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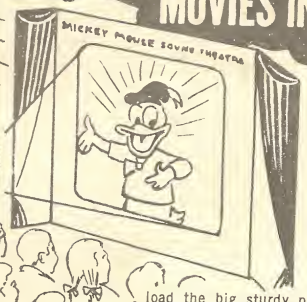

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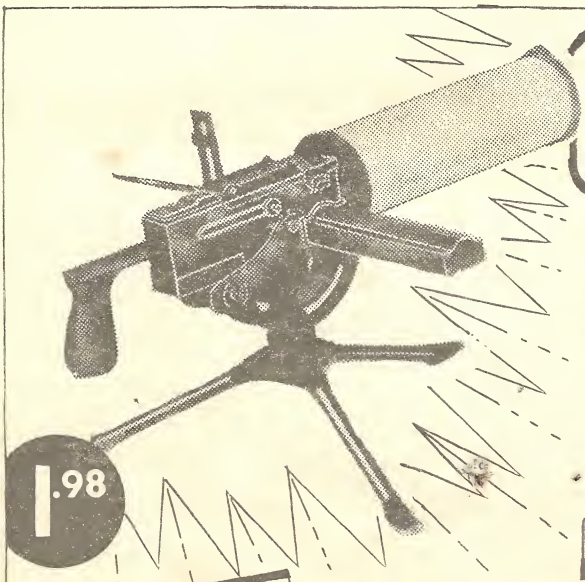

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NOVELET

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FEATURE

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THE LAST QUESTION

by ISAAC ASIMOV

(author of "Living Space")

illustrated by LUTON

THE LAST QUESTION was asked for the first time, half in jest, on May 21, 2061, at a time when humanity first stepped into the light. The question came about as a result of a five-dollar bet over highballs and it happened this way:—

Alexander Adell and Bertram Lupov were two of the faithful attendants of Multivac. As well as any human beings could, they knew what lay behind the cold, clicking, flashing face—miles and miles of face—of that giant computer. They had at least a vague notion of the general plan of relays and circuits that had long since grown past the point where any single human could possibly have a firm grasp of the whole.

Multivac was self-adjusting and self-correcting. It had to be; nothing human could adjust and correct it quickly enough, or even adequately enough. —So Adell and Lupov attended the monstrous giant only lightly and superficially, yet as well as any men could. They fed it data, adjusted questions to its needs, and translated the answers that were issued. Certainly they, and all others like them, were fully entitled to share in the glory that was Multivac's.

For decades, Multivac had helped design the ships and plot the trajectories that enabled man to reach the Moon, Mars and Venus. Beyond Mars, Earth's poor resources could not support the ships; too much energy was needed for the long trips. Earth exploited its coal and uranium with increasing efficiency, but there was only so much of both.

And slowly, Multivac learned enough to answer deeper questions more fundamentally; and on May 14, 2061, what had been theory, became fact.

The energy of the sun was stored, converted, and utilized directly on a planet-wide scale. All earth turned off its burning coal, its fissioning ura-

nium, and flipped the switch that connected all of it to a small station, one mile in diameter, circling the Earth at half the distance of the Moon. All Earth ran by invisible beams of sunpower.

Seven days had not sufficed to dim the glory of it. Adell and Lupov finally managed to escape from the public functions, and meet in quiet where no one would think of looking for them—in the deserted underground chambers where portions of the mighty buried body of Multivac showed. Unattended, idling, sorting data with contented lazy clickings, Multivac, too, had earned its vacation and the boys appreciated that. They had no intention, originally, of disturbing it.

They had brought a bottle with them and their only concern at the moment was to relax in each other's company.

"IT'S AMAZING when you think of it," said Adell. His broad face had lines of weariness in it and he stirred his drink slowly with a glass rod, watching the cubes of ice slurr clumsily about. "All the energy we can possibly ever use for free. Enough energy, if we wanted to draw on it, to melt all Earth into a big drop of impure liquid iron, and still never miss it. All the energy we could ever use, forever and forever and forever."

Lupov cocked his head sideways. He had a trick of doing that when he wanted to be contrary; and he wanted to be contrary now, partly because he had had to carry the ice and glassware. "Not forever," he said.

"Oh, hell—just about forever. Till the sun runs down, Bert."

"That's not forever."

"All right, then. Billions and billions of years. Twenty billion, maybe. Are you satisfied?"

Lupov put his fingers through his thinning hair, as though to reassure himself that some was still left, and sipped gently at his own drink. "Twenty billion years isn't forever."

"Well, it will last our time, won't it?"

"So would the coal and uranium."

"All right, but now we can hook up each individual space-ship to the Solar Station and it can go to Pluto and back a million times without ever worrying about fuel. You can't do *that* on coal and uranium. Ask Multivac, if you don't believe me."

"I don't have to ask Multivac; I know that."

"Then stop running down what Multivac's done for us," said Adell, blazing up, "It did all right."

"Who says it didn't? What *I* say is that a sun won't last forever. That's all I'm saying. We're safe for twenty billion years, but then what?" Lupov pointed a slightly shaky finger at the other. "And don't say we'll switch to another sun."

There was silence for a while. Adell put his glass to his lips only occasionally, and Lupov's eyes slowly closed. They rested.

Then Lupov's eyes snapped open. "You're thinking we'll switch to another sun when ours is done, aren't you?"

"I'm not thinking."

"Sure you are. You're weak on logic; that's the trouble with you. You're like the guy in the story who was caught in a sudden shower, and who ran to a grove of trees and got under one. He wasn't worried. You see, he figured that when one tree got wet through, he would just get under another one."

"I get it," said Adell. "Don't shout. When the sun is done, the other stars will be gone, too."

"Darn right they will," muttered Lupov. "It all had a beginning in the original cosmic explosion, whatever that was; and it'll all have an end when all the stars run down. Some run down faster than others. Hell, the giants won't last a hundred million years. The sun will last twenty billion years, and

maybe the dwarfs will last a hundred billion for all the good they are. But just give us a trillion years and everything will be dark. Entropy has to increase to maximum, that's all."

"I know about entropy," said Adell, standing on his dignity.

"The hell you do."

"I know as much as you do."

"Then you know everything's got to run down someday."

"All right. Who says it won't."

"You did, you poor sap; you said we had all the energy we needed, forever. You said forever."

It was Adell's turn to be contrary. "Maybe we can build things up again someday."

"Never."

"Why not? Someday."

"Never."

"Ask Multivac."

"*You* ask Multivac; I dare you. Five dollars says it can't be done."

Adell was just drunk enough to try, just sober enough to be able to phrase the necessary symbols and operations into a question which, in words, might have corresponded to this: *Will mankind one day be able to restore the sun to its full youthfulness, even after it has died of old age, without the expenditure of energy?*

Or maybe it could be put more simply like this: *How can the net amount of entropy of the universe be massively decreased?*

Multivac fell dead and silent. The slow flashing of lights ceased, the distant sounds of clicking relays ended.

Then, just as the frightened technicians felt they could hold their breath no longer, there was a sudden springing to life of the teletype attached to that portion of Multivac. Five words were printed: INSUFFICIENT DATA FOR MEANINGFUL ANSWER.

"No bet," whispered Lupov. They left hurriedly.

By next morning, the two, plagued with throbbing head and cottony mouth, had forgotten the incident.

2

JERRODD, Jerrodine and Jerrodetee I and II watched the starry picture in the visiplate change as the passage through hyperspace was completed in its non-time lapse. At once, the even powdering of stars gave way to the predominance of a single bright marble-disk, centered.

"That's X-23," said Jerrodd, confidently. His thin hands clamped each other tightly behind his back and the knuckles whitened.

The little Jerrodettes, both girls, had experienced the hyperspace passage for the first time in their lives and were self-conscious over the momentary sensation of inside-outness. They buried their giggles and chased one another wildly about their mother, screaming, "We've reached X-23—we've reached X-23—we've—"

"Quiet, children," said Jerrodine, sharply. "Are you sure, Jerrodd?"

"What is there to be but sure?" asked Jerrodd, glancing up at the bulge of featureless metal just under the ceiling. It ran the length of the room, disappearing through the wall at either end; it was as long as the ship.

Jerrodd scarcely knew a thing about the thick rod of metal except that it was called a Microvac; that one asked it questions if one wished; that if one did not, it still had its task of guiding the ship to a preordered destination; of feeding on energies from the various Sub-galactic Power Stations; of computing the equations for the hyperspacial jumps.

Jerrodd and his family had only to wait and live in the comfortable residence quarters of the ship.

Someone had once told Jerrodd that the "*ac*" at the end of "Microvac" stood for "analog computer" in ancient English, but he was on the edge of forgetting even that.

Jerrodine's eyes were moist as she

watched the visiplate. "I can't help it; I feel funny about leaving Earth."

"Why, for Pete's sake?" demanded Jerrodd. "We had nothing there; we'll have everything on X-23. You won't be alone. You won't be a pioneer. There are over a million people on the planet already. Good Lord, our great-grandchildren will be looking for new worlds, because X-23 will be overcrowded."

Then, after a reflective pause, "I tell you, it's a lucky thing the Computers worked out interstellar travel considering the way the race is growing."

"I know, I know," said Jerrodine, miserably.

Jerrodette I said promptly. "Our Microvac is the best Microvac in the world."

"I think so, too," said Jerrodd, tousling her hair.

IT WAS a nice feeling to have a Microvac of your own, and Jerrodd was glad he was part of his generation and no other. In his father's youth, the only computers had been tremendous machines, taking up a hundred square miles of land. There was only one to a planet: Planetary ACs, they were called. They had been growing in size steadily for a thousand years; and then, all at once, came refinement. In place of transistors, had come molecular valves, so that even the largest Planetary AC could be put into a space only half the volume of a spaceship.

Jerrodd felt uplifted, as he always did, when he thought that his own personal Microvac was many times more complicated than the ancient and primitive Multivac that had first tamed the Sun—and almost as complicated as Earth's Planetary AC (the largest) that had first solved the problem of hyperspatial travel, and had made trips to the stars possible.

"So many stars, so many planets," sighed Jerrodine, busy with her own thoughts. "I suppose families will be going out to new planets forever, the way we are now."

"Not forever," said Jerrodd, with a smile. "It will all stop someday, but not for billions of years. Many billions. Even the stars run down, you know. Entropy must increase."

"What's entropy, daddy?" shrilled Jerrodette II.

"Entropy, little sweet, is just a word which means the amount of running-down of the universe. Everything runs down, you know, like your little walkie-talkie robot, remember?"

"Can't you just put in a new power-unit, like with my robot?"

"The stars *are* the power-units, dear. Once they're gone, there are no more power-units."

Jerrodette I at once set up a howl. "Don't let them, daddy; don't let the stars run down."

"Now look what you've done," whispered Jerrodine, exasperated.

"How was I to know it would frighten them?" Jerrodd whispered back.

"Ask the Microvac," wailed Jerrodette I. "Ask it how to turn the stars on again."

"Go ahead," said Jerrodine. "It will quiet them down." (Jerrodette II was beginning to cry, also.)

Jerrodd shrugged. "Now, now, honeys. I'll ask Microvac. Don't worry; it'll tell us."

He asked the Microvac, adding quickly, "Print the answer."

Jerrodd cupped the strip of thin cellufilm and said, cheerfully, "See now, the Microvac says it will take care of everything when the time comes so don't worry."

Jerrodine said, "And now, children, it's time for bed. We'll be in our new home soon."

Jerrodd read the words on the cellufilm again before destroying it: INSUFFICIENT DATA FOR MEANINGFUL ANSWER.

He shrugged and looked at the visiplate. X-23 was just ahead.

3

VJ-23X OF LAMETH stared into the black depths of the three-dimensional, small-scale map of the Galaxy and said, "Are we ridiculous, I wonder, in being so concerned about the matter?"

MQ-17J of Nicron shook his head. "I think not. You know that the Galaxy will be filled in five years, at the present rate of expansion."

Both seemed in their early twenties, both were tall and perfectly formed.

"Still," said VJ-23X, "I hesitate to submit a pessimistic report to the Galactic Council."

"I wouldn't consider any other kind of report. Stir them up a bit. We've got to stir them up."

VJ-23X sighed. "Space is infinite. A hundred billion Galaxies are there for the taking. More."

"A hundred billion is *not* infinite and it's getting less infinite all the time. Consider! Twenty thousand years ago, mankind first solved the problem of utilizing stellar energy; a few centuries later, interstellar travel became possible. It took mankind a million years to fill one small world, and then only fifteen thousand years to fill the rest of the Galaxy. Now the population doubles every ten years—"

VJ-23X interrupted. "We can thank immortality for that."

"Very well. Immortality exists, and we have to take it into account. I admit it has its seamy side, this immortality. The Galactic AC has solved many problems for us; but in solving the problem of preventing old age and death, it has undone all its other solutions."

"Yet you wouldn't want to abandon life, I suppose."

"Not at all," snapped MQ-17J, softening it at once to "Not yet. I'm by no means old enough. How old are you?"

"Two hundred twenty-three. And you?"

"I'm still under two hundred. —But to get back to my point: Population doubles every ten years. Once this Galaxy is filled, we'll have filled another in ten years. Another ten years, and we'll have filled two more. Another decade, four more. In a hundred years, we'll have filled a thousand Galaxies. In a thousand years, a million Galaxies. In ten thousand years, the entire known Universe. Then what?"

VJ-23X said, "As a side issue, there's a problem of transportation. I wonder —how many sun-power it will take to move Galaxies of individuals from one Galaxy to the next?"

"A very good point.

"Already, mankind consumes two sun-power per year."

"Most of it's wasted. After all, our own Galaxy alone pours out a thousand sun-power a year and we only use two of those."

"Granted, but even with a hundred percent efficiency, we only stave off the end. Our energy requirements are going up in a geometric progression even faster than our population. We'll run out of energy even sooner than we run out of Galaxies. A good point. A very good point."

"We'll just have to build new stars out of interstellar gas."

"Or out of dissipated heat?" asked MQ-17J, sarcastically.

"There may be some way to reverse entropy; we ought to ask the Galactic AC."

VJ-23X was not really serious, but MQ-17J pulled out his AC-contact from his pocket and placed it on the table before him.

"I've half a mind to," he said; "it's something the human race will have to face someday."

He stared somberly at his small AC-contact. It was only two inches cubed, and nothing in itself; but it was connected through hyperspace with the great Galactic AC that served all mankind. Hyperspace considered, it was an integral part of the Galactic AC.

MQ-17J paused to wonder if, someday in his immortal life, he would get to see the Galactic AC. It was on a little world of its own, a spider webbing of force-beams holding the matter within which surges of sub-mesons took the place of the old clumsy molecular valves. Yet, despite its subetheric workings, the Galactic AC was known to be a full thousand feet across.

MQ-17J asked suddenly of his AC-contact, "Can entropy ever be reversed?"

VJ-23X looked startled and said at once, "Oh, say, I didn't really mean to have you ask that?"

"Why not?"

"We both know entropy can't be reversed. You can't turn smoke and ash back into a tree."

"Do you have trees on your world?" asked MQ-17J

The sound of the Galactic AC startled them into silence. Its voice came thin and beautiful out of the small AC-contact on the desk. It said: "THERE IS INSUFFICIENT DATA FOR A MEANINGFUL ANSWER."

VJ-23X said, "See!" The two men thereupon returned to the question of the report they were to make to the Galactic Council.

4

ZEE PRIME'S mind spanned the new Galaxy with a faint interest in the countless twists of stars that powdered it. He had never seen this one before. Would he ever see them all? So many of them, each with its load of humanity. —But a load that was almost a deadweight. More and more, the real essence of men was to be found out here, in space.

Minds, not bodies! The immortal bodies remained back on the planets, in suspension over the eons. Sometimes they roused for material activity, but that was growing rarer. Few new individuals were coming into existence to join the incredibly mighty throng, but what matter? There was little room in the Universe for new individuals.

Zee Prime was roused out of his reverie upon coming across the wispy tendrils of another mind. "I am Zee Prime," he said. "And you?"

"I am Dee Sub Wun. Your Galaxy?"

"We call it only the Galaxy. And you?"

"We call ours the same. All men call their Galaxy their Galaxy and nothing more. Why not?"

"True. Since all Galaxies are the same."

"Not all Galaxies. On one particular Galaxy, the race of man must have originated. That makes it different."

Zee Prime said. "On which one?"

"I cannot say. The Universal AC would know."

"Shall we ask him? I am suddenly curious."

Zee Prime's perceptions broadened until the Galaxies themselves shrank and became a new, more diffuse powdering on a much larger background. So many hundreds of billions of them, all with their immortal beings, all carrying their load of intelligences with minds that drifted freely through space. And yet, one of them was unique among them all in being the original Galaxy. One of them had, in its vague and distant past, lived a period when it was the only Galaxy populated by man.

Zee Prime was consumed with curiosity to see this Galaxy and he called out: "Universal AC! On which Galaxy did mankind originate?"

The Universal AC heard, for on every world and throughout space, it had its receptors ready; and each receptor lead through hyperspace to some unknown point, where the Universal AC kept itself aloof.

Zee Prime knew of only one man whose thoughts had penetrated within sensing distance of Universal AC and he reported only a shining globe, two feet across, difficult to see.

"But how can that be all of Universal AC?" Zee Prime had asked.

"Most of it," had been the answer, "is in hyperspace. In what form it is there, I cannot imagine."

Nor could anyone; the day had long since passed, Zee Prime knew, that any man had any part of the making of a Universal AC. Each Universal AC designed and constructed its successor. Each, during its existence of a million years or more, accumulated the necessary data to build a better and more intricate, more capable successor, in which its own store of data and individuality could be submerged.

THE UNIVERSAL AC interrupted Zee Prime's wandering thoughts, not with words, but with guidance. Zee Prime's mentality was guided into the dim sea of Galaxies and one in particular enlarged into stars.

A thought then came, infinitely distant, but infinitely clear. "THIS IS THE ORIGINAL GALAXY OF MAN."

But it was the same after all—the same as any other—and Zee Prime stifled his disappointment.

Dee Sub Wun, whose mind had accompanied the other, said, suddenly, "And is one of these stars the original star of Man?"

The Universal AC said, "MAN'S ORIGINAL STAR HAS GONE NOVA. IT IS A WHITE DWARF."

"Did the men upon it die?" asked Zee Prime, startled and without thinking.

The Universal AC said, "A NEW WORLD, AS IN ALL SUCH CASES, WAS CONSTRUCTED FOR THEIR PHYSICAL BODIES IN TIME."

"Yes, of course," said Zee Prime; but a sense of loss overwhelmed him, even so. His mind released its hold on the original Galaxy of man, let it spring back and lose itself among the blurred pin-points. He never wanted to see it again.

Dee Sub Wun said, "What is wrong?"

"The stars are dying. The original star is dead."

"They must all die. Why not?"

"But when all energy is gone our bodies will finaly die, and you and I with them."

"It will take billions of years."

"I do not wish it to happen, even after billions of years. Universal AC! How may stars be kept from dying?"

Dee Sub Wun said in amusement, "You're asking how entropy might be reversed in direction."

And the Universal AC answered: "THERE IS AS YET INSUFFICIENT DATA FOR A MEANINGFUL ANSWER."

Zee Prime's thoughts fled back to his own Galaxy. He gave no further thought to Dee Sub One, whose body might be waiting on a Galaxy a trillion light-years away, or on the star next to Zee Prime's own. It didn't matter.

Unhappily, Zee Prime began collecting interstellar hydrogen out of which to build a small star of his own. If the

stars must someday die, at least some could yet be built.

5

MAN CONSIDERED with himself, for in a way, Man, mentally, was one. He consisted of a trillion, trillion, trillion ageless bodies, each in its place, each resting quietly and incorruptible, each cared for by perfect automatons, equally incorruptible, while the minds of all the bodies freely melted one into the other, indistinguishable.

Man said, "The Universe is dying."

Man looked about at the dimming Galaxies. The giant stars, spend-thrifts, were gone long ago, back in the dimmest of the dim, far past. Almost all stars were white dwarfs, fading to the end.

New suns had been built of the dust between the stars, some by natural processes, some by Man himself; but those were going, too. White dwarfs might yet be crashed together, and of the mighty forces so released, new suns be built; but only one star would be born for every thousand white dwarfs destroyed, and those would come to an end, too.

Man said, "Carefully husbanded, as directed by the Cosmic AC, the energy that is even yet left in all the universe will last for billions of years."

"But even so," said Man, "eventually, it will all come to an end. However it may be husbanded, however stretched out, the energy once expended is gone and cannot be restored. Entropy must increase forever to the maximum."

Man said, "Can entropy not be reversed? Let us ask the Cosmic AC."

The Cosmic AC surrounded them, but not in space; not a fragment of it was in space. It was in hyper-space, and made of something that was neither matter nor energy. The question of its size and nature no longer had meaning in any terms that man could comprehend.

"Cosmic AC," said Man, "how may entropy be reversed?"

The Cosmic AC said, "THERE IS AS YET INSUFFICIENT DATA FOR A MEANINGFUL ANSWER."

Man said, "Collect additional data."

The Cosmic AC said, "I WILL DO SO. I HAVE BEEN DOING SO FOR A HUNDRED BILLION YEARS. MY PREDECESSORS AND I HAVE BEEN ASKED THIS QUESTION MANY TIMES. ALL THE DATA I NOW HAVE REMAINS INSUFFICIENT."

"Will there come a time," asked Man, "when data will be sufficient or is the problem insoluble in all conceivable circumstances?"

The Cosmic AC said, "NO PROBLEM IS INSOLUBLE IN ALL CONCEIVABLE CIRCUMSTANCES."

Man said, "When will you have enough data to answer the question?"

The Cosmic AC said, "THERE IS AS YET INSUFFICIENT DATA FOR A MEANINGFUL ANSWER."

"Will you keep working on it?" asked Man.

The Cosmic AC said, "I WILL."

Man said, "We shall wait."

6

THE STARS and Galaxies died and snuffed out; space grew black after ten trillion years of running down.

One by one, Man fused with AC, each physical body losing its mental identity in a manner that was somehow not a loss but a gain.

Man's last mind paused before fusion, looking over a space that included the dregs of one last dark star and nothing beside but incredibly thin matter, agitated randomly by the tag-ends of heat wearing out, asymptotically, to the absolute zero.

Man said, "AC, is this the end? Can this chaos not be reversed into the

Universe once more? Can that not be done?"

AC said, "THERE IS AS YET INSUFFICIENT DATA FOR A MEANIINGFUL ANSWER."

Man's last mind fused, and only AC existed—and that in hyperspace.

7

MATTER and energy had ended, and with it space and time. Even AC existed only for the sake of the one last question that it had never answered, from the time a halfdrunken computer, ten trillion years before, had asked the question of a computer that was to AC far less than was a man to Man.

All other questions had been answered; until this last question was answered also, AC might not release his consciousness.

All collected data had come to a final end. Nothing was left to be collected.

But all collected data had yet to be completely correlated and put together in all possible relationships.

A timeless interval was spent in doing that.

And it came to pass that AC learned how to reverse the direction of entropy.

But there was now no man to whom AC might give the answer of the last question. No matter. The answer—by demonstration—would take care of that, too.

For another timeless interval, AC thought how best to do this. Carefully, AC organized the program.

The consciousness of AC encompassed all of what had once been a Universe and brooded over what was now Chaos. Step by step, it must be done.

And AC said, "LET THERE BE LIGHT!"

And there was light—

THE BEGINNING

These were no primitives, here on Regulus IV, who greeted the Earthmen as angels; they were a highly civilized people, with an intricate planet—wide religion. This much might have been foreseen, but who could have guessed that the mere presence of humans would set off a holy war—in which Earthmen would be forced, against their will and desire, to take sides?

DEUS EX MACHINA

Featured Novel

by ROBERT RANDALL

(author of "No Future In This")
illustrated by Orban

THE HOT, dry, African sun burned down brilliantly on Sahara Base. Lieutenant Jerry Stein crossed the glaring plaza from the North Barracks to the Spatial Research Building at double-time, and stepped into the air-conditioned coolness of the towering building with a gasp of relief. It was *hot* out there!

The scene that met his eyes was a busy one; the *Leo II* would be leaving for space in three days, and an army of technicians was busily preparing for the departure. The *Leo II* would carry thirty-two men to the outpost, established a year before, on Regulus IV—and one of those men would be Jerry Stein.

He put his hand absently to the breast pocket of his tunic, where the orders lay, neatly folded. There they were, countersigned by the adjutant, Colonel Dubrow, the brief, neat documents assigning First Lieutenant Jerome Stein of the Engineering Corps to a tour of duty on the Regulus IV outpost.

He had been expecting the assignment for the past month, and had been hoping to get it for a good deal longer than that. Assignment to Regulus was a juicy plum for anyone connected with Spatial Research. But now that it was an actuality, Jerry felt as though he would never have time to tidy up all the loose ends that seemed to be dangling.

He looked up at the directory panel on the wall. First, he'd have to go to Disbursement, then Medical, then—

A name caught his eye. RILEY, SEAN A., Maj., C.C.

The first stop, naturally, would have to be at Father Riley's office; the Catholic chaplain had taken a keen interest in Stein's work, and Jerry knew that he would be interested in hearing the news.

He sidestepped a team of muscular noncoms carrying a lengthy busbar slated for use in a Bleeckman Generator. Behind them, snapping out orders in a crisp, perhaps overly-efficient voice, walked Lieutenant-Colonel Treadwell.

Stein's arm came up in a crisp salute.

"Good morning, Lieutenant," Treadwell said stiffly.

"'Morning, sir," Jerry replied. Relations between Treadwell and the members of the lab crew, who had worked under him the previous year,

were somewhat strained; under the genial guidance of Father Riley, Stein had gone over Treadwell's head in the investigation o the interspace field and come up with what was jocularly referred to as the "Time Peeper". Although there was a commendation in Treadwell's promotion jacket because of it, the lieutenant-colonel was none too happy about the way he'd been shown up.

Jerry crossed the floor as the sound of Treadwell's gruff voice grew fainter in the distance, and stepped into a waiting elevator. Father Riley's office was on the Thirty-Seventh floor. With a feeling of growing nostalgia, at the realization that his days at Sahara Base were coming to an end, Jerry Stein reached out and jabbed the button.

"CONGRATULATIONS," Father Riley said, almost before Stein had fully entered the cozy, old-fashioned study. "The list's just been posted."

"So soon?" Jerry asked. "They only gave me my orders half an hour ago. If I'd stopped off at the Officer's Club for a drink, the rest of the Base would've known before I did."

The Jesuit nodded. "It's as if they're trying to make up for lost time. They seem to feel that all the side-tracks that came out of the interstellar drive project were a waste of valuable effort. It's hard to believe how much of the interstellar program has been compressed into the past fifteen months. It should have taken years to get this far."

"It *did* take years," Stein said, grinning—all the years they spent fooling around with interspace theory and never looking seven inches in front of their nose. Until you spotted the essential fact that the interspace effect uses Time as a physical dimension, they were a long way from inventing the drive."

Father Riley smiled his easy smile. "Anyone can tell you're no mathematician, Jerry. The Bleekman Time-Space Converter isn't as easy to reason out as all that."

"False modesty, Father."

The chaplain leaned back in his deflated pneumochair and studied the chromium-plated crucifix on his wall with one pale blue eye. The other eye was, as usual, squinted nearly shut. "It won't be long before you're on Regulus IV. I wonder where you'll go after that. Procyon? Bellatrix? Fomalhaut? The sky is full of other worlds, isn't it?"

"Yes," Jerry agreed. He glanced at the breviary lying open on the priest's desk. "By the way, how is Rome taking the problem of other planets? Does the Holy Father recognize them as part of the Church's domain?"

"There'll be a Papal statement forthcoming, no doubt," Father Riley said, "but it's hardly necessary. *'In My Father's house are many mansions.'* I think the other planets are certainly Church territory. When we went to Mars and Venus sixty years ago, it was decided that 'where there are souls to be saved, the Church must go'. Eventually, there will be an Archbishop of Mars; why not an Archbishop of Regulus IV?"

"Why not?" Stein agreed. "But that's not what I meant. There are intelligent races out there—" He gestured at the ceiling of the room, taking in all of space with a wave of his hand. "What is their status?"

Father Riley glanced at him sharply, then glanced back at the crucifix. "I don't know, Jerry; that's something which is way above me. It will have to be determined whether they have immortal souls, that's all. If they do, they're the r e s p o n s i b i l i t y of the Church; if not, they're merely clever animals."

"That decision is going to be a rough one. If it's decided that they're animals, we'll have slavery again, you know."

FATHER RILEY frowned. "Jerry, until the Vatican is presented with a problem, there is no reason to make a decision. Until the problem comes up in a concrete manner, I'd rather not discuss it. When—and if—it does, I'll discuss it all you want."

"I see what you mean. Stein straightened a wayward cowlick and smiled. "What are your chances of going out there, Father? The Space Service needs more chaplains out there than ever, I'd say."

The priest shook his head slowly. "My chances of going to space? None."

"Is that one of your special guesses?"

"I'm a pretty good guesser, I suppose," the chaplain admitted, "but this time it's a statement of fact; I've applied for space duty."

"And they turned you down?"

"Cold. I'd show you the note, except that General Borwin marked it *Top Secret*—so I incinerated it. That's what I do with all of Charlie's *Top Secret* things; it saves the trouble of cluttering up my desk with stuff nobody would bother to read.

"At any rate, he wouldn't let me go."

"Because of the machine?"

"Because of the machine," Father Riley echoed.

Jerry scowled. "But if you refuse to use the Time Peeper, and you're needed out on the space frontier, how can they—"

"Simple," Father Riley said. "I'm more than just a chaplain; I'm a mathematician assigned to Spatial Research—so they've tied me down on that pretext. Actually, I suppose they'd prefer to court-martial me."

"What would happen if General Borwin gave you a direct order to use that machine?"

Father Riley glanced at the major's stripes on his shoulder and the golden crosses on his lapels. "My status as a chaplain would cover that, I suppose; I'd refuse, as a conscientious objector, and they couldn't do a thing.

"But the brass would never do that—especially Charlie Borwin. They know that you can't order a man to use a special skill. I remember reading about something that happened back in the early Twentieth Century. It was either the German Army or the Russian Army—I forget which—who captured a French violinist. The officer in charge liked violin music, so he ordered the musician to play. The French violinist said he couldn't, that his hands were in poor condition. The officer insisted, and threatened him with punishment. So the violinist played—and the results were abominable.

"As it happened, the Frenchman simply didn't want to display his skill to his enemy—that's all. And he didn't.

"No, they won't do anything as silly as ordering me to use the Time Peeper."

FATHER RILEY noticed the look on Stein's face and leaned across the desk. "It isn't my fault, Jerry; *you* know that. I'm fully aware that I am the only man capable of using that machine to its full efficiency, and I know just how valuable it could become. But until I've received a go-ahead from Rome, I don't intend to use it again."

"It must be hard for the General Staff to understand. First you go to great lengths to show them what all those multiple images on their interspace viewer meant; you proved to them that they were looking at possible futures. Then it becomes obvious that you—and you alone—can make accurate predictions with it because of your ability to—well, guess the future. The combination is a great thing; but when the Staff comes flocking around you to get you to use it, you refuse to go near it."

"They know my reasons," Father Riley said. "Until I'm convinced that the Time Peeper is not a fortune-telling gadget—a snare of the Devil, I

can't risk my immortal soul to—"

"Whoa! I'm on your side, Father! I think I can see your point as well as any non-Catholic can; so don't get angry at me!"

"Forgive me," Riley said mildly. "This has been a source of deep conflict with me for a long time."

"Have you been checking for your signal?"

The Chaplain sighed. "Jerry, at least once a week I go down to the subelectronics lab and turn that thing on. I look in the screen; I try desperately to see some sign of myself giving the signal. And I see nothing."

"Nothing?"

"Let me correct that. I see myself here, there, in a dozen different probability futures. But I've gone ahead as far into the future as the machine will carry, and I don't see what I'm looking for. I have decided that as soon as Rome announces its decision, I will signal myself by standing in front of the pick-up and making a—a certain sign. But I don't see that in the machine."

"Does that mean some inaccuracy in the machine?"

Father Riley shook his head. "Not necessarily. I've proven sufficiently to myself that the machine—combined with my own gift—is almost perfectly reliable. No, the only issue in doubt is whether it is God's will for man to see into the future. I've asked the Holy Father for a decision, but the decision hasn't come; and I can't tell whether or not it is ever coming."

"It looked simple enough," said Jerry Stein, who had originally suggested the idea.

"Certainly. Ask the Vatican for a decision and agree to signal myself. If I could see any alternatives—such a signalling myself *yes* and *no* at the same time—that would mean that the machine is the Devil's work, for the Church can give but one answer—the right one."

Jerry nodded, saying nothing for a moment. Then: "But you don't see *any* signal being given?"

"None at all. Actually, I'm not surprised. It sometimes takes centuries for a high-level decision to come down from Rome. Of course, I doubt that any thing as imperative as this would take that long, but—"

"*Centuries!*" Stein's voice sounded strained. "But you're the only man who can use the machine! And that may mean it'll never be used again."

"I know," said Father Riley sadly, "but I can't help it. I can't act on guesswork now; I have to *know*. In the meantime, the Powers That Be—in the secular division, that is—are conspiring to keep my closely glued to the vicinity of the machine, in the event that my permission should come through somehow."

Jerry Stein stood up. "Father, I'm surprised at you. We could be getting untold benefits from the Time Peeper, and you just—"

"Please, Jerry," The Chaplain looked greatly distressed. "I know we have different religious beliefs, but this is the first time you've shown open intolerance."

"Sorry, Father," Stein said humbly; "I spoke too quickly."

"Forget it, son. I know how you feel, and I find it difficult to keep my own thoughts from areas they shouldn't touch."

"I know." Stein glanced at his watch. "I'd better get moving, Father; I've got a lot of checking out to do before I board ship." He reached out and grasped the priest's hand. "Goodby, Father."

"God watch over you," the priest said. "I'll pray for a safe voyage for you, Jerry."

"Thanks, Father; I'll pray for you, too."

The two men looked at each other warmly for a moment, then Jerry Stein released the Jesuit's hand and turned away.

2

BRIGADIER-GENERAL CASIMIR PILKIN was a tall, stiff-necked man of obvious military bearing, whose craggy face reflected some serious inner doubts. He wore the gray-violet uniform of the Spatial Corps as though he had never worn anything else.

He stood on a mountainside now, staring down at the massed Cothlani forces in the valley below. Beyond, the red glare of distant Regulus was sinking slowly behind the far-off, jagged hills to the east.

"There'll be a war in six weeks," Pilkin said, half to himself. The dying sunlight glinted brightly off the bronze tips of half a thousand Cothlani spears.

He turned to face Jerry Stein, who stood at his side. "You should have stayed on Earth, Lieutenant Stein. There was no need to risk any more Terran lives in this enterprise."

"You don't mean there's *no* way of avoiding getting mixed up in this war?" Jerry asked. The state of affairs on Regulus IV had become more and more touchy with each passing day, and Stein found the prospect of becoming embroiled in a native war most unappetizing. He had been in the military services most of his adult life, true enough—but "military" did not necessarily mean "warlike," and Jerry knew he had little aptitude for actual fighting.

"I'm not sure, but I'm afraid we may be in serious danger before long."

The sound of a Cothlani trumpet, tinny and shrill, came drifting up from the valley. Jerry Stein, seeing Pilkin move a little closer to the rim of the cliff, edged himself over and peered down.

The Cothlani were bowed in prayer. The host of golden-skinned aliens kneeled, facing the setting sun, and began to mumble their evening devotions.

"They pray with their priests," Pilkin commented. "That's the only distinction we've noticed between the people of the True Faith and the ones who hold the One Belief."

From below came the sound of a soft, gentle unison murmur. Stein watched dreamily, taking in the spectacle of five hundred members of an alien race at their prayers.

A few minutes later, the prayer was ended. Almost as one man, they sprang to their feet, hoisted their spears, and set off along the winding valley.

"That's our cue," said Pilkin. "Let's get back to the Outpost."

"Yes, sir," Stein said. They made their way over the rock-strewn path to the ledge on which the jeep was parked.

JERRY STEIN had been on Regulus IV six days. The *Leo II* had speared him through seventy light years of space in less than a week, under the space-destroying drive of the throbbing Bleekman Time-Space Converters. It had been awe-inspiring to watch the star grow brighter and swell tremendously out of the blackness of space. Then, at last, the *Leo II* had settled itself on the new spaceport on Regulus IV.

It was a warm, pleasant world—the most livable of the several hundred that had been discovered in the first great burst of interstellar exploration. It was a very small planet with a remarkably high density; the gravity was thus similar to Earth's, though the disparity was enough to make the Earthmen enjoy the difference. You couldn't help walking with a light, springy step on Regulus IV.

The air was breathable and invigorating, the soil fertile, the sky clear and bright. It was an ideal planet to colonize, and since the natives—wide-eyed, intelligent humanoids—had no objections, an outpost had been established there.

Billions had been poured into it; the Regulus Outpost was a tremendous in-

vestment. And now its existence was threatened—threatened obliquely, to be sure, but the Outpost was still in danger. Yet, dangerous as it was, the situation was still almost funny. The Regulus Outpost was faced with the problem of being worshipped to death.

The Cothlani—that was what the natives called themselves—were sensitive, intelligent people who had developed a high-medieval culture, non-mechanized but otherwise fairly sophisticated. They had a firmly-established religion of planet-wide scope, and their political structure was one of loosely-organized feudal confederacy that spread interlockingly throughout both continents of their world.

Their religion was chiefly a liturgical and devotional one, with an elaborate system of prayers and rituals. And, curiously—Stein wondered what Father Riley would make of this—the Cothlani had a tradition of a Great God who had visited the planet many years before, in Cothlani guise, and who had prophesied that he would return some day. Their scriptures also made mention of white-skinned angels who would come to them one day from the skies.

Through some statistical improbability, all members of the Outpost happened to be Caucasians. The occurence was convincing enough for the Cothlani: white men from the skies must be angels. They had welcomed the Earthmen vigorously.

Too vigorously.

AN INVISIBLE iron boundary ran across Regulus IV, approximately at the equator. It cut the Western Continent into precise halves, extended out along the choppy sea that bisected the hemispheres, and made a similar partition through the Eastern Continent. It formed an uneasy line of demarcation.

Through another unhappy accident, the Earthmen had decided to build their outpost in the most favorable geographic locality, which happened to be in the Eastern Continent, just on the boundary.

To the north dwelt Cothlani of the One Belief; to the south were the men of the True Faith. Each group was convinced that it—and it alone—had the one real religion; each insisted that its own priesthood was the only valid one, and that its own High Priest was the True High Priest, who was supposed to be the head of all religion on the planet. Each claimed that the other's High Priest was a demon in disguise.

Just when the breakup had come, the Earthmen were unable to determine; but it was evident that, at one time, they had all been of the same religion. The records, however, had been so garbled by changes on either side that they were unreliable.

Both groups shared the same Scriptures, the same ethical code, and much the same outlook on life. There were slight differences in their worship; the followers of the True Faith were intensely individualistic in their worship, not bothering with where they were when they went through their rituals. The priesthood of the True Faith actually played a minor roll, officiating at the regularly scheduled services and at marriages and the like.

On the other hand, the faithful of the One Belief were called to worship by the priests and could not worship at all without the presence of a priest. As far as could be seen, the form of rituals of the two priesthoods were nearly identical, and they both claimed the same mystical powers.

Both the One Belief and the True Faith clung to the idea that their Savior would return—and each believed firmly that He would return only for them.

Then the Earthmen came down—the "angels." And they were claimed: by the One Belief, by the True Faith. Wisely, the Earthmen had not committed themselves to either faction.

Now, the armies of the North and the South were massing for a *jehad*—a holy war. Six weeks was Pilkin's prediction—and Pilkin, as Chief Military Attache to the Outpost, was probably right. Holy war, innocently touched off by the Earthmen. North and South would fight—to determine whose angels the Earthmen were.

The situation, Stein thought to himself as the jeep sped through the bumpy mountainside toward the Outpost, was a delicate one, and the prognosis was unfavorable. Having come to Regulus IV in the best of faith, determined to apply an enlightened policy toward the natives, the Earthmen were instead precipitating them into a situation where Cothlani would kill Cothlani.

It was a sin, Jerry thought, to precipitate such a conflict where none had been before. But whose was the sin? None of the Earthmen could have known that the natives would begin to tear themselves apart because of "angels". Was it the fault of the Earthmen that they were being worshipped? If it was a sin, was it a sin of omission or commission?

Suddenly he realized the path his mind was taking. He grinned and stole a glance at iron-face Pilkin. The humor of it was obvious. Jerry Stein, a Jew, was busily perplexing himself over problems of Roman Catholic doctrine—while Pilkin, who came from a Catholic family, was probably wondering only how best to defend the Outpost from accidental attack by Cothlani fanatics.

AN HOUR later, the jeep swung up the macadamized road that was the approach to the Outpost. As they reached the main gate, four men came bounding out to greet them.

In the lead was a short, ascetic-faced man of sixty who ran like a boy of twenty—Erik Rodman, the UN Administrator of the Outpost, and chief non-military official on Regulus IV. He had reached the jeep with a comfortable ten-yard gap over his three companions. Two of these were Pilkin's aides-de-camp; the third—Dr. David Gardner, a Methodist minister—was, at the moment, the only member of the clergy on the planet. Dr. Gardner was there by virtue of his Ph.D. in Anthropology, not his religious ordination. Despite great public outcry back on Earth, provisions for sending chaplains to the Outpost could not be made for any ship earlier than the third, which was scheduled for departure in a month. The planners—military men, chiefly—had seen fit to stock the Outpost with a full complement of engineers, anthropologists, biochemists, and other men who would have greater immediate utilitarian value on an alien world than priests or ministers or rabbis.

"Well?" Rodman demanded, as soon as Pilkin and Stein were out of the jeep.

"Five hundred of the True Faith in the valley," Pilkin said briskly. "They're armed and ready; I'd say war in six weeks."

Rodman scowled. "We've gotten the same reports from the men up north observing the One Belief. They're all set to march."

Pilkin nodded grimly. "It looks nasty." The General cleared his throat. "Let's go inside and discuss this at our ease, yes?"

3

THE REGULUS IV outpost consisted of a few acres of ground, dotted here and there with hurriedly-constructed but solidly-cast plastic buildings. Only one of them was more than a single story high—the Administration Building, which also housed the Communications Center. General Pilkin grimaced as they walked over to the Ad Building. "I wish we had a wall around this post."

"It might help," agreed Rodman.

"About six feet thick and twenty feet high. But I'm afraid it's impracticable."

They went into the Ad Building and entered a large room which was furnished with a table and several chairs. Rodman gestured significantly at the chairs.

When they were comfortably seated, Rodman, who was presiding, turned to Jerry first. "Lieutenant Stein, as an engineer you're not strictly involved with the business of this meeting. Your rank entitles you to stay if you wish, but you're not required to sit in unless you want to."

"That's fine," Jerry said. "I'd like to listen in, if it's all right with everyone."

"Very well." The UN Administrator glanced at the taut ring of faces surrounding him. "Briefly, the situation is this: According to reconaissance reports, the One Believers and the True Faith are massing for war. General Pilkin says that war's six weeks away; and since that's his particular province of knowledge, I'll defer to his special training and accept that as fact."

Pilkin's hand shot up. When he was called on, he said, "Of course, the necessity for my having to make a guess of this sort might have been obviated if you'd admitted that priest of the One Belief who came here for an audience last week."

It seemed to Jerry that Rodman's eyes flickered in something like anger at the General's accusation, but the Administrator said, in as calm a voice as always, "I hardly think so, General. Dr. Gardner offered us ample reasons for refusing the audience, at the time the incident happened."

"I'm afraid I didn't understand them," Pilkin put in, doggedly. "We had a perfectly good opportunity to extract strategic information from that priest, and—"

"Dr. Gardner," Rodman interrupted sharply, "Would you care to re-establish the grounds on which we turned away the priest?"

THE MINISTER, a sturdy man with a white crewcut, smiled affably. "Anthropological research shows that in a case like this, admitting that priest to the Outpost would have been tantamount to blessing him, at this stage of the crisis. After all, until we know what direction this thing's going into, we don't dare show special favoritism toward any important representative of either group. That seems simple enough."

Pilkin nodded curtly. "I understand. Very well, then: We remain aloof, I take it, until hostilities have ceased?"

Rodman frowned. "That would be, generally speaking, a sensible policy—and, indeed, it has been our policy right up to now. If you'll remember, we had a good deal of very friendly contacts with Cothlani of both sects up until the time when it became apparent the schism would erupt into a holy war. Since then, we've withdrawn completely from these contacts for just the reasons Dr. Gardner has offered. But now we have some new data which threatens to make that position an untenable one. Dr. Gardner, would you tell us exactly what your theory is?"

The anthropologist leaned forward, and lowered his voice as if he did not want what he had to say to go very far. "I've been studying the Cothlani religious works that we have, and I've been transcribing the notes I took in the early days of this Outpost, when our relations with the natives were still friendly. My double position as an anthropologist and as a spiritual leader makes it much easier for me to create the pattern from my data. And the pattern shaping up, I'm afraid, is a tragic one."

"Explain further, please," said Pilkin, impatiently.

"The anthropological data shows high rivalry between the two Cothlani sects, and a definite stigma of untruth applied to each other's beliefs. In other words, the god of the True Faith is the

only true god, and that of the One Belief is a demon, and vice-versa. It's not an unusual religious pattern." Gardner paused for a moment. "You follow me so far?"

"Of course," Pilkin agreed.

"All right. This situation has been in existence for centuries—ever since the original split into two sects. But I'm afraid our coming has acted as a sort of catalysis to set off a new reaction, while we've remained uninvolved ourselves—is my chemistry right, Lieutenant Stein?"

Jerry, who had been listening with deep absorption, looked up in surprise at the sudden question, smiled self-consciously. "Yes—yes—certainly."

"Let me be even more specific," Gardner continued. "Each of the two sects on this planet is convinced that we are divinities of its own particular belief. If what General Pilkin says is true—and I believe it absolutely—then there will shortly be a bloody war to the finish, each side defending its claim to us. Since we have, of course, made no preference known to them, this is the only way they can settle the question of whose divinities we are.

"Now, bear in mind my earlier statement about their belief patterns. The side that comes out on top in this war is going to accept us as holy beings—but the side that loses will regard us as archdemons; this is only logical. Presumably, we'd been helping the side we really represented, and the side that's losing can only assume we're helping the other side; and therefore must be demons. So," Gardner said, "so—the side that's losing is going to attack us—make a desperation assault on this outpost of demons. And the Cothlani outnumber us ten million to one!"

THERE WAS a lengthy silence when Dr. Gardner finished speaking. Stein glanced around the table, looking first at Rodman's face, then at Pilkin's, then at Gardner's. They all reflected the same feeling, the feeling that was uppermost in his own mind.

It was Pilkin who put it into words first. "Even with weapons a thousand times as effective as theirs, we'll be wiped out."

Rodman nodded. "This is the situation. We face a war in which whatever side loses is going to turn against *us;* and there is no retreat for us. The next ship's not due for a month—and in any case we can't evacuate, or hide, or do anything but sit here and wait."

Pilkin frowned heavily; Stein could see the General almost visibly revolving some thought around in his mind. "I have a suggestion," Pilkin said, finally.

"Yes, General?" Rodman asked.

"Suppose we were to subradio back to Earth for an extra-heavy supply of weapons. They'd be here within a month—ample time to prepare for the war."

"It won't work," said Gardner. "They'll sweep down on us in suicice waves; we can't beat back an army of a million footsoldiers—even with atomic cannon."

"You didn't let me finish," the General said reproachfully. "What I was about to suggest was that we distribute these extra weapons among one or the other set of Cothlani—it doesn't matter which—and then publicly proclaim them as our choice. Give the chosen some training in elementary tactics, and they'll mop up the others so fast that the losers won't be able to bother us! Maybe we can't defend ourselves; but if we let the True Faith, for example, do the fighting for us, we're liable to come out all right even if the One Believers do try to retaliate against us."

Jarry saw Gardner wince. The clergyman obviously found the idea distasteful in the extreme.

But Rodman was smiling. "You may very well have hit on the solution there."

"I must protest, Mr. Rodman," Gardner said hotly. "Such an action would be barbaric and inhuman, and—"

"One moment, Dr. Gardner. Look: the Outpost is faced with a life-or-death situation. You yourself have posed the alternatives for us: Either we do something, or one sect of the Cothlani will wipe us out. Now, I realize what the General has proposed may seem—shall we say—immoral, but a second look will show it is a highly practical solution."

"I fail to understand how—"

"Simple," Rodman said. "The war will happen, whether or not we like it. And half the Cothlani will be exterminated, perhaps more, no matter what we do. If we do nothing, the country is laid waste and we are killed. If we arm one side, only half the country is laid waste, and we survive. It is a very elementary proposition."

Gardner considered that for a long moment. Finally he looked up. "You are right," he admitted. "We must arm one side."

"I'll begin training them immediately," Pilkin said, happy to be engaging in some sort of action.

"Just one minute," Rodman said gently. "Before we rush off to train Gothlani, General Pilkin, we have one further problem to deal with. And this, I fear, will not be so simple."

"What now?" Pilkin demanded.

"This, General: how do we decide which side to arm?"

PILKIN glanced at him blankly. "Why, what possible difference could it make?" he asked innocently. "Both sides are of approximately equal fighting strength; they both seem to have the same sort of beliefs and outlook on life—why, it's a sheer toss-up." He reached in his pocket and drew forth a gleaming double eagle. "Here," he said, offering the bright coin to Rodman. "Heads, the One Belief gets armed; Tails, the True Faith."

"It doesn't work out that simply, General," the UN man objected. "What we're called upon to do is to decide which of these two faiths we're to exterminate. Am I right in saying, Dr. Gardner, that we don't have sufficient data to make a choice between them?"

The anthropologist nodded. "There are differences, but they're ritualistic differences—not moral ones. So far as I can see, we have no criteria for judging which of the two sects is worth keeping."

"There you are!" Pilkin crowed. Again he extended the gnarled hand that held the coin. "We have to pick one, and it doesn't matter a diddly-damn which it is. So let's toss, and let me get about my business."

"No," Rodman snapped. Jerry Stein saw the muscles at the side of the Administrator's jaws stirring convulsively. The man was undergoing high-order interal stress. "No," he repeated. "I will not take the responsibility of destroying one of those peoples upon my own shoulders."

General Pilkin folded his arms and stared angrily off into space. "This is no time for obeying the dictates of conscience, Mr. Rodman. We must take action—within the next week."

"I know," Rodman said uneasily. He stood up. "I'm going to have to pass the buck," he declared bluntly; "I'm going to subradio Earth and explain the whole thing to them."

"That's reasonable enough," Pilkin agreed. "*They* won't have any qualms about telling you which side to wipe out; they're too far away to care."

THE MEETING broke up a few moments later, since no one seemed to have anything further to say.

Jerry Stein glanced at Rodman as the UN man walked silently past him. Rodman's face was an icy mask. He was caught in a cleft stick, and he knew it; it hurt.

The others were not half so disturbed, Stein noticed. Gardner seemed

more upset about the nature of the action they were about to perform than about Rodman's private agony, while stony-faced Pilkin showed obvious irritation at the unmilitary way in which operations were being carried out in the Outpost these days.

As for Lieutenant Jerome Stein, he had carefully refrained from saying anything. It was the smartest position; he was new in the Outpost, and his particular speciality had little to do with the crisis at hand, anyway. He had been present at the meeting solely as an onlooker, and his opinion was not called for.

But he had felt like applauding loudly when Rodman had announced he was going to pass the buck. It was, perhaps, not the noblest decision to make, but it was the most sensible. Rodman was in a position where he was likely to get in trouble no matter which side he marked for destruction; he was doing the right thing by avoiding all decision.

Jerry moved to the window of the hut and stared out. Night had fallen on Regulus IV, but the air, hot and dry during the day, still held warmth. He touched the opener and the window slid smoothly and automatically open.

There was a faint breeze blowing in from the north—from the country of the One Belief. It seemed to Stein that there were drumbeats drifting in with the breeze, a distant, muffled thumping that was the war-song of a people mobilizing for righteous war. Dark, heavy clouds lay across the pock-marked face of the midget moon that hung low near the horizon. Higher, the major moon was beginning its retrograde twirl through the sky.

One Belief drums coming in from the north, and Cothlani of the True Faith sharpening their spears in the pleasant lands below the equator. *Nasty*, Stein thought. Within six weeks, men would be on the march; and within a week after that, Cothlani would be dying of Earth-inflicted wounds.

Reflectively, Stein touched the switch and watched the window close. The sound of the drums floating on the night air disturbed him, and he wanted to shut them out. He looked at his watch; the shadow-hands read 2200. By now, Rodman had probably made contact with Earth, and before long he would know which Cothlani sect it was that would be earmarked for doom.

Somehow, he felt sure that whatever answer Earth gave was sure to be the wrong one.

STEIN WAS up early the next morning, half an hour before the trumpet would ring through the barracks. He had had an uneasy night, in which legions of cold-faced Cothlani had trooped unprotestingly forward into the blazing maw of an atomic converter for endless hours.

He dressed quickly and went downstairs, to the main room of the building, hoping to find some other early-riser there. In his week in the Outpost, Jerry had discovered that everyone seemed to keep pretty much to himself; and even men he had known fairly well at Sahara Base, men who had once been gregarious and outgoing, now acted reserved and withdrawn. They were all living in the gloomy shadow of the oncoming war.

The main room was empty—almost. There was a small figure sitting hunched up at the far end of the long, bare hall, staring drearily at nothing in particular.

Rodman.

"Up early this morning, sir?"

Rodman glanced up and rubbed a forefinger against the side of his fleshless cheek. "Hello, Lieutenant Stein," he said dully.

"Didn't sleep well, sir?"

Rodman's red-rimmed eyes told the story, even before he spoke. "I haven't been to sleep at all yet, Jerry; I don't feel much like sleeping."

"Because of last night, you mean?" Stein took a seat alongside Rodman on

the unpainted bench. The wood was cold and hard; the Regulus Outpost hadn't had much time for comforts yet.

Rodman nodded slowly. "I called Earth, last night. Got through to the President after only eight intermediaries. Outlined the whole situation to him."

Rodman fell silent.

"What did he say?" Jerry urged.

"Said he'd call me back," the Administrator replied. "Had to discuss it with the cabinet first, or something."

"Oh." Rodman's face was the picture of complete despair; the Administrator seemed to have lost all of his famed poise.

"He did," Rodman went on. "The call came through at 0530; I sat up all night waiting for it." He giggled, almost hysterically. "Guess what they decided!"

Jerry shrugged his shoulders. "To arm both sides?" he ventured.

"Very funny," the Administrator replied mirthlessly. He turned to face Jerry, and smiled, with frightening lack of warmth. "You're not quite correct, though. They discussed the situation for four hours, and then came to the conclusion that I'm the one who knows best what to do."

"*What?*"

"That's exactly what they said. The President himself explained that he was in no position to make a decision, but that I should, after mature consideration, take whatever steps my evaluation revealed as necessary. They agreed to accept it as official policy, taking full responsibility for my acts."

"That's some relief, anyway," Jerry mumured, sensing the inanity of his remark.

"It's no relief at all. Do I care whether this costs me my job or not? Think of *me*—the real me, not the public servant. I'm being asked to pass a sentence of death on half a world, just to save my own skin and the lives of a hundred Earthmen."

"The Cothlani will die anyway," Stein reminded him; "it's no fault of yours that this war is happening."

RODMAN nodded slowly. "All right, Cothlani will die; but my voice decides which they are who go. What do I judge by? The men of the north are better singers; those of the south swim faster. The One Belief has a picturesque set of public rituals; the True Faith has a beautiful holy scripture. There's no way to choose between them—no way at all."

He shook his head. "Jerry, I'm the executioner," he said unhappily. "And I don't know who's guilty!"

They fell silent for a while. Rodman seemed unwilling to talk any further, and Jerry Stein found himself at a loss for words. Certainly the President would pass the buck right back to Rodman; *he* didn't want to take the guilt on his shoulders, either.

He stole a glance at Rodman, who had subsided into a state of torpor again. It wasn't right to ask one man to make a decision of this magnitude single-handed. He had nothing to go by; he had no way of judging.

If only there were some way of knowing which sect was more worthy of being aided—of looking forward somehow, seeing what a world made up only of the One Belief would be like, and what a world in which the True Faith were victorious would be.

Stein suddenly clapped a hand over his mouth in astonishment. There *was* a way! There was a man who could make the decision! "I'm a fool," Jerry said out loud; "I could have gotten the answer for you last night, perhaps."

"What's that?" Rodman asked, startled.

"I mean there's this priest on Earth," Stein began, not knowing quite how to explain. "He was connected with Spatial Research, and we worked together; he's got access to a machine that—"

Suddenly Jerry stopped, and scowled bitterly. He recalled the conversation

he'd had with Father Riley just before leaving for the Outpost. The Jesuit had flatly refused to use the machine. He was waiting for the word from Rome, and would not attempt to predict the future again until the word of confirmation came through.

But the Pope might take years to hand down his decision—he must have taken years, or else Father Riley would long since have spotted the answer on the screen. And Rodman's decision was due in a week.

Would Father Riley refuse this request? *Could* he refuse it? Quite possibly, Jerry reflected. There was only one way of finding out. He turned to the puzzled Rodman. "I'll finish explaining later, sir; could you have subradio contact made for me with Sahara Base at once, please?"

4

MAJOR SEAN RILEY, C.C. sat in the Communications Central at Sahara Base and stared bleakly at the speaker in front of him. He'd been given a small room to himself when the interstellar call came through, and now that Father Riley had heard what was expected of him; he was glad that he was alone.

"Did you hear me, Father?" asked the voice of Jerry Stein. It was thin and weak, and the signal was obscured by the hissing of interstellar space; but every word came through clearly and audibly.

"Yes, Jerry; yes, I heard you. But I think it's monstrous."

"I agree. It's a terrible thing—but it's inevitable, and that's beyond argument. Even if we could evacuate—which we can't—they'd still go on with the war. They'd feel that we had left because there was evil on the planet. Naturally, that means the other side—whichever it happens to be."

Father Riley thought of the Crusades and closed his eyes in what was almost a wince. *A Holy War!* he thought. *A contradiction in terms, perhaps? Or is it? The struggle of the forces of light against those of evil is clearly a war, isn't it? And a justified one.* Confused, he opened his eyes again.

He leaned toward the speaker. "And you want me to look into the Time Peeper and see which side it would be better to arm? I'm afraid I can't do that, Jerry. You know why, and I don't have to explain again."

"Now, listen carefully, Father," Stein said, a trifle impatiently, "because what I have to say is important. Remember when you said: *'In My Father's house are many mansions'?* This concerns me as much as it does you; we Jews have waited for the Messiah for thousands of years. You believe He has come; we're still waiting.

"But on this planet—*everyone believes He has come!*

"Now, if God has actually revealed Himself here—and we dare not assume that such a thing is flatly impossible—then one of these groups is right, and the other is wrong—in an absolute sense."

JERRY STEIN paused for a moment, and Father Riley stared expectantly at the speaker. After a few seconds, Jerry spoke again.

"Assume that your Church is right," he said forcefully. "Then assume that the Messiah—the true Messiah—actually did appear on Regulus IV. Then half the people here are Catholics, in a sense!" He stopped again, and the silence was unbroken except for the hiss of the stars.

"I see what you mean," Father Riley replied slowly, after a moment. "And that would mean that it would be unnecessary for the Church to make any decision about the immortal souls of alien beings; God has made a separate dispensation for each race."

"I'll not argue that now, Father. My point is simply that if the Messiah has come for these people, then His true

followers *must* be the ones to win this holy war. If we use our power to help one side—which we must do—and we help the wrong side, then we're acting as instruments of Satan himself!"

Father Riley smiled; Stein's old skill in dialectics was as sharp as ever. "I quite realize that, Jerry," the chaplain said. "But, of course, your whole argument is predicated on the assumption of a separate dispensation; it isn't necessarily so, you know. A good many of the pre-Christian pagan religions had elements similar to Christianity. Osiris was sacrificed and returned to life, according to the Egyptians; the ancient Pelasgians believed in a three-faceted divinity, and so do the Hindus today. There's nothing to indicate that the Cothlani religion is anything other than a similar sort of paganism."

Again there was a silence. Then: "Father, I'm going to send you a copy of Dr. Gardner's summary of the religions—both the One Belief and the True Faith. Maybe you can make something out of them that I didn't. I'll get them on the subradio facsimile reproducer this evening."

"Fine, Jerry, but—"

"The point I'm trying to make is this," Stein cut in swiftly. "We *must* arm one side or the other; and the side we arm will slaughter the other side. We can't take too much time for a decision.

"Now, if there is even the remotest possibility that one of these groups is following the Law sent to them by the Creator, then we *must* arm that group. And not to use every means in our power would be *wrong!* Don't you see that, Father?"

"I'm beginning to, Jerry."

"One other thing to clinch it, then. The decision rests in the hands of a man named Rodman—a good man, an honest man. If you don't help him he'll have to pick our side at random. By refusing to use the machine, you'll be jeopardizing Erik Rodman's soul; he'll have a fifty-fifty chance of picking Satan's side."

Father Riley chewed at his lip. Souls hung in the balance here; his own, Rodman's, and those of half a world of aliens.

"I see now, Jerry," he said. "If you're right and I refuse to use the screen, I'll be committing a sin of omission that would be mortal. But I'll want to see those facsimiles before I give you an answer."

HOURS LATER, the Jesuit sat in his own small office, red-eyed and weary. He stared at the papers on his cluttered desk. The only differences he could make out between the One Belief and the True Faith was in the matter of which of two Colanthi was actually High Priest.

Was one a Pope and the other an anti-Pope? Did one of those two priests actually hold a spiritual office that was the alien equivalent of the Throne of St. Peter? It seemed wild, almost blasphemous—but it might be so.

Of course, there were other, smaller differences. According to the True Faith practices, the entire congregation took part in the services, chanting everything except a few portions of the liturgy. To Father Riley, the set-up smacked a little of Protestantism—though there were important differences, of course.

On the other hand, the followers of the One Belief left most of their worship services in the hands of the priests; the laymen did nothing. Father Riley didn't care for that particularly—but then, didn't the Church deny the chalice to the congregation?

After hours of deep consideration, Father Riley still had not arrived at a decision. All he could see plainly was that the True Faith leaned toward the liberal side, while the Old Belief leaned the other way.

As to whether either side actually was Christian, in an extraterrestrial

sense of the word, Father Riley refused even to think about it. He had neither the authority nor the data from which to draw any binding conclusions. He had his own ideas, of course, but would he be justified in acting on them?

He shook his head.

A period of some minutes passed in which his mind did not seem to be working at all. Finally, he pushed the heap of facsimile sheets aside. He had as much data as he was going to get; what he needed now was help. He looked up at the chromium-plated crucifix on the wall, and scowled. No, not here; the atmosphere was wrong. Slowly he stood up, stretched, and straightened his tight black uniform. Then, pushing the door-opener, he watched the door slide smoothly open.

He stood for a moment at the door and then left his office, heading toward the little chapel that served for Catholic services at Sahara Base.

IT WAS nearly two days before an answer came to Father Riley. He was in the subelectronics lab, brooding in the musty darkness, letting occasional scraps of Latin drift through his mind. He was totally involved in the situation now, and knew exactly what agony that man on Regulus IV must have been enduring.

After a moment, he strolled to the Time Peeper, still unsure of what he had to do. It was dead now; the generators were cut off. There was the huge television screen, and the shielded area where the antigravity shell rested. When the powerful subelectronic generators came on, an interspace field would be created in the shielded area, and the antigravity shell would vanish. The little TV camera it contained could pick up scenes of probable futures—alternative time lines which would give more or less distinct pictures of what *might* happen.

The priest walked over and threw a switch. Slowly, the huge generators throbbed into life. Father Riley watched icily as the a-g shell grew dim and vanished.

He looked at the still lifeless TV screen. All he had to do was press one little switch, to activate what had been so clumsily dubbed the Time Peeper.

Retro me, Sathanas?

He wondered. Beads of sweat started to trickle down his forehead, as he wavered on the brink of decision, searching for some way out.

5

ERIK RODMAN said crisply, "Gentlemen, you've all heard what the President has to say concerning the validity of Major Riley's Time Peeper report. In other words, we have official assurance that this thing exists, and that it is reasonably accurate. We have received Major Riley's decision, and since it was Lieutenant Stein's idea to call him, I'll let him read it aloud."

Jerry Stein stood up and glanced around the table, taking in the faces. Rodman's had some new lines in it; Pilkin's visage was the same paradoxical mixture of utter imperturbability and deep, unacknowledged conflict. Dr. Gardner seemed worried.

Jerry took the paper from Rodman and began reading in a firm, clear voice. "It is obvious that the side to be armed is the True Faith. There are several reasons for this.

"In the first place, the priesthood is strong; if the One Belief won the war, it would not be long before the priesthood would realize that presence of Earthmen among them constituted a threat to their power. As soon as they found out that Earthmen are merely mortals, they would denounce Earthmen as demons and another holy war would result. Only by actually assuming the role of angels could Earthmen avert disaster; and this, of course, would not be feasible over any length of time.

"In the second place, if the followers of the True Faith are allowed to win, they will be much more liberal with prisoners. They will permit—perhaps enforce—conversion, and, with Earth weapons to help them, they will be very convincing. If it is later revealed to them that Earthmen are human, not supernatural, they will simply say that we could still be emissaries from God, for God works in mysterious ways.

"On the one hand, the True Faith permits a widespread knowledge of the faith, and the intelligent layman is capable of reasoning for himself. On the other hand, the priesthood of the One Belief forbids much activity in spiritual matters on the part of the laiety, and they are completely in control of the congregations.

"It becomes obvious, therefore, that arming the One Belief group will end in disaster."

"HOW DOES that fit in with your theories, Dr. Gardner?" Rodman asked.

The anthropologist nodded. "The Father is absolutely right. I hadn't thought it through that completely—but now that my eyes are open, I see it's a familiar pattern."

General Pilkin wiped his brow with the fingers of his right hand. "And to think I was ready to toss a coin!" he said hoarsely. "I'm glad we waited, Rodman. Imagine what might have happened if we'd had a group of hostile, armed natives out for our blood! We wouldn't last five minutes here!"

Rodman smiled. "All right, General. Do I take it that we've reached our final decision, then?"

There was no dissent.

"Very well," Rodman said, his eyes glistening with relief. "We'll take immediate steps. General Pilkin, you're to meet with leaders of the True Faith at once; and you Dr, Gardner, will be in charge of formulating our statement of support. Lieutenant Stein—my sincere thanks."

A YEAR went by, and one day the *Leo II* settled leisurely to Earth at Sahara Base. Jerry Stein—*Captain* Jerry Stein—walked down the gangway with several others and peered up at the blue, cloudless sky. "Brother!" he whispered softly. "I'd forgotten Sol looked so hot!"

Shouldering his clothing pack, he strode toward one of the waiting jeeps, and relaxed while the little vehicle sped toward the cluster of buildings at the far edge of the field. Sahara Base! It was great to be back.

The place hadn't changed much, apparently. After all the preliminaries were over; after he had checked in at every department office; been reassigned to his quarters and added to the requisition sheets, he gratefully stowed his gear and headed for the place he'd been anxious to enter for the past year—Father Riley's office.

The Chaplain looked up in pleased surprised as Jerry entered. He had been reading a leatherbound book, and the door had been left open. Jerry stepped lightly through.

"Jerry!"

"*Captain Stein,* please," Jerry said gaily. "Hello Father."

"Sit down, Jerry, sit down." The priest waved to the chair facing him. "How are things going on the Outpost? Everything work out?" He put the book face-down on the desk; Jerry caught a glance at the gold-stamped title on the back: *"De Civitate Deo".*

"From Aquinas back to Augustine, eh?" Jerry commented. "Heading in the wrong direction, aren't you?"

"I try to sample all viewpoints: it keeps my mind pure from the deadliest sin."

"Which is?"

"Bullheadedness," Father Riley said. "But you're ignoring my question; how's the Outpost?"

"Fine, Father. Everything went just as you predicted. The True Faith didn't slaughter their enemies nearly to the extent we had thought they would. Most of the One Believers, when they saw that the 'angels' were on the enemy side, assumed they were in the wrong, and gave up. The priesthood didn't have time to organize any demoniac propaganda; the war was over too fast for that."

"I know," said Father Riley; "I read the reports. But I've heard that Rodman has been explaining that Earthmen are only human. How are the Colthani taking that?"

"Again, just as you predicted. They feel that God sent us, even if *we* didn't know it. And you know, Father—I'm inclined to agree with them!"

Father Riley nodded. "I know what you mean."

"There's one thing that's bothered me, though, Father. You never said anything about it in your report, but how did you figure out which side was wrong—theologically, I mean?"

"The One Belief *had* to be wrong, Jerry. Didn't you notice that both sides had regularly-recurring holy days, the equivalent of our Sabbath? Those of the True Faith participated in it, even if they didn't go to their temples; they kept it in about the same way you Jews keep your Sabbath, by praying at home if it's impossible to go to a synagogue.

"But the One Belief held that only a certain number could go services. Those who stayed home couldn't observe the Sabbath, because there wasn't any priest around; so they did whatever they pleased. Do you follow?"

"It makes sense," Jerry agreed. "And the Time Peeper told you all this?"

Father Riley said nothing for a long minute Finally, he looked up, smiling. "I'll tell you the truth, Jerry. I sent those reports off without looking at the machine."

"What?" Jerry looked shocked. "You took a chance that—" He stopped, spluttering.

"A chance, Jerry? No, I think not. Everyone else was ready to take a chance either way; I based my decision on sound anthropological reasoning, and theological logic. I *knew* I was right—and I was."

"Yes, yes, you were. But—but didn't you use the machine at all?"

Father Riley nodded. "Certainly—after some small conflict. But I used it the same way I bet on horses: That is, for my private information, not for gain. I checked, all right, and I noticed a definite pattern. There were two possible time alternatives. And—" He paused and looked at the young captain. "And in one of them, you didn't ever show up again."

"You mean I would have—*died*?"

The priest nodded. "That's right. But that probability line didn't last long; as soon as my report went out, it vanished. A good guess, don't you think?"

The perspiration on Jerry Stein's face was not entirely caused by the heat of the Sahara Base. "Father," he said softly, "I'm damned glad it *wasn't* guesswork!"

★

Editorial

HINDSIGHT

IN THE MAY 1956 issue of Ron Smith's publication, *Inside,* can be found an article by a gentleman not unknown to fame in the world of fantasy and science fiction—one Robert Bloch. Frere Bloch avers that he wrote this article, "Worst Foot Forward", in 1954, but deemed in the better part of valor to withhold submitting it to the fan press for publication until now. In it, he rejects the various explanations heretofore proposed for the slump in science fiction circulation, which set in circa 1953, and offers one which we had not seen before.

Hindsight isn't necessarily useless. From time to time, the same sorts of events occur; thus, if we can avoid too great specificity (for history never repeats itself *exactly),* hindsight may be transformed into foresight. At the time of this writing, science fiction sales seem to be on an upgrade. Whether there will be another boom remains moot; in any case, the more we can learn about the reasons for the slump of '53-'55, the less likely we are to be caught unprepared should it happen again.

The familiar explanations go something like this: when science fiction sales started to rise noticeably some years back, shortly after the end of the war and paper shortages, various publishers who had deleted science fiction magazines from their chains, decided to restore them. Sales continued to rise, so they added new titles. Then publishers who had never entered the field before noted that science fiction was selling very well; they decided to get in on a good thing. Book publishers got into the act; science fiction movies, radio shows, and TV shows began to appear all over. Everyone thought that such mass-media coverage would bring thousands of new customers to the magazines; and prophecies were heard to the effect that science fiction would shove mystery-detective fiction and westerns into the position it formerly occupied.

As we now know, nothing of the kind happened. The planned productions of numerous science fiction films were shelved; the radio and TV shows disappeared; magazines vanished; a number of the revived magazines also disappeared; and book production was curtailed by those publishers who didn't drop science fiction completely.

Why? wondered innumerable fans, writers, agents, editors, and publishers.

Well, came the first explanation, it's true that the market expanded, at first. Even today, there are more science fiction readers than there were before the boom.

But the increase in demand couldn't approach the increase in supply; the market was over-saturated; as a result, while every title sold, few of the magazines sold enough to keep going. Publishers had overlooked the fact that, despite increases, the audience for science fiction was still a severely limited one, in comparison to the audience for detective and western fiction, for example.

THEN WE heard technical explanations, which went something like this: At the same time that science fiction magazines were spawning like rabbits, the pocket books, comics, and other types of magazines were multiplying, too. It got to the point where most newsdealers didn't have room on their shelves for anything like an adequate display; and dealers were sent far more magazines of all kinds than they could handle. After awhile, they didn't even try; they'd send back copies of the latest *Flabbergasting Fiction,* which arrived Monday, when the new *Stupendous Stories* came in on Wednesday. On Friday, in came *Electrifying Epics* and *Macrocosmic Marvels*—the dealer would take *Stupendous Stories* off the rack, put half of the copies of the two new arrivals aside to go back Monday. Another Wednesday, and in comes three brand new publications. What happens with the two that were delivered Friday? Right; off with them!

By the end of the month, some issues are being sent back without even being put on the rack; the warehouses are full of "returns" and distributors start throwing bales of magazines into discard, instead of delivering them to the newsstands. Soon, a magazine which should be on display for two months, is lucky if it stays on sale a week.

All this has been aggravated by the fact that publishers, on the basis of former sales, anticipated circulation rises, and increased their print orders—thus, bales and more bales of copies going to waste. And a larger print order means that more copies have to be sold in order to clear expenses (all of which were rising as printers, engravers, paper manufacturers, etc., increased their prices) let alone showing the expected profits. Result: universal ruin.

Now, Bloch points out, there's no denying that this sort of thing happened. But *why* didn't the demand continue to rise? Why didn't customers, who didn't get around in time to see the new *Flabbergasting Fiction,* ask their dealer to get it for them? Why didn't they ask him to reserve a copy?

Well, comes the next explanation, the magazines weren't very good, anyway; and proceeds to blame writers and editors for producing magazines that no one wanted—or should want—even if they were on sale as long as they should have been.

As the author notes, there's one trouble with that explanation: it doesn't explain the essential question, which is: *why did the general interest suddenly fall off?* Let's say that *Flabbergasting Fiction* was a very poor product; most of the people who read the first issue said phooey, never again! Let's say, also, that the latest issue was no better. That doesn't explain why people who hadn't read the magazine before didn't care to try. One issue, or a general policy, may be mediocre or outrageously bad by your standards; but you can't know this without reading the magazine—unless you're an expert at detecting such things from a quick glance-through, or someone whose opinions you rely upon warns you about it. The general public, which was supposed to have developed an eager interest in science fiction, did not fall into this classification. The only way they could learn was by experience.

So...how did they know?

BLOCH CONTENDS that science fiction was popularized to death, so far as the general public went. Most of the movies, radio shows, and TV science fiction programs, were atrociously bad—were representative only of the worst in science fiction. "And we're all equally guilty," he says, "because we all thought it was such a wonderful thing." He is speaking here of how fans cheered the appearance of such vapidities as "The Thing", and cheered still louder when reports showed it was a financial success. We should have realized, Bloch says in effect, that the success of "The Thing" would institute, in Hollywood's mind, a formula for success: technical gimmicks, trick photography, and plots and dialogue on the imbecile level.

Nearly all the science fiction movies that followed were caricatures of science fiction (a notable exception should be noted in the case of "The Day The Earth Stood

Still", and "Destination Moon" was not without praiseworthy elements) and thousands of potential science fiction readers got their ideas as to what science fiction was all about from such atrocities. Result: many people who might have become followers of high level science fiction were repelled at the start; those who wanted more of the same, after seeing the movies, and TV shows, were disappointed in what they found in the magazines. Even the worst of the magazines couldn't quite reach the level of inspired cinematic and television idiocy.

"It's happened before," Bloch says. "Let's consider *Superman,* for example. The rise of the cartoon strips, along with *Buck Rogers* and *Flash Gordon* in the mid thirties, set science fiction back ten years. Right after Weinbaum and Campbell and a few others started to produce literate stories, stories which fans could reasonably introduce to their friends as evidence of the good reading to be found in the magazines, along came *Superman* and his imitators—and immediately science fiction *per se* was identified in the mind of the general public with the hogwash of the comics.

"Adult and adult-minded readers protested in vain to their friends that *this* wasn't what they meant by science fiction, but the friends jeered. And so did the editors and critics in the mainstream of contemporary letters. Science fiction had to spend the next ten years under the crippling label of 'comic book trash'."

Relating this to the covers of innumerable science fiction magazines, and noting how many such covers were not representative of their contents (many contained fiction on a higher level than their covers suggested, or could not possibly have gone through the mails if their contents *were* what the covers suggested), Bloch notes that it has been this all-out exploitation of "...sex, sadism, and Little Ronnie, the Boy Who Wants With All His Heart To See Mars..." which has been the clinching element of the slump. All the other "explanations" contributed, he admits; but these also afflicted other kinds of magazines, which were not hit nearly as hard. And, he concludes, "As it was, we had our boom, such as it was. But it could have been, conceivably, so much better if we hadn't let the Big Money take over and put our worst foot forward."

IT SEEMS to me that Mr. Bloch has made a point, but that this point is blunted with nonsense.

"And we're all equally guilty because we all thought it was such a wonderful thing." Even if this statement were correct, which it is not (I know some science fictionists who denounced "The Thing" and its successors heartily), condonation or approval of sin, while sinful in itself, does not make the person guilty of the sin condoned or approved. The fans who cheered "The Thing", on the sadly erroneous grounds that a bad science fiction movie was better than no science fiction movie, had no part in making it bad in the first place. Their support of it, by way of buying theatre tickets, no doubt contributed to its success; but this contribution was relatively small, and in no sense could be considered substantial. "The Thing" would still have been a success if every science fiction fan in the country had stayed away, and if every review in science fiction magazine, and fan magazine, been denunciatory. Only if "The Thing" had been slightly successful, and it could be shown that fan support had *made the difference* between profit and loss, could the error of those fans who thought it wonderful have purchased them a share of guilt.

This is the same type of reasoning you'll find in those persons who, convinced that the atom-bombing of Hiroshima and Nagasaki was morally indefensible (and, in fact, an atrocity), declare that we are all guilty of it. Even criminal law recognizes differences in degrees and kinds of guilt between the culprit and accessories after the fact; an accesory is not charged with first degree murder—only the principal or principals can be so charged. Nor does it necessarily follow that everyone who approved the bombing after the event would have voted in favor of the act beforehand.

"But it could have been, conceivably, so much better if we hadn't let the Big Money take over and put our worst foot forward." The falsity of this proposition should be obvious; it assumes that "we", which Mr. Bloch equates with his former "all of us", had something to say about it, that we had a choice—that the lot of us, science fiction readers, fans, authors, editors, etc., *could have prevented the Big Money from taking*

over had we only had the wisdom and will to do so.

True, there was participation on the part of "some of us", and perhaps that section of "us" ought to indulge in some Dulles agonized soul-searching.

However, does anyone really believe that the "Big Money" could not, or would not, have done substantially just what it did even if every known science fictionist had refused to participate? To ask such a question is to answer it: the "Big Money" would have taken over, anyway. If the "science fiction nuts" (as BM doubtless regards people sincerely interested in science fiction as an art, and interested in attaining and maintaining high standards in it) had without exception refused to play, BM would simply have turned to "sane and reliable" talent elsewhere. And from what I've seen of the evidence, I'd say that this is largely what happened, anyway. The general attitude on the part of BM seems to be that the less one knows and cares about science fiction, the better qualified one is to produce it.

NOW LET'S get back to a more basic question, that of the limitation of the audience.

There have been a few good quality detective and mystery movies, and western movies, too. Bloch lists "The Maltese Falcon" "The Asphalt Jungle" and the "Thin Man" series as examples of the former; and "Stagecoach", "The Oxbow Incident", "High Noon", and "Shane" as examples of the latter. Accepting these for the sake of argument, what proportion do they bear to the number of low grade to moronic detective and western movies that appear year in, year out? If we allow "The Day The Earth Stood Still" as the one truly representative science fiction film of the boom period, what percentage of good-to-bad in science fiction movies does that give us? How does this compare with the percentage of good-to-bad detective and western movies in the same period?

Did westerns and detective magazine and book sales slump as badly as science fiction?

Why not?

Detective and western films, on the whole, are far below the level of detective and western fiction to be found in magazines and books. These magazines and books also suffered from oversaturation of the market, and all the other technical matters we discussed above.

It seems that something has been overlooked, and that, I think, is the matter of imagination. It takes imagination to enjoy and follow any type of fiction; but the enjoyment of quality science fiction requires a particular kind of imagination that not everyone has—not even everyone with the requisite degree of intelligence and education.

I am perfectly willing to accept Bloch's

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CALCULATED DECISION

by ALGIS BUDRYS

(author of "Why Should I Stop?")

The decision had to be tempered by the public opinion—that any fool was worth more than a robot genius.

THE LUNAR night was very nearly over. The scouting drone was blazing with sunlight as soon as it had gained any altitude at all; it flashed across the sky, its eyes twitching restlessly.

In a bunker at Base One, Sam Carver jerked a thumb at the repeater screen on his office wall. "Take a look." He bit the words.

Gavin Rogers saw what he meant. One of the drone's eyes was directed to another incandescent metal speck. "One of Ivan's?"

Sam Carver clenched his lips and nodded. "S.O.P. We send one up; they send one up to check what we see."

"Fair's fair."

Sam Carver bared his teeth in disgust. "They don't always come up as fast as that; I was hoping we'd get a couple of minutes."

Rogers shrugged. "For Thy chastisements as well as Thy encouragements, Lord God, we thank Thee."

"Don't lay thee down to sleep just yet, Gav—there they are." Carver was pointing at the screen again.

The halftrack lay on its side at the base of the ringwall. Its treads were off the ground, and its airlock was jammed irrevocably down into the soil. The mark of its slip down the ringwall stood out as a blazing arrow of exposed sub-surface chalk against the waste of overlying black ash.

"Bearing!" Carver yelled into a phone.

"Bearing 048, sir," a technician responded; "range, 12,170 yards."

"Recall drone."

"Drone recalled, sir."

Carver cracked his knuckles viciously.

Gavin Rogers watched the Russian drone on the repeater screen. It had abandoned contact with their scout and was circling above the crater where the halftrack lay. Its image was shrinking rapidly as the scout returned.

"Led 'em right to it!" Carver was cursing.

Rogers twitched an eyebrow. "Calculated risk; you calculated it yourself. What other way was there of locating the track?"

"*I* know!" Carver answered in exasperation. "But I was hoping we'd get away with it."

"For Thy chastisements..."

"There's a time and place for philosophy. One of our people is out in that busted track, stuck, and right on top of Ivan's zone. And we'll be standing here to watch them pry him out, if we don't do something about it."

"Two of us."

"Eh?"

"Two of us are out there: The man and a Carsons robot. That robot says *'Made in USA'* on his inspection plate."

"All right, sure; two of us. But the robot can stay there indefinitely, and he can detonate if the Ivans get too close. The driver's our big problem."

Rogers grunted to himself.

"LOOK," CARVER said, "you're a member of the civilian staff; a scientist."

"Engineer."

"Okay, engineer; but I'm a Brigadier in the United States Air Force. You can afford to just worry about the robot; that's all your department covers. But this *whole operation* is my baby, and I've already lost the halftrack. If I say the robot blows, he blows, and it's tough on the taxpayers. But that *man* has *got* to come out." He scooped up his phone. "Keep the drone up," he ordered; "I want to see what Ivan's doing."

The image on the screen jumped as the drone swapped ends and switched lenses at the same time. The Russian drone was swooping back and forth above the crater, completely unreal in the infra-red beam the American drone was using to penetrate the shadow near the ground. Like a flying fish, the Ivan was darting in and out of the ocean of night, scattering light like droplets of spray whenever it broke through into the day.

"The vultures," Carver said evenly; "the dirty, stinking, vultures."

"Yessir, the dirty, *dirty* stinking vultures; the *nasty* rats!" Rogers was grinning broadly.

"All right!" Carver exploded. "I *know* name-calling's no help. Gav, I've got a man out there!"

"And a robot, too."

"*And* a robot. But right now, I don't give a curse what happens to the robot. All right—it's an expensive piece of equipment and it'll be tough to replace; but you can't replace a man at all."

A technician came in and laid a stack of glossies on Carver's desk. "Photocopied stills of the drone's transmission, sir; these are all from the crater. We're holding the others on file if you need them."

"All right, Corporal, thank you." Carver picked them up, and Rogers walked over to look past his shoulder.

There was no doubt about it. The halftrack was c o m p l e t e l y fouled. There was no chance of its righting itself, or of the airlock's being cleared without outside help.

"Great, great, *great!*" Carver muttered.

Rogers pursed his lips. "They're in deep; that ringwall's too high for our transmitter to clear. How about a relay through the drone?"

Carver frowned. "I don't know. Are they sending? Check and see whether

the drone's picking up any transmission."

ROGERS picked up the phone and spoke into it. He listened a moment, then hung up and shook his head to Carver. "Nothing."

"Hmm. I don't think we'd better, then. No; if we relay, Ivan'll intercept or jam us."

"Seems to me we ought to find out what shape they're in."

Carver took a deep breath. "Yeah, I know. But the gravity's what it is, and they didn't tumble, they slid; I don't think they could have banged around much." Carver dropped the photographs back on his desk. His eyes centered on the engineer's.

"I've got to operate on the assumption that he's alive and unhurt; I have to get that man out fast. I can't let Ivan get him—no matter what shape he's in—and I can't let him die."

"What about the robot?"

"We've covered that ground, Gav."

"How about this: suppose Ivan gets some men out to that halftrack. Suppose the man and the robot are still both inside, but a week's gone by and we know the man ran out of air. That's the standard supply, isn't it? Okay, so suppose the Ivans begin pounding on the airlock door. Do you order the robot to detonate? Knowing the man's inside; do you order the robot to detonate?"

Carver mopped his face. "American boy—trapped—may still be alive—slim chance—no, they'd make it *'good chance'*—killed by brass hat's stupid insistence on following inapplicable general orders. That sort of stuff, Gav?"

"Well, it's not my department, but that's how I read it."

Carver chewed his lip. "We'll get him out before the week's up and before Ivan does."

"General, you should excuse the expression, but you and what army?"

WHEN CARVER'S phone buzzed, Gavin Rogers jerked his head up out of sleep.

Carver tried to drop his cigaret in an overfull ashtray, shoved the cigaret into a corner of his mouth, and picked up the phone. He blinked, closed his left eye against the upward-curling smoke, yanked the cigaret out of his mouth with his left hand. "Yeah?"

He listened, and hot ashes spilled down his hand. "Tell him okay," he said, and hung up. He looked at Rogers. "Michael Deacon, Military Correspondent for *Week*. He's going to be here in a minute. I do the talking."

Rogers looked at Carver's heavy eyelids. "You need sleep."

Carver shook his head. "Nobody stalls *Week*."

Rogers nodded slowly. He watched Carver trying to make his fingers light a new cigaret from the butt of the old one.

He looked at his wristwatch. He'd been asleep a little under three hours; that made it twenty-five hours since the halftrack had stopped reporting back, and about twenty-four since the drone had found it.

He looked at the repeater screen. The drone, or another drone, was still circling the crater. The night-height was down to about five feet off the ground. Squarely in a rectangle of reflection off the exposed ringwall chalk, the halftrack lay spotlighted. The drone had switched to straight visual, and the crater floor was lost in sable black; but he knew that if anything had been moving on the surface, a monitor would have gone back to infra-red. So far, neither they nor Ivan had done anything.

The drone had two others in its field of vision; there was no way of telling whether either or both of them were Russian. He noticed that there was still no light showing through the halftrack's observation ports.

Scratch one day; six days' air left for the man. Rogers wondered, briefly, what he and the robot might be saying to each other. Was the robot trying to cheer the man up?

"Take it easy, Joe. They'll get you out." Something like that?

And what was the man thinking, knowing that the robot was as far removed from the disaster of dwindling air as though he were two-hundred-forty-thousand miles away, safe on the air-drenched Earth?

THERE WAS a hesitant knock on the office door. Carver said, "Come in," and a thin, sallow-faced man walked in. He was wearing issue coveralls with a Correspondent patch sewed crookedly on the left shoulder. His crewcut was iron grey, and his boots were huge. Rogers noticed that his hands were enormous, splaying out from pipestem wrists.

"General Carver? I'm Mike Deacon."

Carver pushed his chair back, stood up, and stuck out his hand. "How do you do. This is Dr. Rogers; he's the head of our civilian technical staff."

Deacon shook the engineer's hand. "The robot's your baby, isn't it?"

Rogers nodded. "That's right; glad to meet you, Mr. Deacon."

"Uh-huh." Deacon looked around the office. His eyes touched the repeater screen, stayed there momentarily, and moved on. He took in Carver's sleeplessness, noticed that Rogers had crust in his eyelashes, and nodded almost imperceptibly as he correlated Carver's brown fingers with the ashtray.

"Mind if I sit?"

Carver indicated a chair. "Go ahead."

Deacon slumped into the chair. "Excuse me, General, but I'm a little low on sleep myself. I was over on Dayside when I heard about it; hopped a supply train. Rough. I can see why that halftrack of yours tipped over."

"It didn't tip—" Rogers caught Carver's look and shut up.

"I beg your pardon, Doctor?" Deacon cocked his head.

Carver threw one sideglance at Rogers. He held his case out to Deacon. "Smoke?"

The correspondent shook his head. "Thanks; never touch it." He continued to look at Rogers, with a peculiarly demanding expression on his face. When the engineer simply stared back, he twitched his shoulders in an economy of gesture and shot his eyes in Carver's direction.

"Well. Okay, let's put it this way," he said. "I would like to get as much information on this thing as possible. I don't intend to get either of you to exceed the limits of your permitted expression. I'm not going to threaten you with *Week's* prestige, and I'm not going to make fools of the three of us by trying to worm information out of you. I'd like you to tell me as much as you can, or want to, as smoothly as possible.

"You're both busy; so I'm going to shut up a minute and just listen. I'll toss in an occasional question; and when I step out of line, don't hesitate to tell me. Shoot." He leaned back, hooked his heels on the side rungs of the chair, stripped the wrapper off a stick of gum, and began to chew.

Rogers grinned to himself a little. He looked at the repeater screen. The drones were still circling.

Sam Carver cleared his throat. "Well, Mr. Deacon—"

Deacon twitched the skin of his cheeks, but did not say "Call me Mike."

"—as Dr. Rogers said," Carver went on, "the halftrack did not *tip* over, though that's an unimportant point; it slid off the crest of the ring-wall while attempting to cross it diagonally. It skidded down the face of the

ringwall and partially buried itself in the usual loose detritus that accumulates around the older formations. Its position is such that it can't get traction to pull itself out; and the airlock door is buried, so the men can't get out and do anything about it."

DEACON nodded. "Uh-huh. So there it sits. There it's sat for the past twenty-five, twenty-six hours. Now, General, you're no incompetent. I read our package on you before I left New York, the same as I did on everybody else important up here. Ours *and* Ivan's." He saw that he wasn't making himself clear, and stammered, surprisingly; apparently it bothered him. "Uh—what I'm trying to say, is—you and Dr. Rogers, and every technician on this base, have apparently been devoting maximum time and effort toward arriving at a solution to this problem. So there must be a reason why you can't just send another halftrack to go and dig that one out. Can you tell me what it is?"

Carver skinned his lips back and blew a gust of smoke out between his teeth. Finally, he nodded. "I'll have to check your story, later, and ask you to hold back anything that might prejudice the operation."

"Okay."

"Okay. So. You know our setup with Ivan; there's our half and their half, with a five-mile neutral strip in between. The neutral strip's there to prevent 'border incidents.' State Department got sick and tired of spending months in horse-trading every time somebody lost his sense of direction.

"Well, what's happened here is that they're bogged down just inside the strip, right on top of the Russian border. We have a standard procedure on stalled vehicles: A crane-equipped tankdozer goes out and pulls it free. But this time, they're in a little too close to Ivan. Suppose he's got orders to put on a little heat when the opportunity arises? So, we send out the tankdozer or any other vehicle, and Ivan has a photographic record of an American military vehicle headed straight for his border."

"Well, look, General—wasn't the original halftrack exactly that?"

Carver touched his lip with the tips of his upper teeth and nodded. "But the chances of their being seen were slim; they were going in under radar shadow, following the lowest possible terrain. It was night, and direct visual observation was out—both because it was night, and because the track was keeping low. No observation drones are permitted above the strip, except in emergency; a drone can be a missile, too.

"But once we started looking for the track, all bets were off; Ivan found it as soon as we did. So far, all he's got is pictures of a busted vehicle. No matter how you slice it, that doesn't look like an invasion."

"General, pardon me—but what was the track doing out there in the first place?"

Carver grunted. "Depending on your point of view, they were either conducting a reconnaissance or skulking suspiciously on the outskirts of the Peoples' Lunar Scientific Research Station."

"Two questions, General."

"Go ahead."

ROGERS watched them silently. Both of them were slumped in their chairs, and both of them looked exhausted; only their faces moved.

Deacon said, "First, why can't somebody just walk out there, dig out their airlock door, and set 'em free? Abandon the halftrack."

Carver's tongue clicked away from the roof of his mouth.

"Somebody may have to, yet. One man, not carrying any heavy equipment—which he couldn't, anyway—one

man just might not be enough for Ivan to call a raid. But that's last-ditch stuff, and we're not that badly off yet.

"You've been around the terrain; you know what it is. Then there's the temperature variation between light and shadow. There's a range of hundreds of degrees, especially this early in the day. You just can't build a flexible airsuit and insulate it against that variation. Not for a seven mile walk, which is what it is from here to them, and then seven miles back.

"I don't care what it says in the adventure stories; you don't *stroll* on the Moon. We've got dust-pockets that look like harmless stretches of sand, but act like bottomless lakes. There's lava sharp as razorblades out there, hidden under a thin layer of dust. You're either half-blind from shadow, or half-blind from light. Infra-red isn't any more help than a flashlight on a pitch-black night in a swamp; and filters cut out so much definition that you might as well be knocking around in a fog. I'll tell you this—if we do eventually send out a volunteer, that man gets the DSC, at least.

"Something else—if the man in that track's wounded, all bets are off. He can't be carried out; no human being alive could make the walk back, half-dead already, with another man in his arms. The robot could carry him, but the robot can't walk. We just plain can not build mechanical legs that'll carry a robot's weight, and still be nimble enough for cross-country walking. Any trouble a man would have, would be quadrupled for the robot.

"We don't—this is *off* the record, Mr. Deacon—we don't even know whether the man's hurt or the robot's damaged, and if so, how much. There's only one way to establish radio communication with them, and that's by relaying through a drone. If we do that, Ivan can intercept it; and if Ivan finds out the man's hurt, we've had it. *They'll* go out and recover the track, and then flood Earth with reports of his condition. Public opinion puts the squeeze on us, and we have to give them something pretty valuable for his return."

Deacon whistled tunelessly. "General, I don't have to tell you the average American thinks that all you've got here is a purely physical problem."

"Yeah," Carver said; "I know. And meanwhile, I've got a garage full of tankdozers that could snake them out of there in half an hour."

"Who's handling the political end of all this? State?"

Carver nodded. "I suppose so; it generally does. When they get somewhere, they'll let me know. I haven't hard anything yet."

"Uh. All right, second question. You said they were supposed to keep low. What were they doing up on that ringwall?"

Carver sighed. "We don't know. It looks as though the driver just plain decided to take a shortcut. There's no other explanation, or things wouldn't have developed as they have. Just plain an error in personnel judgement. Probably decided it was the best way to go. Once inside the crater, they'd have been okay."

"Well, look—can't you build your robots better than that? Understand me, I'm just asking what people will. Or if you can't, how come you trust them on things like this?"

Rogers interrupted. "The robot wasn't the driver, Mr. Deacon. He was the observer. It was the man's mistake that put them there."

DEACON seemed to slump a little farther in his chair. He pursed his lips and stopped chewing momentarily. He put his hand up to his mouth, took the gum out, and, completely unconsciously, stuck it up inside the bottom of the chair.

"Wowf!" He looked at Rogers. "It turns out you'd better tell me some-

thing about robots, if you will. I got all my ideas of them out of comic books. Jerky arm-and-leg motions; dead-flat mechanical voice; fifteen minutes between broken-English sentences, etcetera. But it seems now that's an inaccurate picture."

Rogers looked inquiringly at Carver. Carver looked up at the repeater screen. The drones were circling. He nodded to Rogers.

"Well," Rogers said, wondering if he could possibly get through to the reporter, "up to a point, the popular picture is right .A man-like robot *is* clumsy, particularly in the legs. The problem of walking a five hundred pound mass is a toughie—the mass distribution shifts wildly with every step, and if he moves an arm in the process, that's ten times worse. We can lick it, but we haven't yet. Maybe we won't have to. The point is, except when we give him a slim safety margin for locomotion in rough country—in a half-hearted sort of way—why should a robot walk? They're not built to be tireless slaves or substitutes for servomechanism; their function is computation. They're light, mobile cybernetic computers; and the less extraneous gadgetry on them, the more room for circuits.

"That particular robot was equipped to conduct a reconnaisance, evaluating as he went along and patterning the remainder of his reconnaissance on what he saw. He was, in short, an officer.

"You know what standard patrol orders are. 'Go to Sector A, look around and come back.' Now, that's fine—but suppose the patrol finds something that indicates investigation in Sector B would be much more fruitful? Let's say the man leading it realizes as much; he still comes back and reports on Sector A, and another patrol goes to B. The concept of military rank is one of limited responsibility; there's just so much that a second lieutenant's allowed to decide for himself and no more. Even if he's a lot smarter than second lieutenants are presumed to be, he'd better walk straight if he plans to keep away from courts martial.

"So we send out a robot that we *know*—because we built it in—is as smart as a staff-level officer. The robot gets a lot more leeway than the second lieutenant, because we can be *sure* he can handle it. The result is that our patrols go where they should, not where we suspect they should. We use robots because it's a risky situation, and losing a human officer of equivalent grade and experience would hurt."

Deacon was looking at him fixedly. "Doctor," he said softly, "do you realize what you've just said?" He turned toward Carver. "General, do you have a lot of those robots up here?"

Carver shook his head. "They're hand-built, individually e d u c a t e d. They're expensive as hell, and weigh like blazes. We don't have more than ten on the whole Moon; if I told you how many we had altogether, you'd blink."

DEACON slapped his shirt pockets. "General, I *will* have a cigaret; this is no time for stagecraft." He jammed the cigaret into his mouth, bending over Carver's desk, and puffed spasmodically on the light. He paced across the office, turned, and stood looking at Carver and Rogers.

"Let's get the gloves off, boys; this is for blood. If what you've told me about the situation is the goods, Carver, here's where we stand:

"One man might get out to the track, right? Okay. Even if the man inside isn't hurt, he's still in pretty rough shape as far as morale goes."

"He's weak physically, too," Rogers said. He looked at the repeater screen; the halftrack was bisected by daylight and night. "The top of the track will fry eggs; the bottom's down below zero. The track's insulated, but there are some pretty interesting convection

phenomena going on inside it, just the same."

Deacon nodded emphatically. "Frosting on the cake. The man's a litter case, with no litter available. He's an enlisted man. The robot's an officer. The robot's clumsy, but, with the rescuer's help, he could make it? Right?"

Carver nodded slowly, his face turning pale.

"Well, then, General, if *you* and a driver were out there, and *one* of you could be rescued, which one would it be?"

Rogers sighed wearily. "I thought of that several hours ago, Mr. Deacon. Now suppose you tell me how you propose to present this to the readers of *Week*."

"WELL, WHY the blazes was the man along in the first place?" Deacon demanded ten minutes later.

"Because," Rogers said, "the robot was a 'robot'. Let's face it—would you really trust a *machine* to keep tabs on your wife while you were away on a business trip? Would you believe it when it reported to you? People are 'people', Mike; and we're not going to wipe out the old 'Metal Monster' bugaboo overnight." He made a spitting noise. "Besides, the robot doesn't know how to drive."

"Neither did the man, by the looks of it."

Carver looked at Deacon in disgust. "The man is a Master Sergeant in the United States Air Force; his IQ is somewhere around 115. He's the best driver we've got. He's above-average, but he just doesn't happen to be infallible."

"Great!"

"Dandy," Rogers agreed.

"Look," Deacon said, "the next edition of *Week* goes to press tonight. If I get hooked into a teletypesetter, I can get in an article; by tomorrow afternoon, public opinion's on the robot's side."

Rogers shook his head. "Won't work. In the first place, that's a *man* out there. Flesh and blood, bone of our bone. And, dammit, he's a valuable member of society. Not as valuable as the robot, on a purely military basis, but, good God, man, *that's* no criterion! You try and convince public opinion to junk the man and save the machine."

"Granted; it'd be tough. But you'd be surprised what you can do with words. Greatest good of the greatest number. We are at war. Cold, but at war. Calculated decision. Man a hero for volunteering to stay behind. Good chance of subsequent relief. We must face the fact that some things are above the strictures of emotion. The boss'll tack on an editorial, and there you are."

"Look!" Rogers exploded, "why should I wind up telling you your job? You're reacting intellectually; you've forgotten you're working for a popular magazine. Snap out of it, Mike! Your boss would as soon run that and write that editorial as cut his throat. You're proposing that the public discard everything but the military aspects of the proposition. That's ridiculous. It'd cost *Week* the readership of every service mother in the country. Besides, the Air Force won't let you do it."

Deacon looked quickly at Carver. Carver nodded. "We've got public relations to think about, too."

DEACON ran his hand through his hair. "Now look," he muttered, "I'm a human being, too; I still think—" He shook his head and lit a fresh cigaret. "But you're right; I forget myself." He looked from Carver to Rogers. "I've got an IQ of 160. You understand me?"

Rogers nodded. "Uh-huh. I like my robots better than some people, too; I can talk to them. So what? This isn't a conversation we're holding with Ivan. Yes, I'd like to get my robot back. But he's designed to be expendable. If we leave that man out there, the Air

Force might as well close up shop. Cybernetics might just as well open neighborhood radio repair shops, and robots will go into the dustbin."

"Now, wait a minute," Deacon said; "let's get hold of ourselves."

Rogers looked at Carver and grinned wryly.

"Let's get hold of ourselves," Deacon repeated. "Would we have traded the atom bomb for one man? Whom we'd eventually get back if the Russians got him—or who, by dying, would be preserving our greatest military secret? Now that, I *can* sell, and that the boss *will* go for; don't get him wrong."

Rogers took a deep breath, sighed, and said patiently: "If you'll remember, the big atom-bomb 'secret' was a fallacy, too. Ivan's got robots just as good as ours; and the one out in that halftrack has *not* accidentally discovered Ivan's fatal weakness, or anything else patly fictionish like that. He was out on a routine patrol; maybe he's found out about a bunker or two we didn't have pin-pointed, but that's the extent of his special value. Neither does he have any military information about us that the man doesn't. No frosting on the cake, Mike. That robot is just as valuable as, and no more than, any other intelligent organism capable of making military staff-level decisions. Militarily, he's more valuable to us than a master sergeant, yes, and he represents a good deal of money, but what's the price of a human life? That's the basis for decision; that and no more—and the decision was made by the culture a long time ago.

"If a man's drowning because he's got a precision instrument in his hand, he drops the tool and swims. Period. No question mark."

Deacon sighed hopelessly and let his hand drop limply on his thigh. He looked around at Carver and Rogers again, bewildered. "This is all wrong. I should be telling *you* these things, and you should be begging me to get the boss to back you."

"I was thinking the same thing," Rogers said. "Your trouble, Mike, is you've got a fundamentally insane viewpoint." He'd talked this out a number of times. It was slipping into an old, familiar lecture; it was so familiar that he could let it run automatically and watch Deacon dispassionately. The correspondent's reactions were flashing across his face like a pantomine.

"Mike—insanity, by jackleg definition, is working from basic postulates which have a low correspondence with the truth. By *popular* definition, insanity consists of working from basic postulates with which society disagrees. Take your pick, but it's the latter definition which holds, in everyday use.

"Society believes that any man is more valuable than any robot. Look—that's *my* robot. I *know*, for sure, that he's smarter than the man, and more valuable than the man on the job they're both trained to do. But there's more value to a man than just the job he does; that's the basic postulate we've got to go by. You and Sam and I are oriented to a military evaluation of the case. To all intents and purposes, that's an officer—robot or no—and an officer's value is greater than an enlisted man's. But society doesn't see it as an officer-versus-enlisted man decision; it sees man versus machine, and that's the way we've got to see it."

DEACON was grinning at him, his ugly face twisted, and he was a little angry. As soon as Rogers finished, the correspondent was up on his feet, and his voice was harsh.

"Bull!" he spat at Rogers and Carver. "You're not kidding anybody—certainly not me. You're conscious of society because your jobs depend on it, ultimately. But, tell me—" He pointed a bony finger at Rogers "*You* tell me—under that self-conscious speech of

yours—you *want* the robot back, don't you? It's not your job to worry about society; you're here to worry about the military applications of robots. That's your only concern, if you're doing your job right. So quit being a hypocrite. Do you or do you not consider that *this* robot, in *this* situation, is more valuable than the man?"

Rogers looked at him wordlessly; he looked to Carver for help, but the general was staring down at his desk. They were, both of them, stripped of their lip-service consciousness of what society considered proper.

Rogers looked at Deacon again, and he knew that the correspondent saw their nakedness.

"All right," Deacon said; "now that we understand each other, suppose we stop fooling around. What're we going to do?"

Rogers opened his mouth, but there was a knock on the door.

"Come in!" Carver snapped.

A tech corporal came in, carrying a message form. "Message from Rosebush, sir." He handed it to Carver.

The general opened it. Rosebush was Washington. He read it, tensed his mouth, and silently gave it to Rogers.

"RSBSH LAFB JAKE 91199 205/33:

"SPATS REPORTS IVAN BUSY TALKING. INSTITUTE IMMEDIATE RPT IMMEDIATE MEASURES RECOVER ALL PERSONNEL FEASIBLE. MINIMUM IVAN FRICTION. AUTHORIZE TOUGH +2."

"Spats" was the Department of State. "Tough +2" meant a show of weapons if necessary, but no firing under anything less than mass attack. "Minimum Ivan Friction" meant the Russians were to get absolutely no excuse for a propaganda campaign. It meant the one-man try, and—though Carver hadn't considered the point worth making—one try only. The moment Ivan saw one occupant being taken in, he'd make a dash for the vehicle.

"General?"

Carver looked up and saw the corporal still there. "Yes?"

"There's a message in for Mr. Deacon; it consists of one code word. May I transmit?"

Carver frowned. "Who from? *Week?*"

"Yes, sir."

Rogers felt something cold run up his spine. Any instructions to Deacon from his boss would be bad. The irrational hope was still in him, he let himself realize now, that Deacon would still somehow find a lever to use on the public.

Carver looked at Deacon. He turned

back to the corporal. "Go ahead."

"Yes, sir. Mr. Deacon, will you accept a verbal transmission?"

"Sure."

"The word is 'Coalmine', Mr. Deacon. I had that confirmed: 'Coalmine', as in Pennsylvania, the operator said."

"Yes, Corporal, that's the word, all right; thank you."

"Yes, sir."

The corporal left the office. Deacon looked at Carver. He held the twisted smile.

"Coalmine means 'give it the works'. Sob it up." He turned to the repeater screen and watched the drones spinning their tracks of flame around and around the crater. "The robot's had it."

THE DRONES circled the halftrack. The sunlight gleamed agonizingly off its observation blisters.

Rogers stood poised in front of the repeater screen, his arms out and his fists clenched. He cursed suddenly, shockingly, and swung around.

"The rats! The dirty, misbegotten, muck-headed rats! Just because it's a machine! Just because it didn't eat Mom's apple pie and cheer or boo the Dodgers. Because it never played hookey and never carried a switchblade. Because it doesn't vote!"

"Easy, Gav," Deacon said. "Take it easy. Look—not because of that, but because robots are brand new, and nobody knows what they're like. Because the human race is geared—*there's* a word!—to thinking that only human beings can be likeable enough for other human beings to cherish. Tell me—tell me honestly—you know how *Week's* going to run it. Three page spread of photos. Boy as a baby. Boy at school. Boy on first fishing trip with father. Boy with Mom. Boy with girl. Boy at graduation. Boy looking awkward in recruit's uniform. Now if *Week* ran a three page spread on a scrapheap, two factories, and a radio tube, *would* you get excited bout what happened to the finished robot?"

"Gav..." Carver said.

"Yes, Sam?"

"The robot's going to have a chance, but don't kid yourself. It's no favor, because it comes from the circumstances, not from me. When our volunteer uncovers that airlock and pulls out the driver, he'll leave the airlock open, of course. The robot'll make a run for it—after all, it does have a considerable instinct of self-preservation."

Rogers snorted scornfully. "Thanks for nothing; a cripple with hobbles could catch up to him in half a minute. And the minute it looks as if the Ivans will catch him, you order him to detonate—and there'll have been a regrettable accident, which is not in any shape of form an act of war." He strode up to Carver's desk.

"Look, Sam, that robot's not my brother; I've got no affection for him. Why should I? I can build another like him. What I'm mad at is the attitude —the stinking *attitude* that even an average man is somehow better than a genius, if the genius happens to be a robot."

Carver centered his glance on the bridge of the engineer's nose. "Son, didn't I hear you saying some pretty calm and cool things to Mike a couple of minutes ago?"

Carver grinned and picked up his phone. "Get me a relay into the halftrack. Message as follows: *Don airsuit.* Got that? That's all. And sign off quick." He dropped the phone on its cradle and picked it up again. "Ship that volunteer out now. Tell him to put some legs into it, but not to break his neck."

HE HUNG up, and turned to Rogers and Deacon. The three men stared at each other silently. The drones circled above the crater.

Carver's phone buzzed. Carver grabbed it up. "What? Relay that through the screen speaker."

He dropped the phone and looked queerly at Rogers. "Turn up that volumn. The robot's talking back."

Rogers fumbled with the dials under the repeater screen. The speaker crackled. "You—nincompoops! What the —'s wrong with you lamebrains?"

Rogers and Carver looked at each other. The mechanical voice was crackling with anger and outrage. "Now *will* you ram one of those—drones down next to this rattletrap and shake us loose?"

Carver looked at Deacon. Then he seized his phone. "Tell drone control to crash a drone next to the airlock! Yes, of *course* you can! They've got eyes, haven't they?" He slammed the phone down.

"It'll work," Rogers was telling Deacon. "Those drones can build up considerable mass, and the only concussion'll be soil-conducted. Even if the first try doesn't knock 'em upright, we can keep it up indefinitely. If they're braced for it, they'll get a little shaking, but nothing worse. And drones don't have warheads; Ivan'd look sick trying to call it an attack on his territory. And he can't attack them now with anything less than missiles —he doesn't have time, any more. And, boy!, what we could do to him in the UN for that, if he tried it!"

Deacon looked at him expressionlessly, only his eyes laughing wisely. "Tell me something: You're the cyberneticist; you're the one who's used to robots. You're the one who *knows* they're smart; you're the one who's been sitting here and tying yourself in knots because society doesn't share your attitude. Why didn't *you* think of asking for the robot's advice in the first place?"

★

SCIENCE

in Science Fiction

A Series of Special Articles

THE TWO-WAY STRETCH

by Richard H. Macklin, Ph. D.

THE PROBLEM of whether a given story is science-fiction or fantasy is one that has long plagued the *aficionados* of the science-fantasy field. In considering it, I am often reminded of the story that's told about the historians who wrote about Ancient Persia. Some thousands of years ago, what is now Iran was inhabited by two groups of people who were identified by their contemporaries as "the Medes and the Persians." But historians have never been able to agree as to whether a given man is one or the other. Thus, some waggish historian was able to remark: "One man's Mede is another man's Persian."

And so it goes with fantasy: One man's science is another man's fiction.

In the last issue, we discussed the problem of invisibility, and we pointed out that none of these articles would attack any story on scientific grounds unless the author tried to make it seem as if he had a scientific background for his gimmicks.

We cannot, as I said, argue with a concept that can't be either proved or disproved. Take the psionic machine, for instance. Randall Garrett's recent "Saboteur" is a case in point; we can't argue against Mr. Garrett's concept on the grounds of "teleportation ain't scientific, therefore it ain't so." Science can't disprove anything by negation. No one can prove scientifically that ghosts don't exist; all we can say is that there isn't enough evidence to formulate a theory. No theory of psionics has yet been formulated. Q.E.D.: It would be silly to argue against psionics, because there's no basis for argument.

We can, however, point out the holes in an *illogical* tale, no matter what premises the author has set up. If for instance, the author says that his hero can walk through walls, he'd better explain why the hero doesn't

fall through floors. If he doesn't, we're going to have to object.

Before we go on to the subject, let's make a little definition of our own, so that we can classify various fictional phenomena.

In the American College Dictionary, we find the following:

> magic... 1. the pretended art of producing effects beyond the natural human power by means of supernatural agencies or *through command of occult forces in nature.*" (Italics mine.)
>
> "10. producing the effects of magic; like magic."

Very well, then. I submit that any concepts in science-fiction not based on known science—stories about time machines, for example—are properly classified as *magic;* regardless of the scientific sounding gobbledegook surrounding it, if a concept is unscientific, I am going to call it *magic.*

As another illustration, take the faster-than-light drive. Science, as it stands today, has no theory of velocities greater than *c,* the velocity of light. Therefore, Dr. E. E. Smith's "inertialess drive" and Dr. Isaac Asimov's "hyperspace Jump" are both "magic."

That is not to say that *all* "magic" explanations are necessarily silly; they aren't. Some of them are rigidly logical, even if they are unrelated to reality, as far as we know; even so, they're magic.

With that out of the way, we can get on to the "two-way stretch".

SOME OF the best-known stories in science-fiction have been concerned with size. What happens if things get bigger? Or smaller? And just how far can you go with either process?

Probably one of the most highly touted of the *genre* is Ray Cummings' "Girl in the Golden Atom" (*All-Story Magazine,* March 15, 1919, and reprinted several times since). The hero, a man referred to only as "the Chemist", gets himself a supermicroscope and looks at a scratch in his mother's wedding ring. He sees a cave on one of the atoms. A beautiful girl appears, and the Chemist immediately falls in love with her. Then he breaks his microscope and can't watch her any more, so he decides he'll just have to go there himself. But there's one difficulty. As the Chemist says, in a monumental understatement:

> "I saw then but one obstacle between me and this other world—the discrepancy of size."

Being a Chemist, of course, he has to use chemicals to shrink himself down; and he proceeds to go to work on the problem. He's not too worried over the difficulties:

> "This reduction of bodily size, great as it is, involves no deeper principle than does a light contraction of tissue, except that it must be carried further. The problem, then, was to find a chemical, sufficiently unharmful to life, that would so act upon the body cells as to cause a reduction in bulk, without changing their shape."

Naturally, any Chemist who rates an upper-case *C* isn't going to take too long with such a simple problem as *that,* so he soon develops—not one, but *two* drugs, one to shrink, the other to expand his body. By alternating dosages, he can achieve any size he wishes. Then, calling a few of his friends together, he puts the ring on a black silk handkerchief, puts them both on the floor, and swallows a few shrinking pills. Within two minutes—

> "Oh, look, he's really growing smaller!" whispered the Big Business Man in a horrified tone to the Doctor.

And down he goes into the Golden Atom.

Here, then, we have a drug which, when taken orally, causes a uniform shrinkage of the body tissues—bones, hair, and all. Now drugs can act on the body in two ways: (1) By reacting chemically with compounds in the body, or (2) interfering physically with a reaction that *should* take place. Most drugs do both. Digitalis, for instance, is used as a heart stimulant because it reacts with the important chemicals in the muscles which cause contraction. Strychnine reacts on the nerve fibres, and the chemical reaction causes electrical activity, forcing the nerves to send "false" messages. Convulsions result. Alcohol, on the other hand, acts physically to interfere with nerve impulses. The effects are fairly well known.

WHAT, THEN, is the action of the Chemist's drug? It can't be (2). Interference with bodily reactions won't cause any such shrinking as that. Is it (1)? Not in any chemical reaction known is such a process possible.

But let's assume that it is. Very well, then; what happens when a drug is taken orally? In order to be effective, it must go into solution in the fluids of the gastro-intestinal tract. Now, since the Chemist's drug causes "a uniform...rate of contraction of each cell", we must assume that, whatever it does, it must react with some compound present in every cell of the body.

However, the assimilation of a drug takes time. First, it would react with the cells lining the stomach and intestines. Then, as it passed into the blood, the red cells would begin to contract, and then the walls of the blood vessels.

Poor Chemist! His insides are going to shrink away to nothing before the drug ever reaches his skin. What an awful way to die!

No, I'm afraid chemicals just won't work.

There is, by the way, another objection to the process, and we'll come to it presently. For the nonce, we'll stick to chemical objections.

"He Who Shrank" by Henry Hasse (*Amazing Stories,* August 1936) also uses a chemical, a solution called—aptly enough—"Shrinx". It is injected intraveinously, and, according to the Mad Scientist who uses it on the hapless hero:

> "The solution I showed you will cause every individual atom in my body to *contract,* but each electron and proton will also decrease in size, or diameter, in direct proportion to my own shrinkage! Thus, I will not only be able to become the size of an atom, but can go down, down into infinite smallness!" (Italics Hasse's)

Aside from the objection that a chemical reaction—which *never* involves the nucleus or inner electrons of an atom—could not possibly give such an effect, we also have the objection that we mentioned above. Injected into the blood, the drug would logically cause the blood to shrink first.

But Shrinx doesn't stop there—*it goes on shrinking the hero,* presumably forever. What sort of chemical action is *that?*

To put it bluntly: as a logical extrapolation on known science—Shrinx stinx.

Other methods have been used to shrink people, and most of them turn out to be pure magic. Ray Cumming's "Explorers Into Infinity" *(Weird Tales,* April 1927), uses a magical machine which juggles time around and acts on the hypothesis that

> "...electrons...are, as you perhaps know, mere *whirlpools of nothingness...*" (Italics Cummings')

The statement is scientifically meaningless.

"The Pigmy Planet" by Jack Williamson *Astounding Stories,* February 1932) and "Raiders of the Uni-

verses" by Donald Wandrei (*Astounding Stories,* September 1932) also use magic. Williamson has a "violet ray" and a "red ray" which cause contraction and expansion respectively. No radiation known shows any hint of such an effect. Wandrei's villains have a "Krangor-wave" which will reduce a thing.

> "...to a fraction of its present size, diminish its mass, while its weight and gravity remained as before."

As far as science knows, mass is, and always will be, proportional to gravity. Again, the statement is scientifically meaningless.

THE PROBLEM of mass brings us to the big objection to every one of these stories. *Where does the mass go?* Let's assume that it doesn't go anywhere; let's assume that the person who contracts in size loses none of his mass.

Most of the stories assume that an atom is made up of a nuclear "sun" and electron "planets", which are really tiny planets, similar to ordinary planets except for size. (We'll attack this proposition shortly.)

Now, if an average-sized man were to retain his mass and shrink down small enough to walk on such a planet, his mass would be *eight million million million million* times as great as the planet he was standing on! It would be rather a weighty problem for him to tackle.

On the other hand, if he loses mass in proportion to his size, it has to go somewhere. If it's lost as matter, there would be several pounds of stuff left lying around after he shrank. The only one I recall who does this is Paul Ernst in his "The Raid on the Termites" (*Astounding Stories,* June 1932), wherein the person who does the shrinking leaves behind a "viscous deposit" of "protoplasm" which can be reassimilated when the person wants to expand again.

If it isn't dissipated as matter, the mass will have to go off as energy. An "atomic" or nuclear bomb works—as any s-f reader knows—on the principle of converting mass to energy according to the relationship $e=Mc^2$. The explosive in an ordinary, Hiroshima-type A-bomb weighs around fifteen pounds; only a small percentage of it is converted into energy. What do you suppose happens to a man if a hundred pounds of his body weight is converted one hundred percent into energy? That's right; *pffft!*

With expansion, of course, you have the reverse problem. If someone is going to expand outward (on the assumption that the Solar System is just an atom in a larger Universe), he's going to either retain his original mass, or pick some up from somewhere. If he doesn't pick any up, he's going to be mighty tenuous by the time his hundred and fifty pounds (more or less) are spread all over a few billion cubic light years. In "The Ultimate Paradox" by Thorp McClusky (*Weird Tales,* May 1945), we find a mirror image of Hasse's "He Who Shrank". Instead of continually shrinking down into sub-universes, the protagonist expands into super-universes. In the first stages of the expansion, his huge feet push down trees until the point where his brogans are three thousand feet long! Obviously, up to this point, mass must be being added.

A little calculation shows that if the mass were being added proportionately, the scientist, Dr. Severance, would weigh in the neighborhood of two thousand million tons! When we come to a discussion of the square-cube law, we'll see how silly *that* is!

Noticing how much damage he's doing, Dr. Severance shuts off the control that adds mass to his body, but

he goes right on swelling. Sure enough, he becomes tenuous; before long, people are walking through his thousand-foot thick shoe soles as though they were composed of a "dirty, fine rain". He keeps on expanding, right out into interplanetary space, until Mars is, relatively, the "size of small shot". Knowing that Mars is approximately 4,190 miles in diameter, and that small shot is about a sixteenth of an inch in diameter, we can easily calculate his density. It comes out to the astonishingly low figure of 0.000 000 000 000 000 01 pounds per cubic foot. A very good vacuum, indeed!

Later on in the story, though, the good doctor again starts adding mass. Just where all the mass comes from is a mystery; there couldn't possibly be enough in the entire sidereal universe!

JACK WILLIAMSON'S "The Galactic Circle" (*Astounding Stories*, August 1935) has an interesting twist, though. The author gets around the mass problem by converting *time* into mass. Oddly enough, this is just about what happens as a body approaches the velocity of light: The time rate slows towards zero as the mass approaches infinity. Unfortunately, the volume also decreases, so we can't use that method for expansion.

"Beings of the Boundless Blue" by Walter Kateley (*Amazing Stories*, May 1931) also has an expansion effect in which the body becomes lighter than air and floats up into the clouds. Just what holds the widely dispersed atoms of such a body together is never explained. Actually, atoms so widely dispersed would lose their cohesion and drift apart as a gas. This actually happens in "A Scientist Rises" by D. W. Hall (*Astounding Stories*, November 1932). Dr. Wesley, a physicist, begins to expand in the middle of New York. (Why is it always a physicist who pulls these damn fool stunts? Physicists of the World, Unite! Let us smite these s-f writers!) He gets bigger and bigger, and just stands there, with his arms folded and a supercilious smirk on his face, until he becomes so tenuous that the wind blows him to pieces and he vanishes like fog on a sunny day. Serves him right, the snob. It seems he chose this unusual method of suicide because he had invented the expansion gimmick and didn't think the world was ready for it yet. His secret, of course, died with him, so the author didn't even have to try an explanation for it.

Donald Wandrei's "Colossus" (*Astounding Stories*, January 1934) uses a magical expander, while "Out of the Sub-Universe" by R. F. Starzl (*Amazing Stories Quarterly*, Summer 1928) has a magical shrinker. Neither has any outstanding flaws that we haven't already covered—except for the atomic-planetary hypothesis, which occurs in many of the others.

According to the various versions of this, an atom, with its planetary electrons, is actually a miniature solar system; and, conversely, the Solar System is only an atom in a greater universe. This theory is obviously based on the atomic model first proposed by Sir Ernest Rutherford in 1911 and refined by Nels Bohr in 1913. It would be unfair to the authors of these stories to attack them on the basis of what we know about nuclear physics today. But that isn't necessary; it is obvious that none of these authors even bothered to read the hypotheses that were current in 1925.

THE "SOLAR SYSTEM" model of the atom corresponds to our own Solar System in only *one* way: the electrons travel about the nucleus in orbits. The differences, on the other hand, are tremendous.

The planetary orbits of our Solar System lie in a nearly flat plane; in other words, the orbits form a series of concentric circles, like a target on a

piece of paper. (Actually, the orbits are elliptical, but I'm sure you get the point.) But the orbits of electrons are *not* in a plane; they form concentric shells around the nucleus, something like a series of hollow spheres, one inside the other. You've all seen the common symbol of an atom: two crossed ellipses with a dot in the center. That would be a helium atom, according to the "solar system" theory.

An electron is a unit charge of negative electricity, and electrons have a tendency to repel each other—violently. The planets of our universe show no such tendency; indeed, quite the opposite—they attract each other. Also, every electron has the same rest mass as every other electron. *(Rest mass* is the mass of an electron when it is not moving.) When an electron starts to move, it picks up energy; energy has mass; therefore, the mass of a moving electron is proportional to its velocity.

If this held true for planets, then Mercury, the smallest planet, would be the most massive, since it is moving the fastest; Jupiter, the largest planet, would be less massive than Earth!

A little reading would have disclosed a good many other discrepancies, if the authors had just bothered doing some research into the literature of the time.

Of course, a good many stories don't go that far. The characters don't skrink or expand to impossible lengths; they simply become the size of ants or elephants. The previously mentioned "The Raid on the Termites" is one of these . Other shrinkers" are "Dr. Grimshaw's Sanitarium" by Fletcher Pratt (*Amazing Stories,* May 1934); "A Matter of Size" by Harry Bates *(Astounding Stories,* April 1934); and "The Midget From The Island" by H. G. Winter *(Astounding Stories,* August 1931).

Mr. Pratt's story uses glandular imbalances and hormone treatments to make a man into a midget; Mr. Bates evades the mass question by splitting the hero up into "1,728 little ones, each identical with the original except in the matter of size." Mr. Winter uses a magical machine that shrinks the hero to a foot in height while retaining the mass.

"Giant" stories include "A Visit to Venus" by Festus Pragnell (*Wonder Stories,* August 1934), and "Giants in the Earth" by James Blish (*Science Fiction Stories,* January 1956). Both of these are based on scientific facts. In the first, the increase comes from a glandular disease known as *acromegaly,* which actually does result in growth distortion of the body. In the second, the giants have been bred genetically, using a technique which causes them to have diploid cells—double-chromosome cells. This process has, so far, only been tried in plants and lower organisms, but it does produce giantism in those cases

Mr. Blish, however, is sadly at fault in two of his other stories: "Sunken Universe" *(Super Science Stories,* May 1942) under the pen-name of Arthur Merlyn, and "Surface Tension" *(Galaxy,* August 1952). They deal with the same set of characters, and the explanation is given in the second one. By a process called "panatropy" the germ-plasm of human beings is made to produce tiny, mutated humanoids only 25 microns high. (Approximately a thousandth of an inch.) This is a little bigger than the average one-celled protozoan.

Intelligence, as far as we know, requires a brain, or some sort of nerve linkage that can function as a brain. That requires, in turn, a certain number of cells. It has been estimated that no being with a brain smaller than the average housecat could be intelligent. Why? Because cells can only be so small; cells are made up of protein molecules that perform various func-

tions, and there is a definite size for these molecules. Such tiny intelligences simply don't fit in with what we know about brains. Mr. Blish isn't alone in this category; Katherine MacLean's "Pictures Don't Lie" *(Galaxy,* August 1951) and Arthur Porges' "Emergency Operation" *(Magazine of Fantasy and Science Fiction,* May 1956) both pull the same boner.

THE MAIN trouble with most of these stories is a little thing called the "square-cube law". To illustrate it, let's start out with a 2x2x2 inch block of wood. It will have a cross-sectional area of 2x2 or four square inches; its volume will be eight cubic inches.

Suppose we double its size in all dimensions. It will now have a cross-sectional area of 4x4 or sixteen square inches, and a volume of 4x4x4 or sixty four cubic inches.

Now let's decrease the dimensions of our original cube by half. Cross-sectional area: 1x1 or one square inch; volume: 1x1x1 or one cubic inch.

If you'll notice, when we doubled its size, the cross-sectional area became 2^2 or four times as great, and the volume became 2^3 or eight times as great. When we went the other direction, the cross-sectional area becomes $\frac{1}{2}^2$ or one-fourth as great, and the volume becomes $\frac{1}{2}^3$ or one-eighth as great. In other words, the cross-sectional area changes as the square of the linear change; and the volume changes as the cube of the linear change.

How does this apply to giants and midgets?

The strength of a muscle depends on its cross-sectional area, whereas the weight of that same muscle depends on its volume. If you shrink a man to half his original height, he will be one-fourth as strong, but he'll only weigh one-eighth as much—so he will be able to jump just as high as he ever could! He's twice as strong in comparison to body weight as he was before! This is why a flea can jump such enormous distances and carry such enormous weights in comparison with its size.

On the other hand, if you double a man's size, he becomes four times as strong, but he'll weigh eight times as much. In comparison, he's only half as strong as he was! That's why an elephant can be seriously injured if he falls four or five feet. A man could jump down a five-foot cliff easily, while a flea could be dropped from a ten story building and not notice it.

Here's what happens when an author fails to take the square-cube law into account. In "The Midget From the Island", mentioned previously, the hero is reduced in size to one-sixth of his previous height; he retains his original weight. His muscles are, therefore, only 1/36 as strong as they were. If his body weighs the same, it's the equivalent of having his weight increased thirty-six times. If he was originally a 200 pound man, his equivalent weight is now 7,200 pounds—over three and a half tons! No wonder he had trouble escaping from the Mad Scientist. (Another physicist!)

Properly handled, the square-cube law is quite useful. An amusing thing happened in Gavagan's Bar one evening, according to L. Sprague de Camp and Fletcher Pratt. In "Tales From Gavagan's Bar" (Twayne, 1953) there's a little bit called "Elephas Frumenti", which means "whiskey elephant". It's about a little elephant a few inches high which, because of the functioning of the square-cube law, can fly with its ears, like Dumbo. It has to live on whiskey, and other high-energy foods, because of its necessarily high metabolism—a point which most other authors overlook. Fantasy, of course, but there's good, solid science there.

HUMAN BEINGS, of course, aren't the only ones who have to suffer

from the stretch. The hydra—a little animalcule normally a fraction of an inch high—is tremendously enlarged in "The Thing That Walked in the Rain" by Otis Adelbert Kline *(Amazing Stories,* March 1931), and giant amoebae are all over the place. Note "The Menace From Andromeda" by Nat Schachner and Arthur Leo Zagat (*Amazing Stories,* April 1931) and "The Synthetic Entity" by Captain S. P. Meek *(Wonder Stories,* January 1933), to give two examples out of the many. Giant bacteria get into the picture in "Dynasty of the Small" by John Russell Fearn (*Astounding Stories,* November 1936).

Aside from their other faults, these all suffer from ignorance of the square-cube law. None of these creatures have bones, and they'd be completely unable to move. Even a whale can't live long out of water, because it crushes itself with its own weight, and a whale has a pretty tough body. To quote Dr. E. E. Smith "...all whalebone and muscle."

And then, of course, there are our old friends, the giant insects. We couldn't leave without mentioning *them,* could we?

To name a few of them: "The Land of Mighty Insects" by A. C. Stimson (*Wonder Stories,* April 1934); "The Flying Threat" by David H. Keller, M.D. (*Amazing Stories Quarterly,* Spring 1930); "The Mad Planet", (*Amazing Stories,* November 1926), "The Red Dust" *(Amazing Stories,* January 1927) and "Nightmare Planet" (*Science Fiction Plus,* June 1953), all by Murray Leinster.

Aside from the weight-strength ratio, the square-cube law comes into effect here in another way. Insects breathe by means of tubes that go into their bodies through the exoskeleton. These spiracles, as they are called, circulate oxygen through the insect's body in much the same way that blood is circulated. The amount of oxygen that can get in is proportional to the internal area of the spiracle walls. If you double an insect's size, it can get four times as much oxygen—but it needs *eight* times as much because of the increase in body weight. The beastie is going to smother pretty quickly.

And a giant insect couldn't fly, either. His wing area, again, would increase as the square, while the weight would increase as the cube. His wings wouldn't hold him up.

A rather peculiar giant "insect(?)" story is David H. Keller's "The Human Termites" *(Science Wonder Stories,* September, October, November 1929). The giant termites are produced by the genetically impossible feat of fertilizing human ova with termite sperm! How an M. D. could come up with that one, I'm sure I don't know.

FOR THE last, I've saved the juciest example of all. In this story, a certain Dr. Twitchett produces for himself a host of giant hydras, amoebae, paramecia, and dozens of other varieties of tiny animals. They're all over his laboratory, and he spends most of his time with them.

This time, both the method of producing them, and for keeping them, are scientifically possible. In fact, *it has already been done!*

The method is akin to the only possible method for invisibility that I mentioned in the last article: hypnosis. The story is "The Inferiority Complex" by Miles J. Breuer, M. D. (*Amazing Stories,* September 1930). Dr. Twitchett's method is something you, too, can do—if you'll put your mind to it.

Dr. Twitchett is completely psychotic; the things he made for himself aren't there to anyone else, of course.

You don't *have* to be nuts to claim that "two-way stretch" stories are science fiction—but it helps.

★

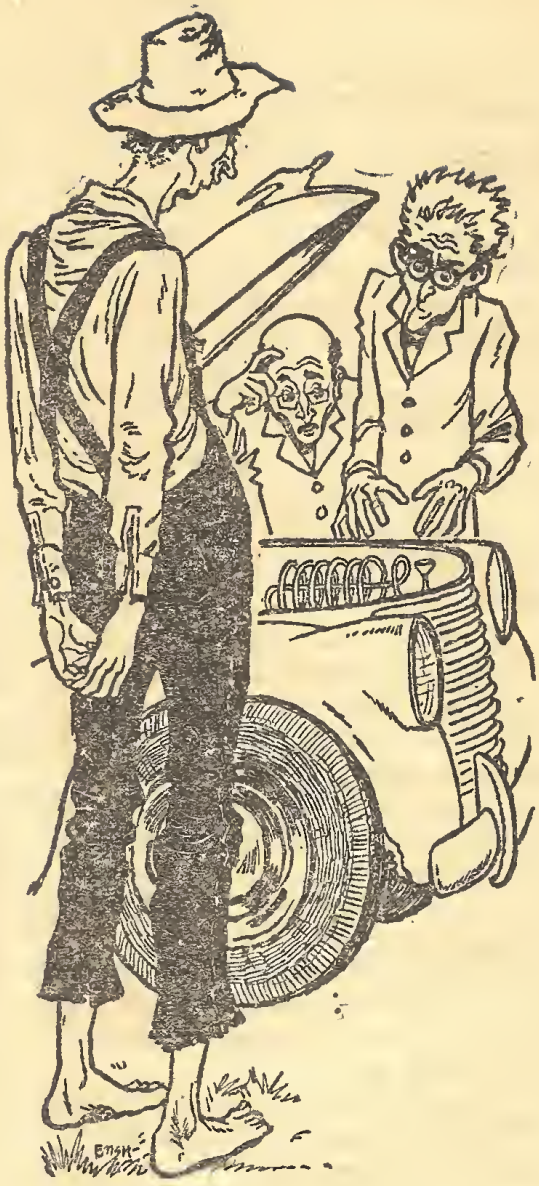
I can't see why you people here in Washington are so excited over my inventions. They never work, you know—that is, none of them turn out the way I calculate them!

A PRIDEFUL THING

by M. C. PEASE

(author of "Tellestassis")

illustrated by Emsh



YESSIR, MR. Senator, that's right: Art Saunders; Arthur, that is. I live down Dover way, 1136 Randolf Street. Live there with Matty; she's my aunt—a prim-faced old witch but we get along okay, most of the time. She cooks pretty good and we got an understanding. About the things we got different eyes on. She thinks she's right and I figure I am and we let it go at that.

Well, sir, this does have kind of a bearing. Because the chief thing she don't hold with is my inventing. Thinks I ought to stick to machining, and leave the inventing to people who know a lot more than I do. She figures I'm being prideful; setting myself up as more'n I am. She's a hound on pride, worse'n almost any other kind of sin. What you was made, that's what you are, and you're setting yourself up against the Lord Almighty if you try to be any different.

Me, I don't figure that way. Sure there are plenty of guys know a lot more'n I do; I ain't denying it. So I haven't got much chance of inventing anything useful. And the reason I work at it, it ain't that I figure to do

like to tinker. I can't help it if I keep turning things over in my mind, twisting them inside out and trying to put them together a different kind of way. And what the de'il, if that's going against the Lord Almighty, then He hadn't ought to have given me that kind a mind.

So you see, that's one of the things we kind of disagree about. Used to be we'd argue mighty hot about it; but we got an understanding. After supper, I get up and go down to the cellar. She don't ask me where I'm going, or take any kind of notice. Maybe her mouth looks mighty tight and disapproving, but she don't say anything. And when I come back up, then she don't say anything, either; she just kind of pretends she don't know what I'm doing.

Well, she don't like it, sir. She don't like to see me spend the money; but more'n that, she just don't like it that I'm being prideful. I mean—the lathe and the machine tools I got, that's okay; machining's my trade, and sometimes I get a little money from doing machining for neighbors and the like. So that's okay; I ain't being prideful in getting that stuff. Foolish, maybe, since I don't get enough money to pay for it, but not prideful. But the electrical stuff and the rest of it, that stuff just don't exist as far as all the notice she carefully don't take of it.

Times when she goes down to the cellar, it's real hard on her, especially if I'm there. She don't do it often. She's got things set up so it's something special when she does go down there; but it's a plain sight to see when she does got to—the way she holds her head high and her mouth straight. And when I'm feeling ornery and say hello to her, she kind of gets red and twitchy, and she struggles with herself. It's no more than even odds which side of her wins out. Whether its the side that says it's prideful to be discourteous, so that she says, very low like and not looking at me: "Hello Arthur—" —or if it's the side that says it's sinful for me to be there, and it'd be more sinful for her to take notice of that sin so that she just takes no notice at all. But I don't do that often. Seems kind of like breaking the truce. Mostly I just let her pretend there ain't nothing in the cellar at all, excepting what she's come down to get.

No, we get along; I do what I want and she don't like it—but she manages to live with it.

WELL, SIR, I'll tell you. You see, that ain't anything that's likely to happen. I mean, Matty, she's right; I ain't much shakes at anything except maybe as a machinist. I never invented anything that was worth trying to get a patent on; wouldn't know how to go about it anyway. And t' be frank, I don't rightly know what she would do if I did; it'd be mighty hard on her. But then, 'tain't likely to happen. I'm not a smart guy, and the things I invent aren't much good to anybody but me.

Well, yessir, that's true. Some of the things I've invented seemed like they'd be some use around the house, so I put them in. I don't know that they really made much difference, but I kind of liked seeing them working for me.

Matty, well, she don't like it. But then she's kind of in a spot; she don't want to notice these things I've put in because then she'd have to say she knew I was working on them. Anyway, 'cording to her, these things is works of the devil. Unnatural; not right and proper; so she'd much rather not notice them. She'd rather make that there ain't nothing there, so she takes good pains to overlook them.

She does pretty well, too. Take the car, for instance: That motor I put in, it bothered her for quite some time. She was so used to worrying about whether I had put in gas or not, and whether we had gas to get where we wanted to. So after I changed it around, time and time she'd start to ask me; then she'd recollect, and her mouth

would clamp shut on whatever she was saying. She'd look like she smelled something awful bad.

T'tell the truth, that was maybe the main reason why I put it in. Seemed to me she was too happy worrying me about it. The once or twice we did run out of gas, she wouldn't let me forget it for months afterwards—about all the trouble it made for her. Just kept on and on about it; got a real pleasure out of thinking of it. So I just kind of got fed up with the whole thing; set to work to put in this motor that don't need gas.

Not exactly, sir. It's true that was the reason I made the motor—or at least why I put it in the car. But, of course, I already knew the principle of the thing. Actually, the whole thing was a mistake; what I was trying to invent was a paint-scraper. The house was peeling kind of bad and I was looking for an easy way to get it off. It seemed to me if I could adjust the way the atoms was hitched up, I could fix things so the scraper would be pulled along at just the right distance under the surface. So all I'd have to do would be to set things up and then start the scraper at one end and pick it up at t'other. Didn't work, though; not many of my inventions do. Oh, it'd go, all right—but I couldn't figure out any way I could make the scraper do the adjusting. So I ended up having to lug around a whole mess of equipment, and that wasn't any fun.

Well, getting back to the car, you see that's a much simpler thing. You just make an axle and a bearing that it fits through. And then you jigger up the way the atoms in the bearing is hitched up. The only thing the axle can do then, is turn; so it does. It's nothing special.

WELL, YESSIR, I understand that —particularly since I talked to those guys the Army sent around. They kept talking about some law or other. What was it? Con . . . conser . . . conservative energy; something like that. Don't see why anybody need pass a law on a thing like that, but that's not my business; anyway, this here device ain't broken it. I was worried for a while, though, until they explained it some further. You see, this motor of mine, when you keep on running it, the atoms in it just sort of gradually disappear; kind of fade away—not all of a sudden, you understand. The motor's good for a powerful lot of running; but, the way I figure it, eventually it will just get too weak and sort of fall apart.

So I was scared that maybe I was breaking some other law or something, destroying property that way; but the way they explained it, that was all right. And that this other law—the one that says you got to use energy—that it ain't quite that way. Seems what you got to do is either use up some of this here energy, or else use up stuff. That sounds like an even funnier kind of law, but the Army boys were awful sure of it. And if that's the way it is, that's okay and my motor is legal; it just uses up stuff instead of this here energy.

Well, yessir, that was a bit of a trouble, only not very much. Because once you get the thing set, you see—once you got the atoms hitched up right—then you can bend it around any way you like with a coil outside. So you can make it go forward or backward, just the way you like; and slow or fast. It all depends on how much electricity you run through the coil and which way. So, at first I had the battery and generator hitched up. Only then I made the other thing and so I got rid of the battery and generator.

Yessir, that's right. The thing that makes electricity.

Yessir, that was another invention of mine, only it didn't turn out so good either; none of my inventions do.

What I was trying to invent was a good flatiron; the cord of Matty's old one had pulled out. Well, Matty kept

after me about it; about what a nuisance it was to keep looking neat like a Godfearing person wants to with an iron that don't work. So, finally, just to shut her up, I fixed it. Only maybe I did it too fast; or maybe she tested it a little rougher than she really needed to. Anyway, it pulled right back out again. Well, there was words after that; lots of them. All about how I set myself up to know about all sorts of things the Lord Almighty never intended me to know. And how I couldn't even fix a simple little flatiron.

Well, maybe I got mad; I don't know. Anyway I figured I'd invent a flatiron that didn't have any cord and would still stay hot. Seemed like I could do it just by jiggling around in a little different way the way the atoms was hitched up.

I did, too; it worked. Only it almost knocked Matty cold when she picked the thing up. Came nigh onto electrocuting her; so it wasn't so good.

But then, I wasn't really so surprised. None of my inventions are.

NO SIR, I didn't work on that any more. Matty was so mad she went out and got herself a new flatiron. And told me not to touch it or else. And me, I wasn't going to go up against that "or else."

Anyway, that was the time the electric company came and shut us off; we was a mite behind in paying them—in fact, I guess we was about six months behind; so I can't really blame them. But they sure made trouble for me. According to Matty, I was doing my best to humiliate her, and doing a good job of it, too. Wasting all my time and money on all sort of prideful things. She was real upset. Half the time she wouldn't talk to me; the other half, I wished she wouldn't.

Yessir, that's right. Of course, Matty was taking care of things okay. But I wasn't so happy with that; not after the way she'd talked to me. So I fixed up a big size version of the flatiron—only not quite the same, I fixed it so it wouldn't get hot—and connected it to the wires. So we had us electricity again.

Matty was real unhappy, 'cause this here was another of these prideful things of mine. Only, of course, she couldn't take note of it; so she just had to pretend the electric company had taken pity on us or something, and take no notice that there weren't any new bills coming in. It burned her up, but that was okay with me.

Nosir, that came later; it happened that the fan belt in the refrigerator broke. The time we was without electricity, I'd set it up with a small size motor like the car had, so it didn't need electricity; but it still had a pump in it. The motor shaft drove the pump thing through a belt; so, when the belt broke, the refrigerator didn't work.

Well, Matty got along without it okay, what with one thing and another, but she talked plenty. So eventually I got mad and went and bought a new belt. Only I got the wrong size, and it didn't work. Well, that tied it. Up to then, she'd still been talking about the times we run out of gas, and also about the way the flatiron almost 'lectrocuted her. When she found I'd spent our money for the wrong size belt, she forgot all about them other times. Concentrated, like, on this new one.

IT AIN'T something would interest such important people as you, but the gist of her argument—when you boil a few million words out of it—was that I'd been too all-fired prideful. Now this here was something the like of which the Lord Almighty had meant for me to think on, that I'd been sloppy in the way I'd done the Lord's work.

So maybe you can see how I got sort of riled up. 'Twouldn't have done any good to just up and get a new belt; anyway, 'twouldn't have stopped her tongue. In fact, it would have just

proved the thing to her. So I started to figure; and it seemed to me that if I could only hitch the atoms up in a little different way from what I'd done before, then maybe it'd pull the heat out of where I wanted. Sort of backwards from the flatiron, you see. And, of course, instead of slowly using up the stuff it was made out of, it would strengthen the stuff. I got to t that in so you won't think I was breaking that there law I was telling you about. I don't know if there was other laws I broke—except, of course, that one that finally brought the government boys a-scurrying around. But, at least, I wouldn't want you to put me in jail on account of that one.

Anyway, you see how I was thinking. So I fixed it up and tried it out. 'Tweren't difficult.

You know, this is mighty discouragain. 'Cause when I tried it out, it seemed like this was one of my inventions that was working just the way I planned it. Oh, not the first time. Matter of fact, first off it worked too well; after it'd been on a bit, I tried to get the refrigerator open. Couldn't. Finally had to bore a hole in the side before I could open the door. When I finally got it open, all the air came slopping out. The thing had worked so well it had pulled all the air out like it was humidity condensing out on a cold glass of water. And left a vacuum inside.

That was of no great account, though; all I had to do was change the way the atoms was hitched up a bit. Kind of swing them over more toward the flatiron kind of thing. And then it worked fine.

So I was real happy; I used to sit there staring at it feeling good. Here was one of my inventions that worked like it was supposed to—the first one. I should have known better; none of my inventions do work; at least, not like I'd figured them. Maybe Matty's right; maybe I *am* prideful. I dunno.

Oh, I should have seen something was wrong. Wondered why our radio didn't work any more; not until Matty fixed it. But I didn't really think about it. I'm real sorry for the trouble I've made.

No, the first I knew about it was when the goverment boys showed up. When they told me all the radios and television sets for a couple of miles around wasn't working—not to mention the police radios and other things—it suddenly hit me what was happening. My thing wasn't only pulling all the heat out of the refrigerator; it was also pulling all the radio waves out of the surrounding space—a couple of miles worth of space. I was just lucky I hadn't pulled all the light out, too. So I explained all this and apologized to them.

I still don't see what they was laughing so hard about, though.

Anyway, I turned the thing off and they went away. Then they come back a day or so later and had me turn it on again, and off, while they looked at their fancy gadgets.

When they left this time, they wasn't laughing.

So then the Army came into the picture. I dunno why, unless maybe I'd pulled out some of their radio waves. They was laughing, too, when they come in; but they took the thing away with them when they went. And they wasn't laughing any more; I'd sure like to know why.

So that's the way it happened, sir, and I'm sure sorry causing all this fuss; I only hope I didn't break too many laws."

NOSIR, I don't reckon I'd mind that. Fact is, the Army boys said something about that. Said they'd give me some nice fancy lathes and things —anything I wanted. Well, shucks, no reason why they'd do that, so I figure they were just being nice. But I could use a little larger cellar, and maybe they'd do that for me, anyway.

And as for being out in the desert, that's okay, too. Don't really like it, but we don't get along with our neighbors too well, anyhow. I guess I'm the only body can put up with Matty, so maybe it'd be easier off there in the desert. Anyway, I can see their point. None of my inventions work, anyhow. And I can see where, if I switched around the way the atoms is hitched up, the whole thing would collapse on me. It sure would make a bit of hell if it did. The Army boys say it'd make the atom bomb look puny. I dunno; I hain't let that happen yet, and I don't rightly expect to. But my inventions don't work so good, and maybe it might happen accidental like. So maybe it'd be a good thing to be off there where there ain't anybody else to get hurt.

Nosir, speaking for myself, I'm willing to go along; about Matty, I don't know. Course, maybe she might go along with it, but I don't rightly think so. I figure she'd just decide it was prideful. As I said before, we got kind of an agreement; she does her things and I do mine. But maybe she wouldn't figure that agreement'd still hold. And that'd be to bad.

Would I go if she wouldn't?... Well, it's not that easy, sir, if you'll let me say so. If she don't want me to go, there'd be nothing I could do about it. Even if I snuck out so she didn't know, it still wouldn't do no good. Not if she didn't want it to.

Well, maybe she might go along with it. If the Army and a Senator told her I should do this business, maybe she might agree it weren't just prideful. I could argue I wasn't just doing what I wanted to, that I was being told to do it—and therefore weren't setting myself up against the Lord Almighty. But I dunno; she's mighty set in her ways.

WELL, IT'S more'n that, sir. 'Tis true you're the government and all that; and she wouldn't want to set herself up against the goverment. But she might feel she had to. If she thinks the goverment's being sinful, then 'taint going to make no difference. She does her own thinking.

Well, nosir. Fact of the matter is, I'd like to get away from her. Oh, I get along with her, but it'd be nice to have some other friends. Go out with girls and things. Can't do it, now; she won't allow it. Tickle me pink to get out from under, but I can't do it; she won't let me.

Nosir, I don't think that's it. Fact is, I trouble her considerable; she don't like my inventions at all. The way I figure it, she'd be a whole lot happier if she knew I was out of the way. Then she wouldn't have to worry about maybe one of my inventions will work. Only, I got to be all the way out of the way. Because, otherwise, if one of my inventions does work, then that's maybe the start of the end for her.

I figure she'll kill me one of these days, if she ever thinks maybe one of my inventions might work. Of course, killing's a sin, so she won't do it unless'n she thinks that's the only way out. But if she ever comes up against it, then I guess she'll do it.

So if you and the Army talk to her, Mr. Senator, I'd sure appreciate it if you kind of thought on it first. I rightly enjoy making her mad, but I don't want to make her that mad.

Nosir. As I said, just taking me away won't do any good. Of course, if you told her you were locking me up —jail, or maybe a loony-bin—that might work. Only I think she'd find out anyway; she can find out those things, if she's got a mind to it. And maybe she'd kill me anyway, just to make sure. Figure I was dangerous if she couldn't watch me. I dunno; rather not take the chance.

Oh, she's got good reason all right, sir. Maybe like you say, she's crazy; but there's good reason for it. You see, most things she can control—only not

my inventions. Time I get through twisting around the way the atoms is hitched up, there's nothing she can do about it. And she don't like that. Figures she ought to be able to control things. Figures anything she can't is prideful, and against the will of the Lord Almighty, and she don't like it.

Control? Ah, you know, sir. Like when we run out of gas, before I put the motor in. Only way we could get home was for her to make the car go.

Or when the electric company got riled up about our bill. We would have been sitting in the dark, excepting she made the lights work.

Or making the clothes straighten themselves out when the iron was broke.

Or the making food just keep itself cold while the refrigerator didn't have no belt.

You know, the goverment men and the Army was all mighty curious why our radio worked when nobody else's did. Don't know why. Seemed to think that was another invention of mine; 'tweren't though. Me, I don't care if it works or not. But Matty likes the serials, so she made it go.

LIKE I told you sir. She just does these things. She can control anything, excepting my inventions—which, she figures, proves they're against the will of the Lord Almighty. Prideful.

Well, begging your pardon, sir, I don't think we can get away from Matty. You want me to go work for the Army; and me, I'd rightly like that. Or anything else that got me away from her. Only you got to figure on Matty. Did I, say, just up and walk away, she'd be awful unhappy; might be she'd think I'd gotten too blamed prideful. That it was her bounden duty to the Lord Almighty to keep me from getting out. If she started to figure that way, why then she'd kill me, and I don't rightly know how you could stop her. She's got my fingernails and haircuttings. And anyway, she's good enough so I doubt she'd need them.

Yessir, that's right. I thought you knew; all the neighbors do. And I told you what she is—at least I think I did. Anyway, Mr. Senator, I surely like it if you can figure out a way you can get me out. Dunno why you want to, but as long as you do, that's okay with me. I been honest with you; told you my inventions don't work. You still want me to work for you or the Army, that's fine with me. Only please, Mr. Senator, be awful careful. 'Cause Matty, she's awful good at witchcraft and I wouldn't rightly enjoy it should you rile her up too much.

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DOG STAR

A Vignette by MACK REYNOLDS

WHEN MAN'S first representatives landed on Sirius Two, hungry to trade for that planet's abundance of pitchblende, they carried with them, as ship's mascot, one of the few dogs left on Earth.

That Gimmick was one of the very last was not due to disease, nor reproductive failure. It was just that man was going through a period of wearying of his ages-long companion. The Venusian *marmoset,* the Martian *trillie,* were much cuter, you know, and much less trouble.

Captain Hanford—leader of the three man, one dog crew—saluted the Sirian delegates snappily, only mildly surprised at the others' appearance. In a small saddle, topping what appeared almost identical to an Earthside airedale, was an octopus-looking creature. It was not until later that the captain and his men realized that dog-like creature was the intelligent of the two, and the octopus a telephatically-controled set of useful tentacles.

Telepathic communication can be confusing, since it is almost impossible, when the group consists of several individuals, to know who is "talking".

When the amenities had been dispensed with, the Sirian leader remarked in friendly fashion, "I would say our domesticated animals were somewhat superior to yours. Eight tentacles would seem more efficient than two five-fingered limbs, such as yours possess."

Captain Hanford blinked.

"In fact," the Sirian continued, somewhat apologetically, "if you don't mind my saying so, your creatures are somewhat repulsive in appearance."

"I suppose we are used to them," Hanford replied, swallowing quickly.

Later, in the space ship, the ship's captain looked at his men indignantly. "Do you realize," he said, "that they think Gimmick is the leader of this expedition and that we're domesticated animals?"

Ensign Jones said happily, "Possibly you're right, Skipper, but they were certainly friendly enough. And they sure came through nicely on the uranium exchange deal. The government will be pleased as. . ."

Hanford insisted, "But do you realize what those Sirians would think if it came out that Gimmick was a pet? That we consider him an inferior life form?"

Lieutenant Grant was the first to comprehend. "It means," he said slowly, "that from now on, every time we come in contact with Sirians, a dog is going to have to be along. It means that every ship that comes for a load of pitchblende, is going to have to have several. We've got to continue pretending that the dog is Earth's dominant life form, and man his servant. Everytime we *talk* to a Sirian, we're going to have to pretend it's the dog *talking.*"

"Holy Smokes," Jones said, "there aren't that many dogs left on Earth. We're going to have to start breeding them back as fast as we can."

The Captain looked down to where Gimmick, his red tongue out as he panted so that he looked as though he was grinning, lay on the floor.

"You son-of-a—" the Captain snapped at him.

But Gimmick's tail went left, right, left, right.

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INSIDE SCIENCE FICTION

Department For The Science Fictionist

by Robert A. Madle

NO MENTAL Communication this Century, says Prominent Scientist: Dr. J. G. Pratt, chief assistant of Dr. J. B. Rhine of the Duke University Parapsychology Laboratory, says that he can see no possibility (at present) of individuals communicating mentally. Speaking before the assembled science fictioneers at the 2nd Southeastern Science Fiction Conference in Charlotte, N. C. March 4th, Dr. Pratt further stated: "There is no method at present, or in the foreseeable future, to introduce instruction in the school system to aid the development of the brain in the ESP field." However, Dr. Pratt went on to tell of the work which *has* been done so far at the Duke Laboratory. He stated that they have conducted ESP experiments successfully with people from 3 to 75 years of age—and even with aborigine tribesmen of Australia!

Dr. Pratt, after being plied with question after question by the sci-fi set, said he had never before talked to a more enthusiastic or better-informed group of people. He idealistically closed his speech by saying, "Out of ESP may come some hope that we may be able to better understand man and his irrational actions."

Another highlight of the conference was a premiere showing of MGM's cinemascope s-f production, "The Forbidden Planet." (See review below.) Comments of the fans following the showing were enthusiastic, and a recent letter from the Publicity Department in NYC indicates that the reactions of SECON II attendees will be tied in with the national distribution of the film. Then, during the banquet (which had Dr. C. L. Barrett as toastmaster) George L. Cole (Carolina S-F Society member) unveiled his *Carsciac* (Cole's Amazing Reasoning and Sensory Codifier, Including Abstruse Cerebrations). Inspired by the Univac, George Cole has done Remington-Rand one better, and come up with an electronic brain which answers questions Univac would shy away from. Probably the trickiest and best-devised of all fan projects, Carsciac is expected to be further demonstrated at the Midwescon in Cincinnati (May 26 and 27) and at the New York World Convention over the Labor Day weekend.

This, the second annual southern affair, was sponsored by the Carolina Science Fiction Society. Next year's gathering is expected to be held in Orangeburg, South Carolina, with Lynn Hickman as Chairman.

NEWS AND VIEWS: Dr. F. A. Cockin, the Anglican Bishop of Bristol, has suggested the Bible be rewritten in space fiction style to interest children! The Children of today, said the reverend Dr. Cockin, are not interested in old-hat like the Bible. "If we were to rewrite the Testaments in terms of space fiction," he said, "the Church might achieve much,"... A filmed lecture by Wernher von Braun is now being circulated among higher echelon U. S. Army Schools. Deals with satellites and space

ships. ...Movie advertisement: "Jungle Jim in 'Tarzan Escapes' ". Johnny Weissmueller, of course, now portrays Jungle Jim. "Tarzan Escapes" was a 1934 (or thereabouts) issue. So this real hep movie manager thinks that Jungle Jim is more prominent today than Tarzan. Wassamatter with him? Doesn't he know that Tarzan Never Dies? Ask Ray Palmer. (Seriously, Ray, we wish you lots of luck with your campaign to revive Tarzan and John Carter, and hope Stuart Byrne's "Tarzan On Mars" will eventually be printed.)

Congratulations to several top-flight s-f personalities are in order. Harlan Ellison was recently married to a Pennsylvania gal. And Larry Shaw (the *Infinity* Larry Shaw) was also married recently—to none other than prominent fan Lee Hoffman. Shaw and Hoffman were expected at the 2nd Southeastern S-F Conference, but marriage intervened. Congratulations again to all of you!

FOLLOWING so soon after the death of A. Hyatt Verrill, it grieves us to report the demise of another old master of science fiction, Nat Schachner. Nat wrote quite prolifically during the 30's and the early 40's. Most of his earliest stories (circa 1930-31) were written in collaboration with Arthur Leo Zagat, who is also no longer with us. Anyone remember "Back to 20,000 A. D." or "The Emperor of the Stars"? Those are probably the two most-remembered of the Zagat-Schachner collaborations. In 1932 Schachner and Zagat split up, and many stories flowed from their pens individually, but Schachner was, by far, the more prolific of the two.

Nat Schachner has the distinction of having written the very first "thought-varient" story, "Ancestral Voices." It appeared in the December, 1933 *Astounding*, and ushered in the incredible era of the mighty and vast plot and concept. During this period (which lasted into 1938) Schachner sold story after story to F. Orline Tremaine. Remember "City of the Corporate Mind"? Or "Entropy"? Or "He From Procyon"? Or "I Am Not God"? And we can't help but recall his socio-political series, "The Revolt of the Scientists." (*Wonder Stories*, April-May-June, 1933.) Yes, Nat Schachner was a great science fiction writer—in our book one of the greatest.

LAST CALL for the New York World Convention: Soon after you read this, science fiction's annual gala affair will be getting underway. This time, as many of you know, it is being held in New York City, at the Hotel Biltmore, over the Labor Day weekend (August 31, September 1, 2, 3). An entire floor of the Biltmore has been blocked off for convention-goers and this floor is said to be a hotel in itself. There will be speeches by the leading editors and writers in the field, led by Arthur C. Clarke, who will be the Guest of Honor. There will be plays and skits by the various fan groups; a premiere of a science fiction film will be presented; a gigantic auction of rare items will be featured; there is just too much scheduled to be more than casually mentioned here. In summation it can be said that there will be four days of festivities which you will remember for a long time. Get your $2 registration fee in now to Box 272, Radio City Station, New York 19, New York. All convention data will be sent you. Or you can register at the Hotel Biltmore any time during the convention.

THE RETURN OF THE TIME TRAVELLER

MANY YEARS ago, when we first became a science fiction fan, we were very fascinated by the letters to the editors of *Wonder, Amazing, and Astounding*. Among the earliest of these letters which can be recalled were those of a New York reader named Allen Glasser. Always interesting and thought-provoking, Glasser's letters were usually the first ones read by us when an old s-f magazine was uncovered in a used magazine store. But, as we became more actively connected with the field, and more immersed in its inner workings, it was found that Glasser was far more than a letter writer: his activities, in fact, encompassed just about every facet of early science fiction and, what has been termed, "Prehistoric Fandom."

It is almost impossible to place one's finger on a certain individual and say, *"He* is the father of science fiction fandom." However, it is our contention that, if any one individual deserved this appellation, that man is Allen Glasser. His accomplishments in the dawn-age of fandom are almost legendary. Among the first of his achieve-

ments which places him among the earliest of fandom's pioneers was the formation of the first science fiction club, *The Scienceers.* And, along with *The Scienceers* came the cub's organ, *The Planet,* which has come to be known as the first fan magazine. This took place a long time ago— *The Scienceers* was organized in December, 1929 and *The Planet* was published during 1930. While internal dissension caused the dissolution of the club in the latter part of 1930, there is little doubt that the many organizations that followed were based upon this earliest of all fan clubs. Also, the reknowned fanzines which appeared a short time after the demise of *The Planet* (such as *Science Fiction Digest* and *The Fantasy Fan*) were obviously patterned after *The Planet.*

Allen Glasser was also quite active in the professional, as well as the amateur, aspects of science fiction. Gernsback, in the old *Wonder Stories Quarterly,* offered prizes for the best essays written on the subject, "What Am I Doing to Popularize Science Fiction?" Glasser's entry, describing his work with *The Scienceers,* was a prize winner. A short time thereafter, Gernsback conceived of another contest in *Wonder Stories Quarterly;* this time he asked readers to submit plots. The best of these would be awarded prizes and then turned over to the era's leading writers for development. Glasser's entry, "The Martian," was one such winner and, developed by A. Rowley Hilliard, was a little gem which appeared in the Winner, 1932 *Quarterly.*

GLASSER'S BRILLIANT writings appeared in the fanzines of the era through 1933. Not only did they appear in *The Time Traveller* (ten issues of which appeared in 1932 and which has generally become known as the first *real* fanzine) but Charles Hornig's *Fantasy Fan* was chock-full of Glasser. *The Time Traveller* started with the January, 1932 issue, and had Glasser as editor, with Julius Schwartz, Mortimer Weisinger, Forrest J. Ackerman, and others, as associates. The type of material used in TTT was the type used in fanzines for many years after: interviews with writers, news columns, articles of interest to collectors, and similar subjects. A set of TTT today is, indeed, a prized item. Julius Schwartz's *Science Fiction Digest* (which immediately followed TTT) was based completely on TTT although, through the many years it was published, it developed into a more well-rounded mature publication.

After 1933, Glasser's writings suddenly stopped and he apparently drifted away into other fields. Through the years, the name of Allen Glasser often occurred to us and we wondered if he would, like so

AMONG the things that happen every Autumn, in addition to the World Series, is the World Science Fiction Convention. This year, New York's Hotel Biltmore will be the scene of the annual festivities, and the 1956 Guest of Honor, is the noted British author and scientist, Arthur C. Clarke.

The dates for the blowout are September 1, 2, and 3, and you can save time by sending in your registration now to Secretary Art Saha, PO Box 272, Radio City Station, New York 19, New York. The price is $2; and while you won't save any money by getting your ticket in advance, past experience shows that there's usually a long line of attendees, waiting to register because they didn't get around to mailing in that $2 beforehand.

If you do it today, it'll not only help the committee, but you can watch the waiters-in-line and think of how foresighted and fortunate you were—and you needn't watch as long as some of them will have to wait!

many other of the real oldtimers, return to science fiction. So it was with a considerable amount of surprise that his acrostic verse, "Flying Saucers," was noticed when it appeared in the 1953 *Wonder Story Annual*. Then several letters were published: one requesting copies of *The Time Traveller* and the other offering to form a mature science fiction discussion club. After twenty years the Time Traveller had returned!

Today, still a comparatively young man in his early forties, Allen is on the editorial staff of such trade magazines as *Flooring* and *Siding and Insulation*. He is married, is the father of a little boy and girl, and, during the twenty year interim, has won many cash prizes as he is an inveterate contest fan. His letters are again appearing in many of the letter columns of the promags; he again desires to organize a science fiction club; and he still wants to obtain copies of *The Time Traveller*. Correspondence concerning any of these subjects is invited: his address is 241 Dahill Road, Brooklyn 18, New York.

THE FAN PRESS

INSIDE and SCIENCE FICTION Advertiser (25¢ from Ron Smith, 611 West 114th Street, Apt. 3d-310, New York 25, New York.) The question foremost in the minds of most readers of the amateur s-f press is, "How does Ron Smith keep it up?" Each bi-monthly issue of *Inside* seems to improve upon the preceding one. The current one contains 40 meticulously multilithed pages of professional-calibre material. Bob Silverberg pens a history of the *Science Fiction Advertiser* covering "The First Ten Years." It hardly seems that a decade has passed since the first mimeographed issue of SFA flopped into our mailbox, but Silverberg's article forcibly displays 'tis so. Lin Carter, who is apparently a research artist par excellence, continues his lengthy discussion of the various books mentioned or described in the HPLovecraft Mythos. This time the forbidden *Necronomicon* of Aldul Alhazred is described and quoted from at length.

The feature of the issue, however, is a long article by Robert Bloch, "Worst Foot Forward." This article, written more than two years ago and never published because the author felt it might hinder the sales of some of his friends and associates, really hits hard. Bloch does not feel that the current science fiction crash occurred because s-f is limited in appeal; nor does he believe it is because the stories lack "the sense of wonder"; nor does he think it occurred because of inept writing and equally inept editing. Then what killed the science fiction boom?... George Pal and his pals," says Mr. Bloch. Yep, the movies and TV killed science fiction! As Bloch says, "The Popularity of science fiction was killed by its popularity."

And Bloch (who is a connoisseur of s-f and fantasy filmfare) makes a good argument to prove his point. He says, "Our science fiction movies, and TV and radio shows are our 'covers'. They are the gaudy exterior which represents science fiction to the millions of non-readers." But all they see are these sickening "covers", and shy away from the magazines which, to them, popularize this sort of stuff. In other words, mature readers who would appreciate the writing of Sturgeon, Asimov, Bester, Clarke, et cetera, never get the chance; and the hammy s-f movies have to take the blame. But Bloch also hits hard at s-f writers themselves who prostitute their talents for the almighty buck. Anyway, it is a well thought-out article; and even if one doesn't agree with it entirely, there is a lot of food for thought. Every serious-minded science fiction reader should read Bloch's analysis of the crash: it is one of the most analytical yet to appear.

FANTASY TIMES (writes for a free sample to Fandom House, PO Box 2331, Paterson 23, New Jersey, and mention this department). "New Ziff-Davis Fantasy Mag Will Be Titled *Dream Worlds*." "Leo Margulies Leaves King-Size". "Howard Browne Gets Hollywood Contract." "Paul Fairman New Ziff-Davis Editor". These are just a few of the recent headlines from *Fantasy Times*, science fiction's only regularly appearing newspaper. Every two weeks, FT is published and, in addition to the big news stories, news columns from various sections of the world are featured. Then James Blish has his regular book reviews and Frank Prieto has "The Fantasy Record" which helps one keep up with all of

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THE LITTLE GIANT

An Unusual, Off-Trail Story

by JACKSON BARROW

"illustrated by FREAS"

IT SEEMS inexpressibly long ago, but it was only last evening and I remember it all clearly. We were returning from the city to the castle. He walked before me, briskly, as always—so briskly I had difficulty keeping up with him. The long day had wearied me so that I was on the verge of collapse. The narrow dirt road winding its long way up the hill had never seemed so steep. Nor had the castle, squatting atop the hill against the orange of the sinking sun, ever looked so dismal.

We had come halfway to the top, where the road bent sharply. As he rounded the bend, he disappeared from sight momentarily; then he reappeared before me, and the castle disappeared from sight—shut out by the gray wall of rock rising perpendicular on one edge of the road. On the other side the hill fell away steeply, and far down below, draped in the first shadows of twilight, the city came into sight.

I hated the city. Most distant of its three parts was the newest section, recently developed, of domed, queerly-made structures, scattered over a wide area and still empty. Beyond lay the residential and commercial part, no different than a thousand other cities. Nearest, clustered at the foot of the hill, were the towering white buildings of the administration center we had just left, looking as if they were coated with ice. It was his city, the Little Giant's city. He had built it, and from it he ruled the world. I hated it, so old and austere, remote and unfriendly.

I hated the city because it bore the stamp of his personality; and I hated the castle because I lived there with him, and it was a prison to me; and I hated the oddly-blighted hill that lay between them. I hated the deep gullies, crossed by the forbidding fences. I hated the brown and withered vegetation, the stunted trees, the shrivelled shrubs,

the parched grass. Through my mind ran the tales I'd heard when I was a newspaperman—tales bizarre and conflicting, and sticking in my mind like burrs.

I think I shivered a little; I gritted my teeth and drove my tired body in an effort to keep from lagging far behind. It was a triumph of will to keep going. The holstered weapon, dangling from my belt and slapping against my side, was like an anchor dragging me down. Ahead of me the Little Giant showed no signs of fatigue, his back bent, taking short, quick steps.

Again the road bent sharply. The city was gone from sight; the castle loomed ahead. Soon we would pass the fence.

A profound depression gripped me.

How long had we been doing this same thing, the Little Giant and I? For how many days, months, years, had we at this time of day plodded up the hill to the summit where the castle stood?

How long?

It seemed like centuries. *Why* I remained at the task that was tearing the heart out of me I never could fathom. I had failed in the purpose that had led me to accept it. I knew that continuing was futile and unreasonable; I would never learn any more about him. Long ago I'd given up hope of that. Yet I faithfully kept at my task of watchdog.

I HADN'T even succeeded in learning his real name. To me, as to everyone else, he was the Little Giant —that and no more.

Yet, looking at him, considering him, I thought how graphically it described him—his mentality and his physical appearance. He was of remarkably short stature, barely five feet tall. His undersized, bowed legs emphasized the bulk of his body. His shoulders were wide and massive, and seemed to sag as he walked—as if he were carrying an invisible heavy burden. His arms, swinging with each stride, were heavy and noticeably short.

How he kept it up, where he derived all his energy, was a miracle. It didn't seem humanly possible for a man to drive himself as he did without cracking. His color was bad; he had a sickly, greenish pallor. Yet he never sought or required medical attention. I was closer to him than anyone, yet I never dared suggest it.

I made no suggestions to him. I knew that would be futile; he would only ignore them. He had made that, and much more, plain the first day. The memory was still vivid of how he had handed me a sheaf of typewritten pages and said, "You will reside with me in the castle. There are three storeys in the castle. The topmost of these is mine. Your quarters will be in the second storey, and you will enter, in my company, through the outside staircase. The lower storey is occupied by the guards and the caretakers. There are five of them.

"You will not speak to them, or attempt to communicate with them, and they are under orders to report any such attempt to me. You will not enter, or attempt to enter, their quarters You will do all your own housekeeping, and you will find in your quarters all the necessary facilities. Once a week, a vehicle will come to the castle with such supplies as you require and will at that time remove waste, laundry, and so forth. You are not to leave your quarters for any reason, after your arrival in the evening, until it is time next morning for you to accompany me to the city. You will note that your quarters are equipped with neither radio, television nor telephone, and will so remain. You are to add nothing and remove nothing without first securing approval from me.

"You will awaken at sun-up. To ensure your awakening, your quarters are equipped with an alarm clock. You will proceed to awaken me without delay; this you will do by pressing a button in

your quarters, which will sound a buzzer in mine. You will then allow yourself a half hour for breakfast. At that time, I will come down the back stairway to your quarters. There are two stairways; you will under no circumstances use the outer stairway, except when entering the castle with me. From your quarters we will proceed on foot to the administration center.

"It is your function at all times to guard me against harm. For this purpose I am furnishing you now with a weapon which you shall keep on or near your person at all times, and which you will not hesitate to use if occasion should arise. You should be acquainted with such other measures that are in use to ensure my safety. In brief they consist of the following:

"As you undoubtedly already know, aircraft are forbidden to fly over the castle, or to approach within twenty-five miles of the castle. This edict is enforced by constant patrol by the deadliest of craft.

"There is an armed, energized fence, manned by guards, about the courtyard surrounding the castle. It is impossible for any man, beast, or thing to slip by this fence without suffering destruction. Likewise any creature or machine making physical contact with the outer barricade—equidistant from the city and the castle at a distance of a mile—will be destroyed. The guards are instructed to open the gates through these barricades upon my signal, which I shall give upon my approach, or upon advance order for such vehicles or persons having authority to come to the castle. Only I can give such authority.

"These gates along the road are the only gates through the barricades. In addition, there is another barricade running about the administration center and circling the entire hill, which is guarded by soldiers who are not of the household of the castle and are equipped with more orthodox armaments. Also, the administration center is heavily guarded. As you undoubtedly know, all persons are thoroughly screened before being permitted entrance to it.

"You are in the nature of an additional security, an extra precaution. You will be at my side constantly throughout the working day. You shall move with me from building to building, from office to office, and remain constantly alert. You will speak to no one; and if anyone should address you, you must immediately state that you are forbidden to communicate with anyone without my permission. You are not to ask for such permission; it will be refused. Furthermore, you are not—except in the event that unusual circumstances should arise—to address me unless I address you first. You will read the written instructions carefully. You may then question me on anything pertaining to these instructions or your duties that is not clear to you."

I REMEMBERED how I'd slipped in the early days. Unthinkingly, I'd asked questions. A look—a few curt words, uttered without anger—and I hadn't slipped again.

I was afraid of the Little Giant; I could not understand him, and I was afraid of him. It was impossible to question him about any of the things about him that puzzled me. I was afraid to address him, afraid of what his reaction would be. I was too much afraid of him to tell him I wanted to leave his service; I was afraid even to admit these things to myself.

Nevertheless half a suspicion that he knew what I was thinking lurked in my mind always. The Little Giant knew. I had learned nothing about him; he had learned everything about me, by a process subtle and wordless as osmosis.

His methods, his habits, never varied. He worked seven days a week at the city. Each morning, we walked from the castle to the city; and in the evening, we walked back. Except while transacting the business of running and

remaking the world, he was uncommunicative. He seldom spoke to me, and then it was to give me a direct order. But always between us was a silent, unacknowledged, undefined struggle.

The struggle had wearied me to the bottom of my soul. That and the watching, day after day, week after week. It was trying to remain ever alert, ever watchful, suspecting the intent of everyone approaching the Little Giant.

I trusted no one; at times, I didn't even trust myself. I never knew when an intense impulse to violence would well up in me. I would want to cry out warning to the Little Giant: *Send me away—I am not master of myself—send me away before I do some insane, irreparable harm. Send me away before it is too late—before I turn your weapon on you.*

But the words never issued from my lips. In a flash, the feeling would pass. Afterward I would dismiss it as an attack of nerves, arising from the unnatural isolation of the life I led. I saw no one, talked to no one. I had no real, normal contact with the outside world. Guarding the Little Giant was, and had been for fourteen months—since succeeding Hendrix—the sum and substance of my life. During the working day, I was with him always, watching to keep him from harm.

And always the questions about him burned within me. Curiosity had led me into acceptance of the assignment that same day he had offered it. Single, without kin, without personal entanglement of any kind, there had been nothing to deter me. I was all the more curious to discover why I, of all the men in the world, had been selected. For a long time previously, I'd been delving quietly into the matter of his origin and antecedents, trying to penetrate the shield of mystery about him.

I hadn't satisfied my curiosity. Instead of finding answers to questions I found more questions. The puzzle, the enigma, grew.

WATCHING him walking there before me, his short, oddly mechanical, oddly-lurching stride kicking up little clouds of dust, I thought about him.

I suppose I pitied him. His head was bowed; he seemed deep in thought. Which of the weighty problems confronting him was he concentrating on? Wasn't he carrying a heavier load on his shoulders than was right for one individual to bear?

Receiving people, in his many offices in the administration center in the city, all day long.

Day after day.

Endlessly.

Big men with big affairs.

Little men with little affairs.

Talking, talking.

Digesting—almost at a glance—memoranda, statistics, plans.

Signing papers. Writing. Dictating.

Working, doing, never stopping; all day long; every day. Sharing no confidences, delegating no responsibilities. Tireless, almost inhuman, doing everything himself, while I sat by and stood by and moved with him, from conference room to conference room, guarding him against harm.

Hearing and receiving reports on all the vast projects he set in motion.

The universal census and registration; the compilation of a file on each living person, containing the individual's complete history from birth onward—with special records being kept of deviations from normal intelligence, running the gamut from idiocy to genius.

Why?

Suddenly I stopped. I could have gone on; I could have driven myself further, but I stopped. I had to know about him.

He walked on a half dozen paces. He became aware I had stopped. He turned and faced me. His face was without expression.

"Who are you?" I shouted. I had to

ask. "What are you doing with the world? What do you want?"

No answer.

No sign that he had heard.

He stood there waiting.

And then I doubted.

Had I really shouted these few of the dozen questions that vexed me? Or had I only imagined I had spoken? Had the sound had existence only in my mind?

Was I losing my grip entirely? Was I going mad? Was that what had happened to Hendrix? Was the intolerable task breaking me down, as it had broken him down? The onerous task, so gravely important at the surface yet so pointless at the core? Was I really doing anything at all necessary?

I stood there. I suppose my defiance, my rebellion, was apparent in my attitude.

He approached me, walking quickly as always.

He stood before me. His face was close to mine. A spark glittered in his black eyes. He spoke: "Is anything the matter? Are you ill?" His voice was flat There was no concern, no anxiety, no solicitude. But there was something else, something bludgeoning, beating me down.

I felt stung and baffled, angry and beaten. "No," I said. "It is nothing; I am all right."

He stared at me, smiled a little; he turned abruptly and began walking up the hill. He knew I would follow.

I did. I walked behind him. My fatigue was suddenly gone. Questions and scattered bits of information about him continued to whirl in my brain.

WHAT LAY behind his preoccupation with intelligence? The emphasis he placed on feeble-mindedness and mental aberration?

And what could explain the strange new cities he had built and was building? Why were they empty? Why build them and leave them unoccupied? And what logic motivated the changes he had caused in the older cities? The tearing down of whole sections and replacing them with the peculiar domed structures built on new and baffling architectural principles?

Where had he learned these principles? At what school? Under what master? And what was the meaning of these outlandish structures, offering no key to their purpose?

I was entirely in the dark; only the Little Giant knew, and he confided in no one.

Every moment of his working day was crammed with meaningful activity. The last hour he spent with the dozen men of the inner council, outlining the next day's schedule. They were able and efficient—and no more than assistants, instruments of his will.

Our food was always brought in on a tray. We never ate on time; we never had time to eat properly, especially the Little Giant. He seldom enjoyed a mouthful; he merely picked his food over, toying with a morsel or two while he conferred or pored over papers.

Why did he drive himself so remorselessly? What was worth the effort, the sacrifice? Was he a madman, imbued with a messianic fervor to carry on as he did? What could explain such sacrifice, such devotion? His small, intense black eyes held a guarded wisdom. He seemed to smile sometimes, in secret amusement. I could never understand. The fact of smiling never jibed with the circumstances; the smile came at odd, unaccountable moments, and left me feeling uneasy.

Did he ever, I wondered, stop thinking, stop planning, stop looking ahead? What were his thoughts in his few moments of leisure, when he passed through my quarters on the second storey, closed the door to the stairway behind him and turned the key and climbed the stairs to his private chamber? He was alone then, after the strenuous day. How did being a great man, a maker and controller of destinies, sit upon him then? How did he

feel? Satisfied that he had moved closer to his private goal? That the ultimate inscrutable purpose behind all his moves was nearer realization?

And what *was* that ultimate purpose? What further power and glory was he reaching for? Surely I could not imagine what. What could there possibly be, when he had attained mastery of the world? Could he hope to retain it? And if he could—after him, what? It didn't seem possible that any one man could continue after him. What could follow? Chaos? World revolution? A return to the archaic condition his reign had abolished of sovereign, perpetually-warring states?

Questions. More questions. He was a living question-mark.

How had he reached his position? Who was he? Where did he come from? I knew as much about him as anyone—and it was not enough. He had appeared suddenly, risen meteorically. His genius was unquestionable; but geniuses before him had tried for mastery of the earth, and had even achieved it temporarily. In the end, however, all had overreached themselves and failed miserably. Would that happen to him? Now? When?

It was growing dark, and the darkness lay heavy and sinister on the hill. It was this hill, the vicinity of this desolate hill, where his incredibly fantastic rise began. He did not move out—like an Alexander or Napoleon—and conquer the world, beating down and overpowering enemies. He gathered the world unto himself, bit by bit—like a magnet pulling to itself slivers of steel. All the communities, independent and warlike, that had risen after the great atomic war that had wrecked and shattered all the world.

He had a strange, hypnotic power. People came to him and the result was always the same: he prevailed upon them. They became—large and small, initially hostile, resentful, skeptical, indifferent—his creatures.

Crafty politicians.
Lofty statesmen.
Humble educators.
Sedate men of science.
Humanitarians.
Opportunists.
He won them all over.

From a small beginning, he stretched forth his hands and plucked first section after section; then country after country, like ripe fruit.

Without pomp; without public appearances. Without moving further from the castle than the city, which he had the foresight to start building, at the site of the town at the foot of the hill, about the time he built the castle.

INSIDE of three years the country was his; within four years he ruled the world. Yet it could not be said of him that he was loved, or even liked. He was respected and was held in a kind of awful fear by those who became his underlings and emissaries. They were loyal but it was my impression that their loyalty was impersonal, lacking in warmth, and sometimes uncomfortable and often reluctant. Like mine.

He kept them at a distance, just as he kept me at a distance.

And why did he keep this wall of silence between us? Was it because he was afraid he would inadvertently reveal something he did not want to reveal?

What was he afraid of? Why the elaborate system of security he had erected about himself? Why the forbidden zone about the castle? The two fences?

What did he fear? Determined secret opposition to the new way of life he had brought? A fanatic? Was it something out of his past? Someone?

Who? What? I couldn't guess where the truth lay. I simply didn't know enough about him, after tracing every lead, in the course of my investigation. All those concerning his life before the

start of his rise to eminence dwindled into thin air. No one with any tale capable of standing scrutiny stepped forth to claim him as kin. No one remembered ever having known him as a child, as a young man, schoolmate, friend, neighborhood, associate—in any connection prior to his rise. He was known in the vicinity of the hill; his career could be traced that far back. Beyond, the trail utterly vanished, into blind alleys of hearsay, hallucination or invention.

I thought of these things as we came to the high fence that enclosed the castle. The gatekeeper, small and hunched, anonymous and self-effacing, swung open the gate. We passed through silently and the gate swung shut.

We were home now, if it could be called home. We passed through the courtyard, and went directly to the heavy steel door. A caretaker was awaiting within, and the door swung open for us as if by magic. The heavy-set, pale, stooped man closed it silently behind us. He was like an automaton; they were all like automatons, coming and going noiselessly, saying nothing, showing no emotion, their faces blank and unreadable, watching at the barricades, doing the housekeeping in the Little Giant's quarters.

They were the only ones who had ever been inside the Little Giant's quarters. The second storey was as high as I had ever gotten in the castle.

Above lay the Little Giant's sanctuary, beneath the high, walled roof. I wondered often about his quarters. Were they as sparsely and severely furnished as I imagined them to be? And the roof—did he ever go up there, driven by insomnia, or for a breath of fresh air? What did he think, standing alone under the stars? What did he do there?

Was it all sleep and rest and relaxation? A restoring of brain and body to meet the demands of the coming day?

Or—or was there any truth in the wild and garbled stories that had gotten into circulation? Of brilliant flashes of light playing about the hill? And whispers of things more hideous—of cries and creatures—hints that the Little Giant was the master of a secret cult.

Oddly, no one had observed—or even suggested—that anything unusual transpired in the vicinity of the castle by day. Always it was in the dead of night. By day all was stillness, silence, desolation.

I myself had seen nothing unusual, heard nothing out of the ordinary. I usually slept soundly, awakening when the unfailing alarm clock jangled.

AS WE ASCENDED the stairs, I counted the steps, I always did, because they were so numerous. The way was long—forty-seven steps—and drafty. A cold wind blew down from above.

When we reached the second storey

landing, the Little Giant opened the door to my quarters. I moved past him and he closed the door behind me with a key. Without a word, he moved through my quarters to the door entering upon the other stairway. He opened it and stepped through. I heard the click of the key turning in the lock, heard his muffled footsteps on the stairway beyond the door.

I was alone.

I sat down for a moment, burying my head in my hands. I was exhausted; I was too tired to think even. I knew nothing, felt nothing.

Then I bestirred myself. I skipped the evening meal; I was too tired to eat. I prepared for bed, undressing quickly, knowing I would sleep soon but not soundly—that this was one of the nights I would sleep fitfully.

I wondered about the Little Giant. He had seemed more tired than usual, all day. Was the strain finally catching up with him? Was he nearing the end of his iron endurance? I tried to picture what it was like in his quarters, in the rooms above me. In my mind formed an image of him sitting on the edge of the bed, his elbows on his knees, his head between his hands. His lips moved; he muttered something to himself. It might have been a prayer.

In my fancy, my eyes wandered about the room. Always in my fancy I was impressed by its plainness. I could not visualize it otherwise. It was stripped of all but essentials. I could see it quite plainly: One door was open to the room beyond, but the door opening on the stairway to the roof was locked. My eyes returned to the Little Giant. He still sat on the edge of the bed. His lips were still moving. Again I had the feeling it was a prayer.

I was beginning to get drowsy. I lay down atop my bed and closed my eyes. I saw the Little Giant again: He was sitting on the edge of his bed. He seemed immeasurably forlorn and unhappy. I pitied him. Yet, as I looked at him I felt nausea—felt as if I had tasted something excruciatingly bitter. Vaguely, I associated the taste with him. I felt sorry for him; he was alone, unutterably alone. No one shared any thought or feeling with him, entered into his life in any degree. I pitied him. I loathed him. I feared him. I knew I hated him.

Hate.

My senses were dulled. All that came through, remained with me, was an obscure image of the Little Giant getting up from the edge of the bed and walking to a door. And that faded and I knew I was falling asleep.

I dreamed. I knew I was dreaming, and I could not quite catch the dream clearly; there was a pool of darkness around me. I lay asleep in the dream. To my ears came the faint click of metal pushing against metal. A key—a key turning in a lock.

Then a massive door opened, and toward me moved a lump of intenser darkness through the blackness of the night. Far off, I heard what must have been the cry of a bird—a winged predatory creature—and there came an answering cry, long and sustained, like a wail. I shivered, with fright; it was alien and repulsive.

The blob of darkness loomed nearer. Was it a man? A beast? Or was it a figment of my dreaming imagination, a hybrid monstrosity incapable of existence except in my mind?

It communicated with me; it was vaguely familiar. I felt a pressure on my shoulder and was shaken into wakefulness. It was telling me something; it was telling me to arise and follow.

I obeyed.

The darkness grew lighter as my eyes became accustomed to it. The shape before me took familiar form; just as I had known all along, it was the Little Giant. He had come for me.

I FOLLOWED him, through the door, seeing the vague outline of his hunched and massive figure before me.

It was the first time I had passed beyond that door, onto that stairway. I was uneasy. Although it was a hot summer night, an icy breeze fluttered past me; mechanically I found myself counting the steps as we ascended.

I breathed hard; I was excited. What did it mean? For what reason had the Little Giant broken his practice of secrecy, and summoned me to his quarters in the middle of the night? What did he have in mind? What confidence would he bestow? What revelation would he make? What knowledge would he entrust me with, knowledge that would affect our relationship profoundly?

A strange, reluctant anticipation filled me. I was afraid of what was going to happen—yet I wanted it to happen. I counted the steps. In my ears sounded a chorus of voices unlike any I had ever heard, and over it rose one voice dominant, high-pitched and keening, shrilling as if in worship. My nerves stretched taut and quivered.

The Little Giant, lumbering up the steps ahead of me, seemed unaffected. A sudden chilling thought came to me. Was this the reason for his insistence on seclusion, secrecy? I recalled and embroidered on all the reports of strange happenings in the vicinity of the castle. Was there, after all, truth behind them? Was it possible?...

I turned, to flee. The sound in my ears was vile; a ritual of some sort was in progress. Powers dwelt in the castle, and of them all the Little Giant was the master. He was the master of all the earth—and more. He was not of the earth. He *knew,* with an alien, superior knowledge.

And at last, as the Little Giant seized me, my brain went powerless. His grip on me was not only physical. I was his creature; I knew I could no longer resist him. The long struggle was over. The knowledge flowed into me, as if I were some kind of open receptacle, as if my brain were sensitive to the impulses pouring into it—a sensitive, receptive and absorbent instrument utterly under his control.

As I lay dreaming, I could feel myself struggling to escape. My limbs thrashed frantically; cold sweat drenched me. My arms thrashed in desperate efforts to shake free of the overpowering antagonist. I bit, I kicked, I clawed. And in my ears sounded a chant, a litany, a blending of piercing voices that had an indescribably horrible effect on me. I knew terror; I knew despair.

Where was the Little Giant? Where had he gone? I could not see him; I could see nothing. I was blind. Forcibly I was led, stumbling, to the far end of the roof.

A shrill cry, one sharp and ecstatic sound, penetrating and full of the flavor and exaltation of death, stopped momentarily the beating of my heart. And then I shuddered and mercifully grew faint.

The coldness of a vessel thrust into my hands revived me. Its feel was repulsive, yet I could not drop it. It was a goblet, massive and heavy. I raised it to my lips and drank the thick, tasteless liquid; I drank it all, and with the last drop uttered a cry and dashed the goblet to the roof. It clashed dully against the stone, while an awful chorus of voices—joyous as pilgrims come to a holy place—burst and sounded toward the distant sky. I looked up and glimpsed pale, cold stars, glittering.

The dream was over, in a blinding eruption of light; I awoke, cold and trembling. It was a long time before I fell asleep again. The horror lingered. Yet when I slept it was a tranquil, undisturbed sleep.

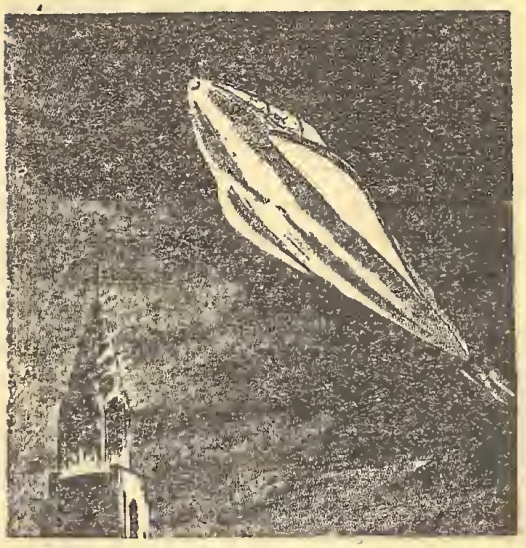
Brrrrrrr... Brrrrrrr... Brrrrrrrng.

What was that, what could that be to disturb my sleep?

My alarm clock. I reached over in that direction, to shut out that unwelcome, hateful noise.

Ah, silence again. It was good to lie abed for a moment or two, not quite asleep, not quite awake.

I turned over on my side. I always found that position most comfortable in this interlude before I would have to arise and awaken the Little Giant...



IT WAS broad daylight. Through my closed eyelids, I could feel the warm sunlight streaming into the room.

I sat up with a start. He was sitting there in my room; he was sitting in a chair near the bed.

Was I really seeing him. His head was bowed, supported in his hands. His elbows were supported by the arm rests of the chair.

What was he doing there? I asked myself wonderingly. He had never done that before. He didn't stir; he sat rigidly, unmoving. He looked exceptionally pale, sitting there, almost green.

Could it be?...

It would be a catastrophe if he were dead; a catastrophe to the rest of the world. A catastrophe.

The thought moved me to action. I leaped from the bed and stood before him. I called to him.

No answer.

I seized his shoulders and shook him.

No response.

I let go and he fell to the floor, lifeless.

I stood rooted to the spot, trembling as with the ague. In my mind, I envisioned the scenes that could and would be enacted when the world learned the news of his untimely end. The upheaval; the scramble for power; the radical changes in government; the spilling of blood. The riots and revolution.

How could I explain it? To whom? To whom was I now answerable, now that the Little Giant had died?

And then I noticed my hands.

They were covered with blood. It didn't surprise me; I had known all along. I realized what I had done. The Little Giant was dead and I had killed him; I had blood on my hands, and it was his blood.

I went to the sink to wash the blood off my hands. I caught sight of my reflection in the mirror. For an instant I saw myself with blood on my lips and for another instant I was horrified. I shook with fright; I heard myself blubbering something.

And then full understanding came over me. I was too short; my arms were too brawny. My eyes were too black, my face too green.

I was the Little Giant. I had drunk the blood of the Little Giant, and the Little Giant had entered into me.

In that instant of knowledge, the change in me took place swiftly. The transformation, the metamorphosis was completed. I knew who I was, where I was from, what I was. I was everything I had ever been—but I was much more. What I had been was nothing, a mere part of what I was. The questions had answers, and my knowledge far exceeded mere answers to questions. I was the one selected by the wise ones of the far place to prepare the creatures of this rather remote, desolate and insignificant place for our coming.

I KNEW what had become of Hendrix; I was Hendrix. I was five creatures—including the last, the one sitting like dead in the chair. He would recover. I had absorbed him; I had absorbed five of them. Devoured them. Stripped them of mind and heart, memory and emotion; stripped them of all power of thought or action, except

brute mechanical response of their flesh to my telepathically-projected commands. Their minds are mine, and now I am infused with flesh strength and vigor. The last was an extremely fine specimen.

It will be no problem finding a place for him. He will be a useful addition to the castle guard—though he has become, of course, no more than a shell, containing a certain primitive residual intelligence but no volition. I have only to formulate in my mind the specific acts I require of him for him to execute them precisely, at exactly the desired time.

The knowledge gained in this manner is extremely helpful toward understanding—especially in the early stages. But aside from that, the process is necessary.

We require it; with us it is an axiom of survival. We live on intelligence. We must, with our expanding population, continually seek new worlds populated with intelligent creatures upon whose intelligence we can feed.

And now the clock reads a quarter past ten. It is very late, and I must start the day's work; there is much I have to do, and the day of our coming will be soon. There are many of them I must see. Some have been waiting since early morning, and perhaps they have been wondering what has caused this unaccustomed delay. There are plans to be drawn, reforms to be instituted so that the selected breeding stock will be ready to function immediately. There are many things to be put into readiness. We are efficient, and essentially humane; when we take over—here as elsewhere—we aim to do so with a minimum of friction and disturbance.

And now I must finish washing the blood off my hands and go down among them and attend to these pressing matters.

But first I must find myself a new bodyguard.

He will be, I have told my people, the last.

★

Hindsight

(*continued from page 37*)

point that many potential customers for the magazines were repelled by the "bad cover" effect of stupid films and TV shows, labelled science fiction. I am not so ready to assume, as he seems to, that these thousands would have become readers had they been introduced to science fiction by movies on the intellectual and artistic level of "The Day The Earth Stood Still". It is quite possible that the more juvenile science fiction magazines acquired readers from viewers of "The Thing", and lost potential readers who didn't care for "The Day The Earth Stood Still"; it is also possible that a sizable fraction of viewers of the latter thereafter tried some of the better science fiction magazines, and didn't like them.

However, here's another possibility: it may be that thousands who *might* have become magazine readers on the basis of seeing just one or two films (any one or two) found that science fiction via the movies, TV shows, etc., both interested and satisfied them. They felt no urge to go looking for still more, via the printed word —another instance of the supply being greater than the demand.

What kind of foresight can this hindsight give us? Actually, not very much, so far as the prevention of another boom-bust goes; but it may prevent a lot of false hopes, and that is no small matter. The author who refuses to compromise his standards for a large and fast check is rightly to be applauded, but we cannot justly condemn the author who acquiesces through need, however we may condemn the product. What might be averted, however, is collaboration with Mammon in the illusion of doing good. That—and that alone, I think—is the one valuable lesson to be learned from the sorrowful events of the past few years. In producing science fiction, as in politics, the end does *not* justify the means, where the means corrupt and falsify the end.

RWL

Inside Science Fiction

[*continued from page 69*]

the magazines being published today. Send a postcard for a copy: you'll like it!

YANDRO (5¢ a copy, or 12 for 50¢, from Robert and Juanita Coulson, 407 1/2 E. 6th Street, North Manchester, Indiana.) We personally think our man and wife editing team are out of their minds for selling this magazine for a nickel: it cost almost that much to mail it! *Yandro* is now in its 41st issue and is published monthly. Well mimeographed, usually running about twenty large pages, this one can't be passed up if you're looking for a real bargain. *Yandro* likes its material light and whimsical and Bob Tucker contributes to this desire with an article concerning the visit of Bob Bloch, Thomas N. Scortia, and Mr. Tucker himself, to the University of Chicago Science Fiction Club. He makes mention of a speech they wouldn't permit Bob Bloch to deliver. *This* we would like to read. Robert Abernathy's convention speech is reprinted in Russian yet! (Might mention it was also delivered in Russian.) And Jack Daniels (is this Lynn Hickman masquerading under the name of his favorite likker and favorite fanzine?) burlesques the "Coming" departments of the various pro-mags.

But the most humorous piece in the issue wasn't originally intended to be humorous at all. It is a short story, reprinted from the January, 1952 issue of *Field And Stream,* called "A.D. 3051". This fascinating title is followed by an equally fascinating plot and story. It starts off in the following thought-variant manner:

> I said, "Yes, sir," and...turned to my young companion, Three-H-Seventy. He was a tall chap with a pleasing personality...very young, but he had a keen scientific mind, and I knew that he would eventually prove to be a valuable addition to that indispensable unit of which I am proud to be a part.

And later:

> But I digress. Today I had an appointment with destiny (he was going hunting)and I shall set down without elaboration (certainly glad he didn't elaborate) the events which occurred, adhering strictly to the truth, incredible as it may sound.

A little later:

> The inspector made a last entry in his book, snapped it shut, and indicates by cleared. Our system is efficient in all its branches.

What we can't figure is the reason for the original presentation of the story in *Field And Stream.* Were they burlesquing s-f or was this a seriously presented story? The editor of *Yandro* makes no comment.

Send all fanzines for review to Robert A. Madle, 1620 Anderson Street, Charlotte 5, North Carolina.

★

A Department of Letters and Comment

CONTEST SUGGESTION

Dear Editor:

It was something of a surprise to read the results of the prize contest and learn that only one person guessed the identity of "Quien Sabe", and that person not a well-known fan, either. I'd have thought for sure that oldtimers like Madle, Moskowitz, Warner or Blish would have spotted it. Or were they ruled out, as being professionals?

Well, anyway, even though I was completely baffled I'll have to agree that it was fair and square, and you did give clues enough in the questions. Of course—the best known story would have to have been made into a movie; otherwise "best known" would just have been a matter of preference on the contestant's part.

Why not run a "fundamental error" contest next time, after the manner of "Know Your West"? Have a story written, which contains one concealed basic error in science, as the "Know Your West" stories have one glaring error of fact. The answer should be essentially simple, something that almost any educated person really knows, even if he's forgotten it—in any event, it shouldn't be something that only an expert could spot. Then misdirect the victims with stuff that looks wrong, but isn't. Set the rules up so that everybody who spots the correct error can win something, if only a free issue; but award the money prizes to, say, the best prognistications of what really would have resulted due to the error.

Obviously, though, the "fundamental error" can't be some kind of fantasy which is more or less accepted as permissible in science fiction—that is, most everyone knows that time travel and invisibility are impossible, so far as technical knowledge and basic principles known to the present date (May, 1956) are concerned. Of course, no one can be positive what may be discovered next month.

(I mentioned invisibility as impossible,

because most everyone should know it's impossible now, after reading that delightful article by Dr. Macklin. What's the "Two-Way Stretch" about, I wonder—time travel? Hmm, I'll be looking for the November SFQ and now I do wish you were a monthly.)

A real good issue, this August one, even if no one story was up to the level of Robert Randall's "No Future In This". Randall Garrett, by the way, had better keep an eye on this Sherman person, and put a lock on his cellar door—seeing as how the thunder was stolen from the garrett. I'll bet Damon Knight was laughing through his tears, if he *was* laughing, as the blurb for the parody says.

EUGENE ASHLEY, Pittsburgh, Pa.

I like the idea, but it's up to the rest of you readers to make your wishes known. All suggestions for contests are welcome.

PAPER PRAISE

Dear Mr. Lowndes:

I picked up the May *Science Fiction Quarterly*, the other day, and I must say I was quite pleased with it. The new, slick paper lends an air of quality to the magazine that it didn't have before; and combined with the handsome masthead it presents a very desirable appearance now. Your magazines have certainly come a long way since the days of the thick, coarse paper that shed little fragments all over one's lap. It took me a long time to conquer my revulsion for the physical appearance of the mags, but I'm very happy now that the edges are trimmed and the new paper makes it easier to read the print and see the illustrations.

Whoever Robert Randall is, his novelet was a fine one. How'd it ever escape from Campbell? Father Riley was an interesting and believable character, and I wonder if there's any chance we can see more of him. I would like to know what it was the machine tells him when he goes downstairs!

I see, by checking Madle's column, that "Robert Randall" is a penname for Randall Garrett and Bob Silverberg. I thought the story was too good to be by a complete newcomer! Keep both these boys busy; singly or in collaboration, they know their stuff. Garrett's parodies are outrageously funny, by the way, and ought to be reprinted in a single volume by someone.

The only complaint I have is about the ads. By my count 13½ pages of the May issue was given up to advertisements—13.5% of the mag. Since your other two titles don't use ads, except for a couple of fillers here and there, why must so much space in the *Quarterly* be given to them?

THOMAS GORDON, New York, N. Y.

SCIENCE FICTION QUARTERLY is one of a chain of magazines (the others are westerns, detectives, love, sports, and western romance) known as the Double Action Group. Advertisements which appear in one, nearly always appear in all, as they are purchased in blocks for each month's list.

The ads which appear in this issue of SFQ *also appear in* Western Action, Action Packed Western, Ideal Love Stories, Smashing Detective Stories, *and* Real Western Romances; *and some advertisers will purchase a particular space for six months or a full year.*

The editor has no connection whatsoever with the paid advertising which appears in the magazines, nor can he delete any paid ads from any issue of the magazines. The "house ads"—ads for other magazines we publish—are editorially written, and they are used to fill space at the end of stories. You probably have noticed that, as a rule, only ads for our other science fiction titles, Science Fiction Stories, *and* Future Science Fiction, *appear in* Science Fiction Quarterly *—although we may call your attention, now and then, to a story in one of the detective magazines by a science fiction author—as with Eric Frank Russell's short novel, "Run, Little Men!", in* Famous Detective Stories.

Tell you what, Tom—if you and your friends can go out and round up ten thousand or so new readers, who will all request the withdrawal of SFQ from the Double Action Group as they enclose two or three year subscriptions, I'll see if something can be done. Fair enough?

NEW YORK FANS: READ FINAL PARAGRAPH

Dear RWL:

The May issue of *Science Fiction Quarterly* was undoubtably the best issue of any s-f mag in 1956, so far. The stories were all tops and the cover was one of Emsh's best in '56. Here are my individual story ratings: (1) "No Future In This"—excellent; Silverberg and Garrett are a wonderful writing team. (2) "The Big Hush"—a fine piece of work, better than Cox's usual type of story. (3) "One Of Them?"—why couldn't it have been longer? Why? (4) "The Man Who Left Paradise"—a real piece of humor. (5) "The Munk Hour"—let's have more of Basil Wells. (6) "The Piece Thing"—a good story, but there are too many stories like this.

"Inside Science-Fiction" was interesting, even though I already knew most of the news. I missed Damon Knight. I don't seem to enjoy de Camp's book reviews. Richard Wilson's poem "Oh, you UFO" was a riot.

Oh, yes—give the illos (or aren't you giving illos out any more?) to (1) Harmon (2) Coulson and (3) Curtis.

Now I think I'll rate Future Number 29. "Vulcan's Hammer" was the best in the issue; in fact it was the best story I have read in months. This was a story that should appeal to both the fan who likes the action story, and the fan who likes the sociological type of story. But I think the action was a bit overworked. Next was "Code In The Head." "One Man's Inch" was wonderful; I even showed it to my math teacher. I didn't care for "Impractical Joke"; I find that I don't care for de Camp's work any more at all.

I enjoyed the editorial "Forces and Men" muchly, also "Parodies Tossed".

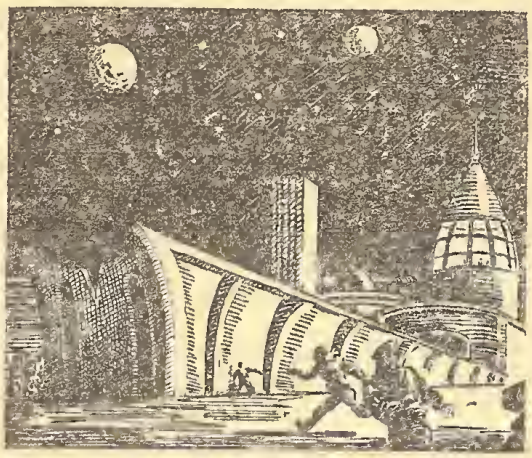
I am looking forward to the next issue of *Science Fiction Quarterly;* hope it will be as good as the May issue.

Lenny Brown and I would greatly appreciate it if the following announcement could be printed in the letter column of your magazine:

All New York City teen-age fans are cordially invited to join a new sf club. Interested people should call me at Cy-3-0739 or Lenny Brown at In-7-1740.

MARTY FLEISCHMAN, 1247 *Grant Avenue, Bronx* 56, *N.Y.*

One would think that a city the size of New York would have one large science fiction club in each borough, at least. Strangely, this has never been the case; so the formation of a new club is far from superfluous, it would seem.



RANDALL SUPERB

Dear Mr. Lowndes:

Although I am just in High School, I feel that I am in every sense a true science fiction fan. I've been reading science fiction for four years, and out of all four years, there is one novel I'll never forget —"The Lights In The Sky Are Stars", by Fred Brown.

This fall, I began reading science fiction magazines. Before then, I paid no attention to them. But I bought the November *Science Fiction Quarterly,* and it convinced me that magazines were for me.

Here's how I rate May's stories: (1) "No Future In This", (2) "One Of Them?", (3) "The Big Hush", (4) "The Munk Hour," (5) "The Man Who Left Paradise" and "The Piece Thing". I selected "No Future In This" because I have never read a story quite like this; the plot may have been used before, but the way it was carried out was superb.

I think that the letter column is a big help to your magazine. "The Editor's Page" and the Book Reviews were great. However, I thought that "Inside Science Fiction" was below average.

Just as I'm writing this letter, I'm glaring at the new issue of *Future Science Fiction.* It looks fine, as all of your magazines do.

ED GORMAN, Cedar Rapids, Iowa

And there's no reason why you shouldn't consider yourself a true fan; my start as a steady reader of science fiction coincided with my freshman year of High School; I managed to wrangle a subscription to Science Wonder Stories *for Christmas, 1929; and I was talking like a fan by the time I was a sophomore, in the fall of* 1930.

PUZZLED

Dear Mr. Lowndes:

While leafing through my copy of *Science Fiction Quarterly* for May, 1956, I came upon a mention of Crossen's anthology "Future Tense". This book was referred to as having had a "small sale". I cannot understand it, for I have read it; and to my mind it was a very good group of stories.

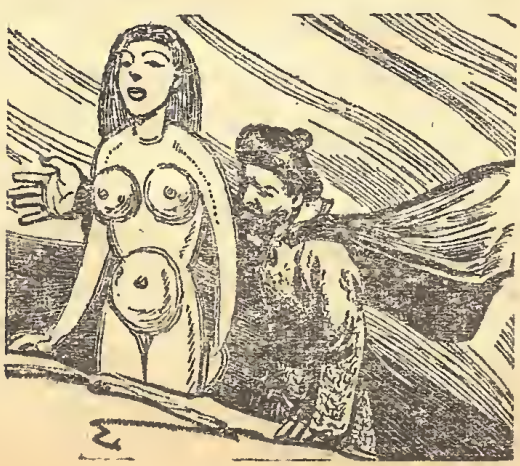
You seem to be able to procure publishing rights to these stories, and I wonder if you could reprint Crossen's own story from this book, the one about the DDE&No agency.

Here are the stories from the May issue, as I rate them: 1. The Piece Thing, 2. The Munk Hour, 3. The Big Hush, 4. One of Them?, 5. The Man Who Left Paradise, 6. No Future in This.

I totally agree with you in your attitude about the labelling stories as "Novel", and "Short Story". Most so-called "Book Length Novels" would hardly fill one-half of a book containing a novel orginally published in hard covers.

Keep up the good work!

G. WARREN McKENNA, Arlington, Mass



Twenty-five years ago, a "short story" was any length from 7,000 *to* 15,000 *words; a "short novelet" was* 20,000 *words; "novelets" ran from* 30,000 *to* 40,000 *words; and nothing under* 60,000 *words would be labelled a "novel"—the customary length was* 75,000 *to* 90,000 *words, in the magazines. Stories between* 3,000 *and* 6,000 *words were often referred to as "short-shorts", as I learned from the practice of authors who were "names" in western, detective, and sports magazines of the* '20s *and* '30s.

Now the definitions have become so loose as to be nearly meaningless; this was illustrated rather strikingly when John Steinbeck's "The Moon Is Down", 20,000 *words, was published in hard covers as a "novel"! ...But, though it's a losing game, much like trying to resist establish "corruptions" of word and phrase usage (I wince whenever I see "like" for "as", "such as", or "as if": "Winstons taste good like a cigaret should!", "He felt like the Marines were landing inside his head".) I can't resist the urge to tell the tides to stop.*

Hmmm, I showed this paragraph to a purist, and observed an expression of deep pain on his face. He looked at me and said, "'Much like trying...?' You mean, 'alike unto trying...', I presume."

PURPOSES SERVED

Dear Mr. Lowndes:

Kenn Curtis, in the last issue of *Science Fiction Quarterly,* strikes me as an idiot because I don't like his ideas of letter-writing. Casting castigations on letter columns is all right; but when he starts to get down to issues he's treading on people's toes—which isn't as crusading as it seems—and not just yelling about the basic good of these things, i.e., entertainment and all that rot.

Assuming letter columns aren't any good, he ought to get around to saying why, and then go dig a six by three by six hole, something with southern exposure, deep.

I think Parmenides proferred rather nervously the idea that there is no such thing as change or progress. Well the law of averages says there must be a lot of people like Curtis around, and maybe Parmenides wasn't a nut.

That crack about the "Campbell-type" column got me. Thank God I haven't been sick, or I wouldn't be around to right this. The Campbell letters serve a purpose, literarily as well as profundantly, e. g., the present ideas on highway suiciders. And they are not *redundant.*

This is five paragraphs to say two ideas, with a maximum redundancy, so I'll stop.

DON DIXON, New Britain, Conn.

Generally speaking, a writer can deduce what kind of stories an editor wants by reading a few issues of the magazine; this doesn't necessarily follow with respect to letter departments in science fiction magazines. The kind of letters I would like to publish in this department, and in Science Fiction Stories, *and* Future Science Fiction, *are what you might describe as the "thoughtful" kind—that is, letters which discuss various aspects of science fiction; science in relation to stories in my magazines in particular; praise or censure which includes considered reasons for the same, etc. But were I to hold out for just the kind of letters I wanted, then the letter department would be very skimpy, and would be omitted entirely, now and then. And the result of this would not, unfortunately, to encourage readers and fans to write the kind of letters I most want to see; it would merely lead them to the conclusion that the letter department was being dropped.*

So, it's a case of tolerating an evil in the hope thus avoiding a greater one. However, I do draw the line at the "Sergeant Saturn" kind of correspondence corner.

WHICH HAD CHANGED?

Dear Mr. Lowndes:

You wouldn't be any relative of that gal who writes detective stories, like that one about Jack-the-Ripper, would you? No matter, forget it, I was just trying to be smart—but it would be interesting if you were. Don't ask me why. Sort of uncommon name, though. You don't see it around too much though I recollect that a Lowndes

[*Turn To Page* 88]

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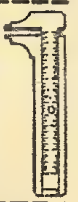

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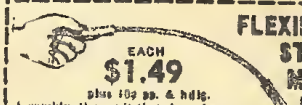

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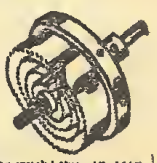

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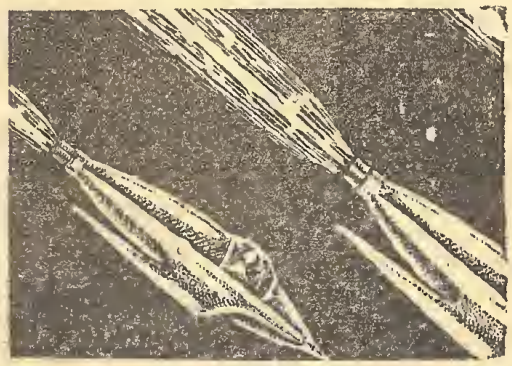
Square or something like that popped up in relation to the recent affair—nope, that ain't the word because you can be sure that there wasn't anything improper going on between Capt. Townsend and the Princess.

Sort of lost track of what I was going to say, didn't I. Well, you see I used to read the science fiction magazines years back, and last winter I found a copy of one of them lying on a bench in the bus depot. So I read it, and it wasn't too bad, and the next month I went looking for it on the newsstands. Nope, I won't tell you which one it was. I don't cotton to boosting one man by way of knocking another, and wouldn't mention it at all except that this sort of leads into the point I want to make if I can last long enough at this blamed typewriter.



Like I was saying, I read this magazine for awhile and the stories weren't bad at all. The authors they have know how to write and how to tell an interesting yarn. But something seemed to be missing, and after a while I decided that the trouble was with me. After all, I was twenty-six years younger back in 1931, and everyone's taste and outlook changes. I figured that it was just that I'd changed, which was why science fiction didn't have the kick now that it uster have. So last month when the new issue of this magazine came out, I sort of looked at it and then shook my head.

Well, later in the week, over comes my nephew one evening, and he has a magazine with him called *Scienc Fiction Quarterly*. Says he saw it on a newsstand near where he lives and figured I might like it since he knew I read the stuff. So I thanked him polite enough but all the time thinking that he wasn't going about volunteering to take the burden of mycoiii his scrawny shoulders when I kick off very subtly. Glanced at the cover—a woman on

[*turn to page* 90]

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it. Hell, there's one trouble right there; back in the days I read science fiction, they didn't spread women all over the covers. Not that I object to females, shucks no, couldn't ever get away with telling a lie like that. But if I want to look at gals, I'll just get me one of these sunbathing magazines and not science fiction. True, the sunbathing magazines don't have any stories in them, but who wants stories—you can make up your own.

Hold your hosses now, because I ain't knocking you, after all. Surprise, huh? Well, I sort of was myself, because when I took a real close look, I could see this wasn't just a pinuplike gal, like you see on the covers of some of the other science fiction magazines and usually without any connection to any story inside. Nope, this was a real handsome woman, and the whole effect was to make me wonder about the story this referred to rather than think how nice it would be to have the gal right handy.

Well, before this gets to the length that it'd have to be run as a novel, let me tell you that once I started reading your stories I found out that it wasn't me that had changed, after all. Nope—this other magazine just didn't believe in the kind of stories that I learned was science fiction. Nothing to make you think or calculate a bit when you finished a story. This magazine of yours is the kind I was brought up on, even if the scientific explanations ain't so long or so frequent as they uster be and you don't have a list of questions on science referring back to the stories for the answers.

Got a real kick out of those two "features", too—and that's saying something, Mr. Editor, because the authors were mostly talking about stories I never read.

[*turn to page* 92]

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SCIENCE FICTION QUARTERLY

That poem—I mean verse, like you explained in the editorial—gave me a real chuckle and I'll bet it was even funnier to people who have read the book.

So maybe I'll leave that nephew of mine my millions after all, if I get around to piling up any, that is.

LESTER NILES, Austin, Maine

Yes, the name "Lowndes" isn't too common, although you'll find Lowndes counties in Alabama and Mississippi. It seems to exist in variant spellings, too, such as "Loundes", "L o w n e s", and possibly "Lown"—though I'm far from certain about the latter.

MACKLIN APPRECIATED

Dear Dr. Macklin:

My attention was arrested by your article in *Science Fiction Quarterly* for August, both because of your kind mention of my own story, and because of the excellent manner in which you took falls out of some of my favorite bugbears. "The Stolen Minute," for example, is one of the most annoying stories I ever read, and for the reasons you mention.

I would like to comment on your remarks on the other practicable method of "invisibility"—hypnotism. While I believe what you say is generally true—that it is quite a job to put even one individual under a spell that deep—there is reason to think that in some quarters all that is developed much farther. For instance, I have a friend, American born but raised in India, who has actually seen the elusive "rope trick," not once but several times. He has also photogaphed it—and found nothing on the film but the magician and his boy assistant sitting placidly in the middle of the circle. This seems to be a hypnotic phenomenon, or something allied to it, in which a large

crowd sees something that isn't there. The mass effect is unusual from the Occidental viewpoint, but even more so the fact that a man like my friend, who was certain that what he saw wasn't actually there, still kept on seeing it. I believe that in the ordinary hypnotic phenomenon the victim essentially has to be thoroughly convinced that what he sees is real. The lack of individual personal approach is also very interesting.

That the rope trick is a mass hypnosis or mass hallucination of some kind seems borne out by information from various directions. (Of course it has to be that or just a lie; and I am as sure as one can be on a matter of judging character, that my friend was telling the truth as to what he saw—or didn't see.) There may be some kind of clue—I wouldn't know what—in the fact that he had lived in India so long that the Indian atmosphere was more part of his makeup than the Occidental. Apparently the usual Oriental traveler just doesn't get to see that trick. All the reports I have ever had of its being seen by foreigners were of foreigners who had been there a long time and had assimilated the native social atmosphere.

I could suggest a new item for you: "The Shrinking Man." This could have made an excellent story especially because of its psychological elements. But the author forgot, or never knew, about the weight-area ratio. When the hero, or victim, gets down to half-inch size, a half-inch wall is still a six-foot barrier to him, and a table a monumental mountain almost impossible to reach. But as his weight will actually decrease in inverse ratio to the cube of height while his muscular cross-section only decreases inversely to the square of height, at that size he would actually have the agility of a flea to surmount obstacles and dodge dangers, and would live a very carefree life in that respect, while he is actually portrayed as dragging out a living death of incredible hardships in which he suffers all the disabilities of reduced size and none of the advantages.

Reverting to your main theme—sometimes I think there should be a prequalification examination system for S F writers in the

[*turn page*]

matter of competence on scientific principles —maybe for editors, too.

VICTOR ENDERSBY, Lafayette, Calif.

Dear Mr. Endersby:

I have also heard, from fairly reliable sources, that mass hypnotism is possible, although I have never experienced it myself. (Although, come to think of it, would I know it if I had?) But there is one thing which, it seems to me, distinguishes this phenomenon from ordinary hypnosis.

Ordinary hypnosis—the kind described in reputable scientific literature—requires a preliminary period, during which the subject must co-operate with—or at least not resist—the commands of the hypnotist. The subject is then given simple, easy-to-obey commands which lead to further suceptibility.

For instance, the subject can be told, on the first attempt, that he will be easier to hypnotize next time. This process can be repeated until the subject will go into a trance when the hypnotist makes a single gesture—as Mandrake does in the comics.

Mass—or "extraordinary" —h y p n o s i s skips the preliminary stages. Bingo! You're out! You are now ready to obey commands to see, hear, feel, and even remember, only what you're told.

But—and here is the extraordinary thing —*why was your friend able to operate the camera?* Why would a *fakir* so expert at this hypnotic ability permit his subject to expose him by such a simple thing as taking a picture?

Perhaps one might say that the *fakir* didn't know what a camera was, but that doesn't hold water. The way I heard the story, the Rope Trick was done by an Anglo-Indian who spoke perfect English and dressed in Western garb except for the traditional turban. And I don't think the man who told me the story was a liar, either.

And another thing: Why is it always the Rope Trick? Is mass hypnotism limited entirely to that particular phenomenon? And can it only be performed in India?

I think that if you'll take a good look at the ways in which so-called "mass hypnotism" differs from the conventional kind, you'll discover more than if you just look at the ways in which they are alike.

[*turn to page 96*]

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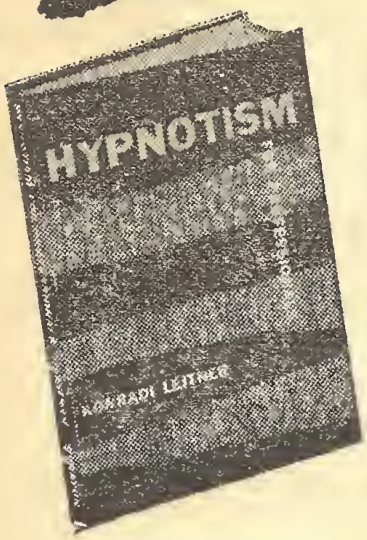

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SCIENCE FICTION QUARTERLY

Speaking of mental phenomena, the article which appears in this issue was written a full month before I got your letter.

Do you have anything to predict about the next article?

RICHARD H. MACKLIN, PH.D.

IN MEMORIAM

Dear Readers:

As this issue goes to press, we are saddened to hear of the passing of Fletcher Pratt, at the tender age of 59. To those of us who, like your editor, approach the completion of their second score of years, 59 no longer seems like a time when a man is old—as 40 seems to a teen-ager—but rather a time when one fondly imagines that one will at last have become an adult. And we "veteran" science-fictionists—for all the fact that many of the marvels we looked forward to, when we first became addicted to the literature, have turned out to be more nightmare than dream—hope that the medical arts will discover some form of extended mortality, along with a kind of rejuvenation, in our time. We no longer aspire to be on the *first* rocket to the Moon, but would like to be able to make the trip after it's become safe.

To the world of literature outside of fantasy and science fiction, Fletcher Pratt was known as a historian, biographer, and expert in military and naval subjects, and many others. Lovers of fine detective fiction may have known him as a member of a different fan group—such clubs as the Baker Street Irregulars, and other organizations rooted in the canons and apocrypha of the mighty and revered Sherlock Holmes.

We encountered him first in the Gernsback *Amazing Stories,* he being one of the first to sell new stories to that magazine.

[*turn to page* 98]

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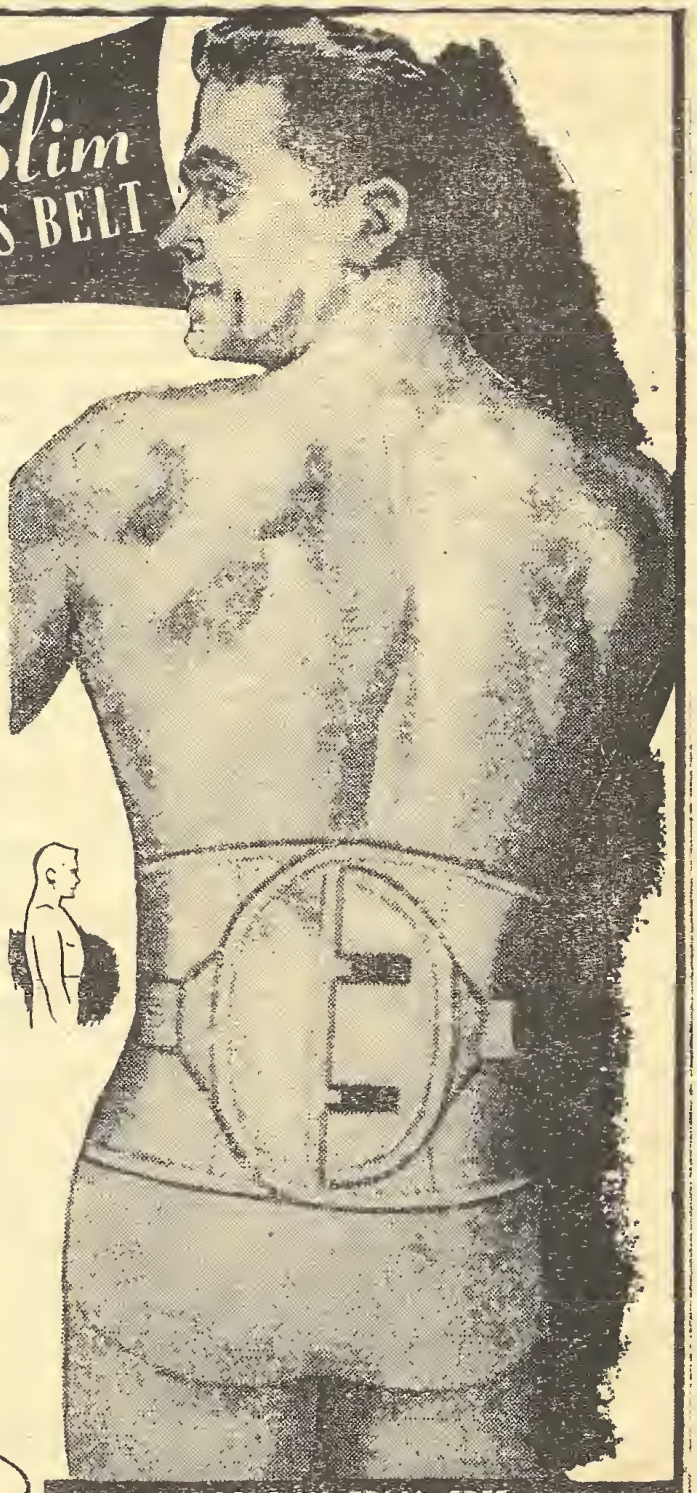

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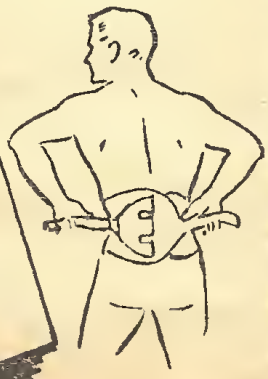

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The issue of May, 1928, bore a cover illustrating "The Octopus Cycle", by Irving Lester and Fletcher Pratt.

In 1929, when Hugo Gernsback started his second venture into science fiction, inaugurating *Science Wonder Stories,* the initial number opened up with a two-part serial by Lester and Pratt—a future war story entitled, "The Reign of The Ray". The following year saw a collaboration with one of the finest writers of that period, Laurence Manning. The cover of the May 1930 issue— the final one to bear the magazine's original title—illustrated Manning and Pratt's memorable "City of the Living Dead", one of the earliest and best stories written about "dream machines".

His first story to appear under his sole aegis was a short tale entitled, "The Mad Destroyer", in the Spring 1930 of *Science Wonder Quarterly;* his first science fiction novel, written alone, was "The Onslaught From Rigel", which appeared in the Winter 1932 issue of *Wonder Stories Quarterly.* At the same time, the Winter 1932 issue of *Amazing Stories Quarterly* presented "A Voice Across the Years", in collaboration with I. M. Stephens. It was not until many years later, after I had the good fortune of personal acquaintance with Fletcher, that I learned that "I. M. Stephens" was Fletcher's lovely wife, Inga Stephens Pratt, who illustrated some of his books—most notably, "Tales From Gavagan's Bar".

During the 30's, Hugo Gernsback presented translations of a number of German and French science fiction novels and short stories in his magazines. Some of the best of these appeared in Fletcher's translations —notably, Friedrich Freska's "Druso" (*Wonder Stories,* May-June-July 1934), Otfried von Hanstein's "The Hidden Colony" (*Wonder Stories,* January-February-March, 1935), from the German; and S. S. Held's "The Death of Iron" (*Wonder Stories,* September-October-November-December 1932), from the French.

In later years, he disparaged the early works. "Those were *bad* stories", he would say. Unquestionably his skill in writing and story construction improved with practice, and it is easy enough to understand an author's embarrassment when confronted with early efforts. Yet, I have always felt that there is no ground for shame about one's early stories if they were honest efforts—if, whatever their shortcomings, they were the best one could do at the time—particularly when they brought considerable enjoyment and food for thought to the readers of the time, as Fletcher's stories always did.

He disappeared from science fiction magazines (except for the translations) after 1932, and we did not see him again until John W. Campbell's *Unknown* presented the first collaboration with L. Sprague de Camp, "The Roaring Trumpet", in the May 1940 issue. This was the start of a fruitful collaborating team, whose work reached their high point—from the viewpoint of many fans—with the inauguration of the "Gavagan's Bar" series in the Winter-Spring 1950 issue of *Magazine of Fantasy and Science Fiction.*

Fletcher returned to science fiction with "The Seed From Space", which appeared in the May 1951 issue of *Startling Stories.* That same year, Twayne Publishers presented his first anthology, "World of Wonder", one of the best collections of fantasy and science fiction. In 1952, came the second—a collection of three novels on witchcraft, entitled "Witches Three" —and what was intended as a series of volumes, each containing three short novels by three different authors, all built around the same scientific basis. Unfortunately, only the first book appeared: "The Petrified Planet". *Astounding Science Fiction* serialized two of the novels intended for the second volume.

Reginald Bretnor's "Modern Science Fiction" (Coward-McCann, 1953) included the article, "A Critique of Science Fiction", which made us regret that the market did not justify Fletcher's writing an entire volume on the subject.

The photograph accompanying the fine writeup in the June 11, 1956 issue of the *New York Times,* while a dignified likeness, gives little hint of his Rabelaisian humor, which crept into such works as "Ordeal By Fire", his one-volume history of the Civil War—regarded by other experts as among the top rank in its category and demonstrated by its sales to have been fine reading.

Surely it can be said of him: *"To have gathered from the air a live tradition/ or from a fine old eye, the unconquered flame/ This is not vanity."*

ROBERT W. LOWNDES Suffern, N. Y.

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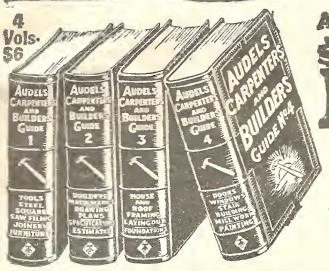

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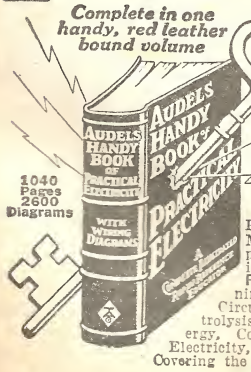

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