other madly.

But do they?
Such a sphere has a volume of $4,200,000$ cubic light-years and there is, therefore, an average volume of 42 light-years per star and an average distance of separation of 3.5 light-years.

This is only the average distance of separation. Stars are increasingly crowded as one approaches the center of a globular cluster, so suppose we say that at the center the average distance of separation between stars drops to only 0.5 light-years.

On the atomic-scale such a separation is equal to 0.014 inches and this is still 100,000 times as great as the separation between molecules of hydrogen in ordinary hydrogen gas under earthly conditions. Even the center of a globular cluster, then, is comparable to an Earthly vacuum, with a density only one-quintillionth that of hydrogen. Consider, too, that the hydrogen molecules are moving at mile-a-minute velocities, whereas on an atomic scale, the stars in a globular cluster are just about motionless relative to each other. You can see, then, that even at the center of a globular cluster there is not much chance of stellar collisions.

Stars are strewn through the Galactic center with about twice the density found in globular clusters and perhaps, at the very core of our Galaxy, average separations of 0.25 light-vears are to be found. The vacuum is still a good one and even at the Galactic center collisions will take place only once every million years or so.
(Nevertheless, the force of gravitation of a volume containing several million crowded stars is incredibly higher than it is over a volume con-
taining several million hydrogen molecules-so that large numbers of stars may conceivably collapse or "implode" to liberate fantastic energies, whereas molecules do not and cannot behave like that. One must not carry analogies too far.)

On the atomic-scale, the Galaxy is 225 feet across and the Sun is about 80 feet from the center. The Galactic nucleus is about 43 feet in diameter and the thickness of the spiral arm here where our Sun is, is about 8 feet.

Even on the atomic-scale, the Galaxy is an impressive object, for if laid flat on the ground, it will cover about an acre.

The Sun moves around the Galactic center in 220 million years. On the atomic scale it covers an orbital length of about 500 feet in those $220,000,000$ years or about a five-hundredth of an inch in a 70 -yearlifetime of watching. Obviously the Galaxy will seem motionless under these conditions and, indeed, when we observe the nearby galaxies by telescope, at sizes equivalent to less than the atomic-scale, they do indeed seem motionless.

On the atomic-scale, by the way, the nearest large Galaxy, the Andromeda, is almost exactly a mile away. The exploding galaxy M82 (see A GALAXY AT A TIME, $F \in S F$, December 1964) is $41 / 4$ miles away. A cluster of galaxies in Virgo is 16 miles away and a giant cluster in Coma Berencies is 81 miles away.

The nearest quasar (see BB OR NOT BB, THAT IS THE QUESTION, $F \in S F$, August 1966) is perhaps 900 miles away. The farthest known quasar is about 3,500 miles away and the edge of the Observable Universe is 5,300 miles away.

Even on the atomic-scale, then, with the Galaxy itself quite easily visualizable, the entire Universe is still uncomfortably large, making up a sphere over 10,000 miles across.

Let us take on another shrinkage, then, and obtain our fourth scale. Let us pretend that the Sun is not the size of an atom, but the size of a proton at the center of an atom. It is about $\mathbf{1 / 2 5 , 0 0 0 , 0 0 0 , 0 0 0 , 0 0 0}$ of an inch across and this gives us the "protonic-scale."*

On the protonic-scale, the Milky Way Galaxy-the entire mighty lens of over $100,000,000,000$ stars-shrinks to a mere 0.0274 inches in diameter.

[^1]How distances shrink now! The nearest quasar lies at a distance of some 40 feet from the tiny lens of the Galaxy, while the farthest known quasar is at a distance of a bit over 180 feet. The edge of the Observable Universe is a little under 300 feet away. So if we imagine the stars to be the size of protons, the entire Universe becomes a sphere of 600 feet in diameter and its volume is roughly $100,000,000$ cubic feet.

How many galaxies does it contain? Nobody knows, but a good, round guess that I have often seen is $100,000,000,000$. This would mean 1,000 protonic-scaled galaxies per cubic foot and the average distance between galaxies would be about 1.2 inches.

Actually, the Andromeda galaxy is only about 0.6 inches from us on the protonic-scale, and there are a number of small galaxies as close or closer, so the separation of galaxies in our own neighborhood seems less than the average distance I calculated.

Perhaps we lie in a volume where galaxies are strewn more thickly than on the average. We may be part of a huge galaxy of galaxies, a "super-galaxy" beyond the edges of which there is a great deal of relatively empty space until we come to another super-galaxy. In that case, the galactic density within the super-galaxy cannot be considered typical of space generally. - There are some astronomers who do think just that.

On the other hand, it may also be that the estimate of $100,000,000$,000 galaxies in the Observable Universe errs on the side of conservatism. Perhaps there are a hundred trillion rather than a hundred billion. I, for one, would not be surprised.

Let me make one more quick drop to a fifth and last scale. Suppose our entire Galaxy were the size of an atom. In that ultimate-scale the Observable Universe would be $1 / 700$ of an inch across and the average distance between galaxies would become 0.0000002 inches. This would be very close to the separation of the molecules in ordinary hydrogen under standard conditions.

In other words, if we could only get away from the Universe; get away far enough to see it as a little bubble of microscopic matter-so small that its galaxies were no more than atoms-we would find that we had a tiny droplet of "galaxy-gas" with a particle-density like that of "ordi-nary-gas."

Which brings us full-circle, at last, and safely home.
Or are we safely home? Ought we perhaps to wonder if the generation of science fiction writers who tried to make Solar systems out of atoms were just being too conservative. Now if they had tried to make galaxies out of them, would they-

But no, that way madness lies!

If you read last month's science column, you'll recall Dr. Asimov's reply when a young man asked him to give, in a few moments, his impression of what the world of the future will be like. "Crowded," said Dr. Asimov, and went on to discuss (in the article) the population of our teeming cities. Our grandchildren will be part of a civilization bursting at the seams. And their children? It will be a time for drastic action, though not, we hope, as drastic as this astonishing projection.

## RANDY'S SYNDROME

## by Brian W. Aldiss

Gordana stood in the foyer of the Maternity Hospital, idly watching cubision as she waited for Sonia Greenslade. A university program was showing, shots of fleas of the cliff swallow climbing up a cliff swallow's legs alternating with close-ups of a cadaverous professor delivering himself at length on the subject of parasitology.

When Sonia came up, her face crimson, she took Gordana's arm and tried to hustle her away.
"Just a moment," Gordana said. A line of fleas was working its way steadily up a sheet of damp laboratory glass. "Negative geotropism!"
"Let's get out of here, honey!" Sonia begged. She tugged Gordana towards the stride-strip entrance of
the hospital, looking rather like a mouse towing a golden hamsterfor she was only five months on the way against the blonde Gordana's nine-month season. "Let's get home -you can watch CB in my place if you like. I just can't bear to stay here one moment longer. I was brought up modest. The things that doctor does to a woman without turning a hair!- Makes me want to die!"

The high color disappeared from her cheeks as they sped homewards along the strip. This was the quietest time of day in their level, midmorning, when most of the millions of the city's inhabitants were swallowed into offices and factories. For all that, the moving
streets with their turntable intersections were spilling over with people, the monoducts hissed overhead, and beneath their feet they could feel and hear the snarl of the sub-walk supply lanes. Both women were glad to get into Block 661.
"Maybe we'd better go into the canteen," Sonia suggested, as they swept into the porch. "John was on night duty last night, and he's bound to be writing now. He'll get all neurotic if we disturb him.
"He sure works hard," Sonia said. "He's nearly finished the eighteenth chapter."
"Good." Although the Greenslades happened to live in a flat on the same floor as Gordana and Randy, Gordana doubted whether they would ever have become friends but for the chance of their pregnancies coinciding. Randy was a simple guy who worked on an assembly line in the day and watched cubision and cuddled his wife in the evening; John was a scholar who packaged dinner cereals all night and wrote a book on The Effect of the Bible on Western Civilization, 1611-2005, during the day. Gordana was large and content, Sonia was small and nervous. The more Sonia talked, the more Gordana retreated into her little world dominated by her loving husband and, increasingly, her unborn child.

Together, the two girls scanned the canteen menu. Rodent's meat was in fashion this week; the man
at the next table was eating chinchilla con carne. Sonia ordered a beaverberger. Gordana settled for a cup of coffeemix.
"Go on and eat if you want to; $i t$ 's all the same to me."

She looked round nervously. The voice sounded so terribly loud to her, a shout that filled her being, yet nobody else noticed a thing. "Just coffeemix," she sub-vocalised. Mercifully, silence then; it had gone back into its mysterious slumbers, but she knew it would soon rouse completely and wanted to be alone with it when that happened.
". . . . Still and all, I mustn't keep on about John," Sonia said. "It's just-well, you know, he works such long hours and I don't get enough sleep and he will play back what he's written so loud. Some of it is very interesting, especially the bit he's got to now about the Bible and evolution. John says that even if the Bible was wrong about evolution and society, that's no reason for it to have been banned by the government in 2005, and that it doesn't have the harmful effects that they claim. . . . Say, honey, what did the medics say about you back at the hospital? Didn't they say you were overdue?"
"Yep, ten days overdue. My gynaecologist wants to induce it next week, but I'm not going to let him. Men never have any faith in nature. I want my baby born when it wants to be born and not before."

Sonia tilted her little head to one side and fluttered her eyes in admiration. "My, you're so good at sticking up for yourself, Gordana Hicks, I just wish I were that brave. But suppose they grab you next week and force you to go through with it?"
"I'm not going back there next week, Sonia."

Gordana kept their flat very tidy and clean, or had done until the langors of this last month. Not that there was much to keep clean. She and Randy had a single room in which to live, ten feet by twelve, with a bed that swung ingeniously down from the ceiling. Their one unopening window looked onto the hissing monoduct, so that they generally kept it opaqued.

They were six levels below ground level. Their building, a low avant-garde one situated in the suburbs, had thirty-two stories, twenty-four of them above ground. With luck, and not too many kids, they might expect to rise, on Randy's pay scale, to the twentyeighth floor in successful middle age, only to sink back underground, layer by layer, year by year, like sediment, as they grew older and less able to earn. Unless something awful happened, like civilization falling or bursting apart at the seams, as it threatened to do.

Having left Sonia at her flat door, tiptoeing in to see if John was working or sleeping, Gordana
put her feet up in her own room and massaged her ankles. Listlessly, she switched on the wall taper, to listen to the daily news that had just popped through the slot.

It had nothing to offer by way of refreshment. The project for levelling the Rocky Mountains was meeting trouble; the plague of mutated fish was still climbing out of the sea near Atlantic City, covering sidewalks a foot deep; the birth rate had doubled in the last ten years, the suicide rate in the last five; Jackie "Knees" Norris, famed CB star, was unconscious from a stroke. Abroad, there was a rash of troubles. Europe was about to blow itself up, as Indonesia had done. Gordana switched off before the catalogue was complete.

A vague claustrophobia seized her. She just wished Randy earned enough to let them live up in the daylight. She wanted her baby brought up in daylight.
"Then why doesn't Randy study for a better job?"
"Negative geotropism," she answered aloud. "We work our way up towards the sun like the fleas working their way up the swallows' legs."

The foetus made no attempt to understand that, perhaps guessing that it was never likely to meet either swallows or fleas in the flesh. Indeed, it repeated its question in the non-voice that roared through Gordana's being, "Why doesn't Randy study for a better job?"
"Do try and call him Daddy, or Pop, not Randy. It makes it sound as if I wasn't married to him for the next five years."
"Why doesn't he try and get a better job?"
"Darling, you are about to emerge into a suffocatingly overcrowded world. There's no room for anything any longer, not even for success. But your dad and me are happy as things are, and I don't want him worrying. Look at that John Greenslade! He spent five years working at the CB University course, doubling up on History and Religion and Literature streams, and where'd it get him when he took his diploma? Why, nowhere-all places were filled. So he drives himself and his wife mad, working all his spare hours, trying to pump all that education back out of his system into some magnabook that nobody is going to publish. No, my boy, we're just fine as we are. You'll see as soon as you arrive!"
"I don't want to arrivel"
"So you keep saying-it was the first thing you ever said to me, three months ago. But nature must take its course."

Ironically, his voice echoed hers: "Nature must take its course."

He had heard her say it often enough, or listened to it echo round her thoughts since the time he had first made her aware that his intelligence was no longer dormant. Gordana had never been scared.

The embryo was a part of her, its booming and soundless voiceproduced, she suspected, as much in her own head as in his little cranium that was fed by her blood-stream-seemed as much part of her as the weight she carried before her.

Randy had been hostile when she told him about the conversations at first. She still wondered what he really thought, but was grateful that he seemed resigned to the situation; she wanted no trouble. Perhaps he still did not fully believe, just because he could not hear that monstrous tiny voice himself. However he had managed it, he seemed content with things as they were.

But when Randy returned that evening, he had a nasty surprise for her.
"We're in trouble, old pet," he said. He was pale, small, squatThe Packaged Modern Man, she thought, with nothing but affection -and tonight the genial look about his eyes was extinguished. "I've notice to quit at the end of the week."
"Oh, sweetie, why? They can't do this to you, you know they can't! You were so good at the job, I'm sure!"

After the usual protestations, he broke off and tried to explain.
"It's this World Reallocation of Labor Act-they're closing the factory down. Everyone's been fired.'
"They can't do that!" she wailed. "People will always need wristcomputers!"
"Sure they will, but we manufacture for the Mid-European block. Now we've set up a factory in Prague, Czechoslovakia, that is going to turn out all parts on the spot, cut distribution costs, give employment to a million MidEuropeans."
"What about a million MidAmericans!"
"Hon, you think we got overpopulation problems, you should see Europe!"
"But we're at war with Czechoslovakia!"

He sighed. You couldn't explain these things to women. "That's just a political war," he said, "like our contained war with Mongolia, but a degree less hot. Don't forget that the Czechs are not only in the Comblok politically, they are now in the Eurcom economically, not to mention Natforce strategically. We have to help those goddamned Czechs or bust."
"So you're bust," she sighed.
Randy was annoyed. "I could have broken this news better if you could still manage to sit on my knee. When are you going to give birth, I want to know? What are they going to do about it down at that goddamned hospital?"
"Randy Hicks, I will give birth when I am good and ready and not before."
"It's all very well for you, but
how do you think a man feels? I want you with your figure back again, sweetie pie." He sank to his knees against her, whispering, "I want to love you again, sugar, show you how much I love you."
"Oh, no, you don't!" she exclaimed. "We've only been married ten months yet! We're just not going to have a whole brood of kids-I want to see daylight through my window before I die-I-"
"Daylight! All you think of is daylight!"
"Tell him I won't be born until the world is a fit place to be born into!"

The sound of that interior voice recalled Gordana to realities. She laughed and said, "Randy Junior says he is not appearing on the world scene until the world scene looks rosier. We'd better try to fix you up with a job, pet, instead of quarreling."

The days that followed were exhausting for both Gordana and Randy. Randy left the one-room flat early every morning to go looking for a job. Since private transport had long since been forbidden inside city areas, he was forced to use the crowded urban transports, often travelling miles to chase the rumour of a job. Once he took a job for three days pouring concrete, where the foundations of a new government building had pierced through the earth's crust
into the Mohorovicic discontinuity below, creating a subterranean volcanic eruption; then he was on the hunt again, more exhausted than ever.

Gordana was left alone. She had Sonia Greenslade to visit with her once or twice, but Sonia was too busy worrying about John to be best company: John was under threat of dismissal at the packing plant if his work did not improve. On the next day that she was due to report to the hospital, Gordana went out instead and took a robowl up to the surface.

It was a fine sweet sunlit day with one white cloud shaped like a flea moving in a south westerly direction over the city. This was summer as she remembered it; she had forgotten how sharply the summer breeze whistled between blocks and how chill the shadows of the giant buildings were. She had forgotten, too, that it was forbidden to walk on the surface. And she had forgotten that transport was for free only on one's own livinglevel. She paid out from her little stock of cash to get to the first green park.

The park was encased in glass and air-conditioned against the hazards of weather. It was tiled throughout and thronged with people at this hour of the afternoon. An old church stood in the middle of the crowded place, converted into a combined museum and fun house. She went in, past the turn-
stiles and swings and flashing machines and "Test-Your-Heterosexuality" girls, into a dim side arcade where vestments were exhibited. People were pressed thick against the cases, but there was space in the middle of the aisle to stand still a minute without getting jostled. Gordana stood without getting jostled and, to her surprise, began to cry.

She did it very quietly, but was unable to stop. People began to gather round her, curious at the sight. Hooliganism one noticed in public, but never crying. Soon there was a big crowd round her. The men began to laugh uncomfortably and make remarks. Two gawky creatures with shaven heads and sidewhiskers, who could not be said to be either boys or men, began to mimic her for each other's delight. The blobby-nosed one gave a running commentary on Gordana's actions.
"New tear forming up in her left eye, folks. This one'll be a beaut, that's my guess, and I've seen tears. I'm World's Champion Tear Spotter Number One! Yeah, it's swelling up to the lid, yeah, gosh, there she tumbles, very pretty, very nice, nice delivery, she's infanticipating I should say, got no husband, just a good time girl having a bad time, and now another tear gathering strength in her right eye-no, no, tears in both eyes! Oh , this is really some performance here, and she's trying to catch
them in a handkerchief, she's making quite a noise-"
"Help me!" Gordana said to her unborn child. It was the first time she had ever addressed it without waiting to hear it speak.
"I brought you here so that you could make public the latest development."
"You brought me here?"
"I can communicate to you on more than one conscious level, and some of your lower levels are very open to suggestion."
"I don't want to be here-I hate these people!"
"So do I! You expect me to be born into this world among these zombies? What do you think I am? I'm not arriving till the world improves. I'll stay where I am forever, do you hear?"

That was the point at which Gordana had hysterics.

Eventually they got her out of the old church and into an ambulance. She was shot full of sedative and shipped down to her own liv-ing-level.

When she woke, she was in her own room, in her own bed, looking mountainous under the bed clothes. Randy was sitting by her, stroking her hand, and looking remarkably downcast. She thought perhaps he was reflecting on how long he had had to sleep on the floor because the bed was too full of her, but when he saw her eyes opening, he said bitterly, "This jaunt of yours has cost us ninety-
eight smackers on the public services. How are we going to pay that?"

Then, seeing he had hurt her, he tried to make up to her. He was sorry to be snide but he thought she had run away. He could not find a job, they might have to leave the flat, and weren't things just hell? In the end, they were both crying. Arms round each other, they fell asleep.

But without knowing it, Gordana had already solved their financial problems. The ambulance crew that shipped her home had reported her case to the Maternity Hospital, and now a thin stream of experts began to arrive at the flatand not only gynaecologists, but a sociologist from Third Level University and a reporter from 'Third Level News'. They all wanted to investigate Gordana's statement that her baby would not be born till the world improved. Since they lived in a cash society, Randy had no trouble at screwing money out of them before they could get in to see his wife. In a short while, Gordana was news, and the interviewees doubled. The cash flowed in and Randy bought himself a doorman's cap and smiled again.
"It's all very well for you, darling," Gordana said one evening, as he strolled into the room and flung his hat into a corner. "I get so tired telling them the same things and posing for profile photos. When's it all going to end?"
"Cherub, I regret to say it's ending any moment now. We've had our day. You are news no longer! No longer are you a freak, but one of many."

She flung a cushion at him and stamped. "I am not a freak and I never was a freak and you are just a miserable horrible cheapskate little man to say I am!"

He leapt to her side and embraced as much of her as he could get his arms round.
"I didn't mean it, hon, really, not that way, you know I didn't, you know I love you, even if you are ten months gone. But look at the papers!"

He held a couple of coloreds out at her.

The story was all over the front page. Gordana was by no means the only pebble on the beach. No babies were being born all the way across the country, and there were hundreds of thousands of pregnancies of almost ten months' duration. Gordana's hysterics had triggered off the whole fantastic story. The medical world and the government were baffled or, as the headlines put it, STATE STALKS STORK STRIKE. One columnist was inclined to blame Comblok for the trouble, but that seemed hardly likely since a wave of un-births was reported from all capitals of the world.

Gordana read every word. Then she sprawled on the bed and looked her husband in the eye.
"Randy, there's no mention here of any woman being able to communicate with her unborn child the way I can."
"Like I told you, honey, you're unique-that was the word I was looking for-unique."
"I suspect all these mothers-tobe can talk with their babes same as I can. But you're the only person I told about that, and these women must feel as I do. It's a private thing. I want you to promise me you will not tell a soul I can talk to our baby. Promise?"
"Why, sure, hon, but what harm would it do? It wouldn't hurt you or junior."
"It's woman's instinct, Randy, that's why, and that's reliable. People would only make capital out of it. Now, promise me you'll keep the secret."
"Sure, pet, I promise, but look, one of all these millions of expectant women is going to leak the secret, you know, and then it will not be a secret any more-"
"That's why it is essential to say nothing!"
"-But the guy-the gal who leaks it first could sure clean up a lot of dough if he leaked it to the right place!"
"Randy!"
"Why, we could even move up into the upper levels, with daylight and all, the way you always wanted."
"Randy, get out of my sight! Get out and don't come back! Haven't
you made enough money already out of my misfortune without debasing us both? Get out and get yourself an honest job, and don't come back till you've got one."

Randy spent a dismal night in the canteen bar before he returned unhappily home.

A man was sitting on the bed beside Gordana.
"Hey! You're a fast worker, aren't you?" Randy exclaimed. The drinks were an effective tranquilizer.

His wife gave him a dazzling smile and held out a puffy hand to him. "Come along, darling! Where've you been? I thought things over and changed my mind about our little secret. This is Mr. Maurice Tenberg of CB 'Masterview', who is going to handle me exclusively for the next month.
"For a considerable fee, Mr. Hicks," Tenberg said, rising and extending his hand. "Your wife is a perspicacious business woman."

The clutter of the cubision equipment in the hall was a considerable obstruction to the occupants of the flats, particularly those unfortunates like Sonia and John Greenslade on the same floor as the Hickses. As they climbed over cables or skirted trollies and monitor banks and powerpacks, they could see into the Hicks's room, which had lost the personality of its owners and was now a studio. Gor-
dana's bed had given way to a fancy couch, and the cooking equipment and sink were shrouded behind a wall-length curtain from the Props Department.

Gordana herself was heavily made up and dressed in a new gown. She was the star turn in an hour long program showing at a peak period on national networks. A panel of famous men had discussed the Baby Drought, as it was called, and now Maurice Tenberg was interviewing Gordana.

Subtly, he stressed both the human and the sensational side of the problem, the woman loving her child despite its irregularity, the novelty of a world into which no child had been born for six weeks, and now this remarkable new development, where the mother could communicate sub-vocally with her infant. Finally, he turned to address the 3D cameras direct.
"And now we are going to do something that has never been done before. We are going to attempt to interview a human being while it is still in the womb. I am going to ask Randy Junior questions, which will be relayed to him by Gordana. She will speak out aloud to him, but I would like to emphasize that that is just for her convenience not his. Randy Junior appears able to have access to all the thought processes going on in her brain."

Tenberg turned to Gordana and, addressing himself to her stomach,
said, "Can you tell us what sort of world you are living in down there?"

Gordana repeated the question in a low voice. There was a long silence, and then she said, "He says he lives in a great universe. He says he is like a thousand fish."
"That's not a very clear answer. Ask him to answer more precisely. Is he aware of the difference between day and night?"

She put the question to him, and was aware of her child's answer growing like a tidal wave sweeping towards the shores of her understanding. Before it reached her, she knew it would overwhelm her.

The foetus within could vocalise thoughts no better than she could. But without words, it threw up at her a pictorial and sensory summary of its universe, a scalding hotchpotch of the environment in which it lived. Dark buildings from a thousand reveries, drowning faces, trees, household articles, landscapes that swelled grandly by like escaping oceans, an old ruined church, numberless, numberless people invaded her.

This was her son's world, gleaned from her, cast back-a world for him, floating in his cell without movement, which knew no dimensions of space. Everything, even the glimpses of widest desert or tallest building, came flattened in a strange two-dimensional effect, like the image dying in a cubision box when the tube blows. But
if the embryo world had no space, it had its dimensions of time.

In its reverie-life, the embryo had been free to drift in the deep reaches of its mother's mind, hanging beyond time where its mother's consciousness was unable to reach. It had no space, but it had, as it claimed, a great universe indeed!

As the flow of images smothered her, driving her into a deep faint, Gordana saw-knew-her mother, grandmother, great-grandmother -they were all there, seemingly at once, her female line, back and back, the most vividly remembered experience of a human life, faces looking down smiling, oddly similar, smiling, fading slowly as they flickered by, lowly faces at last, far back in lapsed time, their eyes still full of gentleness but at last no longer human, only small and shrewd and scared.

And over those maternal faces raced great gouts of light and shadow, as the cardinal facts of existence made themselves felt not as abstracts but tangible things: birth and love and hunger and reproduction and warmth and cold and death. She was a mammal again, no longer a tiny unit in a grinding life machine whose dark days were enacted before a background of plastic and brick: she was the live thing, a clever mammal, running from cold to warmth among the thronging animal kingdom, an animated pipeline from the distant past of sunlight and blood. She
tried to cry at the magnificence and terror of what she felt . . . her mouth opened, only a faint animal sound emerged.

Of course, it made highly viewable CB. A doctor hurried on to the set and revived her, and in no time Tenberg was pressing ahead with the interview.
"He gave you a shock, didn't he, Gordana? What did your baby show you?"

With eyes closed, she said, "The womb world. I saw the womb world. It is a universe. He is right he has a freedom to live we have never known. Why should he want to be born from all that into this miserable cramped flat?"
"Your husband tells me you will be able to move up above ground soon," Tenberg said, firmly cheerful. Gordana could not be said to respond to his tone.
"He can roam . . . everywhere. I'm just an ignorant woman and yet he can find in me a sort of wisdom that our brick and plastic civilization has disqualified. He's-oh, God!-he's more of a whole person than anyone I've-"

Observing that Gordana was on the brink of tears, Tenberg grasped her wrist and said firmly, "Now, Gordana, we are wandering a little, and it is time we put another question to your son. Ask him when he is going to be born?"

Dutifully, she pulled herself together and repeated the question. She knew by his reply that Randy

Junior too was exhausted by the attempt to communicate. His reply came back pale and without emotional tone, and she was able to repeat it aloud as he sub-vocalised.
"He says that he and all babies like him have decided not to be born into our world. It is our world, and we have made it and must keep it. They don't want it. It is too unpleasant a place for them . . . I don't understand oh, yes, he wishes us to pass on this message to all other babies, that they are to control their feeding so that they grow no more and do not incapacitate their mothers further. From now on, they will remain as a parasitical subrace.

Her voice faltered and died as she realised what was said. And it was this crucial statement on which everyone, almost throughout the world, dwelt next morning. This was the point, as an astute commentator was to remark, at which the Baby Drought developed from an amusing stunt to a national con-spiracy-for Randy Junior had succeeded in communicating with all other unborn children through their watching mothers-and to a global disaster.

In the Hicks flat, panic broke out, and the producer of the show ran forward to silence Gordana. But she had something else to convey to the world from her son. Eyes shut, she raised one hand imperiously for silence and said, "He
says that to him and his kind, the foetuses, their life is the only life, the only complete life, the only life without isolation. The birth of a human being is the death of a foetus. In human religions which spoke of an afterlife, it was only a pale memory of the fore-life of the foetus. Hitherto, the human race has only survived by foeticide. Humans are dead foetuses walking. From now on, there will be only foetuses.

The crises, financial, political, national, ecumenical, educational, sociological, economic, and moral, through which the world was staggering, seemed as nothing after that. If the foetuses meant what they said, the human race was finished: there was a traitor literally within the gates.

In maternity hospitals, a series of emergency operations took place. Man could not bear to be defeated by mere unborn children. Everywhere, surgeons performed caesarean operations. Everywhere, the results were the same: the infants involved died. Frequently their mothers died. Within a few days, most countries had declared such operations illegal.

Gordana was immune from this wave of panic. She was too famous to be tampered with. She was made President of the Perpetually Pregnant, she was sent gifts and money and advice. Nevertheless, she remained downcast.

FANTASY AND SCIENCE FICTION
"Come on, hon, smile for Poppa!" Randy exclaimed, when he returned to the little flat a week after the momentous interview. Taking her in his arms, he said, "Know what, Gordy, you and I are going topside to see our new flat! It's all fixed-well, it's not fixed, but we can take possession, and then we'll get it decorated and move in as soon as we can."
"Darling Randy, you're so sweet to me!" she said sadly.
"Course I'm sweet to you, darling -who wouldn't be? But aren't you even going to ask me how many floors up we'll be? We're going to be fourteen floors above ground level! How do you like that? And we are going to have two rooms! How about that, hon?"
"It is wonderful, Randy."
"Smile when you say that!"
They went to see the flat. The tenants had just died-at least the old lady had died and her husband had submitted to euthanasia-and everything was in a mess. But the view from the windows was fine and real sunlight came through them. All the same, Gordana remained low in spirits. It was as if life was a burden that was becoming too much for her to bear.

What with legal delays and decorators' delays, it was a month before Randy and Gordana Hicks moved into their new flat. On the last day in the old one, Gordana went and said a tearful goodbye to Sonia Greenslade, whose pregnan-
cy was now so well advanced that she and her child were communicating. She felt an unexpected reluctance to leave the old environment when the time came.
"You are happy here, Gordy?" Randy asked, when they had been installed for a week in their new home.
"Yes," she said. She was sitting on a new couch that converted into a bed at night-no more cots that folded up into the ceiling. Randy sat on the window sill, looking down at the teeming city. He did no work now and looked for none; money was in plentiful supply for once in their lives and he was making the most of the situation by doing no work, and eating and drinking too much.
"You don't sound very happy, I'd say."
"Well, I am. It's just-just that I feel we have sold ourselves, and the child."
"We got a good price, didn't we?"

She winced at his cynicism. Slowly she got up, looking steadily at him. "I'm going back down to the third level to see Sonia," she said. "We've got no friends on this level."
"Tell me if I'm boring you!"
"Randy, I only said I was going to see Sonia."

Sonia was delighted to see her old neighbor again. She invited Gordana in and they sat painfully
at one end of the little room, close together, while John Greenslade sat at the other end of the room wrestling with the Bible and Western Civilization. He was a small ragged man, not much taller than his wife and decidedly thinner. He sat in an old pair of slacks and a sweat shirt, peering through his contact lenses at his phototape, occasionally uttering a sentence or two into it, but mainly scratching his head and muttering and playing back references in the mountains and alps of magnabooks piled round him. He paid no attention to the women.
"Mine's going to be a little boythat is, I mean mine is a little boy, I mean to say. A little boy foetus," Sonia confided, fluttering her eyelashes. "I don't make him any garments and we haven't prepared a creche or anything-you do sort of save money that way, don't you think? His thoughts are coming on nicely, he talks quite well nowand he's not eight months yet, fancy! It is rather exciting, isn't it?"
"I don't know. I feel kind of depressed all the time."
"My, that'll pass! Now you take me, I don't feel depressed at all, yet I'm much smaller than you, so I find Johnny heavy to carry. He seems to press down on my pelvis just here. Maybe when he's more responsive, I can get him to move round a bit. I get cramps, you know, can't sleep, get terrible rest-
less, but no, I'm not a bit depressed. And you know what, Johnny already seems to take an interest in what John is writing. When John reads his stuff aloud, I can feel little Johnny drink it all in. I don't think it's just my imagination, I can feel him drink it all in. He's going to be quite a little scholar!"

Gordana broke in on what threatened to become a monologue. "Randy Junior doesn't talk much to me any more. I have a guilty feeling I lost his confidence when I let him be interviewed before all the world. But he's working away down there. Sometimes, I can't explain, but sometimes I feel he may be going to take me over and run me as if I were his-well, his automobile."
"But we are their automobiles in a way, bless their sweet little hearts!"
"Sonia, I am not an automobile!"
"No, I didn't mean personally naturally. But women-well, we women are used to being chattels, aren't we? Of men certainly, so why not of our babes?"
"You've been reading too much from the Bible."
"As John always says, there was a lot of sense in that old book," Sonia replied.
"Will you confounded women keep your confounded voices down!" John shrieked, scattering reference books.

The days went by, and the weeks and months. No babies were born live. The foetuses of the world had united. They preferred their vivid and safe pre-life to the hazards of human existence. The vast sums of money that the nations had hitherto devoted to defense were channeled increasingly into research on the birth problem.

Some of this money went to purchase the services of a noted psychiatrist, Mr. Herbert Herbinvore, an immense pastoral man with shrewd eyes, a hairy mole on one cheek, and a manner so gentle it made him look like a somnambulist. He was appointed to get what sense he could out of Gordana, and they met for an hour every day.

In these sessions, Herbinvore coaxed Gordana into going over all her past life and into the reverielife of her unborn child. He made copious notes, nodded wisely, closed his eyes, and went away smiling each morning at eleventhirty.

When this had been going on for some weeks with no noticeable result, Gordana asked him, "Are you coming to any conclusions yet, Herbert?"

He twinkled slightly at her. "Surprisingly enough, yes. My assumptions are based on the opinion I have reached that you are a woman."
"You don't say!"
"But I do say, my dear. It's something that mankind has never
seriously taken into account-the femaleness of women, I mean. How did your foetus and every other foetus suddenly begin to communicate to you? Because that's what foetuses have always done with their mothers; that's why the months of pregnancy are such a dreamy time for most women. It has come to be a much more outward thing now because of the crisis, but women have always been in contact with the verities of life that little Randy exposed to you. Man is cut off from that, and has to make the external world, without much aid from his womankind. It is, as they say, a man's world. More and more, these last centuries, the external world has ceased to resemble the reality that women know of sub-consciously. When the conflict between the two opposites became sharp enough, the foetuses were jerked into a state of wakefulness by it-with the results we are now experiencing."

Suddeny she was overcome with laughter. It seemed so silly, this fanciful stuff he was talking! As if he had any idea of what it was like to be a woman-yet he was telling her. "And does-and does-" she controlled herself "-does what you are saying now resemble most reality or the external world?"
"Mrs. Hicks, you laugh like a sick woman! Man has adapted to his world, woman has failed to. Woman has stuck in the little real-ity-world. You take this matter too
lightly. Unless you and all the other women like you pull yourselves together and deliver the goods, there isn't going to be any sort of reality to adjust to, because the human race will all be extinct."
"How dare you call my son 'goods'? He is an individual, and exists for his own self and not for any abstract like the human race. That's another man's notion if I ever heard one!"

He nodded so gently that it seemed he must rock himself to sleep. "You more than confirm my diagnosis."

They were both silent for a little while, and then Gordana asked, "Herbert, haven't you ever read the Bible?"
"The Bible? It was long ago debunked as a work of cosmology, while as a handbook of etiquette it is entirely out of date. No, I haven't read it. Why do you ask?"
"A friend told me it says 'Go forth and multiply'. I wondered if maybe a woman wrote it?" And she started to laugh again. The sound of her son's voice within cut off her giggles.
"Mom, what is it like to be a man? Why is it so different?"

She had forgotten, as so often she did, that every conversation she had was available to Randy Junior as soon as it registered in her mind. "Those are silly questions, darling. Go back to sleep," she said.
"What did he ask?" Herbinvore
inquired, looking more relaxed than ever.
"Never mind," she muttered. Randy was repeating his questions. He repeated them after Herbinvore had left and throughout the afternoon, as though he could not believe there were things his omnipresent host did not know. He was only silenced when Sonia came to visit in the afternoon.

Sonia looked tear-stained and dishevelled. She clutched at Gordana and looked at her wild-eyed.
"Is your husband here?"
"No. Out as usual."
"Listen, Gordana, my poor little babykins has gone stark staring crazy! He wanted to know a whole lot of things I couldn't answer, and so I got John to answer, and then Johnny got interested in John's work, you know how they are. I just can't satisfy him. And now this morning-what do you think?-he ordered me to work at the phototaper when my husband was getting some sleep, and then he just took over my mind, and made me write the most utter nonsense!"

She waved a tape at Gordana. Gordana reached for it, but Sonia snatched it away.
"If you listen to it, you'll think my poor little baby has gone mad. He's digested everything from my husband's brain and scrambled it all up, and you'll think he's gone mad. As a matter of fact, I think he's gone mad.

As she broke into wails of mis-
ery, Gordana grabbed the tape and thrust it into the wall tapespeaker.

Sonia's voice filled the roomSonia's voice, but barely recognisable as such, as it slowly pronounced its nonsense.
"Here no able, sow no able, spee no able, was the mogger of the three mogries, mescalin, feminine, and deuteronomy, and by their boots ye shall know them. And it came to pass water, and darkness was over the face of the land, so that the land hid its face and could not look itself in the $I$, as was prophesied even in the days of the lesser prophets, particularly those born of the linen of Bluff King Hal, Hal King Bluff and of course Bess Queen Good. Though she had the soul of a woman, she had the body of a man, kept in her privy where none should see. Woe to women who commit deuteronomy!
"The former treatise are shoter than the ones you are wearing, $\mathbf{O}$ excellent Thuck; yet, yea verily and between you and me and this megadeath, the royal lineage shall not pass away nor the land of the Ambisaurs which devour the sledded Polticians on the ice, nor the sun in the morning nor the moon in June, and as long as rivers cease to run this treaty shall stand between us though dynasties pass: you, you, and your airs and assigns and all who inherit, viz., your mother, your mother-in-law, daughter, female servant, ass, cow, sister, governess, god-daughter, or
any other species of deuteronomous female, hereinafter referred to as The Publishers, shall not brew Liquor on the premises or allow anything to ferment or rot except on the third Sunday after Sexagesima, Boadecia, or Cleopatra, unto the third and fourth degeneration, for ever and ever, Amen."

The silence grew in the room until Sonia said in her tiniest voice, "You see, it's utterly meaningless.
"It seemed to me to have lots of -" Gordana broke off. The foetus within her was making a noise like laughter; it said, "Now do you believe in Santa Claustrophobia!"

Urgently, Gordana said, "I'm sorry, Sonia, you must get out of here, before you infect Randy Junior with the madness too. He is starting to talk nonsense as well."

Without ceremony, she hustled her little bulging friend out of the door and leant against it, panting.
"You're going to try and scare us, aren't you?" she said aloud.
"Do you suffer from negative geotropism? Remember the fleas, climbing ever upward? You know what they were doing."
"Annoying the swallows! But you're not going to be a flea, you're going to be a man."
"The fleas were climbing upwards towards the light. Let there be light, let there be light!"

Whimpering softly, she crept over to the couch, lay down on it, and began meekly to give birth.

Randy Hicks, Herbert Herbinvore, Maurice Tenberg, the Mayor of the city, the Director of the Maternity Hospital, a gynaecologist and her assistant, three nurses and an inquisitive shoeshine boy who happened to be passing stood round Gordana's bed, admiring her and her baby as they slept the deep sleep that only sedation can bring.
"She'll be just fine," Herbinvore murmured to Randy, standing more relaxedly than most men sit. "Everything is working out as I predicted. Don't forget, I was consulting your friend Sonia Greenslade every morning from eleventhirty till twelve-thirty, and I could see how these foetuses were feeling. They liked their little world, but they were getting past it. Remember what your son was supposed to have said about a foetus having to die for a human to be born?"

Randy nodded mutely.
"Then picture how a human would feel if his life were unnaturally protracted to two hundred years; he would long for death and for what our superstitious ancestors would have called the Light Beyond. Young Randy felt like that. The time came when he had to overcome the forces ranged against him and move forth to be born."

Randy pulled himself out of his daze. He longed to kneel and embrace his sleeping wife, but was cagey about the nurses who might
laugh at him. "Wait a bit, Doc, how do you mean he had to overcome the forces ranged against him? What forces? It was his idea not to get born in the first place."

Only an old cow asleep in a meadow deep in grass could have shaken her head as gently as Herbinvore did now in contradiction.
"No, no, no, I fear not. Things were not as they might have seemed to laymen like you. As I shall be saying to the world over the CB later tonight, the foetuses really had no option in the niatter. The world was at crisis-half a dozen crises-and the women just suddenly came out with a mass neurosis. You might even say that world tensions had paralysed women like Gordana, paralysed their uterine contractions so that labor could not take place. There are examples in the insect kingdom-among the flies, for instance-of creatures that can control their pregnancies until the moment is fit, so this incident is not entirely without precedent. It was the women that didn't want babies-nothing to do with what the babies felt at all."
"But you heard what my kidwhat Randy Junior said."
"No, Mr. Hicks, I did not. I never heard him utter a word. Nor did you. Nor did anyone else. We have only the word of the reluctant mothers that their babes spoke. That idea is all nonsense. Telepathy is nonsense, hogwash! The whole idea was just part and parcel of the
womanly mass neurosis. Now that it looks as if the world's on the upgrade again, the girls are all giving birth. I'll guarantee that by tomorrow there's not a delayed pregnancy left!"

Randy felt himself compelled to scratch his head, but the whirling thoughts there refused to come to heel. "Gosh!" he said.
"Precisely. I have it all diagnosed." The grass in the meadow was well up to the cow's hocks. "In fact, I will tell you something else."

But Randy had already heard too much. Breaking away from the hypnotic sight of Herbinvore pontificating, he braved the nurses and flung himself down beside Gordana. Rousing gently, she wrapped an arm about him. The baby opened its blue eyes and looked at its father with a knowing and intelligent air.

Unperturbed, the psychiatrist continued to hold forth for the good of the company. "I will tell you something else. When I had completed my diagnosis, I placed Mrs. Greenslade under light hypnosis to persuade her to write the nonsense she did. That was quite enough to scare the women into their senses again. I have the feeling that when this whole affair is written about in times to come, it may well be known as 'Herbinvore's Syndrome'.

The babe on the bed fixed him with a knowing eye.
"Nuts!" it said.

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