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FEB. '41

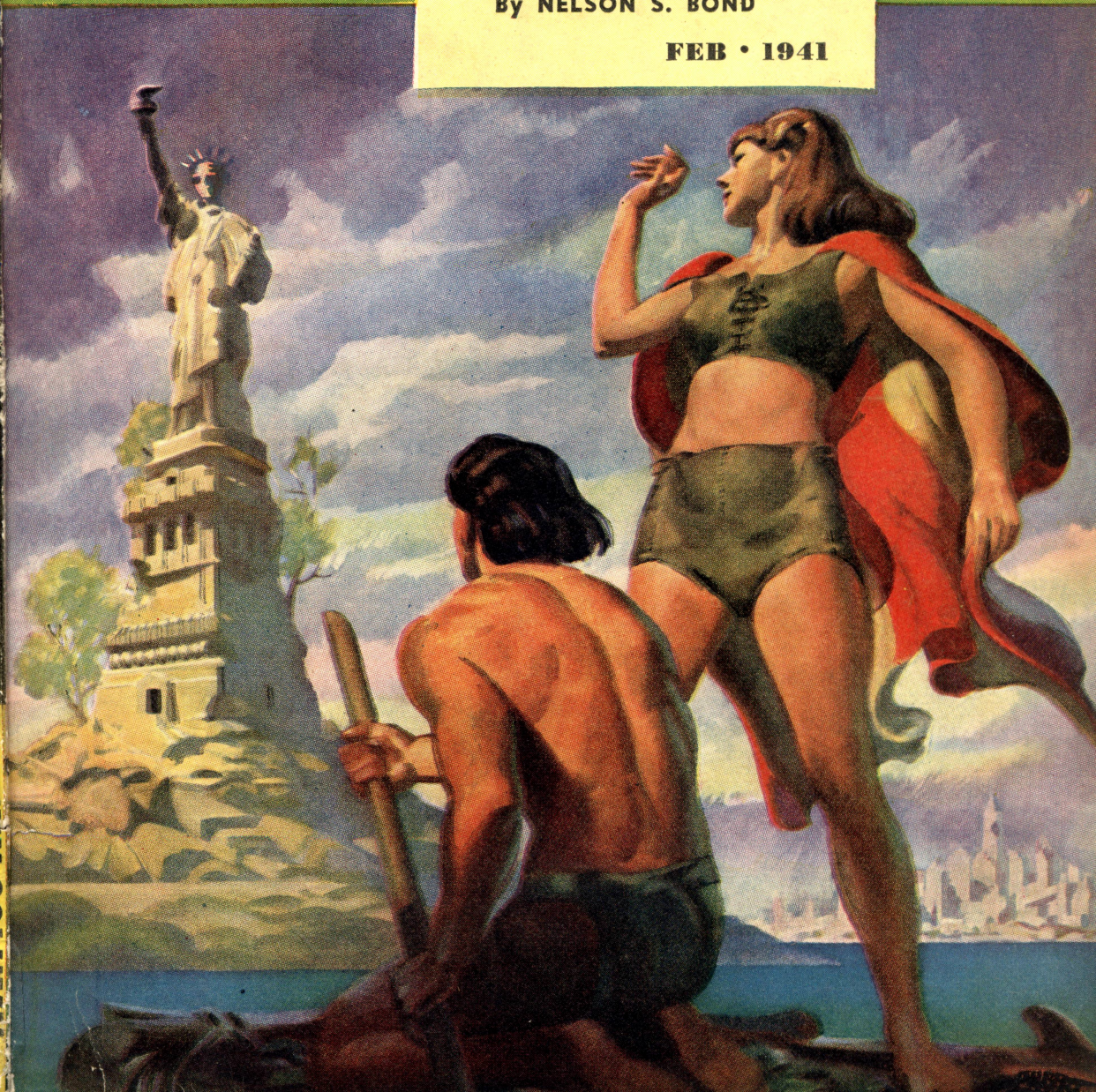
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MAGIC CITY *NS*

20¢

By NELSON S. BOND

FEB • 1941





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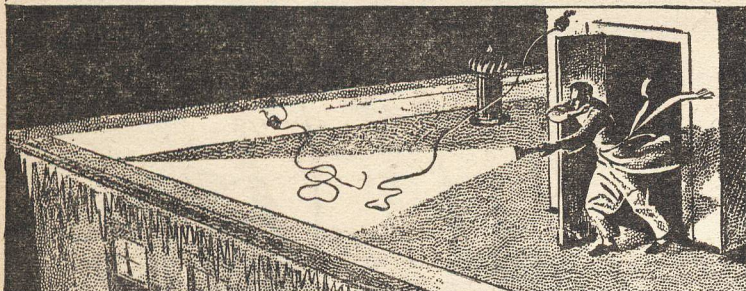
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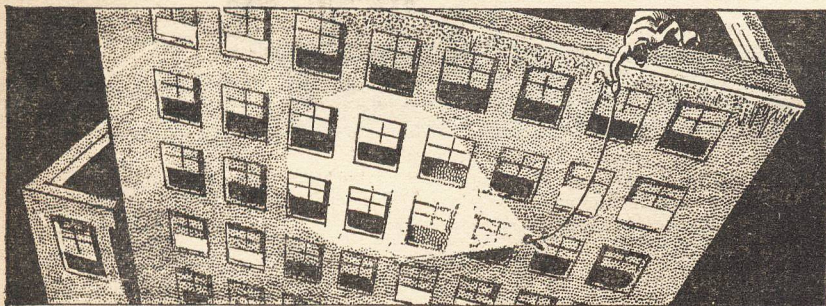
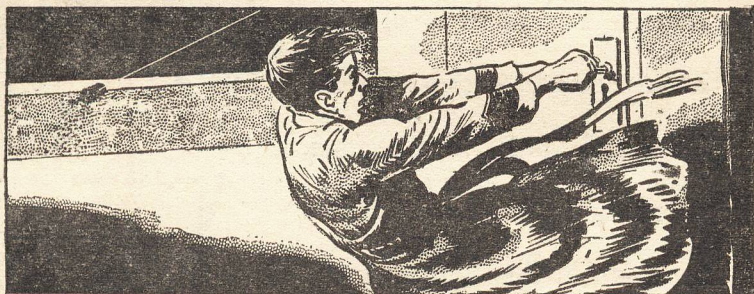
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Illustrations by Binder, Cartier, M. Isip, R. Isip and Schneeman.

COVER BY ROGERS

All stories in this magazine are fiction. No actual persons are designated either by name or character. Any similarity is coincidental.

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INVITATION

Most of Astounding's authors are, in the professional sense, amateur authors, spare-time writers who earn their bread and butter in one field of work, and use their writing ability as a source of the jam supply. Astounding is at present—in fact, as usual—looking for new authors; the present invitation is a suggestion that you consider the following facts as applied to your personal case:

Though it was pointed out that the navy has contributed a number of Astounding's top authors, Astounding's readership has contributed *all* the top-rankers. That readership is, naturally, where we expect to find the next dozen or so top contributors.

Every individual story, no matter whose name it bears, stands exactly equal chance of acceptance or rejection purely on its individual merit. Write a better story than those now being accepted, and you get the jam with our blessing.

From our past experience, authors don't, generally speaking, "work their way up." Heinlein's first story, "Lifeline," was the first he submitted here. De Camp's first published story was his first submission; it was also a good yarn. Van Vogt, similarly, sold the first story he submitted, as have many of the other authors. Apparently, if you can write good, strong fiction, you can, and will, write good, strong fiction the first time. That statement is heretical—and pragmatic. It's happened.

"Jam" in the above sense is useful. Briefly, it amounts to the equivalent of a couple of new suits, or a suit and overcoat, for a short story, a new radio with, say, FM tuning for a novelette, and a new car or so for a novel.

I know perfectly well that there are probably twenty or thirty first-line authors undiscovered among the readers of this little squib. I wish I could convey somehow the feeling of frustration that conviction engenders in me. Somewhere is the man who is going to write the sort of science-fiction I want, the best science-fiction yarn of the bunch. And I can't lay hands on his address, can't get him started.

So I've got to wait around, with a couple thousand dollars for him, until he gets around to sending in that first manuscript. Will the gentleman kindly shake loose and send in that script? It won't do either of us any good just mulling around in your head.

THE EDITOR.

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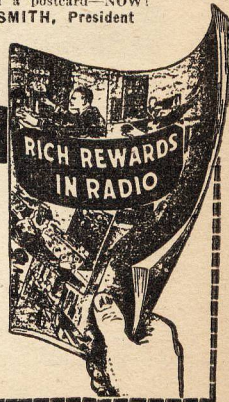
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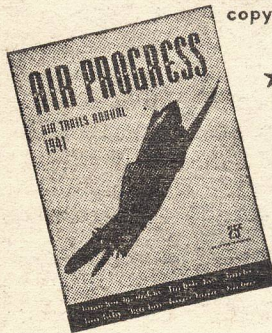
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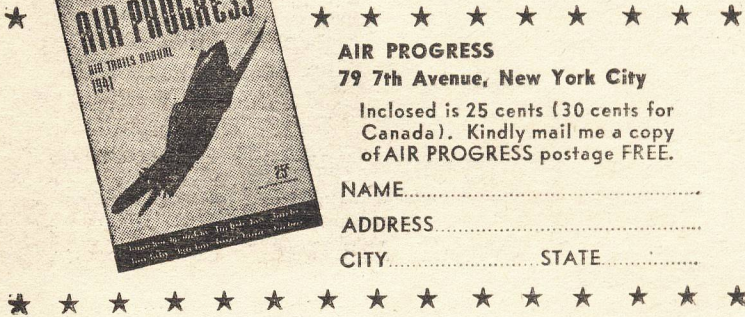
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MAGIC CITY

By Nelson S. Bond

A tale of a civilization starting upward again—under the handicaps of misunderstanding!

Illustrated by M. Isip



OUT of the sweet, dark emptiness of sleep there was a pressure on her arm and a voice whispering an urgent plea.

"Rise, O Mother! O Mother, rise and come quickly!"

Meg woke with a start. The little sleep-imp in her brain stirred fretfully, resentful of being thus rudely banished. He made one last effort to hold Meg captive, tossing a mist of slumber-dust into her eyes, but

Meg shook her head resolutely. The sleep-imp, sulky, forced her lips open in a great gape, climbed from her mouth, and sped away.

Sullen shadows lingered in the corners of the *hoam*, but the windows were gray-limned with approaching dawn. Meg glanced at the cot beside her own, where Daiv, her mate, lay in undisturbed rest. His tawny mane was tousled, and on his lips hovered the memory of a smile. His face was curiously, endearingly boyish, but the bronzed arms and shoulders that lay exposed were the arms and shoulders of a fighting man.

"Quickly, O Mother—"

Meg said, "Peace, Jain; I come." She spoke calmly, gravely, as befitted the matriarch of the Jinnia Clan, but a thin, cold fear-thought touched her heart. So many were the duties of a Mother; so many and so painful. Meg the Priestess had not guessed the troubles that lay beyond the days of her novitiate. Now the aged, kindly tribal Mother was dead; into Meg's firm, white hands had been placed the guidance of her clan's destiny. It was so great a task, and this—*this* was the hardest task of all.

She drew a deep breath. "Elnor?" she asked.

"Yes, Mother. Even now the Evil Ones circle about, seeking to steal the breath from her nostrils. He bides His time, but He is impatient. There is no time to waste."

"I come," said Meg. From a shelf she took a rattle made of a dry gourd wound with the tresses of a virgin; from another a fire-rock, a flaked piece of god-metal and a strip of parchment upon which a sacred stick, dipped into midnight water, had left its spoor of letters.

These things she touched with reverence, and Jain's eyes were great with awe. The worker captain shud-

dered, hid her face in her hands lest the sight of these holy mysteries blind her.

Dry fern rustled. Daiv, eyes heavy-lidded, propped himself up on one elbow.

"What is it, Golden One?"

"Elnor," replied Meg quietly. "He has come to take her. I must do what I can."

Impatience etched tiny lines on Daiv's forehead.

"With those things, Golden One? I've told you time and again, they won't bother Him—"

"Hush!" Meg made a swift, appeasing gesture lest He, hearing Daiv's impious words, take offense. Daiv's boldness often frightened Meg. He held the gods in so little awe it was a marvel they let him live. Of course he came from a sacred place himself, from the Land of the Escape. That might have something to do with it.

She said again, "I must do what I can, Daiv. Come, Jain."

They left the Mother's *hoam*, walked swiftly down the deserted walk-avenue. The morning symphony of the birds was in its tune-up stage. The sky was dim, gray, overcast. One *hoam* was lighted, that of the stricken worker, Elnor.

MEG opened the door, motioned Jain quickly inside, closed the door again behind her that no breath of foul outside air taint the hot, healthy closeness of the sickroom. She noted with approval that the windows had been closed and tightly sealed, that strong-scented ox-grease candles filled the room with their potent, demon-chasing odor.

Yet despite these precautions, the Evil Ones did—as Jain had told—vie for possession of Elnor's breath. On a narrow cot in the middle of the room lay the dying worker. Her

breath choked, ragged and uneven as the song of the jay. Her cheeks, beneath their coat of tan, were bleached; her eyes were hot coals in murky pockets. Her flesh was dry and harsh; she tossed restlessly, eyes roving as if watching some unseen presence.

Jain said fearfully, "See, O Mother? She sees Him. He is here."

Meg nodded. Her jaw tightened. Two women and Bil, Elnor's mate, huddled about the sickbed. She motioned them away. "I will do battle with Him," she said grimly.

She poised a moment, tense for the conflict. Elnor moaned. Then Meg, with a great, reverberant cry, struck the sacred stones together, the bit of fire-rock and the rasp of god-metal. A shower of golden sparks leaped from her hands. Her watchers cried aloud their awe, fell back trembling.

Meg raised the gourd. Holding it high, shaking it, the scrap of parchment clenched in her right hand, she began chanting the magic syllables written thereon. She cried out reverently, for these were mighty words of healing power, no one knew how old, but they had been handed down through long ages. They were a rite of the Ancient Ones.

"I swear," she intoned, "by Apollo the physician and Aesculapius, and Health, and All-heal, and all the gods and goddesses, that, according to my ability and judgment, I will keep this Oath and stipulation—"

The gourd challenged the demons who haunted Elnor. Meg crossed her eyes and crept widdershins three times about Elnor's cot.

"—I will give no deadly med-sun to anyone—"

The sonorous periods rolled and throbbed; sweat ran down Meg's cheeks and throat. Beneath her

blankets, Elnor tossed. In the corner, Bil muttered fearfully.

"—will not cut persons laboring under the Stone, but will leave this to be done by men who are practitioners of this work—"

The candle guttered, and a drop of wax spilled on the floor as the door behind her opened, closed gently. Meg dared not glance at the newcomer, dared not risk halting the incantation. Some of the hectic color appeared to have left Elnor's cheeks. Perhaps, then, He was leaving? Without His prey?

"—while I continue to keep this Oath unviolated, may it be granted to me—"

Meg's voice swelled with hope. Oh, mighty was the magic of the Ancient Ones! The spell was succeeding! In a vast, triumphant clamor of the gourd, tone shrill and joyful, she broke into the peroration.

"—to enjoy life and the practice of the Art, respected by all—"

A sudden, blood-chilling sound interrupted her. It was Elnor. A gasp of pain, a stifled cry, one lunging twist of a pain-racked body. And then—

"It is too late, Golden One," said Daiv. "Elnor is dead."

The women in the corner began keening a dirge. The man, Bil, ceased his muttering. He moved to the side of his dead mate, knelt there wordlessly, staring at Meg with mute, reproachful eyes.

Choking, Meg stammered the words required of her. "Aamé, the gods, have mercy on her soul." Then she fled from the hoam of sorrow. It was not permitted that anyone should see the Mother in tears.

Daiv followed her. Even in his arms, there was but little comfort—

LATER, in their own hoam, Daiv sat watching in respectful silence as Meg performed the daily magic that was an obligation of the Mother.

Having offered a brief prayer to the gods, Meg took into her right hand a stick. This she let drink from a pool of midnight in a dish before her, then scratched it across a scroll of smooth, bleached calfskin. Where it moved it left its spoor, a spidery trail of black.

She finished, and Daiv gazed at her admiringly. He was proud of this mate of his who held the knowledge of many lost mysteries. He said, "It is done, Golden One? Read it. Let me hear the speech-without-words."

Meg read, somberly.

"Report of the fourteenth day of the month of June, 3485 A.D.

"Our work is going forward very well. Today Evalin returned from her visit to the Zurrie territory. There, she says, her message was received with astonishment and wonder, but for the most part with approval. There is some dissent, especially amongst the older women, but the Mother has heard the Revelation with understanding, and has given her promise that the Slooie Clan will immediately attempt to communicate peace and a knowledge of the new order to the Wild Ones.

"Our crops ripen, and soon Lima will have completed the new dam across the Ronoak River. We have now fourscore cattle, fifty horses, and our clan numbers three hundred and twenty-nine. All of our women are supplied with mates.

"We lost a most valuable worker today, when He came for Elnor, Lootent of the Field Coar. We could ill afford to lose her, but He would not be denied—"

Meg's voice broke. She stopped

reading, tossed the scroll on a jumbled heap with countless others, some shining new, some yellow with age, written in the painstaking script of Mothers long dead and long forgotten.

Daiv said consolingly, "Do not grieve, Golden One. You tried to save her. But eventually He comes for each of us. The aged, the weak, the hurt—"

Meg cried, "Why, Daiv, why? Why should He come for Elnor? We know He takes the aged because in their weakness is His strength; He takes the wounded because He scents flowing blood from afar.

"But Elnor was young and strong and healthy. There were no wounds or sores upon her body. She did not taste of His berries in the fields, nor had she touched, at any time, a person already claimed by Him.

"Yet—she died! Why? Why, Daiv?"

"I do not know, Golden One. But I am curious. For I am Daiv, known as He-who-would-learn. There is a mystery here far greater than all your magic spells. Perhaps it is even greater than the wisdom of the Ancient Ones."

"I am afraid, Daiv. He is so ever-near; we are so weak. You know I have tried to be a good Mother. It was I who made a pilgrimage to the Place of the Gods, learned the secret that the gods were men, and established a new order, that men and women should live together again, as it was in the old days.

"I have worked to spread this knowledge throughout the world, through all of Tizathy. One day we will reclaim all the Wild Ones of the forests, bring them into our camps and together we and they will rebuild the world.

"Only one stands in our way. Him! He who strikes down our war-

riors with an invisible sword, reaps an endless harvest amongst our workers. He is our arch-foe. A grim, mocking, unseen enemy, against whom we are powerless."

DAIV grunted. There were small, hard lines on his forehead, between his eyes. His lips were not up-curved in their usual happy look.

He said, "You are right, Meg. He, alone, destroys more of us each year than the forest beasts or our occasional invaders. Could we but find and kill Him our people would increase in knowledge and power swiftly."

He shook his head. "But we do not know where to seek Him, Golden One."

Meg drew a swift, deep breath. Her eyes glinted, suddenly excited.

"I know, Daiv!"

"You know where He lives, Golden One?"

"Yes. The old Mother told me, many years ago when I was a student priestess. She spoke and warned me against a forbidden city to the north and eastward—the city known as the City of Death! That is, must be, His lair!"

There was a moment of strident silence.

Then Daiv said, tightly, "Can you tell me how to reach this spot, Meg? Can you draw me a marker-of-places that will enable me to find it?"

"I can! It lies where the great creet highways of the Ancient Ones meet with a river and an island at a vast, salt sea. But . . . but why, Daiv?"

Daiv said, "Draw me the marker-of-places, Meg. He must be destroyed. I will go to His city to find Him."

"No!" It was not Meg the priestess who cried out; it was Meg the

woman. "No, Daiv! It is an accursed city. I cannot let you go!"

"You cannot stop me, Golden One."

"But you know no spells, no incantations. He will destroy you—"

"I will destroy Him, first." The happy look clung to the corners of Daiv's lips. He drew Meg into his bronze arms, woke fire in her veins with the touching-of-mouths he had taught her. "My arm is strong, Meg; my sword keen. He must feel its bite if we are to live and prosper. You cannot change my mind."

Then Meg decided.

"Very well, Daiv. You shall go. But I will make you no marker-of-places."

"Come now, Golden One! Without it I shall not be able to find—"

Meg's voice was firm, unequivocal. "Because I shall go with you! Together we shall seek and destroy—Him!"

II.

SO STARTED Meg and Daiv for the City of Death. It was not a happy parting, theirs with the men and women of the Jinnia Clan. There were tears and lamentations and sad mutterings, for all knew the law that the eastern cities of the Ancient Ones were forbidden.

There was bravery, too, and loyalty. Stern-jawed Lora, Captain of the Warriors, confronted Meg at the gate. She was clad for battle; her leathern plates and buckler were newly refurbished, her sword hung at her side. Behind her stood a squad of picked warriors, packed for trek.

"We are ready, O Mother!" said Lora succinctly.

Meg smiled, a sweet, proud smile. She knew only too well the mental terror, the physical qualms of fear these women had overcome to thus

offer themselves. Her heart lifted within her, but she leaned forward and with her own fingers unbuckled Lora's scabbard.

"You are needed here, my daughter," she said. "You must guard the clan till I return. And"—she faltered an instant, continued swiftly—"and if it is the will of the gods I return not, then you must continue to see that the law is obeyed until the young priestess, Haizl, is finished her novitiate and can assume leadership.

"Peace be with you all!" She pressed her lips to Lora's forehead lightly. It seemed strange to none of them that she should call the harsh-visaged chieftain, many years her senior, "My daughter." For she was the Mother, and the Mother was ageless and of all time.

Others came forward then, each in their turn to ask a farewell blessing, to offer silent prayers to the gods for Meg's safe return. Young Haizl, the clear-eyed, inquisitive twelve-year-old maiden whom Meg had selected to succeed her as matriarch of the Jinnia Clan, whispered: "Be strong, O Mother, but not too daring. Return safely, for never can I take your place."

"But you can, my daughter. Study diligently, learn the speech-without-words and the magic of the numbers. Keep the law and learn the rituals."

"I try, O Mother. But the little pain-demons dwell in my head, behind my eyes. They dance and make the letters move strangely."

"Pursue your course and they will go away."

Came 'Ana, who had been a breeding-mother before the Revelation, and who was now a happily wedded mate. Her eyes were red with weeping and she could not speak. Came Izbel, strongest of the

workers, who with her bare hands had crushed the life from a mountain cat. But there was no strength in her hands now; they trembled as they touched Meg's doeskin boots. Also came Bil, eyes smoldering with hot demand.

"I would go with you to destroy Him, O Mother! It is my right. You cannot refuse me!"

"But I can and do, Bil."

Bil said rebelliously, "I am a man, strong, brave. I fought beside Daiv when the Japcans attacked. Ask him if I am not a great fighter."

"That I know without asking. But now we fight an invisible foe. Of all the clan, only Daiv and I can stand before Him. I am a Mother, inviolate; Daiv is sprung of an ancient, sacred tribe. The Kirki tribe, dwelling in the Land of the Escape.

"And now—farewell—"

But after they had left the town, Daiv repeated his objections, voiced many times in the hours preceding this.

"Go back, Golden One! This is a man's task. He is a potent enemy. Go back to the clan, wait for my return—"

Meg said, as if not hearing him, "See, the road lies before us. The broken creet road of the Ancient Ones."

IT WAS NOT a long journey. Only eight days' march, according to Meg's calculations. Scarce one fifth of the distance she had covered in her pilgrimage to the Place of the Gods in 'Kota territory a year before. And Daiv was an experienced traveler; alone, he had wandered through most of Tizathy from sun-parched 'Vadah to bleak Wyomin, from the lush jungles of Flarduh to the snow-crested mountains of Or-gen. Only this one path he had never trod, for all tribes in wide

Tizathy knew the law, that the east was forbidden.

So their journey was one filled with many wonders. It was difficult walking on the crumbled creet highways of the Ancient Ones, so Meg and Daiv walked in the fields but kept the white rock roadbed in sight. They passed through an abandoned village named Lextun or Veémi—the old name for it was confused in the records—and another known as Stantn. Only by the intersections of the roads could they tell these towns had once been. No hoams stood; grass ran riot where once had been fertile fields and pasture land.

On the morning of the fourth day they took a wrong turning, departed from the high plateau and climbed eastward into a blue and smoky ridge of mountain. Here they found a great marvel. High in the hills they came upon the broken walls of an ancient shrine, stone heaped upon stone, creet holding the blocks together. Spiked with god-metal on one wall was a green-molded square. Daiv, scraping this out of curiosity, uncovered oddly shaped letters in the language. The letters read:

URAY CAVER

—dmiss——One dol—

Beyond the shrine was a huge hole, leading deep into the bowels of the earth. Daiv would have gone into it, seeking a fuller explanation of this wonder, but cold dampness seeped from the vent, and the stir of his footsteps at the entrance roused a myriad of loathsome bats from below.

Meg understood, then, and dragged Daiv from the accursed spot hastily.

"This is the abode of one of their Evil Gods," she explained. "The bats are the souls of his worship-

ers. We must not tarry here."

And they fled, retracing their steps to the point at which they had made the wrong turning. But as they ran, Meg, to be on the safe side, made a brief, apologetic prayer to the dark god, Uray Caver.

OH, many were the wonders of that journey. Perhaps most wondrous of all—at least most unexpected of all—was their discovery of a clan living far to the north and east, near the end of their sixth day's travel.

It was Daiv who first noted signs of human habitation. They had crossed a narrow strip of land which, from a rusted place of god-metal Meg identified as part of the Maerlun territory, when Daiv suddenly halted his priestess with a silencing gesture.

"Golden One—a fire! A camp-fire!"

Meg looked, and a slow, shuddering apprehension ran through her veins. He was right in all save one thing. It could not be a *campfire*. Flame there was, and smoke. But in this forbidden territory smoke and flame could mean only—a charnel fire! For they were nearing His abode. Meg's nostrils sought the air delicately, half-afraid of the scent that might reach them.

Then, surprisingly, a happy sound was breaking from Daiv's throat, he was propelling her forward.

"They are men, Golden One! Men and women living in peace and harmony! The message of the Revelation must somehow have penetrated even these forbidden regions. Come!"

But a great disappointment awaited them. For when they met the strange clanspeople, they found themselves completely unable to converse with them. Only one thing

could Meg and Daiv learn. That they called their village Lankstr. Their tribal name they never revealed, though Daiv believed they called themselves Nikvars.

Meg was bitterly chagrined.

"If they could only speak the language, Daiv, they could tell us something about His city. They

live so near. But perhaps—" She looked doubtful. "Do you think maybe they worship—Him?"

Daiv shook his head.

"No, Golden One. These Nikvars speak a coarse, animal tongue, but I think they are a kindly folk. They have never received the Revelation, yet they live together in the



Meg intoned the ritual, but knew as she did so that the girl was dying, the chant failing.

fashion of the Ancient Ones. They plow the fields and raise livestock. They have sheltered and fed us, offered us fresh clothing. They cannot be His disciples. This is another of the many, many mysteries of Tizathy. One that we must some day solve."

And the next morning they left the camp of their odd hosts. They bore with them friendly gifts of salt and bacca, and a damp-pouch filled with a strange food, krowt. And with the quaint Nikvar farewell ringing in their ears, "Veedzain! O Veedzain!", they continued their way east into a territory avoided and feared for thrice five centuries.

Through Lebnum and Alntun, skirting a huge pile of masonry that Meg's marker-of-places indicated as "Lizbeth," up the salt-swept marshes of the Joysy flatlands. The salt air stung their inland nostrils strangely, and the flatland air oppressed Meg's mountain-bred lungs, but she forgot her physical discomforts in the marvels to be seen.

And then, on the morning of the tenth day, the red lance of the dawning sun shattered itself on a weird, light-reflecting dreadfulness a scant ten miles away. Something so strange, so unnatural, so absolutely incredible that it took Meg's breath away, and she could only clutch her mate's arm, gasping and pointing.

Hoams! But such hoams! Great, towering buildings that groped sharded fingers into the very bosom of the sky; hoams of god-metal and creet—red with water-hurt, true—but still intact. Some of them—Meg closed her eyes, then opened them again and found it was still so—must have been every bit of two hundred, three hundred feet in height!

And as from afar, she heard Daiv's

voice repeating the ancient description.

"'It lies where the great creet highways of the Ancient Ones meet with a river and an island at a vast, salt sea.' This is it, Meg! We have found it, my Golden One!"

The sun lifted higher, spilling its blood upon the forbidden village. There was ominous portent in that color, and for the first time fear crept from its secret lurking place in Meg's heart, ran on panicky feet to her brain. She faltered, "It . . . it is His city, Daiv. See, even the hoams are bleached skeletons from which He has stripped the flesh. Think you, we should go on?"

Daiv made a happy sound deep in his throat. Still it was not altogether a happy sound; there was anger in it, and courage, and defiance.

He said, "We go on, Golden One! My sword thirsts for His defeat!"

And swiftly, eagerly, he pressed onward. Thus came Meg and Daiv to the City of Death.

III.

IT WAS NOT so easy to effect entry into the city as Meg had expected. According to the old marker-of-places she had brought, the city was connected with the road by a tunl. Meg did not know what a tunl was, but clearly it had to be some sort of bridge or roadway.

There was nothing such here. The road ended abruptly at a great hole in the ground, similar to that which they had seen at the shrine of Uray Caver, except that this one was be-gemmed with glistening creet platters, and everywhere about it were queer oblongs of god-metal scored with cryptic runes. Prayers. "O Left Tur," said one; "O Parki," another.

Daiv glanced at Meg querulously, but she shook her head. These were—or appeared to be—in the language, but their meanings were lost in the mists of time. Lost, too, was the significance of that gigantic magic spell carven in solid stone at the mouth of the hole—

N. Y.—MCMXXVII—N. J.

Discouraged but undaunted, Meg and Daiv turned away from the hole. Fortunately this was uncivilized territory; the forest ran right down to the water's edge. It eased the task of hewing small trees, building a raft with which they might cross the river.

This they did in the daytime, working with muffled axes lest He hear, investigate, and thwart their plans to invade His domain.

At night they crept back into the forest to build a camp. While Daiv went out and caught game, a fat young wild pig, Meg baked fresh biscuit, boiled maters she found growing wild in a nearby glade, and brewed cawfee from their rapidly dwindling store of that fragrant bean.

The next day they worked again on their craft, and the day after that. And at last the job was completed, Daiv looked upon it and pronounced it good. So at dusk they pushed it into the water. And when the icy moon invaded the sky, forcing the tender sun to flee before its barrage of silver hoar-shakings, they set out for the opposite shore.

Without incident, they attained their goal. Behind a thicket, Daiv moored their rough craft; each committed the location to memory. Then they climbed the stone-rubbed bank, and stood at last in the City of Death, on the very portals of His lair.

NOR was there any doubt that this *was* Death's city. So far as the eye could see or the ear hear, there was no token of life. Harsh, jumbled blocks of creet scraped tender their soles, and there was no blade of grass to soften that moon-frozen severity. About and around and before them were countless aged hoams; their doors were gasping mouths, their shutterless windows like vast, blank eyes. They moved blindly forward, but no hare sprang, startled, from an unseen warren before them; no night bird broke the tomblike silence with a melancholy cry.

Only the faint breath of the wind, stirring through the great avenues of emptiness, whispered them caution in a strange, sad sigh.

A great unease weighted Meg's mind, and in the gloom her hand caught that of Daiv as they pressed ever forward into the heart of Death's citadel. High corridors abutted them on either side; by instinct, rather than sense, they pursued a northward path.

A thousand questions filled Meg's heart, but in this hallowed place she could not stir her lips to motion. But as she walked, she wondered, marveled, at the Ancient Ones who, it was told, had built and lived in this great stone village.

Perhaps the creet roadbed on which they walked had once been smooth, as the legends told, though Meg doubted it. Surely not even the ages could have so torn creet into jagged boulders, deep-pitted and sore. And why should the Ancient Ones have deliberately pock-marked their roads with holes, and at the bottom of these holes placed broken tubes of red god-metal?

Why, too, should the Ancient Ones have built hoams that, probing the sky, still were roofless, and

had in many places had their façades stripped away so that beneath the exterior showed little square cubicles, like rooms? Or why should the Ancient Ones have placed long laths of metal in the middle of their walk-avenues? Was it, Meg wondered, because they feared the demons? And had placed these bars to fend them off? All demons, Meg knew, feared god-metal, and would not cross it—

How long they trod those deserted thoroughfares Meg could not tell. Their path was generally northward, but it was a devious one because Daiv, great-eyed with wonder, was ever moved to explore some mysterious alley. Once, even, he braved destruction by creeping furtively into the entrance of a hoam consecrated to a god with a harsh-sounding foreign name, Mmchl, but from there Meg begged him to withdraw, lest He somehow divine their presence.

Yet it was Daiv's insatiable curiosity that found a good omen for them. Well within the depths of the city, he stumbled across the first patch of life they had found. It was a tiny square of green, surmounted on all sides by bleak desolation. Yet from its breast of high, rank jungle grass soared a dozen mighty trees, defiantly quick in the city of the dead. Meg dropped to her knees at this spot, kissed the earth and made a prayer to the familiar gods of her clan.

And she told Daiv, "Remember well this spot. It is a refuge, a sanctuary. Perhaps, then, even He is not invulnerable, if life persists in His fortress. Should we ever be parted, let us meet here."

She marked the spot on her marker-of-places. From a plaque of the Ancient Ones, she learned its name. It was called Madinsqua.

THROUGH the long night they trod the city streets, but when the first faint edge of gray lifted night's shadow in the east, Daiv strangled in his throat and made a tired mouth. Then Meg, suddenly aware of her own fatigue, remembered they must not meet their powerful foe in this state.

"We must rest, Daiv. We must be strong and alert when we come face to face with Him."

Daiv demanded, "But where, Golden One? You will not enter one of the hoams—"

"The hoams are taboo," said Meg piously, "but there are many temples. Behold, there lies a great one before us now. I am a Priestess and a Mother; all temples are refuge to me. We shall go there."

So they went into the mighty, colonnaded building. And it was, indeed, a temple. Through a long corridor they passed, down many steps, and at last into the towering vault of the sacristan.

Here, once, on the high niches about the walls, there had stood statues of the gods. Now most of these had been dislodged, their shards lay upon the cracked tiles beneath. Yet a few stood, and beneath centuries of dust and dirt the adventurers could still see the faded hues of ancient paint.

The floor of the sacristan was one, vast crater; a wall had crashed to earth and covered the confessionals of the priests. But above their heads was suspended an awesome object—a huge, round face around the rim of which appeared symbols familiar to Meg.

Daiv's eyes asked Meg for an answer.

"It is a holy sign," Meg told him. "Those are the numbers that make and take away. I had to learn them when I was a priestess. There is

great magic in them." And while Daiv stood silent and respectful, she chanted them as it was ordained, "One—two—three—"

The size of this temple wakened greater awe in Meg than anything she had heretofore seen. She knew, now, that it must have been a great and holy race that lived here before the Great Disaster, for thousands could stand in the sacristan alone without crowding; in addition, there were a dozen smaller halls and prayer rooms, many of which had once been provided with seats. The western wall of the cathedral was lined with barred gates; on these depended metal placards designating the various sects who were permitted to worship here. One such, more legible than the rest, bore the names of communities vaguely familiar to Meg.

THE SPORTSMAN—12:01

Newark
Philadelphia
Washington
Cincinnati

This was, of course, the ancient language, but Meg thought she could detect some similarity to names of present-day clans. She and Daiv had, themselves, come through a town called Noork on their way here, and the elder legends told of a Fideffia, the City of Endless Sleep, and a Sinnaty, where once had ruled a great people known as the Reds.

But it would have been sacrilege to sleep in these hallowed halls. At Meg's advice they sought refuge in one of the smaller rooms flanking the corridor through which they had entered the temple. There were many of these, and one was admirably adapted to their purpose; it

was the tiny prayer room of a forgotten god, Ited-Ciga. There was, in this room, a miraculously undamaged dais on which they could sleep.

"They had eaten, but had not slaked their thirst in many hours. Daiv was overjoyed to find a black drink-fountain set into one of the walls, complete with a mouthpiece and a curiously shaped cup, but try as he might, he could not force the spring to flow.

It, too, was magic; at its base was a dial of god-metal marked with the numbers and letters of the language. Meg made an incantation over it, and when the water refused to come, Daiv, impatient, beat upon the mouth part. Rotten wood split from the wall, the entire fountain broke from its foundation and tumbled to the door, disclosing a nest of inexplicable wires and metal fragments.

As it fell, from somewhere within it tumbled many circles of stained metal, large and small. Meg, seeing one of these, prayed the gods to forgive Daiv's impatience.

"The fountain would not flow," she explained, "because you did not make the fitting sacrifice. See? These are the tributes of the Ancient Ones. White pieces, carved with the faces of the gods: the Red god, the buffalo god"—her voice deepened with awe—"even great Taamuz, himself! I remember his face from the Place of the Gods.

"Aie, Daiv, but they were a humble and god-fearing race, the Ancient Ones!"

And there, in the massive pantheon of Ylvania Stat, they slept—

MEG STARTED from slumber suddenly, some inner awareness rousing her to a sense of indefinable malease. The sun was high in the

heavens, the night-damp had passed. But as she sat up, her keen ears caught again the sound that had awakened her, and fear clutched her kidneys.

Daiv, too, had been awakened by the sound. Beside her he sat upright, motioning her to silence. His lips made voiceless whisper.

"Footsteps!"

Meg answered, fearfully, "His footsteps?"

Daiv slipped to the doorway, disappeared. Minutes passed, and continued to pass until Meg, no longer able to await his return, followed him. He was crouched behind the doorway of the temple, staring down the avenue up which they had marched the preceding night. He felt her breath on his shoulder, pointed silently.

It was not Him. But it was someone almost as dangerous. A little band of His worshipers—all men. It was obvious that they were His followers, for in addition to the usual breechclout and sandals worn by all clansmen, these wore a gruesome decoration—necklaces of human bone! Each of them—and there must have been six or seven—carried as a weapon His traditional arm, a razor-edged sword, curved in the shape of a scythe!

They had halted beside the entrance to a hooded cavern, similar to dozens such which Meg and Daiv had passed the night before, but had not dared investigate. Now two of them ducked suddenly into the cavernous depths. After a brief period of time, two sounds split the air simultaneously. The triumphant cry of masculine voices, and the high, shrill scream of a woman!

And from the cave mouth, their lips drawn back from their teeth in evil happy looks, emerged the raiders. Behind them they dragged the

fighting, clawing figure of a woman.

Meg gasped, her thoughts churned into confusion by a dozen conflicting emotions. Amazement that in this City of Death should be found living humans. The ghouls, His followers, she could understand. But not the fact that this woman seemed as normal as her own Jinnians.

Second, a frightful anger that anyone, *anything*, should thus dare lay forceful hands upon a woman. Meg was of the emancipated younger generation; she had accepted the new principle that men were women's equals. But, still—

Her desire to do something labored with her fright. But before either could gain control of her muscles, action quickened the tableau. There came loud cries from below the ground, the sound of clanking harness, the surge of racing feet. And from the cavern's gorge charged the warriors of this stranger clan, full-panoplied, enraged, to the rescue of their comrade.

The invaders were ready for them. One had taken a position at each side of the entrance, another had leaped to its metallic roof. As the first warrior burst from the cave mouth, three scythes swung as one. Blood spurted. A headless torso lurched forward a shambling pace, pitched to earth, lay still. Again the scythes lifted.

Daiv could stand no more. A rage-choked roar broke from his lips, his swift motion upset Meg. And on feet that flew, sword drawn, clenched in his right fist, bellowing his wrath, he charged forward into the unequal fray!

IV.

NOR was Meg far behind him. She was a Priestess and a Mother, but in her veins, as in the veins of

all Jinnians, flowed over the quicksilver battle lust. Her cry was as loud as his, her charge as swift. Like twin lances of vengeance they bore down upon the invaders from the rear.

The minions of Death spun, startled. For an instant stark incredulity stunned them to quiescence; that immobility cost their leader his life. For even as his scattered wits reassembled, his lips framed commands to his followers, Daiv was upon him.

It was no hooked and awkward scythe Daiv wielded; it was a long sword, keen and true. Its gleaming blade flashed in the sunlight, struck at the leader's breast like the fang of a water viper—and when it met sunlight again, its gleam was crimson.

Now Daiv's sword parried an enemy hook; his foeman, weaponless and mad with fright, screamed aloud and tried to stave off the dripping edge of doom. His bare hands gripped Daiv's blade in blind, inchoate defense. The edge bit deep, grotesque-angled fingers fell to the ground like bloodworms crawling, bright ribbons of blood spurted from severed palms.

All this in the single beat of a pulse. Then Meg, too, was upon the invaders; her sword thirsted and drank beside that of her mate. And the battle was over almost before it began. Even as the vanguard of clanswomen, taking heart at this unexpected relief, came surging from the cave mouth, a half dozen bodies lay motionless on the cret, their blood enscarleting its drab. But one remained, and he, eyes wide, mouth slack in awestruck fear, turned and fled down the long avenue on feet lent wings by terror.

Then rose the woman whom the invaders had attempted to linber;

in her eyes was a vast respect. She stared first at Daiv, uncertain, unbelieving. Then she turned to Meg and made low obeisance.

"Greeting and thanks, O Woman from Nowhere! Emma, Gard of the Be-Empty, pledges now her life and hand, which are truly yours."

She knelt to kiss Meg's hand. Then deepened her surprise, for she gasped:

"But . . . but you are a Mother! You wear the Mother's ring!"

Meg said quietly, "Yes, my daughter. I am Meg, the Mother of the Jinnia Clan, newly come to the City of Death."

"Jinnia Clan!" It was the foremost of the rescuers who spoke now; by her trappings Meg knew her to be a lootent of her tribe. "What is this Jinnia Clan, O Mother? Whence come you, and how—"

Meg said, "Peace, woman! It is not fitting that a clanswoman should make queries of a Mother. But lead me to your Mother. With her I would speak."

The lootent flushed. Apologetically, "Forgive me, Mother. Swiftly shall I lead you to our Mother, Alis. But what—" She glanced curiously at Daiv who, the battle over, was now methodically wiping his stained blade on the hem of his clout. "But what shall I do with this man-thing? It is surely not a breeding-male; it fights and acts like a Wild One."

Meg smiled.

"He is not a man-thing, my child. He is a man—a true man. Take me to your Mother, and to her I will explain this mystery."

THUS it was that, shortly after, Meg and Daiv spoke with Alis in her private chamber deep in the bowels of the earth beneath the City of Death. There was great wonder in the Mother's eyes and

voice, but there was respect, too, and understanding in the ear she lent Meg's words.

Meg told her the tale of the Revelation. Of how she, when yet Meg the Priestess, had made pilgrimage, as was the custom of her clan, to the far-off Place of the Gods.

"Through blue-swarded Tucky and Zurrie I traveled, O Alis; many days I walked through the flat fields of Braska territory. In this journey was I accompanied by Daiv, then a stranger, now my mate, who had rescued me from a Wild One. And at last I reached the desolate grottoes of distant 'Kota, and there, with my own eyes, looked upon the carven stone faces of the gods of the Ancient Ones. Grim Jarg, the sad-eyed Ibrim, ringleted Taamuz, and far-seeing Tedhi, He who laughs—"

Alis made a holy sign.

"You speak a mighty wonder, O Meg. These are gods of our clan, too, though none made your pilgrimage. But we worship still another god, whose temple lies not far away. The mighty god, Granstoom. But—this secret you learned?"

"Hearken well, Alis, and believe," said Meg, "for I tell you truth. The gods of the Ancient Ones—were *men!*"

"Men!" Alis half rose from her seat. Her hands trembled. "But surely, Meg, you are mistaken—"

"No. The mistake occurred centuries ago, Mother of another clan. Daiv, who comes from the sacred Land of the Escape, has taught me the story.

"Long, long ago, all Tizathy was ruled by the great Ancient Ones. Mighty were they, and skilled in forgotten magics. They could run on the ground with the speed of the woodland doe; great, wheeled horses they built for this purpose. They could fly in the air on birds made

of god-metal. Their hoams probed the clouds, they never labored except on the play-field; their life was one of gay amusement, spent in chanting into boxes that carried their voices everywhere and looking at pictures-that-ran.

"But in another world across the salt water from Tizathy were still other men and women. Amongst them were evil ones, restless, impatient, fretful, greedy. These, in an attempt to rule the world, created a great war. We cannot conceive the war of the Ancient Ones. They brought all their magics into play.

"The men met on gigantic battlefields, killed each other with smoke and flame and acid and smell-winds. And at hoam, the women—in secret magic-chambers called labteries—made for them sticks-that-spit-fire and great eggs that hatched death."

"It is hard to believe, O Meg," breathed Alis, "but I do believe. I have read certain cryptic records of the Ancient Ones—but go on."

"Came at last the day," continued Meg, "when Tizathy itself entered this war. But when their mates and children had gone to Him by the scores of scores of scores, the women rebelled. They banded together, exiled all men forevermore, set up the matriarchal form of government, keeping only a few weak and infant males as breeders.

"When they could no longer get the fire-eggs or the spit-sticks, the men came back to Tizathy. Then ensued years of another great war between the sexes—but in the end, the women were triumphant.

"The rest you know. The men, disorganized, became Wild Ones, roving the jungles in search of food, managing to recreate themselves with what few clanswomen they liberated from time to time. Our civilization persisted, but many of the

old legends and most of the old learning was gone. We finally came to believe that *never* had the men ruled; that it was right and proper for women to rule; that the very gods were women.

"But this," said Meg stanchly, "is not so. For I have brought back from the Place of the Gods the Revelation. Now I spread the word. It is the duty of all clans to bring the Wild Ones out of the forests, make them their mates, so our people may one day reclaim our deserved heritage."

THERE was a long silence.

Then asked Alis, "I must think deeply on this, O Meg. But you spoke of the Land of the Escape. What is that?"

"It is the hot lands to the south. Daiv comes from there. It is a sacred place, for from there—from the heart of Zoni—long ago a Wise One named Renn foresaw the end of the civilization of the Ancient Ones.

"In the bowels of a monstrous bird, he and a chosen few escaped Earth itself, flying to the evening star. They have never been heard of since. But some day they will come back. We must prepare for their coming; such is the law."

Alis nodded somberly.

"I hear and understand, O Mother to whom the truth has been revealed. But . . . but I fear that never can we make peace with the Wild Ones of Loalnyawk. You have seen them, fought them. You know they are vicious and untamed."

Meg had been so engrossed in spreading the news of the Revelation, she had almost forgotten her true mission. Now it flooded back upon her like an ominous pall. And she nodded.

"Loalnyawk? Is that what you call the City of Him? Perhaps you

are right, Mother Alis. It would be impossible to mate with the children who worship Death as a master."

"Death?" Alis' head lifted sharply. "Death, Meg? I do not understand. They do not worship Death, but Death's mistress. They worship the grim and savage warrior goddess, the fearful goddess, Salibbidy."

"Her," said Meg dubiously, "I never heard of. But you speak words unhappy to my ear, O Alis. A long way have Daiv and I come to do battle with Him who nips the fairest buds of our clan. Now you tell me this is not His city—

"Aie, but you must be mistaken! Of a certainty it is His city. His tumbled desolation reigns everywhere."

Alis made a thought-mouth.

"You force me to wonder, Meg. Perhaps He is here. Of a truth, He takes many of us to whom He has no right. A moon ago He claimed the Priestess Kait who was young, happy, in wondrous good health.

"A sweet and holy girl, inspired by the gods. Only the day before had she been in commune with them; her tender young body atremble with ecstasy, her eyes rapt, her lips wet with the froth of their knowledge. Oft did she experience these sacred spells, and I had planned a great future for her. But—" Alis sighed and shook her head. "He came and took her even as she communed with the gods. It was a foul deed and brutal."

Daiv said grimly, "And by that we know that this *is* His city, indeed. For where else would He be so powerful and so daring?"

"Yes," said Alis, "the more I think on it, the more I believe you are right. Above ground must be His domains. We have not guessed

the truth, because for countless ages we have dwelt in the tiled corridors of Be-Empty."

"Tell us more," demanded Daiv, He-who-would-learn, "about the halls of Be-Empty. Why are they called that?"

"I know not, Daiv. It is the ancient name, yet the corridors are *not* empty. They are a vast network of underground passages, built by the Ancient Ones for mystic rites we no longer know. Great wonders are here, as I will later show you.

"These corridors are tiled with shining creet, and upon their roadbeds lie parallels of god-metal, red and worn. Aie, and there is a greater wonder still! From place to place I can show you ancient hoams, with doors and many windows and seats. These hoams were tied together with rods of god-metal, and whensoever the Ancient Ones would move, they had but to push their hoams along the parallels to a new location!

"Once we were not all one clan, but many. There were the Women of the In-Deeps, and there were the Aiyartees. But we were the strongest, and we welded all the livers-underground into one strong clan.

"We have many villages, wide creet plateaus built on the sunken roadways of the Ancient Ones. Each village has its entrance to the city above, forbidden Loalnyawk, but we use these only when urgency presses. For there are openings aplenty to the sun, there are streams of fresh water. Safe from the Wild Ones above, we raise our vegetables and a few meat-animals.

"Yet," continued Alis proudly, "there is no spot in all Loalnyawk to which we have not ready access should it be necessary to get there. Above ground there are many shrines like that of great Granstoom and

the fallen tower of Arciay. There is also the Citadel of Clumby to the north, and not far from where we now sit could I show you the Temple of Shoobut, where each year the Ancient Ones sacrificed a thousand virgins to their gods. There is the forbidden altar of Slukes—"

The Mother's mouth stayed in midsentence. Her eyes widened.

"Slukes!" she repeated awfully.

"Well?" Meg and Daiv leaned forward, intent.

"That must be it! In the ancient legends it tells that there was where He visited most often. That must be His present lair and hiding place!"

"Then there," proclaimed Daiv, "we must go!"

V.

MEG STUMBLED on a sharp stone, lurched against Daiv and steadied herself on his reassuring presence. Her eyes had become somewhat accustomed to the endless gloom, now, though they ached and burned with the concentration of peering into murky blackness, then having the blackness lighted from time to time, unexpectedly, by a shaft of golden sunlight flooding into the corridors of Be-Empty from the city above.

Her feet, though, thought Meg disconsolately, would never accustom themselves to this jagged, uneven roadbed. She had been told to walk between the parallels of god-metal, for that was the best, driest, safest walking. Maybe it was. But it was treacherous. For there were creet crossies on which her doeskin-clad feet bruised themselves, and ever and again there were rocks and boulders lying unsuspectedly in the road.

How far they had come, Meg had no way of guessing. It must have been many miles. They had passed, easily, twoscore tiny, raised vil-

lages of the Be-Empty Clan. At each of these they had tarried a moment while the warrior lootent, under whose guidance Alis had dispatched a small foray party at Meg's disposal, made known herself and her mission.

Meg panted, hating the heavy, stuffy air her lungs labored to suck in, fuming at the slowness of their march, eager only to reach their destination. It did not improve her temper to slip on a round rock, submerge one foot to the ankle in a stream of sluggish water. Of the lootent she demanded, "How much farther, my daughter?"

"We are nearly there, O Mother."

Daiv grunted. It was a think-grunt. Meg tried to see him, but in the darkness his face was a white blur.

"Yes, Daiv?"

"There's more to this than meets the eye, Golden One. These passageways are not the purposeless corridors Alis thought. I was wondering—"

"Yes?"

"Well—it sounds ridiculous. But do you remember those hoams on wheels? The ones with the windows? Suppose the Ancient Ones had the magic power to make them run like horses along these parallels?"

Meg shrugged.

"But why should they, Daiv? When it would have been so much simpler to make them run on top of the earth? These grottoes were built for some sacred purpose, my mate."

"I suppose you're right," acknowledged Daiv. But he didn't sound convinced. Sometimes Meg grew a little impatient with Daiv. He was, like all men, such a hard creature to convince. He couldn't reason things out in the cold, clear logical

fashion of a woman; he kept insisting that his "masculine intuition" told him otherwise.

Much time had passed. They had broken fast at the hoam of the Mother, and had eaten a midday meal here in the depths of Be-Empty. The last opening under which they had passed revealed that the sun was being swallowed by the westward clouds; for twelve hours it would pass through the belly of the sky, then miraculously, tomorrow, a new sun would be reborn in the east.

So it was almost night when the lootent halted at a tiny, deserted creet platform, turned and touched her forehead to Meg.

"This is it, O Mother."

"This?" Meg glanced about. There was nothing unusual about this location.

"Above this spot lies the forbidden altar of Slukes. I . . . I fear—" The lootent's eyes were troubled. "I fear I dare take you no farther, O Mother. You and your man are inviolate; I and my warriors are but humble women. That which lies above would be destruction for us to gaze upon."

Meg nodded complacently.

"So be it, my daughter. We shall leave you now, go to dare Him in His den."

The lootent said, "We shall wait, Mother—"

"Wait not, my child. Return to your village."

"Very well, Mother. Your blessing ere we leave?"

Meg gave it, touching her fingers to the lips and the forehead of the kneeling lootent, chanting the hallowed phrases of the Ancient Ones' blessing. "'My country, Tizathy; sweet land of liberty—'" Then there were stifled footsteps in the

gloom and Meg and Daiv were alone.

Only briefly did Meg consider the possibility of entering His temple at this time—and then she abandoned the project. It would be suicidal. Everyone knew He was strongest at night. His powers waned with the waxing sun. So she and Daiv built a tiny fire in the quarters of a long-vanished warrior named Private Keepout, and there huddled together through the long, dank, fearsome night.

THEY AWAKENED with the sun, broke their fast with unleavened biscuit given them by Alis. Daiv, who was expert at such matters, then examined with painstaking care their swords and hurling-leathers. He approved these. And as if feeling within his own breast an echo of the dread that fluttered in Meg's, he pressed his lips hard against hers in a touching-of-mouths. Then, hand in hand, they climbed a long flight of steps, into the sunlight, forward to the threshold of His stronghold.

It was a majestic building.

How many footsteps long and wide it was, Meg could not even conceive. It reached half as far as the eye would reach in one direction; in the other, it branched into many smaller buildings. And it was pine-high. An awe-inspiring sight.

Daiv, standing beside her, stared dubiously at the main portal. He said, "This may not be the place, Meg. Alis said the name of the temple was Slukes, didn't she? This is called—" He glanced again at the weather-worn carving atop the doorway. "This is called Stlukes."

Again, as oft before, Meg felt swift pride at her mate's intelligence. Daiv was a living proof that men were the equals—or almost, anyway

—of women. It had taken her many, many summers to learn the art of reading the speech-without-words; he had assimilated the knowledge from her in a tenth the time.

"It is the right place, Daiv," she whispered. "The Ancient Ones were often careless in putting down the language. But can you not *feel* that this is His abode?"

For she could. Those grim, gray walls breathed an atmosphere of death and decay. The bleached walls were like the picked bones of a skeleton lying in some forgotten field. And the great, gaping vents of windows, the sagging lintels, the way one portion of roof had fallen in—there were marks of His dominance. Meg did not even need the omen of the red-throated carrion buzzard wheeling lazily ever and ever about the horrid altar of Slukes.

"Come," she said, "let us enter."

Daiv held back. There were anxious lines about his eyes. "He does not speak, Meg?"

"No one has ever heard His voice, Daiv. Why?"

"I thought I heard voices. But I must have made a mistake. Well"—he shrugged—"it does not matter."

Thus they entered the secret hiding place of Death.

ALL the great courts lay silent.

What Meg had expected to see, she did not rightly know. Perhaps a charnel house of human bodies, dismembered and gory, raw with frightful cicatrices, oozing filth from sick and rotting sores. Or perhaps that even more dreadful thing, chambers in which were imprisoned the mournful souls of the dead. Against flesh and blood, no matter how frightful, Meg knew her courage would hold. But she did not know

whether her nerves would stand before the dim restlessness of the gray unalive.

She found neither of these in the temple of Slukes. She found only floors and walls and ceilings which had once been shining white, but were now gray with ages of floating dust. She found her footsteps muffled beneath her upon a mat of substance, now crumbling, but still resilient to the soles. She found silence, silence, silence that beat upon her eardrums until it was a tangible, terrifying sound.

And finding that, she took comfort in Daiv's keen, questing, ever-forward search for Him.

Down a long hallway they strode on catlike feet; a chamber they passed in which heaped dust outlined the seats and stools of Ancient Ones. Past a god-metal counter they walked, and saw within its confines not one by a half-dozen water fountains like that Daiv had wrenched from the wall of Ited-Ciga's shrine.

Above their heads, from time to time, they glimpsed strange, magic pendants of green and red god-metal; beneath one of these was a greater marvel still—a pear-shaped ball with wire seeds coiled within. Transparent was the skin of this fruit, and slippery to the touch. Daiv tried to split it, hungering for a taste of its newness, but it exploded in his hands with a fearful *pop!*—and there was nothing but its stem and seeds!

The fruit itself had vanished, but the skin, as if angered, had bit Daiv's palm until the blood flowed.

Meg blessed the wound, and begged forgiveness in a swift prayer to the gods of the harvest at having destroyed the magic pear.

And they went on.

Either side of the corridor through

which they moved was lined with doorways. Into one of these they looked, believing He might have hid there, but the rooms were vacant except for strange, four-legged god-metal objects humped in the middle, on which reposed parasitic coils and twists of metal twined inextricably together. Dust lay over all, and in one room more carefully shuttered, barred and sealed than the others, they saw tatters of something like homespun covering the coils. But when Meg attempted to touch this, the wind from her motion swept the gossamer cloth into nothingness.

Aie, but it was a mighty and mysterious place, this altar of Slukes, where dwelt Him who steals away the breath! There were rooms in which reposed great urns and pans of god-metal; these rooms held, also, huge metal boxes with handles on the front, and their platters were crusted with flaked and ancient grease. Meg shuddered. "Here," she whispered to Daiv, "He burnt the flesh of them He took." In the same room was a massive white box with a door. Daiv opened this, and they saw within neat metal racks. "And here," whispered Meg, "must He have stored the dwindled souls until again He hungered. But now He does not use this closet. I wonder why?"

AND they went on.

Until at last, having climbed many flights of steps, Meg and Daiv came at last to the chamber they had been seeking. It lay on the story nearest the roof. Oh, but He was a methodical destroyer. The compartments in which he imprisoned His victims were all carefully labeled in the language. Contagious Ward, Infants' Ward, Maternity Ward—all these Meg saw and read, and shuddered to recognize. And



"We can reach the place through the corridors of Be-Empty—"

this, His holy of holies, was symbolized as His workroom by the sign, Operating Room.

Once it had been a high, lofty chamber; now it wore the roof of infinity, for some antique cataclysm had opened it to the skies. Crumbled plaster and shards of brick heaped the floor.

But in its center, beneath a gigantic weapon defying description or understanding, was His bed. It could be nothing else, for even now, upon it, lay the lately-slain body of

a woman. Her face was a mask of frozen agony; His touch had drawn taut her throat muscles and arched her back in the final paroxysm. Her lifeless fingers gripped the sides of the bed in unrelaxing fervor.

And the room bore, amidst its clutter and confusion, unmistakable signs of recent habitation! The trappings of the newly slaughtered woman had been tossed carelessly into a corner, along with countless others. Feet, many feet, had beaten firm the rubble on the floor; in one

corner, not too long since, had been a fire. And the blood that had gushed from the dead woman when her heart had been roughly hewn from her bosom still clotted the floor!

Meg cried, a little cry of terror and dismay.

"He is here, Daiv!"

Then all things happened at once. Her cry wakened ominous echoes in chambers adjacent to this. Daiv's arm was about her, pulling her away. There came the patter of footsteps, voices lifted, and the door at the farther end of the room jerked open.

And Daiv cried, "Not only He, but His ghouls! Behind me, Golden One!"

Then the deluge. A horde of Wild Ones of the same tribe as those whom they had fought two days before, charged into the room.

VI.

THERE WAS no taint of cowardice in the heart of Meg the Mother. Had she any fault, it was that of excess bravery. Oft before had she proven this, to her own peril. This time, Daiv's speed left her no opportunity to become a courageous sacrifice to His minions.

His quick eye measured the number of their adversaries, his battle-trained judgment worked instinctively. For an instant he hesitated, just long enough to strike down with flailing long sword the foremost of their attackers. Then he swept Meg backward with his mighty right arm, thrust her irresistibly toward a doorway at the other end of the room.

"Flee, Golden One!"

Meg had no choice. For Daiv was on her heels; his body a bulwark of defense against hers and a battering-ram of force. They reached the

door, crashed it shut in the face of the charging ghouls. Daiv braced himself against it stanchly, his eyes sweeping the small chamber in which they found themselves.

"That!" he commanded. "And that other, Golden One. And that!"

His nods designated objects of furniture within the room; heavy, solid braces of god-metal. Meg bent to the task, and before Daiv's strength could fail under the now clamorous pounding on the doorway, the portal was braced and secured with the massive frames that once had been chairs, a desk, a cabinet.

Now there was time for breathing and inspection of their refuge. And Meg's soul sickened, seeing the trap into which they had let themselves.

"But, Daiv—there is no way out! There is but one door to the room. The one through which we entered!"

Daiv said, "There is a window—" and strode to it. She saw the swift, dazed shock that creased his brows, moved to his side and peered from the window.

It was an eagle's aerie in which they stood! Down, down, down, far feet below, was the sun-lit courtyard of this building. But the wall was sheer and smooth as the jowls of lean youth; no crawling insect could have dared that descent.

Daiv looked at her somberly, and his arm crept about her.

"Since we cannot flee, we must outwait them, Golden One. If we cannot get out, they, at least, cannot get in."

He did not mention the thought uppermost in his mind and in hers. That their food pouches lay far below them, in the murky grotto of Be-Empty; that they had no water. And that the shortest of sieges would render them impotent before their adversaries.

For he was Daiv, known as He-

who-would-learn. And even in this moment when things looked darkest, he was roused to curiosity by the chamber in which they were immured.

It was a small and cluttered room. More dusty than most, and that was odd, because it was not open to the dust-laden air.

But Daiv, questing, discovered the reason for this. The floor was gray not with rock dust, but with the fragments of things which—which—

"This is a great mystery, Meg. What are, or were, these things?"

MEG, too, had been staring about her. A faint suspicion was growing in her mind. She remembered a word she had heard but once in her life, and that when she was but a young girl, neophyte priestess under the former Mother.

"Shelves," she whispered. "Many long shelves, all of water-hurt god-metal. Desks. And crumbled fragments of parchment.

"Daiv, long ago the Ancient Ones had houses, rooms, in which they kept, pressed flat between cloth and boards, parchment marked with the speech-without-words. These they called—" She cudged her brain for the elusive word. "These they called 'lyberries.' The flat scrolls were known as 'books.' This room must have been the lyberry of Slukes."

"And in these books," said Daiv in hallowed tones, "they kept their records?"

"Aie, more than that. In them they kept all their secret knowledge. The story of their spells and magic, and of their foretelling-of-dreams."

Daiv groaned in pain as an unhappy-imp prodded his heart.

"We stand at the heart of their mysteries, but He who withers all has ripped their parchment into

motes! Meg, it is a sad and bitter thing."

He saw, now, that she spoke truth. For he pawed through the piles of rotted debris; in one spot he found a frayed leather oblong from which, as he lifted it, granules of charred black sifted. Once, again, he found a single bit of parchment marked with the language, but it fell into ten million bits at the touch of his fingers.

"There have been fire and flame in this room," Meg said. "Water-hurt, and the winds of the ages. That is why no books remain. It must have happened in the wars, when the fire-eggs fell upon the building. Daiv! What are you doing?"

For Daiv, still pawing the ruins, had uncovered a large, metal cabinet deep-set in the wall. This alone seemed to have escaped, unhurt, whatever holocaust had destroyed all else. With a swift grunt of satisfaction, he was tearing at the handle of this cabinet.

"Don't open it, Daiv! It is a forbidden thing! It may be a trick of the Ancient Ones. Of Him—"

But Meg's warning was futile. For Daiv's fumbling fingers had solved the secret of the antique lock; creaking in protest, the door swung open to reveal, in an unlighted chamber from which a faint, musty breath of wind stirred—*books!*

Books! Books as Meg had described them. Books as Meg had learned of them from the lips of the elder Mother. Books, still encased in jackets of cloth and leather, unhurt through thrice five centuries of time, preserved, by a whim of the gods, in a locked and airless cabinet!

And again it became Meg's lot to save Daiv's life and soul, for he, manlike, impatient, paused not to

placate the gods, but groped instantly for the nearest of the forbidden volumes.

Fervent were the prayers Meg made then, and swiftly, that the gods destroy him not for his eagerness. And she was rewarded graciously, for Daiv did not fall, mortally stricken, as he knelt there muttering over his find.

"Behold, Meg—the secrets of the Ancient Ones! Ah, Golden One, hurry—read to me! This speech-without-words is too mighty for my powers; only the knowledge of a Mother can tell its meaning. But, lo! here are drawings! Look, Golden One! Here is a man like me! But, behold, this is a mystery! The flesh has been stripped from his body, disclosing hordes of tiny red worms covering his carcass—but he still stands erect!

"And, see, Meg—here is a woman with white sheets of bandage about her head. What means this? And behold this man's head! It lays open from front to back, but Meg, there is no village of tiny pain-imps, and like-imps and hate-imps dwelling within! Only red worms and blue, and inside his nostrils a sponge—"

Meg took the book with trembling hands. It was as Daiv said. Here were drawings without number of men and women who, their bodies dismembered horribly, still smiled and stood erect. Little arrows pierced them, and at the end of the arrows were feathers of the language, saying magic words. *Serratus magnus—Poupart's ligament—transplyoric plane.*

And the name of the book was "Fundamental Anatomy."

IN THEIR MOMENT of wild excitement, both Meg and Daiv had quite forgotten the danger of their situation. Now they were rudely re-

awakened to a memory of that danger. For the sounds outside the door of the lyberry, which had never quite ceased, now sharpened in tone. There came the sound of a voice raised in command, cries of labor redoubled, and with an echoing crash, something struck the door of their refuge!

The door trembled; the braces gave a fraction of an inch. And again the crash, the creak, the strain.

"A ram! Daiv, they are forcing the door!"

Daiv the dreamer became, swiftly, Daiv the man of action. With a single bound he was on his feet, his sword in hand. His brows were anxious.

"Take you the right side of the door, Golden One; I will guard the other. When these ghouls burst in upon us, we shall split them like pea pods—"

But a great idea had been born to Meg.

Her face glowing with a sudden happy look, she spun to face her mate.

"No, Daiv. Open the door!"

"What? Golden One, has fear softened your brain?"

"Not my brain nor my heart, beloved! But do as I say! Look you! I am a Mother and a Priestess, is it not so?"

"Yes, but—"

"And I have just discovered a mighty secret. The secret of the knowledge of the Ancient Ones."

"Still—" said Daiv.

"Would not even the underlings of Him," cried Meg, "pay greatly for this knowledge? Open the door for them, my mate! We will parley with them or with Death, Himself, for an exchange. Our lives in payment for the sharing of this secret!" Daiv might have withstood her

logic, but he could not refuse the eager demand of her eyes. Like a man bedazed, he moved to the door, started, scraping the bulwark away even as the horde outside continued their assault.

When he had almost completed, the door shook before imminent collapse—

“Stand you out of sight, Daiv. I would meet them face to face.”

And she took her post squarely before the door. In the hollow of her left arm she cradled the Book of Secrets. On her face was the smile of triumph, and a look of exalted glory. The door trembled; this time it split away from its hinges. Once more, now! Came the final crash, and—

“Hold!” cried Meg, the Priestess.

Through the oblong of the door, faces frightful with fury and blood lust, tumbled the ghouls of Death. Their hook-shaped scythes swung ready in their hands; a scream of triumph hovered on their lips. Hovered there—then trembled—then died!

And of a sudden, a miracle occurred. For the flame died from their eyes, their sword-arms fell, and as one man the attackers tumbled to their knees, groveling before Meg. A low muttering arose, was carried from man to man as the breath of the night wind is passed through the forest by the sad and whispering pines.

It was a murmur, then a cry, of fear and adoration.

“Mercy, O Goddess! Slay not your children, O Everlasting. O Goddess—great Goddess Salibbidy!”

VII.

Not in her most hopeful moment had Meg expected so sudden and complete a victory as this.

For her plan she had entertained great hopes, true, but she had wagered her life and Daiv's on the balance of an exchange. But here, suddenly, inexplicably, was utter capitulation. Surrender so complete that the leader of His warriors dared not even lift his eyes to meet hers as he slobbered his worship at her feet.

She glanced swiftly at Daiv, but for once Daiv had no knowledge in his eyes; they were as blank and questioning as her own.

Still, Meg was a Priestess and a Mother. She was a woman, too, and an opportunist. And instinct governed her actions.

She stepped to the leader's side, touched his brow with cool fingers.

“Rise, O Man! Your Goddess gives you grace.”

The ghoul rose, shaken and fearful. His voice was the winnowed chaff of hope.

“Be merciful unto us, O Goddess. We did not know—we did not dream—we dared not hope for a Visitation.”

Meg chose her words carefully, delivered them as a Mother intones a sacred chant, in a tone calculated to inspire dreadful awe in the hearts of her listeners.

“You have sinned mightily, O Man! You have laid siege to the holy refuge of the Goddess. You have linberred and slain women of the Be-Empty Clan, a grievous deed. You have forgotten the Faith, and have bowed down in worship before Him, the arch-enemy, Death—”

“No, O Goddess!” The contradiction was humble but sincere. “These other sins we confess, but not this last! Never have we worshiped Him! Never!”

“You dwell in His citadel.”

“His citadel!” There was horror in the Wild One's voice. “We did

not know it was His, O sweet Salib-bidy! We live many places as we journey through Loalnyawk. To-day we rested here because we had a sacrifice to make unto thee; a woman unfit for mating whom we linberred last night." His eyes pleaded with Meg's. "Was the sacrifice unpleasing to thee, gracious Salibbidy?"

"It was foul in my nostrils," said Meg sternly. "Her blood is a wound upon my heart. This is the law from this time henceforward! There shall be no more linberring or slaying of women. Instead, there shall be a new order. You shall go to the women and make peace. They will receive you with singing and soft hands, for unto them I have given the law.

"Together, you shall form a new city. They shall come out of the caverns of Be-Empty. You and they shall reclaim the hoams of the Ancient Ones. When again I visit the village of Loalnyawk, I shall expect to see men and women living together in peace and harmony as it was in the days of old.

"Do you understand the law?"

"Yes, mighty Goddess!" The cry rose from each man.

"You will obey it?"

"We will obey it, sweet Salib-bidy."

"Then go in peace, and sin no more."

The vanquished worshipers, intoning prayers of thanksgiving, crawled backward from the chamber. When the last had disappeared, and they were again alone, Meg turned to her mate. His strong arms soothed the belated trembling of her body.

"Fear not, Golden One," he whispered. "Today have you performed a miracle. In bloodless victory you have borne the Revelation

to the last outpost. To the accursed and forbidden city of the Ancient Ones. To the stronghold of Him."

"But they said they did not worship Him, Daiv! And they dared not lie, believing me their Goddess. If He does not rule them, if He reigns not here, then where is He, Daiv? And why did they accept me as their Goddess? Why?"

Daiv shook his head. This was unimportant now, he thought. It was sufficient that the enemy had been overcome. There were great things to do. He returned to his cabinet, and drew from it its precious store of books—

AFTERWARD, in the hoam of Alis, Meg learned part of the answer to her questions. When she had told Alis what had happened, and received the Mother's pledge to accept the Wild Ones' envoys in peace and good will, she told again of their sudden surrender.

"I sought but to parley with them, Mother Alis. At the door I stood, and thus I stood, waiting calmly—"

She struck the pose. Book cradled in her arm, the other arm lifted high above her head; chin lifted proudly.

And then Alis nodded. But in her eyes, too, came unexpectedly a worship-look, and she whispered brokenly, "Now I understand, O Goddess who chooses to call herself Meg, the Mother. From the beginning I felt your sanctity. I should have known then—"

She rose, led Meg to the surface above Be-Empty, now no longer forbidden territory to the women. Once there had been many and great buildings here, but ancient strife had stricken them as the whirlwind hews a path through solid woodland.

Far to the southward, where the green ocean waters met the creet shores of Loalnyawk there was a figure, dimly visible. But not so dimly visible that Meg and Daiv could not recognize it.

"There is thy image, sweet Salib-bidy," whispered the Mother, Alis. "Still it stands, as it did in the days of the Ancient Ones. Forever will it stand, and you remain the Goddess of broad Tizathy."

Meg cried petulantly, "Alis, do not call me by this name, Salibbidy! I am Meg, Mother of the Jinnia Clan. Like yourself, a woman—"

A smile of mysterious understanding touched Alis' lips.

"As you will—Mother Meg," she said.

But it was strange that her head should still be bowed—

Thus it was, that with the breaking of the new dawn over the creet walls of Loalnyawk, Meg and Daiv said farewell to these friends and converts, and turned their faces south and west to the remembered green hills of Jinnia.

Nor was this a sad parting. An envoy of the men had come this morning; long had he and the Mother parleyed, and an understanding had been reached. As ever, there were women who demurred, and women who disapproved—but Meg had seen a young maiden looking with gentle, speculative eyes upon the envoy. And a grim warrior had spoken with unusually gentle warmth to one of the envoy's guards—a bristle-jowled man of fighting mold.

These things would take care of themselves, thought Meg. The new order would come about, inevitably, because the men and women, both, would wish it so—

Then the last farewell had been

spoken, the final blessing given. And once more Meg and Daiv were striding the long highway to Jinnia.

Daiv was strangely silent. And strangely inattentive, too, for he was attempting a difficult task. Trying to march without watching the road before him. His eyes were in one of the many books he had brought with him; the others he wore like a huge hump on his back. He stumbled for the hundredth time, and while Meg helped him reset the pack on his shoulders she said, ruefully:

"There is but one thing I regret, Daiv! Much we accomplished, but not that one thing we came to do. We found not Him, nor destroyed Him, as we willed. And our problem is still great, for ever and again will He pluck the ripest from our harvest of living."

But Daiv shook his head.

"Not so, Golden One."

"No?"

"No, my Priestess. It has come to me that we have more than fulfilled our mission. For you see—"

Daiv looked at the sky and the trees and the clouds that floated above. He took a deep breath, and the air was sweet. Life flowed strongly and true in his veins, and the knowledge he was eking, laboriously, from the magical books was potent liquid in his brain.

"You see, Golden One, we were wrong. He does not, nor ever did, live in Loalnyawk. He has no hoam, for He is everywhere, waiting to claim those who violate His barriers."

Meg cried bitterly, "Then, Daiv, we are forever at His mercy! If He cannot be found and destroyed—"

"He cannot be slain, Meg—and that is well. Else the crippled, the sick, the mad, would live forever, in endless torment. But He can be



CASTAWAY

By Robert Moore Williams

Concerning a slight misunderstanding as to the point of origin of a certain castaway on a Caribbean island—

Illustrated by Jack Binder

"BUT look here," Parker protested into the phone. "You must be mixed up about your dates. I came out of that God-forsaken corner of hell—excuse the profanity, but the description is accurate—only

six days ago. I'm not due to relieve Johnson for eight more days, so don't be calling and telling me to report for duty. Huh? What's that?"

It was Hanson's secretary who had called him. Hanson was chief of the Gulf division of the lighthouse service. The girl had made a mistake, he thought.

The phone clicked and the girl's voice was gone. Hanson himself came on the wire, slightly apologetic, but with the "duty-is-duty" tone in his voice.

"Parker? Report to the dock immediately. The plane will be ready to take you back to your station by the time you arrive."

"The devil. I mean, sir—"

"I quite appreciate that you are off duty," Hanson said, "but this is an emergency."

Hanson's voice clicked into silence. Parker waited for an explanation. It didn't come.

"What kind of an emergency?" he questioned. "Has something happened to Johnson?"

"Yes. You are to report at once."

"All right, sir. But what happened to Johnson?"

"He fell down the lighthouse steps and broke an arm. We . . . ah . . . had a radio report from him last night. The plane went out for him this morning. I'm sorry to have to ask you to take your turn before your time is up, but we don't have a replacement, and the navy prefers that we have an observer constantly on duty at your post, as you know. You'll have to finish Johnson's turn and then do your own. By that time, I'll have a new man to take Johnson's place."

"That means I'll spend three weeks out there," Parker grumbled. Then he pointed out: "And if you send a new man, I'll have to stay

and break him in. In that time, Johnson should have recovered from his broken arm and be able to take his own turn again. I'm willing to take over his turn, since it's an emergency, but what do you want to send a new man for?"

"Parker, I don't have time to sit here and argue with you about this," Hanson snapped. "I know you're entitled to two full weeks off duty and I also know you've earned every second of it, but I've got to send somebody out to that lighthouse and the only person I can send is you. So cut out this arguing and get down here."

"All right, I'll be down right away," Parker answered.

The old man could be tough at times. This seemed to be one of those times. But it seemed to Parker that Hanson was being tougher than circumstances warranted.

Damn Johnson, he thought. Why did the long drink of water have to fall down the stairs and break his arm? And why had he, Parker, ever been big enough fool to enter the lighthouse service? Once it had seemed a rather romantic occupation, taking care of the big lamp, seeing that the lens was clean and the reflectors bright, flashing warnings to ships out in the Gulf. But now Parker had been in the service six years and a lot of the romance had vanished. Now he knew that nothing ever happened in a lighthouse.

That was what was wrong with the damned job. Nothing ever happened! You took care of the light, and fished, and made radio reports, and hunted for something to kill the time so the loneliness didn't get you. Two weeks on duty and two weeks off. For two weeks you didn't see another human being.

HANSON was waiting at the landing when Parker arrived. At the end of the wharf a big seaplane was floating, her motors turning over slowly.

"Sorry, Parker," Hanson said, apologizing again, "but the navy insists that we have trustworthy men at your station, especially with the war in Europe going blue blazes. A sub or two might slip into the Gulf and raise hell with shipping before she could be tracked down, especially if there should be a secret base somewhere around. The patrol boats can't cover everything, you know, and the navy wants all the eyes it can get on the lookout."

"That's all right," Parker answered rather stiffly. "How's Johnson?"

"Johnson!" Hanson seemed startled. "Oh, I guess he'll be all right. Don't know yet. He's at the hospital now, for observation."

Parker looked at Hanson. The chief had grown gray in the lighthouse service. He looked worried now.

"What is there about a broken arm that calls for observation?" Parker asked.

Hanson had a pair of gimlet eyes that could be used to drill twin holes in a questioner. But he didn't turn the gimlets on the slightly disgruntled young man who was facing him. He studied the seaplane as if he found something of intense interest in it.

"The arm was pretty badly swollen," he answered, still not looking at Parker. "Take a day or two to get the swelling out so the doctors can set the bone. Well, good luck, lad," he finished, suddenly thrusting out his hand. "Make your reports regularly, and if anything suspicious should turn up, don't

hesitate to get in touch with me immediately."

A little startled, Parker took the proffered hand. Hanson didn't usually shake hands with men leaving for a turn of duty. Nor did he usually come down to the landing to see them off.

"Thank you," he said. "If anything turns up, I'll get in touch with you. But nothing will," he added wryly. "Nothing ever does." He walked down the dock toward the plane. Looking back, he saw that Hanson was still watching him.

He got into the plane.

It was a navy plane, with a crew of two, which was something special in the way of service. Usually the lighthouse service used their own planes, especially in taking men to Parker's station, which was over two hundred miles away on a tiny island near the southern side of the Gulf. But this was an emergency, and perhaps the navy had been willing to supply transportation, since they were so anxious to have someone on duty all the time.

"Let her roll," Parker said.

There was a lieutenant at the controls. He taxied away from the landing, set her up on the step, and lifted her into the air. Parker was aware that the radio operator was looking at him.

"Too bad about the other chap," the radio operator said.

"Yeah," Parker answered. He was still grumpy at this sudden call to duty. "But he probably fell down the steps and broke his arm on purpose, just so he could go on sick leave."

He knew it wasn't true. Johnson wasn't that kind of a guy. Johnson took his duty seriously. But he was grumpy.

"What's that?" the radio operator asked. "He broke his arm?"

"Sure. That's what the old man said. But you ought to know. You brought him in, didn't you?"

The radio operator looked at the lieutenant.

"Yes," the lieutenant said hastily. "We brought him in. It sure was tough, about his arm. You men in that service ought to be very careful. If you suffered a serious accident and couldn't get to the radio, you might die before help was sent."

Parker twisted in his seat. He looked from the lieutenant to the radio operator.

"What do you mean?" he said. "Are you holding back something? Didn't Johnson have a broken arm?"

"Yes," the lieutenant answered. "That was it. A broken arm. Sure."

A frown settled on Parker's face. But he said nothing more. The plane climbed into the sky, leveled out for flight. He was so busy thinking that almost before he knew it, the plane was nosing down again. Far off across the blue water, he could see the white tower of the lighthouse rising out of the sea. He was at his station.

The radio operator helped him unload his bags.

"Good luck," the lieutenant said.

Parker watched the plane taxi across the water, watched it rise abruptly into the air. The song of the motors died in the distance. Soon it was as small as a gull. Then it was gone. With it went the only human beings he would see for three weeks.

THERE WAS a small frame house beside the lighthouse. The keeper lived there. A boardwalk led from the landing up to the lighthouse. Parker started along the walk. Suddenly he stopped. His eyes ran over the tiny island, over the lighthouse, over the small house beside it, then

returned to the boards under his feet.

There were wet splotches on those boards, splotches that were almost dry now. They looked like footprints. Parker stared at them.

"Nuts," he said. "Who do I think I am, Robinson Crusoe, finding a footprint in the sand?"

He went up the walk and into the house, dropped his bags. Automatically he began a routine tour of inspection. The door of the lighthouse was open. Wet footprints led inside.

Parker looked at them. Standing outside, he ran his eyes up the white, wooden walls of the lighthouse tower. He looked at the tracks again. He turned, walked back into the house, took the pistol out of his bag. It was a .45 caliber automatic, an army gun. He clicked a clip of cartridges into place, gently worked the slide to feed a cartridge into the firing chamber. Slipping the gun into his jacket pocket, he went back to the lighthouse. Overhead was a wooden floor. The radio equipment was up there. Much farther up, at the top of the tower, was the light. The steps led up to the radio room through a trapdoor. The wet footprints went up the steps.

The trapdoor was open.

He went up very quietly.

"Hello," he said, when his head was above the level of the floor. "What are you doing here?"

The fellow jumped at the sound of Parker's voice. He was in the radio room, staring at the transmitter. He didn't know Parker was near him until the latter spoke.

He was short and squat, and built like a battering-ram. Except for a strip of metallic-appearing cloth at his waist, he was naked. He looked at Parker and grinned.

"Hello, Johnson," he said.

The lighthouse keeper's eyes narrowed. He looked the man over. "You're a native, aren't you?" he said. "How does it happen that you speak English?"

The man eyed him. "Speak English?" he parroted. "You not Johnson," he said accusingly.

"No," Parker answered. "I came to take Johnson's place. But how did you get here?"

South America was not too far away, and there were natives there who looked a lot like this fellow. Sometimes storms caught their canoes and drove them far out to sea. Not often, but it had happened.

"Came in boat," the man answered. "Boat got lost. Sink. See light. Swim here. That last dark. Come in. Johnson take care of light. Take care of me, too. Went for swim, come back, Johnson gone. Look for him, not find. Where Johnson go?"

"He went away in a"—Parker hesitated. How could he explain the operation of an airplane to this fellow?—"in a boat that flies through the air, a canoe with wings. I'm taking his place."

The native nodded. The winged canoe did not seem to surprise him. Perhaps he hadn't understood at all.

"You let stay here?" he questioned. He spread his hands in an apologetic gesture. "None other place to go. Big water all around."

"Sure," Parker answered. "Sure. You're welcome, old man. You can stay here until my relief comes, then I'll take you back with me. Maybe I can fix you up on a freighter that will take you back to South America. What's your name, by the way?"

"Name? Name? Oh, name. Bobo."

"Bobo, eh? Well, mine's Parker. What do you say, Bobo, we try to

scare up some lunch?"

Parker turned and started down the steps. He looked back. Bobo was staring at him, so he rubbed his stomach and pointed to his mouth. Bobo seemed to get the idea. He came gladly. But he didn't appreciate the food of civilization. He would hardly eat the food Parker set before him.

"Don't you like it, Bobo?" the lighthouse keeper asked.

"Sure," Bobo answered. "Good. Damn good."

"It's rather difficult to manage canned tomatoes with a knife," Parker said, watching the native. "But you'll learn."

"You bet. Learn damned good," Bobo answered, trying to scoop up the tomatoes with the blade of the knife, as Parker was doing. Parker watched him in silence. There were lines of thought at the corners of the lighthouse man's eyes.

That night they slept in adjoining rooms. The lighthouse keepers never more than cat-napped during the night. The light might go out.

"Good night, Bobo," Parker called, closing the door between the two rooms.

"Good night, Parker," Bobo answered.

PARKER didn't go to sleep. He could sleep tomorrow, or next week, or when he was dead. He lay in the darkness, watching the circling light flash through the window. The eternal Gulf wind was blowing. It had found a loose board somewhere on the roof of the house. The board was flapping. There were other sounds too, sounds that only lonely lighthouse keepers hear, and the lookouts of tall ships, and fishermen. Parker waited. He really wasn't sleepy. The gun under his pillow made a hard lump.

A tiny sound came from the adjoining room. The cot creaked, the way a cot does when a sleeper turns. By and by the outer door creaked. Parker got up. He didn't put on his shoes. He went to the door, the gun in his hand.

There was a full moon overhead. The moon and the light illumined the tiny island.

A shadow was moving along the walk toward the landing. Bobo. While Parker watched, the native went to the end of the landing and dived into the sea.

Keeping out of sight, the lighthouse keeper slipped down to the edge of the water. Bobo was splashing in the sea, apparently having the very devil of a good time. He dived and swam and turned somersaults in the water with all the grace and agility of a seal.

Parker took the gun out of his pocket. He looked thoughtfully at it, to make certain the safety was off.

Bobo came out of the water. He shook himself like a dog, and then strode along the walk. He went into the lighthouse tower.

Parker followed. Bobo was in the radio room again. The trapdoor was open. There was no light in the radio room except the dim glow coming from the tubes of the transmitter. Bobo had turned on the filament heaters. He was working in the dark. He was doing something to the transmitter; what it was Parker couldn't see. The native seemed to be making changes in the wave coils. The set operated on a wave length of six hundred meters. Bobo was making changes. He didn't seem to be hesitating about the changes. He seemed to know what to do and to be able to do it with a deftness that would have amazed the navy experts who had

installed this equipment.

The set was designed for either voice or code. Like all continuous wave transmitters, it was silent in operation, except for the tapping of the key when code was used. Bobo began to use the key.

Parker knew Morse. He tried to follow the key. Now and then he seemed to catch a letter. It was hard to follow that racing key, so damned hard that Parker eventually knew that Bobo wasn't using Morse. He didn't know the code the native was using, but it certainly wasn't Morse.

Bobo stopped transmitting. Clamping the earphones over his head, he began to twirl the dials of the receiver. Parker watched. The native went back to the transmitter. He examined it carefully and seemed to be making minute changes. Again the key rattled. Again Parker couldn't follow it.

This alternation between transmitter and receiver kept up for perhaps half an hour. Parker, his head just level with the floor, watched. He had the impression that each successive failure sunk the native in deeper gloom.

Then Bobo got a reply. He almost danced for joy. He rapped off a hasty answer on the key, listened once, then rapidly began changing the wave coils back to their former frequency values.

Parker went down the steps. He went into his room and waited. Bobo came in, went directly to his room. The cot creaked and he laid down.

He didn't move again all night. Parker stayed awake to make certain. Once Parker got up and went up to the top of the tower to inspect the light. Bobo didn't follow him.

Parker was up with the sun.

"Hey, Bobo," he called. "Light-

house keepers have to be up early in the morning. Out of it."

Rubbing his eyes, the native came out of his room.

"Sleep good?" Parker asked.

"Sure. Sleep damned good, you bet."

"O. K. I'm going up to turn off the light."

Bobo didn't follow him up the tower. He turned off the light, made notes on the temperature, wind direction, and barometer readings, then, mindful of the navy's wishes, picked up the binoculars and swept the surface of the sea. There was no sign of a sub. There was no ripple of a periscope breaking the surface. The Gulf was calm.

He looked down toward the wharf. Bobo was in swimming again. The native seemed to have almost a mania for the water.

Parker went down to the radio room. By the time he got the transmitter warmed up, Bobo had come up the steps. He shook himself like a dog, and a spray of water flew from his glistening, powerful body.

"What do?" he asked curiously, as Parker picked up the microphone.

"It's time for the regular morning report," the lighthouse keeper answered. "You know, report by radio."

Bobo merely stared at him.

PARKER got through to the base station. He reported the temperature, wind direction, barometer reading. This latter dope was collected for the weather bureau.

"How's Johnson?" he asked, when his report was finished.

"Johnson?" the speaker rattled, after a silence.

"Yes, Johnson. How's his arm coming along? He fell down the stairs and broke it, you know."

"Oh, his arm. Yes. I don't have

any dope on it yet this morning, but it's probably doing all right. Anything else?"

Parker hesitated. He glanced sideways at Bobo. The native hadn't moved. But he wasn't watching Parker. He was looking out the window toward the sea.

"No, nothing more," Parker said. He snapped the switches that fed juice into the transmitter, rose to his feet.

"Breakfast, Bobo," he said.

The native jerked around to face him. "Breakfast? You mean eat? Oh, sure, you bet. Eat damned good."

"O. K., you go on down. I'll be down in a minute."

"Go on down? Sure. You bet."

Still dripping water from his recent swim, the native went bounding down the stairs. Parker followed slowly. There was a thoughtful look on his face. The thoughtful frown was replaced by a look of incredulous amazement the instant he set foot outside the tower.

Bobo was not waiting for him in the house. He was not waiting at all. He was racing along the board walk, toward the landing, running so rapidly that his legs seemed to blur.

But it was not Bobo's action that stamped the look of incredulous amazement on Parker's face. It was something else, something that was moving across the surface of the sea toward the island, and emerging as it moved. It was a round, bulging dome. It threw a long wake behind it.

"A sub!" Parker gasped. "She was lying out there under the surface all the time. Hey, Bobo!" he yelled. "Don't try to swim out to that thing. Stay away from it. No good. Bad. You hear, bad?"

The native didn't answer. He kept running along the walk.

"By Heaven!" Parker rasped in understanding. "So that's the way it is! So that's why you were sneaking in and using the radio transmitter! You're an educated native, eh? Or maybe you're not a native at all."

"Halt!" he shouted.

Bobo kept running.

The gun seemed to leap into Parker's fist. Its explosion smashed the morning silence into a million pieces. A tiny splash showed where the bullet had struck.

"Halt!" Parker shouted. "The next time I'll shoot to kill."

The native had reached the landing. Never hesitating in his stride, he dived into the water.

Cursing, Parker raced down the walk. In the water, Bobo would be entirely at his mercy. The sub would have to stay well out because of the shoals, and while he didn't know the sub's intentions, as long as he held Bobo, he would have a strong bargaining point. It might easily be a bargaining point on which his life would hinge. That sub would not be likely to leave him here to report its presence. And it would be armed. It could stand off from shore and send a hail of machine-gun bullets smashing over the island. True, America wasn't at war, but no nation seemed to bother much about a declaration of war these days. If he had Bobo, the sub wouldn't dare shell him. Or would it.

A dark shadow was moving through the water. It was Bobo, swimming under the surface. Parker sent a bullet downward. It smacked into the water, but Bobo never halted. Probably the bullet didn't touch him. He was too far under the surface.

"All right, damn you," Parker gritted. "You'll have to come up for air sometime, and when you do—"

The sub was coming closer now. A great bow wave was curling out from it as it drove toward the shore. It was lifting farther and farther out of the water. Men were tumbling out of an opening in the side of the conning tower.

"They'll have a gun in operation in a minute!" Parker thought. "Damn that native. Will he never come up?"

Bobo didn't come up. Parker began to itch, waiting for him. Seconds ticked away. A minute passed. Then two. Three. Parker felt cold. Nobody could stay under water that long. His eyes followed the shadow that was Bobo. Swimming like a fish, he was moving out toward the sub. Although he was completely under the surface, he was using a kicking stroke that would have made a south sea islander turn green with envy.

And he wasn't coming up. He was out a hundred yards, then farther. Parker was expecting his head to break the surface any second. It didn't. The native kept swimming under water. He was too far out for anything but a lucky shot to get him.

All over his body, Parker's skin seemed to be crawling. He cast a glance at the submarine, at the shadow that was Bobo, then turned and ran toward the lighthouse.

He was expecting a blast of machine-gun fire to let go any instant. Or perhaps a cannon. That sub simply couldn't let its presence here be known. Uncle Sam would raise merry hell about a submarine in the Gulf, merry hell indeed. Hence—machine-gun slugs.

But none came. Yet.

Parker was aware that he was holding his breath as he ran. His back itched from the bullets he was expecting.

There wasn't a spot of cover where he could hide. All he hoped to do was to reach the radio transmitter in time.

He pounded into the lighthouse and up the steps. With a single bound he was through the trapdoor and into the room, snapping switches that fed current to the tubes. It took time for the tubes to warm up. It would probably take more time to contact the base station. This wasn't the regular time for calls. Of course, there would be an operator on duty, but it might take fifteen minutes to raise him. A lot could happen in fifteen minutes.

THROUGH the window, Parker had a perfect view of everything that was happening. The sub was still coming in, emerging more and more all the time. Bobo was still swimming toward it. He reached it, was drawn quickly aboard. Oddly, Parker noted that the native had swam underwater all the way to the sub. It was a quarter of a mile at least, probably nearer a half. But Bobo hadn't broken the surface once in all that distance.

"Now it's coming," Parker thought. "Bobo is safely on board. Now it will be my turn."

He leaped to the meter panel. The needles were beginning to wiggle. The transmitter was warming. Juice was beginning to flow through it.

"Hurry, damn you, hurry," Parker prayed. "They'll have a machine gun and a landing party on the way in no time."

The meter needles suddenly

jumped. Juice was flowing. Parker grabbed the microphone.

"Calling base station lighthouse service, Station 719 calling base station lighthouse service, Station 719 calling base station lighthouse service, calling—"

He switched to the receiver.

No answer.

"Calling—"

Suddenly he stopped. Through the window he could see the submarine. Bobo had been taken aboard. But no machine gun had been unlimbered. No ugly-snouted cannon had appeared on the fore-deck. The men on the sub were not working with a gun. They were entering the conning tower.

Parker stared.

"Calling base station lighthouse service," he said automatically. He didn't notice what he was saying. He was watching that sub.

It was turning, heading away from the island, heading out to sea. It was going away. It wasn't sending a landing party ashore.

A white wake was spreading behind it. It was moving faster. And faster still. It was going faster than any submarine had ever gone before. *And it was still emerging from the water.*

A low drumming sound, like distant thunder, was beginning to throb in the air."

"Station 719 calling base station light—"

That was as far as he got.

The thunder had grown in volume. It had become a roaring torrent of distant sound. More than ever it sounded like the growling of thunder in a tropic storm.

The sub was still rising out of the water. Jets of fire were appearing along the edges of its hull. It seemed

to lift itself on those fire jets. Fire was spurting from its tail.

It was big, far bigger than any submarine he had ever seen. It had no wings. But in spite of that it was rising in the air. Into the air!

From fascinated eyes, Parker stared at the thing. It was completely clear of the surface of the sea. Gaining speed, it was rising on a long slant. It was moving very fast now. The spurts of light from the fire jets were fading into tiny flashes. The drum thunder was fading into the distance.

It went up, up, up. It went out of sight, still going up.

SUDDENLY Parker sat down. He was weak. Beside the transmitter a pad of yellow paper caught his attention. He stared at it for a long time before he realized what he was seeing. Then slowly his brain began to register the message his eyes were bringing.

The pad of paper had been lying there all the time. But another sheet of paper had been lying on top of it. Somehow, in his haste to get the transmitter into action, he had knocked off the top sheet, revealing what was written on the pad.

Object much resembling submarine appeared in the sky. Flashes of fire leaped from it and it made a noise like thunder. It glided down to a landing near the island. I saw it first from the light room. After moving across the surface, it stopped for a few minutes, then suddenly submerged. Went out in boat and tried to locate it, but was unable to do so. On returning to island, found I had a visitor who looks like a Carib and calls himself Bobo. He seemed very stupid at first. Couldn't speak English. He began to pick it up from me. From the speed with which he picked it up, I am beginning to doubt that he is a native. I suspect he came here in that strange flying submarine and that he was caught on its deck when it suddenly submerged. Unable to return to his ship, he swam ashore here. He seems very fas-

inated by our radio equipment, which is another reason I suspect he is not the wild Carib he seems. No native could grasp the operation of radio apparatus so quickly.

The message had been hastily scribbled. Apparently it was a series of notes made while the events it described were fresh in the observer's mind.

It was in Johnson's handwriting.

Abstractedly Parker flipped on the receiver.

"Lighthouse service calling Station 719," the speaker squawked, as if the operator had been calling for several minutes and was annoyed because he hadn't gotten an answer. "Go ahead, Station 719."

"Put Hanson on," said Parker tersely. "Do it fast."

The loud-speaker squawked. There was a series of clicks. Parker was suddenly sweating. Drops of sweat were running down his face. He wiped them away with his hand, stared at his sticky palm.

Hanson came on. "What do you want, Parker?" he demanded.

"I want to report—" Suddenly Parker choked. Sweat was in his eyes. Sweat was all over his body.

"I want to know what happened to Johnson!" he said.

"Johnson? He broke—"

"Skip that part of it," Parker snarled in a tone so savage it startled him. "You can tell that to the marines. I want to know what really happened to him.

The speaker rattled noisily as Hanson cleared his throat.

"Well, if you must know, he went off the deep end, and I had to recall him. He's in a psychopathic hospital for observation. The doctors say there is nothing seriously wrong with him, that when he has a good rest he'll be all right again. I'm arranging a shore job for him."

Parker swallowed. "Then why did you tell me he had a broken arm?"

"For a very good reason," Hanson said exasperatedly. "If I told you the truth, the suggestion might start *you* seeing things, too."

"The devil!" Parker said. "What did he report he saw—a flying submarine?"

"What?" the speaker rattled. "How did you know what he thought he saw. Have you gone off your head, too?" There was suspicion in Hanson's voice.

Parker thought swiftly. Light-house keeper's sickness, they called it. The loneliness caused it. Under a different name, sheep herders and forest rangers and lonely trappers, suffered from the same illness.

His hands were sticky with sweat. He swallowed.

"Nope," he said.

"Then how did you know what Johnson thought he saw?" Hanson demanded.

"Oh, that," Parker answered. "I ran into some notes he had made, so I thought I would call you and get the truth of the matter."

"Huh? Notes? Then what are you so scared about?"

"I'm not scared," Parker answered stiffly.

"You sound like it."

"Maybe the radio is distorting my voice."

There was a moment of silence. "Maybe that is it," Hanson said. "Oh, well— Are you sure you're all right, lad?"

"Sure. You bet. Sure."

"All right then. For a minute you had me worried. Is that all you want?"

"Yes," said Parker. "Yes."

"O. K., then."

The speaker snapped into silence. Parker wiped the sweat off his face, then turned off the transmitter. He got to his feet, looked out the window. A haze was beginning to appear over the Gulf. Far up in the sky white clouds were appearing.

That was all there was in the sky—white clouds and a beginning haze. There was no sound of distant thunder.

Parker looked at the floor. There were wet blotches on the boards where a castaway, who seemed to like water, had stood while he shook himself. The spots were drying rapidly. In a few minutes they would be completely gone.

THE END.



TROUBLE ON TANTALUS

By P. Schuyler Miller

There was a mystery somewhere on that little-known planet, and like it or not, Moran was being carried into the heart of it!

Illustrated by R. Isip

THE mutter of the bull drums throbbed through the dripping blackness. Moran pushed his face deeper into the muck of the forest floor and listened.

VUB, vub, vub, vub. VUB, vub vub, vub.

They were on three sides of him now. To east, and south, and north of him the Blueskin shamans were thumping their mocking challenge, dancing their frenzied dances, promising their young men his skull for the village pyramid and his skin for a drum that would outroar, outbluster and outbrag any drum in all the reeking jungles of Tantalus.

To east and south and north—the road ahead was clear. There lay the great sky-reaching crags of the Mountains of the Night, blanketed in everlasting clouds, cleft by bottomless chasms, drenched by the endless rains that were slishing into the mire in which he lay, rattling on the forest roof above him. There, somewhere, was the mysterious Black Hole that had sucked a score of ether ships into oblivion since men first found this God-forsaken planet. There—

Somewhere ahead of him another drum began to beat. *Tap, tap, tap.* A little drum—a shrill drum—a drum headed with human skin. *Tap, tap, tap.* A drum that jeered and mocked and dared him to come and fight. He knew that drum. He knew the blue-skinned devil who was

hammering Pete Davis' stretched pelt with Pete Davis' bleached white shinbone, and by the same token, old Wallagash knew him. The withered ear that was nailed to the wall of his shack back in Talus was mate to the one that was out there in the blackness, listening to the tap, tap, tapping of Pete's shin on Pete's tanned belly. The evil, slanted eye that was peering through the murk was mate to the one his knuckles had found the night Pete Davis died. North and south, east and west. They had him, and they knew it. Well, by Heaven they'd see fighting before he went!

Six feet six of him reared out of the stinking muck. Black mud matted his red beard and his red mane. Black ooze trickled down the white barrel of his chest. One huge fist closed on the thorn branch that arched over him and ripped it down. He broke it across his knee and hefted it approvingly. With a shillelagh like that in his hand Paddy Moran could bash heads till they cut the guts out of him, and maybe a bit longer if his legs held.

VUB, vub, vub, vub. VUB, vub vub, vub.

They'd make no drum of his skin, by the saints! They'd carve no obscene runes on his boiled shins to make magic against white men of Earth. They'd finish him, like enough, but what they got wouldn't be cat meat. He shivered. There

was a tale told that the Morans had a banshee to wail them into the place of Death when the time came,

but like enough she'd lost her way after the first few million miles of empty space. Sirius was not a far



*The haze of that vision was over his eyes,
but somehow Moran found his mark—*

star, as stars went, but it was far enough, and Tantalus was by a long way the least pleasant of its many planets.

He made no attempt to be quiet now. The sooner it was done the better. He plowed his way steadily through the dripping undergrowth toward that mocking tapping in the west. It grew louder as he approached, and he could hear the echo of it rattling against the naked rock of the escarpment beyond. Then suddenly it stopped.

He stood stock-still, head up like a listening stag. Far to the north a single drum still mumbled; it broke off in midbeat, and the only sound was the hiss of rain through the branches and the drip of water in liquid mud. His grip on the thorn club tightened until he felt the skin stretch on his knuckles. The short hairs prickled along his spine. What devilry was afoot now?

And then he heard it.

Rather, he felt it. Under his spread feet the ground trembled with a slow, rhythmic shock. One—and two—and three—and four. Like a marching army. Like the slow pacing of a giant cat. Like—

Saints above! *The Stalkers!*

Sweat came out on him in trickling beads. Blueskins he could fight. Blueskins were men. But the Stalkers were legend—horrible legend!

He listened, not breathing. They moved like cats, with a cat's stealth, with a cat's cruel sureness. They were black as the pit of hell, invisible in the night. They were ogres, demons, vampires. They were Death!

Somewhere behind him a Blueskin screamed in terror—the high, mad yammer of a frightened beast. It was too far—there must be more than one. They hunted in pairs, legend said. Up through his legs,

from the quaking bog to his prickling brain, thudded the slow rhythm of the approaching footsteps. One—and two—and three—and four—

Off to the right a tree ripped down through the tangle of vines and branches to crash with echoing thunder in the mud. He wheeled, stared vainly into the blackness. Was it there?

There was a trickle of light from above. Silver highlights shone on the sprawling roots of a forest giant. Slowly, settling each foot in the mire with infinite care, he moved into their shadow. Squeezed into a crevice in the trunk he stared at the ghostly column of light that filtered down from above. It must cross that to reach him. He would see it, silhouetted against the gleam from that glistening pool. Magnified by the resonant wood on which he stood, the footsteps shook his whole tensed body. Thud! And thud! And thud!

They stopped. A foul, animal reek stifled him. Then claws thick as a man's body closed on him and lifted him struggling into the tree-tops.

MORAN regained consciousness. The reek of musk was still in his nostrils. The air was saturated with it. It made his head swim. He lay still in the dark, trying to gauge his whereabouts. There was a carpet of thick velvet under his spread fingers. It was dry, and hot, and it swayed under him with a slow rhythm that matched the swing of the thudding footsteps.

He got unsteadily to his feet, stood with spread legs. He put out his hand, and touched naked, wrinkled flesh that shrank away with a shriek. Something went scuttling past him in the darkness. Something whispered behind him. There

was a slow, methodical sucking that brought the goose pimples on him. He took one cautious step ahead..

His foot struck something, spun it aside. He stooped and groped for it, found it. It was his club. Then he remembered the pouch at his waist. There was a white light in it. His fingers fumbled with the flap, opened it, found the little metal cylinder with its crystal bulb. As the tiny flame blazed up his jaw sagged in amazement.

He was in a narrow, windowless room lined with black velvet. A great scarlet egg twice his height filled all the far end. And cowering against its base was such an assemblage as only the mad, black jungles of Tantalus could have spawned.

Two little things like naked pink Teddy bears huddled together against the scarlet shell. Their huge, opalescent eyes sparkled with blind terror in the bright light. A creature like a wingless, boat-billed stork, with a bristling bright-blue mustache fringing its horny beak, stood morosely on one leg, regarding him with one oval eye. There was a flat pancake disk of mottled flesh, pegged around the edge with short red legs, that seemed to be trying to burrow under the egg. And almost at his feet a thing like a giant black weasel, with six stubby legs and a tubular snout, was sucking avidly at the throat of a Blueskin woman.

Some sixth sense warned him. He ducked as an eight-inch glass blade snicked past his ear and shattered against the egg. He spun on bent legs, his club raised. Old Wallagash crouched there against the wall, a snarl on his wrinkled face, red hatred in his single slanted eye. In his withered claw was a thing like a barbed steel skewer, three feet long and needle-sharp. With a

cackling screech he leaped, just as Moran's club came down with a splintering crash.

The shaman's arm fell limp, broken at the elbow. Moran's fist caught him under his receding chin. The second blow smashed into his naked belly; the third crunched full into his grinning, black-lipped mouth. Then Moran had him by the scrawny throat, worrying him like a dog with a bone.

Wallagash went limp. Moran got to his feet and retrieved his light. Ugly old devil! All Blueskins were ugly, with their pointed ears and slant eyes, their grinning, toothy mouths, their bodies made in grotesque imitation of humanity. There was a story that they were the creation of the demented scientist who had first landed on this insane planet that the space hogs called Tantalus. Certainly they resembled nothing in this mud hole so much as man. A filthy tuft of hair hung at the dead sachem's waist. Blond hair. A woman's hair! Moran knew those bleached locks—knew them intimately. So that was why Pete Davis had launched his mad crusade against the Blueskins. Moran shrugged. Much good it had done him. You could get other women, but a man had only one skin.

He turned his back on what was left of Wallagash. There was other danger here. That weasel-thing—he'd heard of them before. Rumor had it that they followed you until you slept, then sucked the life out of you while you dreamed pretty dreams. He'd learned to respect rumor in such matters. He picked up the dead Blueskin's needle-sword.

"O, Man."

The voice came from above. It was like the croak of a Martian raven. He looked up. Perched on top of the great scarlet egg was the

damnedest creature he had ever seen.

It was the size of a bulldog, with a face like a vampire bat and a head of spiky black hair growing between two spreading ears. It was as black as sin, with short, kinky wool growing all over its potbellied body down to the ankles of its double-jointed legs. Its feet were two-toed claws, bare black skin over knucky bone. And wrapping it like a leather cape were two huge bat's wings whose hooked wrists stuck up above its head like furled flags.

It had eyes like blood-red soup plates with pin-prick pupils. One of them swiveled to stare up into the shadows above them; the other regarded him unwinkingly.

"I am Shag, a Murath," the thing croaked.

MORAN had heard of the Muraths. "Gollywogs," space hogs called them. They were the true native race of Tantalus, held in slavery by the few semicivilized Blueskins who had their black stone cities on the strip of fen land beyond the Mountains of the Night. Few humans had ever visited them, and fewer had returned, for while the citified Blueskins lacked some of the unpleasant habits of their savage brethren, they were inclined to be touchy and had some unpleasant tendencies toward atavism.

"Do not touch the sheetag," the clipped voice went on. "It will scream and arouse the Stalker. I can escape. I can bring help."

Sheetag—that was the weasel thing. But what did this padded cell have to do with the Stalkers? What had happened, anyway?

"Where are we?" Moran demanded. "What's this all about?"

The little creature rustled its wings impatiently. "Must we talk?"

it asked. "Very well. This is the egg of a Stalker. This is its incubation pouch. Perhaps the egg will hatch and the young of the Stalker will eat us. Perhaps it will do something else. I do not know. Nobody knows. I know that I can escape if you will help. You will come here please."

Moran shrugged. Half his life had been spent in space and the planets that rattled around in space. He'd given up balking at screwy situations long ago. He crammed his shoulders into the space behind the big red egg, wedged his knee against its pebbly surface, and began to climb.

Against his back the black plush wall of the room pulsed with a rhythm quite different from the lurch and sway he had felt before. It was like a great artery, throbbing with the incessant pulse of life. What if it *was* an artery? What if this *was* the brooding pouch of a Stalker, as Shag had said? Then what in the name of Heaven must a Stalker be like?

The Murath thrust out a long-toed foot and hauled him up on the rounded top of the egg. It had no hands, only the two great wings. They must have had a spread of twenty feet. No wonder the creature's chest stuck out like the keel of a yacht.

He had to stoop because of the ceiling. The black fur lining stopped opposite his knees. Leathery black skin covered two bands of muscle that closed the pouch. He put his hand up. They were warm, like flesh. They were flesh. It was true.

The gollywog's hideous face swiveled toward him. "You can make an opening," it observed passionlessly. "You are strong. I will crawl out. I am small. I will bring help. I can fly."

One scrawny claw kicked at the bands of muscle above his head. "The pouch is weak here. You are strong. You will make it open. You will hold it until I escape. I can fly. I will bring help."

Moran stiffened his legs, and braced both hands where the gollywog had pointed. Sure—he'd open up, if it could be done. As for letting the little rat make his getaway alone, that was something else. He gritted his teeth and heaved. With surprising ease the walls of muscle parted. He thrust his shoulders into the gap, hitched his knees against the opposite side, and shoved.

He was in starlight. Fifty feet below drifted a sea of swirling, heaving clouds. Above, a vast black naked body blotted out the stars. This was a Stalker! This thing that walked on mountains!

The Murath's bristling head pushed up beside his legs. It climbed out and perched precariously on the lip of the pouch, staring owlshly out over the panorama of mountain crags that rose about them. The Stalker was deep in the heart of the unknown ranges, and every swing stride was bearing them farther. Then below sounded a shrill, piercing scream of rage. The *sheetag!* The Stalker stopped.

Two vast bat wings spread before him and Shag dived spinning into space. His tiny body swung like a grape between his great black wings. They flapped slowly, ponderously, lifting him higher and higher above the encircling peaks, carrying him with each beat farther from the colossal body of the Stalker. Then out of the rolling cloud-sea burst a shape from nightmare—the second Stalker!

Two hundred feet—three hundred

—how could he measure it in that phantom light? Only the weak gravity of Tantalus could spawn so monstrous a thing. The mists boiled about its shoulders, about its waist, about its plodding legs. Legs like the massive columns of centuries-old trees. A body broad as an ether ship, squat, bent, blotting out the sky. A head peaked and misshapen, with glowing yellow eyes like gibbous moons. And arms like the flails of Death himself, striking like mighty serpents at the tiny winging shape!

Some updraft from the steeped crags caught the Murath and spun him upward like a leaf. The smiting talons swept harmlessly beneath him; he rocked dizzily in the boiling air currents, then tilted his giant wings and slid like a drifting shadow into the abyss.

Again that vast claw struck—and missed. The winged dot swerved deftly from its path. The black wings folded and Shag fell like a plummet into the seething mists. Only the furrows left by raking talons showed where he had been.

A spasm shook the wall of muscle against which Moran was braced. Spurted like a melon seed from between the closing lips of the pouch, he sprawled over emptiness while the clouds rushed up to meet him. Then out of nowhere came a giant, glistening hand that caught him, crushed him, thrust him kicking into oblivion.

It seemed that he came swimming up out of unfathomable depths. A glassy wall stretched over him, barring him from the light. He beat at it with his fists—burst through and yelled with all the pent-up agony of bursting lungs. His feet were under him, firm on solid stone, and he shouted blind defiance at God and man.

He saw the sprawling city of the Stalkers.

Walls of splintered rock soared upward into the clouds. He stood a thousand feet above the valley floor, on a terrace of cut stone, with the grotesque hovels spread before him like children's blocks rolled on a table top. Slabs of gray granite, toppled together and chinked with blocks of softer stone. Barrows of heaped boulders, covered with baked mud. Walled in crannies of the living rock, black with damp and dirt and decay. And beyond an endless labyrinth of smooth-cut blocks, ruined and desolate, stretching out mile after mile across the valley floor.

A city—and the memory of a city.

Giants had built it when Tantalus was young. Giants dwelt now in the hovels that huddled in the shadow of its colossal walls. Giants vaster and more terrible than anything in men's dreams, dwarfed by a glory that was dead and forever lost.

Steps climbed from the valley, each tread thrice a tall man's height. At their foot the Stalkers stood. There was a score of them—all that remained of the race that had raised the city of the plain. Their bodies were a mockery of man's, their arms dangling, simian things with three-clawed hands, their feet splayed, cloven hoofs. Their heads were like the twisted wedge of an earthly Brazil nut, the flat, curved bases turned ahead, the sloping sides meeting in a bony ridge that ran in a fringe of jagged bone down their massive backs. An eye was set in each slant-face, great faceted yellow jewels peering out of pockets in the rubbery black flesh. A beaklike mouth split the forward apex of the wedge,

and from its scarlet lips came a humming like the purr of a giant cat.

Behind him sounded an answering trill, shrill, sweet—and terrible!

MORAN spun in his tracks. Pylons of cut stone rose on either hand, framing a mighty gateway in the cliffs. Beyond them, cut out of the gorge's floor, was a pit, blocking it from wall to wall. A pit—and in the pit a toad!

Great webbed paws were bowed under its bleached white belly. Its flat, warty head hung level with the terrace where he stood. Its golden eyes blinked sleepily, hypnotically, at the little group that cowered at the pit's edge—the creatures of the pouch.

Fear froze them in their tracks—fear and the fascination of those burning eyes. They swayed on their feet to the murmuring rhythm of the Stalkers, to the shrill piping of the monster toad. But now that crooning trill stopped short. Instantly one of the little pink things turned and ran. Faster than sight the toad's pale tongue licked out—and it was gone. Again from the valley he heard the exultant mutter of the Stalkers.

Pictures were racing through Moran's brain. Pictures of Earth, and he a boy, sprawled flat in the cool green grass beside a little stream, watching a toad eat ants. Time after time that lightning-swift tongue had struck, and each time an ant vanished. But always an ant that moved!

An ant that moved! Moran's muscles tensed. Billion on billions of miles separated this colossal monster from the little, harmless toads of Earth, but perhaps the force of evolution that had given them life had acted in the same way on this

mad, black world. Perhaps this toad too saw only things that moved.

Slowly, slowly his fingers crept across his thigh, behind his back, where his knife should be. It came loose in his fingers and that hand crept slowly back. Eyes on the toad's great jeweled ones, he waited for that moment when its deadly trill would cease. Soon now—

Before it came he flipped the knife. It spun in a shining arc, stood quivering in the furry shoulder of the weasel-thing. With a scream of rage it spun, leaping like a black arrow toward him, but the toad was quicker. Its tongue licked out—was gone—and with it the *sheetag*. In that instant Moran sprang.

Five great strides took him to the pit's edge. Legs that had not faltered under accelerations of five gravities flung him into space. Feet first he struck between the toad's great, staring eyes. He slipped, fell to his knees, then before the monster's sluggish brain could know what had happened was on his feet and running, leaping, rolling on the gorge's rocky floor. Behind him the purring of the Stalkers rose to an angry buzz. He heard their great hoofs pounding on the stairs, the slap of the toad's webbed paws on the pit's walls as it turned. Scrambling to his feet he began to run.

The ravine twisted upward between sheer walls of solid rock. The floor was worn smooth by the tread of countless naked feet during endless years. Two hundred feet above him he could see the black smears where generations of Stalkers had rubbed their sooty shoulders against the rock. Below, at a man's height, were other smears where other, smaller things had gone. What was it that drew them, here in the desolate heart of the ranges?

As he climbed he began to feel the wind. The valley of the Stalkers was sheltered, but now he was rising above the level of the bounding cliffs, close under the cloud blanket, and as he advanced the force of the wind increased until he was leaning against a howling gale. It was raining again, a slow drizzle, and the fine droplets stung his face and bare body, washing away the mud that had caked on them.

By the time he reached the summit of the pass he was crawling on all fours, digging his fingers into crannies of the rock, hugging the walls of the ravine for what little shelter they afforded. He was in the midst of the clouds now, so that he groped his way through an impenetrable fog, lit from above by the weird blue light of distant Sirius.

On and on he crawled, driven now by a blind determination that seemed to have been born of the wind and the fog. Whatever happened, he would not turn back. Something there ahead called him as it had called countless other beings of many worlds through untold centuries.

At last the path led down. An icy rivulet ran ankle-deep in the groove that was worn in the soft slate by the plodding of many feet through many years. Soon he was below the clouds again, and the gorge was widening and deepening into a canyon whose fluted walls were a great harp on which the winds played dolefully. How far he had come from the valley of the Stalkers and their monstrous toad-god, he did not know. Nor did he care. There ahead, near now, was—something.

AHEAD a natural archway spanned the gorge. It had been shaped into a gateway through which the wind

screamed, a window above emptiness through which poured a flood of violet light. Battling his way foot by foot against the tempest, Moran came to the gateway and looked through.

Another valley lay below him, carved out of many-colored sandstone by the fury of the winds. Weird columns of red and orange rose from its barren floor, and the black slits of dry arroyos channeled its painted walls. Dykes of volcanic rock angled across it in an insane labyrinth, the softer shales and sandstones eaten away from around them, leaving them like the cyclopean tumbled ramparts of a city of the winds.

He did not see the weird beauty of that painted garden. He did not see the black dots that were caves in the gray limestone that underlay the painted rocks. He looked beyond, at the Black Hole of Tantalus—and the thing that gave it birth.

Opposite him the wind-carved minarets drew back from a road of purple quartz that formed a slowly rising ramp across the valley floor. Closing the valley's eastern end rose a cliff of black obsidian, splintered into a myriad of knife-edged facets by the terrific forces that had raised it from the depths of the planet. At its foot gaped the abyss.

Ten miles it must have been, between the obsidian wall and the rock of its nearer lip. Out of it poured a torrent of violet light, striking back with countless scintillant spear-shafts from the broken cliff. Above it the clouds spun back in the mighty whirlpool of the Black Hole, through which streamed the cosmic forces of the abyss that could suck a ship out of space against all the power of a hundred drumming jets. And where the road of ame-

thyst met its edge there rose a shaft of clear crystal, six-sided, blunt-tipped, thirty feet and more from base to tip, through which the light from the planet's heart beat in a shower of fiery radiance. A giant crystal of pure, clear quartz, and at its heart a cavity, a bubble, in which floated a thin black speck that was—something.

The path led down through the maze of steepled rocks. At the first turn the abyss was lost to sight. It was then he saw the dwellers in the caves.

There were perhaps thirty of them, of a dozen races and worlds. There were Blueskins from Tantalus' own reeking jungles, and leather-bellied dwarfs from the red deserts of Mars. There were three-eyed, six-armed drogags from the twin worlds of Alpha Centauri, and octopus-armed lizards who inhabited the last of the six planets that circled Sirius. There was the tiny form of a Murath, one great wing burned away by a ray-blast. And old and young, short and tall, there were men of Earth!

They stood on the slope in front of the caves, gaunt and silent, eyeing him dourly. Moran tugged at his belt where a gun should be and squared his naked shoulders. They didn't seem overjoyed at the sight of him. Food was probably scarce here, and he was another mouth to cut down their rations. Well—they'd take him, and they'd like it!

As he came down from the rocks their line split to let him through. He felt a prickling at his spine as he passed between them, but no one moved to harm him. At the mouth of the largest cave he turned, his arms folded, his back to a great block of fallen stone.

"Now then," he demanded, "let's have it."

ONE MAN stepped forward from the rest, a Negro with the fine features and silky hair that meant Venusian blood.

"You're new here," he said tonelessly. "You're big and maybe you feel big. Maybe you'll have ideas about doing things, and about who'll do them. I wouldn't if I was you."

A grin came on Moran's bronzed face. He knew this kind of talk. "I might at that," he admitted. "And what would you gentlemen be thinking you might do about it?"

Three others aligned themselves with the black man. One was a Martian, with the shoulders and dangling arms of a bull ape. The other two were men his own size, or bigger.

"We've laws here," the Martian hissed. "We have ways of keeping them. There are four of us who see to that. You will eat when we tell you and what we tell you. You will sleep where we say and do what work we say. That is the law here, and you will obey it."

"Is it now?" Moran's thumbs were in his belt, and he teetered appraisingly on his toes. "So that's the way of it—little to eat and a devil of a lot too many to eat it. There'll be rations, I'm thinking, and the four of you to share them out when the time comes." He let his gaze wander insolently over the sullen faces of the crowd and back to the four who confronted him. "Now then, have you ever held the thought to make it five?"

The taller of the two white men answered. He had a knife scar on his cheek, and one ear had been mutilated by a ray-blast. "You're new here, fella," he sneered. "There's meat on your bones and blood in your guts. You'll take new men's rations till we and the boss say different. You'll do what we say,

when we say it, or we'll pare you down a size in the collar and a couple more in the head."

Moran's grin was insulting. "Oh my, oh my," he deplored. "Is there no sportsmanship left in the race of man? Four of you against one, and you with your sour-looking friends to boot. "Yah!" He spat contemptuously. "Come on, the four of you! I'll take any one of you with my hands tied and bend you into knots! I'll take all four of you—yes, and your friends besides—and show you who'll make the laws in this place from now on! Show me this skulking boss of yours, and by the saints I'll—"

"You will what?"

A man stood in the cave mouth, an old man, with white hair and beard, taller than Moran. He wore shorts and a jerkin of leather, and his arms were folded on the hilt of a mighty broadsword.

Moran turned to face him. Here was a man of another sort, a man he could treat as an equal.

"You'll be the boss, I think," he sneered. "And you a man past your best years. Faith, it must be no trick at all, to handle this gang of bezabors you have here."

"Do you think so?" There was a queer light in the old man's eyes. They were eagle eyes, peering under snow-white brows into Moran's face. The steely ring had gone out of his voice when he answered. "You have a name, I think. What, among friends, might it be?"

"Friends is it?" Moran snorted. "You talk softer than the boys here. It's maybe different if you've a man to buck, in the place of a lot of starved bilge rats with no starch in their knees. There's no secret to it, though—friend or foe it's Moran."

"Danny! My boy!" The great sword fell clanging on the rock.



The crystal sheath about her shattered, and for an instant he held her before a revulsion swept him—

Tears were in the old man's eyes and his hands were outstretched. "Danny Moran—have you forgot your father?"

Moran gripped the oldster's two shoulders. The grin was back on his face and twice as broad.

"Paddy Moran is the way of it," he said, "not Danny. Patrick Terence Aloysius Moran is the whole of it, and a name that's known from here to Capella and maybe farther. Danny Moran was my father, God rest his soul, before the drink got him and he went off by his lone self after chib-bugs on Pluto. Is there a chance at all that you would be that teetotalin', horse-stealin', space-blisterin' old reprobate of the world, my esteemed old spalpeen of a grandfather?"

He knew it before he asked. The Moran face was there, under the white beard, and the Moran eyes, and the muscles of the Morans rippled under his fingers in shoulders that were eighty years old and more besides. It was thirty years ago that Michael Moran had steered his ship into the black gulf that is between the stars, and vanished like dust into space. Thirty years ago Patrick Moran was but a likely glint in his father's eye as he surveyed the pretty girls of Dublin. There had been tales told of the teetotaling giant with ready fists and a readier tongue who seemed always to have scrip in his wallet and a chip on each of his broad shoulders, but they ended where they began, in emptiness. Old Michael Moran was a legend among space hogs, and another Moran was fast becoming one in his own right.

A GRIN stood on the old man's face. His gnarled fist smote Moran's chest with a blow that would fell an ox. His arm went around the younger

man's shoulder as he turned to his watching men.

"Ye've a Moran to deal with here, ye blaggards!" he roared. "Blood of my blood, and by the feel of him bone of my bone. He'll whip any five of you with his two hands tied and a quart of liquor in him, but by the Lord Harry if he touches a drop in my presence I'll have the hide off his back for it! Zagar—Moses—come here, the pack of you. Wolves that ye are, you've a better wolf than any of you to fawn on and ye'll feel his fangs too if need be, as ye've felt mine! He's new, but he's a Moran, and we'll stew the fatted calf in his honor, and be damned to tomorrow!"

The Martian's face was dark. "The ration's too short now," he hissed. "There's ten days before we'll get more. By what right do you break the law for a new man?"

Moran felt the old man stiffen beside him. One foot came down on the great sword, so that it clanged faintly on the rock.

"I made the law," the calm voice said. "I'll make new ones if need be. Would you, perhaps, care to make a trial of it?"

Zagar's glance fell. "You have the sword," he mumbled.

"I have indeed." The old man picked it up and stood again with his hands clasped on its massive hilt. It was beaten out of a strange gray steel, tempered blue at the edges, and as broad as a man's thigh. "With my own two hands I made it out of the star that fell, and as ye've cause to know I've used it. Are there, maybe, some of you that think it has grown too heavy for me to swing?"

"The law's for you, not us." It was Moses, the Negro. "You made it to suit yourself and you break it to make a feast for a man who has

no need of food. You've kept us to a ration that a dog would starve on. You've kept us weak and sick, so you could lord it over us with your loud mouth and your big sword. We're thirty men, hungry, and you'll swill away our food!"

"And what will you do?" Moran felt the old man's elbow against him, pushing him back.

"We're bare-handed and you have the sword. All right. You asked if we thought you could still swing it. Well—can you?"

Quick as was the Negro's spring, the boss was quicker. The great blade fell in an arc of blue light. Split to the breastbone, Moses dropped at his feet. Then before he could free the sword the Martian was upon him.

The glint of battle shone in the old man's eyes. He caught the squat form in his two hands and swung it above his head, then hurled it, twisting and sprawling, into the mob. At his side Moran was slugging knee to knee with the bigger of Zagar's two companions. He felt the man's ribs come under his fist, saw bright red blood spurt from his lips, and stepped over him to meet the charge of the half-mad pack.

Months of starvation had told on them. In bloody glee Moran smashed at their bony faces, kicked at their crowding bodies, before the tide closed over him. He dug his thumbs into the throat of a snarling Blueskin uglier than old Wallagash. He ducked past the six flailing arms of a Centaurian and pushed back his scaly, three-eyed skull until his bull neck cracked. Then a tentacle as thick as his arm twined round his throat and began to tighten. As he raised his hands to tear it away, a second twisting tendril fastened on his wrists. A bloody haze thickened before his

eyes. A pulse of spent air throbbed and hacked at his throat. Then with the clang of steel on iron-hard scales the tentacles loosened and he fell to his knees. He heard a great voice roaring somewhere near him. The mist cleared and he saw the old man, his sword red to the hilt, standing spread-legged over the cloven body of the lizard-man and shouting his defiance at the mob.

"Come on!" he cried. "Show me the stuff in you! There's but the two of us here, and me a grandfather to boot. Can I swing the sword yet, did you ask? Can I prove the law, who made it? Rats is what you are—crawling, squeaking rats! Is it food you're wanting? There's carrion for you! Fill your bellies so you can crawl into your holes like the rats ye are and dream of the day when you'll pull down Michael Moran. Or will you go to *her* and get your fill of what she'll give you?"

They quailed before him. Six of them were dead and Zagar lay writhing with a broken back. They retreated as the old man strode to where the crippled Martian lay.

"You know the law," he said quietly. "There's only death for you, the way you are, and you've got the choice. Which is it, the sword—or her?"

Moran saw black venom in Zagar's eyes. The flat brown face twisted in a leer of hate. "I claim the law!" the Martian hissed. "Take me to her!"

Dead silence followed his reply. Leaning on his sword, the old man stared into the hate-filled eyes. He shook himself like a great, shaggy dog.

"Pick him up, Paddy Moran," he commanded. "You'll be with us a long time, and you may as well know the whole of it now as later. Follow behind me now, and remember

—kin of mine or not, I'm boss!"

Shouldering his bloody sword like a rifle, the old man strode down the broken slope in front of the caves. Picking up Zagar, Moran followed. An impulse came over him to crush the life out of that hate-filled dwarfish body and fling it away among the rocks, but the Martian's whisper stopped him:

"I claim the law!"

FOLLOWING paths which old Michael seemed to know well, they wound their way through the labyrinth of wind-worn, gaudy stone, forcing their way against the howling gusts of wind that buffeted them from every side. They came to a little stream, a mere trickle of icy water running in a groove in the soft rock, and stopped to wash the blood from their faces and bodies and to clean the great sword. At last, through an avenue in the rock, Moran saw the amethyst dyke rising before them, its top a good fifty feet above the rock of the valley floor. Blocks of broken crystal made a steep way to its top, and up that broken away they climbed until they stood side by side on its bare summit, that ran like a great smoky purple road to the east.

Here in the open they were exposed to the full force of the wind. The dyke was glassy-smooth, and Moran had all he could do to keep his footing as he followed the old man along its top toward the abyss. He tried to speak, but the wind snatched the words from his mouth. He bowed his shoulders over the now unconscious Martian and struggled on.

Straight as a drawn line the purple causeway ran, splitting the valley in two halves. As they struggled on, the giant clear crystal at its end loomed ever higher before them and

the dazzling radiance from the abyss beat ever brighter upon them, until they were forced to shield their eyes. A sudden gust spun Moran around and flung him to his knees, and as he rose he saw that the others were close behind them.

The old man walked cradling the sword in his arms like a child, his white head bowed. Moran could feel the fierce light on his skin, burning deep into it. Then it was welling up through the rock under his feet, beating in on all sides, so that it seemed that he walked on a ribbon of purple ice, flung out in a great projecting frost-tongue over the abyss.

The old man stopped. The dyke was narrow here, barely eight feet across, and the mutter of the wind had died until Moran could hear his voice.

"Lay him there at her feet."

Moran strode forward, one pace, two and three, and laid the body of the Martian at the base of the crystal shaft. He stepped back and looked up.

He saw her floating there.

She was a woman, taller than most, and slim. Her hair streamed in a red glory over her bare white shoulders, covering her body with a veil of silken flame. Her hands were pressed flat against her body, each pink fingernail showing as though lit from within. Her head was bent a little to look down, her red lips parted breathlessly. Her eyes were closed and the long dark lashes lay gently on her cheeks that were soft as white velvet.

She floated in a hollow in the quartz, an oval casket filled with violet radiance that surrounded her like a halo. The light from the abyss seemed somehow collected, curdled, compressed into the intangible me-

dium in which she swam, her little feet pressed close together, her ten pink toes treading on emptiness. She was woman as men have dreamed of her since time began, and in him Moran felt the hot desire flooding up through his veins and bringing all the savage fury of love out of him in a mighty shout.

His grandfather's hand was on his shoulder and he shook it off. He stepped forward, stiff-legged, like a robot walking. He heard the Martian's cackle of mad glee.

He saw her green eyes open and look down at him.

Out of the world went everything but the love and the glory of her. Out of the world went everything but the red, red welcome of her parted lips, and the warm pleasure of her burning hair. Into his soul swam the glory of her sea-green eyes, calling him, drawing his life out to mingle with her life in a Nirvana never known to man.

In a world where the grass was springing emerald flame, where the trees drooped with clustered pearls for fruit and the streams were molten sapphire he wandered at her side under seething purple skies, and drank from the silver cup she held for him, feeling a flame of radiant fire surging through his veins as he sank with her into the clinging purple mists from which she drew her immortality—and his.

IN A WORLD where soft, perfumed breezes blew over spindrift of apple-jade and slow waves curled along coral sands, he lay dreaming under a moon of argent and shadowy purple, under a sky studded with diamond stars. In shadowed darkness, arched over with the filmy fronds of giant ferns, bedded on tufted mosses, he lay and played at love with maidens who ran from

him through the pulsing darkness and danced among the silver moonbeams, mockingly, whose ringing voices called him, lured him, over hill and dale until in the cool gray light of dawn he came upon them bowed among orchids and saw them melt and merge into a shining, yielding One.

Flesh of her flesh he hung in the void above the Universe and saw it spread in a shining cloud beneath his spurning feet, saw it receding to a pin point of misty light as he rushed on and up and out into the utter blackness of space, held in her slim, warm arms, bathed in her fiery hair, drinking the sweetness of her crimson lips—until in all Eternity were only they two, and the hungry, feasting love that made them one, man and woman, until the end of time.

Soul of her soul he swam in a place of fires that burned without warmth, of tiny glowing motes that drifted up out of nowhere and swirled about his head like perfumed smoke. He caught one between finger and thumb and held it up for his mind to probe it and know it for a universe of universes, infinitely small, infinitely remote, where the lifetime of a world was but the ticking of a pulse. Yet in that microcosm he lived as he lived in the place of flame, and she with him, holding her to him with the green promise of her half-closed eyes, weaving a web with the copper glory of her hair, drawing him down, down, down into unfathomable blackness where there was only the green, cold light of her two eyes, staring, staring out of nothingness.

And then her soft hand was in his, drawing him away into a place where there was only herself and the beauty of her, like a thing alive and breathing, where he was but a hungry,

longing atom of her being, merging in her, looking out through her eyes upon a world of mad, warped shapes that filled him with fear and loathing, and with a hate that came into him out of her and filled him with blinding rage—rage that eclipsed all save the smile on her soft, warm lips and the half-closed eyes that regarded him under drooping lashes—hate that split him in two parts, a part that fought and slew and a part that watched.

He saw one who wore his shape wrest the great sword from the old man's hand and buffet him to the ground. He saw that one charge berserker upon the huddled crowd of men, hewing at them like a woodsman at a tree, beating at them as with a flail of steel, driving them before him like milling sheep. A silver thread ran from him to that one whom he saw, and over it came surging a great, cold glee, and the slippery stickiness of fresh blood warm on his hands, and the salt taste of blood on his lips, that were her lips, licked by her pointed tongue. He felt the evil joy welling up in her at the odor of death that was in the air, and the sight of death in her eyes, and it seemed that it drove out the self that was in her, and made it one with he who stood and slew.

He was that one, there on the purple path, with the great sword in his bloody hands and the blood of slaughtered men wet on his face. And behind him, where the witch-woman swam in her crystal sepulcher, he heard the rasping, vengeful cackle of Zagar, the Martian.

ALL the lusts of his man's body had been sucked up by the witch's gaze—the lust of man for woman, and the lust of man for gold, and the bloody lust of man for war and

death. Those lusts were gone from him, and he stood, now, cold and empty, staring at the old man, his grandfather, where he lay senseless at the abyss' edge. He saw the Martian, twisted with pain at the crystal's base. And he saw again the woman floating in her mist, with the dark evil standing naked in her green eyes.

The red sword swung in an arc of steel and smote at the crystal's face. Again—again—and the whole world rang with the clamor of steel on quartz. But the walls of the bubble that held her were thin, and with the third mighty blow they shivered and rained about him like needles of clear ice. Again he raised his dripping sword—and met her clear green eyes.

Slowly his arms fell limp at his sides and the sword fell at his feet unheeded. Her small bare feet stepped daintily down among the broken shards. Her red hair flowed back over her round white shoulders, revealing all the loveliness of her witch's body, and her two slim hands were held out to him in invitation.

It seemed that an icy draft blew on his chest as he took her hands in his. Uncomprehending he saw the long white welts that rose where her fingers touched him. Her hands were on his arms now, sapping away their strength, and her red lips were raised to his, her pointed tongue licking out between her sharp white teeth. There was a perfume on her hair and her body, pungent and intoxicating, that filled his brain and drugged his reeling senses. He felt her body against his, and all its promise poured through him in a numbing, chilling wave that left in him a single core of searing fire. Her eyes were closed, but now they opened slowly and he plunged reck-

lessly, hopelessly into their fathomless green depths.

In him a bubble burst. An atom of white fire exploded in his brain, scourging him, cleansing him. He looked into his grandfather's steely eyes, over the sundered, bloodless body of the woman-thing, cleft by a single blow of the great gray sword. He raised her body up in his two hands, and it was light as a husk of shadow and cold as the touch of Death. He hurled it out into the sea of violet flame, and saw it drift and spin and sink like a feather into the abyss. Then the fury of the winds burst over them and he was flat on his face at the abyss' edge, clinging with bleeding fingers to the jagged quartz.

Inch by inch he dragged himself back from the verge, along the ribbon of amethyst to a place where he could scramble down into the shelter of the rocks. His grandfather was there, with the others who were still alive. The old man's hand seized his arm in a grip of iron.

"You did it, boy! You did what every man of us has tried to do since we were spilled into this hell's paradise! You went to her freely, and you broke her spell and her power with it. We've only the Stalkers to face now, and with her gone I'm thinking it will be a different tale."

Moran shuddered. If the old man's arm had not been strong and his eye sure, those full red lips would have touched his. What lay beyond he dared not guess. What had she been—she with her woman's shape, a woman's allure, yet dry and bloodless like a husk of cast skin? What manner of unnatural force kept the life in her, there in her crystal tomb and after? What would have been the price of that last kiss—or its reward?

"Tell me about it," he said huskily. "What's it all about?"

"She was the answer," the old man told him. "Once there was a reason for it. They had brains, those old Stalkers that built the city and put her here. They knew what they were doing, but now—he spat contemptuously—"these things that've come down from them do what they do because it's habit, because their parents did, and theirs before them, because their pint-size brains haven't room for anything but the things they've always done. Maybe she was a goddess, if things like that can have goddesses. Anyway, every time things were fixed so that Sirius' companion star shone through the Black Hole they'd bring food and leave it by the crystal. We lived on that, and men like us have lived on it for Heaven knows how long. She never touched it—not her. We were the food she craved!

"I don't know if they found her here, those old Stalkers, or if she was from another star, maybe another universe, and they put her there in the crystal to keep her from getting at them. She'd have taken them, all right. She drew no lines, but she liked her own kind best. She took them when she could. You've been through it—you know, maybe, what it was—but she left them dead and drawn, with something gone out of them—and smiling. It was the choice we gave to them that broke the law—quick death by the sword, or her. Some of 'em took her—

"That's where the toad came in. She needed strong men, big men, men with brains that could fight her, that she could play like a fish before she took the life out of them. The Stalkers would bring what they could get, and them that got past the toad were fit for her. There's

been a lot of us, since I came here. It took a quick brain and a strong body to make it, and she got the best there was."

"Why did you stay here?" Moran demanded. "There must be some way out."

"Hell, we've all tried that!" It was a scarred half-caste from one of Earth's stray colonies. "There's no way, only the way we came, and there you've got the toad to pass and the Stalkers if you make it. With her dead we'll starve here. There was worse things than goin' to her!"

Moran's eyes narrowed. "Are you man enough to risk the Stalkers if I handle the toad?" They stared at him blankly. "They're big but they're stupid; some of us'll get through. Do you have the guts to try?"

They shuffled forward, one by one, until they were crowding around him. "All right," he told them, "you've got leather—make me two ropes, strong ones, and get together whatever you've got to fight with. Grandpa and me'll do the rest."

IT WAS NIGHT when they crossed the summit of the pass and crept down the gorge through the eternal rains—a dozen men, armed with

broken stones, knives of chipped flint, or their bare hands. Ahead of them went Moran, his eyes and ears alert for any sign of danger, and at his side marched the old man, fondling his beloved sword.

Shortly after dawn Moran gave the word. They lashed the ropes securely about his body and snubbed them about projections of the cliff. He walked slowly toward the edge of the pit. The toad was waiting. Slowly its flat head rose, its golden eyes blinked, and that hypnotic trill began to throb from its swollen throat. A chill of horror brought the cold sweat out on Moran's skin. What if the ropes should break?

He was at the limit of his tether now. Fascinated, he stared at the hideous face that hovered at the pit's edge. Gritting his teeth, Moran waved his arms. The trilling stopped; the great toad's muscles tensed. With a shout Moran leaped back.

At once the pallid tongue licked out. He felt its sticky mass envelop him, felt the leather thongs cutting into his flesh as they resisted its pull. He was suffocating, strangling, the breath crushed out of his bursting lungs. Then came the scramble of feet on the stone and old Michael Moran was at his

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side. He heard the clang of steel on stone, and the severed tongue dropped at his feet. A second blow and the ropes were cut, and the two men sprang forward into the pit. Side by side they stood on the toad's broad skull. Seizing the sword, Moran raised it high above his head and smote with all his strength. Blood and brain pulp spurted from the cleft in the monster's skull, and the last dying kick of the great creature flung them from its back. Then it was still, and they were clambering up over its colossal bulk, out of the pit, with their crew close at their heels.

The Stalkers were aroused. In the half light of dawn Moran could see their ungainly forms scrambling out of their barrows, hear them calling out to each other in their purring voices. He saw their eyes glowing in the darkness like golden moons as they stalked across the valley toward the stairs.

Moran looked at his grandfather. The old man's legs were braced, his white locks whipping in the wind. The others were close behind—ten grim-faced men, armed with chipped stones and bits of wood, waiting to die fighting against inhuman giants thirty times their size. With room to run, to dodge, to hide among the ruined buildings of the deserted city, they might have escaped. Here, penned on this narrow ledge, they had no chance. Even the great sword could do nothing against those giant bodies.

He took the old man gently by the arm. "Give me the blade," he said. "You've had your fun, now. Let it be Paddy Moran that shows the creatures the welcome we have for them."

Cradling the sword in his arms as his grandfather had done, he

watched them coming up the steps. Their heads towered far above him; they were almost within reach. He flung a curt order over his shoulder: "Wait—then run for their legs. They'll be a bit busy at the first, and you'll maybe get through."

Grounding the sword's point, he tensed for the first futile blow.

Black hail screamed down across his vision. Great sweeping wings—long, shining lances—ray guns spitting out their needles of white fire. In hundreds and thousands, streaming from the clouds like rain in a headlong dive, the Muraths came.

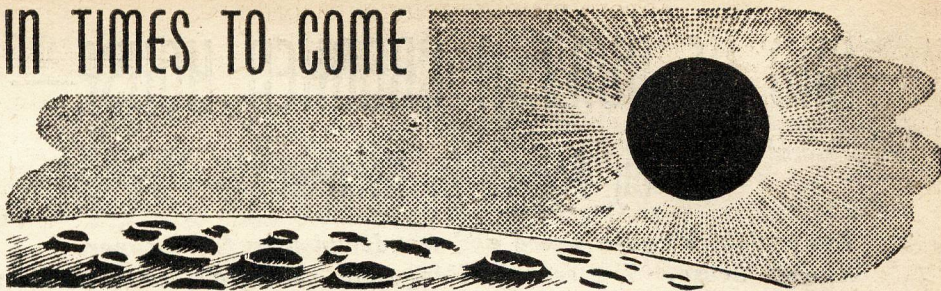
Bewildered, the Stalkers stood in a huddle, midway of the stairs, their misshapen heads cocked upward, their vast arms hanging limp. Then they were in retreat, stumbling across the plain to the shelter of the ruined city, striking vainly at the buzzing, darting mites that zoomed and banked about their heads striking death with rays and stabbing spears. Five of them lay dead and others were staggering, falling, to lie still on the bare stone.

Out of the winged horde one tiny figure dropped toward the watching men. It braked deftly and landed at Moran's feet. "Greetings, O Man," it croaked. "Shag holds his word. Life for life—that is law."

It was Shag, the Murath, who showed them the road through the Mountains of the Night before he returned to complete the slaughter which his winged legions had begun. From time immemorial Stalkers and Muraths had warred, and many of Shag's kinsfolk had gone to feed the great toad in the Stalkers' pit. Never before had one of them escaped, to lead his race back to the hidden stronghold of the giants and to their vengeance.

THE END.

IN TIMES TO COME



ROBERT A. HEINLEIN's back again next month with the cover story, "Logic of Empire." This story is, as usual with Heinlein's material, a soundly worked out, fast-moving yarn, more than able to stand on its own feet. But in connection with it, I'd like to mention something that may or may not have been noticed by the regular readers of *Astounding*: all Heinlein's science-fiction is laid against a common background of a proposed future history of the world and of the United States. Heinlein's worked the thing out in detail that grows with each story; he has an outlined and graphed history of the future with characters, dates of major discoveries, et cetera, plotted in. I'm trying to get him to let me have a photostat of that history chart; if I lay hands on it I'm going to publish it.

At any event, "Logic of Empire" is laid against the same matrix that extends from the near-present as presented in "Lifeline" and the current "Crooked House," to the remoter future of "Misfit." You'll find that "Roads Must Roll," "Blowups Happen," "If This Goes On" and "Coventry" all fit in. And in "Logic of Empire" you'll find one of the uses of knowing the future beyond the time the characters of that story know. "Logic of Empire" is laid in a time just before the beginning of the Prophet's dictatorship and its consequences as described in "If This Goes On."

But the characters of the story don't know that— THE EDITOR.

ANALYTICAL LABORATORY

As of noon, December 2nd, at which time this issue went to press, "Slan" had set a definite and unchallenged record. The whole December issue of *Astounding* had drawn an unusually heavy number of reader votes, with "Slan" itself apparently the reason for the unusual number. The record lies in this: every voter had placed "Slan" in number-one position. So the scores stand:

<i>Story</i>	<i>Author</i>	<i>Score</i>
1. "Slan"	A. E. van Vogt	1.000
2. "Fog"	Robert Willey	2.25
3. "Old Man Mulligan"	P. Schuyler Miller	3.00
4. "Legacy"	Nelson S. Bond	3.28
5. "Spheres"	D. M. Edwards	5.22

"Fog," incidentally, was the only other story to get any first-place votes; two readers tied it with "Slan."

I expect to wait a considerable time before another story comes along on which there is such surprising unanimity of opinion; apparently "Slan" merited the praise I gave it.

THE EDITOR.

“—AND HE BUILT A CROOKED HOUSE—”

By Robert A. Heinlein

The architect had a weird and wonderful idea for a super-modern house. The sort of thing that California permits using. But the slight jar of an earthquake rather changed it—

Illustrated by Schneeman

AMERICANS are considered crazy anywhere in the world.

They will usually concede a basis for the accusation but point to California as the focus of the infection. Californians stoutly maintain that their bad reputation is derived solely from the acts of the inhabitants of Los Angeles County. Angelenos will, when pressed, admit the charge but explain hastily, “It’s Hollywood. It’s not our fault—we didn’t ask for it; Hollywood just grew.”

The people in Hollywood don’t care; they glory in it. If you are interested, they will drive you up Laurel Canyon “—where we keep the violent cases.” The Canyonites—the brown-legged women, the trunks-clad men constantly busy building and rebuilding their slap-happy unfinished houses—regard with faint contempt the dull creatures who live down in the flats, and treasure in their hearts the secret knowledge that they, and only they, know how to live.

Lookout Mountain Avenue is the name of a side canyon which twists up from Laurel Canyon. The other Canyonites don’t like to have it mentioned; after all, one must draw the line somewhere!

High up on Lookout Mountain at number 8775, across the street from the Hermit—the original Hermit of Hollywood—lived Quintus Teal, graduate architect.

Even the architecture of southern California is different. Hot dogs are sold from a structure built like and designated “The Pup.” Ice cream cones come from a giant stucco ice cream cone, and neon proclaims “Get the Chili Bowl Habit!” from the roofs of buildings which are indisputably chili bowls. Gasoline, oil, and free road maps are dispensed beneath the wings of tri-motored transport planes, while the certified rest rooms, inspected hourly for your comfort, are located in the cabin of the plane itself. These things may surprise, or amuse, the tourist, but the local residents, who walk bare-headed in the famous California noonday sun, take them as a matter of course.

Quintus Teal regarded the efforts of his colleagues in architecture as faint-hearted, fumbling, and timid.

“WHAT is a house?” Teal demanded of his friend, Homer Bailey.

“Well—” Bailey admitted cautiously, “speaking in broad terms, I’ve always regarded a house as a gadget to keep off the rain.”

“Nuts! You’re as bad as the rest of them.”

“I didn’t say the definition was complete—”

“Complete! It isn’t even in the right direction. From that point of view we might just as well be squatting in caves. But I don’t blame

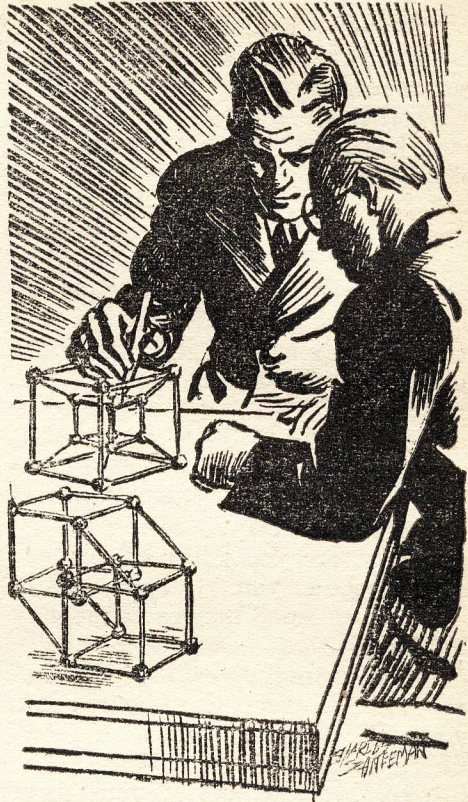
you," Teal went on magnanimously, "you're no worse than the lugs you find practicing architecture. Even the Moderns—all they've done is to abandon the Wedding Cake School in favor of the Service Station School, chucked away the gingerbread and slapped on some chromium, but at heart they are as conservative and traditional as a county courthouse. Neutra! Schindler! What have those bums got? What's Frank Lloyd Wright got that I haven't got?"

"Commissions," his friend answered succinctly.

"Huh? Wha' d'ju say?" Teal stumbled slightly in his flow of words, did a slight double take, and recovered himself. "Commissions. Correct. And why? Because I don't think of a house as an upholstered cave; I think of it as a machine for living, a vital process, a live dynamic thing, changing with the mood of the dweller—not a dead, static, oversized coffin. Why should we be held down by the frozen concepts of our ancestors? Any fool with a little smattering of descriptive geometry can design a house in the ordinary way. Is the static geometry of Euclid the only mathematics? Are we to completely disregard the Picard-Vessiot theory? How about modular systems?—to say nothing of the rich suggestions of stereochemistry. Isn't there a place in architecture for transformation, for homomorphology, for actional structures?"

"Blessed if I know," answered Bailey. "You might just as well be talking about the fourth dimension for all it means to me."

"And why not? Why should we limit ourselves to the— Say!" He interrupted himself and stared into distances. "Homer, I think you've really got something. After all, why not? Think of the infinite richness



of articulation and relationship in four dimensions. What a house, what a house—" He stood quite still, his pale bulging eyes blinking thoughtfully.

Bailey reached up and shook his arm. "Snap out of it. What the hell are you talking about, four dimensions? Time is the fourth dimension; you can't drive nails into *that*."

Teal shrugged him off. "Sure. Sure. Time is a fourth dimension, but I'm thinking about a fourth spatial dimension, like length, breadth and thickness. For economy of materials and convenience of arrangement you couldn't beat it. To say nothing of the saving of ground space—you could put an eight-room house on the land now occupied by a one-room house. Like a tesseract—"

"What's a tesseract?"

"Didn't you go to school? A tesseract is a hypercube, a square figure with four dimensions to it, like a cube has three, and a square has two. Here, I'll show you." Teal dashed out into the kitchen of his apartment and returned with a box of toothpicks which he spilled on the table between them, brushing glasses and a nearly empty Holland gin bottle carelessly aside. "I'll need some plasticine. I had some around here last week." He burrowed into a drawer of the littered desk which crowded one corner of his dining room and emerged with a lump of oily sculptor's clay. "Here's some."

"What are you going to do?"

"I'll show you." Teal rapidly pinched off small masses of the clay and rolled them into pea-sized balls. He stuck toothpicks into four of these and hooked them together into a square. "There! That's a square."

"Obviously."

"Another one like it, four more toothpicks, and we make a cube." The toothpicks were now arranged in the framework of a square box, a cube, with the pellets of clay holding the corners together. "Now we make another cube just like the first one; and the two of them will be two sides of the tesseract."

Bailey started to help him roll the little balls of clay for the second cube, but became diverted by the senuous feel of the docile clay and started working and shaping it with his fingers.

"Look," he said, holding up his effort, a tiny figurine, "Gypsy Rose Lee."

"Looks more like Gargantua; she ought to sue you. Now pay attention. You open up one corner of the first cube, interlock the second cube at one corner, and then close the corner. Then take eight more

toothpicks and join the bottom of the first cube to the bottom of the second, on a slant, and the top of the first to the top of the second, the same way." This he did rapidly, while he talked.

"What's that supposed to be?" Bailey demanded suspiciously.

"That's a tesseract, eight cubes forming the sides of a hypercube in four dimensions."

"It looks more like a cat's cradle to me. You've only got two cubes there anyhow. Where are the other six?"

"Use your imagination, man. Consider the top of the first cube in relation to the top of the second; that's cube number three. Then the two bottom squares, then the front faces of each cube, the back faces, the right hand, the left hand—eight cubes." He pointed them out.

"Yeah, I see 'em. But they still aren't cubes; they're whatchamacalls—prisms. They are not square, they slant."

"That's just the way you look at it, in perspective. If you drew a picture of a cube on a piece of paper, the side squares would be slaunchwise, wouldn't they? That's perspective. When you look at a four-dimensional figure in three dimensions, naturally it looks crooked. But those are all cubes just the same."

"Maybe they are to you, brother, but they still look crooked to me."

TEAL IGNORED the objections and went on. "Now consider this as the framework of an eight-room house; there's one room on the ground floor—that's for service, utilities, and garage. There are six rooms opening off it on the next floor, living room, dining room, bath, bedrooms, and so forth. And up at

the top, completely inclosed and with windows on four sides, is your study. There! How do you like it?”

“Seems to me you have the bathtub hanging out of the living room ceiling. Those rooms are interlaced like an octopus.”

“Only in perspective, only in perspective. Here, I’ll do it another way so you can see it.” This time Teal made a cube of toothpicks, then made a second of halves of toothpicks, and set it exactly in the center of the first by attaching the corners of the small cube to the large cube by short lengths of toothpick. “Now—the big cube is your ground floor, the little cube inside is your study on the top floor. The six cubes joining them are the living rooms. See?”

Bailey studied the figure, then shook his head. “I still don’t see but two cubes, a big one and a little one. Those other six things, they look like pyramids this time instead of prisms, but they still aren’t cubes.”

“Certainly, certainly, you are seeing them in different perspective. Can’t you see that?”

“Well, maybe. But that room on the inside, there. It’s completely surrounded by the thingamujigs. I thought you said it had windows on four sides.”

“It has—it just looks like it was surrounded. That’s the grand feature about a tesseract house, complete outside exposure for every room, yet every wall serves two rooms and an eight-room house requires only a one-room foundation. It’s revolutionary.”

“That’s putting it mildly. You’re crazy, bud; you can’t build a house like that. That inside room is on the inside, and there she stays.”

Teal looked at his friend in controlled exasperation. “It’s guys like

you that keep architecture in its infancy. How many square sides has a cube?”

“Six.”

“How many of them are inside?”

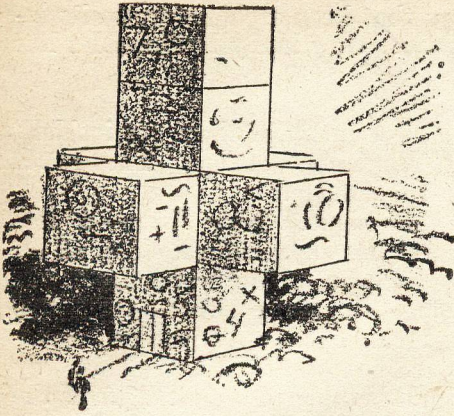
“Why, none of ’em. They’re all on the outside.”

“All right. Now listen—a tesseract has eight cubical sides, *all on the outside*. Now watch me. I’m going to open up this tesseract like you can open up a cubical pasteboard box, until it’s flat. That way you’ll be able to see all eight of the cubes.” Working very rapidly he constructed four cubes, piling one on top of the other in an unsteady tower. He then built out four more cubes from the four exposed faces of the second cube in the pile. The structure swayed a little under the loose coupling of the clay pellets, but it stood, eight cubes in an inverted cross, a double cross, as the four additional cubes stuck out in four directions. “Do you see it now? It rests on the ground floor room, the next six cubes are the living rooms, and there is your study, up at the top.”

Bailey regarded it with more approval than he had the other figures. “At least I can understand it. You say that is a tesseract, too?”

“That is a tesseract unfolded in three dimensions. To put it back together you tuck the top cube onto the bottom cube, fold those side cubes in till they meet the top cube and there you are. You do all this folding through a fourth dimension of course; you don’t distort any of the cubes, or fold them into each other.”

Bailey studied the wobbly framework further. “Look here,” he said at last, “why don’t you forget about folding this thing up through a fourth dimension—you can’t anyway—and build a house like this?”



"What do you mean, I can't? It's a simple mathematical problem—"

"Take it easy, son. It may be simple in mathematics, but you could never get your plans approved for construction. There isn't any fourth dimension; forget it. But this kind of a house—it might have some advantages."

Checked, Teal studied the model. "Hm-m-m— Maybe you got something. We could have the same number of rooms, and we'd save the same amount of ground space. Yes, and we would set that middle cross-shaped floor northeast, southwest, and so forth, so that every room would get sunlight all day long. That central axis lends itself nicely to central heating. We'll put the dining room on the northeast and the kitchen on the southeast, with big view windows in every room. O. K., Homer, I'll do it! Where do you want it built?"

"Wait a minute! Wait a minute! I didn't say you were going to build it for me—"

"Of course I am. Who else? Your wife wants a new house; this is it."

"But Mrs. Bailey wants a Georgian house—"

"Just an idea she has. Women don't know what they want—"

"Mrs. Bailey does."

"Just some idea an out-of-date architect has put in her head. She drives a 1941 car, doesn't she? She wears the very latest styles—why should she live in an eighteenth century house? This house will be even later than a 1941 model; it's years in the future. She'll be the talk of the town."

"Well—I'll have to talk to her."

"Nothing of the sort. We'll surprise her with it. Have another drink."

"Anyhow, we can't do anything about it now. Mrs. Bailey and I are driving up to Bakersfield tomorrow. The company's bringing in a couple of wells tomorrow."

"Nonsense. That's just the opportunity we want. It will be a surprise for her when you get back. You can just write me a check right now, and your worries are over."

"I oughtn't to do anything like this without consulting her. She won't like it."

"Say, who wears the pants in your family anyhow?"

The check was signed about half-way down the second bottle.

THINGS are done fast in southern California. Ordinary houses there are usually built in a month's time. Under Teal's impassioned heckling the tesseract house climbed dizzily skyward in days rather than weeks, and its cross-shaped second story came jutting out at the four corners of the world. He had some trouble at first with the inspectors over these four projecting rooms but by using strong girders and folding money he had been able to convince them of the soundness of his engineering.

By arrangement, Teal drove up in front of the Bailey residence the morning after their return to town. He improvised on his two-tone horn.

Bailey stuck his head out the front door. "Why don't you use the bell?"

"Too slow," answered Teal cheerfully. "I'm a man of action. Is Mrs. Bailey ready? Ah, there you are, Mrs. Bailey! Welcome home, welcome home. Jump in, we've got a surprise for you!"

"You know Teal, my dear," Bailey put in uncomfortably.

Mrs. Bailey sniffed. "I know him. We'll go in our own car, Homer."

"Certainly, my dear."

"Good idea," Teal agreed; "'sgot more power than mine; we'll get there faster. I'll drive, I know the way." He took the keys from Bailey, slid into the driver's seat, and had the engine started before Mrs. Bailey could rally her forces.

"Never have to worry about my driving," he assured Mrs. Bailey, turning his head as he did so, while he shot the powerful car down the avenue and swung onto Sunset Boulevard, "it's a matter of power and control, a dynamic process, just my meat—I've never had a serious accident."

"You won't have but one," she said biting. "Will you *please* keep your eyes on the traffic?"

He attempted to explain to her that a traffic situation was a matter, not of eyesight, but intuitive integration of courses, speeds, and probabilities, but Bailey cut him short. "Where is the house, Quintus?"

"House?" asked Mrs. Bailey suspiciously. "What's this about a house, Homer? Have you been up to something without telling me?"

Teal cut in with his best diplomatic manner. "It certainly is a house, Mrs. Bailey. And what a house! It's a surprise for you from a devoted husband. Just wait till you see it—"

"I shall," she agreed grimly. "What style is it?"

"This house sets a new style. It's later than television, newer than next week. It must be seen to be appreciated. By the way," he went on rapidly, heading off any retort, "did you folks feel the earthquake last night?"

"Earthquake? What earthquake? Homer, was there an earthquake?"

"Just a little one," Teal continued, "about two a. m. If I hadn't been awake, I wouldn't have noticed it."

Mrs. Bailey shuddered. "Oh, this awful country! Do you hear that, Homer? We might have been killed in our beds and never have known it. Why did I ever let you persuade me to leave Iowa?"

"But my dear," he protested hopelessly, "you wanted to come out to California; you didn't like Des Moines."

"We needn't go into that," she said firmly. "You are a man; you should anticipate such things. Earthquakes!"

"That's one thing you needn't fear in your new home, Mrs. Bailey," Teal told her. "It's absolutely earthquake-proof; every part is in perfect dynamic balance with every other part."

"Well, I hope so. Where is this house?"

"Just around this bend. There's the sign now." A large arrow sign, of the sort favored by real estate promoters, proclaimed in letters that were large and bright even for southern California:

THE HOUSE OF THE FUTURE!!!

COLOSSAL—AMAZING—
REVOLUTIONARY

SEE HOW YOUR GRANDCHILDREN
WILL LIVE!

Q. Teal, Architect

"Of course that will be taken down," he added hastily, noting her expression, "as soon as you take possession." He slued around the corner and brought the car to a squealing halt in front of the House of the Future. "*Voilà!*" He watched their faces for response.

BAILEY STARED unbelievably, Mrs. Bailey in open dislike. They saw a simple cubical mass, possessing doors and windows, but no other architectural features, save that it was decorated in intricate mathematical designs. "Teal," Bailey asked slowly, "what have you been up to?"

Teal turned from their faces to the house. Gone was the crazy tower with its jutting second-story rooms. No trace remained of the seven rooms above ground floor level. Nothing remained but the single room that rested on the foundations. "Great jumping cats!" he yelled, "I've been robbed!"

He broke into a run.

But it did him no good. Front or back, the story was the same: the other seven rooms had disappeared, vanished completely. Bailey caught up with him, and took his arm. "Explain yourself. What is this about being robbed? How come you built anything like this—it's not according to agreement."

"But I didn't. I built just what we had planned to build, an eight-room house in the form of a developed tesseract. I've been sabotaged; that's what it is! Jealousy! The other architects in town didn't dare let me finish this job; they knew they'd be washed up if I did."

"When were you last here?"

"Yesterday afternoon."

"Everything all right then?"

"Yes. The gardeners were just finishing up."

Bailey glanced around at the faultlessly manicured landscaping. "I don't see how seven rooms could have been dismantled and carted away from here in a single night without wrecking this garden."

Teal looked around, too. "It doesn't look it. I don't understand it."

Mrs. Bailey joined them. "Well? Well? Am I to be left to amuse myself? We might as well look it over as long as we are here, though I'm warning you, Homer, I'm not going to like it."

"We might as well," agreed Teal, and drew a key from his pocket with which he let them in the front door. "We may pick up some clues."

The entrance hall was in perfect order, the sliding screens that separated it from the garage space were back, permitting them to see the entire compartment. "This looks all right," observed Bailey. "Let's go up on the roof and try to figure out what happened. Where's the staircase? Have they stolen that, too?"

"Oh, no," Teal denied, "look—" He pressed a button below the light switch; a panel in the ceiling fell away and a light, graceful flight of stairs swung noiselessly down. Its strength members were the frosty silver of duralumin, its treads and risers transparent plastic. Teal wriggled like a boy who has successfully performed a card trick, while Mrs. Bailey thawed perceptibly.

It was beautiful.

"Pretty slick," Bailey admitted. "Howsomever it doesn't seem to go any place—"

"Oh, that—" Teal followed his gaze. "The cover lifts up as you approach the top. Open stair wells are anachronisms. Come on." As predicted, the lid of the staircase got out of their way as they climbed

the flight and permitted them to debouch at the top, but not, as they had expected, on the roof of the single room. They found themselves standing in the middle one of the five rooms which constituted the second floor of the original structure.

For the first time on record Teal had nothing to say. Bailey echoed him, chewing on his cigar. Everything was in perfect order. Before them, through open doorway and translucent partition lay the kitchen, a chef's dream of up-to-the-minute domestic engineering, monel metal, continuous counter space, concealed lighting, functional arrangement. On the left the formal, yet gracious and hospitable dining room awaited guests, its furniture in parade-ground alignment.

Teal knew before he turned his head that the drawing room and lounge would be found in equally

substantial and impossible existence.

“Well, I must admit this *is* charming,” Mrs. Bailey approved, “and the kitchen is just *too* quaint for words—though I would never have guessed from the exterior that this house had so much room upstairs. Of course *some* changes will have to be made. That secretary now—if we moved it over *here* and put the settle over *there*—”

“Stow it, Matilda,” Bailey cut in brusquely. “Wha’d yuh make of it, Teal?”

“Why, Homer Bailey! The very id—”

“Stow it, I said. Well, Teal?”

The architect shuffled his rambling body. “I’m afraid to say. Let’s go on up.”

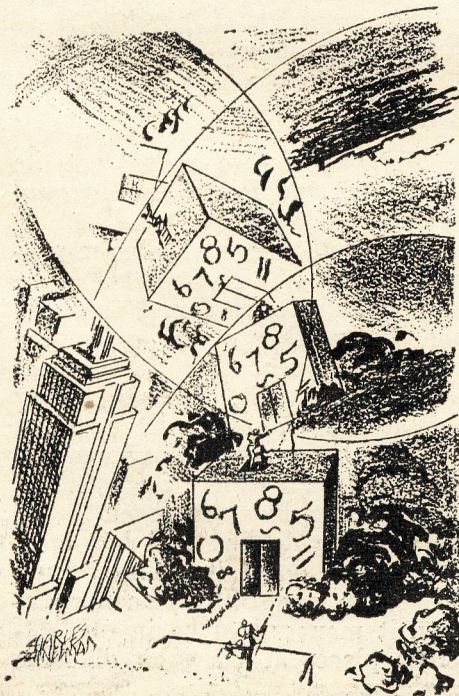
“How?”

“Like this.” He touched another button; a mate, in deeper colors, to the fairy bridge that had let them up from below offered them access to the next floor. They climbed it, Mrs. Bailey expostulating in the rear, and found themselves in the master bedroom. Its shades were drawn, as had been those on the level below, but the mellow lighting came on automatically. Teal at once activated the switch which controlled still another flight of stairs, and they hurried up into the top floor study.

“Look, Teal,” suggested Bailey when he had caught his breath, “can we get to the roof above this room? Then we could look around.”

“Sure, it’s an observatory platform.” They climbed a fourth flight of stairs, but when the cover at the top lifted to let them reach the level above, they found themselves, not on the roof, but *standing in the ground floor room where they had entered the house.*

Mr. Bailey turned a sickly gray. “Angels in heaven,” he cried, “this



place is haunted. We're getting out of here." Grabbing his wife he threw open the front door and plunged out.

TEAL was too much preoccupied to bother with their departure. There was an answer to all this, an answer that he did not believe. But he was forced to break off considering it because of hoarse shouts from somewhere above him. He lowered the staircase and rushed upstairs. Bailey was in the central room leaning over Mrs. Bailey, who had fainted. Teal took in the situation, went to the bar built into the lounge, and poured three fingers of brandy, which he returned with and handed to Bailey. "Here—this'll fix her up."

Bailey drank it.

"That was for Mrs. Bailey," said Teal.

"Don't quibble," snapped Bailey. "Get her another." Teal took the precaution of taking one himself before returning with a dose earmarked for his client's wife. He found her just opening her eyes.

"Here, Mrs. Bailey," he soothed, "this will make you feel better."

"I never touch spirits," she protested, and gulped it.

"Now tell me what happened," suggested Teal. "I thought you two had left."



"But we did—we walked out the front door and found ourselves up here, in the lounge."

"The hell you say! Hm-m-m—wait a minute." Teal went into the lounge. There he found that the big view window at the end of the room was open. He peered cautiously through it. He stared, not out at the California countryside, but into the ground floor room—or a reasonable facsimile thereof. He said nothing, but went back to the stair well which he had left open and looked down it. The ground floor room was still in place. Somehow, it managed to be in two different places at once, on different levels.

He came back into the central room and seated himself opposite Bailey in a deep, low chair, and sighted him past his upthrust bony knees. "Homer," he said impressively, "do you know what has happened?"

"No, I don't—but if I don't find out pretty soon, something is going to happen and pretty drastic, too!"

"Homer, this is a vindication of my theories. This house is a real tesseract."

"What's he talking about, Homer?"

"Wait, Matilda—now Teal, that's ridiculous. You've pulled some hanky-panky here and I won't have it—scaring Mrs. Bailey half to death, and making me nervous. All I want is to get out of here, with no more of your trapdoors and silly practical jokes."

"Speak for yourself, Homer," Mrs. Bailey interrupted, "I was *not* frightened; I was just took all over queer for a moment. It's my heart; all of my people are delicate and highstrung. Now about this tussy thing—explain yourself, Mr. Teal. Speak up."

He told her as well as he could in the face of numerous interruptions the theory back of the house. "Now as I see it, Mrs. Bailey," he concluded, "this house, while perfectly stable in three dimensions, was not stable in four dimensions. I had built a house in the shape of an unfolded tesseract; something happened to it, some jar or side thrust, and it collapsed into its normal shape—it folded up." He snapped his fingers suddenly. "I've got it! The earthquake!"

"Earthquake?"

"Yes, yes, the little shake we had last night. From a four-dimensional standpoint this house was like a plane balanced on edge. One little

push and it fell over, collapsed along its natural joints into a stable four-dimensional figure."

"I thought you boasted about how safe this house was."

"It is safe—three-dimensionally."

"I don't call a house safe," commented Bailey edgily, "that collapses at the first little temblor."

"BUT look around you, man!" Teal protested. "Nothing has been disturbed, not a piece of glassware cracked. Rotation through a fourth dimension can't affect a three-dimensional figure any more than you can shake letters off a printed page. If you had been sleeping in here last night, you would never have awakened."

"That's just what I'm afraid of. Incidentally, has your great genius figured out any way for us to get out of this booby trap?"

"Huh? Oh, yes, you and Mrs. Bailey started to leave and landed back up here, didn't you? But I'm sure there is no real difficulty—we came in, we can go out. I'll try it." He was up and hurrying downstairs before he had finished talking. He flung open the front door, stepped through, and found himself staring at his companions, down the length of the second floor lounge. "Well, there does seem to be some slight problem," he admitted blandly. "A mere technicality, though—we can always go out a window." He jerked aside the long drapes that covered the deep French windows set in one side wall of the lounge. He stopped suddenly.

"Hm-m-m," he said, "this is interesting—very."

"What is?" asked Bailey, joining him.

"This." The window stared directly into the dining room, instead of looking outdoors. Bailey stepped

back to the corner where the lounge and the dining room joined the central room at ninety degrees.

"But that can't be," he protested, "that window is maybe fifteen, twenty feet from the dining room."

"Not in a tesseract," corrected Teal. "Watch." He opened the window and stepped through, talking back over his shoulder as he did so.

From the point of view of the Baileys he simply disappeared.

But not from his own viewpoint. It took him some seconds to catch his breath. Then he cautiously disentangled himself from the rosebush to which he had become almost irrevocably wedded, making a mental note the while never again to order landscaping which involved plants with thorns, and looked around him.

He was outside the house. The massive bulk of the ground floor room thrust up beside him. Apparently he had fallen off the roof.

He dashed around the corner of the house, flung open the front door and hurried up the stairs. "Homer!" he called out, "Mrs. Bailey! I've found a way out!"

Bailey looked annoyed rather than pleased to see him. "What happened to you?"

"I fell out. I've been outside the house. You can do it just as easily—just step through those French windows. Mind the rosebush, though—we may have to build another stairway."

"How did you get back in?"

"Through the front door."

"Then we shall leave the same way. Come, my dear." Bailey set his hat firmly on his head and marched down the stairs, his wife on his arm.

Teal met them in the lounge. "I could have told you that wouldn't work," he announced. "Now here's what we have to do: As I see it, in

a four-dimensional figure a three-dimensional man has two choices every time he crosses a line of juncture, like a wall or a threshold. Ordinarily he will make a ninety-degree turn through the fourth dimension, only he doesn't feel it with his three dimensions. Look." He stepped through the very window that he had fallen out of a moment before. Stepped through and arrived in the dining room, where he stood, still talking.

"I watched where I was going and arrived where I intended to." He stepped back into the lounge. "The time before I didn't watch and I moved on through normal space and fell out of the house. It must be a matter of subconscious orientation."

"I'd hate to depend on subconscious orientation when I step out for the morning paper."

"You won't have to; it'll become automatic. Now to get out of the house this time— Mrs. Bailey, if you will stand here with your back to the window, and jump backward, I'm pretty sure you will land in the garden."

Mrs. Bailey's face expressed her opinion of Teal and his ideas. "Homer Bailey," she said shrilly, "are you going to stand there and let him suggest such—"

"But Mrs. Bailey," Teal attempted to explain, "we can tie a rope on you and lower you down eas—"

"Forget it, Teal," Bailey cut him off brusquely. "We'll have to find a better way than that. Neither Mrs. Bailey nor I are fitted for jumping."

TEAL was temporarily nonplused; there ensued a short silence. Bailey broke it with, "Did you hear that, Teal?"

"Hear what?"

“Someone talking off in the distance. D’you s’pose there could be someone else in the house, playing tricks on us, maybe?”

“Oh, not a chance. I’ve got the only key.”

“But I’m sure of it,” Mrs. Bailey confirmed. “I’ve heard them ever since we came in. Voices. Homer, I can’t stand much more of this. Do something.”

“Now, now, Mrs. Bailey,” Teal soothed, “don’t get upset. There can’t be anyone else in the house, but I’ll explore and make sure. Homer, you stay here with Mrs. Bailey and keep an eye on the rooms on this floor.” He passed from the lounge into the ground floor room and from there to the kitchen and on into the bedroom. This led him back to the lounge by a straight-line route, that is to say, by going straight ahead on the entire trip he returned to the place from which he started.

“Nobody around,” he reported. “I opened all of the doors and windows as I went—all except this one.” He stepped to the window opposite the one through which he had recently fallen and thrust back the drapes.

He saw a man with his back toward him, four rooms away. Teal snatched open the French window

and dived through it, shouting, “There he goes now! Stop thief!”

The figure evidently heard him; it fled precipitately. Teal pursued, his gangling limbs stirred to unanimous activity, through drawing room, kitchen, dining room, lounge—room after room, yet in spite of Teal’s best efforts he could not seem to cut down the four-room lead that the interloper had started with.

He saw the pursued jump awkwardly but actively over the low sill of a French window and in so doing knock off his hat. When he came up to the point where his quarry had lost his headgear, he stopped and picked it up, glad of an excuse to stop and catch his breath. He was back in the lounge.

“I guess he got away from me,” he admitted. “Anyhow, here’s his hat. Maybe we can identify him.”

Bailey took the hat, looked at it, then snorted, and slapped it on Teal’s head. It fitted perfectly. Teal looked puzzled, took the hat off, and examined it. On the sweat band were the initials “Q. T.” It was his own.

Slowly comprehension filtered through Teal’s features. He went back to the French window and gazed down the series of rooms through which he had pursued the



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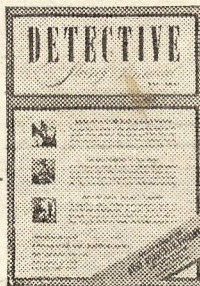
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mysterious stranger. They saw him wave his arms semaphore fashion. "What are you doing?" asked Bailey.

"Come see." The two joined him and followed his stare with their own. Four rooms away they saw the backs of three figures, two male and one female. The taller, thinner of the men was waving his arms in a silly fashion.

Mrs. Bailey screamed and fainted again.

SOME MINUTES later, when Mrs. Bailey had been resuscitated and somewhat composed, Bailey and Teal took stock. "Teal," said Bailey, "I won't waste any time blaming you; recriminations are useless and I'm sure you didn't plan for this to happen, but I suppose you realize we are in a pretty serious predicament. How are we going to get out of here? It looks now as if we would stay until we starve; every room leads into another room."

"Oh, it's not that bad. I got out once, you know."

"Yes, but you can't repeat it—you tried."

"Anyhow we haven't tried all the rooms. There's still the study."

"Oh, yes, the study. We went through there when we first came in, and didn't stop. Is it your idea that we might get out through its windows?"

"Don't get your hopes up. Mathematically, it ought to look into the four side rooms on this floor. Still we never opened the blinds; maybe we ought to look."

"Twon't do any harm anyhow. Dear, I think you had best just stay here and rest—"

"Be left alone in this horrible place? I should say not!" Mrs. Bailey was up off the couch where she had been recuperating even as she spoke.

They went upstairs. "This is the

inside room, isn't it, Teal?" Bailey inquired as they passed through the master bedroom and climbed on up toward the study. "I mean it was the little cube in your diagram that was in the middle of the big cube, and completely surrounded."

"That's right," agreed Teal. "Well, let's have a look. I figure this window ought to give into the kitchen." He grasped the cords of Venetian blinds and pulled them.

It did not. Waves of vertigo shook them. Involuntarily they fell to the floor and grasped helplessly at the pattern on the rug to keep from falling. "Close it! Close it!" moaned Bailey.

Mastering in part a primitive atavistic fear, Teal worked his way back to the window and managed to release the screen. The window had looked *down* instead of *out*, down from a terrifying height.

Mrs. Bailey had fainted again.

Teal went back after more brandy while Bailey chafed her wrists. When she had recovered, Teal went cautiously to the window and raised the screen a crack. Bracing his knees, he studied the scene. He turned to Bailey. "Come look at this, Homer. See if you recognize it."

"You stay away from there, Homer Bailey!"

"Now, Matilda, I'll be careful." Bailey joined him and peered out.

"See up there? That's the Chrysler Building, sure as shooting. And there's the East River, and Brooklyn." They gazed straight down the sheer face of an enormously tall building. More than a thousand feet away a toy city, very much alive, was spread out before them. "As near as I can figure it out, we are looking down the side of the Empire State Building from a point just above its tower."

"What is it? A mirage?"

"I don't think so—it's too perfect. I think space is folded over through the fourth dimension here and we are looking past the fold."

"You mean we aren't really seeing it?"

"No, we're seeing it all right. I don't know what would happen if we climbed out this window, but I for one don't want to try. But what a view! Oh, boy, what a view! Let's try the other windows."

They approached the next window more cautiously, and it was well that they did, for it was even more disconcerting, more reason-shaking, than the one looking down the gasping height of the skyscraper. It was a simple seascape, open ocean and blue sky—but the ocean was where the sky should have been, and contrariwise. This time they were somewhat braced for it, but they both felt seasickness about to overcome them at the sight of waves rolling overhead; they lowered the blind quickly without giving Mrs. Bailey a chance to be disturbed by it.

Teal looked at the third window. "Game to try it, Homer?"

"Hrrumph—well, we won't be satisfied if we don't. Take it easy." Teal lifted the blind a few inches. He saw nothing, and raised it a little more—still nothing. Slowly he raised it until the window was fully exposed. They gazed out at—nothing.

Nothing, nothing at all. What color is nothing? Don't be silly! What shape is it? Shape is an attribute of *something*. It had neither depth nor form. It had not even blackness. It was *nothing*.

Bailey chewed at his cigar. "Teal, what do you make of that?"

Teal's insouciance was shaken for the first time. "I don't know,

Homer, I don't rightly know—but I think that window ought to be walled up." He stared at the lowered blind for a moment. "I think maybe we looked at a place where space *isn't*. We looked around a fourth-dimensional corner and there wasn't anything there." He rubbed his eyes. "I've got a headache."

THEY WAITED for a while before tackling the fourth window. Like an unopened letter, it might *not* contain bad news. The doubt left hope. Finally the suspense stretched too thin and Bailey pulled the cord himself, in the face of his wife's protests.

It was not so bad. A landscape stretched away from them, right side up, and on such a level that the study appeared to be a ground floor room. But it was distinctly unfriendly.

A hot, hot sun beat down from lemon-colored sky. The flat ground seemed burned a sterile, bleached brown and incapable of supporting life. Life there was, strange stunted trees that lifted knotted, twisted arms to the sky. Little clumps of spiky leaves grew on the outer extremities of these misshapen growths.

"Heavenly day," breathed Bailey, "where is that?"

Teal shook his head, his eyes troubled. "It beats me."

"It doesn't look like anything on Earth. It looks more like another planet—Mars, maybe."

"I wouldn't know. But, do you know, Homer, it might be worse than that, worse than another planet, I mean."

"Huh? What's that you say?"

"It might be clear out of our space entirely. I'm not sure that that is our Sun at all. It seems too bright."

Mrs. Bailey had somewhat tim-

idly joined them and now gazed out at the outré scene. "Homer," she said in a subdued voice, "those hideous trees—they frighten me."

He patted her hand.

Teal fumbled with the window catch.

"What are you doing?" Bailey demanded.

"I thought if I stuck my head out the window I might be able to look around and tell a bit more."

"Well—all right," Bailey grudged, "but be careful."

"I will." He opened the window a crack and sniffed. "The air is all right, at least." He threw it open wide.

His attention was diverted before he could carry out his plan. An uneasy tremor, like the first intimation of nausea, shivered the entire building for a long second, and was gone.

"Earthquake!" They all said it at once. Mrs. Bailey flung her arms around her husband's neck.

Teal gulped and recovered himself, saying:

"It's all right, Mrs. Bailey. This house is perfectly safe. You know you can expect settling tremors after a shock like last night." He had just settled his features into an expression of reassurance when the second shock came. This one was no mild shimmy but the real seasick roll.

In every Californian, native born or grafted, there is a deep-rooted primitive reflex. An earthquake fills him with soul-shaking claustrophobia which impels him blindly to *get outdoors!* Model boy scouts will push aged grandmothers aside to obey it. It is a matter of record that Teal and Bailey landed on top of Mrs. Bailey. Therefore, she must have jumped through the window first. The order of precedence cannot be attributed to chivalry; it

must be assumed that she was in readier position to spring.

THEY PULLED themselves together, collected their wits a little, and rubbed sand from their eyes. Their first sensations were relief at feeling the solid sand of the desert land under them. Then Bailey noticed something that brought them to their feet and checked Mrs. Bailey from bursting into the speech that she had ready.

"Where's the house?"

It was gone. There was no sign of it at all. They stood in the center of flat desolation, the landscape they had seen from the window. But, aside from the tortured, twisted trees there was nothing to be seen but the yellow sky and the luminary overhead, whose furnacelike glare was already almost insufferable.

Bailey looked slowly around, then turned to the architect. "Well, Teal?" His voice was ominous.

Teal shrugged helplessly. "I wish I knew. I wish I could even be sure that we were on Earth."

"Well, we can't stand here. It's sure death if we do. Which direction?"

"Any, I guess. Let's keep a bearing on the Sun."

THEY HAD TRUDGED on for an undetermined distance when Mrs. Bailey demanded a rest. They stopped. Teal said in an aside to Bailey, "Any ideas?"

"No . . . no, none. Say, do you hear anything?"

Teal listened. "Maybe—unless it's my imagination."

"Sounds like an automobile. Say, it *is* an automobile!"

They came to the highway in less than another hundred yards. The automobile, when it arrived, proved

to be an elderly, puffing light truck, driven by a rancher. He crunched to a stop at their hail. "We're stranded. Can you help us out?"

"Sure. Pile in."

"Where are you headed?"

"Los Angeles."

"Los Angeles? Say, where is this place?"

"Well, you're right in the middle of the Joshua-Tree National Forest."

THE RETURN was as dispiriting as the Retreat from Moscow. Mr. and Mrs. Bailey sat up in front with the driver while Teal bumped along in the body of the truck, and tried to protect his head from the Sun. Bailey subsidized the friendly rancher to detour to the tesseract house, not because they wanted to see it again, but in order to pick up their car.

At last the rancher turned the corner that brought them back to where they had started. But the house was no longer there.

There was not even the ground floor room. It had vanished. The Baileys, interested in spite of themselves, poked around the foundations with Teal.

"Got any answers for this one, Teal?" asked Bailey.

"It must be that on that last shock it simply fell through into another section of space. I can see now that I should have anchored it at the foundations."

"That's not all you should have done."

"Well, I don't see that there is anything to get downhearted about. The house was insured, and we've learned an amazing lot. There are possibilities, man, possibilities! Why, right now I've got a great new revolutionary idea for a house—"

Teal ducked in time. He was always a man of action.

THE END.

COMPLETELY AUTOMATIC

By Theodore Sturgeon

A yarn about a perfectly automatic ship, and her perfectly incompetent crew, her hopeless, practically mindless crew trapped by her perfect mechanisms when things went wrong!

Illustrated by Jack Binder

"WHAT the devil does he do for a living?" I asked as the petty officer left the mess room.

"Nothing," said the second officer. "Nothing at all."

"What do you carry him for, then?"

The second was a man in his middle forties with a very nice grin. He used it now. "We carry him just in case," he said. "He's the chemical supervisor. He stands no watches, makes no reports. He reports aboard before we take off and disappears when we make port. For that he knocks down six hundred and forty credits a month."

"Six— Holy Kit, that's a lot of change for doing nothing. I was always under the impression that the crew of a spaceship was streamlined down to practically nothing. Does every ship carry these . . . these paid passengers?"

The second nodded as he filled my glass again. "There was a time, four or five hundred years ago, when a ship couldn't have done without them. They had no automatic machinery to speak of then. The ships were self-powered, and half their capacity was given over to fuel. Half the rest was driving machinery. They had no power beams then; they had to plot their courses and steer them every trip. Now, of course, with the power beams that both guide and drive the vessels,

things are different. There are only two or three hundred men in the System that know the theory of astrogation nowadays, and they are either research scientists or doddering scholars. It's only tradition that keeps a crew aboard any more—that and the fact that the more jobs the Supreme Council can create, the better for everybody. I don't kid myself—I know damn well that I could be replaced in a minute by two switches and a rheostat on the control panel back on Earth. That goes for everyone else riding these ships, too. Only the passenger ships carry captains, and they are there to impress the passengers. Sort of glorified masters of ceremonies. No, space travel isn't what it used to be."

"That may be true," I said, "but at least you do something for a living. You stand a regular watch and supervise the stowage and the passenger lists and keep the log and give the passengers the idea that the ship is in competent hands—but what about that chem super? False front is false front, but it's usually attached to something solid. That guy hasn't even an excuse for being aboard."

"You don't think so? Granted, his work is taken care of entirely by automatic machinery that hasn't broken down once in the last three hundred years, but that isn't the



*We started pulling and pushing things frantically,
but results simply made the heat more awful.*

point. Remember—I told you that he is here *just in case*.”

“In case of what?”

“Certain eventualities. Got an hour or so? I’ll tell you a story about a chemical supervisor that might interest you.”

“Go ahead,” I said. “I’ve got three weeks with nothing to do, let alone an hour. Start spinning.”

The second officer unzipped his collar, flipped a lever on his chair to tilt it back a little, and began.

THE REASON I think you in particular would be interested in this yarn is that it has to do with what happened when they did exactly what you say they should do—get rid of some hundred-odd thousand pieces of deadwood in the way of chem supers and their apprentices. Yeah, they did, about twenty-eight years ago. There was a great deal of noise about it at the time, because most of the old conservatives didn’t like the idea of breaking an old space tradition that way. They said that spaceships should no more take off without chem supers than they should without lifeboats. The fact that no one within the memory of living man had ever used a lifeboat for anything but joy-riding didn’t faze them.

The machinery was foolproof, rigidly inspected every trip, and all of it either one hundred percent automatic or remote control. Supers simply were not needed. The boys that held down the jobs were, with a few exceptions, friends of somebody who had a friend in the office. Their qualifications were courtesy ones; a couple of oral questions were examination enough for them. Many skippers carried their relatives with them as supers. A lot of fellows grabbed the jobs because they were sincerely interested in space travel

and that way they could have a good look around the ship to see how they liked it and what kind of work would suit them best. It was a set-up—harmless enough, to be sure, except for the fact that the supers got paid a high wage, and that made the rest of the crew a little sore because they had to work for a living.

This was before the days of the Functionalist government, when many of the space lines were privately owned and the big boys at the top were anxious to cut costs and increase profits without regard to the number of men they threw out of work. I don’t have to tell you that space transportation is as big an industry as they come; to get rid of a chem super and his apprentice on every single ship in the System that ever left any atmosphere was a big jolt. A few hundred thousand men thrown out of work all at once played hell with the economic balance, close as it was. Besides, most of those supers were absolutely worthless—bums, parasites, drifters, trouble-makers.

It was a foolish move, and the Council knew it; but the pressure put on by the profit-drunk “efficiency” experts of the space companies was too strong. They bounced them out—every last one of them. It’s interesting to know that it was that group of worthless ex-supers who, by the noise they made, were ultimately responsible for the new set-up, where men are hired and paid for jobs that could be done away with—my job, for instance. It’s better that way. No one loses anything; the companies don’t gain so much, that’s all. They can afford it. And it has completely done away with unemployment.

But to get back to the supers. I know all about what happened because it happened aboard the *Mag-*

gie Northern, my first ship—my first job on these cans. It was a first for the ship too—her first trip without a super.

I CAME ABOARD her—I was a 'teen-age kid at the time—with a suitcase with a busted handle under my arm and more ignorance than sense under my hat. I got in a lot of people's way and was finally shunted into the rocket man's fo'c's'le. I stood in the middle of the floor feeling shy. I hadn't known a spaceship would be like this. Like every kid my age, I had filled myself full of stories about the trade, and thought it would be cramped and stuffy with tiered bunks and lacking every facility a he-man would sneer at. But this, one of the poorest-equipped freighters in the Great Northern ore fleet, had three men to a room, each with a bed with innerspring mattress, hot and cold running water—the works. Some bright soul had painted a garden scene on the windowless bulkhead and had rigged it up with a window frame, glass and curtains. There was a kid a couple of years older than me sitting on a bench looking sad. He looked up at me.

"Hi. You the new wiper?"

"Yeah."

He got up and stuck out a hand. He was a good-looking kid, very tall. Well set up. "My name's Hume. Welcome to our dirty little home."

"I'm Babson. It don't look so bad."

"Neither does Fuzzy here," said Hume as a burly individual, the third wiper, came into the room. "But, boy—wait till you get to know him."

Fuzzy stopped in his tracks as he saw me and waited while his ape-like face lit up. Then he ambled over to me, looked into my face,

circled me slowly. "I seen that hay spread on the gangplank an' I figured they was goin' to coax somethin' like this aboard," he said as if to himself. "What they doin', Hume—shippin' hog-callers now that they got rid of the supers?"

I got sore right away, not knowing kidding when I ran against it. "I don't think I like this guy, Hume," I said, and squared off to this Fuzzy.

Fuzzy said, "Heh! It talks!" But he went over to the lockers and began being busy.

"Don't mind him," Hume told me. "He ain't happy. I was super on this scow, see, and he was tired of working for a living and was after my job. Darn near got it, too—didn't you, Fuzzy?"

Fuzzy grunted.

"Would have, too, only the Council wiped the job off the books. That's the only thing about losing my job I like—it didn't go to a heel like that."

Since Hume seemed to be getting away with talking behind Fuzzy's back to his face that way, I thought I might as well chime in. "What'd he do?"

"Started studying chemistry, of all things! He was all set to prove to the Board that he knew more about my job than I did. As if anyone cared about how much a chem super knew! Anyhow, he's all set to pull his little blitz on me when the job disappears. This scow, being an ore boat and notably ill-equipped, has no apprentice super. I get demoted to wiper; Fuzzy is still a wiper; you're another."

I laughed. Fuzzy swung around. "All right, you mugs. I'll get my chance to show you wise eggs up yet. Some day, that job's going back on the books. When it does, I get it."

"Not a chance," said Hume. "It took the Council three hundred years to get rid of the job. You'll be on a government pension before you ever hear of it again."

Fuzzy opened his mouth to say something else but the loud-speaker cleared its throat and announced the take-off. The two wipers jumped to their bunks, threw up a lever and lay down. I followed suit; in a few seconds there was a grinding roar and our beds slid on quadrantal rollers up against the bulkhead. There was a moment of crushing weight, and just when I thought I'd never get the strength to draw in another breath, the beds slid back off the bulkhead and were parallel with the floor again. In those days the momentum screens were inoperable inside the Heavyside Layer, and during the few seconds it took to get outside, the acceleration was really rough. They could lay it on thick because it lasted such a short time, but I can tell you, the headache you carried around with you for a couple of hours after starting was one to stand up and sneer at all the other headaches on Earth, laid end to end.

I LEARNED all I had to know about being a wiper within two days after starting. I had a station to keep clean, a few alleyways to sweep, and the twelve-to-four space man to keep entertained. His job was to clean another station, sweep the alleyways I didn't sweep, and entertain me. In the old days, you know, they had an engine room aboard, and a crew to run it; and they had a control room and another crew to run that. The Plotnick-Martin power beams took care of that now. The three space men held lifeboat tickets and the wipers didn't, and that was the crew. They stood

watches, two at a time, four hours on and eight off, and then there was a pin-headed individual who used to wander around the alleyways at odd hours doing nothing that I could see. He answered to the title of captain and he carried papers certifying his ability as a stowage expert for this particular ship.

That ship was quite something. There may be a few of them left—bulky old KH-type ore carriers. The series has been discontinued now, but it seems to me I saw one or two of them on the inter-asteroid runs a few years ago. Her capacity was something like two hundred thousand tons net and she was loaded to the ceil-plates with granular magnesium and sodium for the Sun mirrors of Titan. I don't have to tell you about the seven two-mile-diameter orbital mirrors that circulate around the satellite, making it habitable. You may not know, though, that the girders are all solid mag, because great rigidity isn't needed out there, and mag is cheap. The mirrors are silvered with sodium, which is bright and easy to handle. They have a patrol for each of the mirrors, which patches up meteorite punctures when they occur, squirting liquid sodium around the holes until they fill, then shaving them down with N rays. Well, we were bringing them their stock in trade, and it was an interesting cargo to handle. The mag was flaked to facilitate melting and casting, and the sodium was melted on Earth and run right into the holds where it "froze." When we discharged it, we would simply heat up the holds and pump it out. As long as it was loaded in an atmosphere of nitrogen and pumped out in space, there was little danger from it. We had tanks of nitrogen under pressure aboard, because after the sodium solidified

in the holds it was contracted. The space it left had to be filled with something, and it better not be air or water! Hence the nitrogen.

AFTER a couple of weeks of this kind of life I began to wonder about the stories I had read, and what happened to all the glamour and adventure the space service was steeped in. I even went so far as to ask Hume about it. He thought it was very funny.

"That whiffed out with the power beams," he told me. "There wouldn't be anyone aboard these ships if it weren't for the fact that someone has to keep the chrome clean and the books up to date. Then, of course, there are emergencies."

"What?" I asked hopefully.

"Oh—I dunno. I never heard of any. But just in case some of the machinery turned out not to be fool-proof, which has never happened so far, or in case something happened to the ship—"

"But what *could* happen?"

"Well—aw, why worry about it? Nothing ever has. If it did, it would happen so quickly we'd never know about it, or the ship would take care of itself so fast that by the time we realized there was an emergency, it would be past history." He sat down on the mess room table and put his feet on the bench. "Look, kid, I might as well wise you up. This is no kind of a life for a human being. If any of us were worth a damn in any trade at all, we wouldn't be here. If the Board members weren't as worthless as we are, they'd build ships without crew's quarters. If you have any gumption, you'll get off as soon as we get back to Terra, and go back to raising castor beans or whatever else it was you were doing before you

shipped aboard this mud hen. If you have no gumption, you'll stay here with the rest of us bums and pray that the world in general and the Space Commerce Board in particular doesn't get hep to what soft, soft cushions a space tradition has shoved under our fat—"

Crash!

It wasn't a loud noise, and it wasn't much of a lurch, but both were so utterly unexpected that both of us found ourselves thrown very hard and very flat.

Hume looked at me blankly. The lights went out, flashed on again as an automatic emergency circuit snapped in. He said in a weak voice, "Well, there's your emergency!" and fainted away.

A voice I had never heard before said sharply, through the speakers, "Emergency! Stand by!" I rightly assumed that this, too, was an automatic alarm. I shook Hume until he sat up.

"What do we do now?" I snapped at him. I rather think I was a little panicky.

"I only work here," he said with a sickly attempt at levity. There were voices in the alleyway outside. We drifted out there. It was the captain and two of the space men.

"How should I know? Who do you think I am—Plotnick?"

"Who's Plotnick?" asked one of the stooges. The fact that Plotnick had invented the power beam that Martin had adapted to interstellar commerce was just another of those things that those guys never got around to learning.

"Plotnick's dead," said the other stooge brightly.

"The captain ain't dead," said the first stooge even more brightly.

"Oh, go on back to bed," said the captain pettishly. "Something happened. I don't know what it

was. It'll be fixed when we get to Titan. Pass the word."

There was no necessity for that since the whole crew was there by that time. Those not on watch went back to bed. Yeah—back to bed, in the most desperate emergency any of them were ever destined to live through.

I WENT ON WATCH two hours later. I hadn't slept very well. Breathing was hard and my heart was racing violently. I dozed fitfully, not realizing what the trouble was until the sting of sweat got into my eyes and I came awake. Just then Fuzzy came in to call me.

"One bell, lug," he said. His usual shirt and dungarees had given way to a pair of underwear shorts, and he, too, was sweating profusely. What jolted me more than anything else was his voice. It had been a deep gas-on-the-stomach bass. Now it was a quavering tenor-baritone.

"Comin' up," I said, and rolled out. We stared at each other curiously. My voice had positively pipsqueaked. He opened his mouth, closed it again and went out. I noticed he was panting.

There was a red light blinking over the door. I'd never noticed it before. Somewhere an alarm siren began wailing. I didn't know what that meant either. I rolled out and headed for the mess room. They were all there. Everyone looked worried except the captain. He just looked unhappy. They were all asking him what had happened, what was happening. I gathered that everyone was having trouble breathing, and I know everyone's voice sounded like a recording speeded up three hundred percent.

It was hot as hell.

Came that throat-clearing sound from the annunciators. Everyone

shut up. Here at last was the blessed voice of authority. "Air pressure falling," it said. "All hands into space suits. Look for leaks."

We looked at each other stupidly. No one had the slightest idea where a space suit might be found.

There was a whir and click from the alleyway. Someone looked out and reported, "An impenetron shield's blocked us off from the rest of the crew's quarters, cap."

"My word," said the captain.

"My cigarettes," said Fuzzy.

The captain started forward. We followed because there was nothing else for us to do. When we got to the control room another shield dropped quietly behind us.

"No more mess room," said Fuzzy sadly.

"Yeah. No more eats," said one of the stooges.

"I don't see what's so funny about this," I said. I was scared. I was more scared than I ever even heard of anyone being. I was wishing I was working in the mines instead of this. I was wishing I was home in bed.

"There isn't anything funny about this," said the captain worriedly. He began fumbling a door open. We trailed in.

Thank heavens the captain knew something about the ship. The room was lined with case upon case of supplies—food, weapons, coils of wire, masses of spare apparatus that none of us knew anything about. But we knew cases of food when we saw them. There was even a roomy refrigerator there for storage. Also—eight space suits. Spares.

THE CAPTAIN checked our rush for them. "The air's all right here," he said. "Those automatic gates must have cut off the sections where the leaks were. We'll just have to

make ourselves comfortable here."

"Yeah," said one of the stooges. "No beds. Where am I gonna sleep?"

There was a babel over that childish question. I drew Hume aside. He was no gem, but he seemed a little more intelligent than the rest of them. "What's this all about?"

He scratched his ear. "I dunno." That seemed to be a reflex with these boys—"I dunno." "I guess we hit something—or something hit us."

"That would account for the loss of pressure," I said, "but what about the heat?" He began to speak; I stopped him. "Don't say, 'I dunno.' Think, for a change!"

It was a new idea for Hume. He turned it over for a minute and then came out with, "Why should I worry about it? The ship can take care of us till we get to Titan, and then the repair crews can worry about it."

"O. K., O. K.," I said, sore. "Go on, worm, spin yourself a cocoon. Me, I'll do my worrying now. That heat isn't coming from just nothing. Seems to me if we were just punctured it'd be getting cold here, not hot. But—you ain't worried. So go ahead. Be happy." I walked away.

He stared after me for a second and then shrugged and started looking for a place to bunk. Twice, out of the corner of my eye, I saw him stop and stare at me. He seemed to be going through pangs of some sort. I had a hunch what it was. The birth of thought. The stirring of an awakening intellect. It isn't surprising. Brains atrophy when they're not used, same as arms or legs. Boy, he was a case.

It got hotter.

I went to the captain about it. He actually seemed to be listening to everything I had to say. He nod-

ded sagely every time I paused for breath. I was a little more than annoyed when I realized that he was nodding because he didn't understand a word of what I was saying. In some kind of desperation I asked him if there was, by any chance, a manual aboard, describing the ship and its equipment. When I had finished he went right on nodding his head, realized I had asked him a direct question, and stopped, not knowing what to do with his little head. Not use it to think with, certainly. He was another. The things that happen in the name of civilization! Some people would call this kind of ship progress. I was calling it poison.

"Yes," he said uncertainly, "there ought to be some such thing around." He began fumbling through the stores. I had to keep on his tail or he'd have forgotten what it was he was looking for. "Don't know what you want it for. Can't imagine. Terribly dull reading," he kept muttering. Suddenly he came across a box of books. He pulled one out, looked at it—the son-of-a-gun could read, apparently—and exclaimed, "Now *here* is something!" He handed it to me. It was a trilogy of romantic novels.

"What the hell's this for?"

"One of the finest books I ever read," he said, in a let-me-be-a-sister-to-you tone.

I threw it at his head, tipped the books out. The manual was there all right. It was a thick volume, very efficient-looking. It was. It was streamlined. It consisted of column after column, page after page, of figures and letters and dozens of symbols I'd never heard of. I couldn't understand a letter of it. In the foreword it said something about a key. Apparently there was a twenty- or thirty-volume key

somewhere which gave the definitions of all that spaghetti. There was, the captain informed me—in the after magazine.

The after magazine was closed off by those precious automatic gates.

I groaned and took myself and my manual off into a corner. Somewhere in that book must be what I was looking for—instructions on how to proceed when your ship seems to be burning up. I raised my head. Burning up? If something was burning—

But what could be burning? The ship was all steel and impenetrable. The cargo—*magnesium. Sodium!*

I ALMOST let out a shout, but I hadn't the heart to disturb all those happy, stupid, unworried drifters. What good would it do them to know what the trouble was? They wouldn't know what to do about it if I did tell them.

No one got in my way as I circulated around the control chambers, staring at the maze of dials and indicators banked around the walls. The ship's designers had had a shot of the interior decorator's virus mixed in with their blood, it seemed to me. There were more damn concealed closets and sliding panels than a dope addict could dream up. It was mostly by accident that I found what I was looking for—a panel studded with tiny centigrade dials, with a monel plate at the top bearing the inscription "Cargo Temperatures."

Now the *Maggie Northern* had seventy-six holds of various sizes. Our cargo was about one-sixth sodium, the rest mag. According to the dials—and there was no reason why they should lie about it—fourteen of the mag holds were at temperatures ranging from nine to

eleven hundred-odd degrees. Fourteen of them, all on the starboard bilge. That was all I wanted to know. I called the captain over. He peered owlshly at the dials.

"There's your trouble," I said with the air of a man completing a very complicated card trick. He nodded and looked at me as if he expected me to say something else.

"Well, what's the matter with you?" I roared. "The mag's afire! We hit something—sideswiped it! The frictional heat raised the mag to its kindling temperature; there was a residue of air in the holds; the mag started to burn, softened the bulkheads, and the air pressure from alleyways and living quarters and other holds caved them in and fed more air to the burning mag!"

The captain shook his head in wonderment. "You certainly seem to have doped it out," he said admiringly.

I stared at him, unable to believe my own eyes and ears. "What's the matter with you?" I screamed. By this time the rest of them were gathered around us, looking like a flock of sheep just over the hill from blasting operations. "Radio in to Titan! Find out what to do about it!"

The captain looked about him blankly. "What's the use? The ship's duplicate indicator board has already told the Titans all about it. I can't imagine why they haven't already let us hear from them."

"Try it," I gritted.

"Why?" he said.

I plowed into him. I only got a couple of good ones in before Hume and Fuzzy piled on me and held me down. The captain ran into the storeroom and shut the door.

"You shouldn't have done that," said Hume amazedly.

I said something like "Ugh!" and shrugged loose.

Fuzzy's ape face was disgustingly slack. Those guys didn't have the guts God gave a goose.

I went over to what looked to me more like a visiscreen than anything else in the place. There was a switch beside it. I threw it. Nothing happened. "Where's the receiver and transmitter?" I growled.

One of the space men piped up. "That's my station," he said. "Starboard side, down below."

I had another look at the hold-temperature indicators. "Fused solid by this time," I grunted. "You know anything about radio?"

He shook his chowder head. So did everyone else. I felt like crying.

Somebody had to do something. I couldn't—I didn't know anything. If only I had—aw, what's the use! And then it was I had my bright idea. I turned to Hume.

"Listen—didn't you say you were chem controller aboard this ship?"

He nodded.

"Well—come on then—give. We got a fire aboard. Put it out!"

"Me?"

"You."

"Oh." He counted on his fingers in slow motion, which, I gathered, was his substitute for thought. Finally he came out with, "I don't know how."

"You don't know how." I was going to get started on a long diatribe about how he ever got to be a chemical controller when he didn't even know how to put a little fire out—a fire that would have us all well-done and tender a week before what was left of the ship reached Titan. I decided to try to be patient.

"Look," I said gently. "Unless something is done by somebody, and

soon, you and you and you are going to be roasted alive in this pig. See? I don't suppose you've noticed it, but it's getting warm in here too, already. Look—Four more holds have gone. O. K. Sit around and tell each other some bedtime stories. Go on. Die. See if anyone cares. Wait until the air gets so hot in here you can't breathe it. Watch your lazy ignorant flesh slough off when it starts to cook. It won't be quick, you know. You'll stay alive a long time. You have plenty to eat, plenty to drink. It'll hurt some, but what do you care? You're too damn comfortable to do anything about it."

The boys looked definitely sober. After a while Fuzzy spoke up. "Come on, Hume—can't you think of something?"

Hume had suddenly become very important to all of them. And I think the guy was really trying to come through. "We could put water on it," he said finally.

"This ain't a house fire, you know," I said.

"So what?"

"So—nothing," I said in my ignorance. "Try it, anyway; try something."

WE COAXED the captain out and explained what went on. It was all right with him. Anything was all right with him. He showed us the tank valves and the controls to the hold pipe lines. Luckily they were very plainly labeled. Hume went to work on No. 14 hold. It wasn't as hot as the others, according to the temperature readings. The hottest any of them got was around eleven hundred, for some reason. Fourteen was about eight hundred. That was the mean temperature for the hold; I gathered from that that it was part afire. After a lot of

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AT ALL NEWSSTANDS

fumbling Hume got the vents into the tank open and the water turned on. We could spare the water—all those ships stored themselves with a safety factor of five. Council law.

The hold had gotten fifty degrees hotter before Hume got the water in there. As soon as he turned his valve the needle bounced up to about two thousand and quivered there.

"Turn it off!" I squawked. "That mag likes water. It likes it very much. Look at that!" I pointed at the board. The next hold was getting hot.

"Now what?" said Hume worriedly.

Me, I didn't know what to say. Fuzzy saved me the trouble.

"Get out of the way," he spat, suddenly very much alive. "You call yourself a chem super! I wasn't far off when I got the idea I could push you out of that job! Let a man in there." He slammed Hume aside, began to be very busy with the valves. "The set-up's perfect," he said. "What's in a fire extinguisher? Water? No, dope—carbon dioxide. We have a fire in an inclosed space—all we have to do to blank it is fill the hold with CO₂! Cap—give me a hand."

I just watched. It sounded all right to me. Hume looked ashamed of himself. The rest of the boys clustered around the temperature gauges.

"Try Hold No. 20," I said.

Fuzzy threw over a lever and turned a valve quickly. There was a new confidence in the way he worked that was like a breath of cool air in the control room. Only there wasn't any cool air in the control room. It was getting hotter. Seven pairs of eyes watched the needle, narrowed as it flickered, widened as it slid over the dial to two thousand plus.

"Cut!" I cried.

There was a dead silence. Someone said unnecessarily, "It likes carbon dioxide, too."

"I don't understand it," said the captain. "I've been loading mag on this run for eight years now." He mopped his head. "I know all about it—specific gravity 1.75, boiling point 1100, melting point 632.7. But I guess no one ever thought I'd have to know how to put it out if it started to burn."

"And you never thought to look it up," I said.

He shook his head.

I'd noticed that Hume had been sulking a little too silently in a corner after Fuzzy had shoved him there. He suddenly let out a yip and dove for the valves.

"Now what?" I asked.

"That would be over there," Hume said, nodding toward Fuzzy, "barked up the wrong stump. I've got it! We're safe! Look—when mag burns—when anything burns—it hooks up with oxygen—right? It burned the oxygen in the air. It burned the oxygen in water. It burned the oxygen in the CO₂. But there ain't no oxygen in nitrogen!"

I turned it over gleefully, and slapped him on the back. He and the captain got busy hooking up the nitrogen tanks to the hold pipe lines. I called for No. 22. It took a little longer this time, due to Hume's accidentally turning the water valve on instead of off when he had finished turning a whole set of wrong valves, so that the nitrogen, under pressure, backed up into the water tanks. But we got that straightened out and proceeded.

Nothing happened. One of the stooges got hysterical and had to be locked in the storeroom. The needle wavered a little, went down twenty

degrees, stayed there. In a few minutes it went up.

"It used up all the nitrogen!" wailed the captain.

Hume said, "Must have combined with it. Damn. That mag sure is hungry." He looked at me as if I were a policeman and he were a little lost boy.

"Don't look at me that way," I said. I glanced at the dials. More than half the mag cargo was either burning or ready to. I had a bright idea. "Dump the cargo!"

The captain spread his hands. "Can't. If the hatches are opened, the automatic relays will break the power beam. The ship can't take off, operate, or anything else with the hatches open."

"Oh." I started walking up and down. I took off my shirt. Everyone else already had. Some had gone further than that. These automatic controls might have some good points, but—boy, oh, boy! when they started working against you!

I whirled on the captain. "What about the lifeboats?"

He looked up hopefully and then shook his head. "There's one forward and one aft. But they're both aft of here; we're right up in the nose now. The impenetron shields have locked us in. There's an escape hatch here, but—no, the lifeboat locks can only be opened from the inside. We couldn't get to the boats if we went out in space suits."

Hume got excited then. "How about those space suits?" he rapped out. "When it gets too hot in here, couldn't we cling to the hull in suits until the ship docks?"

We streamed into the storeroom. On each of the space helmets was a tag describing the air, water and food rations for each suit. Enough for eight days. We wouldn't be in for another two weeks. We went

back to the control room and sat down. The stooge who had been locked in came out with us, much chastened. It got hotter.

FOUR DAYS later we were a sorry-looking lot. No one had spoken for twelve hours. We'd thrown away all our clothing with metal fasteners, all rings, wrist chronometers and radios, because the metal was too hot to bear. The refrigerator in the storeroom had afforded some relief until it broke down. We were in a bad way. And one by one the crew started to crack. Hume began to giggle quietly to himself, on and on and on. Fuzzy lay still like some great hairy animal, panting silently. The captain sat unmoving with an insanely complacent smirk on his excuse for a face. No one dared move or speak because of the agonizing impact of the hot ore on their bare flesh when they did so. There was no relief, no help for it. By now the sodium cargo was molten, the mag burning wherever it could find air—and it found air every time it got a bulkhead hot enough to work on it. The bulkheads weren't built for that sort of thing. They could take any kind of hammering when they were fairly cool, but that damn alloy couldn't take it when it got much over a thousand degrees. The hull resisted nicely enough, more's the pity. We'd have been happy to see the mag burn its way through into space.

No one noticed the faint rumbling sound any more, once we had doped it out as merely the opening up of new bulkheads, feeding more air and more mag to the voracious fire. But all of us started weakly at the tremendous shuddering crash that echoed suddenly through the ship. The captain began to laugh crazily. We looked at him numbly.

"She's still working," he whispered hoarsely. "And that finishes us. The ship was getting off balance. The automatic equalizing chutes just opened. All the mag on the port side's open to the fire now." He waved weakly at the temperature board. Every needle on it had begun to climb.

Hume said something that made my flesh creep. "I wish I had the guts to kill myself."

ANOTHER two days. The crew sprawled around, asleep or unconscious or dead. I came to for a little while, I remember, because I started coughing weakly. Hume, in a last effort to accomplish something, had opened a water valve he'd discovered in the storeroom, thinking it would cool us off. It puffed into steam where it touched metal, and the air was full of it. Somehow someone else—Fuzzy, I think—managed to turn it off.

Then there was a time when someone began shaking me and shaking me. I didn't see how I could be alive, but I must have been because I felt the heat again. It was Hume. He had lost about thirty pounds. He had a red beard. Red eyes.

"Whassamarrer?"

"The gauges! They're . . . they're going down!"

I lay there for a long time, not able to react. He crouched over me, a thin line of moisture creeping out of the corner of his mouth.

"The holds are cooling down!" he said again and began shaking me.

I sat up, blinked at the board. It took quite a while for me to focus my eyes, but when I saw he was right I somehow found the energy to get my feet under me, climb upright.

It was unbelievable, it was past

all hope, but it was true! Hume started giggling again, and this time it didn't annoy be because I giggled, too.

"The mag," he said. "You see? Why'n hell didn't we think of that before? Mag's a good conductor. When the ship equalized herself, the rest of the mag smashed down on what was burning, soaked up heat, distributed it so much that it lowered the temperature below kindling point!"

"Throw another log on the fire," I crooned, "an' the fire goes out!" And then the rest of it occurred to me.

"Th' sodium!" I said. "See what happened? It dumped onto the hot mag, vaporized. The vapor conducted the heat to the ship's hull. She's radiating it off! If it wasn't for that, the temperature would just get to a certain point and stay there, and we'd have gotten roasted anyway, fire or no fire!"

We hugged each other gleefully and then started working on the rest of the crew.

"WELL, that's all there is to it. We rode in to Titan on the super-efficient wreck. We were all of us more dead than alive, but what the hell—as long as there was life enough left to bring back." The second officer of the new passenger liner stood up and stretched himself.

"So they restored the office of chem super?"

"Yep. But now those boys really know their stuff. Man—you ought to see the examinations they have to pass to get that kind of money for doing nothing! I'd sooner work for pay all along the line than work for nothing trying to learn that much

about a job I might flunk out of anyway."

"Just a second," I said. "A couple of things I'd like to know. What happened to Hume and Fuzzy?"

"Both got the jobs they wanted. You'd be surprised how hard they studied their chemistry!"

"Not under those circumstances I wouldn't," I said. "Er . . . one thing I don't understand. You said that the ship was thrown off balance when one half of the mag cargo was ignited. How come? Where'd the weight come from?"

The second officer fastened his collar. "Very shrewd of you, my lad. Can you keep something to yourself?"

"I can try."

He sat down again and put his head close. "The *Maggie Northern* didn't put her own fire out. I did."

"You did?"

"Yeah. Now wait a minute—don't go giving me credit for it. I turned plumb yellow. I got hysterical. I couldn't stand to see those boys gasping out their lives for days on end. Most of all, I guess, I couldn't stand the idea of dying that way myself. That 'log on the fire' business was my idea. If half the cargo would burn and kill us slowly, I assumed that if the whole cargo burned we'd die fast. I dumped the rest of the cargo on the fire. Maybe some of them saw me, but no one noticed. Well, it turned the trick, and it wasn't the kind of thing I'd bring out at the inquest if nobody else did."

"Completely automatic," I murmured. "I've sure changed my opinion about these useless jobs. You guys can get along swell without brains!"

THE KLYSTRON

By Stanley R. Short

Electronics Engineer

A fact article describing the theory and operation of the first major advance in radio tube design since Lee DeForest invented the triode tube. The klystron opens up a hitherto unreachable spectrum of radio more than one hundred times wider than the entire field available previously!

ALTHOUGH the effects of velocity control and resultant "bunching" is clearly visible to any motorist at any stop light on any home-from-the-holiday evening, the physical possibilities were recognized after, not before, the application. It represents a clear, and beautiful hint to the electronics engineer—and was steadfastly ignored.

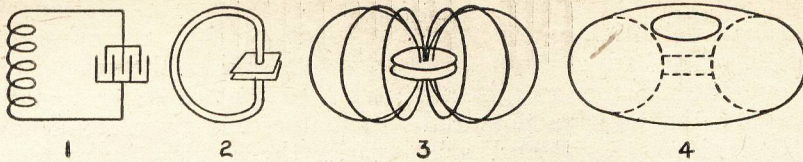
Given a steady stream of traffic—say the cars leaving a vehicular tunnel—and a traffic light, the results are inevitable. When the light is green, motorists hurry toward it; when it turns red, they slow down. Presto! The steady, fairly uniform stream of cars has been transformed into knots of cars made up of red-slowed cars overtaken by succeeding green-speeded cars.

That's a familiar sight, whether in open country or in a city—and the fundamental principle in the operation of the only new electrical oscillator principle since De Forest's triode tube. But the klystron was, as usual with fundamental scientific principles, worked out the "hard" way. It evolved slowly from mathematical work and painstaking experiment, an evolution forced—also as usual—by necessity.

Several years ago, it became evident that some new principle of

control for electrons was needed if efficient amplifiers and oscillators were to be made for wave lengths less than one meter. Since the invention of the audion, or three-element vacuum tube by Dr. Lee De Forest in 1908 no new principle for the control of electrons had been used. Every kind of commercial radio tube now in use employs a negative grid near the cathode to control the electron stream; the improvements have been the addition of grids, etc., which act on the electrons *after* they have been controlled by this negative grid. This grid action works perfectly over the whole spectrum of frequencies in general use today—but for those frequencies that are measured in billions of cycles per second, and which will become commonplace in the future, this grid action loses its high efficiency. There are two reasons for this.

The first is partly mechanical. If grids of ordinary size are used, they act as if there were a leak between them and the cathode or electron emitting surface. This is because, as the frequency increases, the energy can more easily flow across space without the aid of metallic conductors. Let us describe it this way. If an alternating voltage of



EVOLUTION OF THE RUMBATRON

high frequency is applied between the grid and cathode of a conventional tube, there occurs in the space between them an electric field, changing at a high rate of speed. Clerk Maxwell was the first to recognize that for such a condition there would be an actual flow of current across that space and he named it a "displacement current" to distinguish it from a "conduction current." At really high frequencies—billions per second—more current will flow across the space between two condenser plates than through a heavy copper wire with a loop in it. Unfortunately Maxwell died at an early age and was thus prevented from knowing of the importance that his theory would have on the whole realm of radio waves, for his theory was based on waves of light and was worked out before man knew that radio waves could be produced.

This "displacement current" constitutes a leak between the grid and cathode and at the very high frequencies the leakage is so great that the grid becomes ineffective for controlling the electrons. The smaller the grid, the less the leakage—but very quickly we reach the limit in this direction, for if the grid becomes tiny, so must the cathode, and microscopic cathodes mean microscopic power outputs. The little acorn tubes which can be dropped in a thimble represent about the ultimate

in development in the direction of smaller size.

The second reason is due to the transit time of the electrons across the tube. In an ordinary tube, the electrons cross in something like one billionth of a second so that the grid action is, to all intents and purposes, instantaneous. But if the grid alternates in voltage several times during the interval that it takes the electrons to go through the region of its influence, it acts both ways on the same electrons and the controlling action is rendered ineffective. This transit time can be reduced by speeding up the electrons with higher voltages, but not much help lies in this direction either, for a tenfold increase in voltage gives only a threefold increase in speed.

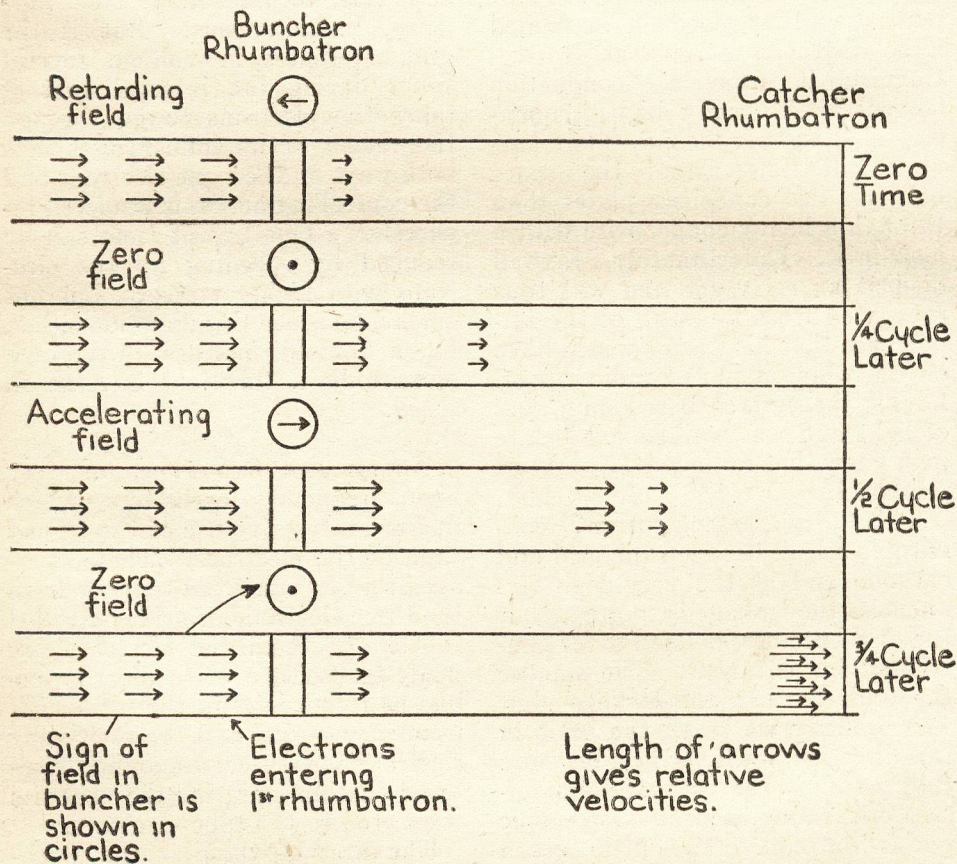
THERE ARE two types of very high frequency oscillators which make constructive use of the transit time of the electrons. These operate in a very different manner from the three electrode or grid controlled tubes. In them the electrons are made to oscillate or to describe orbits at frequencies in the ultra high frequency region and the oscillating electrons induce corresponding electrical oscillations in the circuits connected to the tube elements.

The first of these is the Barkhausen electron oscillator. In its simplest form it consists of a cathode,

a grid of fine wires maintained at a high *positive* potential, and a negative plate. Now an electron that starts out toward the grid is accelerated by the positive potential and attracted by the nearest grid wire in much the same fashion that a comet or asteroid is attracted by the Sun. Unless headed directly toward the grid wire it will miss it and be swung around in an orbit describing many revolutions about the wire. Other electrons moving halfway between two grid wires may swing back and forth in a line and still others may describe sinusoidal paths between the wires. The fre-

quency of these oscillations is dependent on the velocities of the electrons and on the spacings in the tube, so that in order to tune the oscillator to a given frequency, one varies the accelerating potential or voltage on the grid.

There is no way of controlling the individual electrons so that all may be made to oscillate in synchronism. A certain amount of such control is introduced by the oscillating circuit, but this is only partially effective, and the oscillator is, in consequence, not a very efficient one. Efficiencies of two or three percent are about as high as can be realized.



The principle of the operation of the klystron.

This is exceedingly poor, and were it not for the fact that they can be made to oscillate at frequencies in the billion cycle range, they would hardly be of more than passing interest to the radio engineer.

The other type of electron oscillator works in much the same way except that instead of the electrons being swung into orbits by positive grid wires, they are curled around by a magnetic field. This is the magnetron high frequency oscillator.

If a moving electron enters a magnetic field, it will follow a curved path. If the magnetic field is uniform, the orbit will be a circle. The time it takes an electron to complete a revolution or cycle in its orbit depends primarily on the strength of the magnetic field so that to tune a magnetron type of oscillator one varies the magnetic field strength. In this case also there is no good way of maintaining all of the oscillating electrons in synchronism, so that the magnetron is not greatly different from the Barkhausen oscillator as regards efficiency. But they have been made to oscillate at a frequency of thirty billion cycles per second which corresponds to a radio wave length of only one centimeter—thirty thousand times the frequency of ordinary broadcast radio.

The importance of producing power in the billion cycle range is so great that in spite of their poor efficiencies these two types of oscillators have been the subject of a great deal of research, and there is voluminous literature on them scattered throughout the scientific journals of the world. In spite of all this work, however, no great improvement in them had been made in the last few years. It began to be evident several years ago that the greatly desired billion cycle range

vacuum tube would have to work on entirely new principles.

At about this time the properties of the cavity resonator began to attract attention, and it was the development of this device that started the experiments which led to the invention of the klystron.

It started with the old coil-condenser combination which forms the oscillating circuit at ordinary radio frequencies, for the cavity resonator is simply an advanced form of this circuit. In this coil-condenser combination, the current oscillates back and forth, first charging the condenser in one direction and then in the other. To keep it oscillating, energy must be fed into it to make up for that which is lost. This loss is of two kinds: first, that due to heating by the flow of the currents through the resistance of the coil, and second that due to the radiation of energy as radio waves.

As the resonant frequency of this combination is increased, the coil must have fewer turns and the condenser fewer plates. Finally the limit is reached in which the coil has one turn and the condenser only two plates. This can be made to resonate at very high frequencies, but then the losses become very great and a great deal of energy must be continuously supplied to it to keep it oscillating. We can decrease the first kind of energy loss—due to heating—by increasing the surface of the wire, since at high frequencies the energy flows only on the surface of the conductor—the “skin effect”—but the loss by radiation also becomes very great at high frequencies. The cavity resonator reduces both of these losses to a remarkable degree.

Suppose that to the single-turn

coil and condenser there are added a large number of single turns, each connected to the same two condenser plates in parallel. The surface over which the oscillating currents flow would be increased, and the loss of the first kind reduced. Now if we had a great number of such turns, they would form a torus, or doughnut-shaped single turn which would have a very large surface area. But equally important, the torus would form its own shield and prevent radiation from getting away. Such a resonant cavity is an extremely efficient resonator. This particular torus shape is the one developed by Professor W. W. Hansen, Stanford University physicist. He calls it a rhumbatron because one of his assistants likened the swinging back and forth of the electrical energy in the cavity to a couple dancing the rhumba. There is more justification than that for the name, however, since the Greek word for rhythmic oscillation is *rhumba*. This isn't the only shape of resonant that can be used, although it appears at present to be the best one. A hollow sphere will work, as will also a number of other shapes. The Germans, like the Greeks have a word for them—*hohlraum*, which means a hollow space.

A physicist might recall that such resonators were used for sound waves many years before radio waves were known. Helmholtz built a synthesizer for musical tones using hollow spheres. Indeed, the apparatus in a laboratory where these very high frequencies are studied resembles in many details that of a physics laboratory engaged in the study of sound waves. One finds megaphones and horns of various kinds, hollow resonant tubes like organ pipes and of the same dimensions, long tubes for transmission exactly

like speaking tubes and the hollow vessels for resonators mentioned above.

This coincidence is not so strange in view of the fact that the wave lengths are of the same magnitude in the two cases. For instance, a thousand-cycle note—about two octaves above middle C on the piano—has a wave length about one foot long—and a billion-cycle radio wave is also about a foot long. The main difference between the two is that the transmission medium for the sound waves is air and the medium for the radio or electromagnetic waves is the hypothetical ether.

But to get back to the development of the klystron. Professor Hansen had developed the rhumbatron for use in a proposed new type of atom smasher, but when Flight Captain Sigurd Varian of the Pan American Airways heard of it he decided that it might be more useful in connection with the generation of ultra high frequency radio waves. His brother Russell, who had been engaged in television research, also became interested. The two brothers joined forces and became research associates at Stanford University.

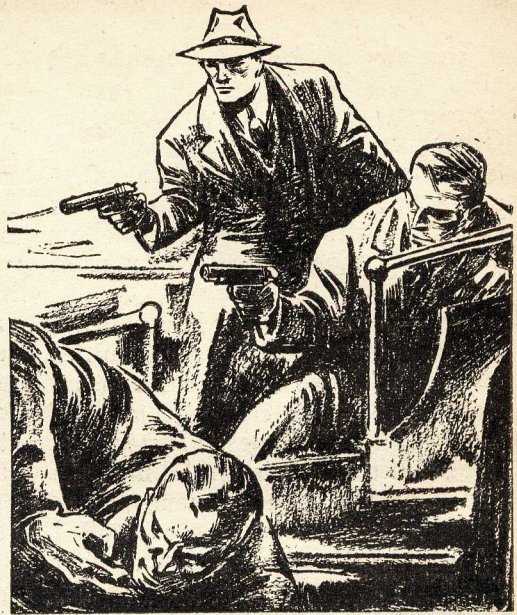
Sigurd was interested in the practical side of the problem. He was after a device which could be used for a successful blind landing system for aircraft, for he had fifteen years of service as an airline pilot and knew at firsthand how important such a system was. Russell was more the dreamer, the supplier of ideas, and it was he who finally thought of a way to use the rhumbatron efficiently in connection with a stream of electrons. When this principle had been demonstrated in an experimental set-up, Professor D. L. Webster, head of the Physics Department at Stanford, joined in

the work and developed the mathematical theory so that the experimental work could be guided on a more solid engineering basis.

The result of these endeavors was finally a tube which incorporated an electron beam passing through two rhumbatrons located a short distance apart, and which, for the first time, produced real power at three billion cycles per second. This device was called the klystron.

TO UNDERSTAND how it works let us go back to our example of the cars issuing from a tunnel. In the klystron, the electrons from the hot cathode are shot into the first rhumbatron in a steady stream at about one tenth the speed of light. In passing through the hole in the doughnut-shaped resonator, they suffer velocity modulation by the alternating electric field. When the field is with them, they are speeded up just as the cars are when the light is green, and when the field is against them, they are slowed down as are the cars by the red light. After leaving the first rhumbatron they are allowed to drift undisturbed for a few inches before entering the second rhumbatron. Thus, as with the automobiles, the faster ones catch up with the slower ones of the preceding cycle and they become grouped in bunches. These bunches of electrons passing through the second rhumbatron give up their energy to it and cause it to oscillate violently.

The first rhumbatron, called the "buncher," requires very little power to keep it oscillating and this is furnished by feeding a little energy back to it from the second rhumbatron which is called the "catcher." This is the arrangement for the oscillator. For amplifying weak signals the buncher and catcher are independent electrically and the input is fed directly to the buncher.



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AT ALL NEWSSTANDS

The name "klystron," which has been copyrighted by the Sperry Gyroscope Co., is derived from the Greek verb *klyzo*, which means the breaking of waves on a beach. Anyone who has watched the waves bunch up as they roll in on a shallow beach will recognize the aptness of the term.

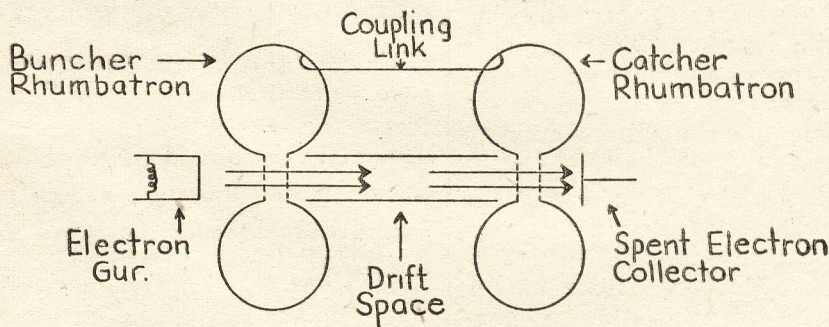
It now becomes clear how this device gets around the two difficulties mentioned above that become insurmountable in the electrode tube at very high frequencies. Instead of using a grid whose potential must be varied by the high frequency oscillations, the electrons are controlled by sending them through the field of the oscillator itself, and instead of attempting to reduce the transit time of the electrons from input to output, it is actually increased and utilized to bring about the desired bunching. The efficiency is good, and as much as three hundred watts have been produced by a klystron at a billion cycles per second.

It was not long after the development of successful models that a trial was made of the device as a source of waves for a blind landing system for airplanes. Irving R.

Metcalf, chief of the technical department of the Civil Aeronautics Authority in collaboration with Professor E. L. Bowles of the Electrical Engineering Department of the Massachusetts Institute of Technology, had recently developed a system for blind landing using ultra high frequency radio waves. Using commercially available vacuum tubes, they were up against the problem of producing power at these frequencies. Hearing of the klystron, they called on the Stanford scientists for help and as a result a klystron was flown to Boston for tests at the East Boston Airport.

The klystron was still pretty much a laboratory tool, and had been used with continuous pumping to maintain a good vacuum within it. Accordingly, a truck was procured and in this the klystron, its power supply equipment, and a vacuum pumping system were installed. This was driven out on the field for the tests. The power from the klystron was fed into a special megaphone designed by Professor W. L. Barrow from which the radio waves issued in a highly directional beam.

This beam was directed so that it



SECTIONAL VIEW OF A KLYSTRON
OSCILLATOR

made an angle with the ground of about 7° —a little steep for gliding to a landing, but by following the under side of the beam, a pilot could come down over a curved natural gliding path making contact with the ground at an angle of only 3° or 4° . With Captain Milton M. Murphy as pilot, and Inspector Jack Haynes of the Civil Aeronautics Authority as passenger, an airplane was landed repeatedly with the aid of the beam, demonstrating the feasibility of the blind landing system as well as the effectiveness of the klystron in this application of tight-beam radio.

This was the first practical application of the new device, and it is to be expected that others will soon follow. Plans to apply the klystron to such problems have been made by the Stanford group, the Civil Aeronautics Authority and the Sperry Gyroscope Co.

WHILE the field of usefulness for waves in the billion-cycle range takes in a variety of applications, those relating to aircraft appear to be the most important at the moment, for there is a real demand for these waves in aeronautics. One of the major reasons for this demand is their relative freedom from static. All radio waves of whatever wave length are subject to static interference whenever atmospheric electrical disturbances become severe. Lightning produces static on all wave lengths of the radio spectrum. However, it is well known that in general the higher the frequency, the less the interference of this kind.

One of the best ways to reduce static is to make the antennae highly directional, and by the use of horns an extremely high directivity is achieved. But horns are

only practical at the very high frequencies, because their size increases with the wave length so that here is another factor in favor of these ultra high frequencies in so far as static is concerned.

For aircraft, there is another source of static, closely linked to the first but distinct from it in its nature. This is the so-called precipitation static. It becomes troublesome when flying through electrically charged clouds, through sleet, rain, snow, and dust. Tests have shown that this kind of static is also materially reduced by using these very high frequencies.

There are still other advantages of these waves for aircraft. Since the beams are not reflected by the Heaviside layer, many stations scattered over the country may operate on the same wave length without interference. The smaller antenna equipment (four inches long for the blind landing tests described above) means less drag on the plane because of air resistance. The transmitting stations are cheaper to build since expensive antenna towers are not necessary.

It is only fair to point out that there are disadvantages as well, but these are not serious. For instance ignition noise, in contrast to ordinary static, increases in intensity with increase in frequency of the radio waves.

Many other applications are possible, but to properly evaluate them we must know more about the characteristics of the waves themselves. Before the klystron, research in this field was difficult because of the lack of a powerful source of power, but now this situation has been remedied and a new impetus has been given to such investigations. Although the surface has only been

scratched, it is already apparent that we must be ready to discard many fundamental notions; the behavior of electrical energy at these high frequencies is in many ways strange to our experience.

FOR INSTANCE, better transmission is obtained by sending it through an electrical nonconductor with metal around it for "insulation" than through a metal with the more familiar rubber or porcelain insulating material as the confining agent. At a recent meeting of the Institute of Radio Engineers, Professor W. L. Barrow of M. I. T. demonstrated that waves of 1.5 centimeters—a frequency of twenty billion cycles—were transmitted very well through standard BX cable—the house wiring kind—from which the metallic conductors had been removed. A 2" x 4" piece of wood—also the kind used in building houses—was used to transmit or guide the electrical energy and served very well in this capacity. Pistons moving cylinders have been used as tuners, and iris diaphragms like those used in cameras have been found to be efficient as transformers.

Actually, a good insulator or dielectric material makes the best conductor and is, in fact, highly efficient if it is "insulated" by a metallic coating to prevent loss by radiation. The researches of Professor Barrow and of Dr. G. C. Southworth have shown that the cable of the future will be the inverse of that of today. Whereas long-distance cables are now packed with as many conductors as it is possible to squeeze inside the sheath, the cables of the future will

be packed with exactly nothing; they will consist of hollow pipes and they will be capable of carrying millions of messages simultaneously whereas today's cables have difficulty in carrying hundreds.

Future television needs can also be met by the hollow pipe cables, for it will be possible to send a number of television programs simultaneously through one pipe. In fact, this would appear to be the answer to the problem of television networks which undoubtedly will some day cover the continents.

One is tempted to envisage other possibilities. For instance, there are at present hollow pipe lines spanning many miles of this and other countries which are used to convey oil, kerosene, gasoline and gas from the oil fields and refineries to points of distribution and use. Now these products all make good dielectrics so that with the aid of klystrons, it may be possible to put these pipe lines to double use and send television, telephone, and telegraph messages through them while they are transporting oil or gas to their destinations. Thus the great oil companies may enter the television relay business in much the same way that some of the large electric power distributing networks are now used for telephoning and signaling.

In any event, it is reasonably certain that the birth of the klystron and of the rhumbatron, and the new principles of electronic action which these have brought to light will exert a profound influence on the whole field of electronics and of high frequency radio. They have lifted the vacuum tube out of the rut of grid control and another milestone in its history has been passed.

THE END.



THE BEST-LAID SCHEME

By L. Sprague de Camp

Marvelous what ructions a man with a time-traveler could cause! The schemes he could work up! The way he could trip over himself!

Illustrated by Edd Cartier

THE BEST-LAID SCHEME

By L. Sprague de Camp

RUSSELL F. R. HEDGES did not look like a world destroyer. He was in fact an almost annoyingly harmless-looking soul, a plump person of forty-five in neat black serge, with dark hair, streaked with gray and in need of cutting, hanging down over his steel-rimmed glasses.

The folly of trying to judge people by their looks has been pointed out by generations of psychologists and such people. But this form of judgment seems to be ingrained in human folkways. Perhaps that is why Co-ordinator Ronald Q. M. Bloss underestimated Hedges. When the chief executive officer of the great North American continent is told by a mere head of the Bureau of Standards to do thus-and-so, thus-and-so being a program designed to put the affairs of the continent in the said head's hand, the co-ordinator's natural reaction is to ring the buzzer and have the erring subordinate carted off to the hatch.

Bloss was curious. Finger poised over the button, he asked: "How, my dear Hedges, do you propose to destroy the world?"

Hedges smiled amiably. He spoke in barely more than a whisper, suspecting the presence of dictaphones: "Simple, my dear Bloss." He was being offensively familiar; people normally addressed the co-ordinator as "your efficiency." "You recall my investigations into the nature of Time. The process of temporal forward-jumping, vulgarly known as vanwinkling, has been an established fact for several decades, being a favorite occupation among those who

are dissatisfied with the present world and hope to find a better one in the future."

"I know all that," said Bloss irritably.

"You may as well calm yourself, my dear Bloss. Being in a position to be as verbose in my explanations as I please, I intend to indulge my whims in that direction. As I was about to say, the problem of backward-jumping has not hitherto been solved. It involves an obvious paradox. If I go back and slay my own grandfather, what becomes of me? It's all very well to say he wasn't killed, and that something will happen to prevent my carrying out my design. Who shall see to it that my scheme is in fact frustrated, once I have actually gotten back to his time and located him? Yet, if I kill him, I obviously disarrange subsequent history.

"Subsequent history is a tough fabric, and will no doubt try to adhere to its original pattern. That it will altogether succeed in doing so I presume to doubt. In fact, any action on my part in bygone times that seriously affects other persons will set in train a series of events that will ultimately wrench all subsequent history out of its normal channels. Someone will marry or fail to marry the spouse he would otherwise have chosen, and a great statesman will be born or will fail to be born, as the case may be. And so forth. So, all I have to do is go back far enough, commit a few sufficiently significant acts, and presto! you and all the other inhabitants of

the continent cease to be; or rather, you cease to be the persons you now are. You see, my dear Bloss?"

Bloss thought he saw very well. He pressed the button.

Hedges saw him do so. The chief of the Bureau of Standards looked at his wrist watch. It was a large wrist watch, with a lot of buttons and things around its circumference. His fingers moved to one of these.

"Ah, well," he said, "it seems a demonstration is needed." And he vanished.

WHEN THE GUARDS bounced in three seconds later, they found a worried-looking co-ordinator. He was not especially disturbed over Hedges' vanishment—he'd seen people do that before when they van-winkled—but he was wondering if by some remote chance the man might not have actually gone back instead of forward.

He sent for Vincent M. S. Collingwood, head of the Continental Bureau of Investigation.

Collingwood pulled a sheaf of papers out of his brief case. "Hah!" he said. "Here are the files on Russell F. R. Hedges. Our staff psychologist has him down as 'shrewd, ambitious, resourceful, and persevering beneath a deceptively mild exterior.'" Collingwood fixed his chief with a glittering eye. "That, your efficiency, is sinister!"

"I don't know," said Bloss. "Maybe I'm foolish to get excited; maybe he was bluffing and did a vanwinkle on us."

"Hah!" grated Collingwood. "But did he? If it was an ordinary vanwinkle, he'd be stranded in the future and unable to get back. No, I'm sure there's a dastardly plot behind this."

Bloss began: "If—" He stopped with his mouth open. Through the

White House ran a silent, motionless earthquake, if you can imagine such a thing.

Bloss stared at the wall behind Collingwood. "That picture," he said. "That picture behind you."

Collingwood scowled at the blank wall. "I don't see any picture."

"That's just it. It was there a second ago. And *you* are wearing a different shirt."

"Hah! So I am. This *is* sinister. He's gone back and done something—it doesn't matter much what—and changed subsequent history."

"Stop saying 'hah' all the time," complained Bloss. "I want you to *do* something."

"You don't have to worry about *my* doing something, your efficiency. Doing something is just my job."

"Well, what did you have in mind?"

"Why . . . uh . . . I don't just know. But don't worry."

"But I *am* worrying. Can't you at least put some of your men to following Hedges?"

"Of course, your efficiency," cried Collingwood. "Just what I had in mind, hah! I'll put de Witt after him. He's the toughest man we have. Besides, he has an artificial eye."

"What's that got to do with it?"

"Hah! Wouldn't you like to know?"

HEDGES popped back into sight, in the chair just recently vacated by Collingwood. Bloss jumped.

"Ah, my dear Bloss," said Hedges. "The demonstration was convincing, I trust?"

"Uh-huh," said Bloss warily. "What do you want me to do now?"

"I've told you already. Force a bill through giving the head of the Bureau of Standards the powers I enumerated."

"All right. But it will take time to prepare it and to get it passed."

"I know that. I'm in no rush. I shall continue with my usual duties. You will, of course, not try anything so rash as to have me arrested—or assaulted. If you do, I shall go back quite a way, and I shall devote my efforts particularly to your own ancestors, all of whom I have looked up to be sure I can locate them. Good day, your efficiency."

Bloss watched him leave in a more conventional manner. The co-ordinator had in fact thought of telling Collingwood to dispose of Hedges in any way he chose, so long as Hedges was gotten rid of, but he had hesitated. He was a sticker for legality, and the murder of inconvenient citizens without due process of law was highly felonious in the North America of 2365. Besides, there was a close election coming up, and his opponents would be sure to find his sins out and use them.

Now there was an even better reason for preserving Hedges' immunity: if the C. B. I. attacked Hedges with gun or blackjack, but were not successful at the very first try, Hedges would disappear into the past, and would, in revenge, do something really drastic to the fabric of history. Maybe Bloss would find himself no longer co-ordinator—or no longer Bloss. As Bloss had considerable affection for himself, the thought of such separation was painful.

MEANWHILE Vincent M. S. Collingwood had called in his toughest operative, Mendez S. D. de Witt. This de Witt was in disgrace for having killed a man; he said it was necessary to keep the man from escaping; others said it was not. Nothing had been done to de Witt,

but he was made to feel that he'd have to go some to get back in the Bureau's good graces. He was a thick-bodied man with short black hair standing on end. Nobody would have suspected his artificial eye, which he had made some curious uses of in his work. He had a carefully cultivated slovenliness of dress and manner.

"This Hedges," said Collingwood impressively, "is a dastardly scoundrel. He threatens not merely the foundations of our government and the fabric of our society, but our very existence."

"Yeah," said Mendez de Witt.

"He must be stopped! Our glorious land cannot tolerate such a viper in her bosom."

"Yeah."

"You have been selected for this—" Collingwood's phone rang, and he listened to Bloss. Bloss told him that under no circumstances must Russell F. R. Hedges be assaulted, assassinated, kidnaped, or otherwise molested.

Collingwood continued: "You have been selected for the perilous task of thwarting this sinister force. But in the accomplishment of your aim, Hedges must on no account be assaulted, assassinated, kidnaped, or otherwise molested. You understand?"

"Yeah," said de Witt. "Whatcha wa' me to do, stick out my tongue at him?"

"Hah! You're as funny as a wheel chair, de Witt. No, you will first go to work in the Bureau of Standards, where you can keep an eye on him. You will learn whence he derives his time-traveling power, and whether he can be deprived of it without much risk."

"That all?"

"That's all. Good luck, my boy."

"Some day," said de Witt, "a guy

is gonna call another guy my boy' once too often. Be seein' ya."

MENDEZ S. D. DE WITT had several artificial eyes, none of which was quite what it seemed. He occupied a section of a laboratory desk in the Bureau of Standards Building, and, with a soldering iron and tweezers, deftly assembled the mechanism for yet another spurious optic. This one was to be a paralyzing-ray machine. The mechanism would be installed in the lucite shell at another time; de Witt didn't want the other Bureau of Standards technicians to learn about his eyes.

One of these technicians sneezed. He ran a finger around the base of his faucet and held it up with a faint smudge of yellow powder on it. He crumbled this trace of powder over his burner, and sniffed.

"Now who," he said, "has been scattering powdered sulphur around the lab?"

De Witt could have told him. He could also have told him that the sulphur was radioactive.

Russell F. R. Hedges marched through the laboratory on the way to his office. He nodded and smiled at the technicians, saying: "Ah, my dear Hutchinson. Ah, my dear Jones."

When he passed de Witt, giving the laboratory's most recent recruit a look of suspicion, de Witt stared at Hedges' wrist. He shut his good eye—the right one—tight, then blinked it several times. Then he went back to his paralyzing mechanism.

When de Witt got home, he at once took out his fake eye. The shell unscrewed into two parts, and inside it was a neat little X-ray camera, full of exposed one-millimeter film. He developed this and printed a series of enlargements.

They showed X rays of Hedges' wrist, and of the remarkable wrist watch worn thereupon. The photographs were mere black-and-gray silhouettes, made by the emanations from the radioactive sulphur that de Witt had scattered around. Each showed the inside of the watch as a jumble of coils and cogwheels, and would have been useless by itself. But de Witt, by comparing a number of pictures taken at different angles, formed a good idea of the workings of the gadget. It was Hedges' time-travel machine all right. On its face were number-disks like those on the odometer of an automobile, reading years and days of the year. All Hedges had to do was set the thing forward or back.

De Witt promptly set about duplicating the machine. It took him three weeks. Collingwood got pretty impatient by the end of that time.

De Witt explained: "You see, chief, all I wanna do is chase this guy outa his own time. Then I'll fix him so he won't do *nothing*."

"But de Witt, don't you remember what his efficiency said about not molesting—"

"Yeah, I know. But that only has to do with what I do to him *now*. His efficiency couldn't kick about what I did to Hedges five hundred years ago, now could he?"

"Hah. Yes. I see your point. Of course. I believe in following his efficiency's orders, but in combatting a sinister force like this—"

DE WITT FINISHED his duplicate time watch. He strapped it on his wrist and spun the setter.

Nothing happened, though the dial showed 2360—five years before. The C. B. I. man cursed softly and spun the disks some more, and still some more. Nothing happened until

he reached 2298. Then, *whoosh*, the room blurred into frantic motion.

De Witt found himself sitting in empty air twelve feet above the ground of a vacant lot, to whose surface he dropped, *thump*.

He picked himself up. The explanation dawned upon him. He'd gone back to a date before the boardinghouse where he lived was built. Thank Heaven he hadn't tried the stunt in a skyscraper—or on the former site of another building. He wondered what it would feel like to find yourself occupying the same bit of space as a steel I-beam. Probably there'd be a hell of an explosion.

Then he wondered why the gadget had not worked until he had gone back thirty-seven years. He was thirty-six years old—that must be it: you couldn't occupy any one

stretch of time more than once. It wouldn't do to have two Mendez S. D. de Witts running around simultaneously.

To check, he walked out to the sidewalk—to be safe—and advanced the setter slowly. Nothing happened until it registered 2365 again; then *whoosh*, his boardinghouse scrambled into existence, like a movie of a blowing-up in reverse.

Then he finished his paralyzer. It proved something of a disappointment. It worked, but only at a range of a meter or less. And you had to aim carefully at the victim's neck vertebrae.

But he inclosed the paralyzer in its eye-shaped case, and put the case in his left eye socket. Next morning he walked in on Hedges unannounced.

"Ah, my dear de Witt—" said Hedges, smiling.

"O. K., skip it. I guess you know who I am, buddy."

A C. B. I. man? I suspected it. What do you want?"

"You're coming with me, get me?"

"Yes?" Hedges raised his eyebrows, and touched his wrist watch. He vanished.

But so did Mendez de Witt.

It was damn funny, sitting there and spinning the setter, and looking at the shadowy form of Hedges on the other side of the desk. As de Witt was only a second or two behind Hedges in his pursuit, he could keep him in sight. When Hedges speeded up his time-travel, de Witt's strong and agile fingers spun the setter faster; when Hedges vanished for a second, de Witt quickly reversed the motion of the setter and picked up Hedges going the other way. When Hedges stopped, de Witt stopped too.

The C. B. I. man grinned at Hedges. "Gotcha, huh?"

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"Not quite," said Hedges. He fished a bomb out of his pocket, and started to pull the pin. De Witt just sat there, holding the setter. Hedges put the bomb back in his pocket.

De Witt laughed. "Thought you'd turn that thing loose and skip, huh? I can skip just as fast as you can."

Hedges went back to his time watch. Forward and backward he spun the disks. De Witt followed him. The next time Hedges stopped, there was a third man in the room; a startled-looking old man.

Hedges looked at him and jerked a thumb. "One of my predecessors; a man named Rasviadnik. I recognize his picture."

"You damn fool," said de Witt. "If he'd been sitting in the chair too when you stopped it'd have been blooey for both of you."

"I suppose so, de Witt. It's a bit crowded here, don't you think?" And he began spinning the setter again.

THIS TIME de Witt lost him. He went back to the time he'd been at when he last saw Hedges, and went over it carefully. At last he picked up a glimpse of Hedges bouncing out of his chair and running for the door. De Witt adjusted the setter carefully, and managed to stop just at the time of Hedges' reaching the door.

De Witt ran after him. He had to keep him in sight, not only in the three spatial dimensions, but in time also. He was a much faster runner than Hedges. But as he caught up with his victim, Hedges fiddled with his wrist and began to fade.

De Witt did the almost impossible feat of running after Hedges and spinning his setter at the same time. They were outside the Bureau of

Standards Building. De Witt knew that if he once thoroughly lost his man he'd never find him.

They stopped running. Hedges slowed down his setter to where de Witt could glimpse motor vehicles flashing backward past them. Several went right through them.

"Look out!" yelled de Witt, as Hedges almost stopped his time-travel at a point that intersected the space-time track of a big truck. No sound came; you could move while traveling in time, but you couldn't hear. Hedges saw his danger and speeded up again.

Hedges gave up time-flight; since it had only one dimension, you could always find a man by moving back and forth along it far enough. He began running physically again, de Witt after him. They raced down Pennsylvania Avenue. De Witt had lost track of their location in time. He stole a glance at his watch. It read 1959.

Hedges, he thought, must have had that bomb ready so that he could carry out his threat by going into the past and blowing up some innocent bystanders. De Witt, tough as he was, was shocked. He reached for his pistol, which he had hoped not to have to use.

Hedges was getting winded. He bumped into a pedestrian. De Witt felt a psychic jar run through him.

Hedges bumped another pedestrian. The pistol vanished from de Witt's grasp; he was holding an umbrella instead. He knew what had happened: the bumping of the pedestrian, a trivial matter in itself, was one of those first links in a chain of events that change history.

They were approaching a traffic circle. In the middle of this was a circular bit of park with an ornamental fountain. A lot of people were sitting around the fountain.

De Witt grasped Hedges' intention when Hedges pulled out his bomb. If he couldn't get away, he was going to change history right there.

De Witt dodged a couple of automobiles, and with straining lungs caught up with Hedges. He hooked the umbrella handle around Hedges' ankle. Brakes squealed as Hedges fell in front of a car. De Witt leaped on him. Again came that jarring sensation. De Witt knew that they were both changing as they struggled. People were looking at them, and the sight was entering into their individual histories.

Hedges got the pin out of his bomb just as de Witt remembered his paralyzing eye. He blinked his real eye, and sighted the phony on the back of Hedges' neck. The bomb fell to the asphalt. De Witt snatched it up and tossed it into the fountain. He screamed: "Duck!" people looked at him blankly. Then the bomb went off, *pflongk!* sending a fountain of water and fragments of a statue of a Triton high in the air.

The jarring sensation became almost unbearable. De Witt was horrified to feel that he had grown a beard.

A couple of people were cut a little by flying fragments of concrete. But the heavy concrete rim of the fountain had stopped all the low-trajectory pieces.

A police car appeared. De Witt became aware, in that second, of many things he hadn't had time to notice—the ancient appearance of the motor cars; the colorful costume of the people—colorful, that is, in comparison with the grim black-and-white of his own time.

Hedges lay on the asphalt looking blankly up at him. De Witt stooped down, took the setter of Hedges' time watch between the fingers of his left hand, and grasped the setter

of his own watch with his right fingers. He gave both setters a twist.

THEY WERE still in the traffic circle, but it was early morning, and almost nobody was in sight. The fountain supported another Triton, very new-looking. De Witt had tried to send them ahead one year, and had succeeded.

The effect of the paralysis wore off Hedges; he crawled over to the curb around the fountain and sat on it with his head in his hands.

De Witt looked at him sharply. "Say, you aren't the same guy."

"You aren't either."

There was little doubt of that; de Witt was six inches taller than he had been, and he still had the horrible beard. His hair was disgustingly long. Mixed up with his memory of his career as a C. B. I. man came another memory, of an easygoing life on a microscopic income, devoted to disreputable friends and the writing of quantities of stickily sentimental poetry.

"I don't know why I did it," said Hedges. "I'm not ambitious. All I want is a quiet place in the country."

"That's because you aren't the same man," said de Witt. "I'm not either. I'm a damned poet." He looked at the flowerbed around the fountain, and began to compose:

*"The buttercup looks at the yellow rose,
And loves as I love thee, who knows?
But the bee won't fly to both at once,
And the buttercup's love—"*

"What rhymes with 'once'?"

"Dunce," said Hedges. "Are you going to do that all the time?"

"Probably."

"It's awful. But aren't you going to arrest me or something?"

"N-no. I'm not a policeman any more." He ran his hand through his

long hair. "I think I'll just stay here and be a poet."

"I really ought to be arrested."

"You'll have to go back—or forward—to your own time and give yourself up, then. I don't want you."

Hedges sighed. "The best-laid schemes of mice and men—' When we changed the history leading up to our time, we of course changed our own ancestry and background. I think I'd like this time, too. I brought quite a wad of money along; it's in old bills, so it ought to be good. I'll buy a little place in the country and raise flowers, and you can come out and write poetry about them."

"Russell!"

"Mendez!" Friends for life, they shook hands.

THE SOUNDLESS, motionless earthquake brought Co-ordinator Bloss and Vincent M. S. Collingwood to their feet. They stared at each other in terror until the disturbance subsided.

"You've changed," said Bloss.

"Hah! So have you, your efficiency."

"Not very much though."

"No, thank Heaven. I imagine Hedges has done all the damage he can. What's this?"

On the chief executive's desk appeared two time watches, wrapped in a penciled note. The note read:

To His Efficiency the Co-ordinator of North America, Ronald Q. M. Bloss, or to Vincent M. S. Collingwood, Director of the C. B. I.:

We've decided to stay here, in 1960. We will try not to disturb the space-time structures any more than is necessary for the rest of our lives. The time watches we are sending back to you, as a means of transporting this note. We advise you to destroy them utterly.

If you want to see how I made out, look up a late twentieth century poet of my name. Regards,

MENDEZ S. D. DE WITT.

Bloss pulled out volume Dam to Edu of the encyclopedia. "Here he is," he announced. "Yes, he was quite a well-known poet. Married in 1964, no children. Died in 1980. It even mentions his friend Hedges. I bet that story wasn't in the encyclopedia last week. What did you do with those watches?"

Collingwood was staring popeyed at the blank desk. "Nothing—they up and disappeared. That's the most sinister thing I ever saw."

"Not at all," said the co-ordinator. "Hedges and de Witt disturbed the history between their time and ours to the point where Hedges never did discover time travel backwards in our time. So those time watches never existed."

"Let's see—the watches never existed—but they were on the desk a minute ago; they took Hedges back so he could make it impossible for him to have done the thing he did to enable him to go back to make it impossible for him to go back—"

Bloss got out a bottle and a couple of glasses. "My dear Collingwood," he said, "don't drive yourself crazy trying to resolve the paradoxes of time-travel. The watches are gone, and I for one say it's a good thing. Have a drink."

Collingwood snatched up his glass. "Now, your efficiency, you're talking sense!"

On the pages of the open encyclopedia volume, the biography of Mendez de Witt faded out, and its place was taken by a description of the town of Dewsbury, England. The fabric of history had settled back into stable form again.

THE END.

GYPPED!

By Arthur McCann

SIXTY-FOUR years ago, G. V. Schiaparelli, Italian astronomer, announced that he had seen "canali" on Mars. Immediately translated into English as "canals," despite the fact that it properly meant "channels," it aroused interest, then a controversy, and for half a century almost, a battle. Some astronomers saw canals; equally able and honest astronomers did not. Percival Lowell, the American astronomer who did more, and more patient work on the study of Mars than any other man, thoroughly believed the canals were real. His map of them was the result of years of patient and careful labor.

Sixty-four years since Schiaparelli's announcement—and we still don't know whether there are canals or not! Telescopes have doubled and doubled again in size and power. Photography has come in, making ultraviolet and infrared observation possible. Observation technique has improved, new tricks used. And still we don't know what the details of Mars' surface are. Most astronomers feel the two-hundred-inch telescope, vastly useful as it will be in stellar and nebular work, won't help much in planetary observation.

You can thank a neatly nasty trick of Nature for that one. A telescope, like it or not—and the scientists don't—consists of three optical elements; the light-gathering mirror or lens, the eyepiece which does the actual magnification work and the Earth's atmosphere. The mirror can be polished and shaped to accuracy measured in ten-millionths of an inch, the eyepiece lenses are ground and shaped with fanatical care—and the Earth's atmosphere bulges and slumps with every change in barometric pressure and wriggles like a ticklish baby every time the high-level winds blow.

The magnification a telescope can develop depends almost wholly on two things; the brightness of the image as determined by the light-collecting power of the big mirror, and the actual magnification of the eyepiece lenses. Since the eyepiece is essentially nothing but a microscope, we could build that powerful enough to give a magnification of five thousand times with no difficulty.

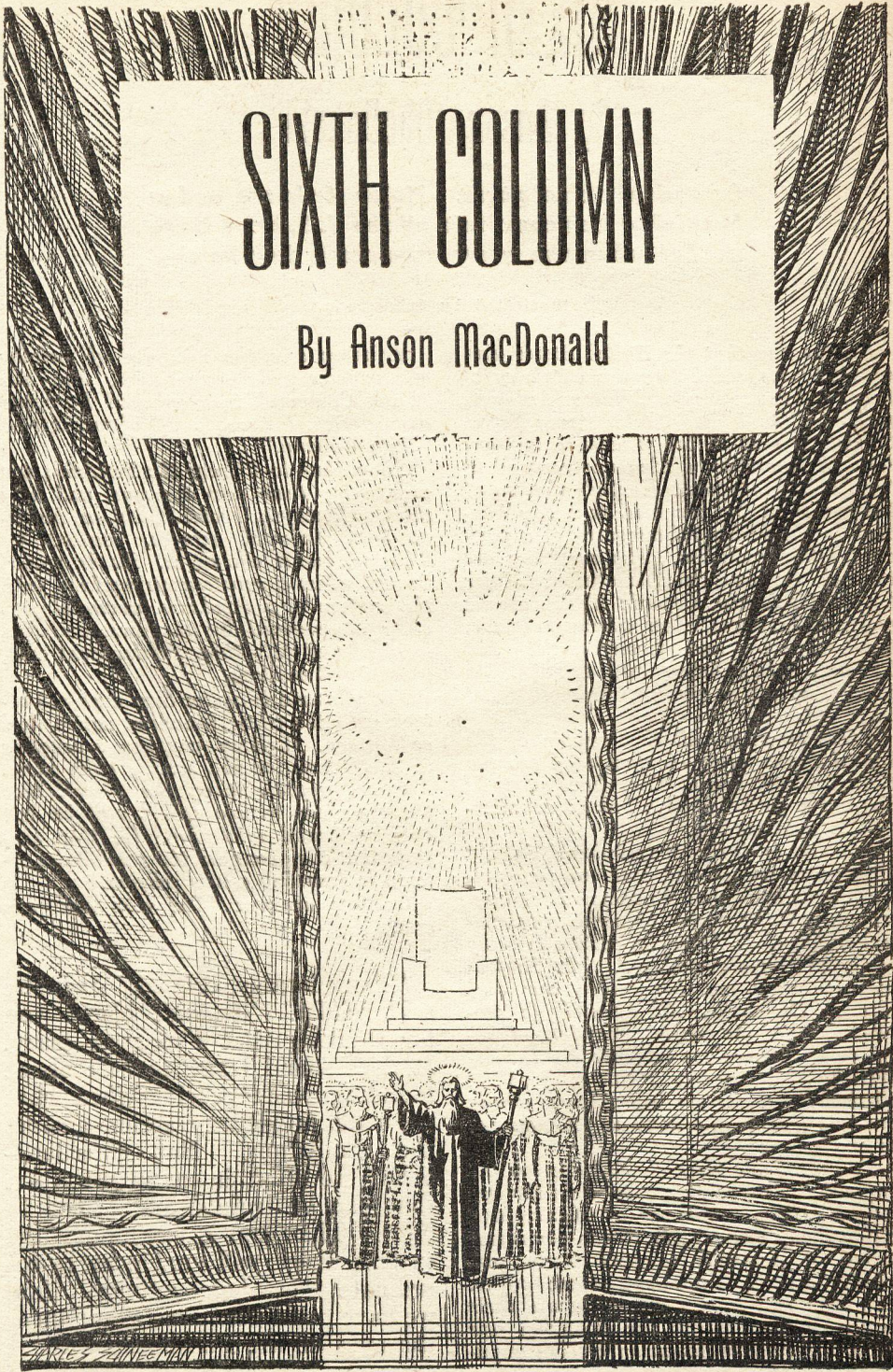
But what the telescope can develop and what it can use are two different things. When you magnify Mars' image, you also, unavoidably, magnify every ripple in the air between here and Mars—about six hundred miles of it. Magnify that five thousand times and the resultant image will be very similar to an image of the Moon in a windswept lake.

Schiaparelli's telescope could produce the maximum amount of magnification any instrument can use before the jittery motion of the air currents ruins things. Our telescopes are infinitely better today—but the atmosphere hasn't changed for the better. Hence, for planetary observations, we've reached the ultimate power available here on Earth.

But once let them establish a telescope, even a pretty small one, on the airless mountains of the Moon—hitched up, perhaps, to an electron microscope—

SIXTH COLUMN

By Anson MacDonald



CHARLES ZWIENEK

SIXTH COLUMN

By Anson MacDonald

Second of three parts. Major Ardmore and a handful of men constitute all the U. S. army there is. But when the army acquires a few halos—

Illustrated by Schneeman

On the day that the United States government collapsed before the blitzkrieg of the PanAsian Empire, Whitey Ardmore, major in the United States Army Secret Service, is sent to the Citadel, a military research laboratory hidden underground in the Rocky Mountains. He finds that all of the personnel but six died that day incident to the accidental discovery of a powerful lethal radiation. The survivors are Colonel Calhoun, mathematician, Major Brooks biochemist, Captain Wilkie, atomic physicist, Sergeant Scheer, master mechanic, Graham, cook and former artist, Jeff Thomas, cook's helper and ex-hobo. As senior line officer present, Ardmore takes command.

These seven are all that remain of the United States army—in fact they are the United States army. They have at their disposal a potent weapon but no organization to fight with it.

Thomas is brevet-commissioned in the intelligence service and sent out to scout. He reports back that Americans have been reduced to the status of serfs, registered and regimented. American culture is being systematically stamped out. The English language may not be printed nor sent through the mails. All assembly is prohibited with the single exception of religious services—slave religions are encouraged by the empire as a matter of policy. Thomas organizes an information service amongst hoboes who have as yet managed to dodge arrest.

The remaining research staff develop the original discovery. It proves to be the key to the ultimate problems of physics, and yields many remarkable results—transmutation of elements, selective death ray, gravity control, convenient atomic power. But they still lack a means to use their power—if they attack the PanAsian war lords, the helpless American civilian population could be slaughtered in revenge.

Ardmore sees the necessity of forming an underground organization, like the "Fifth Columns" that wrecked European democracies, but made up of patriots—a "Sixth Column."

They plan to kidnap the PanAsian top men, using their new weapons, and hold them as hostages. Frank Mitsui, an American-born Oriental refugee, rescued by Thomas, warns against it. He is proved correct when a spontaneous uprising with the capture of a PanAsian provincial governor is answered by the massacre of a hundred and fifty thousand innocent men, women and children.

The dilemma is acute; they dare not attack with the whole American nation held as hostage. Calhoun proposes evacuating to South America and seeking allies there. Ardmore opposes it on the ground that the American people would still be left open to brutal retaliation. He then suggests that they consider the possibilities of ffered in founding a new religion.

Calhoun answers: "The man has gone crazy!"

"TAKE it easy, colonel," Ardmore said mildly. "I don't blame you for thinking that I've gone crazy. It does sound crazy to talk about founding a new religion when what we want is military action against the PanAsians. But consider—What we need is an organization that can be trained and armed to fight. That and a communication system which will enable us to coordinate the whole activity. And we have to do the whole thing under the eyes of the PanAsians without arousing their suspicions. If we were

a religious sect instead of a military organization, all that would be possible."

"It's preposterous! I'll have nothing to do with it."

"Please, colonel. We need you, badly. On that matter of a communication system now— Imagine temples in every city in the country hooked together with a communication system and the whole thing hooked in here at the Citadel."

Calhoun snorted. "Yes, and the Asiatics listening in to everything you say!"

"That's why we need you, colonel. Couldn't you devise a system that they couldn't tap? Something like radio, maybe, but operating in one of the additional spectra so that their instruments could not detect it? Or couldn't you?"

Calhoun snorted again, but with a different intonation. "Why, certainly I could. The problem is elementary."

"That's exactly why we have to have you, colonel—to solve problems that are elementary to a man of your genius"—Ardmore felt slightly nauseated inside; this was worse than writing advertising copy—"but which are miracles for the rest of us. That's what a religion needs—miracles! You'll be called on to produce effects that will strain even your genius, things that the PanAsians can not possibly understand, and will think supernatural." Seeing Calhoun still hesitate, he added, "You can do it, can't you?"

"Certainly I can, my dear major."

"Fine. How soon can you let me have a communication method which can't be compromised nor detected?"

"Impossible to say, but it won't take long. I still don't see the sense to your scheme, major, but I will turn my attention to the research

you say you require." He got up and went out, a procession of one.

"Major?" Wilkie asked for attention.

"What? Oh, yes, Wilkie."

"I can design such a communication system for you."

"I don't doubt it a damn bit, but we are going to need all the talent we can stir up for this job. There will be plenty for you to do, too. Now as to the rest of the scheme, here's what I have in mind—just a rough idea, and I want you all to kick it around as much as possible until we get it as nearly foolproof as possible.

"We'll go through all the motions of setting up an evangelical religion, and try to get people to come to our services. Once we get 'em in where we can talk to 'em, we can pick out the ones that can be trusted and enlist them in the army. We'll make them deacons, or something, in the church. Our big angle will be charity—you come in on that, Wilkie, with the transmutation process. You will turn out a lot of precious metal, gold mostly, so that we will have ready cash to work with. We feed the poor and the hungry—the PanAsians have provided us with plenty of those!—and pretty soon we'll have 'em coming to us in droves.

"But that isn't the half of it. We really will go in for miracles in a big way. Not only to impress the white population—that's secondary—but to confuse our lords and masters. We'll do things they can't understand, make them uneasy, uncertain of themselves. Never anything against them, you understand. We'll be loyal subjects of the Empire in every possible way, but we'll be able to do things that they can't. That will upset them and make them nervous." It was taking shape in his

mind like a well thought-out advertising campaign. "By the time we are ready to strike in force, we should have them demoralized, afraid of us, half hysterical."

They were beginning to be infected with some of his enthusiasm, but the scheme was conceived from a viewpoint more or less foreign to their habits of thought. "Maybe this will work, Chief," objected Thomas, "I don't say that it won't, but how do you propose to get it underway? Won't the Asiatic administrators smell a rat in the sudden appearance of a new religion?"

"Maybe so, but I don't think it likely. All Western religions look equally screwy to them. They know we have dozens of religions and they don't know anything about most of them. That's one respect in which the Era of Non-Intercourse will be useful to us. They don't know much about our institutions since 1945. This will just look like any one of half a dozen cockeyed cults of the sort that spring up overnight in Southern California."

"But about that springing-up business, Chief— How do we start out? We can't just walk out of the Citadel, buttonhole one of the yellow boys, and say, 'I'm John the Baptist.'"

"No, we can't. That's a point that has to be worked out. Has anybody any ideas?"

THE SILENCE that followed was thick with intense concentration. Finally Graham proposed, "Why not just set up in business, and wait to be noticed?"

"How do you mean?"

"Well, we've got enough people right here to operate on a small scale. If we had a temple somewhere, one of us could be the priest and the others could be disciples or some-

thing. Then just wait to be noticed."

"H-m-m-m. You've got something there, Graham. But we'll open up on the biggest scale we can manage. We'll all be priests and altar attendants and so forth, and I'll send Thomas out to stir up a congregation for us among his pals. No, wait. Let 'em come in as pilgrims. We'll start this off with a whispering campaign among the hoboes, send it over the grapevine. We'll have 'em say, 'The Disciple is coming!'"

"What does that mean?" Scheer inquired.

"Nothing yet. But it will, when the time comes. Now look—Graham, you're an artist. You're going to have to get dinner with your left hand for a few days. Your right will be busy sketching out ideas for robes and altars and props in general—sacerdotal stuff. I guess the interior and exterior of the temple will be mostly up to you, too."

"Where will the temple be located?"

"Well, now, that's a question. It shouldn't be too far from here unless we abandon the Citadel entirely. That doesn't seem expedient; we need it for a base and a laboratory. But the temple can't be too close, for we can't afford to attract special attention to this mountainside." Ardmore drummed on the table. "It's a difficult matter."

"Why not," offered Dr. Brooks, "make this the temple?"

"Huh?"

"I don't mean this room, of course, but why not put the first temple right on top of the Citadel? It would be very convenient."

"So it would, doctor, but it would certainly draw a lot of unhealthy attention to— Wait a minute! I think I see what you mean." He turned to Wilkie. "Bob, how could

you use the Ledbetter effect to conceal the existence of the Citadel, if the Mother Temple sat right on top of it? Could it be done?"

Wilkie looked more puzzled and Collie-doggish than ever. "The Ledbetter effect wouldn't do it. Do you especially want to use the Ledbetter effect? Because if you don't it wouldn't be hard to rig a type-seven screen in the magneto gravitic spectrum so that electromagnetic type instruments would be completely blanked out. You see—"

"Of course I don't care what you use! I don't even know the names of the stuff you laboratory boys use—all I want is the results. O. K.—you take care of that. We'll completely design the temple here, get all the materials laid and ready to assemble down below, then break through to the surface and run the thing up as fast as possible. Anyone have any idea how long that will take? I'm afraid my own experience doesn't run to building construction."

Wilkie and Scheer engaged in a whispered consultation. Presently Wilkie broke off and said, "Don't worry too much about that, Chief. It will be a power job."

"What sort?"

"You've got a memorandum on your desk about the stuff. The traction and pressure control we developed from the earlier Ledbetter experiments."

"Yes, major," Scheer added, "you can forget it; I'll take care of the job. With tractors and pressors in an agravitic field, it won't take any longer than assembling a cardboard model. Matter of fact, I'll practice on a cardboard model before we run up the main job."

"O. K., troops," Ardmore smilingly agreed, with the lightheartedness that comes from the prospect

of plenty of hard work, "that's the way I like to hear you talk. The powwow is adjourned for now. Get going! Thomas, come with me."

"Just a second, Chief," Brooks added as he got up to follow him, "couldn't we—" They went out the door, still talking.

A PATROL helicopter cruised slowly south from Denver. The PanAsian lieutenant commanding it consulted a recently constructed aerial mosaic map and indicated to the pilot that he was to hover. Yes, there it was, a great cubical building rising from the shoulder of a mountain. It had been picked up by the cartographical survey of the Heavenly Emperor's new Western Realm and he had been sent to investigate.

The lieutenant regarded the job as a simple routine matter. Although the building did not appear in the records of the administrative district in which it was located there was nothing surprising in that. The newly conquered territory was enormous in extent, the aborigines, with their loose undisciplined ways—so characteristic of all the inferior races—kept no proper records of anything. It might be years before everything in this wild new country was properly indexed and cross-filed, particularly as this pale anæmic people was almost childishly resistant to the benefits of civilization.

Yes, it would be a long job, perhaps longer than the Amalgamation of India. He sighed to himself. He had received a letter that morning from his principal wife informing him that his second wife had presented him with a manchild. Should he request that he be reclassified as a permanent colonist in order that his family might join him here, or should he pray for leave, long overdue?

Those were no thoughts for a man on the Heavenly Emperor's duty! He recited over to himself the Seven Principles of the Warrior Race, and indicated to the pilot an alp in which to land.

The building was more impressive

from the ground, a great square featureless mass, fully two hundred yards across in every dimension. The face toward him shone with a clear monochromatic emerald green, although it faced away from the afternoon sun. He could see a little



The officer halted, oppressed and torn by a terrible weight of nameless dread.

of the wall to the right; it was golden.

His task group of one squad filed out of the helicopter after him and were followed by the mountain guide who had been impressed for this service. He spoke to the white man in English. "Have you seen this building before?"

"No, Master."

"Why not?"

"This part of the mountains is new to me."

The man was probably lying, but it was useless to punish him. He dropped the matter. "Lead on."

They trudged steadily up the slope toward the immense cube to where a broad flight of steps, wider still than the cube itself, led to its nearer face. The lieutenant hesitated momentarily before starting to mount them. He was aware of a general feeling of unease, a sense of mild disquietude, as if a voice were warning him of unnamed danger.

He set foot on the first step. A single deep clear note rolled across the canyon; the feeling of uneasiness swelled to an irrational dread. He could see that his men were infected with it. Resolutely he mounted the second step. Another and different tone echoed through the hills.

He marched steadily up the long flight, his men following reluctantly. A slow, ponderous and infinitely tragic largo kept time to his labored steps—labored, because the treads were just too broad and the lifts just too high for comfort. The feeling of impending disaster, of inescapable doom, grew steadily greater as he approached the building.

Two DOORS of heroic size swung slowly open as the lieutenant ascended. In the archway thus created stood a human figure, a man, dressed in emerald robes that

brushed the floor. White hair and flowing beard framed a face of benign dignity. He moved majestically forward from the doorway, reaching the top of the flight of steps just as the lieutenant attained it. The lieutenant noted with amazement that a halo flickered unsubstantially around the old man's head. But he had little time to consider it; the old man raised his right hand in benediction and spoke:

"Peace be unto you!"

And it was so! The feeling of dread, of irrational fright, dropped away from the PanAsian as if someone had turned a switch. In his relief he found himself regarding this member of an inferior race—so evidently a priest—with a warmth reserved for equals. He recalled the Admonitions for dealing with inferior religions.

"What is this place, Holy One?"

"You stand at the threshold of the Temple of Mota, Lord of Lords and Lord of All!"

"Mota—h-m-m-m." He could not recall such a god, but it did not matter. These sallow creatures had a thousand strange gods. Three things only do slaves require, food, work, and their gods, and of the three their gods must never be touched, else they grow troublesome. So said the Precepts for Ruling. "Who are you?"

"I am an humble priest, First Server of Shaam, Lord of Peace."

"Shaam? I thought you said Mota was your god?"

"We serve the Lord Mota in six of his thousand attributes. You serve him in your way. Even the Heavenly Emperor serves him in his. My duty is to the Lord of Peace."

This was perilously close to treason, the lieutenant thought, if not to blasphemy. Still, it may be that

the gods have many names, and the native did not seem disposed to make trouble. "Very well, old Holy One, the Heavenly Emperor permits you to serve your god as you see him, but I must inspect for the Empire. Stand aside."

The old man did not move, but answered regretfully, "I am sorry, Master. It cannot be."

"It must be. Stand aside!"

"Please, Master, I beg of you! It is not possible for you to enter here. In these attributes Mota is Lord of the white men. You must go to your own temple; you cannot enter this one. It is death to any but his followers."

"You threaten me?"

"No, Master, no—we serve the Emperor, as our faith requires. But this thing the Lord Mota Himself forbids. I cannot save you if you offend."

"On the Heavenly Emperor's service—stand aside!" He strode steadily across the broad terrace toward the door, his squad clomping stolidly after him. The panic dread clutched at him as he marched and increased in intensity as he approached the great door. His heart seemed constricted, and a mad longing to flee clamored through him senselessly. Only the fatalistic courage of his training made him go on. Through the door he saw a vast empty hall and on the far side an altar, large in itself, but dwarfed by the mammoth proportions of the room. The inner walls shone, each with its own light, red, blue, green, golden. The ceiling was a perfect, flawless white, the floor an equally perfect black.

There was nothing to be afraid of here, he told himself, this illogical but horribly real dread was a sickness, unworthy of a warrior. He stepped across the threshold. A mo-

mentary dizziness, a flash of terrifying insecurity, and he collapsed.

His squad, close at his heels, had no more warning.

ARDMORE came trotting out of concealment. "Nice work, Jeff," he called out, "you should be on the stage!"

The old priest relaxed. "Thanks, Chief. What happens next?"

"We'll have time to figure that out." He turned toward the altar and shouted, "Scheer!"

"Yes, sir!"

"Turn off the fourteen-cycle note!" He added to Thomas, "Those damned subsonics give me the creeping horrors even when I know what's going on. I wonder what effect it had on our pal here?"

"He was cracking up, I believe. I never thought he'd make it to the doorway."

"I don't blame him. It made me want to howl like a dog, and I ordered it turned on. There's nothing like the fear of something you can't understand to break a man down. Well, we got a bear by the tail. Now to figure out a way to turn loose—" "How about *him*?" Thomas jerked his head toward the mountaineer, who still stood near the head of the great flight of steps.

"Oh yes." Ardmore whistled at him and shouted, "Hey you—come here!"

The man hesitated, and Ardmore added, "Damn it—we're white men! Can't you see that?"

The man answered, "I see it, but I don't like it." Nevertheless he slowly approached.

Ardmore said, "This is a piece of razzle-dazzle for the benefit of our yellow brethren. Now that you're in it, you're in it! Are you game?"

The other members of the personnel of the Citadel had gathered

around by this time. The mountain guide glanced around at their faces. "It doesn't look as if I had much choice."

"Maybe not, but we would rather have a volunteer than a prisoner."

The mountaineer shifted tobacco from left cheek to right, glanced around the immaculate pavement for a place to spit, decided not to, and answered, "What's the game?"

"It's a frame-up on our Asiatic bosses. We plan to give them the run-around—with the help of God and the great Lord Mota."

The guide looked them over again, then suddenly stuck out his hand and said, "I'm in."

"Fine," agreed Ardmore, taking his hand. "What's your name?"

"Howe, Alexander Hamilton Howe. Friends call me Alec."

"O. K., Alec. Now what can you do? Can you cook?" he added.

"Some."

"Good." He turned away. "Graham, he's your man for now. I'll talk with him later. Now—Jeff, did it seem to you that one of those monkeys went down a little slowly?"

"Maybe. Why?"

"This one, wasn't it?" He touched one of the quiet, sprawled figures with his shoe.

"I think so."

"All right, I want to check up on him before we bring them to. If he's a Mongolian he should have keeled over quicker. Dr. Brooks, will you give this laddie's reflexes a work-out? And don't be too gentle about it."

Brooks managed to produce some jerks in short order. Seeing this, Ardmore reached down and set his thumb firmly on the exposed nerve under the ear. The soldier came to his knees, writhing. "All right, bud—explain yourself." The soldier stared impassively. Ardmore studied his face for a moment, then made

a quick gesture, which was protected from the gaze of the others by his body.

"Why didn't you say so?" asked the PanAsian soldier.

"I must say it's a good make-up job," commented Ardmore admiringly. "What's your name and rank?"

"Tattoo and plastic," the other returned. "Name's Downer, captain, United States Army."

"Mine's Ardmore, Major Ardmore."

"Glad to know you, major." They shook hands. "Very glad, I should say. I've been hanging on for weeks, wondering who to report to and how."

"Well, we can certainly use you. It's a scratch organization. I've got to get busy now—we'll talk later." He turned away. "Places, gentlemen. Second act. Check each other's make-up. Wilkie, see to it that Howe and Downer are out of sight. We are going to bring our drowsy guests back to consciousness."

They started to comply. Downer touched Ardmore's sleeve. "Just a moment, major. I don't know your layout, but before we go any further, are you sure you don't want me to stay on my present assignment?"

"Eh? H-m-m-m—you've got something there. Are you willing to do it?"

"I'm willing to do it, if it's useful," Downer replied soberly.

"It would be useful. Thomas, come here." The three of them went into a short conference and arranged a way for Downer to report through the grapevine, and Ardmore told him as much about the set-up as he needed to know. "Well, good luck, old man," he concluded. "Get back down there and play dead, and we'll reanimate your messmates."

THOMAS, Ardmore, and Calhoun attended the Asiatic lieutenant as his eyes flickered open. "Praise be!" intoned Thomas. "The Master lives!"

The lieutenant stared around him, shook his head, then reached for his sidearm. Ardmore, impressive in the red robes of Dis, Lord of Destruction, held up a hand. "Careful, Master, please! I have beseeched my Lord Dis to return you to us. Do not offend him again."

The Asiatic hesitated, then asked, "What happened?"

"The Lord Mota, acting through Dis the Destroyer, took you for his own. We prayed and wept and beseeched Tamar, Lady of Mercy, to intercede for us." He swept an arm toward the open door. Wilkie, Graham, and Brooks, appropriately clad, were still busily genuflecting before the altar. "Graciously, our prayer was answered. Go in peace!"

Scheer, at the control board, picked this moment to increase the volume on the fourteen-cycle note. With nameless fear pressing his heart, confused, baffled, the lieutenant took the easy way out. He gathered his men about him and marched back down the broad flight of stairs, colossal organ music still following him in awful, inescapable accompaniment.

"Well, that's that," Ardmore commented as the little group disappeared in the distance. "First round to God's chilluns. Thomas, I want you to start into town at once."

"So?"

"In your robes and full paraphernalia. Seek out the district boss and register formal complaint that Lieutenant Zilch did wrongfully profane our sacred places to the great indignation of our gods, and pray for assurance that it will not happen again. You want to be on your high

horse about the whole matter—righteous indignation, you know—but, oh, very respectful to temporal authority."

"I appreciate the confidence you place in me," Thomas said with sardonic grimness. Ardmore grinned at him.

"I know it's a tough assignment, fella, but a lot depends on it. If we can make use of their own customs and rules to establish a precedent right now which sets us up as a legitimate religion, entitled to all the usual immunities, we've got half the battle won."

"Suppose they ask for my identification card?"

"If you carry yourself with sufficient arrogance they will never get around to asking for it. Just think about the typical clubwoman and try to show that much bulge. I want 'em to get used to the idea that anyone with the staff and the robes and the halo carries his identification just in his appearance. It will save us trouble later."

"I'll try—but I'm not promising anything."

"I think you can do it. Anyhow, you are going out equipped with enough stuff to keep you safe. Keep your shield turned on whenever you are around any of 'em. Don't try to account for it in any way; just let 'em bounce off it, if they close in on you. It's a miracle—no need to explain."

"O. K."

THE LIEUTENANT'S report was not satisfactory to his superiors. As for that, it was not satisfactory to himself. He felt an acute sense of loss of personal honor, of face, which the words of his immediate superior did nothing to lessen. "You, an officer in the army of the Heavenly Emperor, have permitted yourself to

look small in the eyes of a subject race. What have you to say?"

"Your forgiveness, sire!"

"Not for me—it is a matter for you to settle with your ancestors."

"I hear, sire!" He caressed the short sword which hung at his side.

"Let there be no haste; I intend for you to tell your tale in person to the Imperial Hand."

The local Hand of the Emperor, military governor of that region which included Denver and the Citadel, was no more pleased than his junior. "What possessed you to enter their holy place? These people are childlike, excitable. Your action could be the regrettable cause of assassinations of many more valuable than yourself. We cannot be forever wasting slaves to teach them lessons."

"I am unworthy, sire."

"I do not dispute that. You may go." Lieutenant Zilch departed, to join, not his family, but his ancestors.

The Imperial Hand turned to his adjutant. "We will probably be petitioned by this cult. See that the petitioners are pacified and assured that their gods will not be disturbed. Note the characteristics of the sect and send out a general warning to deal gently with it." He sighed. "These savages and their false gods! I grow weary of them. Yet they are necessary; the priests and the gods of slaves always fight on the side of the Masters. It is a rule of nature."

"You have spoken, sire."

ARDMORE was glad to see Thomas return to the Citadel. In spite of his confidence in Jeff's ability to handle himself in a tight place, in spite of the assurance that Calhoun had given him that the protective shield, properly handled, would protect the wearer from anything that the Pan-

Asians could bring to bear on it, he had been in a state of nerves ever since Thomas had set out to register a complaint with the Asiatic authorities. After all, the attitude of the PanAsians toward local religions might be one of bare toleration rather than special encouragement.

"Welcome home, old boy!" he shouted, pounding him on the back. "I'm glad to see your ugly face—tell me what happened?"

"Give me time to get out of this bloody bathrobe, and I'll tell you. Got a cigarette? That's a bad point about being a holy man; they don't smoke."

"Sure. Here. Had anything to eat?"

"Not recently."

Ardmore flipped the intercommunicator to Kitchen. "Alec, rustle up some groceries for Lieutenant Thomas. And tell the troops they can hear his story if they come around to my office."

"Ask him if he has any avacadoes."

Ardmore did so. "He says they're still in quick-freeze, but he'll thaw one out. Now let's have your story. What did Little Red Riding Hood say to the wolf?"

"Well—you'll hardly believe it, Chief, but I didn't have any trouble at all. When I got into town, I marched right straight up to the first PanAsian policeman I found, stepped off the curb, and struck the old benediction pose—staff in my left hand, right hand pawing the air; none of this hands folded and dead down stuff that white men are supposed to use. Then I said, 'Peace be unto you! Will the Master direct his servant to the seat of the Heavenly Emperor's government?'

"I don't think he understood much English. He seemed startled at my manner, and got hold of another

flatface to help him. This one knew more English and I repeated my request. They palavered in that damned singsong tongue of theirs, then conducted me to the palace of the Emperor's Hand. We made quite a procession—one on each side and me walking fast so that I kept about even or a little in front of them."

"Good advertising," Ardmore approved.

"That's what I thought. Anyway, they got me there and I told my story to some underofficial. The results astounded me. I was whisked right straight up to the Hand himself."

"The hell you say!"

"Wait a minute—here's the payoff. I'll admit I was scared, but I said to myself, 'Jeff, old boy, if you start to crawl now, you'll never get out of here alive.' I knew a white man is expected to drop to his knees before an official of that rank. I didn't; I gave him the same standing benediction I had given his flunkies. And he let me get away with it! He looked me over and said, 'I thank you for your blessing, Holy One. You may approach.' He speaks excellent English, by the way.

"Well, I gave him a reasonably accurate version of what happened here—the official version, you understand—and he asked me a few questions."

"What sort of questions?"

"IN THE first place he wanted to know if my religion recognized the authority of the Emperor. I assured him that it did, that our followers were absolutely bound to obey temporal authority in all temporal matters, but that our creed commanded us to worship the true gods in our own fashion. Then

I gave him a long theological spiel. I told him that all men worshiped God, but that God had a thousand attributes, each one a mystery. God in his wisdom had seen fit to appear to different races in different attributes *because it was not seemly for servant and master to worship in the same fashion*. Because of that, the six attributes of Mota, of Shaam, of Mens, of Tamar, of Barmac, and of Dis had been set aside for the white men, just as the Heavenly Emperor was an attribute reserved for the race of Masters."

"How did he take it?"

"I gathered that he thought it was very sound doctrine—for slaves. He asked me what my church did besides holding services, and I told him that our principal desire was to minister to the poor and the sick. He seemed pleased at that. I have an impression that our gracious overlords are finding relief a very serious problem."

"Relief? Do they give any relief?"

"Not exactly. But if you load prisoners into concentration camps you have to feed them something. The internal economy has largely broken down and they haven't got it straightened out yet. I think they would welcome a movement which would relieve them from worrying too much over how to feed the slaves."

"H-m-m-m. Anything else?"

"Nothing much. I assured him again that we, as spiritual leaders, were forbidden by our doctrines to have anything to do with politics, and he told me that we would not be molested in the future. Then he dismissed me. I repeated my benediction, turned my back on him, and stomped out."

"It seems to me," said Ardmore,



The prince looked silently at the man. Somehow his words had been twisted again; again he found himself on the defensive.

“that you pretty thoroughly sold him a bill of goods.”

“I wouldn’t be too sure, Chief. That old scoundrel is shrewd and Machiavellian. I shouldn’t call him a scoundrel, because he’s not—by his standards. He’s a statesman.

I’ve got to admit he impressed me. Look—these PanAsians can’t be stupid; they’ve conquered and held half a world, hundreds of millions of people. If they tolerate local religions, it’s because they have found it to be smart politics. We’ve got to

keep them thinking so in our case, in the face of smart and experienced administrators."

"No doubt you're right. We certainly must be careful not to underestimate them."

"I hadn't quite finished. Another escort picked me up on the way out of the palace and stayed with me. I walked along, paying no attention to them. My route out of town took me through the central market. There were hundreds of whites there, lined up in queues, waiting for a chance to buy food on their ration cards. I got an idea and decided to find out just how far my immunity extended. I stopped and climbed up on a box and started to preach to them."

Ardmore whistled. "Cripes, Jeff, you shouldn't have taken a chance like that!"

"But major, we needed to know, and I was fairly certain that the worst that could happen would be that they would make me stop."

"Well . . . yes, I suppose so. Anyhow the job requires that we take chances and you have to use your own judgment. Boldness may be the safest policy. Sorry I spoke—what happened?"

"My escort seemed dumfounded at first, and not certain what to do. I went right ahead, watching them out of the corner of my eye. Pretty soon they were joined by a chappie who seemed to be senior to them. They held a confab, and the senior cop went away. He came back in about five minutes, and just stood there, watching me. I gathered that he had phoned in and had received instructions to let me alone."

"How did the crowd take it?"

"I think they were most impressed by the apparent fact that a white man was breaking one of the rules of the overlords and getting away

with it. I didn't try to tell them much. I took as my text, 'The Disciple is coming!' and embroidered it with a lot of glittering generalities. I told them to be good boys and girls and not to be afraid, for the Disciple was coming to feed the hungry and heal the sick and console the bereaved."

"Hm-m-m. Now that you've started making promises, we had better get set to deliver."

"I was coming to that. Chief, I think that we had better set up a branch church in Denver right away."

"We've hardly got the personnel yet to start branching out."

"Are you sure? I don't like to set my opinion up against yours, but I don't see how we can gain many recruits unless we go where the recruits are. They're all set for it now; you can be sure that every white man in Denver is talking about the old beezzer in the halo—in a *halo*, mind you!—who preached in the market place and the Asiatics didn't dare stop him. We'll pack 'em in!"

"Well . . . maybe you're right—"

"I think I am. Admitting that you can't spare the regular personnel from the Citadel, here's how we can work it: I'll go down to the city with Alec, locate a building that we can turn into a temple and start holding services. We can get along with the power units in the staffs at first, and Scheer can follow along and rebuild the interior of the temple and set up a proper unit in the altar. Once things are rolling I can turn the routine over to Alec. He'll be the local priest for Denver."

THE OTHERS had drifted in one by one while Ardmore and Thomas were talking. Ardmore turned now to Alec Howe.

"How about it, Alec? Do you

think you can make a noise like a priest, preach 'em sermons, organize charities, and that sort of thing?"

The mountain guide was slow to answer. "I think, major, that I would rather stay on the job I have now."

"It won't be so hard," Ardmore reassured him. "Thomas or I can write your sermons for you. The rest of it would consist largely in keeping your mouth shut and your eyes open, and in shooin' likely prospects up here to be enlisted."

"It's not the sermons, major. I can preach a sermon—I used to be a lay preacher in my youth. It's just that I can't reconcile this false religion with my conscience. I know you are working toward a worthy purpose and I've agreed to serve, but I'd rather stay in the kitchen."

Ardmore considered his words before replying. "Alec," he said at length, in a grave voice, "I think I can appreciate your viewpoint. I wouldn't want to ask any man to do anything against his own conscience. As a matter of fact, we would not have adopted the cloak of a religion had we seen any other practical way to fight for the United States. Does your faith forbid you to fight for your country?"

"No, it does not."

"Most of your work as a priest of this church would be to help the helpless. Doesn't that fit into your creed?"

"Naturally it does. That is exactly why I cannot do it in the name of a false god."

"But *is* it a false god? Do you believe that God cares very much what name you call Him as long as the work you perform is acceptable to Him? Now mind you," he added hastily, "I don't say that this so-called temple we have erected here is necessarily a House of the Lord,

but isn't the worship of God a matter of how you feel in your heart rather than the verbal forms and the ceremonials used?"

"That's true, major, every word you've said is gospel—but I just don't feel *right* about it."

Ardmore could see that Calhoun had been listening to this discussion with poorly concealed impatience. He decided to terminate it. "Alec, I want you to go now and think this over by yourself. Come see me tomorrow. If you can't reconcile this work to your conscience, I'll give you an unprejudiced discharge as a conscientious objector. It won't even be necessary for you to serve in the kitchen."

"I wouldn't want to go that far, major. It seems to me—"

"No, really. If one is wrong, so is the other. I don't want to be responsible for requiring a man to do anything that might be a sin against his faith. Now you get along and think about it."

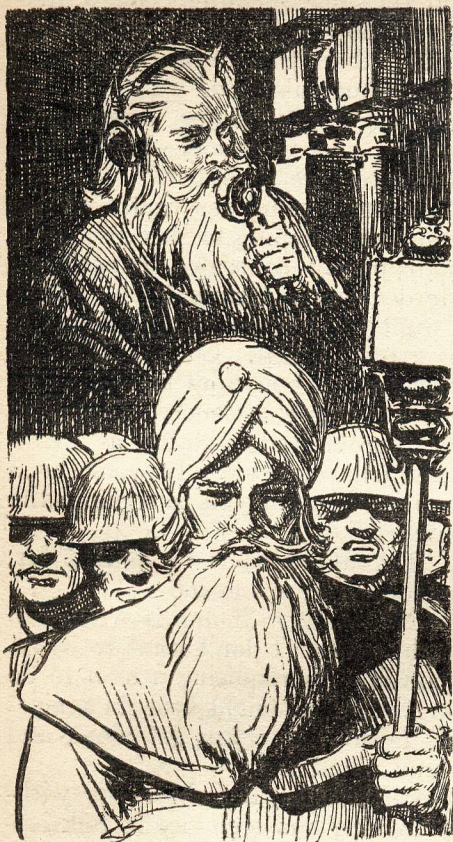
Ardmore hustled him out without giving him a chance to talk further.

CALHOUN could contain himself no longer. "Well, really, major, I must say! Is it your policy to compromise with superstition in the face of military necessity?"

"No, colonel, it is not—but that superstition, as you call it, is in this case a military *fact*. Howe's case is the first example of something we are going to have to deal with—the attitude of the orthodox religions to the one we have trumped up."

"Maybe," suggested Wilkie, "we should have imitated the more usual religions."

"Perhaps. Perhaps. I thought of that, but somehow I couldn't see it. I can't picture one of us standing up and pretending to be a mini-



ster, say, of one of the regular protestant churches. I'm not much of a churchgoer, but I didn't think I could stomach it. Maybe when it comes right down to it, I'm bothered by the same thing that bothers Howe. But we've got to deal with it. We've got to consider the attitude of the other churches. We mustn't tread on their toes in any way we can help."

"Maybe this would help," Thomas suggested. "It could be one of the tenets of our church that we included and tolerated, even encouraged, any other form of worship that a man might favor. Besides that, every church, especially these days, has more social work than it can afford. We'll give the others

financial assistance with no strings attached."

"Both of those things will help," Ardmore decided, "but it will be ticklish business. Whenever possible, we'll enlist the regular ministers and priests themselves. You can bet that every white man will be for us, if he understands what we are aiming toward. The problem will be to decide which ones can be trusted with the whole secret. Now about Denver— Jeff, do you want to start back right away, tomorrow maybe?"

"How about Howe?"

"He'll come around, I think."

"Just a moment, major." It was Dr. Brooks, who had been sitting quietly as usual while the others talked. "I think it would be a good idea if we waited a day or two, until Scheer can make certain changes in the power units of the staffs."

"What sort of changes?"

"You will remember that we established experimentally that the Ledbetter effect could be used as a sterilizing agent?"

"Yes, of course."

"That is why we felt safe in predicting that we could help the sick. As a matter of fact we underestimated the potentialities of the method. I infected myself with anthrax earlier this week—"

"Anthrax! For God's sake, doctor, what in the world do you mean by taking a chance like that?"

Brooks turned his mild eyes on Ardmore. "But it was obviously necessary," he explained patiently. "The guinea pig tests were positive, it is true, but human experimentation was necessary to establish the method. As I was saying, I infected myself with anthrax and permitted the disease to establish itself, then exposed myself to the Ledbetter effect in all wave lengths except that

band of frequencies fatal to warm-blooded vertebrates. The disease disappeared. In less than an hour the natural balance of anabolism over catabolism had cleared up the residue of pathological symptoms. I was well."

"I'll be a cross-eyed intern! Do you think it will work on other diseases just as quickly?"

"I feel sure of it. Not only has such been the results with other diseases in the animal experimentation that I have conducted, but because of another unanticipated, though experimentally predictable, result. I've suffered from a rather severe cold in the head lately, as some of you may have noticed. The exposure not only cured the anthrax, it completely cleared up my cold. The cold virus involves a dozen or more known pathogenic organisms, and probably as many more unknown ones. The exposure killed them all, indiscriminately."

"I'm delighted to get this report, doctor," Ardmore answered. "In the long run this one development may be of more importance to the human race than any military use we may make of it now. But how does it affect the matter of establishing the branch church in Denver?"

"Well, sir, perhaps it doesn't. But I took the liberty of having Scheer modify one of the portable power units in order that healing might be conveniently carried on by any one of our agents even though equipped only with the staff. I thought you might prefer to wait until Scheer could add the same modification to the staffs designed to be used by Thomas and Howe."

"I think you are right, if it does not take too long. May I see the modification?"

Scheer demonstrated the staff he had worked over. Superficially it looked no different from the others. A six-foot rod was surmounted by a capital in the form of an ornate cube about four inches through. The faces of the cube were colored to correspond with the sides of the great temple. The base of the cube and the staff itself were covered with intricate designs in golden scrollwork, formal arabesques, and delicate bas-relief—all of which effectively concealed the controls of the power unit and projector located in the cubical capital.

Scheer had not changed the superficial appearance of the staff; he had simply added an additional circuit internally to the power unit in the cube which constrained it to oscillate only outside the band of frequencies fatal to vertebrate life. This circuit controlled the action of the power unit and projector whenever a certain leaf in the decorative design of the staff was pressed.

Scheer and Graham had labored together to create the staff's designing and redesigning to achieve an integrated whole in which mechanical action would be concealed in artistic camouflage. They made a good team. As a matter of fact their talents were not too far apart; the artist is two thirds artisan and the artisan has essentially the same creative urge as the artist.

"I would suggest," added Brooks, when the new control had been explained and demonstrated, "that this new effect be attributed to Tamar, Lady of Mercy, and that her light be turned on when it is used."

"That's right. That's the idea," Ardmore approved. "Never use the staff for any purpose without turning on the color light associated with the particular god whose help you are supposed to be invoking. That's

an invariable rule. Let 'em break their hearts trying to figure out how a simple monochromatic light can perform miracles."

"Why bother with the rigmarole?" inquired Calhoun. "The PanAsians can't possibly detect the effects we use in any case."

"There is a double reason, colonel. By giving them a false lead to follow we hope to insure that they will bend their scientific efforts in the wrong direction. We can't afford to underestimate their ability. But even more important is the psychological effect on nonscientific minds, both white and yellow. People think things are wonderful that look wonderful. The average American is completely unimpressed by scientific wonders; he expects them, takes them as a matter of course with an attitude of 'So what? That's what you guys are paid for.'

"But add a certain amount of flubdub and hokum and *don't* label it 'scientific' and he will be impressed. It's wonderful advertising."

"Well," said Calhoun, dismissing the matter, "no doubt you know best—you have evidently had a great deal of experience in fooling the public. I've never turned my attention to such matters; my concern is with pure science. If you no longer need me here, major, I have work to do."

"Certainly, colonel, certainly! Go right ahead, your work is of prime importance.

"Still," he added meditatively, when Calhoun had gone, "I don't see why mass psychology shouldn't be a scientific field. If some of the scientists had taken the trouble to formulate some of the things that salesmen and politicians know already, we might never have gotten into the mess we're in."

"I think I can answer that," Dr. Brooks said diffidently.

"Huh? Oh yes, doctor—what were were you going to say?"

"Psychology is not a science because it is too difficult. The scientific mind is usually orderly, with a natural love for order. It resents and tends to ignore fields in which order is not readily apparent. It gravitates to fields in which order is easily found such as the physical sciences, and leaves the more complex fields to those who play by ear, as it were. Thus we have a rigorous science of thermodynamics but are not likely to have a science of psychodynamics for many years yet to come."

Wilkie swung around so that he faced Brooks. "Do you really believe that, Brooksie?"

"Certainly, my dear Bob."

Ardmore rapped on his desk. "It's an interesting subject, and I wish we could continue the discussion—but it looks like rain, and the crops still to get in. Now about this matter of founding a church in Denver—"

DENVER, Cheyenne, Salt Lake City. Portland, Seattle, San Francisco. Kansas City, Chicago, Little Rock. New Orleans, Detroit, Jersey City. Riverside, Five Points, Butler, Hackettstown, Natick, Long Beach, Yuma, Fresno, Amarillo, Grants, Parktown, Bremerton, Coronado, Worcester, Wickenburg, Santa Ana, Vicksburg, LaSalle, Morganfield, Blaisville, Barstow, Wallkyll, Boise, Yakima, St. Augustine, Walla Walla, Abilene, Chattahoochee, Leeds, Laramie, Globe, South Norwalk, Corpus Christi.

"Peace be unto you! Peace, it's wonderful! Come, all you sick and heavy laden! Come! Bring your troubles to the temple of the Lord Mota. Enter the sanctuary where the Masters dare not follow. Hold

up your heads as white men, for 'The Disciple is Coming!'

"Your baby daughter is dying from typhoid? Bring her in! Bring her in! Let the golden rays of Tamar make her well again. Your job is gone and you face the labor camps? Come in! Come in! Sleep on the benches and eat at the table that is never bare. There will be work aplenty for you to do; you can be a pilgrim and carry the word to others. You need only profit by instruction.

"Who pays for it all? Why, Lord love you, man, gold is the gift of Mota! Hurry! 'The Disciple is Coming!'"

They poured in. At first they came through curiosity, because this new and startling and cockeyed religion was a welcome diversion from painful and monotonous facts of

their slavlike existences. Ardmore's instinctive belief in flamboyant advertising justified itself in results; a more conventional, a more dignified cult would never have received the "house" that this one did.

Having come to be entertained, they came back for other reasons. Free food, and no questions asked—who minded singing a few innocuous hymns when they could stay for supper? Why, those priests could afford to buy luxuries that white men rarely saw on their own tables, butter, oranges, good lean meat, paying for them at the Imperial storehouses with hard gold coin that brought smiles to the faces of the Asiatic bursars.

Besides that, the local priest was always good for a touch if a man was really hard up for the necessary. Why be fussy about creeds? Here

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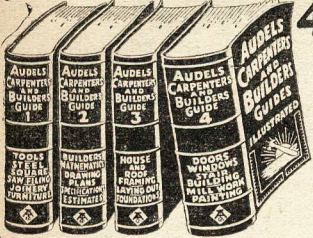
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was a church that did not ask a man to subscribe to its creeds; you could come and enjoy all the benefits and never be asked to give up your old-time religion—or even be asked if you had a religion. Sure, the priests and their acolytes appeared to take their god-with-six-attributes pretty seriously, but what of it? That was their business. Haven't we always believed in religious freedom? Besides, you had to admit they did good work.

Take Tamar, Lady of Mercy, now—maybe there was something to it. If you've seen a child choking to death with diphtheria, and seen it put to sleep by the server of Shaam, then washed in the golden rays of Tamar, and then seen it walk out an hour later, perfectly sound and whole, you begin to wonder. With half the white doctors dead, with the army and a lot of the rest sent to concentration camps, anyone who could cure disease had to be taken seriously. What if it did look like superstitious mumbo jumbo? Aren't we a practical people? It's results that count.

But cutting more deeply than the material advantages, were the psychological benefits. The Temple of Mota was a place where a white man could hold up his head and not be afraid, something he could not do even in his own home. "Haven't you heard? Why, they say that no

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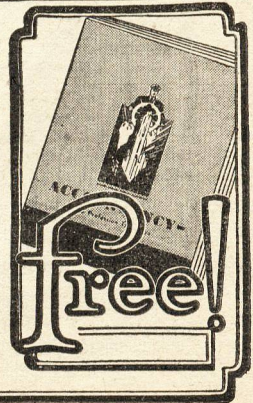
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flatface has ever set foot in one of their temples, even to inspect. They can't even get in by disguising themselves as white men; something knocks them out cold, right at the door. Personally, I think those yellow apes are scared to death of Mota. I don't know what it is they've got, but you can breathe easy in the temple. Come along with me—you'll see!"

THE Rev. Dr. David Wood called on his friend the equally reverend Father Doyle. The older man let him in himself. "Come in, David, come in," he greeted him. "You're a pleasant sight. It's been too many days since I've seen you." He brought him into his little study and sat him down and offered tobacco. Wood refused it in a preoccupied manner.

Their conversation drifted in a desultory way from one unimportant subject to another. Doyle could see that Wood had something on his mind, but the old priest was accustomed to being patient. When it became evident that the younger man could not, or would not, open the subject, he steered him to it. "You seem like a man with something preying on his mind, David. Should I ask what it is?"

David Wood took the plunge. "Father, what do you think of this outfit that call themselves the Priests of Mota?"

"Think of it? What should I think of it?"

"Don't evade me, Francis. Doesn't it matter to you when a heathen heresy sets up in business right under your nose?"

"Well, now, it seems to me that you have raised some points for discussion there, David. Just what is a heathen religion?"

Wood snorted. "You know what

I mean! False gods! Robes, and bizarre temple, and—mummeries!"

Doyle smiled gently. "You were about to say 'papist mummeries,' were you not, David? No, I can't say that I am greatly concerned over odd paraphernalia. But as to the definition of the word 'heathen'—from a strict standpoint of theology I am forced to consider any sect that does not admit authority of the Vicar on Earth—"

"Don't play with me, man! I'm in no mood for it."

"I am not playing with you, David. I was about to add that in spite of the strict logic of theology, God in His mercy and infinite wisdom will find some way to let even one like yourself into the Holy City. Now as for these priests of Mota, I have not searched their creed for flaws, but it seems to me that they are doing useful work, work that I have not been able to accomplish."

"That is exactly what worries me, Francis. There was a woman in my congregation who was suffering from an incurable cancer. I knew of cases like hers that had apparently been helped by . . . by those charlatans! What was I to do? I prayed and found no answer."

"What did you do?"

"In a moment of weakness I sent her to them."

"Well?"

"They cured her."

"Then I wouldn't worry about it too much. God has more vessels than you and I."

"Wait a moment. She came back to my church just once. Then she went away again. She entered the sanctuary, if you can call it that, that they have set up for women. She's gone, lost entirely to those idolaters! It had tortured me, Francis. What does it avail to heal her

mortal body if it jeopardizes her soul?"

"Was she a good woman?"

"One of the best."

"Then I think God will look out for her soul, without your assistance, or mine. Besides, David," he continued, refilling his pipe, "those so-called priests— They are not above seeking your help, or mine, in spiritual matters. They don't perform weddings, you know. If you should wish to use their buildings, I am sure you would find it easy—"

"I can't imagine it!"

"Perhaps, perhaps. But I found a listening device concealed in my confessional—" The priest's mouth became momentarily a thin angry line. "Since then I've been borrowing a corner of the temple to listen to anything which might possibly be of interest to our Asiatic Masters."

"Francis, you haven't!" Then, more moderately, "Does your bishop know of this?"

"Well, now, the bishop is a very busy man—"

"Really, Francis—"

"Now, now— I did write him a letter, explaining the situation as clearly as possible. One of these days I will find someone who is traveling in that direction and can carry it to him. I dislike to turn church business over to a public translator; it might be garbled."

"Then you haven't told him?"

"Didn't I just say that I had written him a letter? God has seen that letter; it won't harm the bishop to wait to read it."

It was nearly two months later that David Wood was sworn into the Secret Service of the United States army. He was only mildly surprised when he found that his old friend, Father Doyle, was able

to exchange recognition signals with him.

IT GREW and it grew. Organization—and communication—underneath each gaudy temple, shielded from any possible detection by orthodox science, operators stood watch and watch, heel and toe, at the paradio equipment operating in one band of additional spectra—operators who never saw the light of day, who never saw anyone but the priest of their own temple, men marked as missing in the files of the Asiatic warlords, men who accepted their arduous routine philosophically as the necessary exigency of war. Their morale was high, there were free men again, free and fighting, and they looked forward to the day when their efforts would free all white men, from coast to coast.

Back in the Citadel women in headphones neatly typed everything that the paradio operators had to report, typed it, classified it, condensed it, cross-indexed it. Twice a day the communication watch officer laid a brief of the preceding twelve hours on Major Ardmore's desk. Constantly throughout the day dispatches directed to Ardmore himself poured in from a dozen and a half dioceses and piled up on his desk. In addition to these myriad sheets of flimsy paper, each requiring his personal attention, reports piled up from the laboratories, for Calhoun now had enough assistants to fill everyone of those ghost-crowded rooms and he worked them sixteen hours a day.

The personnel office crowded more reports on him, temperament classifications, requests for authorization, notifications that this department or that required such and such additional personnel; would the recruiting service kindly locate them? Per-

sonnel—*there* was a headache! How many men can keep a secret? There were three major divisions of personnel, inferiors in routine jobs such as the female secretaries and clerks who were kept completely insulated from any contact with the outside world, local temple personnel in contact with the public who were told only what they needed to know and were never told that they were serving in the army, and the priests themselves who of necessity had to be in the know.

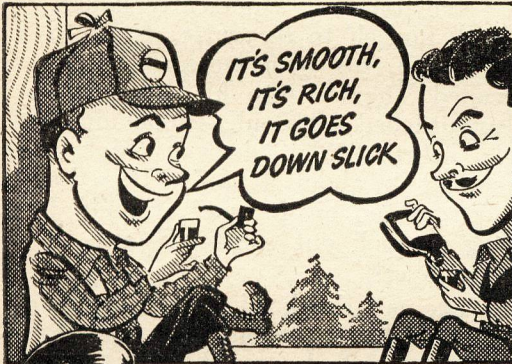
These latter were sworn to secrecy, commissioned in the United States army, and allowed to know the real significance of the entire set-up. But even they were not trusted with the underlying secret, the scientific principles behind the miracles they performed. They were drilled in the use of the apparatus intrusted to

them, drilled with care, with meticulous care, in order that they might handle their deadly symbols of office without error. But, save for the rare sorties of the original seven, no person having knowledge of the Ledbetter effect and its corollaries ever left the Citadel.

Candidates for priesthood were sent in as pilgrims from temples everywhere to the Mother Temple near Denver. There they sojourned in the monastery, located underground on a level between the temple building and the Citadel. There they were subjected to every test of temperament that could be devised. Those who failed were sent back to their local temples to serve as lay brothers, no wiser than when they had left home.

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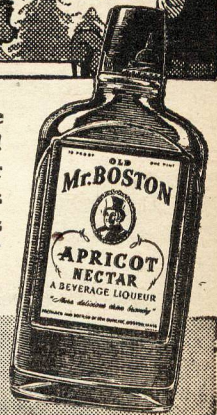
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angry, to make them loquacious, to strain their loyalty, to crack their nerve, were interviewed by Ardmore in his persona as High Priest of Mota, Lord of All. Over half of them he turned down for no reason at all, hunch alone, some vague uneasiness that this was not the man.

In spite of these precautions he never once commissioned a new officer and sent him forth to preach without a deep misgiving that here perhaps was the weak link that would bring ruin to them all.

The strain was getting him. It was too much responsibility for one man, too many details, too many decisions. He found it increasingly difficult to concentrate on the matter at hand, hard to make even simple decisions. He became uncertain of himself and correspondingly irritable. His mood infected those in contact with him and spread throughout the organization.

Something had to be done.

ARDMORE was sufficiently honest with himself to recognize, if not to diagnose, his own weakness. He called Thomas into his office and unburdened his soul. Concluding, he asked, "What do you think I should do about it, Jeff? Has the job got too big for me? Should I try to pick out somebody else to take over?"

Thomas shook his head slowly. "I don't think you ought to do that, Chief. Nobody could work any harder than you do—there are just

twenty-four hours in a day. Besides, whoever relieved you would have the same problems without your intimate knowledge of the background and your imaginative grasp of what we are trying to accomplish."

"Well, I've got to do *something*. We're about to move into the second phase of this show, when we start in systematically trying to break the nerve of the PanAsians. When that reaches a crisis, we've got to have the congregation of every temple ready to act as a military unit. That means more work, not less. And I'm not ready to handle it! Good grief, man—you'd think that somebody somewhere would have worked out a science of executive organization so that a big organization could be handled without driving the man at the top crazy! For the past two hundred years the damned scientists have kept hauling gadget after gadget out of their laboratories, gadgets that simply demand big organization to use them—but never a word about how to make those organizations run." He struck a match savagely. "It's not rational!"

"Wait a minute, Chief, wait a minute." Thomas wrinkled his brow in an intense effort to remember. "Maybe there has been such work done—I seem to recall something I read once, something about Napoleon being the last of the generals."

"Huh?"

"It's pertinent. This chap's idea was that Napoleon was the last of the great generals to exercise direct command, because the job got too big. A few years later the Germans invented the principle of staff command, and, according to this guy, generals were through—as generals. He thought that Napoleon wouldn't have stood a chance against

an army headed by a general staff. Probably what you need is a staff."

"For Pete's sake, I've got a staff! A dozen secretaries and twice that many messengers and clerks—I fall over 'em."

"I don't think it was that kind of a staff he was talking about. Napoleon must have had that kind of a staff."

"Well, what did he mean?"

"I don't know exactly, but apparently it was a standard notion in modern military organization. You're not a graduate of the War College?"

"You know damn well I'm not." It was true. Thomas had guessed from very early in their association that Ardmore was a layman, improvising as he went along, and Ardmore knew that he knew; yet each had kept his mouth closed.

"Well, it seems to me that a graduate of the War College might be able to give us some hints about organization."

"Fat chance. They either died in battle, or were liquidated after the collapse. If any escaped, they are lying very low and doing their best to conceal their identity—for which you can't blame them."

"No, you can't. Well, forget it—I guess it wasn't such a good idea after all."

"Don't be hasty. It *was* a good idea. Look—armies aren't the only big organizations. Take the big corporations, like Standard Oil and U. S. Steel and General Motors—they must have worked out the same principles."

"Maybe. Some of them, anyhow—although some of them burn their executives out pretty young. Generals have to be killed with an ax, it seems to me."

"Still, some of them must know

something. Will you see if you can stir out a few?"

FIFTEEN MINUTES later a punched-card selector was rapidly riffling through the personnel files of every man and woman who had been reported on by the organization. It turned out that several men of business executive experience were actually then working in the Citadel in jobs of greater or lesser administrative importance. Those were called in, and dispatches were sent out summoning about a dozen more to "make a pilgrimage" to the Mother Temple.

The first trouble shooter turned out sour. He was a high-pressure man, who had run his own business much along the lines of personal supervision which Ardmore had been using up to then. His suggestions had to do with routing and forms and personal labor savers rather than any basic change in principles. But in time several placid unhurried men were located who knew instinctively and through practice the principle of doctrinal administration.

One of them, formerly general manager of the communications trust, was actually a student and an admirer of modern military organizational methods. Ardmore made him Chief of Staff. With his help, Ardmore selected several others: the former personnel manager of Sears, Roebuck; a man who had been permanent undersecretary of the department of public works in one of the Eastern states; executive secretary of an insurance company. Others were added as the method was developed.

It worked. Ardmore had a little trouble getting used to it at first; he had been a one-man show all his life and it was disconcerting to find himself split up into several alter

egos, each one speaking with his authority and signing his name "by direction." But in time he realized that these men actually were able to apply his own policy to a situation and arrive at a decision that he might have made himself. Those that could not he got rid of, at the suggestion of his Chief of Staff. But it was strange to be having time enough to watch other men doing *his* work *his* way under the simple but powerful scientific principle of general staff command.

He was free at last to give his attention to perfecting that policy and to deal thoroughly with the occasional really new situation which his staff referred to him for solution and development of new policy. And he slept soundly, sure that one, or more, of his "other brains" was alert and dealing with the job. He knew now that, even if he should be killed, his extended brain would continue until the task was completed.

IT WOULD BE a mistake to assume that the PanAsian authorities had watched the growth and spread of the new religion with entire satisfaction, but at the critical early stage of its development they simply had not realized that they were dealing with anything dangerous. The warning of the experience of the deceased lieutenant who first made contact with the cult of Mota went unheeded, the simple facts of his tale unbelieved.

Having once established their right to travel and operate, Ardmore impressed on each missionary the importance of being tactful and humble and of establishing friendly relations with the local authorities. The gold of the priests was very welcome to the Asiatics, involved as they were in making a depressed and recalcitrant country pay dividends,

and this caused them to be more lenient with the priests of Mota than they otherwise would have been. They felt, not unreasonably, that a slave who helps to make the books balance must be a good slave. The word went around at first to encourage the priests of Mota, as they were aiding on consolidating the country.

True, some of the PanAsian police and an occasional minor official had very disconcerting experiences in dealing with priests, but, since these incidents involved loss of face to the PanAsians concerned, they were strongly disposed not to speak of them.

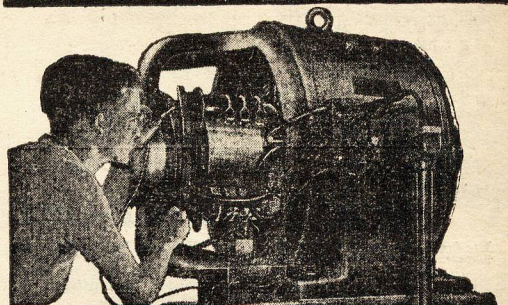
It took some time for enough unquestioned data to accumulate to convince the higher authorities that the priests of Mota, all of them, had several annoying—yes, even intolerable characteristics. They could not be touched. One could not even get very close to one of them—it was as if they were surrounded by a frictionless pellucid wall of glass. Vortex pistols had no effect on them. They would submit passively to arrest but somehow they never stayed in jail. Worst of all, it had become certain that a temple of Mota could not, under any circumstances, be inspected by a PanAsian.

It was not to be tolerated.

It was not tolerated. The Prince Royal himself ordered the arrest of Ardmore.

It was not done as crudely as that. Word was sent to the Mother Temple that the Grandson of Heaven desired the High Priest of the Lord Mota to attend him. The message reached Ardmore in his office in the Citadel, delivered to him by his Chief of Staff, Kendig, who for the first time in their relationship showed signs of agitation. "Chief," he burst out, "a battle cruiser has landed in front of the temple, and

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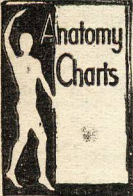
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the commanding officer says he has orders to take you along!"

Ardmore put down the papers he had been studying. "Hm-m-m," he said, "it looks like we're getting down to the slugging. A little bit earlier than I had counted on." He frowned.

"What are you going to do about it?"

"You know my methods. What do you think I'll do about it?"

"Well—I guess you'll probably go along with him—but it worries me. I wish you wouldn't."

"What else can I do? We aren't ready yet for an open breach; a refusal would be out of character. Orderly!"

"Yes, sir!"

"Send my striker in. Tell him full robes and paraphernalia. Then present my compliments to Mr. Thomas and ask him to come here at once."

"Yes, sir." The orderly was already busy with the reflectophone.

Ardmore talked with Kendig and Thomas as his striker robbed him. "Jeff, here's the sack—you're holding it."

"Huh?"

"If anything happens so that I lose communication with headquarters, you are commanding officer. You'll find your appointment in my desk, signed and sealed."

"But Chief—"

"Don't 'But Chief' me. I made my decision on this a long time ago. Kendig knows about it; so does the rest of the staff. I'd have had you in the staff before this if I hadn't needed you as Chief of Intelligence." Ardmore glanced in a mirror and brushed at his curly blond beard. They had all grown beards, all those who appeared in public as priests. It tended to give the comparatively hairless Asiatics a feeling of womanly inferiority while at the same time arousing a vague unallocated repugnance. "You may have noticed that

no one holding a line commission has ever been made senior to you. I had this eventuality in mind."

"How about Calhoun?"

"Oh, yes—Calhoun. Your commission as a line officer automatically makes you senior to him, of course. But I'm afraid that won't cut much ice in handling him. You just have to deal with him as best you can. You've got *force majeure* at your disposal, but go easy. But I don't have to tell you that."

A MESSENGER, dressed as an acolyte, hurried in and saluted. "Sir, the temple officer of the watch says that the PanAsian commander is getting very impatient."

"Good. I want him to be. Are the subsonics turned on?"

"Yes, sir; they make us all very nervous."

"You can stand it; you know what it is. Tell the watch officer to have the engineer on duty vary the volume erratically with occasional complete let-ups. I want those Asiatics to be fit to be tied by the time I get there."

"Yes, sir. Any word to the cruiser commander?"

"Not directly. Have the watch officer tell him that I am at my devotions and can't be disturbed."

"Very good, sir." The messenger trotted away. *This* was something like! He would hang around where he could see the face of that yellow skunk when he heard that one!

"I'm glad we got these new headsets fitted out in time," Ardmore observed as his striker fitted his turban to his head.

The turbans had originally been intended simply to conceal the mechanism which produced the shining halo which floated above the heads of all priests of Mota. The turban and the halo together made a priest

look about seven feet tall with consequent unfavorable effect on the psyche of the Asiatics. But Scheer had seen the possibility of concealing a short range transmitter and receiver under the turban as well; they were now standard equipment.

He settled the turban with his hands, made sure that the bone conduction receiver was firm against his mastoid, and spoke in natural low tones, apparently to no one, "Commanding officer—testing."

Apparently inside his head, a voice, muffled but distinct, answered him, "Communication watch officer—test check."

"Good," he approved. "Have direction finders crossed on me until further notice. Arrange your circuits to hook me in through the nearest temple to headquarters here. I may want Circuit A at any moment."

Circuit A was a general broadcast to every temple in the country. "Any news from Captain Downer?"

"One just this moment came in, sir. I've just sent it to your office," the inner voice informed him.

"So? Yes, I see." Ardmore stepped to his desk, flipped a switch which turned off a shining red transparency reading Priority, and tore a sheet of paper from the facsimile recorder.

"Tell the Chief," the message ran, "that something is about to bust. I can't find out what it is, but all the brass-hats are looking very cocky. Watch everything and be careful." That was all, and that little possibly garbled in word of mouth relay.

Ardmore frowned and pursed his mouth, then signaled his orderly. "Send for Mr. Mitsui."

When Mitsui came in Ardmore handed him the message. "I sup-

pose you've heard that I am to be arrested?"

"It's all over the place," Mitsui acknowledged soberly, and handed the message back.

"Frank, if you were Prince Royal, what would you be trying to accomplish by arresting me?"

"Chief," protested Mitsui, distress in his eyes, "you act as if I were one of those . . . those murdering—"

"Sorry—but I still want your advice."

"Well— I guess I'd be intending to put you on ice, then clamp down on your church."

"Anything else?"

"I don't know. I don't guess I'd be doing it unless I was fairly sure that I had some way to get around your protections."

"No, I suppose so." He spoke again to the air. "Communication office, priority for Circuit A."

"Direct, or relay?"

"You send it out. I want every priest to return to his temple, if he is now out of it, and I want him to do it *fast*. Priority, urgent, acknowledge and report." He turned back to those with him.

"Now for a bite to eat, and I'll go. Our yellow friend upstairs ought to be about done to a turn by then. Anything else we should take up before I leave?"

ARDMORE entered the main hall of the temple from the door in the rear of the altar. His approach to the great doors, now standing open, was a stately progress. He knew that the Asiatic commander could see him coming; he covered the two hundred yards with leisured dignity, attended by a throng of servers clad in robes of red, of green, of blue, and golden. His own vestments were immaculate white.

His attendants fanned out as they neared the great archway; he marched out and up to the fuming Asiatic alone. "Your master wishes to see me?"

The PanAsian had difficulty in composing himself sufficiently to speak in English. Finally he managed to get out, "You are ordered to report to me. How dare you—"

Ardmore cut him short. "Does your master wish to see me?"

"Decidedly! Why didn't you—"

"Then you may escort me to him."

He moved on past the officer and marched down the steps, giving the Asiatics the alternatives of running to catch up with him, or trailing after. The commander of the cruiser obeyed his first impulse to hurry, nearly fell on the broad steps, and concluded by bringing up ignominiously in the rear, his guard attending him.

ARDMORE HAD BEEN in the city chosen by the Prince Royal as his capital before, but not since the Asiatics had moved in. When they debarked on the municipal landing platform he looked about him with concealed eagerness to see what changes had been made. The skyways seemed to be running—probably because of the much higher percentage of Asiatic population here. Otherwise there was little apparent change. The dome of the State capitol was visible away to the right; he knew it to be the palace of the warlord. They had done something to its exterior; he could not put his finger on the change but it no longer looked like Western architecture.

He was too busy for the next few minutes to look at the city. His guard, now caught up with him and surrounding him, marched him to

the escalator and down into the burrows of the city. They passed through many doors, each with its guard of soldiers. Each guard presented arms to Ardmore's captor as the party passed. Ardmore solemnly returned each salute with a gesture of benediction, acting as if the salute had been intended for him and him alone. His custodian was indignant but helpless; it soon developed into a race to see which could acknowledge a salute first. The commander won, but at the cost of saluting his startled juniors first.

Ardmore took advantage of a long unbroken passageway to check his communications. "Great Lord Mota," he said, "Dost thou hear thy servant?" The commander glanced at him, but said nothing.

The muffled inner voice answered at once, "Got you, Chief. You are hooked in through the temple in the capitol." It was Thomas' voice.

"The Lord Mota speaks, the servant hears. Truly it is written that little pitchers have long ears—"

"You mean the monkeys can overhear you?"

"Yea verily, now and forever. The Lord Mota will understand ig-pay atinlay?"

"Sure, Chief—pig latin. Take it slow if you can."

"At-thay is oodgay. Ore-may at-erlay." Satisfied, he desisted. Perhaps the PanAsians had a mike and a recorder on him even now. He hoped so, for he thought it would give them a useless headache. A man has to grow up in a language to be able to understand it scrambled.

THE PRINCE ROYAL had been impelled by curiosity as much as by concern when he ordered the apprehension of the High Priest of Mota. It was true that affairs were not en-

tirely to his liking, but he felt that his advisers were hysterical old women. When had a slave religion proved anything but an aid to the conqueror? Slaves needed a wailing wall; they went into their temples, prayed to their gods to deliver them from oppression, and came out to work in the fields and factories, relaxed and made harmless by the emotional catharsis of prayer.

"But," one of his advisers had pointed out, "it is always assumed that the gods do nothing to answer those prayers."

That was true; no one expected a god to climb down off his pedestal and actually perform. "What, if anything, has this god Mota done? Has anyone seen him?"

"No, Serene One, but—"

"Then what has he done?"

"It is difficult to say. It is impossible to enter their temples—"

"Did I not give orders not to disturb the slaves in their worship?" The Prince's tones were perilously sweet.

"True, Serene One, true," he was hastily assured, "nor have they been, but your secret police have been totally unable to enter in order to check up for you, no matter how cleverly they were disguised."

"So? Perhaps they were clumsy. What stopped them?"

The adviser shook his head. "That is the point, Serene One. None can remember what happened."

"What is that you say?—but that is ridiculous. Fetch me one to question."

The adviser spread his hands. "I regret, sire—"

"So? Of course, of course—peace be to their spirits." He smoothed an embroidered silken panel that streamed down his chest. While he thought, his eye was caught by

ornately and amusingly carved chessmen set up on a table at his elbow. Idly he tried a pawn in a different square. No, that was not the solution; white to move and checkmate in four moves—that took five. He turned back. "It might be well to tax them."

"We have already tried—"

"Without my permission?" The Prince's voice was gentler than before. Sweat showed on the face of the other.

"If it were an error, Serene One, we wished the error to be ours."

"You think me capable of error?" The Prince was the author of the standard text on the administration of subject races, written while a young provincial governor in India. "Very well, we will pass it. You taxed them, heavily I presume—what then?"

"They paid it, sire."

"Triple it."

"I am sure they would pay it, for—"

"Make it tenfold. Set it so high they can *not* pay it."

"But Serene One, that is the point. The gold with which they pay is chemically pure. Our doctors of temporal wisdom tell us that this gold is made, transmuted. There is no limit to the tax they can pay. In fact," he went on hurriedly, "it is our opinion, subject always to the correction of superior wisdom"—he bowed quickly—"that this is not a religion at all, but scientific forces of an unknown sort!"

"You are suggesting that these barbarians have greater scientific attainments than the Chosen Race?"

"Please, sire, they have *something*, and that something is demoralizing your people. The incidence of honorable suicide has climbed to an alarming high, and there have been far too many petitions to return to

the land of our fathers."

"No doubt you have found means to discourage such requests?"

"Yes, Serene One, but it has only resulted in a greater number of honorable suicides among those thrown in contact with the priests of Mota. I fear to say it, but such contact seems to weaken the spirit of your children."

"Hm-m-m. I think, yes, I think that I will see this High Priest of Mota."

"When will the Serene One see him?"

"That I will tell you. In the meantime, let it be said that my doctors, if they have not lived too many years and passed their usefulness, will be able to duplicate and counteract any science the barbarians may have."

"The Serene One has spoken."

THE Prince Royal watched with great interest as Ardmore approached him. The man walked without fear. And, the Prince was forced to admit, the man had a certain dignity about him, for a barbarian. This would be interesting. What was that shining thing around his head—an amusing conceit, that.

Ardmore stopped before him and pronounced a benediction, hand raised high. Then—"You asked that I visit you, Master."

"So I did." Was the man unaware that he should kneel?

Ardmore glanced around. "Will the Master cause his servants to fetch me a chair?"

Really, the man was delightful—regrettable that he must die. Or would it be possible to keep him around the palace for diversion? Of course, that would entail the deaths of all who had watched this scene—and perhaps more such expedient

deaths later, if his delicious vagaries continued. The Prince concluded that it was not the initial cost, but the upkeep.

He raised a hand. Two scandalized men hastened up with a stool. Ardmore sat down. His eye rested on the chess table by the Prince. The Prince followed his glance and inquired, "Do you play the Battle Game?"

"A little, Master."

"How would you solve this problem?"

Ardmore got up and stood over the board. He studied it for a few moments, while the Oriental watched him. The courtiers were as silent as the pieces on the board—waiting.

"I would move this pawn—so," Ardmore announced at last.

"In such a fashion? That is a most unorthodox move."

"But necessary. From there it is mate in three moves—but, of course, the Master sees that."

"Of course. Yes, of course. But I did not fetch you here for chess," he added, turning away. "We must speak of other matters. I learn with sorrow that there have been complaints about your followers."

"The Master's sorrow is my sorrow. May the servant ask in what manner his children have erred?"

But the Prince was again studying the chessboard. He raised a finger; a servant was kneeling beside him with writing board. He dipped a brush in ink and quickly executed a group of ideographs, sealing the letter with his ring. The servant bowed himself away, while a messenger sped out with the dispatch.

"What was that? Oh, yes—it is reported that they lack in grace. Their manner is unseemly in dealing with the Chosen Ones."

"Will the Master help an humble priest by telling him which of his children have been guilty of lapses

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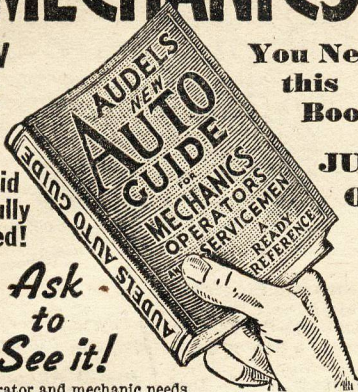
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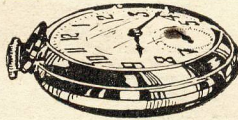
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from propriety and in what respects that he may correct them?"

This request, the Prince admitted to himself, was awkward. In some manner this uncouth creature had managed to put him on the defensive. He was not used to being asked for details; it was improper. Furthermore there was no answer; the conduct of the priests of Mota had been impeccable, flawless, in every fashion that could be cited.

Yet his court stood there, waiting, to hear what answer he would make to this crude indecency. How went the ancient lines? "... Kung F'tze confounded by the question of a dolt!"

"It is not meet that the servant should question the master. At this moment you err in the fashion of your followers."

"Your pardon, Master. Though the slave may not question, is it not written that he may pray for mercy and help? We are simple servants, possessing not the wisdom of the Sun and of the Moon. Are you not our father and our mother? Will you not, from your heights, instruct us?"

The Prince refrained from biting his lip. How had this happened? By some twist of words this barbarian had put him in the wrong again. It was not safe to let the man open his mouth! Still—this must be met; when a slave cries for mercy, honor requires an answer.

"We consent to instruct you in one particular; learn the lesson well and other aspects of wisdom will come to you of themselves." He paused and considered his words. "The manner of address used by you and your lesser priests in greeting the Chosen Ones is not seemly. This affront corrupts the character of all who see it."

"Am I to believe that the Chosen Race disdains the blessing of the Lord Mota?"

He had twisted it again! Sound

policy required that the ruler assume that the gods of the slaves were authentic. "The blessing is not refused, but the form of greeting must be that of servant to master."

ARDMORE was suddenly aware that he was being called with urgency. Ringing in his head was the voice of Thomas: "Chief! Chief! Can you hear me? There's a squad of police at every temple, demanding the surrender of the priests—we're getting reports in from all over the country!"

"The Lord Mota hears!" It was addressed to the Prince; would Jeff understand also?

Jeff again—"Was that to me, Chief?"

"See to it that his followers understand." The Prince had answered too quickly for Ardmore to devise another double meaning in which to speak to Thomas. But he knew something that the Prince did not know he knew. Now to use it—

"How can I instruct my priests when you are even now arresting them?" Ardmore's manner changed suddenly from humble to accusatory.

The face of the Prince was impassive, his eyes alone gave away his astonishment. Had the man guessed the nature of that dispatch? "You speak wildly."

"I do not! Even while you have been instructing me in the way that I must instruct my priests, your soldiers have been knocking at the gates of all the temples of Mota. Wait! I have a message to you from the Lord Mota: His priests do not fear worldly power. You have not succeeded in arresting them, nor would you, did not the Lord Mota bid them to surrender. In thirty minutes, after the priests have cleansed themselves spiritually *and*

girded themselves for the ordeal, each will surrender himself at the threshold of his temple. Until then, woe to the soldier who attempts to violate the House of Mota!"

"'At's telling 'em, Chief! 'At's telling 'em! You mean for each temple priest to hold off thirty more minutes, then surrender—is that right? And for them to be loaded for bear, power units, communicators, and all the latest gadgets. Acknowledge, if you can."

"In the groove, Jeff." He had to chance it—four meaningless syllables to the Prince, but Jeff would understand.

"O. K., Chief. I don't know what you're up to, but we'll go along a thousand percent!"

The face of the Prince was a frozen mask. "Take him away."

For some minutes after Ardmore was gone the Serene One sat staring at the chessboard and pulling at his underlip.

THEY PLACED Ardmore in a room underground, a room with metal walls and massive locks on the door. Not content with that, he was hardly inside when he heard a soft hissing noise and saw a point at the edge of the door turn cherry red. Welding! They evidently intended to make sure that no possible human weakness of his guards could result in escape. He called the Citadel.

"Lord Mota, hear they servant!"

"Yes, Chief."

"A wink is as good as a nod."

"Got you, Chief. You are still where you can be overheard. Slang it up. I'll get your drift."

"The headman witch doctor hankers to chew the rag with the rest of the sky pilots."

"You want Circuit A?"

"Most bodaciously."

There was a brief pause, then Thomas answered, "O. K., Chief, you've got it. I'll stay cut in to interpret—it probably won't be necessary, since the boys have practiced this kind of double talk. Go ahead—you've got five minutes, if they are to surrender on time."

Any cipher can be broken, any code can be compromised. But the most exact academic knowledge of a language gives no clue to its slang, its colloquial allusions, its half statements, over statements, and inverted meanings. Ardmore felt logically certain that the PanAsians had planted a microphone in his cell. Very well, since they were bound to listen to his end of the conversation, let them be confused and baffled by it, uncertain whether he spoke in gibberish to his god, or had possibly lost his mind.

"Look, cherubs—mamma wants baby to go to the nice man. It's all hunkydory as long as baby-bunting carries his nice new rattle. Yea verily, rattle is the watchword—you don't and they do. Deal this cold deck the way it's stacked and the chopstick laddies are stonkered and discombobulated. The stiff upper lip does it."

"Check me if I'm wrong, Chief. You want the priests to give themselves up, and to rattle the PanAsians by their apparent unconcern. You want them to carry it off the way you did, cool as a cucumber, and bold as brass. I also take it that you want them to hang on to their staffs, but not to use them unless you tell them to. Is that right?"

"Elementary, my dear Watson!"

"What happens after that?"

"No thirty."

"What's that? Oh, 'No thirty'—more to come on this story; you'll

tell us later. All right, Chief—it's time!"

"Okey-dokey!"

ARDMORE WAITED until he was reasonably certain that all the PanAsians not immediately concerned with guarding the prisoners would be asleep, or at least in their quarters. What he proposed to do would be effective fully only in the event that no one knew just what had happened. The chances were better at night.

He called Thomas by whistling a couple of bars of "Anchors Aweigh." He responded at once—he had not gone off duty, but had remained at the paradio, giving the prisoners an occasional fight talk and playing records of martial music. "Yes, Chief?"

"The time has come to take a powder. Allee-allee out's in free!"

"Jailbreak?"

"In the manner of the proverbial Arab—the exact manner."

They had discussed this technique before; Thomas gave itemized instructions and then said, "Say when, Chief."

"When!"

He could almost see Thomas nod. "Right-oh! O. K., troops, get going!"

Ardmore stood up and stretched his cramped limbs. He walked over to one wall of his prison and stood so that the single light cast a shadow on the wall. That would be about right—there! He set the controls of his staff for maximum range in the primary Ledbetter effect, checked to see that the frequency band covered the Mongolian race, and adjusted it to stun rather than kill. Then he turned on power.

A few moments later he turned it off, and again regarded his shadow on the wall. This required an en-

tirely different setting, directional and with fine discrimination. He turned on the red ray of Dis to guide him in his work, completed his set-up, and again turned on power.

Quietly and without fuss, atoms of metal rearranged themselves and appeared as nitrogen, to mix harmlessly with the air. Where there had been a solid wall was now an opening the size and shape of a tall man dressed in priestly robes. He looked at it, and, as an afterthought, he meticulously traced an ellipse over the head of the representation, an ellipse the size and shape of his halo. That done, he reset the controls of his staff to that he had used before, turned on power, and stepped through the opening. It was a close fit; he had to wriggle through sideways.

Outside it was necessary to step over the piled-up bodies of a dozen or more PanAsian soldiers. This was not the side of the welded-up entrance; he guessed that he would have found guards outside each and any of the four walls, probably floor and ceiling as well.

There were more doors to pass, more bodies to clamber over before he found himself outside. When he did, he was completely unoriented. "Jeff," he called, "where am I?"

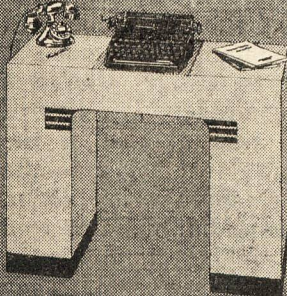
"Just a second, Chief. You're— No, we can't get a fix on you, but you are on a line of bearing almost due south of the nearest temple. Are you still near the palace?"

"Just outside it."

"Then head north—it's about nine squares."

"Which way is north? I'm all

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turned around. No, wait a minute—I just located the Big Dipper. I'm all right."

"Hurry, Chief."

"I will." He set out at a quick dogtrot, kept it up for a couple of hundred yards, then dropped into a fast walk. Damn it, he thought, a man gets out of condition with all this desk work.

ARDMORE encountered several Asiatic police, but they were in no condition to notice him; he had kept the primary effect turned on. There were no whites about—the curfew was strict—with the exception of a pair of startled street cleaners. It occurred to him that he should induce them to go with him to the temple, but he decided against it; they were in no more danger than a hundred and fifty million others.

There was the temple!—its four walls glowing with the colors of the attributes. He broke into a run and burst inside. The local priest was almost at his heels, arriving from the other direction.

He greeted the priest heartily, suddenly realizing the strain he had been under in finding how good it was to speak to a man who was white and a comrade. The two of them ducked around back to the altar and went down below to the control and communication room, where the paradio operator and his opposite number were almost hysterically glad to see them. They offered him black coffee, which he accepted gratefully. Then he told the operator to cut out of Circuit A and establish direct two-way connection with headquarters with reflectophone converted into the circuit.

Thomas appeared to be about to jump out of the screen. "Whitey!" he yelled. It was the first time since the Collapse that anyone had called Ardmore by his nickname. He was

not even aware that Thomas knew it. But he felt warmed by the slip.

"Hi, Jeff," he called to the image, "good to see you. Any reports in yet?"

"Some. They are coming in all the time."

"Shift to relay through the diocese offices; Circuit A is too clumsy. I want a quick report."

It was forthcoming. Within less than twenty minutes the last diocese had reported in. Every priest was back in his own temple. "Good," he told Thomas. "Now I want the projector in each temple set for counteraction, and wake all those monkeys up. They ought to be able to use a directional concentration down the line each priest returned on, and reach clear back to the local jailhouse."

"O. K., if you say so, Chief. May I ask why you don't simply let 'em wake up when the effect wears off?"

"Because," he explained, "if they simply come to before anybody finds them the effect will be much more mysterious than if they are found apparently dead. The object of the whole caper was to break the morale of the Asiatics. This increases the effect."

"Right—as usual, Chief. The word is going out."

"Fine. When that's done, have them check the shielding of their temples, turn on the fourteen-cycle note, and go to bed—all that aren't on duty. I imagine we'll have a busy day tomorrow."

"Yes, sir. Aren't you coming back here, Chief?"

Ardmore shook his head. "It's an unnecessary risk. I can supervise just as effectively through the reflectophone as I could if I were standing right beside you."

"Scheer is all set to fly over and pick you up. He could set her down right on the temple roof."

"Tell him thanks, but to forget it. Now you turn it over to the staff duty officer and get some sleep."

"Just as you say, Chief."

He had a midnight lunch with the local priest and some conversation, then let the priest show him to a stateroom down underground.

ARDMORE was awakened by the off-duty paradio operator shaking him vigorously. "Major Ardmore! Major! Wake up!"

"Unnh . . . M-m-m-m . . . Wassamatter?"

"Wake up—the Citadel is calling you—urgently!"

"What time is it?"

"About eight. Hurry, sir!"

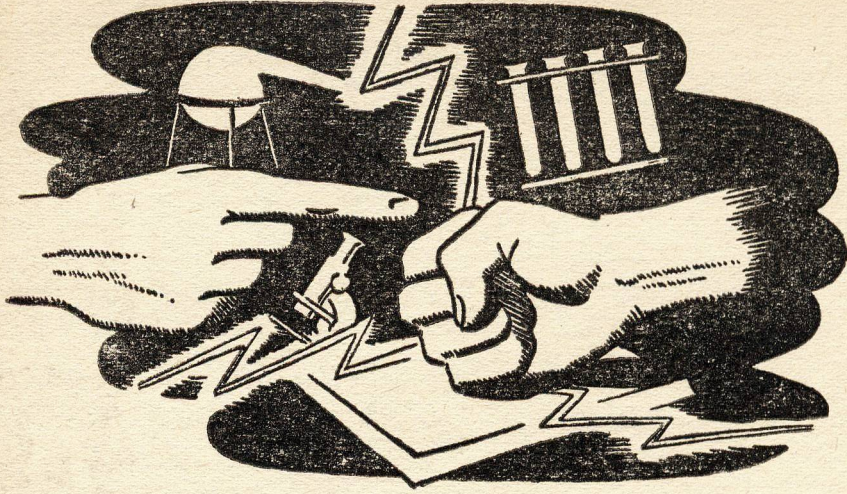
He was reasonably wide awake by the time he reached the reflectophone. Thomas was there, on the other end, and started to talk as soon as he saw Ardmore. "A new development, Chief—and a bad one. The PanAsian police are rounding up every member of our congregations—systematically."

"H-m-m-m—it was an obvious next move, I guess. How far along are they?"

"I don't know. I called you when the first report came in; they are coming in steadily now from all over the country."

"Well, I reckon we had better get busy." It was one thing for a priest, armed and protected, to risk arrest; these people were absolutely helpless.

"Chief—you remember what they did after that first uprising? This looks bad, Chief—I'm scared!"



BRASS TACKS

It didn't take a prophet to tell "Slan" would be liked.

Dear Campbell:

I like the way you run out on limbs and call your shots in advance. Not that you're always infallible, but at least you pour it on thick when you still can.

You promised us something definitely unusual in Heinlein's first serial and your first installment nova, (which you mistakenly ascribed to "Slan" in the September blurb) "If This Goes On—" and you were right. It was good. Not magnificent, perhaps, but good. You warned us again when Hubbard's controversial "Final Blackout" was no more than a name, and you were right again as the acclaim has proved. Better balance, vastly more powerful than the propaganda story, Hubbard's yarn, we conceded, would be difficult to beat in 1940.

But there is, it seems, a man named van Vogt. The fellow apparently owns a typewriter, ten fingers well-skilled in its operation and a mind of a brilliance that has not been directed at the field of science-fiction since the halcyon era of Weinbaum-Smith-Campbell-Williamson and the zenith of imaginative writing.

This chap, who, within a single twelve months had written three or four of that year's ten best, had apparently finished a thing called "Slan." Again the effusive blurb—the extravagant promise—the kind of thing we'd grown used to in a year of

such tactics. "Ah, yes, the bonnie Campbell laddie is awa' again."

Ah, yes, and the bonnie Campbell laddie was right again.

"Slan" is good. It is definitely great stuff. It is the stuff which is called classic. It is the unforgettable—the brilliant—the ultimate. It is the kind of thing that justifies science-fiction.

You must like this van Vogt, John. He is so much of what you are. This fellow can slant you like nobody's business. He's started where you left off, and he's doing the things you would have done if you hadn't gotten a job. He's doing the things I wish more of your writers would do. But there is only one van Vogt, and there will never be another "Slan." Every slan-story the future produces will be weighed against this one, and will be found wanting, for "Slan" lacks nothing.

But even you can make mistakes. Your infallibility as a writer doesn't hold so true as an editor. You're better than any of the rest but—

You pawned something off on us once called "The Last Hope." Remember? You really had it in for us in those days. While we hung on the ropes, you slugged us with "General Swamp," and we reeled anew. Then came Malcolm's Marathon of Mental Maudering otherwise known as "A Question of Salvage," and salvaging was what we both needed, and I am not talking nonsense. Come June, and you topped your-

self. Somebody named Drew said nothing loudly for twenty-six pages, and you fed it to us as "The Carbon Eater." That, John, we thought to be your ultimate low. But little did we anticipate the lean days that lurked ahead; days that would drive you to the nethermost depths of desperation. Days that would culminate in the issue of December, anno Domini. 1940. Days that would find us snatching open the new copy of our beloved Astounding to discover such gems of frowzy incompetence as "Old Man Mulligan" and "Spheres." Daze—

Fiction evolves of its own volition, not generally through an effort by the editor to manufacture trends. Mutants and thought-variants and social significance and man-unarmed-and-naked against a naked-raw-and-seldom-mild nature are O. K., but did you ever try to manufacture a cake out of eggs? You end up with an omelet.

"Slan" saved you in December, but I hope you stop this pressing. It's doing something to Astounding, but is it the right thing? You need the stability of the old faithfuls, Williamson and Smith and your own unbeatable self, which only van Vogt alone among the new writers typifies, to keep the name of pseudo-science from degenerating into pseudo-pseudo-science.

I still contend that 1940 was beaten by 1939. Even "Slan" and "Final Blackout" can't surpass "Crucible of Power," "Cloak of Aesir," "Black Destroyer," "Greater Than Gods," "Discord in Scarlet," and "Gray Lensman." In fact, Hubbard's and van Vogt's serials are the only 1940 stuff that can be mentioned in the same breath with '39's mighty array.

1940 emerges thus:

- "Slan"
- "Final Blackout"
- "Hindsight"
- "If This Goes On—"
- "Farewell to the Master"
- "Vault of the Beast"
- "Coventry"
- "The Stars Look Down"
- "The Testament of Akubii"
- "Neutral Vessal"

—Carl H. Anderson, Traverse City, Michigan.

De Camp is a born scholar with a sense of humor. In the Middle Ages he'd have been a scholar and burned at the stake as the only adequate answer to his joy in poking holes in "the authorities."

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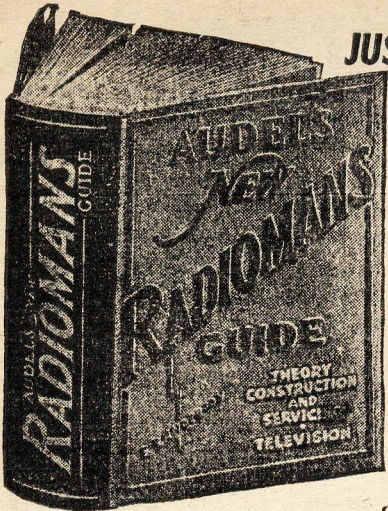
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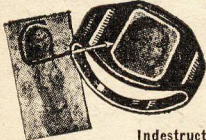


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long time I regarded Astounding as an upstart, but since you have taken over the editorship it has unquestionably led the field. Perhaps the most interesting change in the magazine since then is the gradual recognition of the importance of psychology and the social sciences to supplement the physical sciences. Surely Astounding offers today a much more realistic and intelligent approach to stories than any other magazine in the field; this approach gives a surprisingly enhanced entertainment value, and certainly is much more satisfying to the mind.

Now for the Analytical Laboratory:

1. "Slan"
2. "Fog"
3. "Old Man Mulligan"
4. "Legacy"
5. "Spheres"

The articles—may their line increase!—are not included in the above, but I think they both rate between second and third place. One of Astounding's best points is your ability to get well-written and worthwhile articles written by men who really know their stuff. Say, what is this fellow de Camp, anyway? One who gets the impression that investigating the interesting aspects of familiar and unfamiliar knowledge is his whole life's work.

A word about "Slan." I note quite a few comments wondering why you rated it so highly in advance. I was in that camp, too, even after reading the last installment; that is, until I turned to and read the whole thing without serial breaks. Only then does the whole power and strength of "Slan" become fully apparent.

Wiley's gem is outstanding. It is apparent when an author knows whereof he speaks. On the whole, however, the last two issues are not quite up to the October issue; in which, by the way, I was sorry not to see "White Mutiny" place higher. It and "Admiral's Inspection" are darn good stories and were written by someone who is acquainted with the military. Didn't Jameson have an article on guns in space warfare some time ago? My files are two hundred miles away, but I seem to remember that.—Robert Featherstone, 1087 15th Avenue S. E., Minneapolis, Minnesota.

Nomination seconded—?

Dear Mr. Campbell:

I have just finished writing a rather long and turgid letter in praise of a story. Because I know that the writing of that letter does not affect my supreme enjoyment of that story, and out of respect of the

fact that editors are busy men, I have decided to say this:

For the ten best stories of the year I nominate "SLAN."—Dick Wortman, 842 East 97th Street, Seattle, Washington.

History of the future.

Dear Editor Campbell:

To my great disappointment I discovered—all too late—that "Slan" has four parts and not three. Now for another month of weary waiting. It seems good from sight.

Vic Phillips, whose first yarn was such a great flop, has in "Salvage" a really fine, true-to-life novelette, another in the series of recent sociological epics that do so much to give view to the "history of the future." "Rim of the Deep" gave the ocean-floor "pioneers" a break; "Cold" depicted race suspicion and avarice with a dash of science "ground-breaking" tossed in; "Roads Must Roll," transportation and economics; "General Swamp, CIC," the inevitable war to sever the ties of the home country—Berger brought out the obvious relations to the American Revolution cleverly; the same idea occurred to me as I read that rather dull serial. Then there were "If This Goes On" and "Coventry" to show the progress of radical governmental "isms"; "Blowups Happen" and "Crisis in Utopia" to depict the strange paths that the sciences will take. "Sculptors of Life," "The Idealist" and on, and on and on.

The odd life-forms of Venus were sympathetically portrayed in "Salvage," and the characterization was not of the slushy kind. Too, the drama of the situations and the well-handled suspense did much to make this a thrilling story—a story, no doubt, that poor, suffering children of a few centuries hence will moan over as dull history.

"The Exalted" is second. I cannot say that I enjoyed this return engagement of Johnny Black, but because of the spots of humor throughout, and because of that indescribably fecund wealth of imagination that creates machines of such sound practicability that I wonder why they are not on the shelves of storekeepers, I find that it deserves the merit that all fans usually laud de Camp with, in the past and present, and no doubt in the future. Cartier's drawings for this are fine.

The third tale, "One Was Stubborn," is decidedly *Unknown* material, but very en-

joyable in whatever book it appears. The author has that disgusting habit of attaching a prologue to his yarns—this is the second I've read—telling how all that is to follow is gospel and to be believed. I'm left in the quandary of trying to decide whether he means it—and there I shudder—or if he's just being subtly clever, whereupon I smile indulgently up my sleeve along with him. Do consider these nerves.

Last, but I'd hardly say least, is "Sunspot Purge," a story whose type is rarely used in the Campbell opus. The careful plan and logical—if chilling—conclusion made it a dilly.—C. Hidley, New York, New York.

To date, sociology is too largely based on political faiths rather than logic.

Dear Mr. Campbell:

Maybe Mr. Zollinger really wanted an answer—specifically. If so, he can find it explained rather entertainingly by Hogben in "Mathematics for the Million"—W. W. Norton, 1937—first chapter, pp. 16-19. Found elsewhere also, but that is as delightful an explanation as I have found—both of Zeno's Paradox and of the difference between the point of view of our pre-scientific ancestors and what we are pleased to call the scientific attitude of the twentieth century.

Speaking of today's scientific attitude—in practice—so you publish "undemocratic" stories, Mr. Campbell, and you are guilty of "pro-war propaganda" and "anti-war propaganda" simultaneously! And the Comrades and the Patriots both will get you if you don't watch out.

Think you can get away with protesting that Hubbard, Heinlein, et al., were not arguing social theories? Galileo protested that he was not arguing religious theories, also. His opponents did not agree.

To be sure, to present a rounded, three-dimensional story moving in time, you must permit an author freedom to imagine a social setting—whatever social setting goes with his story. To be sure, it gives a more interesting story. That is irrelevant. Outside considerations are always irrelevant, when a man's sacred doctrines are touched.

When social theories are no longer sacred doctrines, then we may hope that the scientific attitude will eventually touch the field of social relations, too—and didn't it give you a thrill that "Final Blackout"

ranked high? I wanted to cheer, myself. Maybe there are more adult readers among us than most of us had previously thought.—W. K. Verniaud, 203 Du Page St., Michigan City, Ind.

Wonder how many readers spotted Kier Grey as Kathleen's father? Two at least did, I know—

Dear Mr. Campbell:

So last night I drip in to see Elmer Perdue—it was raining—and I say to him, well, where do you think the Slan headquarters is? And he says to me, what do you think John Petty is? Or Kier Grey? And I say, I have an idea, but I'm almost too scared to say it. And Lester del Rey comes in and says, how about the tendriless Slans? And what relationship between Kathleen and Kier Grey?

We talk about supermen in general, and decide that van Vogt is quite correct in not assigning the slans higher intelligence, for intelligence as an abstract quality really does not exist in psychology. What it appears to be is intensified powers of concentration, and an ease of reducing synapse resistance to form nervous patterns.

Which brings us to L. Sprague de Camp's synapse resistance reducer. I sort of wonder about it. When you give a cat an overdose of strychnine, resistance is destroyed in every synapse of the cat's body, so that any stimulus applied anywhere produces the maximum response everywhere. It is a total short circuit. Partial lowering would, perhaps, bring a condition where synapse patterns are very easily formed, so that a person could play a composition on the piano once and have it memorized, instead of requiring many repetitions to create the pattern. Some people can do that, you know. If the effect were general, it would mean that every single thing the person saw, heard, or felt would be forever memorized. It would be a lovely thing to be able to turn on and off at will. But it is somewhat different from the effect de Camp obtains. Probably he uses another line of reasoning.

So, to rate stories. "Slan" is way, way up. Next is "The Exalted," with "One Was Stubborn" not too far behind. "Salvage" was not so hot, and "Sunspot Purge" was pretty terrible. Did you put it in to show us how corny a typical story of vintage 1931 appeared beside modern stuff?—Milton A. Rothman, 1730 P, NW, Washington, D. C.

SCIENCE DISCUSSIONS

Resisting temptation, I will make no puns. This concerns scent, sound and sight movies.

Dear Mr. Campbell:

I believe that reality recently forged ahead of science-fiction stories, at least to my knowledge of the latter subject, and I think that science-fiction readers and writers alike may be interested to get an eye-and-nose-witness report about that thing.

"Reality," in this case, refers to a new invention in the realm of movie making. The date of the event was October 10, 1940, early in the afternoon, and the place was the auditorium in the Swiss Pavilion at the New York World's Fair. It was the first showing of the first "scented" movie, and I feel certain that everyone of the twenty-odd people who had been permitted to be present were as amazed as I was.

While I am sure that this new type of movie will probably be called "smellies" very soon and that the poor jokes and puns to be made will be somewhat annoying, I harbor the belief that that date will later be called a turning point in the technique of movie making. As the term "scented" movie implies, the new invention consists of an attachment which releases the proper scents at the proper moment. The effects are close to miraculous; in various instances the sense of taste seemed to be added, too. I, at least, had the illusion of tasting peaches when I saw them on the screen and smelled a strong scent of fresh peaches at the same time.

The title of the movie was "My Dream," which is the name of a perfume that is characteristic for the heroine of the play. The play itself—duration about thirty-five minutes—is puny and there is no need to tell the story; the plot was very evidently designed to crowd as many "smelly" situations into one half hour as possible. You see the heroine walking through a flower garden. Walking with her you smell the various flowerbeds, occasionally even before you can see them. You follow the hero when he is searching for his girl, equipped with the addresses of all the people in Zuerich bearing the same name. Thus you get into a butcher shop—and smell a collection of choice garlic sausages. You get

into a carpenter's workshop and are immersed in the smell of wood. You finally land in a beekeeper's place who is just then busy filling honey in glass jars and the strong smell of fresh honey makes you wish ardently for griddle cakes and coffee.

That the plot of the movie was puny was amply excused by the fact that it was made just for the purpose of demonstrating the technique. Well, you do not ordinarily experience fifty different smells in half as many minutes, and that the scents were generally a bit too strong was blamed on the small size of the auditorium. It was said that the machinery was designed for a full-sized cinema.

The movie itself was, to a certain extent, a war casualty. It was made especially for America—as evidenced by the fact that the actors, or rather their voice doubles, talked good American all the way through—and was originally supposed to be in technicolor. Due to the war no such film was available in Switzerland and neighboring countries so that it was finally produced on ordinary black-and-white film. I like to add that one gets used to accompanying smells very quickly. Near the end of the film you see a waiting elderly gentleman reading his newspaper and puffing his cigar rather angrily. You are surprised and somewhat disappointed that you do not smell the smoke. As the inventors told me after the performance this lack of tobacco odor is neither due to an oversight nor to technical difficulties in the production of this scent, but was done on purpose, to test the reaction of the public.

The inventors are both Swiss, their names are Hans E. Laube and Robert Barth. I was told that the principle was discovered more or less accidentally during the course

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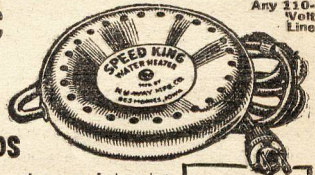
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To be frank I had never believed in the possibility of scented movies, although the idea came up in discussions with engineers or movie people in general every once in a while. I had always maintained that I could imagine that it might be possible to produce assorted everyday smells and to bottle them up "for immediate release." I had also said that I did not think it difficult to design an attachment which would open those "bottles" at the proper instant. But, I had always said, BUT you just CAN'T get rid of smells as quickly as you can produce them and the mixture that would result from a double feature and a newsreel, all of them with strong action—say sports, love and war respectively—would compare favorably with the milder kinds of combat gases on the market. I am now eating these words as gracefully as I can manage. Laube and Barth do manage to get rid of their smells as quickly as they produce them. I am sorry not to be able to tell just how it is done, nor do I know exactly how the scents are produced. They might not be "bottled," after all. Naturally, the two inventors are reluctant to talk and they managed not to divulge their secrets in spite of a tri-lingual cross examination conducted by a few newspapermen and after what had been believed to be an adequate barrage of Manhattans and Martinis.

But I did learn the following: the machinery weighs almost exactly one ton. It is located behind the screen. The scents—I do not know how they are kept—travel slightly slower than the sound emanating from the loudspeaker, but the difference is slight enough not to be noticeable except, perhaps, in a very large building. And it seems that the scent particles are all of such chemical constitution that they oxidize almost immediately, *therefore a smell lasts only as long as it is emitted by the apparatus*, just as a sound lasts only as long as it issues from the loudspeaker.

After that first performance for a few representatives of some of New York's newspapers the film "My Dream" was shown sporadically to other selected groups, as long as the World's Fair lasted. It is now probably in transit to Hollywood, if it did not get there already. For completeness' sake I like to mention that Laube and Barth demonstrated a scented picture to representatives of Swiss and French newspapers on December 2, 1939, at Berne, Switzerland, but that was not a specially made film but only a few newsreel scenes with scents added.—Willy Ley, 304 West 24th St., New York City.

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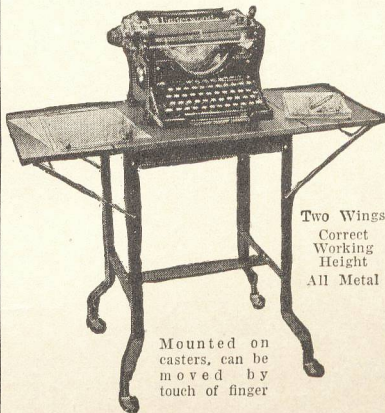
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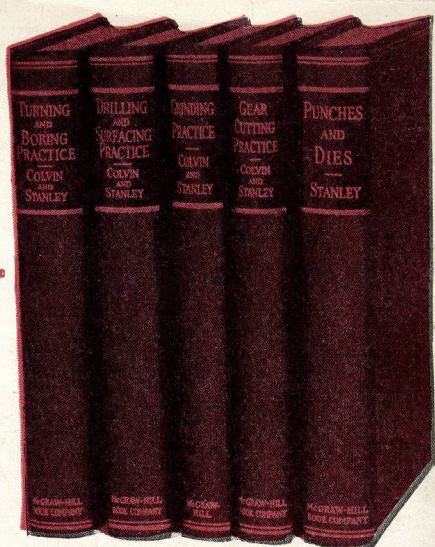
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- description of all important varieties of machines, both manual and automatic, and methods of operating them
- data on speeds and feeds, new cutting alloys and materials, use of coolants, etc.
- practical information on grinding machines and abrasive wheels, showing what they do, how to operate them, and how to make best use of them on various types of work
- preferred methods of leading shops, on speeds, feeds, precision grinding, automatic machines, special work, etc.
- training in the various operations performed in drilling and surfacing materials in the machine shop
- valuable data, methods, suggestions, and illustrations from accepted practice, showing plainly how to handle the cutting of materials, the care of tools, methods of production, etc.
- exact, descriptive data on all aspects of gear cutting practice, useful in shops of any size
- essentials of selecting machines, setting up work, and handling operations in reaming, tapping, planing, shaping, slotting, milling, and broaching.

