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MURRAY LEINSTER'S **NEW NOVEL:** KILLER SHIP

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#### About the Authors—

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Murray Leinster, Dean of Science Fiction and Hugo-winner, is famous for many top science-fiction stories like "First Contact" and "Exploration Team."

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# A First In Science Fiction Since 1926 A MOZINE October, 1965 Vol. 40, No. 2

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#### **EDITORIAL**

WHAT does it take to become "dean of science fiction" in a field so demanding that out of the many highly competent writers in our day (from Rex Stout to Saul Bellow) only a few ever even think of trying to meet its very specialized requirements? For one thing, of course, you'd have to be a pretty good storyteller-because that's why most of us read fiction in the first place. We want a story so good that we can't put it down, not graphic case histories or political crusading thinly disguised as fiction. For another thing, basic this time, you'd need a very special kind of curiosity about almost everythingfrom the use of electronic computers to forecast election results to the orbital velocities of the moons of Mars-but that curiosity should be too lively to stay comfortable with things as they are. It should be ready to shoot off into the speculations that facts can lead to when imagination gets to work on them.

But many non-science-fiction writers are interested in a lot of things—that's why they're writers—and most non-fiction writers are obviously absorbed by the world of fact. Then what's so unique about the science-fiction way of thinking? Just this: For

some reason fact alone is just not enough for a science-fiction writer, and instead of trying to learn more about a subject, instead of doing some original research (as a scientist would), he tends to go in the other direction. He begins wondering about new facts (usually related to science) that we don't know about vet, some of which have an impressive way of coming truelike tranquilizers, atom bombs, orbiting satellites-all first imagined in the pages of a sciencefiction story, all now factual.

But while the science-fiction writer does engage in a certain amount of extrapolating—of controlled "guessing"—if he's good, he doesn't let it get out of hand; he doesn't forget to subordinate his ideas to a really entertaining story that develops naturally out of his speculations. Otherwise he'd be better off writing a straight fact article, and from time to time some of our writers do just that.

That's what it takes just to be a science-fiction writer, but—getting back to the original question—how would you get to be dean in this difficult field? Well, if you're Murray Leinster, you start out early by writing "The Runaway Skyscraper," a

Continued on page 146



Secrets entrusted to a few

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THERE are some things that cannot be generally told - things you ought to know. Great truths are dangerous to some-but factors for personal power and accomplishment in the hands of those who understand them. Behind the tales of the miracles and mysteries of the ancients, lie centuries of their secret probing into nature's lawstheir amazing discoveries of the hidden processes of man's mind, and the mastery of life's problems. Once shrouded in mystery to avoid their destruction by mass fear and ignorance, these facts remain a useful heritage for the thousands of men and women who privately use them in their homes today.

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#### First of Two Parts

A long new story by the Dean of Science Fiction (author of "First Contact," The Forgotten Planet, and the Med-Ship series), in which Murray Leinster shows how he earned that well-deserved title. This time he takes us to the far future and the deep spaces between the stars, to a time when shrewd captains like Trent of the Yarrow try to get their huge spaceships—which never see or hear one another—to ports light-years apart. That's bad enough—but somehow they also have to slip past sleek killer ships that disable you merely by coming in close and firing old-fashioned cannon loaded with solid shot!

### KILLER SHIP

#### By MURRAY LEINSTER

Illustrated by NODEL

TE came of a long line of ship-1 captains, which probably explains the whole matter. His grandfather was the Captain Trent who found the hole in the Coalsack, that monstrous dustcloud between Syrtis and the whole Galliene region, and thereby cut months from the time formerly needed to go around the Coalsack to the new colonies bevond it. A great-great-greatgrandfather was the Captain Trent who charted the interstellar meteoric streams in the Enid group of suns, whereby no less than eight highly desirable planets became available for human occupation, and one was named after him.

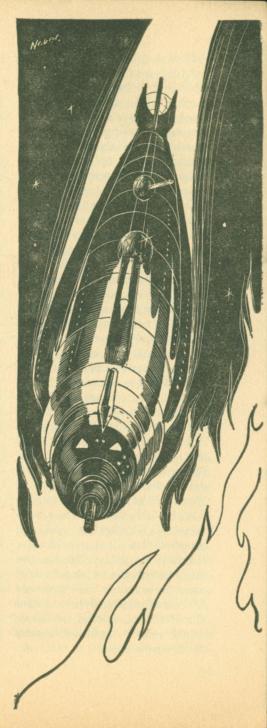
Farther back still, a manymore-times-great-grandfather commanded the second colonyship to reach Delva. When he landed, he found the first arrivals hysterical with terror and demanding to be taken off and carried home-which couldn't be done with his ship already loaded to capacity. But that Captain Trent went into the jungles with eight spacemen and found out the activity-cycle of the giant saurians who'd appeared to make the colony impossible. Now there was a game-refuge for those beasts. carefully watched lest an interesting species be wiped out by hide-hunters.

There were other Captain

Trents, all the way back to one who skippered a trading-ship in the eighteenth century, when ships sailed oceans of water only, and a coasting-voyage from London to Scotland took as long a time as nowadays from Rigel to Punt, and when a sailing-ship took as long to reach the Azores as is now required for the sixty-light-year journey from Deneb to Kildare.

But the similarity between such sailing and modern journeying did not end with the time between ports. In those early days. as now, a ship leaving harbor was strictly on its own until it dropped anchor again. There was -as today-no communication between ports except by ship. Hence a cargo in strong demand in a given port last week might be worthless in an overstocked market this, because in the interval one ship or two had come in with the same commodity to offer. So in those days, as now, all shipcaptains were traders. bought wisely and sold shrewdly. depending on a percentage of the voyage's profits for their reward.

Also, then as now, some ships left port and were never heard of again. Some struck reefs and some perished in storms. But other dangers were of human origin, and that Captain Trent of the eighteenth century was not gentle with their originators.



It was said of him that he once sailed into an English port with shot-holes in his sails and patches on his hull and a fished repair to his foremast-and with hanged men swinging at his vardarms. He explained curtly that a pirate had attacked his ship; he couldn't spare hands to guard those who surrendered, so he'd hanged them. At the time he was much admired, but he was forgotten now. Yet a great-great-great and so on grandson of that Captain Trent was captain of the space-merchantman Yarrow and made the most profitable voyage of any ship-captain so far recorded.

It didn't look promising at the outset. The Yarrow was an elderly merchant-ship of a size becoming unprofitable in modern times, but her record was honorable. She was driven by old and dependable Lawlor engines which faithfully thrust her through emptiness at a good speed in normal space, but a good many times faster than light when an overdrive field surrounded her hull. There had never been any trouble with her air, and she'd been surveved in her fortieth year and certified for voyages of any length in the galaxy. But her size was against her. A skipper who could make money with her could be better employed in a larger ship. Only very special conditions would make it profitable to send her to space again.

But those conditions did exist. The owners of the Yarrow explained them to Captain Trent. He listened. They mentioned that space-commerce in the Pleiad group was almost at an end. It was bad enough that a privateer had been commissioned by the government of Loren to force trade with that un-prosperous planet. That was very bad-legal, perhaps, but undesirable. But out-and-out piracy had been practised to such a degree that even the pirates of the Pleiads now complained of the poor state of business. Hence the possibility of good profits and the offer of the ship to Captain Trent.

The owners of the Yarrow explained that magnificent profits could be earned even by a ship of the Yarrow's size in a trading-voyage to the Pleiads if, first, she had a skipper of Captain Trent's ability to handle her, and second, if she was equipped with a defense against pirates that had been developed by one of the space-line's ship-engineers.

Trent observed that he didn't hold with gadgets. He didn't. He seemed reluctant. The owners raised their offer. Fifteen per cent of the voyage's profits instead of ten to the skipper. An absolutely free hand in the choice of ports to be called at. His own selection of cargo to be put on board. His own crew. A guarantee of so much for making the

voyage, whether profitable or not.

These were very unusual concessions. Captain Trent listened, apparently unconvinced. The owners sweated. They explained urgently that the Yarrow was a dead loss while it remained idle. They were anxious to get it out to space. They added as a final lure that they would send Mc-Hinny along to be the ship's engineer and to operate the piratefrustrating device. He was its inventor. He'd be the ideal operator. The Yarrow would be safe from the pirates who had practically stopped trade between the solar systems of the Pleiads. What more did he want? Salvage rights? He could have them too

It was a custom of owners to offer salvage rights when they wanted to convince a skipper of their generosity. Salvage rights amounted to an agreement that if Captain Trent should find an opportunity for salvage, in space or aground, that he could make use of the *Yarrow* for the job, provided only that he paid charter-rate for the use of the ship during salvage operations.

In the history of the space merchant-marine exactly one skipper had benefitted from such a concession, but the *Yarrow*'s owners cited his case with enthusiasm to make it seem that they were granting something extra as a bonus.

Captain Trent smiled politely and, after reflection, accepted the proposal, including salvage rights. The Yarrow's owners clapped him on the back, congratulating him on their generosity. and then feverishly got the Yarrow ready to lift off. In three days the ship was loaded with cargo Trent had approved. The landinggrid lifted her to space. And the owners relaxed, gratefully. Because this was the day before the insurance rates on ships and cargos for the Pleiads were to be raised to twenty-four per cent. The Yarrow's owners had wanted to get her off ground before that rise in premiums. As Trent saw it, if he did make the voyage and got home again, there'd be a good profit for the owners. But if he didn't return, they'd collect fullvalue insurance on the Yarrow and her cargo. He was aware that on the whole they'd prefer the insurance.

It didn't bother him. He came of a long line of ship-captains, and others had accepted similar commands in their time. After all, a voyage to a remote area where at least one privateer admittedly roamed the spaceways wasn't unprecedented. And prices should be high and profits excellent in a sector of space where space-commerce had become so hazardous that pirates themselves had run up against the law of diminishing returns.

Trent checked the Yarrow's position by sighting and identifying the planet Gram. But he didn't go aground there. He went back into overdrive and drove around the Beta Cloud-an isolated space-danger a light-year in extent, the result of a semi-nova outbreak of the sun in its middle -and made his first landing at Dorade. He learned that the situation of piracy and grounding of space-craft still obtained in the Pleiads. Here, thriftily, he made two deals. One was for the sale of some not particularly desirable cargo, and the other was the purchase of small-arms and police equipment manufactured for export to other planets' police departments. It amounted to a swap of this for that. He learned that the state of things in the Pleiads was worse. Most skippers stayed out of the Pleiads altogether. Interstellar trade in general had been cut by ninety per cent among the Pleiad worlds. Some shipowners there had sent their ships far away, with instructions not to return while space-travel was so perilous in their home stellar group. Some had grounded all their ships. The only real communication between inhabited planets of the Pleiads was by small spacecraft not worth a pirate's or a privateer's attention. But there weren't many of them.

Trent judged this to be a prom-

ising state of things. He lifted off from Dorade. On the next leg of his journey he instructed his crewmen in the use of the newly acquired weapons, particularly in the fine art of combat inside a spaceship's compartments, tanks, holds, and other places they'd never imagined as combat areas. They found the instructions fascinating. He informed them of practical but unusual methods by which men in spaceboats could board other spacecraft, using shaped charges against a metal hull to give them entry. These instructions, of course, were to prepare against pirates. The Yarrow's crewmen were charmed. They formed a zestful conviction that Trent planned some highly profitable piracy himself. They learned their novel lessons with enthusiasm and hope.

In such matters, naturally, the ship's engineer McHinny took no part. It is the belief of all operating officers—they used to be called deck officers-that ships' engineers are a special breed and not quite human. Engineers immure themselves in engine-rooms and fly into furies if anybody enters their domain uninvited-and they never invite anybody. They express infinite scorn of all branches of spacemanship practised outside of engine-rooms. Many of them contrive gadgets, which operating spacemen view with distrust. In turn, engineers jealously hug to their own breasts various secrets about their profession, and many of them believe that some day engineers will command all spacecraft in recognition of their superior quality.

McHinny was a member of the tribe. He brought on board not only the device he'd persuaded his owners was a perfect pirate-repellent, but various other boxes, cases, and containers of different sorts containing electronic parts. Nobody else was allowed to see them. They might be parts to make new gadgets with. They might be spare parts for the pirate-frustrator. He was vastly secretive about all of them. Trent shrugged his shoulders when he thought of his engineer.

But he had to submit to an explanation of the defensive weapon mounted in the engine-room. It was a sizeable square box, with cables which went from it to the ship's power bus bars. McHinny had installed it himself. He knew that he and it were parts of the bargain made with Trent. He considered that he was the essential part of that arrangement. After Dorade he demanded attention. And, standing beside the pirate-dissuader in the engineroom, he explained impressively to Trent that an overdrive field was a particular pattern of space-stress which up to a certain strength appeared to do nothing but detect other, similar stresses. But at a certain critical intensity an overdrive generator-coil stretched space around itself. It created a sort of hole, wrapped the hole around the ship it was installed in, and then pulled the hole inside itself. And did Trent know how a pirate ship with empty holds could blow the overdrive-field coil of a loaded merchant ship and so make it help-less?

He waited condescendingly for Trent to confess ignorance. But Trent simply said, "Yes. I know. Go on."

He did know. He had known since he was a child that when ships in overdrive got too close, sooner or later they'd match phases and one would blow out. In a ship-captain's family such information is absorbed unconsciously, like how to tell time by a clock. Trent couldn't remember when he hadn't known everything told him so far.

McHinny was not pleased. Trent was failing to admire him. He explained truculently that this anti-pirate device was a modified overdrive generator itself. But it didn't make a hole around itself and then pull that hole in. It crippled pirates by a new and brilliant process. It stored power in a bank of high-voltage capacitors, taking current from the ship's power bus bars. When another drive threat-

ened to come too close, that stored power could be released as a surge in the multi-megawatt range. In the forty-thousandth of a second it would match phases with the pirate's drive and then blow it out. And the pirate ship would then be helpless until its crew had rewound the blownout equipment. The merchant ship which had disabled it would then go placidly on its way, untroubled, un-looted, and with its crew un-murdered.

McHinny expanded in his own appreciation of himself. He waited for Trent to utter cries of admiration. Trent didn't. He said, "Why doesn't it blow the Yarrow's overdrive?"

McHinney explained, again condescendingly, that an inductive coupling to the Yarrow's overdrive generator ensured that the pirate-trapper gadget would never get into phase with it. To the contrary, it would force the pirate's drive to phase in and blow out.

Trent considered. Then he said practically, "You don't keep that much power in storage. How long does it take to charge up?"

McHinny said largely that it took a few seconds. Well . . . a little over a minute. To be on the safe side, say five minutes.

"Five minutes," repeated Trent. "And you've put two new switches on the control-board. One's to put the gadget on charge, and the other's to fire it. That is, I must first throw the charging switch five minutes before I can use the second."

He reflected upon this disadvantage. McHinny was indignant. He craved admiration. He wasn't getting it. He ushered Trent out of the engine-room. seething. Trent didn't care about the genius that had made the device-he only wanted to know how to use it! McHinny fumed. He decided scornfully that Trent had probably never known that the function of an overdrive coil was to change the constants of space; that in making a hole to pull inside itself, the coil actually provided a new kind of space for the old, primitive, simple Lawlor drive to work in; that the speed of light was changed, as well as the relationship between mass and inertia; hence impossibilities became commonplace and ships travelled at many times lightspeed. It even occurred to Mc-Hinny that Trent might not even know that nothing could pass through an overdrive field but another overdrive field!

In this scorn, McHinny did Trent injustice. But it didn't matter. The Yarrow went on its way. Trent's several-times-greatgrandfather would have kept his crew chipping paint or tightening or slacking off stays to adjust to differences of humidity from day to day. If they were merchant seamen, they already knew how to fight. But Trent exercised his crew with weapons.

They anticipated interesting consequences from their new combat efficiency. They looked at Trent with bright eyes, waiting for him to tell them they were about to capture a space-liner loaded with treasure and with terrified hence docile females. He gave them no such information, but he did keep them busy.

Presently the Yarrow landed on Midway. He went aground, alone. He asked questions. He admitted that he planned to go trading in the Pleiads. Officials on Midway warned him solicitously. Only one ship had left Midway for the Pleiads in months. None at all had come from them. The one ship to risk going in was the Hecla, and she'd lifted off only the day before. Her skipper'd judged from the latest reports of missing ships that the pirates were working on the far side of the Pleiad group. He was making a fullpower dash for Loren. Trent had better not imitate him. But Trent did. He lifted the Yarrow off Midway after only three hours aground. Immediately after she was in space again, he had the small-arms weapons passed out once more.

For four days out of Midway the Yarrow drove steadily, in ev-

erdrive and of course in illimitable isolation. She was surrounded by her overdrive field. Through it no light could pass. nor any message of any kind except one. Every instrument aboard her, made to report on the universe outside, now read zero. It was as if there were no cosmos, no galaxy, no existence beyond the ship's hull-plates. The viewports viewed nothing. The communicators received nothing. The Yarrow was isolated as earlier generations could not have imagined. If there had been no stars, no Milky Way, no light. no solid object and not even atoms of gas outside the Yarrow-if there had been no creation except of the Yarrow, and nothing else had ever been or ever would bein such a case the isolation of the Yarrow would not have been noticeably increased. In overdrive a ship is practically in another and an empty universe-in which nothing ever happens.

But on the fourth ship-day out from Midway one solitary instrument gave a reading. One dialneedle stirred, in the controlroom. One detector-needle moved the minutest possible fraction of an inch. A relay picked up the indication. A light glowed. The spaceman on control room watch notified Trent through the loudspeaker in the captain's cabin.

"Captain, sir, the drive-detector's registering."

"I'll be there immediately," said Trent.

He was. It was less than five vards from his cabin to the control-room, but he hurried. The broad instrument-board faced him as he entered, with all its dials and indicators above the equally broad but less cluttered lower control-panel. Underneath every instrument either a green or an amber light told that each unit of the ship's equipment either operated normally, or was ready to do so when the ship broke out of overdrive. But the light under the overdrive detector shone red.

"No change as yet, sir," said the man on watch.

Trent grunted. He sat down in the pilot's chair. Almost immediately he reversed the *Yarrow*'s drive. It began to cut down her speed from unthinkable overdrive velocity to thousands of miles a minute, then to hundreds, to tens

The detector reported stronger and stronger indications of another overdrive operating within another ship a—now—relatively trivial number of miles away. It would have to be in a ship, of course. And that ship would be informed by a detector in its control-room of the *Yarrow's* existence and proximity.

Trent threw a switch. A panel of signal-analyzing instruments lighted up. He set to work.

There was silence save for that small assortment of noises any ship makes while it is driving. It means that the ship is going somewhere, hence that it will eventually arrive somewhere. A ship in port with all operating devices cut off seems gruesomely dead. Few spacemen will stay aboard-ship in a spaceport. It is too still. The silence is too oppressive. They go aground and will do anything at all rather than loaf on a really silent ship. But there were all sorts of tiny noises assuring that the Yarrow was alive. The air apparatus hummed faintly. The temperature-control made small, unrelated sounds. Somewhere somebody off-watch had a tiny microtape player on, the Aldonian music too soft to be heard unless one listened especially for it.

The signal-analyzer clicked. It had determined the bearing of the other overdrive field. Lighted numerals preserved the information while the analyzers investigated other items. The detected field was very faint. Its bearing was ten-forty to the Yarrow's course. Its own course—

It had no course. If one allowed for the *Yarrow*'s motion, the other ship must be standing still. But this was light-years from Midway, and Midway was still the nearest world. It was not normal for a ship to lie still in space between the stars. Trent

did something more abnormal still. He headed the *Yarrow* toward the overdrive signal-source.

He pushed the all-hands-alert button. Speakers all over the ship emitted the raucous warning of probable emergency. He spoke into a microphone, and the same speakers echoed his words with a peculiar choral effect.

"Load small-arms," he ordered curtly. "Take combat-posts. Rocket-launchers to the air-locks. No launching without orders."

He settled more firmly in the pilot's chair, and the man on watch drew back and began to get out the spacesuits the control-room occupants might need next. Trent continued to watch the dials of the signal-analysis devices. He had only instrumentreadings to go by now, but in all other respects this development in the journey of the Yarrow was like the sighting of a sail when one of his ancestors captained a trading-vessel in the eighteenth century. The report of a reading on the drive-detector was equivalent to a bellowed "Sail ho!" from a sailing brig's crosstrees. Trent's painstaking use of signal-analysis instruments equal to his ancestor's going aloft to use his telescope on a minute speck at the horizon. What might follow could continue to duplicate in utterly changed conditions what had happened in simpler times, in sailing-ship days.

The Yarrow's mate came in. "Spacesuits, sir?" he asked stolidly.

"Better put them on, yes," agreed Trent. He didn't take his eyes from the instruments. The mate gave the order. He put on a spacesuit himself, from the back wall of the control-room.

"Any other orders, sir?"

"Eh? Yes. Make sure the engineer's gadget is set for operation. We might as well try it out. But the engineer's the kind of putterer who'll constantly be trying to improve it. If he's done anything, make him stop and get it ready for use."

"Yes, sir," said the mate.

"You'd better know what's going on," added Trent. "There's an overdrive field out there ahead. It's of detection strength only; it isn't strong enough to affect the ship that's emitting it. But it should mean that our drive has been picked up too. Yet we're headed for it and it hasn't moved. You figure that out!"

Ships in overdrive avoid each other carefully, for self-evident reasons. But the *Yarrow* was driving toward a ship which was not in motion but should have known of the *Yarrow's* approach. Its overdrive field was very weak, so weak that it couldn't possibly do anything but notify itself of the *Yarrow's* presence and approach. But it hadn't moved!

The mate blinked and struggled with the problem.

"Maybe we'd better keep away, sir." he suggested.

Trent finished sealing his own spacesuit. He put on the helmet and opened the face-plate.

"Go see that the engineer's gadget is ready for use," he commanded. "I'll try it first."

The mate went out. Trent shrugged his shoulders. No ship in pirate-infested space should lie still, emitting a weak drive-field which was an invitation to pirates to approach. For a ship to do so suggested that a very specific event was taking place. The mate didn't see it, which was possibly why he was still a mate.

The Yarrow continued to approach the source of a feeble overdrive field, capable at this strength only of operating as a detector of other overdrive fields. But the Yarrow's approach didn't cause it to move, either to avoid the Yarrow or to attack it. Which was also unreasonable. It suggested that the crewmen of the other ship had some enterprise in hand which was too absorbing to let anybody bother about instruments.

Trent's expression was at once formidable and absorbed. The formidable part was much the stronger. His lips were a firm straight line. From his pilot's chair he surveyed the controlboard again. The signal-analysis set-up continued to work, re-observing the data which was all it could report.

The source of the remarkable weak detector-field was a thousand miles away. Five hundred. Two hundred. One. Trent said in a clipped voice: "Engine-room! Is that gadget ready for use?"

The mate's voice replied from a speaker.

"Just a minute, sir. The engineer says he was improving it. But he's getting it back together, sir."

Trent swore, in a level voice. He swung the *Yarrow* a second time in the infinite blackness of overdrive. The other ship was in normal space; it could see the Milky Way and a thousand million stars. The *Yarrow*, approaching it, saw nothing. It was like one of those legendary submarines of the wars on Earth, blind and invisible because it was in overdrive, but it came nearer and nearer to its unseen quarry.

Trent said shortly: "All hands close face-plates. Use air from your suit-tanks. I'm breaking out of overdrive. Engine-room, how about that gadget?"

The mate's voice, troubled: "Another minute, sir! Not more than another minute!"

Trent said in the iciest of voices, "I'm breaking out now. Let me know when to start charging it.—Rocket-launchers, stay ready but wait for orders."

Then he turned the overdrive switch to "Off."

He felt, of course, those acutely unpleasant sensations which always accompany entry into or emergence from the overdrive state. One is acutely dizzy. One is horribly nauseated for the fraction of a second. One has the helpless feeling of falling through a contracting spiral. Then, suddenly, it is all over.

The Yarrow was back in normal space. There were ten thousand thousands of millions of stars. The Milky Way was visible. There was the Coalsack, distorted by the angle from which it was seen. There was the black Horse-head nebula, seen almost from one edge so it didn't resemble a horse's head at all. For the rest—there were stars.

But the nearest-object dial registered something impossibly close. The dead-ahead screen showed what Trent had guessed at. It showed the other ship and why it was still. It even showed why nobody was paying attention to the readings of drive-detector instruments.

Twenty miles away from where the *Yarrow* had just broken out of overdrive, a bulky merchantman lay dead in space. Two miles from it a smaller, lighter ship stood by. Spaceboats from the smaller vessel were pulling toward the larger ship.

The situation was self-explan-

atory. A pirate or a privateer had blown the overdrive of a merchantman, most probably the *Hecla* out of Midway and bound for the Pleiads, for Loren. The merchantman had evidently been crippled so that it could not flee. And as it lay helpless, boats from the pirate ship were now moving to board their victim. And the crewmen of the marauder were too busy watching to notice detector dials.

2.

The emergence of the Yarrow from overdrive would naturally set strident gongs ringing in both the other ships. The space-communicator speaker in the ceiling of the control-room babbled frantically: "Mayday! Mayday! Calling for help! A pirate has blown our overdrive and shelled us! Mayday! Mayday! Hel—"

There was a crashing noise in the speaker. The wail for aid from the merchantman was blotted out and destroyed by a monstrous pure-white noise. I<sup>+</sup> came from the smaller ship. Somebody in the control-room there had been stung to action by the Yarrow's breakout. He'd seen—at last—the visible detector-signal, and as a first emergency reaction he'd turned loose pure noise. It jammed the rest of the distress-call and would have made

coöperation between the *Yarrow* and the *Hecla* impossible, had it been possible in the first place.

The speaker made other noises, originating in the engineroom. Trent swore. He flipped off the communicator from the need to have in-ship reports. The mate's voice came, startlingly clear: "Gadget's ready to charge, sir. The engineer says so. You can charge the gadget."

Ahead where the two strange craft lay, the spaceboats from the smaller one reversed their motion and raced back toward the ship from which they'd come. That vessel continued to transmit a powerful blast of ear-splitting sound, the reception of which Trent had just stopped. The merchantman continued to beg frantically for help.

"Go ahead, sir," repeated the mate from the Yarrow's engineroom. "It's all right to charge."

Trent fumbled for the first of the two new controls on the instrument-board. The first should draw on the drive-circuit for thousands of kilowatts to charge the gadget's power-bank of capacitors. It should continue to draw for minutes. Then a tripping of the second new control should mean the discharge of energy in one blast of power that ought to blow the pirate's drive and leave it helpless and limited to normal-space drive.

This could be done only with

both ships in overdrive. But Trent was confident that he could force the pirate into that quasicosmos and there let the gadget cripple it, forcing it back to normality where it might be dealt with. He had only police-type rockets, to be sure, but there were other means. . . . In any case, at the least and worst he should be able to take off the Hecla's ship's company and carry them to port, and then return with better weapons to finish off the pirate. He should be able to do it before it could rewind its overdrive. It wasn't a satisfying way to fight, of course. It depended on the engineer's gadget rather than on Trent himself. But he was much more concerned with carrying out his purpose than with any special way to do

His fingers found the charging-switch. Thrown, it should begin to charge up. In minutes it would be ready. The pirate could be gotten into overdrive where it would expect to blow the *Yarrow*'s drive. But its own field-generator should flash and arc and perhaps even melt down.

He threw the charging-switch. There was a racking, crashing explosion in the engine-room. The smell of vaporized metal and burnt insulation spread through the *Yarrow*. There was shouting.

The mate came into the control-room. His spacesuit showed signs of having been spattered with exploded bits of wire-insulator.

"That gadget," he said with unbelievable stolidity, "it blew out. It didn't work. It blew when you turned it on."

Trent was too much enraged even to swear. He'd tried the gadget the Yarrow's owners swore by and touted. He'd thrown away the advantage of surprise. Now he was only miles away from an undoubtedly armed pirate which was acutely aware of his presence. It had been a perfect situation for the use of the gadget, but it wasn't a good situation for the Yarrow as things had turned out.

It would have been logical for him to tear his hair in total frustration, and such a reaction would have seemed as useful as any other. But he stared at the spaceboats streaking back toward the pirate ship. It would take them so long to get back and so much longer to get into the spaceboat blisters in which they were carried. Then the pirate could blow the Yarrow's drive if she went into overdrive. The Yarrow couldn't blow the pirate's. Trent could only put up a fight in normal space with the odds on the pirate. The only fact in his favor was that the pirate wouldn't follow him into overdrive until it had its spaceboats back aboard. It was possible for him to maneuver in a fashion peculiarly like a submarine—one of those fabulous weapons of the last wars on Earth—submerging to get out of sight, but only until the pirate's spaceboats were stowed again.

He used that antiquated maneuver. The Yarrow vanished, only to reappear seconds later in normal space once more and very much nearer to the pirate.

By that time the spaceboats were nearly back home. The pirate swung, and there was one of those extraordinarily hurried bursts of smoke which appear when an explosive is set off in emptiness. Vapor appeared and fled madly to nothingness. A shell went hurtling madly to nowhere. The pirate had a gun. The Hecla had said it had been shelled. Trent quickly took the Yarrow into overdrive again. The symptoms of nausea and dizziness and crazy spiral fall were multiplied in their unpleasantness by being repeated after so short an interval.

The time-lapse before return to normal space was very short, only seconds, but the spaceboats were alongside the pirate and the mussel-shell-shaped covers of the lifeboat blisters were already opening to receive them. But the *Yarrow* was only hundreds of yards away, now, and Trent flung it into full-speed-ahead emergency drive.

The Yarrow rushed upon the pirate ship like something infuriated and deadly. It was the most improbable of all possible maneuvers. There were stars on every hand, above and below to boot. There was no solidity for distances no human being had yet been able to comprehend. With all of space in which to maneuver or attempt to flee: with an enemy come from bevond the nearer stars. Trent was attempting the absolutely earliest and most primitive of naval combat tactics. Ramming. And it was partly successful.

The pirate ship let off a panicky shell at the Yarrow. It missed. Before the gun could be fired again the Yarrow was upon it. Steel hull-plates crumpled and tore. The bigger ship plunged into the lesser one, with all its interior ringing from the screech of rent metal—

And the pirate vanished. It had gone into overdrive at the last and ultimate instant, while its bow-plates were actually crumpling. The Yarrow plunged through the emptiness the pirate left behind. It turned and plunged again, and again, and yet again, like something huge and enraged trying to trample or to crush a small and agile foe.

Now there were only two ships left in normal space. One of course was the Yarrow, the oth-

er, the helpless merchantman Hecla. For the moment Trent ignored the other ship. He kept the Yarrow twisting and circling through the emptiness where the pirate had been. He kept the Yarrow's own drive-detector in operation, attempting to locate his enemy. He'd only damaged it in normal space, but if he followed it into overdrive-as things had worked out-it could cripple the Yarrow and then stand off and bombard it until no trace of life remained aboard. Had the men in the pirate's control-room been alert, the pirate would have had adequate warning of the Yarrow's coming. Naturally a ship in normal space could detect an overdrive field by generating the weakest possible field itself, one far too feeble to take it into a pseudo cosmos. Ordinarily ships on opposite courses would not be aware of each other. They'd flash from undetectability ahead to undetectability behind in the thousandth of a second, and no relay could close so rapidly. But here and now the pirate ship staved in overdrive and within detection-range for a considerable time. It might be evaluating the damage the Yarrow's keel had done to it. But Trent listened icily, and heard the whine of its drive grow fainter and fainter until it died away. Then it must be either in normal space-but a very great distance off-or in

overdrive and almost unimaginably distant.

Trent grunted. The pirate could have weakened its field deliberately to give the impression of flight. But the odds were that it had been hurt badly enough to need to get far away and see what could be done about its injuries.

It was an hour and more before Trent turned the Yarrow to the disabled Hecla. He'd turned off the space-phone speaker so he could listen to aboard-ship reports. Now he flipped it on again, and a shaking, agitated voice came to him instantly.

"Please answer! Our hull is punctured by shells, and we've had to put on our spacesuits because our air is going fast. A shell in the engine-room knocked out our Lawlor drive and our overdrive coil is blown! Our situation is desperate! Please answer!"

Trent thumbed the transmitter button. "Yarrow calling Hecla," he said. "Under the circumstances, all I can do is take you aboard and get you to ground somewhere in safety. I can't linger around here. The pirate is damaged but apparently not destroyed. It went into overdrive when we hit it, and it's gotten away. Whether it can come back or not I don't know. Do you want to try to make repairs, gambling that it won't return?"



The voice from the *Hecla* was almost unintelligible in its frantic denial of any such idea and its haste to accept Trent's offer. Trent made brisk arrangements for the transfer of humans from the disabled ship. He shifted the *Yarrow* close alongside to make the transfer easier. He summoned the mate.

"You'll stay here," he commanded, "and you'll watch that detector! The pirate's men on watch were looking at the spaceboats; so they didn't notice we were on the way. But you'll look at this and nothing else! And you'll report by space-phone if that needle even thinks of quivering!"

He made his way to the blister he'd emptied to receive the *Hecla*'s boat and that helpless spacecraft's complement. In minutes he was aboard the *Hecla*. The airpressure was low. Very low. He went briskly over the wreck with the *Hecla*'s skipper, who would follow tradition and be the last man to abandon ship, but who was plainly not happy about delay.

"All right," said Trent, when he'd seen what damage the pirate's shelling had done. "Just one thing more. I want to look at the engine-room again."

"If—if the pirate comes back

"It will be too bad," agreed Trent, "but just the same—" He went into the *Hecla*'s engine-room. The disabling of the *Hecla* had been very efficiently done. With the overdrive blown, the cargo-boat was capable only of moving in unassisted Lawlor drive. It could make desperate darts and dashes here and there to postpone its inevitable doom. But that would be inconvenient for the pirate. It carried a gun for such occasions. It used it, and the *Hecla* could no longer have resisted.

In ancient times men guessed at weapons of the future. They imagined deathrays, laser-beams and atomic explosives to be used lavishly in interstellar conflicts. But there weren't any interstellar conflicts. Wars could not be conducted by worlds unable to use space-fleets by the nature of overdrive. Nor when they were months apart. And not when all news governing naval operations had to be carried by ships. Deathrays were impractical. Laserbeams turned out not to be adaptable for use in universal destruction. So when a pirate outfitted itself to prey on merchant-ships, the most useful weapon it could carry was centuries old: a gun firing solid shot propelled by chemical explosive. It could puncture a hull and let out air. It could reduce a ship's crew to the air in their spacesuits, and they'd die when that ran out. And solid shot were to be preferred to explosive

shells because they wouldn't damage valuable cargo that explosive shells might destroy. Definitely, a gun was the ideal weapon for a pirate ship of space.

A solid missile had come to rest in the Hecla's engine-room after penetrating the outer and inner hulls and the side wall. It had slithered alongside the Lawlor engine and ricochetted crazily about before coming to rest. The hole by which it entered was partly choked by scraps of paper and other debris the vacuum outside had drawn to itself. Trent pulled away the casing of the Lawlor unit. The shell had severed a cable and scraped some exterior insulation, nothing more. At this moment the Hecla's skipper agitatedly pointed out that the pirate might come hack.

Trent did not answer. He went to the emergency-box to be found in any engine-room. He came out with a temporary cable-repair. He laid it alongside the severed cable and tapped its insulated back. Half its length snapped to a tight grip on one side of the break. He tapped again. The cable had a jury-repair. It would work for a while. Quite well, considering.

"Your control-room man cut off the drive when the shell hit," observed Trent by spacephone. He considered. He read the dials designed to inform the engineer what use was being made of what drive. One showed thrust. One showed the ship's course. Power-demand. Only the one marked "course" seemed to interest Trent.

He went to the great fuse-box in the wall. He established a delav-sequence there. The Hecla's skipper grew more agitated still. He seemed to think Trent was going to suggest that he try to drive the Hecla to port. In the eighteenth century one of this Trent's forbears had brought a ship to port jury-rigged past the comprehension of a landsman. But Trent had no such idea in mind just now. Having established the delay-sequence he went with the Hecla's now-quivering skipper to the airlock. The Yarrow's bulk loomed up not forty feet away, but beneath and between the ships lay an unthinkable abyss. Stars shone up from between their feet. One could fall for millions of years and never cease to plummet through nothingness.

Then they snapped on spacerope lines and a Yarrow spaceman hauled them across to the Yarrow's open airlock. Instants later Trent was in the controlroom, his helmet off but otherwise attired for space. He stared out the viewports. He began to frown, and then to scowl. The

Hecla's skipper came unsteadily to the control-room door.

"I—I suggest," he said shakily, "that we—get away from here as soon as possible."

"This is my ship," said Trent curtly. "I give the orders.

—Ah!"

He hadn't turned from the viewport. He'd been watching the *Hecla*, drained of air and without any living thing aboard, left as a derelict between the stars. But now the abandoned ship suddenly drew away from the *Yarrow*. She swung in space. She began to drive. She went away into the infinite distances between the suns of the galaxy. She dwindled to the tiniest of specks in the starlight. She disappeared altogether.

The Hecla's skipper's mouth dropped open.

"What-"

"I don't like pirates," said Trent. "I'm afraid we didn't damage that one too badly, because it managed to stay in overdrive. But I didn't want it to come back and loot the *Hecla*. So I sent your ship driving off. Pure spite on my part."

"But what are we waiting for?" asked the skipper anxiously.

"Nothing, now," Trent told him. "I've an errand in the engine-room, but that can wait."

He examined the drive-detector with almost microscopic care. It

reported nothing. He set the Yarrow on course. He threw the drive-switch. The Yarrow swept away from there. Nothing happened as evidence that she moved. On Lawlor drive she might build up to a velocity of half the speed of light, but even then the stars would not be visibly in motion. It would take her eight years at full Lawlor drive to get her to the nearest port. Obviously, Lawlor drives by themselves were unsatisfactory.

After five minutes, Trent pushed the all-hands-alert button. He said into the microphone: "Overdrive coming. Spacesuits no longer needed. Count down."

While everybody on the ship mentally counted down from ten to zero. Trent began to unfasten his spacesuit. Zero seconds came. He pushed the overdrive switch to "On." There was that wrenching nausea and dizziness and the momentary feel of falling. Then the viewports were black, and the Yarrow was enclosed in a totally unsubstantial field of force that practically amounted to a different universe. Her Lawlor drive, which in normal space gave her a maximum accumulated speed half that of light, here thrust her immediately up to a velocity which could not be expressed in numerals. They simply wouldn't mean anything.

Trent put aside his spacesuit and went to the engine-room.

Everything was matter-of-fact and commonplace in the corridor on the way. All sorts of tiny noises proved that the ship was very much alive. The air apparatus hummed faintly. The temperature equipment made small and unrelated sounds. Somewhere there were voices. The crew and passengers of the Hecla. still shaken, were babbling about what had almost happened to them. Some of them couldn't quite believe they'd escaped. All were still terrified. Even those who hadn't believed themselves in danger when they were, now seemed unable to be persuaded that they weren't.

Trent entered the engineroom. It still smelled of vaporized metal and burnt insulator.
McHinny paced up and down,
swearing steadily and with undiminished indignation. His
gadget, which should have prevented all danger from the pirate
ship, was now a scorched, swollen and discolored wreck. A
thread of smouldering insulation
still sent a wisp of gray smoke
into the air above it.

"It didn't work," said Trent flatly. "What happened?"

McHinny was instantly and fiercely on the defensive. Hell hath no fury like an inventor defending his claim to genius.

"You didn't work it right!" he cried bitterly. "You ruined everything! You turned it on when

there were two ships in range! Two! You overloaded it!"

Trent said nothing. This was defense, not fact. The *Hecla*'s drive had been burnt out by the pirate. It couldn't constitute half of an overload of overdrive tension.

"And the mate hurried me!" snapped McHinny furiously. "He kept saying I had to hurry and get it back together! I was improving it, and he rushed me to get it together again!"

Trent frowned.

"Can you repair it?" he asked detachedly. "If it can be made to work, we'll try it again."

"I'll have to rebuild it!" fumed the engineer. "And I won't stand for anybody telling me what to do! I invented it! I know all about it! I won't do anything unless I have a free hand!"

Trent raised his eyebrows.

"All right," he said coldly, "but we were lucky. Next time you remember that you're right in the same ship with the rest of us!"

He turned and left the engineroom. He was angry. But a man doesn't get to be a ship-captain with a reputation unless he uses anger with discretion and toward the attainment of a purpose planned and being carried out in cold blood.

His plans for this voyage had been made with precision and without emotion. They weren't progressing so far, but he didn't mean to abandon them. He believed that pirates did not like to fight. They preferred to murder. He suspected that they would be astonished if attacked, because they were accustomed only to attacking. And he believed that violent action when they didn't expect it might yield interesting results.

In short, his views were not those of the average trading-ship captain entering reluctantly into pirate-infested star-groups. He'd had lively hopes of profitable action. He still might very well manage to find or contrive activity of a congenial kind. What he considered non-success in the Hecla matter only moved him to modify his intentions, not to abandon them.

There was a girl in the controlroom when he re-entered it. The *Hecla*'s skipper spoke with something approaching reverence.

"Captain, Miss Hale wants to thank you. Her father is the planetary president of Loren."

Trent nodded politely. The girl said in a still unsteady voice, "I do want to thank you, Captain. If it hadn't been for you—"

"Only too pleased," said Trent as politely as before. "I'm glad we happened along."

"I—I can only offer words," said the girl, "but when we get to Loren, my father will at least

"I'm sorry, but I'm not going to Loren," said Trent. "The Yarrow's bound for Sira. You'll go aground there."

The Hecla's skipper said urgently, "But Captain Trent, this is Miss Hale! Her father's the planetary president! She was bound home! Surely you can swing ship offcourse long enough to put her aground on her home world!"

Trent shook his head regretfully. A few hours earlier, he'd more or less intended to head for Loren himself. But events just past required a change of plan. The encounter with a pirate ship which had captured but not yet looted a merchantman hadn't ended the way he'd have wished. His plans had to be changed. They now called for an immediate call on Sira.

"I'm truly sorry," he said, "but I have to go to Sira. For one thing, it's three days nearer than Loren, and those three days are important to me."

"You don't realize-"

The girl put her hand on the skipper's arm.

"No. If Captain Trent is bound for Sira, then to Sira we go. I can surely get home from there! Of course we must get word to my father about the pirate pretending to be the Bear. But Captain Trent has surely done enough in saving us from—what would have happened if he hadn't

appeared, and especially if he hadn't acted as he did."

Trent cocked his head inquiringly to one side.

"The Bear?"

"Our privateer," explained the girl. "We're in a terrible predicament on Loren. We have to have antibiotics, first, and some other off-planet supplies. But we have to have antibiotics! Our soilbacteria are death to Earth-type crops. Without antibiotics we'll starve! So we licensed a privateer. You see, with a pirate in action hereabouts and interstellar trade cut to ribbons, tradingships don't come to us. But there are some things we have to have! So our privateer stops ships and requisitions goods-and we pay for them with what we can, later. It's an emergency!"

Trent said courteously, "Hm-mmmm."

"This morning," she added, "when the pirate showed on our detectors, we put on full drive to avoid it like any other ship. But it overhauled us and closed in. We tried to dodge and twist away, but it finally got close and blew our overdrive and we were helpless. We broke out of overdrive when the blow-up came—and there was the pirate.

Trent could picture it very clearly, from information about similar events elsewhere.

"And then we arrived," he observed.

The girl nodded again. She was horribly tense. She'd known complete despair only a little while ago. She wore, now, a very fine air of composure. But her hands were clenched tightly. She seemed unaware of it. She was trying hard to keep her lips from quivering. Trent approved of her.

"Nothing can ever repay you," said Marian warmly. "I—I've never really believed that anything dreadful could really happen to me. But it could! It almost did! And you—rescued us. So I—want to thank you."

"You've done it very nicely," said Trent, "but we haven't reached Sira yet. We might still run into trouble. Let me say that you're very welcome and let it go at that. Meanwhile, why don't you take over my cabin and rest up and get relaxed? You've had a pretty unpleasant experience."

She smiled at him and went out. The *Hecla*'s skipper followed her.

Trent turned back to the instrument-board. He looked at the detector-dial with especial care.

The Yarrow's mate said dourly, "Captain, sir, no matter how it turned out, that was a bad fix for us to be in!"

"Yes," agreed Trent drily.
"One should never take the owners' word about gadgets. I didn't like that affair, either. But if the fact means anything to you, we're heroes."

"It don't mean anything to me," said the mate bluntly.

"Then next time," said Trent, "we won't be heroic. Next time we run into pirates, we'll just let them cut our throats without any fuss."

The mate grunted.

The Yarrow went on in utter blackness. The properties of space were changed about her. As far outside her hull as her overdrive field maintained critical intensity, the relationship between mass and inertia was wildly unlike that of unstressed space. The resistance of a ship to acceleration became trivial and. in complete reversal of the conditions in normal space, in overdrive the higher the speed attained, the less the additional acceleration needed to increase it. So the Yarrow drove with impossible speed upon its way.

But after an encounter with pirates, the effect of assured isolation produced a sort of cosiness. The ship felt safe. Beautifully safe. Its air-apparatus functioned perfectly. Its temperature-control was set so that different areas of the occupied sections of the ship were at different degrees of heat or trivial chill, and somehow this made it feel more natural. There were differences in smell. There were even growing plants in a suitable compartment. And the crewmen stood their watches placidly.

while those off-watch loafed and gossiped.

With the rescued complement of the *Hecla* now aboard, practice-sessions for combat in space were temporarily suspended. All was calm. All seemed secure. But though space for distances of light-years was in theory pure emptiness, it could not be tranquil everywhere.

There was a spot illimitably removed from the Yarrow where a ship cut its overdrive and reentered normal space. Starlight shone on it. Its bow-plates were dented and buckled. The forward third of its hull was airless, and no man could go there except through emergency airlocks between compartments, and if he did so without a spacesuit, then he would die immediately. This was, of course, the ship that had called itself the Bear when ordering the Hecla to surrender.

There was no name painted on its hull, and the men who'd brought it here were not nearly as calm as the rescued spacemen on the *Yarrow*. And the men of the damaged ship weren't even as reconciled to their disappointment as the *Yarrow*'s crewmen, who'd practiced battle-tactics for weeks on end and so far hadn't had a chance to let off a single rocket or fire a single small-arm.

The pirate ship's company was not only raging but desperate. There were fewer crewmen than before it hailed the *Hecla*. When air left the forward third of its hull, there'd been men there without spacesuits on. In theory they'd had thirteen seconds in which to get into space-armor. None of them had made it. Nobody has ever made it. The surviving part of the crew wanted horribly to take revenge for the *Yarrow*'s act of self-defense.

But at the moment the pirate ship lay still in emptiness with all the stars of the galaxy able to watch it. For a long, long time nothing happened. Then a side airlock opened. A man in a space-suit came out and carefully fastened a lifeline to himself. He moved forward to survey the damage from outside the ship.

The survey took a long time, and it seemed that the solitary figure with the lifeline and the magnetic-soled boots now moved right-side-up and now upside-down on the damaged ship's plating. And fury seemed to radiate from him. Then he made his way back to the airlock, recoiling the lifeline as he went.

Presently a lifeboat's blister-cover opened. A spaceboat emerged from the oblong hollow in which it had rested. It rolled on magnetized wheels to the place where the damage began. Then torches glowed blue-white where they touched the bent and broken hull-plates. From every torch a singular glistening fog

spread out. A modern oxy-hydrogen torch burns through metal like cheese and in a vacuum-as here-vaporized steel solidifies in microscopic cubic crystals. But at the temperature of empty space the product of the torch's combustion crystallizes as tiny snowflakes. So where spacesuited men began to get ready for repairs to the pirate ship, there was a cloud, a nimbus, a singularly beautiful glittering mist which (because its particles were solid) spread out only slowly from the intolerable brightness of the torches themselves.

Inside the ship, too, there were no less necessary cuttings of bent and broken ship-plates and beams to be made. A second spaceboat moved from its cocoonlike resting-place to join in the work outside. Presently sections of plating came free. They accumulated. The spaceboat took them to the cargo-lock. The contents of the hold came out, floating with space-lines attached to each bale or case. The bent, torn plates went inside to be worked on and straightened and welded. The cargo-door closed.

And presently the torches outside the ship, each in its nearly globular glittering mist, were visibly joined by other torches deep down inside the ship. And very strangely, where the first flamings in the starlight had been beautiful, the splashing,

wildly expanding flames in the depths of the ship's nose-structure took all the eerie beauty away. The savage harshness of the flamelights, and the unhuman spacesuited figures at work with them, seemed somehow like a living, moving picture of an opening into hell.

While this highly necessary work went on, the stars watched abstractedly. They were not interested. They were suns, with families of planets of their own; besides, some of them had comets and meteoric streams and asteroid belts to take up their attention. There was nothing really novel in mere mechanical repairwork some thousands of millions of miles away from even the nearest of them.

So the crew of the pirate ship labored, raging, to repair the damage done by the Yarrow's ramming attack. Extensive if temporary repairs were necessary for anything like normal operation, but even after repair this ship couldn't go to a spaceport and try to pass itself off as an innocent merchantman. Repairs made in space couldn't go unexplained once a ship was aground. And it was very likely that the whole matter of the Hecla's crippling would be known all through the Pleiads-and elsewhere-as fast as the news could travel. In short, if before this event the pirate had ever passed in any spaceport as an honest craft about its lawful occasions, then it couldn't do so any longer.

There was just one possibility. The *Hecla* had been disabled and hulled. If the meddling *Yarrow* had the nerve to stand by to take off its crew, it was abandoned. But if the pirate ship could recover the *Hecla*. . . .

Meanwhile the Yarrow drove for Sira. And Trent made further plans, contingent upon what the pirate might do. If any of his guesses should turn out to be right, the pirates would most ferociously resent it.

3.

The arrival of the Yarrow in port on Sira was not too much unlike the arrival of a much earlier Captain Trent at a seaport on Earth in the eighteenth century. There was first a landfall. which to the ancestral Captain Trent had been the sight of land at the very edge of the world. To Trent of the Yarrow, it was the identification of the sol-type sun around which the planet Sira floated. Then, instead of locating himself exactly by examination of a coastline, the later Trent used Sira's three moons in Trojan orbit around her. This astronomical oddity was as useful for astrogation as a mangrove swamp, or a remarkable white rock, or a small island at a river's

mouth was useful to his ancestor for navigation. And in the place of signalling for a pilot, Captain Trent called from space and requested the coördinates of the place in emptiness where the landing-grid would take charge of the *Yarrow*'s landing.

The coördinates came in a complicated series of numerals. Trent used them. The Yarrow moved. Presently there were curiously cushioned fumbling sensations as the landing-grid on Sira located and fixed its forcefields upon the Yarrow. Then that ship began to descend very swiftly and very precisely to a resting-place in the spaceport. A ship could land on a not-too-massive planet by emergency rocket. and take off again in case of need, but the landing-grid system was so much superior that most skippers never made a single rocket-landing in all their professional careers.

Through a viewport Marian Hale watched the great globe of Sira swell and grow gigantic as the Yarrow approached. The Hecla's skipper pointed out one of the three moons as the ship went past and explained what a Trojan orbit was. Later he pointed out landmarks on the enlarging world of Sira. His elaborately respectful manner annoyed Trent. It seemed less than welcome to the girl. More than once her eyes turned to him during



the *Hecla*'s skipper's elaborate explanations. But Trent stayed aloof.

He'd taken command of the Yarrow for strictly personal business reasons. His first attempt to carry out his idea hadn't turned out according to expectations. He was going to have to make another attempt. He didn't want to have a personal relationship with Marian hinder his operations. She was the daughter of a planetary president. It developed that he was also the owner of the Hecla, and that fact awed the Hecla's skipper. But Trent had been on too many planets, with too many presidents, to pay much attention to her father's status. He simply didn't want to be interfered with. He approved of her, to be sure. She'd shown a fine courage on the Hecla, and an admirable composure on the Yarrow after the danger was over. These things mattered much more than who her father was, and very much more even than that she was a pretty girl. But he assured himself that considering his intentions in regard to the Hecla, it would be improper to have more than the most formal of relationships with her.

But it did annoy him when the *Hecla*'s skipper pointed out to Marian the seas and forests and jungles of the world below. There were cities, and highways con-

necting them, and it was easier to detect the highways than the cities, at first. But as the *Yarrow* dropped closer, the cities showed more plainly. Presently the planetary capital city filled most of a viewport, and there was the lacelike metal ring that was the landing-grid. The interior of the ring was the spaceport.

Eventually the ship touched ground. The girl, smiling, turned to Trent. "We're aground, and there was a time when it didn't seem we'd ever be aground again! What are you going to do, Captain?"

"It's nearly noon here," said Trent. "Before sunset I'll have to do a little trading, and I've some personal chores. Then I'll lift off again."

"When?"

"As soon as possible," he told her. "I'm not here for fun."

"I need to get in touch with our business agents," she observed. "We don't have ambassadors, here in the Pleiads. Just business agents.—Don't you think I'll be perfectly safe going on to Loren from here?"

He shrugged. He wasn't sure. There'd been one pirate ship, certainly, and it wasn't likely to be professionally active again for a certain length of time. But there might be more pirates in this area. Still, if the damaged pirate was lost because of its damages, or if repairs took a long time,

and if it was the only pirate in this part of space-why-then for the time being space-travel would involve only the normal hazards. But if the pirate turned out not to be too badly damaged, or if it were part of an association of freebooters of space working out of a single refuge-why -the danger to a defenseless merchant-ship travelling tween Sira and Loren would be greater. There would be, to be sure, ships taking to space in the belief that the Yarrow had struck a hard blow at piracy. But that would make this the time for pirates to make many and rich captures. It would certainly be true that many ships which ought to stay aground would be sent to space in quest of high profits. As the story spread, other skippers-and owners-would think they could do what the Yarrow had done. But the Yarrow's tactics couldn't be repeated even by the Yarrow. At any time but the actual moment when spaceboats were about to board, the pirate would have been aware of the Yarrow's coming. There couldn't be a duplicate surprise, a duplicate delay for the retrieving of the pirate's spaceboats. And there were other conditions not likely to be repeated.

Marian was actually asking Trent if it was now safe for her to take ship to Loren. He said drily, "I'm not qualified to advise you. I'd say no. But I'm lifting off myself. If I were your father, though, I'd say stay aground here until there'd been no ship missing for a good many months."

She smiled again. She held out her hand. He took it.

"I go aground now. Thank you, Captain! I have to help the Hecla's crew report her loss and the circumstances.—But you'll need to make a report too, won't you?"

He nodded. She didn't with-

"One thing more. Could you talk to our business agent for a few moments—this afternoon—before you lift off?

"I'll try," said Trent.

He shook her hand formally and she withdrew it. Again smiling, she went out of the controlroom and to ground. Trent, frowning, saw her walk to the spaceport offices. It was midday here. It took thought to keep days and nights straight after a long time in space. Marian would rate as a very important person on Sira. Trent could bask briefly in the radiance of her importance if he chose. But he didn't.

He said briskly to the mate, "I'll have to talk about the *Hecla* at the spaceport office. Then I'll talk to some brokers, about our cargo. Then I'll take a look around the spaceport dives to see what kind of men are grounded here because of the pirates."

"Any ground-leave for our men?" asked the mate.

"Hmm," said Trent. He considered. "Spaceport hands will take care of any cargo unloading I may arrange. But I'll lose time talking about the *Hecla*. Give them eight hours. We ought to be ready to lift off then."

"They'll just have time to get drunk," said the mate dourly, "and not enough to sober up again."

"I'm going to ship some extra hands if I can," Trent told him, turning to leave the controlroom.

"Captain," the mate said. "What?"

"That lady," said the mate stolidly, "got to talk to me yesterday. She wanted to find out something. I didn't know whether to tell her or not."

"What did she want to know?"
"If you was married. I told her
no. Right?"

"Yes," said Trent. "It's true. I'm not."

He went off the ship and to the very tedious business of answering questions about the Hecla, and then talking business to brokers and merchants gathered at the spaceport since news of a trading-ship's arrival spread. They were very hungry for goods to sell. He parted with as much of his cargo as he thought wise. It was close to sundown before he went to investigate the places of business just outside the spaceport gates.

They were like all such places outside of all spaceports, as similar places were alike on Earth at harbors' edges in the eighteenth century. An earlier Captain Trent, needing extra forecastle hands for his ship, would have gone frankly to crimps and paid so much for each man brought aboard in a state of greater or lesser incapacity for work. The methods Trent used were similar, but more selective.

Trent went to Winkie's. There was a Winkie's somewhere near every spaceport in the Galaxy. Nobody knew who the original Winkie was, but it hardly mattered any more. Trent asked what spacemen had been longest aground. When he found out, he asked who owed Winkie the most money. There were some names on both lists. Trent considered that only good men would be able to run very deeply into debt, and a good man who'd been aground a long time would be anxious to ship off. He got four men from Winkie's. They looked as if they'd be able to take care of themselves. He sent them off to the Yarrow, having paid their bills for them. He got two more from Sloppy Joe's on the same principle, and four more still from a dice-house where they passionately watched other men gamble, with deep regret that they'd already lost their own money to the last coin. Trent made a sporting proposition. He'd give them each a stake. If they won with it, they'd pay him back. If they lost, they'd sign on the Yarrow. They signed on.

He applied for clearance to lift off at once. He had ten new hard-bitten characters to add to the *Yarrow*'s crew when he went on board the ship again. The mate greeted him with a sour expression.

"Those first men you sent aboard," he observed, "started raising hell as soon as they got in the forecastle. They picked out bunks for themselves. They picked the ones our old hands have been using. They heaved out the old hands' gear and took over. The idea was to prove they was tough and start off the voyage with a fine forecastle fight when our regular men came back."

"I'll attend to it," said Trent. He started for the forecastle.

"I fixed it," the mate said stolidly; I think they had the fight they wanted. They're in the bunks I gave 'em. They're peaceful now."

Trent said nothing, but he looked annoyed.

The mate said, "Somebody who said he was the business agent for Loren called up twice. He's anxious to talk to you. The second

time the lady talked to me too. She says it's important."

Trent scowled.

"She'll want," he said distastefully, "to persuade me to take her to Loren. That'll be the business agent's idea, too. They're cooking up inducements, but I won't do it!"

Suddenly there was a minor uproar in the forecastle.

The mate, undisturbed, said, "That'll be these last new men you brought aboard. They're provin' to the others that they're tough too."

He started for the forecastle. Trent stopped him.

"I'll take care of this."

He took off his coat with the insignia of a merchant-space-man officer on it. He put on a coverall upper garment, such as spacemen wear when there is dirty work to be done about the ship, and moved briskly in the direction of the noises. There were loud voices. Then Trent went in the forecastle.

The mate heard the uproar stop momentarily when Trent appeared. He heard Trent's voice, sardonic and sarcastic. Then more of an uproar. The mate moved to join Trent. Then the uproar ceased for a second time. The mate heard Trent's voice, icily challenging. He was in the doorway of the forecastle when he saw men glaring angrily at Trent, but taking no such

action as the first four had tried against the mate. These were experienced spacemen. The Yarrow was still in port. An attack upon a mate was no great matter, one way or another. Mates got to be mates by proving that they could keep discipline, among other qualifications. But a shipcaptain was different. The men in the forecastle eyed Trent with the frustrated anger of men who know there must not be mutiny—especially in port.

"All right," said Trent, in a voice that could have curdled sulphuric acid, "if none of you will face me, how about following me? I'm going to take a bar apart. Have you got the nerve to tag along?"

He started for the door, and somehow the new hands got up from their bunks and the floor and other resting-places and crowded after him to see what he'd actually do. Maybe they didn't believe him. Maybe they expected only to watch. But they did go crowding after him, muttering to each other, and naturally the mate went along in case of need.

McHinny, the engineer, put his head out of the engine-room as the tramping feet went by. He blinked. Then he saw the mate bringing up the rear.

"What the hell's going on?" demanded McHinny.

"The captain," the mate told

him, "is taking his new hands out to see how much guts they've got before we lift off. Want to come along?"

McHinny didn't grasp the idea. It wasn't the sort of idea he would understand. But all the extra men Trent had chosen that day went plodding in his wake, muttering incredulously to each other. The mate continued to bring up the rear. Trent crossed the spaceport and marched into the bar nearest its gate. The first of his followers was barely inside the door when the tumult began.

It was a most satisfying affair. The original occupants of the bar were astonished when Trent thrust in the door and entered with his dubious new hands behind him. Trent looked over the interior, generally. He picked the biggest man in the place, went over to him, and reflectively pulled the big man's nose.

The big man bellowed and rose, upsetting the table before him. He reached for Trent, but Trent beat him to it and swung from within arm's length. The big man's two hardly smaller companions moved in upon Trent. The odds were outrageous. A new Yarrow hand whooped and plunged in joyfully. Somebody threw a chair. It was not a state of things to stand idly by and watch. Other customers found a fine zest in the spectacle, but the

zest of participation would be greater, so they jumped in. Another chair went hurtling through the air. Struggling. happily battling groups swept tables away. It became evident that Trent was followed, aided, and abetted by men looking for excitement rather than quietude. Some customers, to be sure, made hasty exits through a back doorway. One went out a window without bothering to open the sash. But others staved. The bartenders swung into action, wielding bung-starters of the most modern design. Bottles flew. Chairs crashed.

The battle outgrew the bar in which it had been started. It was a Donnybrook without cause or purpose, and when it bulged out into the open air, it continued to grow. It left the first hospitable business place swept as clean of merchandise as of customers. It swayed here and there in the street—the contending forces continually recruited—and presently it blundered into another bar by way of pushed-in plateglass windows.

Yarrow men recognized Trent and the mate; so they joined them, naturally, and fought anyone they fought. To be sure, the newly recruited members of the Yarrow's crew occasionally swung at those unfamiliar shipmates; but as the small-sized riot increased to medium proportions,

there developed a certain camaraderie. Trent now found himself followed by a panting, more or less coherent group that would follow him anywhere.

It was an extremely satisfying brawl. Four bars, a greasy-spoon restaurant, a dice-house, and a place from which ladies fled shrieking were more or less wrecked, swept clean of everything but smashed bottles and broken furniture. Their proprietors were too stunned by the senseless catastrophe to do more than call for the police and wring their hands as they waited.

And then, quite suddenly, the riot dissolved. Sirens sounded in the distance. The forces of law and order approached. Trent led his now happily battered and heterogeneous crew aboard the *Yarrow*, standing tall on the spaceport tarmac.

There was now a singular amiability among them all. When the lock-door closed behind the last battered crewman, eyes met in the friendship that grows when men have fought together. Black eyes, swollen lips and other non-incapacitating injuries were badges of honor and assurance of congeniality. And men looked fondly after Trent, who casually left them and went into the control-room. He called the airport office. Minutes later the all-hands warning sounded in every portion of the ship.

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"All hands prepare for lift," said Trent's voice from dozens of speakers, making a choral effect of the words. "Lift starts in ten seconds. . . . All hands to duty stations. . . . Five seconds. . . . Lift starts. . . ."

The Yarrow rose toward the starfilled night sky, and the lattice-girders of the landing-grid slid past and vanished below. The planet Sira appeared merely as a vast blackness in which infinitesimal specks of light—street-lamps—grew more and more minute until they disappeared. Then there was merely blackness against an inconceivable mass of stars. But presently the sunlit parts of Sira came into view, and everything was changed.

In the control-room, Trent pulled off his coverall upper garment. He said with a certain contentment, "Nobody'd expect me to come and talk to a business agent after being in that riot! It's a perfect alibi. I doubt anybody'd advise her to ship on the Yarrow after tonight!"

The mate stared blankly. It hadn't occurred to him that Trent could have acted from any other motive than that of welding his crew into a unit with a fine, expectant loyalty to himself. It wouldn't occur to the mate that anybody needed to be more than formally polite to a woman, and even that only up to a certain point. But getting in-

volved in a riot was a good way to get out of going to talk to a business agent and a girl.

"Yeah?" said the mate.

"Yes," said Trent. And then with all his worries for the moment at an end, he said generously, "Fine girl, though. If I were the marrying kind, she's the kind I'd pick."

He set the *Yarrow* on course. It happened to be almost exactly the reverse of the course he'd followed when bringing the refugees from the *Hecla* into port.

It also happened that the daughter of the planetary president of Loren, waiting for Trent to come and talk business to that world's business agent on Sira, heard about the riot in the news. Her expression became remarkable.

But she didn't even begin to guess why Trent had done it.

The galaxy was an aggregation of suns, planets, meteors, gas-clouds, dust-clouds, comets, star-clusters and star-streams, and a remarkable volume of empty space. It was possible to say that it was so many thousands of light-years across, and the statement was probably accurate. But nobody could really envision a light-year. It was approximately six trillion miles, but nobody could quite grasp a trillion, though men agreed that it was a thousand billion, and a

billion was a thousand million, and a million.... There were vainglorious persons who claimed that they could imagine a million, but they couldn't prove it. In any case the trading-ship Yarrow went into overdrive after leaving Sira, and Trent had a sound night's sleep. By next ship-morning he was a good many million, billion, and trillion miles from it.

He went over the ship and found everything to his liking. Even McHinny showed him his pirate-discourager approaching re-completion. It was three-quarters of the way back into operating condition. Trent, feeling kindly to all the cosmos, praised him enough for McHinny to look almost contented. The new members of the crew had been put to work—the mate saw to that—and they regarded Trent with satisfying respect and confidence.

There is a feel to such things. One can't put a finger on it, but a ship with a thoroughly competent skipper, known to be such by the crew—such a ship is a good one to belong to.

In the case of the Yarrow, anticipation of great things to come was based on the fact that her crewmen had been trained in small-arms operation and the tactics of fighting inside the complicated interior of a cargoship. They confided the fact to

the new members of the crew. The Yarrow was now manned by a practically complete double crew. Add to this the weapons training and the very fine riot Trent had begun and carried through the night before, and it seemed very likely indeed that Trent meant to go into the pirate business. His crewmen could imagine nobody better qualified. The prospect aroused enthusiasm.

He didn't discourage it. He did set his older hands to the instruction of the newer members of the crew. The Yarrow, then, again became a place in which men in spacesuits but with open face-plates learned how to operate small-arms in the clumsy gauntlets of space-armor. They were shown those interesting details by which a space-boat could blast a hole in a larger ship's plating, provided the other ship stood still, and the Yarrow's various compartments gave exercise-room for the tactics of onboard combat. Coming to a sidepassage or a corridor, for example, a trained man would never peer around it with his head at a normal height. Close to the floor was preferable, and higher than usual was even better. But one shouldn't put one's head, in a space-helmet, where somebody might be waiting to blow it off.

Trent himself worked painstakingly in the control-room on

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a problem in mathematics. It was tricky. He wanted to re-locate the *Hecla*. The *Yarrow*'s taped log had a record of all courses, drivestrengths, and durations of drive since her departure from her home port. She could get back approximately to where she'd left the *Hecla*. But the *Hecla* wasn't there now.

She'd been sent off on her Lawlor drive on a course Trent. had noted down. But real accuracy of position in space was really out of the question. And nobody could tell what was accurate, anyhow. An attempt at it involved the local sun's proper motion-the sun from whose system one had started out-one's individual velocity in three dimensions due to the motion of the spaceport one left, a highly corrected account of drive-efficiency, the total mass of ship and cargo. and a few score other factors.

And, starting from that, there was the problem of finding the *Hecla*. In the end Trent calculated a cone of probability. The *Hecla* should be within that imaginary geometrical shape in space, her most probable position somewhere along its axis. As one went out from it the probability would grow less. And the *Hecla* would be still accelerating.

He did the best he could and went to see how the combat instructions went on. They went well. He added some details, One of the new hands made a suggestion. It was a good one. He incorporated it into the course of instruction. It looked more and more as if he were preparing for a piratical career. On the second day out of port he suspended the weapons exercises to shift cargo. He had masses of relatively lowvalue cargo packed in the Yarrow's bow. The reason was, of course, that the pirate had carried and used a gun. Trent had seen one of the projecticles, spent, in the Hecla's engine-room. It had penetrated the Hecla's outer and inner hulls, but had done little damage inside. He shifted cargo so that a shell from dead ahead would have to pierce not only the Yarrow's two hulls but various bales of merchandise before it could do much damage. The understanding was, that the Yarrow would be driving toward any cannon-carrying antagonist in any action that took place.

The mate nodded stolidly when Trent explained it.

"If I'm not aboard," said Trent, "it may be a good trick."

The mate nodded again, but he didn't really grasp the idea that Trent might be missing from the Yarrow and himself in command. He didn't even grasp it when, entering the handwritten items in the control-room log—quite separate from the engine-room taped record—he found a memo in Trent's handwriting:

11-4-64 8 bells dog. According to agreement owners Yarrow now engaged salvage at charter rate until return commercial port.

It was very conscientious of

Four days passed. Five. Six. Trent brought the *Yarrow* out of overdrive. The stars were a very welcome sight. He sent out an emergency-radar pulse. One. He waited half an hour. Nothing came back. In overdrive, he shifted the *Yarrow*'s position. Again he sent out a radar-pulse.

It was unpleasant. Going into overdrive, one had the sensations of extreme giddiness and acute nausea and an appalling weightlessness. They lasted only for fractions of a second, but it was impossible not to dread them. Coming out, one had the same sensations repeated. Everybody on the *Yarrow* experienced them twice every half-hour. Presently everybody's belly-muscles ached from the knotted cramps that came with the nausea every time.

On some ships, under some skippers, there would have been protests right away. On the *Yarrow* under Trent there were no protests, but there were pained questions about how long it would be kept up.

"I'm looking for something," said Trent pleasantly. "When I find it, this will stop."

The inquiring crewman was satisfied, if unhappy. He spread the word among the rest. There were guesses at what Trent might be looking for. There was general agreement that it must be a ship, of whose course and probable position Trent had information. But granting that, the guesses ranged from a space-liner chartered to carry colonists, including women, to their new homes, down to a mere bankship carrying rare metals to balance financial accounts between star-clusters. But nobody guessed at the *Hecla*.

It was the *Hecla*, though. Naturally! But the return of a radarpulse came only after many attempts following the crewman's question.

Then the radar-pulse did come back, and the Yarrow moved toward the reflection-point. This, obviously, had to be in normal space, with stars. In terms of miles travelled, the pursuit of the distant object was trivial. But Trent had not only to overtake it but to match velocities. It was a rather painful operation, but in time it was accomplished. Presently the Hecla floated alongside the Yarrow, and Trent leaped the space between the big steel hulls. Arrived, he crawled along the Hecla's hull to the open airlock door through which he'd left it many days before. He swung in and released his lifeline. The lock-door closed. In minutes the Hecla ceased to accelerate, and the Yarrow shot ahead. The mate

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had to bring her back around and come alongside again.

Then there was fine and finicky maneuvering. Ultimately the two ships touched gingerly. Cargo-doors opened, facing each other. Cargo from the Yarrow went aboard the wrecked Hecla. Men went about the inside of that ship, searching for the places where solid-shot missiles had penetrated. Some of them were to be stopped-but not all. There was violent activity of other sorts. Tanks of air went from one ship to the other. Police equipment bought on Dorade. Shaped-charge explosive packages-satchel-bombs. Food and water

Trent went back aboard the Yarrow for final consultation with the mate. "You'll head for Sira," he commanded. "We didn't make delivery of everything I agreed to sell on Sira. You can finish up with that. They'll have forgotten our row by the time you get back. Then you can go on to Manaos. Here are some cargolists and prices. You can unload this stuff for these prices. Understand?"

The mate nodded.

"If all goes well," Trent told him, "I'll come into port on Manaos. You can wait for me there for—hmmm, three weeks. Then if you like you can hunt for me along here." He indicated an area on a three-dimensional chart of this part of the Pleiad cluster. "If you don't find us in a reasonable time, go back to Manaos. Maybe we'll have made it. If we aren't there by then—you're the Yarrow's skipper. In which case, look out for McHinny. He means well but he's a fool. Don't ever take his advice!"

The mate nodded again. He looked acutely unhappy.

Presently the Yarrow drew away from the Hecla. That round-bellied cargo-carrier of space looked intact. It wasn't. Its overdrive coil was blown and its Lawlor drive patched for strictly emergency use. It was empty of air and there were shell-holes in its plating. The Yarrow went into overdrive. It vanished. The Hecla was left alone.

In a way, it was curiously like the occasion when a barkentine of an earlier time had been found by an earlier Captain Trent, battered by cannon-balls and leaking, with its masts shot overside and its boats long gone. This was in a sea where Captain Trent was bitterly unwelcome-so much so that a man-of-war had been assigned especially to hunt for him. But he went aboard the derelict with hands from his proper crew. and his proper ship sailed away leaving him to make what he could of the situation.

It was quite a similar state of things, except that the Captain Trent of the *Yarrow* was aboard a derelict of space, and the ship that wanted ferociously to find him was a pirate.

It was now very nearly ready to resume its professional activities.

4.

There were no oxy-hydrogen torches to be burned for the refitting of the Hecla for space. There was nothing for incurious stars to see. Mere plastic sealings would have closed the shotholes in her double hull, but Trent forbade it for the time being. Every other repair went smoothly. There was no reason for spaceboats to stir in the metal blisters which were their proper repositories. There was no particular reason for anything at all, in the way of visible repair-work, to be performed upon the fabric of the Hecla. She lav seemingly motionless in that emptiness and quietude and remoteness which is between-thestars. That extra air-tanks had been taken aboard, and tools, and food and water and certain specialized equipment designed for planetary police forces-that these things, formerly absent, were now aboard the Hecla could not be discovered from outside it. The Hecla lay still. Matronly, clumsy, bewilderedly acquiescent in her doom, she now seemed astonished at her new lease on life.

but the stars still regarded her without interest or curiosity.

Trent sealed off certain areas inside the ship, and filled them with air from the ship's reserves. He set his new recruits to rewinding the overdrive coil. He himself made a good repair to an emergency-patched cable in the Lawlor-drive casing. Also, with painstaking care he set the taperecorded log to register such actions as took place after the Hecla's reoccupation.

It wasn't on the whole a very difficult business. Hundreds of ships had blown their overdrive coils, rewound them and gone sedately on about their lawful occasions. Thousands had had trouble with their Lawlor drives, but like all superlatively difficult achievements the design of those useful engines was so blessedly simple that nobody felt incapable of the work that would make them whole and functional again.

Trent did a certain amount of stage-dressing, though. His crew for the *Hecla*, recruited on Sira, cherished very unusual hopes. After the satisfying riot they'd staged on Sira, it would have been anticlimactic to set them at a far from routine but by no means hazardous salvage operation. So Trent dressed it up.

He let only the parts of the ship necessary for the repair of the drives and a reasonable living-space be refilled with air. Most of the ship remained empty, with shot-holes unplugged. He painstakingly led his followers, two by two and in spacesuits, through the less frequently visited and now airless parts of the ship. They came to know their way about the bilges, through all the air-seal doorways, until they could move from any part of the ship to any other without being seen by anybody in the regularly used areas. And he had them carry small-arms on these occasions.

It was largely stage-dressing, but not wholly that. Trent still had to think of possibilities. He was not exactly certain that the pirate which had wrecked the Hecla was itself destroyed. He prepared against the possibility that it was not, by charming his crewmen with prospects of lurid action. They learned and rehearsed battle-tactics, and in so doing prepared to be attacked. If the pirate ship should appear. Trent and his followers would be ready for it. If it didn't, nevertheless he'd keep up the continual alert until he brought the Hecla to ground again, and then a reasonable bonus for work accomplished and danger undergone would satisfy everybody. He'd be under no obligation to explain his precautions once they'd ended.

There were personal angles to the matter, too. He'd taken Marian out of a very unpleasant situation. But there is something about the relationship between men and women which obligates a man who's done a woman one favor to do her another and another indefinitely. Trent had meant to salvage the Hecla from the moment of the pirate's disappearance in overdrive-when the Hecla was left helpless in space. If Marian had been another man. even the Hecla's owner. Trent could have admitted his intentions frankly, or even discussed the method and the practicability of the job. But once he'd taken Marian from the wrecked Hecla, if they advanced to a state of cordial friendship, he'd be under an obligation to do her the favor of salvaging the derelict for at most the cost of the operation. Because it belonged to her father. A man who has done a woman one favor can't do business with her thereafter unless it includes other favors. The fact is insane, but it is still a fact.

So Trent had been only polite to her. He'd evaded any but the most formal of conversations. He wouldn't have refrained from choice. He admired Marian warmly. But he did not intend to pay the extravagant price chivalry requires of men for the most trivial and meaningless acquaintance with a woman. In the ordinary course of events Trent would never see Marian again. He

was a ship-captain, and she was the daughter not only of a planetary president but of a shipowner. He acted on that realistic view of the situation.

Quaintly, he believed that he was avoiding that sort of commitment by treating the salvaging of the *Hecla* as the strictly business enterprise it really was—or should have been.

One ship-day passed. Another, and another. The rewinding of the overdrive coil went along at a steady pace. Partly as stagedressing, to be sure, but also for a sound reason, Trent kept men watching certain dials every minute of every ship-day and night. The Hecla's radar remained unoperated. Its pulses would have been recognized for what they were. Her overdrivefield detector was definitely not in use. It could have been detected at many times a radar's effective range. But he did have radar-frequency listening devices turned up to maximum gain. They should give notice instantly if anybody hit the Hecla with even a single radar-pulse, such as Trent had used to find it when it was a derelict.

Stars and nebulae and galaxies shone all about the interior of an apparently hollow sphere whose center seemed to be the spaceship. That slightly overplump vessel showed no faintest sign of life. She floated in empti-

ness. That was all. If watched from a fixed position—which could not exist where she lay between the stars—her bow might have been seen to wander vaguely to various headings. But that had no significance at all. At a hundred yards' distance absolutely nothing about the *Hecla* could have told another vessel that she was alive.

But Trent worried about whether or not be ought to worry. There was no way for him to know. If the pirate survived at all, it was either badly damaged or it was not. If badly damaged, he needn't worry. If not, the damage would either make her head for her base, or not. If the pirate headed for her base, he needn't worry. If not, she'd either hunt for a ship she'd already disabled-the Hecla-or not. If she didn't hunt for the Hecla, he needn't disturb himself. If she did, she'd either find the Hecla or not. If she didn't find the Hecla, there was no reason to worry, but if she did-she could still lie off at a distance and pound that already-battered ship with solid shot until no possible life remained.

And she would.

So it was with concern that he heard the spaceman on radarwatch say uncertainly, "Cap'n, sir, it looked to me like a radarpulse hit us just now. But it was only the one."

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Trent took a deep breath.

"That's the way it would be. Watch for another." He spoke into the microphone of the all-hands speaker system. "All hands! All hands! We've got company coming. All hands clean ship! Tidy up! Everything from Sira down in the bilges! Suits on!"

A stirring began everywhere that men moved or labored throughout the ship. Some donned spacesuits immediately and then set about an elaborate tidying process. Some swept floors before donning space-armor. Others carried small-arms and ammunition out of sight. Men struggled with extra airtanks and with food and water containers brought here on the Yarrow. Police equipment Trent had bought on Dorade many weeks ago was hidden. His new crewmen were thoroughly familiar with it.

Trent went to the engine-room where the re-winding of the overdrive-coil went on. He estimated the amount remaining to be done. He said wryly, "If they'd only held off for two more hours!"

The man on radar-watch called from the engine-room: "Cap'n, another pulse! Somebody's headin' this way!"

"They would be!" said Trent resentfully. To the men in the engine-room he added, "Keep on winding, but have your suits ready. Make it as quick as you can. This is nasty!"

He made a circuit of the ship, while men watched him expectantly. One man asked hopefully, "D'you know who's coming, sir?"

"It's the pirate, I hope," said Trent peevishly. "The one who's been sniping ships all through the Pleiads. Maybe there's more than one. If so, this is the one that wrecked the *Hecla*. And it's coming and we're not ready for it!" Then he said sharply, "Look at that! That doesn't look like an empty ship! Get it out of sight!"

Somebody bundled up blankets that had been spread on the floor for dice to be rolled on. It wouldn't have been in use by the crew of a properly operating ship; so they wouldn't have left it behind when they abandoned ship.

"Open the port lock-door," commanded Trent. "That's the way it was left. Nothing untidy, now! Then get all weapons ready, pick your spots—and use gas if you can."

There were scurryings and more scurryings. Men elatedly completed the completely unusual task of making an occupied, worked-in spaceship look as if it had been abandoned a long while back and never reoccupied.

Another call from the controlroom: "Another radar pulse, sir! Pretty strong!" "All hands in suits," commanded Trent. He'd ordered it before. To the two men still winding the coil he said irritably, "We're going to bleed out all the air. Work in your spacesuits as long as you can. Then get out of sight!"

He checked each spaceman separately, emphasizing that all suit-microphones must be switched to "Off." Reception, though, was desirable. Then he went to the control-room. There he could watch through the viewports and see what the approaching ship did. The Hecla, of course, was no better armed than she'd been when first halted. Her overdrive was still inoperable until the winding was finished; and if and when it could be used, the pirate should be able to blow it instantly. Trent released all the air from the engine-room and living quarters. The ship became airless, like the derelict it represented itself to be

Then he waited.

There is only one set of circumstances in which someone in the control-room of a spaceship between the stars ever sees another ship. Normally, ships in deep space are in overdrive and moving too fast to be sighted even if their overdrive fields allowed it, and they don't. It is not even possible for two ships to rendezvous more than a few hun-

dred million miles from a marker such as a star. Observations taken down to a second of arc are simply not precise enough to bring them within detectionrange of one another. The only way in which one spaceship can actually sight another is when by assisted chance one ship detects the overdrive of a second and closes in on it instead of swerving away as convention required. If it can get close enough, guided by the overdrive detector, one of the two overdrive coils will blow. Then the unharmed other ship can break out to normal space and join the first one there by tracking it down with radar. But this process happens to be congenial only to pirates and privateers. Honest merchant ships refrain from using it.

But Trent, in the *Hecla*'s control-room in very deep space, saw another ship.

First it was radar-pulses coming from nowhere and with decreasing intervals between. Then it was something which made a single star on a vision-screen wink out for the fraction of a second, and then another and another and still others. Then it was a glittering. And then it was a shape moving swiftly closer and growing in size as it did so.

The Hecla's communicatorspeaker bellowed, and Trent's

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helmet picked it up by induction. There was no air in the controlroom to carry sound. There was no air anywhere, except in her reserve-tanks.

"What ship's that?"

Trent naturally did not reply.
The call was repeated: "What ship's that?" rasped the voice from the other ship. "Answer or take what you'll get! We'll put some shells into you!"

Trent waited. He didn't expect bombardment. It would be rather futile. He felt a certain detached anticipation which, had he known about it, would have been interestingly similar to the reactions of an ancestor of his some centuries before. That other Captain Trent had a half-keg of gunpowder beside him, and when the moment was just right he'd touched a slow-match to its fuse and dropped it into the midst of an approaching body of men who'd arrogantly forced their way into a place where they didn't belong. He, also, had waited in a peculiarly detached calm.

But the Captain Trent of the Yarrow and the Hecla had longer to wait. The other ship came nearer, and Trent saw what only previous victims of this particular ship had ever exactly seen. He saw the pirate by interstellar light. It had been sleek and somehow it was still deadly to look at. It had probably been built in a space-yard on the pretense that

it was to be a private vacht for interstellar cruising. Its low cargo-capacity would fit that explanation. Its overdrive coil was of greater capacity than a commercial ship would use. This meant a higher possible speed in overdrive: it also meant that it could blow most other ship-drives because most ships were lowerpowered than itself. In short, the pirate had undoubtedly been built as a vacht but was especially adapted for work as a space marauder. Trent saw it in that shadowless twilight of space remote from any single sun, in which the attenuated light of millions of stars combine so that there is no darkness

As it circled the *Hecla*, he saw welds and patches on its outer bow-plating. It was definitely the ship the *Yarrow* had rammed, repaired in space by men who deserved credit for that achievement. But they were not otherwise to be admired.

It circled again. It could see the *Hecla*'s port-side airlock door left open. No occupied ship would have an airlock open to space. But if a ship was abandoned, the last man to leave it would hardly bother to close such a door behind him.

It was convincing. The pirate came to an apparent stop a half-mile off. It appeared to drift backward, then that drift was over-corrected. It was a long time

before the two ships floated almost exactly still in relation to each other. Then lifeboat blisters opened their mussel-shell-shaped covers. Two spaceboats came out and moved toward the *Hecla*.

Trent murmured into his phone. It wouldn't go outside the ship. "Boats approaching," he said curtly. "I won't be able to use this helmet-phone after they board us, or their helmets will pick it up. Stand by to carry out orders when I give the word."

Silence. Then clankings, Trent heard them by solid conduction as he made his way along those inconspicuous passages in the bilges, which he and all his crewmen had already memorized. He touched his helmet to a metal wall. Yes. A spaceboat had tied up to the open air-lock. He heard metal-soled boots on the airlock floor. Men entered the ship. The lock worked again, though there was no air for it to keep imprisoned. Apparently the second spaceboat was lying a little way off until the first should report all clear.

Trent remained perfectly still, listening. He was in a narrow passageway by which the *Hecla*'s cargo-holds could be bypassed. He heard men tramping all over the ship. The control-room. Airless. The engine-room. Airless. The men who'd been re-winding the overdrive coil were gone, of course. They'd left the coil look-

ing as if no hand had touched it since it blew—its metal case still bulging and discolored from heat—but they were only behind the engine-room side-wall. The pirate crewmen went into the living quarters. They were airless too, and they'd been swept and arranged to look exactly as they had when the *Hecla* was a full-powered, fully-manned and fully loaded ship of space, complacently speeding from one world to another. But then, of course, her hull had been full of air.

There were voices in Trent's helmet-phones. Men reported the ship empty. One man went to the air-lock to open its outer door so that his space-phone message could be picked up by the nearby pirate ship. Somebody'd tried to use the ship's space-communication equipment to call the pirate, waiting half a mile away, but there was no air to carry sound to its microphone.

"Maybe a shell cut a wire," said an authoritative voice.—
"No," another voice replied. "No air." Yet another voice: "No passengers either." Then various voices reporting: "All clear aft."
"Nobody aboard." "All set. I think there's a little air aft, but I'm not sure."

The authoritative voice again: "Some air aft? See if you can build up pressure. Maybe there-'re no shot-holes aft."

Unperturbed Trent listened.

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Soon the interior of the ship began to sound like a very busy place. Men moved here and there and everywhere, exchanging comments by space-phone, but there was no cause for suspicion. The comments ceased to be about the condition of the ship and became observations on the apparent luxury and riches of the food-supply, the practically bulging cargo-holds, and so on.

The authoritative voice said, "Call in the other boat. Have 'em tell the ship everything's all right except the communicator. That'll work when there's air."

Trent stayed quite still, listening with a fine satisfaction as the second spaceboat made fast outside the airlock. The spacesuit tanks of his own men had a good two hours of air in them. He considered that he and they could remain completely out of sight while the pirate crewmen made free with the Hecla. And if the pirate came alongside to take on cargo, in a fine conviction that it had exclusive possession of the abandoned Hecla. . . .

Unfortunately, it didn't work out that way. Within minutes after coming aboard, the first boat-load of pirates had proved beyond question that the *Hecla* was as empty of occupants as of air. There'd been no doubt about it to begin with. Things had to be that way! The second boat-load

of spacemen came stamping aboard through the airlock. The pirate crew-this more or less astonished Trent-set about plugging the shot-holes their ship's guns had made, to restore the hull to air-tightness. It took a considerable time. Then they took air from the reserve-tanks and filled the ship with it. A ship was required by the underwriters to lift off with not less than three ship-volumes of air in reserve-tanks. So the Hecla became re-filled with air-icy, because of its expansion from enormously high pressure to fourteen pounds to the square inch, but still very breathable. And then the men who believed that they were the new owners of the Hecla cheerfully removed their spacesuits and began to examine their prize for objects of value. Some went to the cargo-holds and began to smash open crates at random. Some searched the passengerquarters. They were disappointed in the loot found there. though, because by their own doing traffic in the Pleiads had been cut by ninety per cent, and passenger-traffic by more than that. But not everyone turned to looting. Two men, obviously disgruntled about it, were ordered to the engine-room. They were to examine the overdrive coil in detail. Moreover, they were to see what damage had been done to the Lawlor drive-unit

Waiting and listening, his faceplate open, Trent was moved to swear. He'd had high hopes. But anybody who uncovered the overdrive coil would see that it was almost rewound. A glance at the Lawlor engine would show it had been worked on recently. After the ship had officially been abandoned. The order meant that the pirates didn't intend merely to loot and abandon the ship, but to make use of it. Perhaps to change into it!

There was only one thing to be done. He closed his face-plate and switched on the helmetphone. His followers would hear him, but the pirates, out of spacearmor, wouldn't. "Let's go!" he said distinctly into the microphone before his lips.

Then he suddenly appeared in the living quarters, where two of the pirates jumped visibly and leaped away in the panic of men who have put off their weapons with their spacesuits and are faced by a man who hasn't. Trent used a police weapon. It was necessary for him and his followers to be victors in the ambush they'd made. So when Trent pushed down the triggers of the gas-pistols at his belt, they didn't emit flames or thermit bullets. They flung out thick clouds of fog-gas mixed to exactly the most efficient combination of dense fog laced with sneeze- and tear-gas. Nobody could defy that.

Those two pirates went down, kicking and jerking in convulsive sneezings they were powerless to stop, their eyes streaming tears. Trent felt a queasy disappointment. They were pirates, and they specifically would have murdered Marian as they'd murdered enough others. But instead of being captured in proper battle, he'd trapped them like rats, and they were as unharmed and helpless as petty criminals in the hands of planetary police.

"How's it going?" asked Trent in his space-helmet.

There was a crash, and a grunting, pleased voice said, "Not bad! That one's out!"

There were other noises, confused ones. Trent, angry to profanity, heard the sound of running feet transmitted by the material of a spacesuit to the microphone inside its helmet. He could tell that the wearer of the transmitting spacesuit was plunging in pursuit. Another voice. zestful: "He's mine!" Then somewhere else-he could tell only by the difference in voice timbre—a man swore and panted, "Y'would, would you!" This was followed by a clattering noise, and after that only pantings. But somewhere a deadly weapon rasped, something roared, and he knew that a compartment somewhere was flooded with fog-gas with its diluents, and that a man who tried to kill with an ordinary

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instrument for murder was now seized by his own body and made to sneeze and sneeze as he tried with tearing eyes to find another target in the vapor enveloping him. Then Trent heard the weapon fall as further monstrous convulsions tore at him.

It was a singularly disappointing conflict. Men on the one side thought that they'd won the battle many days ago when they had shelled all the air out of the Hecla. It hadn't been complete victory even to their minds because a mad, intruding ship had come out of nowhere and insanely tried to ram them. But they'd escaped the mad ship-though they should have destroyed it utterly -and now they'd returned. To these men the conflict wasn't a disappointment. It was a catastrophe. They couldn't even bellow their fury over their subjugation. They had to sneeze, terribly and incurably and continually.

Trent's followers shared his disappointment. They'd trained to acquire combat skill in the steel-plate jungle of a spaceship's least-used areas. They could, they believed, fight ten times their number in this special kind of combat and still come out victorious. Instead they'd used groundpolice fog-gas, designed for quelling riots, and they felt no greater triumph than comes of using exterminator spray to get rid of unpleasant insects.

They brought the pirate crewmen, still convulsed by sneezing, and contemptuously piled them in a heap because they'd been so ingloriously subdued. Later they bound them, without even that grudging respect a man sometimes feels for a sneak-thief who fights bitterly when he's caught.

"Now," said Trent precisely, "there's the pirate ship.—Keep your suits on. We got these characters because they made themselves comfortable. We don't want that for ourselves. Heave them into some small compartment and weld the door shut on them. We've got to get away from their ship."

He scowled. Things hadn't gone as he planned. He'd hoped to bring his crewmen out of the bilges after the pirate and the *Hecla* were lashed together for the transfer of cargo. He'd looked for a total surprise and the possible capture of the pirate ship by boarding—by a boarding party appearing from nowhere and deadly in the sort of fighting that these pirates had never bothered to learn.

One of his crewmen said ruefully by helmet-phone, "It wasn't much of a fuss, Cap'n. Shall we go back to work on the overdrive coil?"

For a long time the two ships lay in space, barely half a mile between them. Nothing happened, at least nothing visible. The Hecla's nose pointed successively to an eighth-magnitude star, then to a dim red speck halfway to the Milky Way, and then to a fairly bright green one. The wanderings of its axis among far-away and unconcerned suns had no significance. The patched and battered pirate ship accompanied it in its drifting. For the moment, it was short-handed, the men left behind waiting impatiently for the prizecrew to give some idea of what cargo the Hecla carried and to report that repairs were under way. Sometimes it was actually profitable for a pirate to carry a captured ship to its base. Rewinding the overdrive coil was almost always necessary, and that was tedious, distasteful work, but the transshipment of cargo in bulk also had its inconveniences. So the pirate ship lay off the larger, rounder, matronly Hecla, and waited. It would decide whether to send the Hecla to its base with a minimum crew or to take what cargo was worth taking and leave the ship a derelict.

But the information didn't come. The pirate ship called by communicator. There was no answer. It called again. No reply. The boats had reported that all was as anticipated, and their crews had entered the *Hecla*. There'd been a further report or two from them. But now there were no more reports. The pirate waited impatiently.

The pirate ship called again. Still no answer. Two-thirds of what crew it had left was aboard the Hecla, and they'd reported all well. The ship couldn't afford to send more men to find out why they didn't answer its calls. Besides, the Hecla was theirs! It was captured! It was occupied! But it didn't answer calls! The reaction on the pirate ship wasn't exactly rage. It was mostly pure, stark, superstitious bewilderment. This couldn't happen! It couldn't! Minute after minute, quarterhour after quarter-hour, the pirate ship called frantically to its boarding-party in the Hecla.

Then, quite suddenly, there were swirling clouds, jets, outpourings of vapor from the *Hecla*. She seemed to become the center of an utterly impossible cloud of vapor that almost hid her. There were flashes and explosions in this starlit preposterousness.

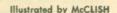
And then the Hecla vanished.

To Be Concluded

## CHRYSALIS

By RAY BRADBURY

In the August Amazing we gave you "Final Victim" (one of Ray Bradbury's early collaborations with Henry Hasse), a fine story clearly announcing the arrival of a major new talent. Now we bring you Bradbury on his own, Bradbury demonstrating that right from the start he had the powerful and original imagination that would go into the writing of such classics as The Martian Chronicles and Fahrenheit 451. In "Chrysalis," for example, a man is dead for eight hours—but his heart still beats (once every 35 seconds), he still breathes (once every four minutes), and his body temperature remains steady (at 60 degrees Fahrenheit)! Now, who could resist an opening like that? We couldn't—and we know you won't.





ROCKWELL didn't like the room's smell. Not so much McGuire's odor of beer, or Hartley's unwashed, tired smell—but the sharp insect tang rising from Smith's cold green-skinned body lying stiffly naked on the table. There was also a smell of oil and grease from the nameless machinery gleaming in one corner of the small room.

The man Smith was a corpse. Irritated, Rockwell rose from his chair and packed his stethoscope. "I must get back to the hospital. War rush. You understand, Hartley. Smith's been dead eight hours. If you want further information call a postmortem—"

He stopped as Hartley raised a trembling, bony hand. Hartley gestured at the corpse—this corpse with brittle hard green shell grown solid over every inch of flesh. "Use your stethoscope again, for God's sake, Rockwell. Just once more. Please."

Rockwell wanted to complain, but instead he sighed, sat down and used the stethoscope. You have to treat fellow doctors politely. You press your stethoscope into cold green flesh, pretending to listen—

The small, dimly lit room exploded around him. Exploded in one green cold pulsing. It hit Rockwell's ears like fists. It him. He saw his own fingers jerk over the recumbent corpse.

He heard a pulse.

Deep in the dark body the heart beat once. It sounded like an echo in fathoms of sea water.

Smith was dead, unbreathing, mummified. But at the core of that deadness—his heart lived. Lived, stirring like a small unborn baby!

Rockwell's crisp surgeon's fingers darted rapidly. He bent his head. In the light it was darkhaired, with flecks of grey in it. He had an even, level, nice looking face. About thirty-five. He listened again and again, with sweat coming cold on his smooth cheeks. The pulse was not to be believed.

One heart beat every thirty-five seconds.

Smith's respiration—how could you believe that, too—one breath of air every four minutes. Lung case movement imperceptible. Body temperature?

Sixty degrees.

Hartley laughed. It was not a pleasant laugh. More like an echo that had gotten lost. "He's alive," he said tiredly. "Yes, he is. He almost fooled me many times. I injected adrenalin to speed that pulse, but it was no use. He's been this way for twelve weeks. And I couldn't stand keeping him a secret any longer. That's why I phoned you, Rockwell. He's—unnatural."

The impossibility of it overwhelmed Rockwell with an inex-

plicable excitement. He tried to lift Smith's eyelids. He couldn't. They were webbed with epidermis. So were the lips. So were the nostrils. There was no way for Smith to breathe—

"Yet, he's breathing." Rockwell's voice was numb. He dropped his stethoscope blankly, picked it up, and saw his fingers shaking.

HARTLEY grew tall, emaciated, nervous over the table. "Smith didn't like my calling you. I called anyway. Smith warned me not to. Just an hour ago."

Rockwell's eyes dilated into hot black circles. "How could he warn you? He can't move."

Hartley's face, all razor-sharp bone, hard jaw, tight squinting grey eyes, twitched nervously. "Smith—thinks. I know his thoughts. He's afraid you'll expose him to the world. He hates me. Why? I want to kill him, that's why. Here." Hartley fumbled blindly for a blue-steel revolver in his rumpled, stained coat. "McGuire. Take this. Take it before I use it on Smith's foul body!"

McGuire pulled back, his thick red face afraid. "Don't like guns. You take it, Rockwell."

Like a scalpel, Rockwell made his voice slash. "Put the gun away, Hartley. After three months tending one patient you've got a psychological blemish. Sleep'll help that." He licked his lips. "What sort of disease has Smith got?"

Hartley swayed. His mouth moved words out slowly. Falling asleep on his feet, Rockwell realized. "Not diseased," Hartley managed to say. "Don't know what. But I resent him, like a kid resents the birth of a new brother or sister. He's wrong. Help me. Help me, will you?"

"Of course." Rockwell smiled.
"My desert sanitarium's the
place to check him over, good.
Why—why Smith's the most incredible medical phenomenon in
history. Bodies just don't act this
way!"

He got no further. Hartley had his gun pointed right at Rock-well's stomach. "Wait. Wait. You—you're not going to bury Smith? I thought you'd help me. Smith's not healthy. I want him killed! He's dangerous! I know he is!"

Rockwell blinked. Hartley was obviously psychoneurotic. Didn't know what he was saying. Rockwell straightened his shoulders, feeling cool and calm inside. "Shoot Smith and I'll turn you in for murder. You're overworked mentally and physically. Put the gun away."

They stared at one another.

Rockwell walked forward quietly and took the gun, patted Hartley understandingly on the shoulder and gave the weapon to McGuire, who looked at it as if it would bite him. "Call the hospital, McGuire. I'm taking a week off. Maybe longer. Tell them I'm doing research at the sanitarium."

A scowl formed in the red fat flesh of McGuire's face. "What do I do with this gun?"

Hartley shut his teeth together, hard. "Keep it. You'll want to use it—later."

ROCKWELL wanted to shout it to the world that he was sole possessor of the most incredible human in history. The sun was bright in the desert sanitarium room where Smith lay, not saying a word, on his table, his handsome face frozen into a green passionless expression.

Rockwell walked into the room quietly. He used the stethoscope on the green chest. It scraped, making the noise of metal tapping a beetle's carapace.

McGuire stood by, eyeing the body dubiously, smelling of several recently acquired beers.

Rockwell listened intently. "The ambulance ride may have jolted him. No use taking a chance—"

Rockwell cried out.

Heavily, McGuire lumbered to his side. "What's wrong?"

"Wrong?" Rockwell stared about in desperation. He made one hand a fist. "He's dying!" "How do you know? Hartley said Smith plays possum. He's fooled you again—"

"No!" Rockwell worked furiously over the body, injecting drugs. Any drugs. All drugs. Swearing at the top of his voice. After all this trouble, he *couldn't* lose Smith. No, not now.

Shaking, jarring, twisting deep down inside, going completely liquidly mad, Smith's body sounded like dim volcanic tides bursting.

Rockwell fought to remain calm. Smith was a case unto himself. Normal treatment did nothing for him. What then? What?

Rockwell stared. Sunlight gleamed on Smith's hard flesh. Hot sunlight. It flashed, glinting off the stethoscope tip. The sun. As he watched, clouds shifted across the sky outside, taking the sun away. The room darkened. Smith's body shook into silence. The volcanic tides died.

"McGuire! Pull the blinds! Before the sun comes back!"

McGuire obeyed.

Smith's heart slowed down to its sluggish, infrequent beating.

"Sunlight's bad for Smith. It counteracts something. I don't know what or why, but it's not good—" Rockwell relaxed. "Lord, I wouldn't want to lose Smith. Not for anything. He's different, making his own standards, doing things men have nev-

er done. Know something, Mc-Guire?"

"What?"

"Smith's not in agony. He's not dying either. He wouldn't be better off dead, no matter what Hartley says. Last night as I arranged Smith on the stretcher, readying him for his trip to this sanitarium, I realized, suddenly, that Smith likes me."

"Gah. First Hartley. Now you. Did Smith tell you that?"

"He didn't tell me. But he's not unconscious under all that hard skin. He's aware. Yes, that's it. He's aware."

"Pure and simple—he's petrifying. He'll die. It's been weeks since he was fed. Hartley said so. Hartley fed him intravenously until the skin toughened so a needle couldn't poke through it."

WHINING, the cubicle door swung slowly open. Rockwell started. Hartley, his sharp face relaxed after hours of sleep, his eyes still a bitter grey, hostile, stood tall in the door. "If you'll leave the room," he said, quietly, "I'll destroy Smith in a very few seconds. Well?"

"Don't come a step closer." Rockwell walked, feeling irritation, to Hartley's side. "Every time you visit, you'll have to be searched. Frankly, I don't trust you." There were no weapons. "Why didn't you tell me about the sunlight?"

"Eh?" Soft and slow Hartley said it. "Oh-ves. I forgot. I tried shifting Smith weeks ago. Sunlight struck him and he began really dying. Naturally, I stopped trying to move him. Smith seemed to know what was coming, vaguely, Perhaps he planned it: I'm not sure. While he was still able to talk and eat ravenously, before his body stiffened completely, he warned me not to move him for a twelveweek period. Said he didn't like the sun. Said it would spoil things. I thought he was joking. He wasn't. He ate like an animal. a hungry, wild animal, fell into a coma, and here he is-" Hartlev swore under his breath. "I'd rather hoped you'd leave him in the sun long enough to kill him inadvertently."

McGuire shifted his two-hundred-fifty pounds. "Look here, now. What if we catch Smith's disease?"

Hartley looked at the body, his pupils shrinking. "Smith's not diseased. Don't you recognize degeneration when you see it? It's like cancer. You don't catch it, you inherit a tendency. I didn't begin to fear and hate Smith until a week ago when I discovered he was breathing and existing and thriving with his nostrils and mouth sealed. It can't happen. It mustn't happen."

McGuire's voice trembled. "What if you and I and Rockwell

all turn green and a plague sweeps the country—what then?"

It was Rockwell who answered. "Then, if I'm wrong—perhaps I am—I'll die. But it doesn't worry me in the least." He turned back to Smith and went on with his work.

A BELL. A bell. Two bells, two bells. A dozen bells, a hundred bells. Ten thousand and a million clangorous, hammering, metal dinning bells. All born at once in the silence, squalling, screaming, hurting echoes, bruising ears!

Ringing, chanting with loud and soft, tenor and bass, low and high voices. Great-armed clappers knocking the shells and rippling air with the thrusting din of sound!

With all those bells ringing, Smith could not immediately know where he was. He knew that he could not see, because his eyelids were sealed tight, knew he could not speak because his lips had grown together. His ears were clamped shut, but the bells hammered nevertheless.

He could not see. But yes, yes, he could, and it was like inside a small dark red cavern, as if his eyes were turned inward upon his skull. And Smith tried to twist his tongue, and suddenly, trying to scream, he knew his tongue was gone, that the place

where it used to be was vacant, an itching spot that wanted a tongue but couldn't have it just now.

No tongue. Strange. Why? Smith tried to stop the bells. They ceased, blessing him with a silence that wrapped him up in a cold blanket. Things were happening. Happening.

Smith tried to twitch a finger, but he had no control. A foot, a leg, a toe, his head, everything. Nothing moved. Torso, limbs—immovable, frozen in a concrete coffin.

A moment later came the dread discovery that he was no longer breathing. Not with his lungs, anyway.

"BECAUSE I HAVE NO LUNGS!" he screamed. Inwardly he screamed and that mental scream was drowned, webbed, clotted and journeyed drowsily down in a dark red tide. A drowsy red tide that sleepily swathed the scream, garroted it, took it all away, making Smith rest easier.

I am not afraid, he thought. I understand what I do not understand. I understand that I am not afraid, yet I don't know why.

No tongue, no nose, no lungs. But they would come later.

Yes, they would come later. Yes, they would. Things were—happening.

Through the pores of his shelled body air slid, like rain needling each portion of him, giving life. Breathing through a

billion gills, breathing oxygen and nitrogen and hydrogen and carbon-dioxide, and using it all. Wondering. Was his heart still beating?

But yes, it was beating. Slow, slow, slow. A dim red susurrus, a flood, a river surging around him, slow, slower, slower. So nice.

So restful.

THE jigsaw pieces fitted together faster as the days drifted into weeks. McGuire helped. A retired surgeon-medico, he'd been Rockwell's secretary for a number of years. Not much help, but good company.

Rockwell noted that McGuire joked gruffly about Smith, nervously, and a lot. Trying to be calm. But one day McGuire stopped, thought it over and drawled, "Hey, it just came to me! Smith's alive. He should be dead. But he's alive. Good God!"

Rockwell laughed. "What in hell do you think I'm working on? I'm bringing an X-ray machine out next week so I can find out what's going on inside Smith's shell." Rockwell jabbed with a hypo needle. It broke on the hard shell.

Rockwell tried another needle, and another, until finally he punctured, drew blood, and placed the slides under the microscope for study. Hours later he calmly shoved a serum test under McGuire's red nose, and spoke quickly.

"Lord, I can't believe it. His blood's germicidal. I dropped a streptococci colony into it and the strep was annihilated in eight seconds! You could inject every known disease into Smith and he'd destroy them all, thrive on them!"

It was only a matter of hours until other discoveries. It kept Rockwell sleepless, tossing at night, wondering, theorizing the titanic ideas over and over. For instance—

Hartley'd fed Smith so many cc's of blood-food every day of his illness until recently. NONE OF THAT FOOD HAD EVER BEEN ELIMINATED. All of it had been stored, not in bulk-fats, but in a perfectly abnormal solution, an x-liquid contained in high concentrate form in Smith's blood. An ounce of it would keep a man well fed for three days. This x-liquid circulated through the body until it was actually needed; then it was seized upon and used. More serviceable than fat. Much more!

Rockwell glowed with his discovery. Smith had enough x-liquid stored in him to last months and months more. Self-sustaining.

McGuire, when told, contemplated his paunch sadly.

"I wish I stored my food that way."

That wasn't all. Smith needed little air. What air he had he seemed to acquire by an osmotic process through his skin. And he used every molecule of it. No waste.

"And," finished Rockwell, "eventually Smith's heart might even take vacations from beating, entirely!"

"Then he'd be dead," said Mc-Guire.

"To you and me, yes. To Smith—maybe. Just maybe. Think of it, McGuire. Collectively, in Smith, we have a self-purifying blood stream demanding no replenishment but an interior one for months, having little break-down and no elimination of wastes whatsoever because every molecule is utilized, self-evolving, and fatal to any and all microbic life. All this, and Hartley speaks of degeneration!"

HARTLEY was irritated when he heard of the discoveries. But he still insisted that Smith was degenerating. Dangerous.

McGuire tossed his two cents in. "How do we know that this isn't some super-microscopic disease that annihilates all other bacteria while it works on its victim. After all—malarial fever is sometimes used surgically to cure syphilis; why not a new bacillus that conquers all?"

"Good point," said Rockwell. "But we're not sick, are we?"

"It may have to incubate in our bodies."

"A typical old-fashioned doctor's response. No matter what happens to a man, he's 'sick'—if he varies from the norm. That's your idea, Hartley," declared Rockwell, "not mine. Doctors aren't satisfied unless they diagnose and label each case. Well, I think that Smith's healthy, so damned healthy you're afraid of him."

"You're crazy," said McGuire.
"Maybe. But I don't think
Smith needs medical interference. He's working out his own
salvation. You believe he's degenerating. I say he's growing."

"Look at Smith's skin," complained McGuire.

"Sheep in wolf's clothing. Outside, the hard, brittle epidermis. Inside, ordered regrowth, change. Why? I'm on the verge of knowing. These changes inside Smith are so violent that they need a shell to protect their action. And as for you, Hartley, answer me truthfully, when you were young, were you afraid of insects, spiders, things like that?"

"Yes."

"There you are. A phobia. A phobia you use against Smith. That explains your distaste for Smith's change."

IN THE following weeks, Rockwell went back over Smith's

life carefully. He visited the electronics lab where Smith had been employed and fallen ill. He probed the room where Smith had spent the first weeks of his 'illness' with Hartley in attendance. He examined the machinery there. Something about radiations . . . .

While he was away from the sanitarium, Rockwell locked Smith up tightly, and had McGuire guard the door in case Hartley got any unusual ideas.

The details of Smith's twentythree years were simple. He had worked for five years in the electronics lab, experimenting. He had never been seriously sick in his life.

And as the days went by, Rockwell took long walks in the drywash near the sanitarium, alone. It gave him time to think and solidify the incredible theory that was becoming a unit in his brain.

And one afternoon he paused by a night-blooming jasmine outside the sanitarium, reached up, smiling, and plucked a dark shining object from a high branch. He looked at the dark shining object and tucked it in his pocket. Then he walked into the sanitarium.

He called McGuire in from the veranda. Hartley trailed behind, threatening, complaining. The three of them sat in the living quarters of the building. Rockwell told them.

"Smith's not diseased. Germs can't live in him. He's not inhabited by banshees or weird monsters who've 'taken over' his body. I mention this to show I've left no stone untouched. I reject all normal diagnoses of Smith. I offer the most important, the most easily accepted possibility of—delayed hereditary mutation."

"Mutation?" McGuire's voice was funny.

Rockwell held up the shiny dark object in the light.

"I found this on a bush in the garden. It'll illustrate my theory to perfection. After studying Smith's symptoms, examining his laboratory, and considering several of these"—he twirled the dark object in his fingers—"I'm certain. It's metamorphosis. It's regeneration, change, mutation AFTER birth. Here. Catch. This is Smith."

He tossed the object to Hartley. Hartley caught it.

"This is the chrysalis of a caterpillar," said Hartley.

Rockwell nodded. "Yes, it is."

"You don't mean to imply that Smith's a—chrysalis?"

"I'm positive of it," replied Rockwell.

ROCKWELL stood over Smith's body in the darkness of evening. Hartley and McGuire sat across the patient's room, quiet,

listening. Rockwell touched Smith softly. "Suppose that there's more to life than just being born, living seventy years, and dying. Suppose there's one more great step up in man's existence, and Smith has been the first of us to make that step.

"Looking at a caterpillar, we see what we consider a static object. But it changes to a butterfly. Why? There are no final theories explaining it. It's progress, mainly. The pertinent thing is that a supposedly unchangeable object weaves itself into an intermediary object, wholly unrecognizable, a chrysalis, and emerges a butterfly. Outwardly the chrysalis looks dead. This is misdirection. Smith has misdirected us, you see. Outwardly, dead. Inwardly, fluids whirlpool, reconstruct, rush about with wild purpose. From grub to mosquito, from caterpillar to butterfly, from Smith to-?"

"Smith a chrysalis?" Mc-Guire laughed heavily.

"Yes."

"Humans don't work that way."

"Stop it, McGuire. This evolutionary step's too great for your comprehension. Examine this body and tell me anything else. Skin, eyes, breathing, blood flow. Weeks of assimilating food for his brittle hibernation. Why did he eat all that food, why did he need that x-liquid in his body ex-

cept for his metamorphosis? And the cause of it all was—radiations. Hard radiations from Smith's laboratory equipment. Planned or accidental I don't know. It touched some part of his essential gene-structure, some part of the evolutionary structure of man that wasn't scheduled to work for thousands of years yet, perhaps."

"Do you think that some day all men-?"

"The maggot doesn't stay in the stagnant pond, the grub in the soil, or the caterpillar on a cabbage leaf. They change, spreading across space in waves.

"Smith's the answer to the problem 'What happens next for man, where do we go from here?' We're faced with the blank wall of the universe and the fatality of living in that universe, and Man as he is today is not prepared to go against the universe. The least exertion tires man, overwork kills his heart, disease his body. Maybe Smith will be prepared to answer the philosopher's problem of life's purpose. Maybe he can give it new purpose.

"Why, we're just petty insects, all of us, fighting on a pinhead planet. Man isn't meant to remain here and be sick and small and weak, but he hasn't discovered the secret of the greater knowledge yet.

"But-change man. Build your

perfect man. Your-your superman, if you like. Eliminate petty mentality, give him complete physiological, neurological, psychological control of himself: give him clear, incisive channels of thought, give him an indefatigable bloodstream, a body that can go months without outside food, that can adjust to any climate anywhere and kill any disease. Release man from the shackles of flesh and flesh misery, and then he's no longer a poor, petty little man afraid to dream because he knows his frail body stands between him and the fulfillment of dreams; then he's ready to wage war, the only war worth waging-the conflict between man reborn and the whole damned universe!"

BREATHLESS, voice hoarse, heart pounding, Rockwell tensed over Smith, placed his hands admiringly, firmly on the cold length of the chrysalis and shut his eyes. The power and drive and belief in Smith surged through him. He was right. He was right. He was right. He knew he was right. He opened his eyes and looked at McGuire and Hartley who were mere shadows in the dim shielded light of the room.

After a silence of several seconds, Hartley snuffed out his cigarette. "I don't believe that theory."

McGuire said, "How do you

know Smith's not just a mess of jelly inside? Did you x-ray him?"

"I couldn't risk it; it might interfere with his change, the way the sunlight did."

"So he's going to be a superman? What will he look like?"

"We'll wait and see."

"Do you think he can hear us talking about him now?"

"Whether or not he can, there's one thing certain—we're sharing a secret we weren't intended to know. Smith didn't plan on myself and McGuire entering the case. He had to make the most of it. But a superman doesn't like people to know about him. Humans have a nasty way of being envious, jealous and hateful. Smith knew he wouldn't be safe if found out. Maybe that explains your hatred, too, Hartley."

They all remained silent, listening. Nothing sounded. Rockwell's blood whispered in his temples, that was all. There was Smith, no longer Smith, a container labeled SMITH, its contents unknown.

"If what you say IS true," said Hartley, "then we should destroy him. Think of the power over the world he would have. And if it affects his brain as I think it will affect it—he'll try to kill us when he escapes because we are the only ones who know about him. He'll hate us for prying,"

Rockwell said it easily. "I'm not afraid."

Hartley remained silent. His breathing was harsh and loud in the room.

Rockwell came around the table, gesturing.

"I think we'd better say goodnight now, don't you?"

THE thin rain swallowed Hartley's car. Rockwell closed the door, instructed McGuire to sleep downstairs on a cot fronting Smith's room, and then he walked upstairs to bed.

Undressing, he had time to ponder all the unbelievable events of the passing weeks. A superman. Why not? Strength, efficiency—

He slipped into bed.

When. When does Smith emerge from his chrysalis? When?

The rain drizzled quietly on the roof of the sanitarium.

MCGUIRE lay in the middle of the sound of rain and the earthquaking of thunder, slumbering on the cot, breathing heavy breaths. Somewhere, a door creaked, but McGuire breathed on. Wind gusted down the hall. McGuire grunted and rolled over. A door closed softly and the wind ceased.

Footsteps, soft on the deep carpeting. Slow footsteps, aware and alert and ready. Footsteps. McGuire blinked his eyes and opened them.

In the dim light a figure stood over him.

From upstairs a single light in the hall thrust down a yellow shaft near McGuire's cot.

An odor of crushed insect filled the air. A hand moved. A voice started to speak.

McGuire screamed.

Because the hand that moved into the light was green.

Green.

"Smith!"

McGuire flung himself ponderously down the hall, yelling.

"He's walking! He can't walk, but he's walking!"

The door rammed open under McGuire's bulk. Wind and rain shrieked in around him and he was gone into the storm, babbling.

In the hall, the figure was motionless. Upstairs a door opened swiftly and Rockwell ran down the steps. The green hand moved back out of the light behind the figure's back.

"Who is it?" Rockwell paused half-way.

The figure stepped into the light.

Rockwell's eyes narrowed.

"Hartley! What are you doing back here?"

"Something happened," said Hartley. "You'd better get Mc-Guire. He ran out in the rain babbling like a fool."

ROCKWELL kept his thoughts to himself. He searched Hartley swiftly with one glance and then ran down the hall and out into the cold wind.

"McGuire! McGuire, come back, you idiot!"

The rain fell on Rockwell's body as he ran. He found Mc-Guire about a hundred yards from the sanitarium, blubbering.

"Smith—Smith's walking ..."
"Nonsense. Hartley came back, that's all."

"I saw a green hand. It moved."

"You dreamed."

"No. No." McGuire's face was flabby pale, with water on it. "I saw a green hand, believe me. Why did Hartley come back? He—"

At the mention of Hartley's name, full comprehension came smashing to Rockwell. Fear leaped through his mind, a mad blur of warning, a jagged edge of silent screaming for help.

"Hartley!"

Shoving McGuire abruptly aside, Rockwell twisted and leaped back toward the sanitarium, shouting. Into the hall, down the hall—

Smith's door was broken open. Gun in hand, Hartley was in the center of the room. He turned at the noise of Rockwell's running. They both moved simultaneously. Hartley fired his gun and Rockwell pulled the light switch.

Darkness. Flame blew across the room, profiling Smith's rigid body like a flash photo. Rockwell jumped at the flame. Even as he jumped, shocked deep, realizing why Hartley had returned. In that instant before the lights blinked out, Rockwell had a glimpse of Hartley's fingers.

They were a brittle mottled green.

Fists then. And Hartley collapsing as the lights came on, and McGuire, dripping wet at the door, shook out the words, "Is—is Smith killed?"

Smith wasn't harmed. The shot had passed over him.

"This damned fool, this damned fool," cried Rockwell, standing over Hartley's numbed shape. "Greatest case in history and he tries to destroy it!"

Hartley came around, slowly. "I should've known. Smith warned you."

"Nonsense, he—" Rockwell stopped, amazed. Yes. That sudden premonition crashing into his mind. Yes. Then he glared at Hartley. "Upstairs with you. You're being locked in for the night. McGuire, you, too. So you can watch him."

McGuire croaked. "Hartley's hand. Look at it. It's green. It was Hartley in the hall—not Smith!"

Hartley stared at his fingers.

"Pretty isn't it?" he said, bitterly. "I was in range of those radiations for a long time at the start of Smith's illness. I'm going to be a—creature—like Smith. It's been this way for several days. I kept it hidden. I tried not to say anything. Tonight, I couldn't stand it any longer, and I came back to destroy Smith for what he's done to me . . . ."

A dry noise racked, dryly, splitting the air. The three of them froze.

Three tiny flakes of Smith's chrysalis flicked up and then spiraled down to the floor.

Instantly, Rockwell was to the table, and gaping.

"It's starting to crack. From the collar-bone V to the navel, a microscopic fissure! He'll be out of his chrysalis soon!"

McGuire's jowls trembled. "And then what?"

Hartley's words were bitter sharp. "We'll have a superman. Question: what does a superman look like? Answer: nobody knows."

Another crust of flakes crackled open.

McGuire shivered. "Will you try to talk to him?"

"Certainly."

"Since when do—butterflies—"Oh, good God, McGuire!"

WITH the two others securely imprisoned upstairs, Rock-

well locked himself into Smith's room and bedded down on a cot, prepared to wait through the long wet night, watching, listening, thinking.

Watching the tiny flakes flicking off the crumbling skin of the chrysalis as the Unknown within struggled quietly outward.

Just a few more hours to wait. The rain slid over the house, pattering. What WOULD Smith look like. A change in the earcups perhaps for greater hearing; extra eyes, maybe; a change in the skull structure, the facial set-up, the bones of the body, the placement of organs, the texture of skin, a million and one changes.

Rockwell grew tired and yet was afraid to sleep. Eyelids heavy, heavy. What if he was wrong? What if his theory was entirely disjointed? What if Smith was only so much moving jelly inside? What if Smith was mad, insane—so different that he'd be a world menace? No. No. Rockwell shook his head groggily. Smith was perfect. Perfect. There'd be no room for evil thought in Smith. Perfect.

The sanitarium was death quiet. The only noise was the faint crackle of chrysalis flakes skimming to the hard floor . . . .

Rockwell slept. Sinking into the darkness that blotted out the room as dreams moved in upon him. Dreams in which Smith

arose, walked in stiff parched gesticulations, and Hartley, screaming, wielded an ax, shining, again and again into the green armor of the creature and hacked it into liquid horror. Dreams in which McGuire ran babbling through a rain of blood. Dreams in which—

Hot sunlight. Hot sunlight all over the room. It was morning. Rockwell rubbed his eyes, vaguely troubled by the fact that someone had raised the blinds. Someone had—he leaped! Sunlight! There was no way for the blinds to be up. They'd been down for weeks! He cried out.

The door was open. The sanitarium was silent. Hardly daring to turn his head, Rockwell glanced at the table. Smith should have been lying there.

He wasn't.

There was nothing but sunlight on the table. That—and a few remnants of shattered chrysalis. Remnants.

Brittle shards, a discarded profile cleft in two pieces, a shell segment that had been a thigh, a trace of arm, a splint of chest—these were the fractured remains of Smith!

SMITH was gone. Rockwell staggered to the table, crushed. Scrabbling like a child among the rattling papyrus of skin. Then he swung about, as if drunk and swayed out of the

room, pounded up the stairs, shouting:

"Hartley! What did you do with him? Hartley! Did you think you could kill him, dispose of his body, and leave a few bits of shell behind to throw me off the trail?"

The door to the room where McGuire and Hartley had slept was locked. Fumbling, Rockwell unlocked it. Both McGuire and Hartley were there.

"You're here," said Rockwell, dazed. "You weren't downstairs, then. Or did you unlock the door, come down, break in, kill Smith and—no, no."

"What's wrong?"

"Smith's gone! McGuire, did Hartley move out of this room?"

"Not all night."

"Then—there's only one explanation—Smith emerged from his chrysalis and escaped during the night! I'll never see him; I'll never get to see him, damn it! What a fool I was to sleep!"

"That settles it!" declared Hartley. "The man's dangerous, or he would have stayed and let us see him! God only knows what he is."

"We've got to search, then. He can't be far off. We've got to search then! Quick now, Hartley. McGuire!"

McGuire sat down heavily. "I won't budge. Let him find himself. I've had enough."

Rockwell didn't wait to hear

more. He went downstairs with Hartley close after him. Mc-Guire puffed down a few moments later.

Rockwell moved wildly down the hall, halted at the wide windows that overlooked the desert and the mountains with morning shining over them. He squinted out, and wondered if there was any chance at all of finding Smith. The first super being. The first perhaps in a long new line. Rockwell sweated. Smith wouldn't leave without revealing himself to at least Rockwell. He couldn't leave. Or could he?

The kitchen door swung open, slowly.

A foot stepped through the door, followed by another. A hand lifted against the wall. Cigarette smoke moved from pursed lips.

"Somebody looking for me?"
Stunned, Rockwell turned. He saw the expression on Hartley's face, heard McGuire choke with surprise. The three of them spoke one word together, as if given their cue:

"Smith."

SMITH exhaled cigarette smoke. His face was red-pink as if sunburnt; his eyes were a glittering blue. He was barefoot, and his nude body was attired in one of Rockwell's old robes.

"Would you mind telling me where I am? What have I been

doing for the last three or four months? Is this a—hospital or isn't it?"

Dismay slammed Rockwell's mind, hard. He swallowed. "Hello.
I. That is—Don't you remember—anything?"

Smith displayed his fingertips. "I recall turning green, if that's what you mean. Beyond that—nothing." He raked his pink hand through his nut-brown hair with the vigor of a creature newborn and glad to breath again.

Rockwell slumped back against the wall. He raised his hands, with shock, to his eyes, shook his head. Not believing what he saw, he said, "What time did you come out of the chrysalis?"

"What time did I come out of —what?"

Rockwell took him down the hall to the next room, pointed to the table.

"I don't see what you mean," said Smith, frankly sincere. "I found myself standing in this room half an hour ago, stark naked."

"That's all?" said McGuire, hopefully. He seemed relieved.

Rockwell explained the origin of the chrysalis on the table.

Smith frowned. "That's ridiculous. Who ARE you?"

Rockwell introduced the others.

Smith scowled at Hartley. "When I first was sick, you came, didn't you? I remember. At the

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radiations plant. But this is silly. What disease was it?"

Hartley's cheek-muscles were taut wire. "No disease. Don't YOU know anything about it?"

"I find myself with strange people in a strange sanitarium. I find myself naked in a room with a man sleeping on a cot. I walk around the sanitarium, hungry. I so to the kitchen, find food, eat, hear excited voices, and then am accused of emerging from a chrysalis. What am I supposed to think? Thanks, by the way, for this robe, for food, and the cigarette I borrowed. I didn't want to wake you at first, Mr. Rockwell. I didn't know who you were, and you looked dead tired."

"Oh, that's all right." Rockwell wouldn't let himself believe it. Everything was crumbling. With every word Smith spoke, his hopes were pulled apart like the crumpled chrysalis. "How do you feel?"

"Fine. Strong. Remarkable, when you consider how long I was under."

"Very remarkable," said Hartley.

"You can imagine how I felt when I saw the calendar. All those months—crack—gone. I wondered what in hell I'd been doing all that time."

"So have we."

McGuire laughed. "Oh, leave him alone, Hartley. Just because you hated him—" "Hated?" Smith's brows went up. "Me? Why?"

"Here. This is why!" Hartley thrust his fingers out. "Your damned radiations. Night after night sitting by you in your laboratory. What can I do about it?"

"Hartley," warned Rockwell. Sit down. Be quiet."

"I won't sit down and I won't be quiet! Are you both fooled by this imitation of a man, this pink fellow who's carrying on the greatest hoax in history? If you had any sense you'd destroy Smith before he escapes!"

ROCKWELL apologized for Hartley's outburst.

Smith shook his head. "No, let him talk. What's this about?"

"You know already!" shouted Hartley, angrily. "You've lain there for months, listening, planning. You can't fool me. You've got Rockwell bluffed, disappointed. He expected you to be a superman. Maybe you are. But whatever you are, you're not Smith any more. Not any more. It's just another of your misdirections. We weren't supposed to know all about you, and the world shouldn't know about you. You could kill us, easily, but you'd prefer to stay and convince us that you're normal. That's the best way. You could have escaped a few minutes ago, but that would have left the seeds of suspicion behind. Instead, you waited, to convince us that you're normal."

"He IS normal," complained McGuire.

"No he's not. His mind's different. He's clever."

"Give him word association tests then," said McGuire.

"He's too clever for that, too."
"It's very simple, then. We take blood tests, listen to his heart and inject serums into him."

Smith looked dubious. "I feel like an experiment, but if you really want to. This is damn silly."

That shocked Hartley. He looked at Rockwell. "Get the hypos," he said.

Rockwell got the hypos, thinking, Now, maybe Smith was a superman after all. His blood. That superblood. Its ability to kill germs. His heart-beat. His breathing. Maybe Smith was a superman and didn't know it. Yes. Yes, maybe—

Rockwell drew blood from Smith and slid it under a microscope. His shoulders sagged. It was normal blood. When you dropped germs into it, the germs took a normal length of time to die. The blood was no longer supergermicidal. The x-liquid, too, was gone. Rockwell sighed miserably. Smith's temperature was normal. So was his pulse. His sensory and nervous system responded according to rule.

"Well, that takes care of that," said Rockwell. softly.

Hartley sank into a chair, eyes widened, holding his head between bony fingers. He exhaled. "I'm sorry. I guess my—mind—it just imagined things. The months were so long. Night after night. I got obsessed, and afraid. I've made a fool out of myself. I'm sorry. I'm sorry." He stared at his green fingers. "But what about myself?"

Smith said, "I recovered. You'll recover, too, I guess. I can sympathize with you. But it wasn't bad....I don't really recall anything."

Hartley relaxed. "But—yes, I guess you're right. I don't like the idea of my body getting hard, but it can't be helped. I'll be all right."

R OCKWELL was sick. The tremendous let-down was too much for him. The intense drive, the eagerness, the hunger and curiosity, the fire, had all sunk within him. So THIS was the man from the chrysalis? The same man who had gone in. All this waiting and wondering for nothing.

He gulped a breath of air, tried to steady his innermost, racing thoughts. Turmoil. This pink-cheeked, fresh-voiced man, who sat before him smoking calmly, was no more than a man who had suffered some partial

skin petrification, and whose glands had gone wild from radiation, but, nevertheless, just a man now and nothing more. Rockwell's mind, his overimaginative, fantastic mind, had seized upon each facet of the illness and built it into a perfect organism of wishful thinking. Rockwell was deeply shocked, deeply stirred and disappointed.

The question of Smith's living without food, his pure blood, low temperature and the other evidences of superiority, were now fragments of a strange illness. An illness and nothing more. Something that was over, done, and gone, leaving nothing behind but brittle scraps on a sunlit table top. There'd be a chance to watch Hartley now, if his illness progressed, and report the new sickness to the medical world.

But Rockwell didn't care about illness. He cared about perfection. And that perfection had been split and ripped and torn, and it was gone. His dream was gone. His super-creature was gone. He didn't care if the whole world went hard, green, brittlemad now.

Smith was shaking hands all around.

"I'd better get back to Los Angeles. Important work for me to do at the plant. I have my old job waiting for me. Sorry I can't stay on. You understand."

"You should stay on and rest

a few days, at least," said Rockwell. He hated to see the last wisp of his dream vanish."

"No thanks. I'll drop by your office in a week or so for another checkup, though, Doctor, if you like. I'll drop in every few weeks for the next year or two so you can check me, yes?"

"Yes. Yes, Smith. Do that, will you, please? I'd like to talk your illness over with you. You're lucky to be alive."

McGuire said happily, "I'll drive you to L.A."

"Don't bother. I'll walk to Tujunga and get a cab. I want to walk. It's been so long, I want to see what it feels like."

Rockwell lent him an old pair of shoes and an old suit of clothes.

"Thanks, Doctor. I'll pay you what I owe you as soon as possible."

"You don't owe me a penny. It was interesting."

"Well, goodbye, Doctor. Mr. McGuire. Hartley."

"Goodbye, Smith."

"Goodbye."

Smith walked down the path to the dry wash, which was already baked dry by the late afternoon sun. He walked easily and happily and whistled.

I wish I could whistle now, thought Rockwell tiredly.

Smith turned once, waved to them, and then he strode up the hillside and went on over it toward the distance city. Rockwell watched him go as a small child watches his favorite sand-castle eroded and annihilated by the waves of the sea. "I can't believe it," he said, over and over again. "I can't believe it. The whole thing's ending so soon, so abruptly for me. I'm dull and empty inside."

"Everything's looks ROSY to me!" chuckled McGuire turning away happily.

Hartley stood in the sun. His green hands hung softly at his sides, and his white face was really relaxed for the first time in months, Rockwell realized.

Hartley said, softly, "I'll come out all right. I'll come out all right. Oh, thank God for that. Thank God for that. I won't be a monster. I won't be anything but myself."

He turned to Rockwell.

"Just remember, remember, don't let them bury me by mistake. Don't let them bury me by mistake, thinking I'm dead. Remember that." SMITH took the path across the dry wash and up the hill. It was late afternoon already, and the sun had started to vanish behind blue hills. A few stars were visible. The odor of water, dust and distant orange-blossoms hung in the warm air.

Wind stirred. Smith took deep breaths of air. He walked.

Out of sight, away from the sanitarium, he paused and stood very still. He looked up at the sky.

Tossing away the cigarette he'd been smoking, he mashed it precisely under one heel. Then he straightened his well-shaped body, tossed his brown hair back, closed his eyes, swallowed, relaxed his fingers at his sides.

With nothing of effort, just a little murmur of sound, Smith lifted his body gently from the ground into the warm air.

He soared up quickly, quietly—very soon he was lost among the stars and headed for outer space . . . .

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If you have read The Day of the Triffids, Re-birth, Consider Her Ways, and other first-rate Wyndham stories, it shouldn't surprise you to find "The Eternal Eve" beautifully written and a fresh treatment of an old theme. We've all read many famous stories about the Last Man and the Last Woman (from Wallace West's classic "The Last Man," back in a 1929 Amazing, to more recent variations on the theme—such as Ray Bradbury's brilliant "The Million-Year Picnic" and Damon Knight's ironic twist in "Not with a Bang"); but trust Wyndham to get deep into his characters, to make us feel what genetic isolation must really be like. And trust him to tell the story of the Last Woman in the World when the world no longer exists—and when, to make things worse, Eve is reluctant.

## The Eternal Eve

By JOHN WYNDHAM

Illustrated by ROD RUTH

THE man came clear of the trees, showing as a small light dot against the background of dark trunks. Amanda got the glasses on to him. His clothing was in a worse state than her

own: the pants had picturesque rents, and there was not a lot left of the shirt. Something unorthodox had happened to his hair and beard, too. He could have got it that way if he had let it grow until it bothered him and then impatiently hacked off a bunch here and there with a knife. At his back he carried a pack. A rifle hung by its sling from his left shoulder. When Amanda recognized him her lips pressed a little more closely together, and she reached for her own rifle.

A few yards out into the open he stopped, scanning the hillside before him. At his back the pale pennant trees streamed like weeds in a brook, tall feathertops swung to the light breeze, the fronds of the tree-ferns rippled so that waves of motion seemed to wash across the whole plain. For a minute or two he stood quite still. His gaze passed over and beyond the spot where she lay, without a pause. Then he hitched his pack, and began to plod upwards.

Behind her tuft of scrubby bushes Amanda waited, watching him detachedly, dispassionately. Presently, with slow, careful movements, she pushed her rifle gently forward, and set the telescopic sights. Her right hand slid back to the small, her finger on to the trigger. Then she paused. She let him come on another hundred yards, making a little to her left, and then reset the sights . . . .

When she fired, he stopped, looking round wildly. He had no cover to drop to. She fired again

After he fell he did not move any more. She put down the rifle, and took up the glasses to make sure.

All day long he lay there, with the pale, grass-like growth beneath him reddened by his blood. Towards evening she went down the hillside, carrying a rope. With it she dragged him laboriously to the edge of the cliffs. There she carefully unfastened the rope before she pushed the body over.

Then she went back to the cave.

Amanda lay on a blanket in the cave mouth. She rested on her elbows, her face cupped in her hands. In front the ground sloped steeply down to the cliffedge. Beyond, growing dark now, was the sea—a fearsome, mysterious sea on which no ship had ever sailed.

At home, in such a setting, there would have been grey and white gulls wheeling plaintively, but here on Venus the birds were dark, businesslike creatures. with no graceful leisure in their flight. The sea, by daylight, was a pale green, and slightly milky so that one could not look down into the water. A great deal of life went on in it-more, it seemed, in these latitudes than on the land. Birds, diving to catch fish in it, were not likely to reappear. Far out, large, unidentifiable shapes would break the water and stay visible for a few minutes. Sometimes huge. squid-like creatures swam slowly past. Now and then a kind of starfish, twenty or thirty feet across and looking like red coral, would cruise close inshore, keeping just awash. Most characteristic of all were the weed banks which came up on the northern current like floating islands with a life of their own, carrying colonies of small birds that pecked and fished in their pools as they drifted. Sometimes too, great limbs or flukes would slap the water, sending up clouds of spray from battle below. It was alienand hostile to the very fringe. You had only to lean over the edge of the cliffs to see its outposts-the great crabs that patrolled the narrow foreshore like tanks on sentry-go.

Amanda, looking out across the unhorizoned sea, saw nothing of it. Her lips moved as she thought aloud, for she had been a long time alone.

"No!" she said. "It was not wrong. I've a right to protect my-self—a right.... He had no right over me. No one else has rights over me. I'm my own.... He need not have come—he would have been all right if he had left me alone....

"It wasn't wrong—it was horrible, but it wasn't wrong....
If another of them comes I shall do it again... and again...

until they don't come any more.

"They shouldn't make me do
it. They've no right . . . . It's
horrible . . . horrible . . . !"

The light faded behind the perpetual clouds, and the sea grew slowly darker. Stillness settled as the birds went to roost. Down in the forest the night would be beginning to hum with insects, but here there was none. There was only the gentle lap of the water—and from time to time a faint, brittle clashing. The great crabs down on the shore, where the body had gone, never seemed to sleep . . . .

Amanda put her hands over her ears, but she could still seem to hear them restlessly clattering over the stones. She could picture them, too, stopping now and then to stand stock-still, their eyes alert and swivelling on their stalks, the enormous claws raised ready to seize anything that might fall from above . . .

She moved back into the cave, and lit a little clay lamp for company. Its tiny flame kept the darkness just at bay.

"It wasn't wrong . . . ," she said, again. "He had no right . . . . I'm a human being, not an animal . . . . I want love and kindness—tenderness . . . ."

She jumped to her feet, stood with arms raised, both fists clenched, as though she hammered at something above her.

"Oh, God," cried Amanda.

"Why me? Why me? Why out of all of them must it be me? I won't . . . I refuse it. Do you hear? I refuse . . . ."

She sank down again. Her lips trembled. The flame of the little lamp sparkled and then blurred as she let the tears come . . . .

When Amanda Vark had first landed at the Melos settlement on Venus-and that was a time that now seemed infinitely further away than its measurement on the calendar-it had been in the expectation of an interesting, but uneventful assignment. In her concentration on the nature of the job itself, it had scarcely occurred to her that for eighteen months she would have to live as one of the residents of a pioneer settlement. But the fact that the place did have a life and mind of its own was made clear to her by the reserve with which the colonv received them. The arrival of three men and two women who had nothing to do with prospecting, exploration or commerce, roused immediate suspicion. The fact that they introduced themselves as an anthropological expedition and were accredited as such, scarcely helped at all. For one thing, few of the residents had any idea what anthropology was, did, or might do, while those who believed that it somehow concerned the study of natives and said so could only, in view of the non-existence of any human natives upon Venus, be disbelieved. The assumption, therefore, had quickly grown that they were some sort of inefficiently disguised government inquiry probably portending interference—and if there was one thing the colony felt solidly about, from the Administrator down to the visiting spacehand, it was interference.

Uncle Joe, as the eminent Dr. Thorer was known to his expedition's company, set himself patiently to disperse this cloud of misunderstanding. True. agreed, there were no human natives, but there were the griffas. From the scientific point of view these timid, silveryfurred little creatures were believed to be interesting. They were known to be intelligent and to live by some kind of social system, and it was thought likely that but for man's arrival they would in time have risen to be the masters of Venus. The expectation was, therefore, that they would provide valuable material for the study of primitive sociologv.

He made slow headway. The only colonial value placed on griffas resided in their silver pelts. It was not readily comprehensible that anyone should spend good money on an expedition just to find out how they lived. Nevertheless, as it became obvious that

the party's interests did actually, if perplexingly, lie in these matters, suspicion began slowly to recede.

Gradually the men of the group came to be accepted, though still with reservation, but the position of the women was more difficult. The existence of two surnameless girls who had already established themselves in the colony did not make it any easier.

Maisie and Dorrie were a pair of those good-looking, well-built girls who inevitably turn up on frontiers. You could have found them with the forty-niners, or, at the right times, in Dawson City, Kimberley, or Coolgardie. It was Maisie's fancy to move with a feline languor in shiny, inappropriate, but indisputably popular frocks. Her genuine blonde hair she wore dressed to a masterly height. When she became vocal it was to thrum deeply rather than to speak, and to convey with it the impression of a Southern accent. Dorrie's line was vivacity. Her brown eyes gleamed in a lively face framed by dark curls. Her nose tilted up a little, and her mouth was red as a new wound. She chattered volubly, introducing, except in moments of stress, sounds that were vaguely continental.

The colonists knew where they were with them: with Alice Felson and Amanda Vark they did not, so they waited to see.

In the matter of Alice it was not necessary to wait very long. At the age of twenty-nine she had already acquired two distinct reputations-one of them scholarly. To her work and to matters which interested her she brought an acutely analytical mind: when she was not working, she rested it thoroughly. The brilliance which exacted respect in academic circles moved right into the back seat. What took over would have been remarkable even in an uninhibited. poorly balanced seventeen-yearold: it seemed to know of no control but the accelerator. She lost practically no time in surrounding herself with an array of incipient crises very wearing to the nerves of a closed community.

But Amanda had remained problematical. There was a rumor that she was engaged to be married to someone back home on Earth. It was not true, but when she heard it, she felt it to have its uses, and refrained from denying it, so that the slight aloofness remained.

A month after her arrival she still had scarcely spoken to either of the other two girls. She was aware of them, and watched them with a naive admiration for their self-confidence. They made her feel terribly inexperienced and mousy by contrast in her plain shirt and trousers. Nor, she could see, were they uncon-

scious of Alice and herself. They watched, too, and they noted, but out of a fund of experience they made no approach.

Things settled down like that, Amanda had plenty of work on her hands. She was by far the youngest of the party, and, as such, the natural recipient of much of the donkey work. But she was interested. It had not been easy at first to make sympathetic contact with the griffas. Their naturally shy disposition had been greatly increased by the frontier tendency to shoot first and think afterwards-if at all. It took patience, perseverance, and numerous bars of chocolate to offset that result. Nevertheless, it was done, and she enjoyed helping to do it. She found them amusing and lovable little creatures, and with an intelligence so avid that the task became eminently worth while. Thus the party settled down to an assignment which seemed likely to prove for her, whatever it might be for Alice, unexciting. A matter of eighteen months (in Earth reckoning) of conscientious observation and notetaking, then the return home. No dream, no presentiment ever suggested to her that a time would come when she would be still on Venus living alone in a cave which she called her home-because there was no other home to go to . . . .

Amanda's better acquaintance with Maisie and Dorrie arose from an incident which revealed that the life of the colony, even outside Alice's aura, was not always placid.

Markham Renarty had been seeing her back to her hut after the customary evening's relaxation at the Clubhouse. Markham had his points-there was no need of defensive tactics with him as there was likely to be with David Brire, who was the voungest male member of the party-or as there certainly would have been with other selfsuggested escorts. Markham was a family man. He was, indeed. well launched on one of his interminable and pointless anecdotes about his singularly boring wife and family back home on Earth. when a piercing scream brought them up standing.

As they realized which hut it must have come from, they began to run. They set foot on the verandah just as the scream came again. The scene inside the hut required no explaining words. Dorrie, whose hut it was, stood pressed back against the further wall. Blood from a wound in her shoulder was trickling down one naked arm, and on the black satin bosom of her dress. Her visitor stood in the middle of the floor. He had a stained knife in his hand, and at the moment appeared to be trying to collect

enough steadiness to approach her again. Amanda left him for Markham to deal with, and ran across to the girl. She was just in time to catch her as she folded up.

When Markham looked round from throwing out the drunk, she was trying to staunch the wound with her handkerchief.

"Better get the doctor quickly. She's losing a lot," Amanda told him.

"The doc passed out cold an hour ago," he reminded her.

"Well, get the first-aid satchel from my hut, then—and hurry."

Dorrie opened her eyes.

"Is it bad?" she asked.

"It looks nastier and messier than it is. You'll be all right," Amanda said, hoping that she sounded convincing. "Here, take a drink of this." She held a cup to lips which now looked like a second gash in the girl's white face.

"Pretty dim of me," Dorrie said. "Must be losing my touch. I can usually handle 'em okay." And she fainted again.

Markham came back with the first-aid case and began to fill a bowl with water.

"Do you know anything about this sort of job?" Amanda asked. "It's worse than I thought."

He shook his head. "Not a thing, I'm afraid."

Amanda compressed her lips, and began to open the kit.

"Nor do I—but somebody's got to do something," she said, and set to work. "You'd better fetch her friend—if you can find her," she told him.

Maisie put in her appearance some ten minutes later. She said nothing, but sat down beside Amanda, watching, and handing things as necessary. When it was finished, they put Dorrie to bed.

Maisie looked at Amanda. She found a glass, and poured a stiff drink into it. Coming back, she put her arm round her.

"Good girl," she said. "Here, take a shot of this. You need it."

Amanda drank obediently. She choked a little on it—partly the strength of the spirit, but partly reactions.

"Sorry," she said. "I'm not the kind—I don't usually—" Then she burst soothingly into tears.

A look of gloomy purpose came into Maisie's eyes as her arm tightened round Amanda's shoulders.

"You just watch me blast the pants off that doc tomorrow," she said. "I'll get him so that he jitters at the sight of a bottle—even a coke."

From the next day the colony had seemed to shift up and make room for Amanda. The two girls adopted an attitude towards her which varied between awe at her scholarship—which they appeared to regard as a cleverly developed though rather impracti-

cal form of higher guesswork and a sense of responsibility towards her inexperience. Maisie particularly seemed to take this to heart. There were remarks which would make her frown.

"What troubles me, honey," she said once, "is your darned innocence. This ain't no location for it. Maybe you do genuinely forget that you're one quarter of the female population here—but others don't. In a dump like this you gotta watch your step. Honest you have, all of the time. We know, don't we, Dorrie?"

"Sure," agreed Dorrie. "Kinda like juggling. You know those guys that keep a dozen balls in the air at once while they ride a bicycle on a wire? Well, that's it."

"I don't see-" Amanda began.

"That's just what's bitin' me. You don't see—but you will," Maisie told her. "Trouble is you've spent your life learning things, and there's a hell of a lot of difference between the things you learn and the things you just kinda get to know. But when you do see trouble beginning to come your way from some of the big irresistibles around here, then let us know. We can handle 'em."

Dorrie backed that up. With a confidence quite unimpaired by her recent lapse of skill, she added:

"Sure. You just tell us. We can fix 'em."

Amanda did not see a great deal of them, for their lives were busiest at times when hers was not, but she was glad to have earned their good will. It was a comforting thought, even if there appeared to be no likelihood of her having to call on them for aid. It needed the coming of the unbelievable disaster to draw them closer together for mutual support.

In whatever way the first news of the disaster had reached the Melos colony, their faith in all they knew would have stopped them from believing it for a time. Some never did believe: a few minds refused to take it, and pitifully broke down. In the event, the news came in installments, building up to the incredible climax.

When first the radio men could raise no reply from Earth, it was simply inconvenient, and they were blamed for poor maintenance of their gear. When the apparatus was found to be okay. the trouble was attributed to a radiation blanket which would pass in a while. When contact was made with the ship Celestes and her operator admitted that he too was unable to raise any of the Earth stations, it began to look more serious. But it was not until the Astarte which had put out from Venus a couple of weeks before reported that she

would attempt to put about and return if possible—for lack of anywhere else to go—that it began to be unbelievable.

From that moment nobody talked of anything else-but they still did not really believe it. Even after the incoming Diana had grounded and her crew had told their story, one still hoped at heart that there had been some mistake, and a crowd still besieged the radio hut while, inside, the operators went on frenziedly trying to make contact with the Lunar Station, with the Port Gillington settlement on Mars, with ships in space, with anwhere that might answer with solid, reassuring news.

According to those on the Diana it had happened that there was a telescope turned back to Earth so that several of them had been able to watch the whole thing on the screen. One moment the Earth had been hanging in space, looking, as always, like a pearl with a cool, cloudy green shimmer: the next it resembled an over-ripe fruit that had split its skin, and the juice that burst from it was flame that stabbed thousands of miles into the darkness. There had been a few dazzling, awesome moments, and then it had begun to break into pieces. So rapid had been the disintegration that half an hour later the telescopes were unable to find more than a few measureable fragments. The *Diana*'s crew could tell no more than that...

Everyone's recollection of the next few days was hazy. Most of them were dazed and absentminded. Some cursed steadily: others fell hopefully to praying for the first time in their lives. The majority chose the shortest road to illusion via the bar where they drank themselves comfortably stupid or into baseless but passionate arguments as to whether the disaster had been a natural phenomenon, a new weapon of war that had overreached itself, or the product of some atomic carelessness. To the rest. the actual cause seemed a matter of utterly unprofitable speculation. Whatever it had been, it could not possibly help anyone to know any more about it now.

A few more ships came in. Some corroborated the *Diana*'s report. Others, looking out for a routine check of bearings, had found that where the Earth should have been there was nothing. The only additional information was that the moon was heading away into space and the planetary orbits were re-balancing themselves. . . .

On the night after the *Diana* grounded, Amanda had gone out alone, still numbly incredulous. Looking up at the clouds eternally covering the Venusian sky,

she kept on telling herself that it could not be true. Whatever they were saying, the Earth must be somewhere up there still. Such a colossal catastrophe could not really happen. . . .

Even later, when the other ships had added their evidence and she had to accept it, there was still a whisper somewhere which kept on saying: "It can't be real. A thing like that just couldn't happen. One day I'll wake up and find it's all there really—with things going on just as they always have."

It was a whisper which grew fainter and fainter, but it would never quite die away. . . .

The Administrator made some attempt to pull things together, but not with success. His authority had been behind him, not in him, and now he lacked weight. His efforts did little but set malcontents recalling earlier grudges, but he persisted.

Amanda spent hours of these unreal days in the company of Maisie and Dorrie, consuming endless cups of coffee and innumerable cigarettes. For some reason—possibly because there had never been any stable background to their lives—they seemed less affected than the rest, and their companionship steadied her.

As Maisie said: "It's the guys with the biggest plans that get knocked silliest. Dorrie and me have always gambled anyway, so what? While you're still breathin' life's gotta go on—they'll get round to that in a while."

Most other people Amanda avoided. She did not flock to the landing field with the rest when the few ships that had managed to make successful diversions came in to their final groundings. She was not even there when the last of all, the U.S.S. Annabelle Lee, made sanctuary on her last few pounds of fuel bringing, among her crew, a young man named Michael Parbert. . . .

On the afternoon of the day that somebody knifed the Administrator, Maisie drifted into Amanda's hut. Amanda was working on some papers, but she pushed them aside and threw over a cigarette.

"What's the idea?" Maisie asked, as she lighted it. "That kind of stuff's no use to nobody no more."

"Uncle Joe's idea," Amanda explained. "He says that for all we know we're the only ones left anywhere, so it's up to us to make a record of all we know between us. Sort of encyclopaedia."

"Uh-huh. And who for?"
Maisie wanted to know.

"Well, there may be others and failing everything else he says that the griffas will be up to learning it one day. We've come a long way in five thousand years or so, he says, but we're only at the beginning really, so we ought to save what we can to help them along."

"Ought we?" said Maisie. "Looking at the funny way we've come, I'd say give the griffas or anything else a clean start-but then, I wouldn't know."

"Nor me," admitted Amanda, "-but it makes something to do." She changed the subject. "Who did it?-The Administrator, I mean."

Maisie inhaled, and blew the smoke out. She shook her head.

"I wouldn't know that, either, I might make a near guess, but what the hell? -If it wasn't one, it'd have been another. He had it coming, anyway. The thing is, it kinda writes off the old setup."

She sent another cloud of blue smoke thoughtfully across the room.

"Meaning-?" inquired Amanda.

Maisie leaned forward, and regarded her.

"Honey, I got a feeling things are going to break open around here. In a dump like this you gotta have a boss of some kind. A stuffed one was okay-with a government in back of him-but when the government's gone, and some guy's let out the rest of the stuffing-well, then you just naturally find some other guys getting big ideas. And the climate's likely to get kinda lively while they're deciding whose idea is the biggest."

"How lively?" Amanda asked. Maisie shook her head.

"I'd like to know that, too. What isn't funny is having a lot of dopes around that are just about crazy on account of what's happened back home. I know the poor devils can't help it-but that don't make it any healthier."

"I see," said Amanda.

Maisie looked doubtful.

"Maybe you do see: maybe you don't-quite. Trouble with educated gals is they keep seeing in one pocket, and understanding in another." She paused. Then she added: "You had a boy back home? One that you were set to marry, I mean-not just the kind a gal's gotta have for selfrespect?"

Amanda hesitated.

"There was one ...," she said, slowly. "But he didn't . . . . Well. he was the only one I ever wanted -and when he chose somebody else, I wasn't interested in those things any more. So I got this job and came here."

There was a pause. Maisie said:

"It ain't natural, honey. You're a swell kid, you're young, you're pretty, you got it all."

"It's natural to me," said Amanda.

"In my experience," observed

Maisie, "every gal is a one-man woman just so long—or so short."

"Except Alice?" suggested Amanda, attempting to deflect the conversation.

"Not excepting Alice. She's the so short part. Kinda concentrated while it lasts." Maisie ruminated a moment, and then resumed. "Well, I reckon it'd be better for you to be expecting trouble when it comes. And when it does come, honey, take it from me the best thing is to—"

Amanda listened, impressed, to a sound, if unconventional, lecture in applied physiology. Her thanks at the end of it were as sincere as Maisie's intention. She had a grateful feeling in the sense of a friend at hand.

Nevertheless, the next few days passed with less overt trouble than Maisie had led one to expect. No rival would-be leaders stood up to shoot it out, nor did any gang thrust an unsuitable chief into authority. The sensation of going to pieces continued quietly with an air of all round loosening up which it was no one's appointed business check. Almost a whole week more passed before Amanda had her first personal encounter with trouble. It came one evening just as she was on the point of going to bed. The latch of her hut door rattled.

"Who's there?" she called.

A thick voice she could not place answered unintelligibly.

"Go away," she said. "This is the wrong hut."

But the man did not go away. She heard his feet shuffle, then something thudded against the door so that it bulged. There was a second thud, and it flew open as the bolt socket tore out. The man who stood in the door way was tall, burly, red-headed, and unsteady. She recognized him as one of the maintenance-shop crew.

"Get out of here, Badger," she said, firmly.

He swayed, and steadied himself by the doorpost.

"Now, now, 'Manda. 'S'not the way to speak to a visitor."

"Go on, Badger. Beat it," said Amanda.

"S'not ladylike—'beat it'!"
Badger reproved. He groped behind him for the door, and shut it. "Listen, 'Manda. You're a nishe girl, you unnerstand' things. I got nothing now, all gone, nothing to live for any more, I wanna lose m'self."

"You'll have to go lose yourself some place else," Amanda told him, unfeelingly. "Get along now."

He stood approximately still, looking at her. Then his eyes narrowed, and there was a displeasing grin on his lips.

"No, b'God! Why sh'd I go?

Amanda did not move. She faced him steadily.

"Get out!" she said, again. His grin widened.

"So you don't wanna play. Scared of me, huh." He began to advance, slowly and not very straightly.

Amanda was rather surprised to find herself very little scared of him. She stood her ground, carefully calculating the distance. When he was near enough, she let fly with all her strength, using her foot.

It was an unexpected, and, in Badger's view, highly dastardly form of attack. It was also successful. For the first time since his entrance she felt it safe to turn her back while she got her pistol. Then, to the groaning figure doubled up on the floor she said: "Now will you get out! Go on!"

The answer was a mouned string of curses.

Amanda pressed the trigger and sent a bullet through the floorboards close beside his head.

"Go on. Beat it, quick," she repeated.

The sound of the shot sent a gleam of sense through Badger's befuddled discomfort. He dragged himself up and hobbled to the door. He paused with his hand on the post, as if considering some Parthian line, but the sight of the pistol discouraged it. He turned away into the dark,

and his picturesque mutterings faded out, to leave Amanda contemplating with some awe her own efficiency in the matter.

It seemed as if that had been the sign for more things to move. The very next day Alice's present, a husky young engineer, was neatly drilled through the head by, presumably, one of her pasts. It was a privation which rendered her almost inconsolable for two whole days. A night or two later an enterprising spaceman looting the general storehouse was shot by somebody else with the same idea. The following evening a ridiculous but bloody knife fight broke out in the saloon over a sentimental record agreeable to some but intolerably nostalgic to others. A couple of nights after that, Amanda, kept awake by an unusually turbulent fracas, or maybe party, in Dorrie's hut, saw the silhouette of a man at work upon her window. She gave no warning, but reached under the pillow for the pistol. She did not know whether either of her shots hit the arm she aimed at, but, anyway, he left. Hurriedly. The following evening a ridiculous attempt was made by Markham to put some bars across the windows. That evening a shot whizzed close to his head as he returned from seeing her home. The next morning she went to see Maisie about it.

"Okay. I'll get my grapevine humming," Maisie promised.

Three hours later she came around to Amanda's hut.

"It's that red-headed dope, Badger," she said. "You've got him kind of sore at you, honey. He's been telling his buddies you're gonna be his girl. The idea seems to be if he scares everyone else off, you'll just take kindly to him sooner or later, out of lonesomeness."

"Oh, is it?" said Amanda
"Well, what do I do about that?"
Maisie considered.

"That Badger's one-tracked—and just kinda naturally stupid. Trouble is he's got quite a pull over that gang of his—so I guess they must be a grade more stupid. If I was you I'd let it ride awhile till things settle down. It could be it'll just work off."

And Amanda, with no better suggestion of her own, agreed reluctantly.

It was about that time that she began to be aware that Michael Parbert, of the *Annabelle Lee*, seemed to be a member of every group she sat with in the Clubhouse. Sedulously she took no more notice of him than of any of the others. It was impossible not to know that he was a personable young man—but so were a number of others. She began to understand Dorrie's words on juggling and tightwires. There was a feeling that everyone

was just waiting for her to fumble or slip. It needed immense concentration to show no suggestion of partiality. It even drove her to staying away from the Clubhouse some evenings, to ease the strain by sitting in her hut in resentful solitude.

Some three uneasy weeks later Maisie came around to Amanda's hut again.

"Big fight last night," she observed, as she lit her cigarette.

"Oh," said Amanda. She was not greatly interested. There seemed to be fights big or small most nights lately.

"Yeh. That Badger got beaten up," Maisie added.

Amanda looked up from the shirt she was mending.

"Badger! Who was it?"

"Michael. He had Badger out cold at the end, they tell me." She paused. Amanda said nothing. She went on: "You wouldn't want to know what it was all about?"

"No," said Amanda.

Maisie flicked her ash thoughtfully on to the floor.

"Listen, honey. You gotta face it. What're you gonna do?"

It was no good pretending not to understand Maisie. Amanda had learned that. She said.

"Nothing. Why should I?"
Maisie shook her head.

"You gotta do something."

"I don't see why."

"Now, don't act dumb with me, honey. You gotta pick yourself a boy-friend."

Maisie looked at her.

"Say, who do you think you are? There's all these guys lined up—all the men that are left now—all you gotta do is point at one an' say 'I'll have that dope there,' an' he'll come runnin'. Sakes alive, what more do you want? It's all on a dish—and you don't even have to find a local Reno if he pans out bad."

"No," said Amanda. "I told you I only ever wanted one guy —I mean, man."

"But listen. Things are all different. From now on you gotta live here-we all have. That's not the same as just stavin' awhilean' it's no good foolin' yourself that it is. You gotta quit playing the old act before it flops hard. You can't go on being the little mascot any more. An' if you keep on trying it, you'll be causing more trouble around here than that Alice. Maybe it's nice for you to sit there like a pretty little honey-pot with the lid tight on-I wouldn't know; I never been that way-but it's just hell and temptation for a lot of these guys. An' you can't blame 'em for that: it's human nature."

"Human nature?" said
Amanda, scornfully.

"Sure. What else? You gotta make up your mind. You gotta team up, so's they can see the way things are. Just so long as you keep dangling around like a forbidden fruit we ain't goin' to have no kind of peace in this dump—an' that's a fact. Now what about this Michael, honey?"

"No," said Amanda.

"Why not? I say he's a good guy. I oughta know; I seen plenty of the other kind. An' anyone who can lay out that Badger has got what it takes."

"No," said Amanda.
"Now, listen, honey—"

"No, no, no!" said Amanda, violently. "No! Do you hear? I won't be the purse in a sluggers' prize fight. And I'm certainly not going to run to the big strong victor for protection. It's disgusting to be fought over as if I were a—a—a she-buffalo, or something. No!"

But Maisie was patient and persistent. "Things are getting kinda primitive here," she said. "You ought to know the sort of thing that means, seein' it's your own subject. In a set-up that's goin' that way a girl's got two lines open: either she plays 'em along, the way Dorrie an' I doan' I reckon you just ain't got the temperament—or she takes up with a guy who can put the fear of God into the rest of 'em. You think it over, honey, an' you'll see. You can get yourself a good guy to look after you, an' have cute babies, an' all that . . . . It could be swell . . . ."

"If you're so fond of babies—"
Amanda began, and then stopped
suddenly. "I'm sorry, Maisie."

"That's all right, 'Manda, dear. That's the way life is, an' I gotta take it . . . But you haven't, honeylamb. So just think it over . . ."

"No!" said Amanda, and shook her head.

Nevertheless, she did spend a considerable part of her time thinking it over. There was no dodging it any more. She became increasingly aware of the tension around her as she sat in the Clubhouse, the way the men looked at her—and at one another. There were more fights, sometimes between surprisingly unexpected persons. She grew nervous and self-conscious, unable to speak naturally to any of them for fear of what a careless word might provoke.

Even Uncle Joe felt himself moved to give her advice—and though its form was more classical, it was too much the same effect as Maisie's.

The feeling of pressure building up made Amanda restless and edgy, but it also increased her obstinacy.

"No!" she repeated to herself. "I won't . . . I won't be driven at one of them. I'm me; my own self. They won't make me belong to one of them. Never . . . never. . . . Damn them, all of them."

But resistance did not diminish the pressure. The climax came when she wakened to hear a shot just outside her hut. Exactly what happened she never found out. To her ears it sounded like a private fight which the intervention of other parties turned into a brisk skirmish. In the course of it at least two bullets slammed in through the hut's wooden wall, and out the other side. Amanda staved in bed, having her mind made up for her. When the sounds of battled died away, she had reached her decision.

The next day she managed to slip off unnoticed into the forest to make contact with the griffas. The little creatures welcomed her. Since the disaster they had been neglected, for the classes to which they had come so eagerly, both for instruction and candy, had been discontinued.

It was difficult to know how much they grasped of the situation, but they seemed clear enough on two essentials—secrecy, and willingness to act as porters for payment in chocolate. They were able to come and go without causing comment, and for a week they did so, carrying away into the forest parcels suitable to their size.

On the final day Maisie came in again. She put up all the old arguments, and ended:

"Honey, I know this isn't your

kind of life. The way I see you is in an old cottage somewhere in your England—a place with a garden, an' you in a print frock, an' a big hat, an' so on— But, hell, kid, it just ain't there any more. You gotta face it . . . ."

"No!" said Amanda.

It had been hard not to say goodbye to Maisie, but she resisted the temptation. With tears in her eyes she watched the tall figure in its ridiculous shiny

dress sway lazily away.

In the evening she wrote a note for Maisie. Then she strapped up her pack, fixed the holster on her belt, and put the rifle to hand. After she had turned out the light, she sat waiting, watching the uncurtained window.

The fuse took longer than she had calculated. Then, just as she was deciding that something must have gone wrong there came a felty thump, and in a few seconds flames burst from the windows of an empty hut a hundred and fifty yards away. There were shouts and sounds of running feet. Against the flames she could see dark figures dodging excitedly about. When she was satisfied that the blaze had attracted the attention of all who chanced not to be paralytically drunk, she opened her door and slipped quietly away through the darkness towards the forest.

The thing that saved both

Amanda's resolution and her reason was that the griffas did not abandon her during her months in the cave. Even when all the chocolate was gone, their insatiable curiosity still brought them up from the forest to examine, observe, and ask endless questions until she found herself holding classes again. Long ago she had ceased to use even the little she had been able to learn of their language, and now they, too, seemed to be in the process of dropping it. Frequently she would hear them talking between themselves in their odd, fluty form of English-the more curious for its being learned from the Works of William Shakespeare and the Oxford Book of English Verse, which Amanda's only books.

Nor was it a one-sided arrangement. By way of payment they kept her supplied with fruits, vegetables and edible roots, teaching her to live off the land in a way that she could never have taught herself.

Nearly six months passed before she had any news of the settlement, then one of the griffas surprised her by producing a packet of paper tied round with a string. She opened it to find a number of sheets written in a large, unpracticed hand, with the signature 'Maisie' at the end.

From them she learned that the colony, after passing through a crisis, had now become more orderly. At the worst time Badger had acquired a following which threatened to dominate the whole place unless it were suppressed. Accordingly, it had been suppressed, and Uncle Joe had been elected president, chief, or whatever you liked to call it. After that Badger had disappeared. The radio operator had picked up distorted sounds on the Mars wavelength to show that at least somebody there was still alive. Alice had disappeared, and alone. This was so improbable, that everyone feared the worst. She had been moody for a couple of days, and then vanished. No one had seen her go, she seemed to have taken nothing with her, and after two months there was still no sign of her. Dorrie had been dangerously ill, but was now almost recovered. She was bitterly disappointed, though: apparently she had always wanted baby, though nobody had guessed it, and now there was no more chance of it. Finally, what about Amanda coming back?

The implication was not lost on Amanda. She was now the very last hope. It was another bit of pressure to nag at her.

"No!" said Amanda. "I won't —I won't. They can't force me."

She wrote a brief reply on the back of one of the sheets, used the rest for lighting her fire, and decided to forget it.

For a day before he arrived Amanda had known from the griffas that there was a man coming her way. It did not greatly surprise her. Sooner or later someone would be bound to find out where she was. She had not known that it was Badger until she saw him through the glasses. Nor did she know how he found her. She suspected that he must have caught and tortured a griffa till it told him. If so, he had got what he deserved. He'd torture no more griffas now.

After a day or two the shooting worried her less. If a soldier could claim a clear conscience in defending his country and his womenfolk, how could hers be the worse for defending herself?

Her life went on as before, for if one thing was certain, it was that Badger would not have passed on the details of his illgotten bit of information.

Yet, a few weeks later, the griffas brought her the news of another man working that way.

Once more she took her rifle and concealed herself in the same spot. As before she watched a distant figure come out of the trees. Through the glasses she saw that it was Michael Parbert—the 'good guy' that Maisie had wanted her to choose. She lowered the glasses, with a frown. The situation would have been easier had it been one of Badger's gang. She hesitated a moment,

and then called to one of the giffas. A few minutes later she watched the little creature make a detour and then go scuttling down the hillside. As it got nearer to the man it raised its arms, and she knew that it was calling to him. Through the glasses, she watched them meet. She could see it giving him her warning. and telling him to go back, but he made no move to do so. For a moment he appeared to dispute. The griffa reached up and took hold of his pants, dragging back the way he had come. He did not move, but stood looking up the hill. Then with an impatient movement he shook the griffa off and started to climb.

Amanda's frown returned.

"Very well, then," she said grimly. And she reached for her rifle . . . .

Later on, she slung the coil of rope over her shoulder, and set off down the slope with a purposeful step. What she had done before, she was prepared to do again. But when she got there, he was not dead. He lay on the pale, matted grassy stuff, with the blood slowly oozing and caking round his two wounds. He was light-headed, and crying like a child. She had never seen a man cry before. Her heart turned over, and she went down on her knees beside him.

"Oh, God," said Amanda, with tears in her own eyes. "What have I done . . . ? What have I done . . . ?"

For several days it remained anybody's guess what Amanda had done, but then, though he was very weak, he began unmistakably to get better.

Amanda, with a dozen or so griffas assisting, had carried him up to the cave. She had made him the most comfortable bed she could contrive with a mattress of springy twigs. And there he lay, delirious at first, then resting most of the time with his eyes shut. He made no complaints when she moved him to dress his wounds, and at first he was too exhausted to talk much. Occasionally she would see that his eves were open, and that he had been watching her as she moved about the cave. Once he asked:

"Somebody shot me?"

"Yes," Amanda told him.

"Was it you?"

"Yes," she said, again.

"You're a bad shot. Why didn't you leave me there?"

"I don't know."

"Going to shoot me again when you've patched me up?"

"Go to sleep now, and stop asking silly questions," Amanda told him.

"I've got a letter for you. In my jacket—right hand pocket."

She found it, and pulled it out. It was queer to see an envelope again, and with 'Miss Amanda Vark' neatly written on it. "Uncle Joe?" she asked.

He nodded. She tore it open. There were several sheets, and they started somewhat heavily. Dr. Thorer was prone to be a little pompous on paper:

My Dear Amanda,

This letter will not be easy for me to write, nor, perhaps, for you to read, yet I beg you to read it carefully and to consider its contents with the honesty which you would give to any social problem in your work . . . .

Amanda read steadily on, with an expression which revealed nothing of her feelings to Michael as he watched her. When she had finished it, she went to the cave mouth. She sat there for some minutes, unmoving, and gazing out across the sea. Then she picked up the letter, and read the last few lines again:

the system some of us will survive, but we do not know that, nor are we likely ever to know. What we do know is that here it is you, my dear, who hold the keys of life and death. Why it should be to you that this wonderful and terrible thing has happened we shall also never know. But there is the chance that you might have daughters... You, and you alone, are vas

vitae, the vessel of our life. Are you content that this shall be the end of it all? Can you carry such a burden on your mind? For you, Amanda, here, at least, are—Eve.

When she looked up, she saw that Michael was still watching her.

"Do you know what this is?" she asked.

He nodded. "You did, too, even before you opened it," he said.

Amanda turned and looked over the sea again. Her fists were clenched.

"Why me...? Why me...?

Am I an animal—a brood mare?

I won't, I tell you! My life is mine—it doesn't belong to any of you. I won't . . .!"

She crumpled up the letter and threw it into the small fire before the cave. It curled, singed, and then caught.

"See! You can tell him. You can tell all of them when you go back."

And she ran away out of the cave.

Convalescence was slow. To begin with he tired quickly. In the evening the feebleness of the clay lamps left them with nothing to do but talk. He could, she found, do plenty of that, and she herself had some months of arrears to make up. Their conversations rambled in every direction, skirting only the present situation—though it was not al-

ways easy to do that. It was difficult when they spoke of laughter, crowds, children, not to stop short suddenly, remembering that these things would never be again . . . .

But it was natural that most of the talk should be retrospective, and it could often be so without being altogether saddening. Talking of places made them live again-for a time. Amanda found-herself growing familiar with Massachusetts Avenue, and the Common, with Brattle Street, and the Halls and elms of Harvard. She had all the best shops in Boston marked down, and could have found her way to Aunt Mary's house in Back Bay, if necessary. In return she toured him around the colleges of Oxford, took him for a summer evening in a punt on the river. and showed him the sunrise from Magdalen College tower. . . .

The griffas continued to come for lessons, and as Michael grew stronger he, too, became a teacher. He made types of simple tools for them to copy; he showed them how to fish with both aet and rod; made them a potter's wheel, and a simple loom. It amused Amanda to look across and see him working with a serious expression, while the little creatures clustered about him no less intently, rather like—children. She knew that he was enjoying it, and for some reason it

pleased her to see that he got on better with them than had the less practical men of her own party . . . .

When he first began to get about again, she had formed the habit of keeping her pistol handy at night. It occurred to her that he had not once treated her as he might not have treated a younger brother, nor did he show the least sign of changing that attitude. In fact it would have seemed more normal if . . . . But, anyway, you never could tell. She did not know that he had noticed the pistol until one night she turned round from tucking it into its place, and saw him looking at her. He was smiling. It was not an attractive kind of smile, because it turned the corners of his mouth down instead of up. He shook his head.

"You needn't bother with that thing. You're perfectly safe, you know. I'm kind of particular—allergic, you might say, to girls that shoot at me from cover. Sort of funny that way: just naturally got no interest in homicides, I guess."

"Oh," said Amanda, flatly. It didn't seem the kind of thing you could follow up.

On a day which had begun like any other day he laid aside his breakfast bowl, and told her without warning:

"I'm okay now, near enough, so I'll be moving along."

Something hurt suddenly and quite unexpectedly in Amanda's chest.

"You—you don't mean you're going?" she said.

"Yes. I can make it now—easy stages."

"But not today?"

"Looks a perfectly good day to me."

"But-"

"But what?"

"I—I don't know . . . . Are you sure you're well enough yet?"

"Near ninety per cent, anyway. If I get stuck, one of the griffas can fetch someone to pick me up."

"Yes, only-well, it's so unexpected that's all."

"Why? What did you expect?"

Amanda looked at him confusedly. She had been to some trouble to prevent herself forming definite expectations of any kind.

"I—I don't know . . . . I suppose it's goodbye, then?"

"That's it. Goodbye—and thank you for changing your mind."

"Changing—? But if you know I've—" she began. Then she stopped. "What do you mean?" she asked awkwardly.

"About killing me. What else?"

"Oh," said Amanda. "Oh that."

As if in a dream she watched him put on his pack, still with the hole where one of her bullets had torn it. Her knuckles were white. As he picked up his rifle, she made an uncertain movement, and then checked it.

"Goodbye," he said again.

"Goodbye," said Amanda, and damned her voice for sounding queer.

He went out of the cave. Half a minute later she followed round the shoulder of the hill to a point where she could watch him go. A party of griffas emerged from the trees to join him, and he stode on into the forest amongst them. He did not give one backward glance . . . .

The whole landscape blurred before Amanda's eyes.

After he had gone, the cave should have reverted to what it was before he came. Logically, when one had got rid of the loom and all the other innovations by parking them in a smaller cave nearby, one was back to normal -only there was evidently something wrong with logic. Things did not automatically return to their former placid order. Amanda found herself restless. Conversation with none but the griffas irked her. She grew shorttempered with them, to their dismay and bewilderment, and then was contrite over her burst of impatience—only to find herself behaving in the same way again five minutes later.

More than ever was she aware of the alienness of the things about her. When one was alone they seemed to press more closely. She became aware of that loneliness and the quiet as she had never been before. The days lacked purpose. She seemed incapable of getting back into the old routine by day, and by night the cave was too quiet. If she woke in the darkness, she missed the reassuring sound of his slow, steady breathing. Instead, the only thing to be heard was the distant scrape and stir of the crabs down on the shore. . . .

For the first time she began to have misgivings about her own strength. It was no longer simple to be detached. In her more honest moments she knew that something was happening to her resolution-but it was happening too late. Some weeks ago she could have heeded Uncle Joe's letter. She could have returned to the settlement and made her choice, with her pride saved by his appeal. But now-how could she go back now? After he had walked away from her-without once looking back. . . .

She swayed between moods of loneliness and determination, misery, and bitter resolve. Yet she knew that the resolve was weakening. She would never again have the confidence which had coldly trained her rifle on the approaching Badger. She wondered what steps she would take when the griffas next warned her

of someone's approach . . . and then left it to be decided at the time.

In the event, it was a decision she did not have to make, for there was no warning. Early on a day about a month after Michael had left, she heard the griffas arriving as usual for their lesson, but among the pattering of their feet she detected another step. She pulled the pistol from her belt, and pointed it at the entrance. A figure, huge among its little escort, came to a stop in the cave mouth. Amanda's heart leaped once, and then sank. Against the light she could not see who it was; but she knew who it was not . . . . The figure stood still a moment, then it said slowly, on a reproving note:

"Would you mind putting that thing down, honeylamb. It looks kinda nervous to me."

Amanda lowered the pistol, and stared at Maisie as she came in. Something seemed to give way and pour up inside her. She ran forward and clung. Maisie put up both arms and held her.

"There, there, Honey," she soothed her. It was all either of them said for quite a little time.

"How did you get here?"
Amanda asked.

She had recovered, and hospitably brought out baskets of sweet shoots, and flat-cakes made from root flour.

"It wasn't so much the get-

ting, as the getting to get," Maisie explained. "I'd have been here long before, but if there is one thing that those griffas have a thorough hold on, it's the meaning of the word 'secret'. I've been trying for months to persuade or bribe 'em. But it's kinda difficult with griffas, you know: now, if it had been men— Anyway, here I am—and three days of steady going it's taken me."

Amanda regarded her with admiring gratitude. Forest travel was not an activity one associated with Maisie, any more than one associated her with the practical suit she now wore. She said:

"Why have you come, Maisie?"

"Well, honey, I wanted to see you. An', for another thing, I reckoned that anyone else who came would likely get shot. It's said to be sort of rough in these parts."

"Then—then he did get back all right?"

"Yeh," said Maisie. She did not amplify, but began a hunt in the pockets of her jacket and trouser. "I got a message for you some place."

"Yes . . . ?" Amanda leaned forward, eagerly.

"Sure. Now where the hell would I have put it? This ain't my kind of outfit, you know," she complained. "Oh, here it is." She smoothed out the envelope. "From Uncle Joe," she added, handing it over.

"Oh . . . ," said Amanda, flatly.

She took it. She opened it with reluctance, for she was sure what it would say. She was perfectly right.

"No!" she said, again, crumpling it up. "No!" But the negative lacked something of its old force—and there was another quality about it, too.

"That's all?" she asked.

"What else would there be?"

"I wondered . . . . I don't know . . . ."

Suddenly Amanda was crying. Maisie took her hand.

"Now, honey, you don't want to get that way. You've been too long alone here. Snap out of it now, and come along back with me."

"But—but I can't—not now," sobbed Amanda. "He doesn't want me. He—he never looked back, not once. He s-said he h-hated girls that shoot from cover."

"Nonsense," Maisie told her, briskly. "Every smart girl always shoots from cover. So you've fallen for this guy, have you?"

"Y-yes," wept Amanda.

"Huh," said Maisie, "then I reckon that fixes it."

She got up and went to the entrance.

A minute later another step outside the cave made Amanda look up suddenly.

"It's-it's-Oh, Maisie, you've been cheating!"

"Me, honey? Never on your life. It's just what they call a forcing bid, maybe." Maisie said. and she drifted out of the cave as Michael walked in.

An hour later she returned. with a heavy footfall.

"Long enough, you two," she said. "I got the whoozies watching those darned crabs down there. Good place to be checking out of."

Amanda, sitting close beside Michael, looked up.

"Not yet," she said, "we're going to have a-a kind of honeymoon first."

"Huh. Well, every gal to her taste-but I'd lay off any idea of beach parties around here. If you mean it, I'll be getting alongand I'll see about fixing a hut ready for you. And I'll tell Uncle Joe you've decided to take his advice-he'll be kinda tickled."

"No!" said Amanda, with all her old decision. "I'm not taking his advice. This hasn't got anything at all to do with duty to community, or to posterity, or to history, or to moral obligations. or the racial urge to survive-or with anything but me. I'm doing it because I want to do it."

"Uh-huh," said Maisie, peaceably. "Well, it's your affair, so you should know, honey. Still, it wouldn't surprise me one little bit to hear that the other Eve once said just that selfsame thing . . . ."

THE END

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OCTOBER 1965

## THE METAL MAN

By JACK WILLIAMSON

Illustrated by PAUL



It is remarkable how good the first stories of our best science-fiction writers prove to be when we go back to see where all that talent first began. To demonstrate this point Damon Knight recently compiled an entire collection (First Flight, Lancer, 1963), which contains such classic first stories as "Black Destroyer" by A. E. Van Vogt, "Life-Line" by Robert A. Heinlein, and "T" by Brian W. Aldiss. To these we'd like to add "The Metal Man," the first story by Jack Williamson (which appeared here way back in 1928). We don't think you will soon forget what happened to Professor Thomas Kelvin, geologist, who left the Tyburn Museum to explore the headwaters of El Rio de la Sangre (The River of Blood) and returned with the tips of his fingernails turning to light green metal.

THE Metal Man stands in a I dark, dusty corner of the Tyburn College Museum. Just who is responsible for the figure being moved there, or why it was done. I do not know. To the casual eve it looks to be merely an ordinary life-size statue. The visitor who gives it a closer view marvels at the minute perfection of the detail of hair and skin; at the silent tragedy in the set, determined expression and poise; and at the remarkable greenish cast of the metal of which it is composed, but, most of all, at the peculiar mark upon the chest. It is a six-sided blot, of a deep crimson hue, with the surface oddly granular and strange wavering lines radiating from it-lines of a lighter shade of red.

Of course it is generally known that the Metal Man was once Professor Thomas Kelvin of the Geology Department. There are current many garbled and inaccurate accounts of the weird disaster that befell him. I believe I am the only one to whom he entrusted his story. It is to put these fantastic tales at rest that I have decided to publish the narrative that Kelvin sent me.

For some years he had been spending his summer vacations along the Pacific coast of Mexico, prospecting for radium. It was three months since he had returned from his last expedition. Evidently he had been sucbeyond his wildest dreams. He did not come to Tyburn, but we heard stories of his selling millions of dollars worth of salts of radium, and giving as much more to institutions employing radium treatment. And it was said that he was sick of a strange disorder that defied the world's best specialists, and that he was pouring out his millions in the establishment of scholarships and endowments as if he expected to die soon.

One cold, stormy day, when the sea was running high on the unprotected coast which the cottage overlooks. I saw a sail out to the north. It rapidly drew nearer until I could tell that it was a small sailing schooner with auxiliary power. She was running with the wind, but a half mile offshore she came up into it and the sails were lowered. Soon a boat had put off in the direction of the shore. The sea was not so rough as to make the landing hazardous, but the proceeding was rather unusual, and, as I had nothing better to do, I went out in the yard before my modest house, which stands perhaps two hundred yards above the beach, in order to have a better view.

When the boat touched, four men sprang out and rushed it up higher on the sand. As a fifth tall man arose in the stern, the four picked up a great chest and started up in my direction. The fifth person followed leisurely. Silently, and without invitation, the men brought the chest up the beach, and into my yard, and set it down in front of the door.

The fifth man, a hard-faced Yankee skipper, walked up to me and said gruffly, "I am Captain McAndrews."

"I'm glad to meet you, Captain," I said, wondering. "There must be some mistake. I was not expecting—"

"Not at all," he said abruptly. 
"The man in that chest was transferred to my ship from the liner *Plutonia* three days ago. 
He has paid me for my services, and I believe his instructions have been carried out. Good day, sir."

He turned on his heel and started away.

"A man in the chest!" I exclaimed.

He walked on unheeding, and the seamen followed. I stood and watched them walk down to the boat and row back to the schooner. I gazed at its sails until they were lost against the dull blue of the clouds. Frankly, I feared to open the chest.

At last I nerved myself to do it. It was unlocked. I threw back the lid. With a shock of uncontrollable horror that left me half sick for hours, I saw in it, stark naked, with the strange crimson mark standing lividly out from the pale green of the breast, the Metal Man, just as you may see him in the Museum.

Of course, I knew at once that it was Kelvin. For a long time I bent, trembling and staring at him. Then I saw an old canteen, purple-stained, lying by the head of the figure, and under it, a sheaf of manuscript. I got the latter out, walked with shaken steps to the easy chair in the house, and read the story that follows:

DEAR Russell,

"You are my best-my only-intimate friend. I have arranged to have my body and this story brought to you. I just drank the last of the wonderful purple liquid that has kept me alive since I came back, and I have scant time to finish this necessarily brief account of my adventure. But my affairs are in order and I die in peace. I had myself transferred to the schooner to-day, in order to reach you as soon as could be and to avoid possible complications. I trust Captain McAndrews. When I left France, I hoped to see you before the end. But Fate ruled otherwise.

"You know that the goal of my expedition was the headwaters of El Rio de la Sangre, 'The River of Blood.' It is a small stream whose strangely red waters flow into the Pacific. On my trip last year I had discovered that its waters were powerfully radioactive. Water has the power of absorbing radium emanations and emitting them in turn, and I hoped to find radium-bearing minerals in the bed of the upper river. Twenty-five miles above the mouth the river emerges from the Cordilleras. There are a few miles of rapids and back of them the river plunges down a magnificent waterfall. No exploring party had ever been back of the falls. I had hired an Indian guide and made a muleback journey to their foot. At once I saw the futility of attempting to climb the precipitous escarpment. But the water there was even more powerfully radioactive than at the mouth. There was nothing to do but return.

"This summer I bought a small monoplane. Though it was comparatively slow in speed and able to spend only six hours aloft, its light weight and the small area needed for landing. made it the only machine suitable for use in so rough a country. The steamer left me again on the dock at the little town of Vaca Morena, with my stack of crates and gasoline tins. After a visit to the Alcade I secured the use of an abandoned shed for a hangar. I set about assembling the plane and in a fortnight I had completed the task. It was a beautiful little machine, with a wingspread of only twenty-five feet.

"Then, one morning, I started the engine and made a trial flight. It flew smoothly and in the afternoon I refilled the tanks and set off for the Rio de la Sangre. The stream looked like a red snake crawling out to the sea—there was something serpentine in its aspect. Flying high, I followed it, above the falls and into a region of towering mountain peaks. The river disappeared beneath a mountain. For a moment I thought of landing, and

then it occurred to me that it flowed subterraneously for only a few miles, and would reappear farther inland.

"I soared over the cliffs and came over the crater.

"A great pool of green fire it was, fully ten miles across to the black ramparts at the farther side. The surface of the green was so smooth that at first I thought it was a lake, and then I knew that it must be a pool of heavy gas. In the glory of the evening sun the snow-capped summits about were brilliant argent crowns, dved with crimson, tinged with purple and gold, tinted with strange and incredibly beautiful hues. Amid this wild scenery, nature had placed her greatest treasure. I knew that in the crater I would find the radium I sought.

I CIRCLED about the place, I rapt in wonder. As the sun sank lower, a light silver mist gathered on the peaks, half veiling their wonders, and flowed toward the crater. It seemed drawn with a strange attraction. And then the center of the green lake rose in a shining peak. It flowed up into a great hill of emerald fire. Something was rising in the green-carrying it up! Then the vapor flowed back, revealing a strange object, still veiled faintly by the green and silver clouds. It was a gigantic sphere of deep red, marked with four huge oval spots of dull black. Its surface was smooth, metallic, and thickly studded with great spikes that seemed of yellow fire. It was a machine, inconceivably great in size. It spun slowly as it rose, on a vertical axis, moving with a deliberate, purposeful motion.

"It came up to my own level, paused and seemed to spin faster. And the silver mist was drawn to the yellow points, condensing, curdling, until the whole globe was a ball of lambent argent. For a moment it hung, unbelievably glorious in the light of the setting sun, and then it sank—ever faster—until it dropped like a plummet into the sea of green.

"And with its fall a sinister darkness descended upon the desolate wilderness of the peaks. and I was seized by a fear that had been deadened by amazement, and realized that I had scant time to reach Vaca Morena before complete darkness fell. Immediately I put the plane about in the direction of the town. According to my recollections, I had, at the time, no very definite idea of what it was I had seen, or whether the weird exhibition had been caused by human or natural agencies. I remember thinking that in such enormous quantities as undoubtedly the crater contained it, radium might possess qualities unnoticed in small amounts, or, again, that there might be present radioactive minerals at present unknown. It occurred to me also that perhaps some other scientists had already discovered the deposits and that what I had witnessed had been the trial of an airship in which radium was utilized as a propellent. I was considerably shaken, but not much alarmed. What happened later would have seemed incredible to me then.

"And then I noticed that a pale bluish luminosity was gathering about the cowl of the cockpit, and in a moment I saw that the whole machine, and even my own person, was covered with it. It was somewhat like St. Elmo's Fire, except that it covered all surfaces indiscriminately, instead of being restricted to sharp points. All at once I connected the phenomenon with the thing I had seen. I felt no physical discomfort, and the motor continued to run, but as the blue radiance continued to increase, I observed that my body felt heavier, and that the machine was being drawn downward! My mind was flooded with wonder and terror. I fought to retain sufficient self-possession to fly the ship. My arms were soon so heavy that I could hold them upon the controls only with difficulty, and I felt a slight dizziness, due, no doubt, to the blood's being drawn from my head. When I recovered, I was already almost upon the green. Somehow, my gravitation had been increased and I was being drawn into the pit! It was possible to keep the plane under control only by diving and keeping at a high speed.

"I plunged into the green pool. The gas was not suffocating, as I had anticipated. In fact, I noticed no change in the atmosphere, save that my vision was limited to a few yards around. The wings of the plane were still distinctly discernible. Suddenly a smooth, sandy plain was murkily revealed below, and I was able to level the ship off enough for a safe landing. As I came to a stop I saw that the sand was slightly luminous, as the green mist seemed to be, and red. For a time I was confined to the ship by my own weight, but I noticed that the blue was slowly dissipating, and with it, its effect.

"As soon as I was able, I clambered over the side of the cockpit, carrying my canteen and automatic, which were themselves immensely heavy. I was unable to stand erect, but I crawled off over the coarse, shining red sand, stopping at frequent intervals to lie flat and rest. I was in deathly fear of the force that had brought me down. I was sure it had been directed

by intelligence. The floor was so smooth and level that I supposed it to be the bottom of an ancient lake.

"Sometimes I looked fearfully back, and when I was a hundred yards away I saw a score of lights floating through the green toward the airplane. In the luminous murk each bright point was surrounded by a disc of paler blue. I didn't move, but lay and watched them float to the plane and wheel about it with a slow, heavy motion. Closer and lower they came until they reached the ground about it. The mist was so thick as to obscure the details of the scene.

"When I went to resume my flight, I found my excess of gravity almost entirely gone. though I went on hands and knees for another hundred vards to escape possible observation. When I got to my feet, the plane was lost to view. I walked on for perhaps a quarter of a mile and suddenly realized that my sense of direction was altogether gone. I was completely lost in a strange world, inhabited by beings whose nature and disposition I could not even guess! And then I realized that it was the height of folly to walk about when any step might precipitate me into a danger of which I could know nothing. I had a peculiarly unpleasant feeling of helpless fear.

"The luminous red sand and the shining green of the air lay about in all directions, unbroken by a single solid object. There was no life, no sound, no motion. The air hung heavy and stagnant. The flat sand was like the surface of a dead and desolate sea. I felt the panic of utter isolation from humanity. The mist seemed to come closer; the strange evil in it seemed to grow more alert.

SUDDENLY a darting light passed meteor-like through the green above and in my alarm I ran a few blundering steps. My foot struck a light object that rang like metal. The sharpness of the concussion filled me with fear, but in an instant the light was gone. I bent down to see what I had kicked.

"It was a metal bird-an eagle formed of metal-with the wings outspread, the talons gripping. the fierce beak set open. The color was white, tinged with green. It weighed no more than the living bird. At first I thought it was a cast model, and then I saw that each feather was complete and flexible. Somehow, a real eagle had been turned to metal! It seemed incredible, yet here was the concrete proof. I wondered if the radium deposits, which I had already used to explain so much. might account for this too. I knew that science held transmutation of elements to be possible—had even accomplished it in a limited way, and that radium itself was the product of the disintegration of ionium, and ionium that of uranium.

"I was struck with fright for my own safety. Might I be changed to metal? I looked to see if there were other metal things about. And I found them in abundance. Half-buried in the glowing sands were metal birds of every kind-birds that had flown over the surrounding cliffs. And, at the climax of my search, I found a pterosant—a flying reptile that had invaded the pit in ages past-changed to ageless metal. Its wingspread was fully fifteen feet-it would be a treasure in any museum.

"I made a fearful examination of myself, and to my unutterable horror, I perceived that the tips of my fingernails, and the fine hairs upon my hands, were already changed to light green metal! The shock unnerved me completely. You cannot conceive my horror. I screamed aloud in agony of soul, careless of the terrible foes that the sound might attract. I ran off wildly. I was blind, unreasoning. I felt no fatigue as I ran, only stark terror.

"Bright, swift-moving lights passed above in the green, but I heeded them not. Suddenly I came upon the great sphere that I had seen above. It rested mo-

tionless in a cradle of black metal. The yellow fire was gone from the spikes, but the red surface shone with a metallic luster. Lights floated about it. They made little bright spots in the green, like lanterns swinging in a fog. I turned and ran again, desperately. I took no note of direction, nor of the passage of time.

"Then I came upon a bank of violet vegetation. Waist-deep it was, grass-like, with thick narrow leaves, dotted with clusters of small pink blooms, and little purple berries. And a score of yards beyond I saw a sluggish red stream-El Rio de la Sangre. Here was cover at last. I threw myself down in the violet growth and lay sobbing with fatigue and terror. For a long time I was unable to stir or think. When I looked again at my fingernails, the tips of metal had doubled in width.

"I tried to control my agitation, and to think. Possibly the lights, whatever they were, would sleep by day. If I could find the plane, or scale the walls, I might escape the fearful action of the radioactive minerals before it was too late. I realized that I was hungry. I plucked off a few of the purple berries and tasted them. They had a salty, metallic taste, and I thought they would be valueless for food. But in pulling them I had inad-

vertently squeezed the juice from one upon my fingers, and when I wiped it off I saw, to my amazement and my inexpressible joy, that the rim of metal was gone from the finger nails it had touched. I had discovered a means of safety! I suppose that the plants were able to exist there only because they had been so developed that they produced compounds counteracting the metal-forming emanations. Probably their evolution began when the action was far weaker than now, and only those able to withstand the more intense radiations had survived. I lost no time in eating a cluster of the berries, and then I poured the water from my canteen and filled it with their juice. I have analysed the fluid; it corresponds in some ways with the standard formulas for the neutralization of radium burns, and doubtless it saved me from the terrible burns caused by the action of ordinary radium.

I LAY there until dawn, dozing a little at times, only to start into wakefulness without cause. It seemed that some daylight filtered through the green, for at dawn it grew paler, and even the red sand appeared less luminous. After eating a few more of the berries, I ascertained the direction in which the stagnant red water was moving, and set off

down-stream, toward the west. In order to get an idea of where I was going, I counted my paces. I had walked about two and a half miles, along by the violet plants, when I came to an abrupt cliff. It towered up until it was lost in the green gloom. It seemed to be mostly of black pitchblende. The barrier seemed absolutely unscalable. The red river plunged out of sight by the cliff in a racing whirlpool.

"I walked off north around the rim. I had no very definite plan, except to try to find a way out over the cliffs. If I failed in that, it would be time to hunt the plane. I had a mortal fear of going near it, or of encountering the strange lights I had seen floating about it. As I went I saw none of them. I suppose they slept when it was day.

"I went on until it must have been noon, though my watch had stopped. Occasionally I passed metal trees that had fallen from above, and once, the metallic body of a bear that had slipped off a path above, some time in past ages. And there were metal birds without number. They must have been accumulating through geological ages. All along up to this, the cliff had risen perpendicularly to the limit of my vision, but now I saw a wide ledge, with a sloping wall beyond it, dimly visible above. But the sheer wall rose a full hundred feet to the shelf, and I cursed at my inability to surmount it. For a time I stood there, devising impractical means for climbing it, driven almost to tears by my impotence. I was ravenously hungry, and thirsty as well.

"At last I went on.

"In an hour I came upon it. A slender cylinder of black metal, that towered a hundred feet into the greenish mist, and carried at the top, a great mushroomshaped orange flame. It was a strange thing. The fire was as big as a balloon, bright and steady. It looked much like a great jet of combustible gas, burning as it streamed from the cylinder. I stood petrified in amazement, wondering vaguely at the what and why of the thing.

"And then I saw more of them back of it, dimly—scores of them—a whole forest of flames.

"I crouched back against the cliff, while I considered. Here I supposed, was the city of the lights. They were sleeping now, but still I had not the courage to enter. According to my calculations I had gone about fifteen miles. Then I must be, I thought, almost diametrically opposite the place where the crimson river flowed under the wall, with half of the rim unexplored. If I wished to continue my journey, I must go around the city, if I may call it that.

"So I left the wall. Soon it was lost to view. I tried to keep in view of the orange flames, but abruptly they were gone in the mist. I walked more to the left. but I came upon nothing but the wastes of red sand, with the green murk above. On and on I wandered. Then the sand and the air grew slowly brighter and I knew that night had fallen. The lights were soon passing to and fro. I had seen lights the night before, but they traveled high and fast. These, on the other hand, sailed low, and I felt that they were searching.

"I knew that they were hunting for me. I lay down in a little hollow in the sand. Vague, mist-veiled points of light came near and passed. And then one stopped directly overhead. It descended and the circle of radiance grew about it. I knew that it was useless to run, and I could not have done so, for my terror. Down and down it came.

A ND then I saw its form. The thing was of a glittering, blazing crystal. A great-six-sided, upright prism of red, a dozen feet in length, it was, with a sixpointed structure like a snow-flake about the center, deep blue, with pointed blue flanges running from the points of the star to angles of the prism! Soft scarlet fire flowed from the points. And on each face of the

prism, above and below the star, was a purple cone that must have been an eye. Strange pulsating lights flickered in the crystal. It was alive with light.

"It fell straight toward me!

"It was a terribly, utterly alien form of life. It was not human, not animal—not even life as we know it at all. And yet it had intelligence. But it was strange and foreign and devoid of feeling. It is curious to say that even then, as I lay beneath it, the thought came to me, that the thing and its fellows must have crystallized when the waters of the ancient sea dried out of the crater. Crystallizing salts take intricate forms.

I drew my automatic and fired three times, but the bullets ricocheted harmlessly off the polished facets.

"It dropped until the gleaming lower point of the prism was not a yard above me. Then the scarlet fire reached out caressingly—flowed over my body. My weight grew less. I was lifted, held against the point. You may see its mark upon my chest. The thing floated into the air, carrying me. Soon others were drifting about. I was overcome with nausea. The scene grew black and I knew no more.

"I awoke floating free in a brilliant orange light. I touched no solid object. I writhed, kicked about—at nothingness. I could

not move or turn over, because I could get a hold on nothing. My memory of the last two days seemed a nightmare. My clothing was still upon me. My canteen still hung, or rather floated, by my shoulder. And my automatic was in my pocket. I had the sensation that a great space of time had passed. There was a curious stiffness in my side. I examined it and found a red scar. I believe those crystal things had cut into me. And I found, with a horror you cannot understand, the mark upon my chest. Presently it dawned upon me that I was floating, devoid of gravity and free as an object in space, in the orange flame at the top of one of the black cylinders. The crystals knew the secret of gravity. It was vital to them. And peering about, I discerned, with infinite repulsion, a great flashing body, a few yards away. But its inner lights were dead, so I knew that it was day, and that the strange beings were sleeping.

If I was ever to escape, this was the opportunity. I kicked, clawed desperately at the air, all in vain. I did not move an inch. If they had chained me, I could not have been more secure. I drew my automatic, resolved on a desperate measure. They would not find me again, alive. And as I had it in my hand, an idea came

into my mind. I pointed the gun to the side, and fired six rapid shots. And the recoil of each explosion sent me drifting faster, rocket-wise, toward the edge.

"I shot out into the green. Had my gravity been suddenly restored, I might have been killed by the fall, but I descended slowly, and felt a curious lightness for several minutes. And to my surprise, when I struck the ground, the airplane was right before me! They had drawn it up by the base of the tower. It seemed to be intact. I started the engine with nervous haste, and sprang into the cockpit. As I started, another black tower loomed up abruptly before me, but I veered around it, and took off in safety.

"In a few moments I was above the green. I half expected the gravitational wave to be turned on me again, but higher and higher I rose unhindered until the accursed black walls were about me no longer. The sun blazed high in the heavens. Soon I had landed again at Vaca Morena.

"I had had enough of radium hunting. On the beach, where I landed, I sold the plane to a rancher at his own price, and told him to reserve a place for me on the next steamer, due in three days. Then I went to the town's single inn, ate, and went to bed. At noon the next day, when I got up, I found that my shoes and the pockets of my clothes contained a good bit of the red sand from the crater that had been collected as I crawled about in flight from the crystal lights. I saved some of it for curiosity along: but when I analysed it, I found it a radium compound so rich that the little handful was worth millions of dollars

"But the fortune was of little value, for, despite frequent doses of the fluid from my canteen, and the best medical aid, I have suffered continually, and now that my canteen is empty, I am doomed.

Your friend, Thomas Kelvin"
Thus the manuscript ends. If
the reader doubts the truth of
the letter, he may see the Metal
Man in the Tyburn Museum.

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When astronaut Major Edward White took his walk in space a hundred miles above America, newscasters and television commentators marvelled at his space gun. "Just like Buck Rogers," some of them said, and with that remark they said more than they knew: for the famous comic-strip character was first created by the late Philip Francis Nowlan right here in Amazing Stories, which first published "Armageddon 2419 A.D." and its sequel "The Airlords of Han," both excellent adult science fiction in which Nowlan predicted such future scientific developments as the walkie-talkie, the bazooka, the jet plane, and the guided missile. Even less known, perhaps, is a third story (this time not about Anthony Rogers of the 25th Century) that Nowlan did for us a little later on. We're glad to bring it to you now and only wish there were more-because in its wonderfully fresh and light style, its convincing scientific speculation, "The Time Jumpers" shows that science fiction lost a fine writer when it lost Philip Francis Nowlan.

## the Time Jumpers

By PHIL NOWLAN

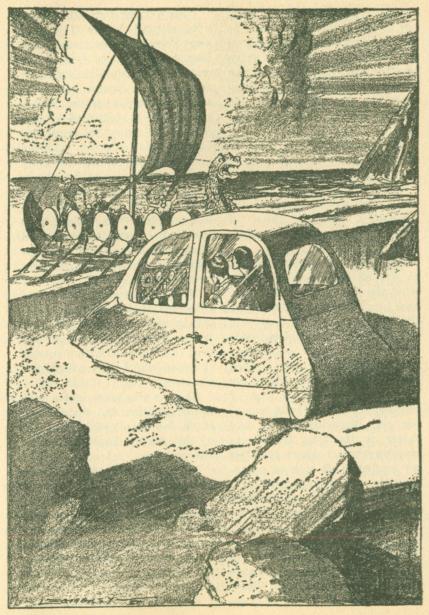
Illustrator: MOREY

OUR first experience with the time-car was harrowing.

It followed two experiments in which I had shot the contraption into the past and brought it back to the present again under automatic control. A very simple clockwork mechanism had served to throw the lever after I got out of the car, and then to reverse it again after ten minutes.

I had set the space-time co-ordinates for roughly 50,000 years, had hooked up the clockwork control, and stepping out, was about to close the door when Spot, a mongrel terrier, who used to make himself at home around the laboratory, frisked into the machine out of my reach and barked playful defiance at me.

In less than two seconds the



THE TIME JUMPERS

car would start its maiden journey into the past. Spot wanted to play tag inside the car, and kept out of my reach. I didn't dare go in after him. I had no intention of risking my life in any timetravelling adventure until I had a better idea of what would happen.

There was only one thing to do. I slammed the door and let Spot make the experiment.

Two backward leaps carried me to the opposite wall of the laboratory. From there I watched in breathless fascination.

Spot was up on his hind legs at one of the heavy quartzine windows. I could see rather than hear him barking. I could see too the blue glow that flashed up in one of the vacuum tubes inside the car. There came a low humming noise that grew in pitch and intensity, until I clapped my hands to my ears. Then I blinked, for the car was wavering and flickering, faster and faster as the hum faded into wavelengths too short to affect my eardrums. It took on an intangible ghostly appearance. I could see right through its shadowy form. Then it was gone.

I RUSHED to the spot where it had stood, waving my arms in front of me, and even ventured to stand where it had been. There was no doubt of it. It had gone.

I don't know how many minutes elapsed before I backed away from that spot again. I had been too excited to look at my watch. But when I realized how dangerous it would be to be standing there when the car returned-if it returned-I not only backed away, but scrambled for the great outdoors, taking a position some hundred feet away in the field to stare at the laboratory doors, while my heart pounded away the slow, breathless minutes. If my calculations had been correct the car should return precisely to its former position. But they might not be exactly correct.

Nothing happened until I was conscious of the unpleasant feeling in my ears. Then the high whine became audible, and lowered in pitch until with a rumble it ceased, and I ran excitedly for the doors.

The car was there, not a foot out of position, but coated with black, dank mud nearly one-third of the way up. Spot was not at the window.

But Spot wasn't dead. I could hear his terrified yowls plainly even through the thick walls of the machine. When I threw open the door he slunk whimpering out, and not for several minutes did he recover sufficiently to begin jumping at my legs in an access of gratitude.

Maybe it was the operation of

the machine; or maybe it was something he saw in the dim, distant past, into which I had hurled him so unceremoniously, that had terrified the dog. But at any rate, the important thing was that he had come through the experience safely. And, I figured, what a dog could do, I could do.

I left the co-ordinates as they were and sent the machine back again the next day, after I had rigged an automatic movie camera inside it. Again the time-car came back safely; but the film on development proved a disappointment. The exposure wasn't right, and it had registered only the faintest of impressions, of fern-like vegetation and great shadowy beasts. It was hopeless even to try to identify them.

IT was just a couple of days after this that Cynthia dropped in and nearly got us both into trouble. Cynthia is a kind of a cousin. At least I have always regarded her as such. She's the daughter of old Dr. Smith, inventor of the cosmic energy generator which is now so rapidly revolutionizing industry and transportation. He was also my guardian. I always called him uncle, and so Cynthia has always seemed like a cousin to me.

She used to stop in at my laboratory every once in a while to see how my "crazy" idea of the time-car was developing. She knew all about it, of course, because her Dad had been good enough to supply me with one of his generators after I had used up all my modest fortune in buying up the total world supply of dobinium. There wasn't much of it, just a few ounces that had been extracted from a meteor that fell in Arizona. It was valuable only as a scientific curiosity. for no experimenters but myself had ever found a practical use for it. Yet when induced to activity through a bombardment of rays from the cosmic generator. its emanations formed the basis of the complex reactions of pure and corpuscular energy by which I was able to cut the curvature of space-time and hurl a material object backward along the time co-ordinates.

Of course I had explained it all to Cynthia many times, and I believe she did grasp the fundamental idea of the thing in a vague sort of way. She couldn't be her father's daughter without having some sort of scientific head. But she had always been a bit skeptical about it.

"Why Ted Manley!" she gasped. "You don't stand there and expect me to believe that you actually sent this thing backward in time, and then brought it back—I mean forward—or whatever you call it, into the present, do you?"

"Ask Spot," I told her. "He made the trip in it." Spot jumped and cavorted around, trying to share her interest with a stick that he alternately dropped at her feet and pretended to run off with.

She tossed her head. "I don't believe it," then more seriously: "Why, Ted! You—you know the whole idea is so—so unbelievable! There must be some other explanation." All the while she was gazing at the time-car with a curiosity she had never shown before.

MAY I get in it?" she asked at last, and as was typical with her, she jumped in and sat on one of the leather-padded seats without waiting for my reply. I followed her in and closed the door.

"It is simple enough to operate," I said. "All you have to do is set the space-time co-ordinates so the beam of the indicator light falls on the year you want to visit. The motion of the earth through space since that time has been calculated and the machine set for it. I never would have been able to do it if they hadn't let me use the Calhoun Calculating Machine down in Washington." I waxed more enthusiastic. "But that isn't all! You see this adjustment here? By simply setting the latitude and longitude dials you can bring the machine to any part of the earth you want to—"

"And what's this lever for?"
Cynthia interrupted me as she reached above her head. The lever moved half an inch under the pressure of her hand. And we were in for it!

A sudden droning hum, rising in pitch rapidly, made our teeth chatter and our ears hurt. Cynthia, her pretty little face a picture of horrified astonishment, shrieked as she glanced out one of the quartzine windows and saw the laboratory vanishing in a shimmering maze of vibrations.

"Now you've done it!" I groaned. "I don't know what the co-ordinates are set for, nor when or where we're going to land!"

Cynthia just had time to flash me a look of contrition, when again we felt the intangible pain of the vibrations, which lowered in pitch until they were audible and then rumbled to a quick stop. We turned frantically to the windows.

SAND dunes everywhere. No. Over to one side, where we could see between them, there was a glimpse of blue-green sea. The time-car was half buried in the sand, tilted at a slight angle. Otherwise everything seemed quite natural, and we were in full posession of our faculties, having suffered no discomfort other than

the terrible ringing in our ears and an uncomfortable sense of vibration, which evidently had been due to the sound alone. Cynthia was still gasping for breath.

At length she gathered herself together and said: "Well, Ted, at least your machine goes somewhere! This looks like a deserted part of the Jersey coast to me."

"You'll find we've gone somewhen as well as somewhere," I replied, "but I haven't the least idea about—"

"Ted! Look! Look!" Cynthia grabbed my arm and pointed through the window toward the ocean.

A strange looking craft had run up on the beach even as we had been talking. It was a long, slender affair resplendent in brilliant colors, with a striped, square sail, and a row of shields along the rails. Long sweeps, glistening in the sun, were tossed inboard, and several armored figures leaped into the shallow water and waded ashore. They carried axes, and looked warily toward the dunes.

"Norsemen!" I muttered. "Now do you believe me, Cynthia?"

The girl gulped and nodded. "You win, Ted," she admitted. "It's — it's magic! — unbelievable! But, oh Ted, I'm kind of—frightened. Suppose something should—should happen!"

And as if enough hadn't happened already, one of the Norsemen spied our little time-car through the gap in the dunes. He pointed to us with his axe and spoke to another Norseman, evidently their leader. This one raised his arm, pointing first to the left and then to the right, and two compact parties of warriors trotted out of our line of vision, heading toward the dunes as though to top them at some distance to either side of us. A third group, under the command of the leader, waited, gazing in our direction.

There was nothing for us to do but wait, or flash back to the Twentieth Century. We were partly buried in the sand and it was impossible to open the doors.

A FTER a bit the Norsemen on the beach must have received a signal from those who had disappeared, for the leader waved his right arm to the right and left. Then, with the remaining group he marched grimly toward us through the soft sand.

They paused about fifty feet away and exchanged startled glances as they caught sight of our faces pressed to the quartzine windows. The chief waved his axe and shouted something. They all came running toward the time-car, spreading out to surround it. I didn't like the look on their faces as they closed in.

"I-I think we b-better be ggoing." Cynthia suggested. I thought so, too, and reached for the reverse lever. But to my consternation the handle moved too freely, and the shaft didn't turn at all. The little set-screw had loosened, and must have been barely hanging in place by the last thread, for when I fumbled at it with clumsy fingers, it dropped out. And to make matters worse, I snatched at it instinctively and only succeeded in batting it out of sight somewhere on the floor.

I heard Cynthia's little gasp of fear as I dropped on my knees to search for it. It was not to be seen. In a panic I jumped to my feet again, wondering if I could turn the shaft with my fingers.

The Norse warriors were not a bit frightened by what must have appeared to be a weird metal box. Nor was there the least sign of friendliness in the bearded faces that pressed against the windows, or the fierce, hostile eyes that glared in at us with glances that roved curiously over the intricate set-up of coils, condensers, and the blue glow of the vacuum tubes.

Suddenly they withdrew a few paces, and an argument developed between the leader and another. They pointed toward us with their axes.

"Quick, Ted!" Cynthia whispered. "What's the matter? Throw the switch! Can't you see they're going to try to break in?"

It was true. The warrior who had been talking to the chief stepped up and took his position before one of the quartzine windows, planting his feet wide and swinging up his great axe for a mighty blow.

I gripped the starting shaft with my fingers until they hurt. I saw the Norseman's bearded lips curl back and his muscles tense. I felt the shaft turn reluctantly.

Instantly the time-car hummed and vibrated. Slowly at first, it seemed, the axe swung downward. Then faster. The hum was a high whine.

Down came the axe in a powerful, slashing stroke as Cynthia and I shrank against the far side of the car. Straight through the side wall and quartzine window it clove, as though nothing were there to stop it. Amazement and panic flashed in the warrior's eves. Then the shrill whine was descending to a hum that lowered quickly to silence. Through the windows of the time-car we saw the interior of my laboratory, and Spot, his tail between his legs, scrambling madly for the peaceful sunlight beyond the open doors of the building.

Cynthia was visibly trembling, and I know my own hand was none too steady as I helped her out of the car. She pushed me aside, weakly. With a sort of hollow feeling in the region of my stomach, and in a bit of a daze, I watched her as she walked a little uncertainly to the laboratory doors and inspecting herself in the tiny mirror of the Dorine, powdered her nose.

Then she turned and said: "We'll be better prepared for our next trip!"

CYNTHIA simply wouldn't hear of being left behind on the next trip. All my arguments as to the dangers involved fell on deaf little ears. I turned to propriety.

"But listen, Cyn," I protested.
"Can't you see I can't let you do
that? It would be highly unorthodox."

"Could anything be less orthodox than jumping into the past across time curves, or whatever you call them?" she countered. "Why strain the straw off the camel's back and then swallow the camel?"

"But you've got to remember that we're not really cousins," I insisted, "and it wouldn't be right to go off this—"

"Who's going to see us," Cynthia interrupted, "except a lot of people who have been dead for centuries maybe? Pooh for them! Don't be so completely ga-ga, Ted. We've known each other like a brother and sister all our lives,

and if Dad could go off to Europe and trust me here during vacation, I don't see why—"

"All right. All right. We won't argue any more about it," I conceded. "Maybe we can make a short trip anyhow; start early in the morning and be back at night. What period do you think we should visit?"

Cynthia suggested Colonial days, or the American Revolution. "Think what a lot of hopelessly lost historical data we could gather, Ted," she said. We couldn't have gotten anything out of those Norsemen anyhow, even if they hadn't tried to smash us up. We couldn't have understood their language."

"No," I admitted. "But at least we established one thing. The Norse did get as far down as the Jersey coast. Do you remember how fine that sand was? I don't think there are any beaches just like that, with such fine sand, much farther north than the South Jersey coast, are there? And by the way—we were so excited we never checked up on how far into the past we went."

We looked at the time-car's control dials. They registered 968-237. That meant 968 years ago, and 237 days; or, as a rapid calculation showed me, June 7, 993 A.D.

"Maybe it was Leif Ericson himself we saw," Cynthia ventured.

"Maybe," I agreed, "but I don't want to be caught again by Leif or any of his friends; not cooped up in an iron box half buried in the sand that way. What we've got to do, Cyn, is to equip this car with a flock of rocket tubes. so we can shoot up in the air with it before we jump the time gap. Did you ever stop to think what might have happened if we had materialized in the year 993 under a pile of rocks or something? We can't always be sure what was at a given spot on the earth's surface at a given time. Maybe the ground level was way above what it is now, or way below. We might be buried-or drop a couple of hundred feet!"

"Any way you dope it, Ted, will be okay with me. Well, I'll be seeing you." And Cynthia hopped into her neat little sportster rocket plane and flashed away toward town.

It took me several days to make the necessary changes in the time-car. Fortunately I had counted on the possibility of making them from the beginning, and had designed the car so that the rocket tubes could be readily attached.

History contains many references to flaming "stars" in the sky. Of course the natural thing to assume is that the ancients had so recorded the observation of meteors. Even to-day people talk of "shooting stars." But I

chuckled as I wondered if any of these might have been—or would be—whichever way you choose to put it—my time-car, riding down on its rocket blast, or shooting across the countryside.

Cynthia and I decided we'd try to land near New York about the year 1750. But the problem of costume bothered us. The things you can get from a theatrical costumer may pass pretty well behind the footlights in 1962, but we had a hunch they'd look pretty sad face to face with the people of 1750. In the end we compromised on a plan of representing ourselves as frontiersmen. That wasn't hard. Cynthia sewed fringe on our shirts and made fur caps with tails on them. She got herself a haircut like mine. and when we were all dressed up. she might have passed for my vounger brother. Both of us had spent plenty of time outdoors, so we were sufficiently tanned for the parts we determined to play. And for safety's sake we carried in concealed holsters a pair of neat little rocket guns that discharged tiny explosive rockets with no more noise than a slight hiss.

WE roared aloft on a powerful blast, and carefully surveying the sky to see that no other craft was near enough to notice our sudden disappearance in midair, we jumped the time-gap.

I thought I had set the co-ordinates for a spot on the Hudson, a few miles above New York. But either I made a mistake or there was some slight element of error in the mechanism, for we materialized over a wooded country-side that was not familiar to us. The forest, however, offered good concealment for the time-car, and we descended. It was something of a job to bring the car down among the trees, but at last I maneuvered over a tiny clearing, and let her drop.

"Now that we're here," I said, "and all ready for the adventure, I don't quite like the idea of leaving the time-car. It seems too much like cutting off our only possible method of returning to our own century."

"We might have to stay here, and get married and become our own ancestors," Cynthia giggled. Then more seriously: "You've got a lock on it, haven't you? Lock the door and come on."

"You know, Cyn, that's a puzzling aspect of this time-travelling you just brought up," I said as we headed into the woods away from the machine. "Seriously now, just suppose we did have to stay here in this period, and we did get married and have children, and our own descendents were—I mean will be—hobnobbing with us back—I mean forward—in 1963!"

Cynthia thought this one over.

Then she said: "I have a feeling something would happen to prevent that, Ted. I don't pretend to understand all this relativity thing. And I don't know more than the A B C of the space-time continuum. But I just have a hunch that somehow that sort of thing couldn't happen. I don't know just how to explain it. It's as though we don't really belong in this century—as though we're not really all here, even though the ground is solid underfoot, and the trees are very real, and so on.

"I don't know whether you noticed it or not," she went on, "but something very funny happened to us back there in 993. That Norseman's axe sliced right into the time-car. The blade was way inside the field of the coils. But it didn't come back to the 20th Century with us in the car."

"Well that incident is easy to explain," I said. "I won't go into the mathematical theories involved, but I can give you a kind of a simile. It would be relatively as different a thing for the Norseman to go forward into the future as it would be for us to return back into the past. And our time-car isn't designed to carry anything forward into the future. But even if it were, you see, it could only be done along the co-ordinate of the time-norm. and the Norseman would be dead some ten centuries as we arrived back in the 20th Century. We'd have nothing with us but his skeleton, if we had even that. See? You can't go into the future except along the norm, and that means the full ageing process, even if you accomplish it in a relative instant. It's quite different from our returning to the future where we already—"

"You needn't bother to go any further," Cynthia cut in. "I'm dizzy. But I still have that hunch that though we seem normal and feel normal in this period, we're really not entirely real and—Oh, what's the use of trying to put it in words? Anyhow, we're not going to be caught in this century and have to stay here."

BUT something happened at this instant that made it look as though Cynthia was wrong.

Something whizzed blindingly between our heads and thudded into a tree behind us where it stuck, quivering. It was an Indian arrow!

For one startled instant we stood as though paralyzed. Then Cynthia cried out: "Back to the time-car, Ted! Don't let them get there ahead of us!" And we were racing madly back through the forest to an accompaniment of blood-curdling yells that seemed to come from every direction.

Now more arrows were whirring past our ears, and the yells were closer. Cynthia tripped over a propecting root and, had I not caught her, would have fallen flat. As it was, we lost precious seconds.

Just why neither of us thought to use the rocket guns we had so carefully provided ourselves with, I don't know. I suppose it was because neither of us was accustomed to firearms, and we didn't instinctively think of them. People act more by instinct than by reason in a crisis like this.

That neither of us was hit by the savages' arrows was due no doubt to the fact that the forest grew very thickly here, and it was difficult for them to get a clean sight on us as we ducked, dodged, jumped and slipped on among the trees in our desperate flight.

We were back now, I thought, where the time-car should have been. But we must have veered off our path, for I could catch no glimpse of it among the trees ahead. There seemed to be no escape for us. The Indians were closer than ever, and flashing occasional glances over my shoulder, I glimpsed bronzed figures following, and felt that their purpose was not so much to overtake us as to surround us.

Then suddenly the horrifying war whoops were stilled. And glancing back, I saw no bronzed bodies among the trees.

"Wh-what's the ma-matter?"

Cynthia panted as she ran. "Aren't th-they ch-chasing us any m-more?"

"I—I do-don't thuh-think so," I replied. "But we—better—k-keep running!"

We continued our desperate flight a bit farther, but when there was no sign of pursuit we slowed down to a hurried walk, panting and gasping too hard to talk right away.

I DON'T think we came nearly this far, from the time-ship," Cynthia said at last. "If we've lost it, Ted, we are in a tough spot!"

"Well, I'm afraid we have," I had to admit. "But I'm even more uneasy about those Indians. We must have looked like easy pickings to them. I wonder why they quit so suddenly?"

I had lagged a few paces to look back. When I turned to follow Cynthia, I ran square into her. She was backing toward me, her arms outstretched to warn me, her gaze centered on a spot in the forest ahead where an indefinable patch of bright blue showed. "Do you see it?" she whispered. "It's cloth I think. And I'm sure I saw it move!"

A voice, all the more startling because of its low, tense tone, made us snap our eyes suddenly to the left. "Stand where ye are!" it commanded, "and reach for no weepons!" Only half concealed behind a tree a blue-coated figure stood, levelling a long rifle at us. Two or three others were moving softly out from their concealment toward us. I heard a faint sound to the right. There were more of them. We were surrounded.

"Reach for the sky, Cyn!" I said under my breath. "We're in a trap!"

Except that they were all badly in need of shaves, and their hair, which was arranged in little pigtails, looked kind of gummy, they didn't seem like a bad lot. Some wore buckskin leggings with their military coats, and others wore coonskin caps, and some had fringed hunting shirts. But there was an air of alertness and straightforwardness about them that relieved my mind considerably.

"Colonial troops!" Cynthia whispered.

"I hope so!" I replied.

Their leader stood before us now. "No rifles, hey?" he said. "Where did ye come from? Ye're not French!"

HARDLY," I replied. "We—we got lost. And Indians chased us."

"They'd be Algonkin devils," he commented. "Allies o' the French. They'd had yer skelps before now if—but here! We got no time to waste. Hi there! Robinson! Altrock! Take these two

pris'ners back to the Colonel, will ye! And mind ye salute him precise. What with these red-coated macaronis tramping all through the forest, the Colonel's startin' to set a heap o' store by cer-eemonial!" And with that he was gone. His men, too, with the exception of the two into whose keeping he had given us, had faded silently into the forest.

And now a vague sound, of thousands of men tramping and crashing on through the forest in the distance, came to us from the other direction.

"Where are you taking us?" I asked one of the lads, for both were but youngsters.

"To th' Colonel," he replied curtly as they started us off down a trail in the direction of the crashing sound. And after a bit he made us draw aside while a long column of grenadiers in brilliant scarlet and white uniforms, marched by.

"British Redcoats!" Cynthia exclaimed.

"Aye" the boy muttered bitterly. "The rapscallions! One of these days the Colonies'll get tired o' their high-handed ways an—" A bit startled at his own temerity, he let his remark trail off into incoherence.

Our two guards weren't too communicative. Besides, Cynthia and I were getting an eyeful of the Britishers. They weren't nearly so impressive, we found,

as the pictures of them in the history books. The queues and powdered hair didn't stand close inspection, and the mixture of sweat and powder didn't improve the appearance of the rather illfitting scarlet coats. The officers, of course, had better fitting uniforms and were much snappier in appearance. But all of them were pretty sorry looking from the knees down. The column evidently had forded a creek and splashed mud all over itself. And the high grenadier-hats frequently were knocked off by overhanging boughs, causing considerable confusions and evoking blistering comments from sergeants. Altogether it gave me quite a chuckle, and I saw the corners of Cynthia's mouth twitching.

Immediately after the grenadiers came a party of mounted officers. Most of these wore the scarlet of the British regulars, but there was one conspicuous in buff and blue, whose keen glance instantly spotted the two Colonials and ourselves. He leaned forward to say something to the rather pompous Redcoat ahead of him, who could have been nothing less than a general, and saluting, pulled out of position and rode over to where we waited, well off the trail.

"Robinson and Altrock, isn't it?" he inquired as the two lads executed smart salutes. "And whom have we here? Prisoners?"
"Aye, sir! The Cap'n sent us
back wi'them, sir."

NOW I had been gazing at this big, deep-voiced officer, with a disconcerting feeling that I had met him before, which of course was obviously ridiculous, since I had spent all of my life, but the past hour or so, in quite another century. And I noticed too that Cynthia was looking at him with astonishment.

"General Washington!" she burst out at last, "The Father of His Country!"

He turned on her sharply: "What's this—what's this?" he demanded. "You know me? But what is this nonsense of 'General," and 'Father of My Country?' I am Colonel George Washington, of General Braddock's staff. But I don't understand the rest of your remark!"

Cynthia drew back in confusion as I whispered to her: "Sh! He isn't a general yet, and the Revolution has not been fought yet, Cyn!"

Washington heard some of this, I thought; and I fancied I saw a startled gleam in his eyes for just a moment. But if so, he had a good poker face. Even as I looked, his face was grave and calm.

The two Colonials told him how they had picked us up in the forest, and mentioned the force of Algonkins that had chased us. He seemed concerned at this.

"We're halting a few rods up the trail," Washington said. "Bring your prisoners up there. General Braddock may want to question you, young men." His second remark was addressed to us. Evidently he had not penetrated Cynthia's disguise. He swung his horse about and galloped away.

Cynthia nudged me. "Why didn't you tell him?" she demanded.

"Tell him what?" I asked, still somewhat in a daze from the novelty of meeting a great historical character face to face.

"Why, about the ambush, stupid!"

"Oh," I said. "I forgot about that. But I will tell him."

It was about twenty minutes later that we approached Washington for the second time. He stood alone with General Braddock. The other officers had withdrawn. Braddock's manner was a bit impatient with Washington, though in a friendly sort of way.

"How now, Washington?" he was saying. "What can these ragged Colonials of yours, and these two babes o' the woods, tell us that we don't already know?"

Washington winced and frowned slightly at the reference to "ragged Colonials," but he said: "If it please you, sir, they have to report a large force of French Indians ahead of us. The

point is they must have known of our near approach, or they would not have been in such great force, nor withdrawn so quietly and readily."

"Gad's 'Ounds, sir!" Braddock said testily. "But we already know Indians and French are ahead of us. And they must needs learn of our advance before we reach 'em! What of it all?"

"Just this sir!" I stepped forward and saluted. "It is the intention of the French to ambush you, and—"

"What!" Braddock roared.
"Ambush British Regulars! Let
them try it! We'll sweep straight
through their ambush with cold
steel!" He turned angrily away,
and addressing Washington,
said:

"Come. I'm sick of this assumption that any naked rabble of savages the French can gather together with bribes of beads and trinkets can halt the advance of regular troops. You hear me, Washington? We're going straight through to Duquesne.\* Let me hear no more of any talk to the contrary." And he strode off, the very picture of stiff, military indignation.

Washington gave us a quick glance and raised his eyebrows significantly. He nodded his head slightly toward the forest.

"He means for us to scram," said Cynthia.

\*Now Pittsburgh.

"I reckon ye do," said one of the lads slowly. "Our orders was to bring ye to the Colonel. We ha' done that. There's no more orders, so belike we'd better be returning to our command." They headed into the trees and soon were lost to sight.

WE withdrew sufficiently far to be inconspicuous, and sat down to rest. "You see how it is. Ted," Cynthia said thoughtfully. "Here we are with absolute preknowledge of what is going to happen-about Braddock's defeat. I mean-we warn him in plain words. But does it do a particle of good? No. He just gets mad and walks away. Washington knows the danger, but there's nothing even he can do about it. As for us-it's just as I said. We simply don't belong in this period. I don't believe anything we could do could possibly change the course of history the slightest bit from what it is to be, because, you see, it already was-at least to us!"

"I guess you're right, Cyn," I said. "But you've got to admit that this is a lot of fun. Look at that old sergeant over there. How funny he looks in that badly fitting red coat, and the green grass stains on the seat of his pants. Yet I bet he's a real hard-boiled

egg in his outfit. None of them seem to see anything funny about themselves, or dream that they look to us like a bunch of comicopera soldiers."

"No," said Cynthia, "and the tragedy of it all is that before they know it, they're going to get bowled right over, just like a bunch of comic-opera soldiers—all except the blood and the slaughter—and—and there isn't a single thing we can do to prevent it." She sighed. "Well, Ted, we ought to try to locate the time-car before the slaughter starts. There's no reason why we should get dragged into it. It's not our fight."

I agreed with her. But before we set out, we paused to look at a command of Iroquois Indians trailing silently, grimly past, on toward the head of the column. Then a bugle blew, sergeants shouted commands, and the column of Redcoats formed quickly and marched off up the trail.

A S nearly as we could figure it, our time-car had to be some distance ahead and off to the right of the trail somewhat further on. And we followed, intending to strike off among the trees somewhat farther on. We went slowly, because we wanted to be alone when we came to the machine. There was no use in having an audience to witness our return to the 20th Century.

But we were not destined to accomplish our purpose as easily as that. A crashing volley of musketry was borne back to us on the wind. Wild yells in the distance. More musketry fire, a bit more ragged this time. The sounds were coming nearer. Blood-curdling war cries of the Indians. The screams of terrified and tortured men. Musketry fire swelling into an almost continuous roll, and coming nearer.

"The slaughter will center chiefly on the trail!" I told Cynthia. "Let's beat it, quick! Straight to the right, away from the trail! And don't forget we've got rocket guns. We'll use them if we have to!"

Away we went through the trees, keeping a sharp lookout to the left, in the direction of the French. The firing, more behind us now, was resuming something of its volley character.

"That's George Washington's work!" Cynthia panted, as we ran. "You know he was responsible for rallying the troops and preventing worse slaughter."

But as though to belie her words, a wave of Redcoats in mad panic swept down on us from our left. Some were cursing. Some laughing hysterically as they tripped and ran. They hurled their muskets and cross belts away, tossed aside their headgear. Some staggered and fell. One held up a bloody hand

transfixed by an arrow, shrieking insanely: "The Red Hand of O'Neil!—See the Red Hand of O'Neil!"

There was no sense in what they did. There couldn't have been a large force of pursuers. But these proud regulars, the pride of the British army, had simply cracked under the strain of battle conditions to which they were unaccustomed. For the moment they were not disciplined troops, but fear-crazed animals, running in horror from a deadly terror they couldn't see.

I dragged Cynthia behind a great tree which, flanked by a couple of smaller ones quite close to it, formed a natural shelter, and held her, trembling in sheer horror, while the wave of panic-stricken troops surged by.

As a matter of fact there were no pursuers. Not at the moment, at least. We ran from one to another of the fallen Britishers. They were all dead except one; and he died in our arms as we tried to relieve his suffering with water from his canteen.

"Well, Cyn, I guess it's no use hanging around here," I said. "We know already how complete this victory is going to be. If we don't find that time-car pretty quick, we're not going to get back to the 20th Century at all."

"Oh, how horrible and bloody it all is," Cynthia said. Her voice trembled. "The way we read it in our school histories, it didn't seem like this at all, did it? Just to think! This poor fellow probably has a mother and father waiting for him on some peaceful English countryside, looking forward to the day when he comes home from the wars and—"

"Come, Cyn," I said, taking her elbow and steering her gently on through the forest. "It's all very sad and terrible. But there's nothing we can do about it. And we have to get back to that time-car!"

Several times we heard distant shrieks and cries and, two or three times, musket shots. Once a party of Iroquois, allies of the English, crossed our trail ahead of us. We could see them slinking through the trees, glancing back occasionally in the direction of the French lines.

"That means the French or the Algonkins can't be far away," Cynthia said. "What do you think we better do?"

"I don't know. If we only knew exactly where the time-car is," I told her, "I'd take a chance and try to crash straight through to it. These are the days of solid shot, you know. Not even explosive artillery projectiles have been invented yet. So unless we meet an overwhelming opposition, we ought to be able to scare off Indians with the explosive bullets of our automatics."

In the end I decided to climb a tree and see if we could get our bearings that way. I selected the tallest I could find, and finally made my way to the top, though I am quite sure that, had there been any Algonkins in the immediate neighborhood, they would have been attracted by the commotion I made.

All I could see in every direction was forest. No—was I mistaken? Did I see a flash, as though of the distant reflection of sunlight on glass, way over there? I couldn't be sure, but we had no better guide. So carefully noting the direction, I descended, and we set forth cautiously in that direction, pausing every few moments to listen carefully.

I THINK we've come about the right distance," I said at length. "Let's circle about carefully. Isn't that a clearing over there?"

"I don't know," Cynthia replied. "That outcropping of rocks is in the way. You can't see very well what is beyond."

We made our way to the little ridge, and as Cynthia anxiously watched me, I crawled to the top, and exposing myself as little as possible, looked over. There was the time-car, just as we had left it. I could see it through the trees about two hundred yards away. And gathered around it, touching and thumping it in obvious

amazement, were some two dozens Indians. Even at this distance I could tell from their headdress that they were not the friendly Iroquois, but Algonkins.

Cynthia crawled up beside me and together we watched, hoping the Indians would pass on in their pursuit of the British column. But they didn't. Instead, when they had gotten through thumping and scratching at the locked car, they proceeded to squat and stretch themselves on the ground as though waiting for something, or someone.

"Do you suppose they can damage it?" Cynthia whispered.

"I hardly think so," I replied. "Not with tomahawks, knives and arrows. None of them seems to have a gun. A bullet might crack one of the quartzine windows, but I don't think it would break it. They're pretty thick, you know. The only trouble is there's no telling what a bunch of fool Indians will do. Suppose they took it into their heads to build a great bonfire around it?"

Then suddenly the savages were on their feet. The white uniform of a French officer had appeared among them. They gathered around him, gesticulating and pointing at our time-car. He stood with folded arms, ignoring the machine with a great air of dignity.

At length he held up his hand with a dramatic gesture and said

something. The Indians backed away and subsided. Then he turned and gravely inspected the car, giving no sign, that we could see, of surprise.

"He naturally wouldn't," Cynthia murmured. "That's one reason the French were so successful with the Indians. They knew how to put on an act with them. Look, Ted! he acts as though a time-car were an everyday affair with him! Maybe he'll order them to go away and leave it."

"Not he!" I said. "He's caught sight of the coils and gadgets inside. He'll try to devise some way of breaking into it."

I was right. The Frenchman slowly drew his pistol from his belt and examined the priming. He was going to try to shoot the lock. Not that he could have broken in that way. But he might have ruined it and prevented our ever getting it open. The time for action had come. I raised my gun and took careful aim at the ground some thirty feet this side of him. I squeezed the trigger gently. The slight hiss from the muzzle was lost in the detonation of the tiny rocket-bullet where it hit the ground.

For a split second the Algonkins remained as though paralyzed, each in the position he had been in at the instant. Then, as though full of coiled springs, they leaped madly in every direction away from the spot where the explosion had occurred. The Frenchman had whirled and faced us, or rather the point of the explosion.

"Come on, Cyn!" I cried. "We'll have to wade right into 'em!"

"Shoot at the ground in front of them!" she suggested.

We went over the top of the rock, shooting slowly and deliberately as we went, virtually laying a barrage down in front of us. The officer shrank back from the terrific explosions and raised his futile pistol, but his shot went wide as he staggered back, blinded from the approaching explosions, and threw his arm up before his eyes.

That lad had courage, though. The detonating bullets, which were somewhat more powerful than the old-fashioned hand grenades of 1917, were something entirely beyond any war experience he could ever have had back in the 1750's. But he didn't turn and run. He just backed slowly away among the trees, calling back to his Indians to turn and face the music. I could have blown him to bits any time I wanted to, but I didn't have the heart. As Americans this might have been our war. But we weren't Americans of that period, and somehow I didn't feel justified in doing a thing more than was necessary to win our way back to our own century.

Steadily we approached the time-machine. The Frenchman was some three hundred yards away now, taking advantage of the shelter of the trees. We only caught occasional glimpses of him. The Indians were completely gone, probably a half mile away by now. Finally my gun just clicked. The magazine was empty. "Have you any shots left?" I called to Cynthia.

She nodded. "A few," she said.
"Then give him a final barrage. I'll open up the car."

I leaped to the door of the time-vehicle and inserted the key. With a sigh of relief I opened the door and turned toward Cynthia. Her magazine was empty too, and she was running toward me. A bullet clanged against the metal panel beside me. Frenchy was still in the game, and coming back at us. He had sensed that we had run out of ammunition, and was coming on the run with no attempt at concealment. In we jumped, and I slammed and locked the door while Cynthia threw the power switch. Would those tubes never develop their blue glow? The officer was plunging toward us at full speed, sword in hand. He had thrown away his useless pistol.

Cynthia's hand trembled on the rocket-blast lever. I glanced alternately at the running Frenchman and the vacuum tubes. There was a faint glow in them now.

"Don't throw it yet!" I cautioned her. "Not till the tubes develop full glow. There's nothing he can do to us with that sticker of his, but if he gets too close the rocket blast will burn him to a cinder!"

He was still thirty feet away when Cynthia finally pushed the lever over. A blast of flame mushroomed from under the car as we rose. The Frenchman halted short, staggered back and threw his arm up to protect his eyes. Then we were roaring aloft, with him standing there gazing up after us in amazement.

I WONDER if this will go down in history?" Cynthia said. "I don't remember reading of anything like it, do you?"

"Not much," I chuckled. "Just let him try to tell a story like this when he gets to Fort Duquesne or to Quebec! Who'd believe him?"

I pulled the time-gap switch. "Well," I said as we drifted down over my laboratory on reduced rocket blast, and in the good old 20th Century, "I like adventure, Cyn, but that was a little too hot for comfort."

"It was a little exciting," Cynthia replied, "but scarcely esthetic. Next time let's pick a more picturesque period of history."

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## The Kensington Stone

BY ROBERT SILVERBERG

Done any serious digging in your garden lately, or maybe you're thinking of uprooting that elm blasted by the last big storm? Think twice about it, but if you do go ahead, beware of strange stones bearing exotic inscriptions—because if you do bring one into the house, you may (as farmer Olof Ohman did) find yourself precipitating a scientific controversy that could topple giants—Christopher Columbus, for instance.—

In November, 1898, a Swedish-born farmer named Olof Ohman was hard at work clearing the land of his farm, in the township of Solem, Minnesota, not far from the village of Kensington. Ohman, born in 1859, had come to the United States in 1881, one of the many Swedish emigrants who settled in Minnesota. By saving his skimpy wages-at best laborers got paid a dollar a day-Ohman was able to make the first down payment on a tract of farm land in 1891. Now, seven years later, he was still busy clearing off the trees.

He was a big, powerful man. His usual method of uprooting a tree was to dig a trench around it, cut the roots, and rock the trunk back and forth until he could pull the tree from the ground, roots and all. On this particular November day he set to work on an aspen tree whose trunk was ten inches in diameter at the base. When he vanked the tree from the ground, he was startled to find a flat stone, almost three feet long, clutched in the tree's roots. As he described it in an affidavit sworn a decade later, "The stone lay just beneath the surface of the ground in a slightly slanting position, with one corner almost protruding. The two largest roots of the tree clasped the stone in such a manner that the stone must have been there at least as long as the tree. One of the roots penetrated directly downward and was flat on the side next to the stone. The other root extended almost horizontally across the stone and made at its edge a right angled turn downward. At this turn the root was flattened on the side toward the stone."

Ohman paused to examine the strange stone. Brushing aside some of the dirt on its surface, he saw that it bore some sort of inscription. Puzzled, Ohman called his neighbor from the next farm, Nils Flaten, to take a look. Neither he nor Flaten could make much out of the inscription.

A few weeks later, Ohman showed the stone to J. P. Hedberg, who ran a real estate and insurance agency in Kensington. Like nearly everybody else in that part of the state, Hedberg was a native of Sweden. Ohman—who could sign his name but not otherwise write—asked his countryman to help him discover the meaning of the inscription.

On January 1, 1899, Hedberg wrote a letter to Swan J. Turnblad, the editor of a Swedish-language paper published in Minneapolis. Even though both Hed-

berg and Turnblad were Swedes, Hedberg wrote his letter in English—of sorts. This is what he said:

"I enclose you a copy of an inscription on a stone found about 2 miles from Kensington by a O. Ohman he found it under a tree when Grubbing, he wanted I should go out and look at it and I told him to haul it in when he came (not thinking much of it.) and he did so, and this is an exsest Copy of it the first part is of the flat side of the stone the other was on the flat edge. I thought I would send it to you as you perhaps have means to find out what it is-it appears to be old Greek letters, please let me hear from you and oblige."

THE copy Hedberg enclosed showed an inscription of 219 characters. Three of them were in the Roman alphabet—the letters AVM, later interpreted as the initials of "Ave Virgo Maria," or "Hail, Virgin Mary." Some of the other characters looked, as Hedberg had said, like ancient Greek or Phoenician letters of a kind that were sometimes reproduced in nineteenth-century books on the Bible.

The rest of the characters appeared to be Scandinavian runes. Runes are a type of alphabetic characters that were used in Scandinavia and elsewhere in northern Europe for about a

thousand years. Perhaps derived from the earlier Greek alphabet. the runic letters first came into use about 400 A.D., but reached their widest spread in the eighth through eleventh centuries, when roving Vikings were ranging across the seas. When Christianity reached the northern countries about the year 1050, the Roman alphabet—the one we use today-came with it, and runic writing, as a relic of paganism. became obsolete. A few literary men continued to write in runes for several centuries thereafter. By the fourteenth century, runic writing was all but unknown in Scandinavia except in the runic calendar, a chart of holy days that remained in use. Since 1500 or so, runic writing has become the exclusive province of scholars.

What was a runic inscription doing tangled in the roots of a Minnesota tree, then? Until 1867, when the first white settlers arrived, the area around Kensington had been Indian territory. It would not have been very much more surprising to find an inscription in Egyptian hieroglyphics there.

OHMAN stored his puzzling stone in a bank vault in Kensington for a while. The manager of the bank, recognizing the inscription as runic, sent a pencilled copy of it to Professor O. J. Breda, head of the Department of Scandinavian Languages at the University of Minnesota. The Norwegian-born Professor Breda, though no expert on runes, knew something about them, and was able to work out a shaky translation of the inscription.

He could make out the word Vinland. That widened his eyes in surprise. Vinland was the name of Leif Erikson's settlement in America, according to the old Norse saga that told of the Viking discovery of America about the year 1000. Many reputable scholars accepted the Erikson story as authentic, agreeing that Vikings had landed in the western hemisphere five hundred years before Columbus. Did this inscription have anything to do with Leif Erikson's Vinland, Breda wondered? He translated as much of the stone as he could. leaving blanks for the words that defeated him. This is what he got:

"—Swedes and — Norwegians on a discovery journey from Vinland westward. We had camp — — one day's journey north from this stone. We were out fishing one day. When we came home we found—men red with blood and dead. A.V.M. save us from evil. We have — men by the sea to look after our ships—day's journey from this island. Year—"

Breda decided that the inscrip-

tion had to be a forgery. It spoke of Vinland, which had been settled for only a few years after 1000, but the runes themselves were in a much later style characteristic of the thirteenth or fourteenth century. And there were other odd things about the inscription that led him to think that it must have been carved by some latter-day Swede with a knowledge of the old runic writing.

When Breda's translation was published by Turnblad's paper in February, 1899, however, it stirred great excitement among the Scandinavian settlers of Minnesota. They shrugged off the professor's opinion that the stone was a fake. Here, at last, was real proof of the Viking landings in America, they declared! Not only had Leif Erikson and his men actually reached the New World, but they had travelled as far inland as Minnesota! It was exciting, satisfying, dizzying news.

MEANWHILE the stone itself was sent to Professor George O. Curme of Northwestern University, in Evanston, Illinois. Professor Curme, an authority on early Scandinavian languages, had heard about the stone and, on the basis of Breda's translation, had thought it might be genuine. A look at the actual stone changed his mind. The letters were carved in clear, sharp

outlines, and they were lighter than the main face of the stone. Would they still seem so sharp after hundreds of years of exposure to Minnesota weather? Dr. Curme did not think so. The appearance of the stone argued that the inscription had been carved fairly recently. He called the stone "a clumsy fraud."

Photographs of the inscription went to the University of Oslo, Norway. Three runologists studied them and offered their opinion in April, 1899. They agreed with Professor Curme. The stone was a forgery, and a crude one at that. It had probably been carved, they said, by some Swede with a vague knowledge of runes. But it was full of errors and of letters that no runologist had ever seen before.

All Kensington was plunged into gloom when the cable from Oslo arrived. If the professors all agreed that the stone was a fake, it must be so, the people agreed. But who had committed the fraud, then?

People began looking suspiciously at Olof Ohman. He was the one who had found the stone. Could he have carved it himself, and pretended to have unearthed it from the roots of a tree? Well, Ohman was not an educated man. He could scarcely read or write modern languages, let alone runes. Had one of his friends conspired with him to concoct the

hoax, then? No one knew. But Ohman was probably involved in some way, it was whispered.

Angry and embarrassed. Ohman took the troublesome stone home and dumped it face down in front of his granary door. He used it as an anvil for hammering leather and for straightening bent nails, and every time he went into the granary he trod across the offending stone that had brought him so much shame. Kensington began to forget the whole awkward business of the fraudulent stone. Eight years went by, and the Kensington Stone remained in the realm of hoaydom

Then, in 1907, the whole issue was revived. A newcomer happened on the scene, heard about the ill-famed stone, and came to the conclusion that it was genuine. More than fifty years and many millions of words later, he is still crusading on behalf of the Kensington Stone, maintaining almost single-handedly that it is not a hoax at all.

His name is Hjalmar R. Holand, a native of Norway, who had settled in the neighboring state of Wisconsin. Holand did not figure in the original controversy over the stone; in 1899 he was a student at the University of Wisconsin, doing research into early Scandinavian poetry. In 1907, though, the 35-year-old Holand was preparing a book on the his-

tory of the Norwegian settlements in America. The course of his research took him through Wisconsin and Minnesota, and he came, ultimately, to the small village of Kensington. Someone there told him about Olof Ohman and his inscribed stone. Holand went out to nearby Solem to visit Ohman.

OHMAN still felt a little touchy about the stone, but he showed it to Holand, explaining that certain professors in Norway and elsewhere had branded it a fraud. Holand examined the 230-pound stone, which was 31 inches long, 16 inches wide, and 6 inches thick. Part of the inscription, he saw, was on the face of the stone, and the rest on the 6-inch edge. Holand did not then see any reason to doubt the verdict of the experts. But he thought the stone looked attractive and interesting, and he asked Ohman if he cared to part with it. The farmer made Holand a present of the stone.

A few months later, Holand translated it. He was able to fill in the blanks in Breda's 1899 translation. In January, 1908, Holand published his version. (The words in parenthesis are not in the inscription, but were added by Holand to make the text read more smoothly in English.) Holand's 1908 translation went as follows:

"(We are) 8 Goths [Swedes] and 22 Norwegians on (an) exploration journey from Vinland round about the west. We had camp by (a lake with) 2 skerries [rocky islets] one day's journey north from this stone. We were (out) and fished one day. After we came home (we) found ten of our men red with blood and dead. A.V.M. (Ave Virgo Maria) save (us) from evil."

He translated the lines on the edge of the stone this way:

"(We) have ten men by the sea to look after our ships fourteen days' journey from this island. (In the) year (of our Lord) 1362."

Holand's translation disposed of one of Professor Breda's important objections. If the stone really had been carved in 1362, it explained why the runes were in the fourteenth-century style and not in the style of the time of Leif Erikson. But the old sagas of the Viking visits to America said nothing about Vikings living there in 1362. The vinland colony had been abandoned hundreds of years before. So the question still remained: what had Vikings been doing in Minnesota in 1362 or at any other time? Could they possibly have ventured so far inland, these sea-rovers who had never been famous for overland exploration?

Yes, Holand said. He proceed-

ed to pour forth a stream of articles defending the genuineness of the Kensington Stone. He dragged poor Olof Ohman and his neighbor Nils Flaten to a notary public in 1909 to swear an affidavit describing the discovery of the stone. He challenged all the philologists and linguists of Europe and America to prove that the stone was false. And he turned to the Minnesota Historical Society, a group of amateur scholars, to have the stone verified.

THE Minnesota Historical So-L ciety was very cooperative. It appointed a committee to examine the stone. Since no one on the committee knew anything about runes, they turned to someone who did-Hjalmar R. Holand, the owner and chief promoter of the stone. Was the inscription genuine, they asked him? Yes, he told them. And so the 66-page report of the committee, issued in April, 1910, endorsed the Kensington Stone as an authentic relic of a Scandinavian expedition to Minnesota in 1362.

There were some other supporters, such as a Wisconsin State University scholar named Hotchkiss, who said in 1909 that "I am persuaded that the inscription cannot have been made in recent years." But most of the experts remained skeptical. From Denmark, Norway, and Sweden's

universities there came practically unanimous condemnation. Professor George T. Flom of the University of Illinois studied the runes of the inscription and doubted their authenticity. Professor Chester N. Gould of the University of Illinois suggested that the perpetrator of the hoax had probably used a modern Scandinavian textbook of runic writing as his guide, adding extra characters as his imagination dictated. Authority after authority lined up against the stone.

Hjalmar R. Holand stood alone, defying the scholarly world. He had not discovered the stone, and he could not in any way be linked to a hoax charge involving it. But he defended the stone as vehemently as if he had been accused of carving it himself. Over the years, he wrote countless magazine articles and at least four books. First came The Kensington Stone, which he published at his own expense in 1932. It was followed by Westward from Vinland in 1942 and America 1355-1364 in 1946. The most recent is Explorations in America Refore Columbus (1956).

HOLAND has had his ups and downs in his defense of the Kensington Stone. Every few years, some reputable scholar declares that the stone really is genuine—and then some equally

reputable scholar denounces it all over again as a fraud. Most of the experts are solidly convinced that the stone is the work of a hoaxer, but Holand does have his supporters. His grandest moment came in 1948, when the Smithsonian Institution decided that the stone was worthy of display at the National Museum in Washington, D.C. For some time prior to that, the stone had been exhibited at Alexandria, Minnesota. When it went off to the National Museum. Alexandria dedicated a Runestone Memorial Park, whose central feature was a gigantic replica of the stone weighing almost 50,000 pounds.

Dr. William Thalbitzer was the controversial stone's chief backer at the Smithsonian. In August, 1951, he published an essay declaring that the stone was genuine. Soon, though, the stone was back in Minnesota. Three Danish experts on runes published a report in 1951 that branded the Kensington Stone as a thoroughgoing forgery. They were so positive in their condemnation that the red-faced curators at the National Museum quickly hustled the stone out of Washington.

Almost sixty years of dispute have left a vast mountain of charges and counter-charges. Is the stone a fake, or isn't it? Holand has been so tireless in his defense that many people have been bowled over by his unending campaign. He was almost eighty-five years old when his fourth book on the Kensington Stone came out in 1956, and he showed no sign of fatigue then. It's impossible not to admire that sort of persistence.

But what are the main arguments, pro and con, about the Kensington Stone?

First is the matter of the discovery itself, on that November day in 1898. Olof Ohman, who was accompanied only by his young son at the time, found the stone—or said he did—clutched in the roots of an aspen tree.

HOLAND has claimed that the tree, with its ten-inch-thick base, must have been about seventy years old when Ohman dug it up. The first white settlers did not reach the area until 1867, when the tree had been growing some forty years. Presumably Indians did not carve the stone. So if the tree were ten inches thick at the base, and if it were really seventy years old, then it could well have tangled its roots around a stone that had been lying on the ground since 1362.

But Ohman is the only man who saw the tree. In April, 1899, ten of Ohman's neighbors came out to view the hole in the ground where the tree had been. One of them, C. W. Van Dyke, later recalled that the group had guessed the age of the tree, from its re-

maining roots, at "about twelve years." Quite possibly the stone could have been carved in the 1880's, covered by the tree, and found by Ohman in 1898. Or it may never have been entwined in the aspen's roots at all.

The fact that the stone's face does not show the effects of weathering has also aroused discussion. A Minnesota geologist named Winchell, who believed the stone was genuine, nevertheless was troubled by the weathering, or the lack thereof. He suggested that the stone must have lain underground and face down for five hundred years; otherwise, he said, the inscription's age could be no more than "fifteen or thirty years," and "probably less than thirty years."

One likewise wonders who put the stone there, if it really was carved in the fourteenth century. Certainly not visitors from Leif Erikson's Vineland, as even Holand admits. The records of Viking visits to America in the eleventh century seem quite authentic to many people. Few important scholars seriously believe today that Christopher Columbus was the first European to land in the Western Hemisphere. But the same Norse sagas that tell us of Leif's visit to America tell us that the Vinland colony collapsed within a few years. The colonists quarrelled bitterly, murdered one another, and suffered Indian attack. In 1121, the sagas and annals state, Bishop Eric Gnupsson sailed from Greenland to find out what had happened to the Vinland colony, and was never heard from again. The record of Norse visits to America ends there—almost 250 years before the alleged date of the Kensington Stone inscription.

Holand has an explanation,

By dint of much digging in old Scandinavian archives, Holand found a record of an expedition supposedly sent out in 1354 by King Magnus of Norway. It seemed that King Magnus had raised funds for an expedition to Russia, through which he would forcibly convert the pagan Russians to Christianity. But fearful plague-the Black Death-broke out in Russia, making such an expedition too dangerous. King Magnus cast about for some other direction. He was brimming with religious zeal and had plenty of cash on hand.

Someone suggested that he look toward Greenland instead. There was a Norse colony on that remote sub-arctic island, but it had had little contact with the home country in recent years. King Magnus had heard that the settlers of Greenland were beginning to stray from the Christian faith. So he chose a certain Paul Knutson to lead an expedition to Greenland and save Christianity

there Holand found a letter from King Magnus to Knutson which declared, "We ask that you accept this our command with a right good will for the cause [Christianity], inasmuch as we do it for the honor of God and for our predecessors, who in Greenland established Christianity and have maintained it until this time, and we will not let it perish in our days. Know this for truth, that whoever defies this our command will meet with our serious displeasure and receive full punishment."

THAT letter, which was dated 1354, no longer exists. It was destroyed during a fire that ravaged Copenhagen in 1728. What Holand found was a copy, made in the sixteenth century, that survived the fire.

There is no reason to doubt that the letter is genuine. Very likely Paul Knutson did lead an expedition to Greenland in the middle of the fourteenth century, or at least was commanded to do so. But what is very much open to question is the fanciful theory that Hjalmar Holand has built out of this single scrap of paper.

Holand thinks that Knutson reached Greenland and found that many of the colonists had emigrated to Vinland—that is, to America. Vinland was supposedly only a few days' sailing to the southwest of Greenland. So, Hol-

and argues, Knutson obeyed the orders of his king, who had told him to contact the Greenlanders, and followed them to Vinland.

And then? Vinland was on the Atlantic coast. Holand suggests that Knutson's party failed to find the settlement. The explorers spent years combing the shores of North America without success. Finally, they split up. Ten men remained by the sea to look after the ships. The rest set out on a fantastic journey inland, evidently to look for the vanished settlers.

Holand thinks that the Norsemen entered Hudson Bay, found the mouth of the Nelson River, traveled down the Nelson on a southwesterly course into Lake Winnipeg, crossed the lake and discovered the mouth of the Red River, and followed that river southward for some 300 miles. Then, he says, the roving Vikings turned eastward along the Buffalo River, reaching Lake Cormorant in Minnesota (the "lake with the two skerries" mentioned on the Kensington Stone) and then, by hauling their boat overland where necessary, by rowing, and by crossing rivers and small lakes, they reached the place that would one day be Olof Ohman's farm. There, they were attacked by Indians, suffered heavy losses, carved a rune stone as a memorial for the dead and as a notice they had been there, and withdrew.

THE Kensington Stone refers to its location as "this island." Olof Ohman's farmland was no island at all, but rather a slight rise in a rolling prairie. Holand has found geological evidence that the prairie probably was flooded in the fourteenth century, which would have made the Ohman farm a true island. Since that would match the description on the stone, it must count as a point in Holand's favor. All the rest of his theory, though, seems like the wildest guesswork.

One immediate question is, did Paul Knutson ever leave Norway? Other records tell us that in 1355, the year after the king's decree, the weather in the north Atlantic was so bad that no ships could sail westward. That same year, King Magnus turned the crown of Norway over to his son. Prince Haakon, under whom the man who originally suggested, the Greenland expedition-one Orm Ostenson-fell from favor and was executed. So perhaps the expedition was cancelled. Magnus himself was also King of Sweden. but he had his hands full there from 1356 on with a series of rebellions led by another son, Prince Erik. So there are many reasons for thinking that Paul Knutson stayed home.

If he did go to Greenland, what proof is there that he continued on to North America? None. We have only Holand's guess. There are no records of Knutson's voyage, none of his experiences in Greenland, none of his return to Norway.

BUT Holand's theory gets its hardest test if we assume that Knutson did go from Greenland to Vinland, spent seven years or so looking for the lost colonists, then ventured inland in 1362. For the Kensington Stone declares that the voyagers had come "fourteen days' journey" from the sea. Which means that in just two weeks they traveled from Hudson's Bay to Minnesota, over an unknown route. It seems unlikely. As Erik Wahlgren, professor of Scandinavian languages at the University of California at Los Angeles, an unbeliever in the stone, has written, "In more ways than one, this was the most remarkable voyage in human history. In spite of time out for fishing—as guaranteed by the inscription-the Norsemen made the well-nigh impossible ascent of the Nelson, its 47 portages and all, followed by seemingly endless hundreds of miles of trackless lake, river, and swamp, some 2,000 miles by even the most economical, mapped-out route (and doubtless twice or thrice that as the strangers must have wandered) in the space of fourteen days!"

Holand himself has come to see the absurdity of that. He now has a new but equally improbable explanation. He says that a "day's journey" had an artificial meaning to the Norsemen, that it was understood to be the "average distance covered in a day's sailing or rowing" and "was equal to about seventy-five English miles or a little more." Thus it did not refer to actual days of travel, but was simply a unit of measure. The straight-line distance from the mouth of the Nelson River to Kensington is about 1100 miles. or roughly fourteen "day's journevs" by Holand's new system of computing-though he admits that the real journey may have taken months. Such reasoning is a little strained, at best.

So is the theory of a Holand supporter named Charles Michael Boland, who has written a book designed to "prove" that not only Norsemen but Phoenicians. Chinese, Romans, and Irishmen visited America before Columbus. Boland can't accept Holand's reasoning in this matter either. He thinks that the Norsemen reached Minnesota by marching inland a way, building a ship, and sailing across Lake Superior. Lake Superior, he says, is the "sea" that Kensington is fourteen days' journey from.

Fine, except that the text of the stone uses the word hawet, which specifically means "saltwater sea." Lake Superior is large enough to seem like a sea. but its water is fresh. Were these Vikings unable to notice that?

The sharpest attack on the Kensington Stone has been directed against the language itself. Erik Wahlgren has declared that the language of the stone (not the alphabet in which it is written) is merely modern Swedish, with at least one Norwegian word thrown in, opdagelse, "exploration." Other critics have shown that the inscription even includes a few English words, as well as a good many runic letters that simply were unknown in the fourteenth century. Holand has explanations to answer these various charges. The controversy is extremely complicated-and, in fairness to Holand, it should be said that his replies to some of the attacks sound very reasonable to a layman. But most of the professors whose life work it has been to study Scandinavian runes share Erik Wahlgren's opinion that "On no possible score, then, can the Minnesota rune stone be accepted as ancient. And if it is not ancient, it is modern and thus a hoax. . . ."

Which leaves us with the hardest problem of all: who was the hoaxer?

In 1910, a small Norwegian weekly published in Wisconsin, *Amerika*, ran an article by its editor, Rasmus B. Anderson, about the Kensington Stone. Anderson had once been a professor at the

University of Wisconsin. He told how a Swede named Andrew Anderson, no relative of his, had visited him and had told him about the possible origin of the Kensington Stone.

A CCORDING to Andrew Andrew Andrew derson, Ohman was not illiterate at all. "He is not a collegebred man, but has always been a great reader," with a fondness for works of science, history, and philosophy. Among Ohman's friends was one Sven Fogelblad. a former clergyman interested in such scholarly matters as runic writing. Fogelblad, so Andrew Anderson said, owned a book about runes. So did Ohman: a reference work called The Well-Informed Schoolmaster, which had pictures of the old runic alphabets.

Rasmus Anderson wrote, "The three, Fogelblad, Anderson, and Ohman frequently discussed the runes when they were together, Fogelblad writing long sentences in runic on paper and explaining them to Ohman. . . . All three were deeply interested in runes and either one of them was capable of producing the rune-stone in question."

Holand has denied Rasmus Anderson's charges, point by point. He insists that Ohman had no education and knew nothing about runes, that Andrew Anderson was no scholar either and not

even a friend of Ohman's, and that Fogelblad was lazy, ignorant, and owned no books on runes. Ohman too, in a letter written in 1910, denied the entire Anderson story—though course that proves nothing, if Ohman were in on the hoax. One point Holand does admit: that Ohman was not quite the slowwitted farmer he was said to be. for he owned a few books, including a Swedish grammar text and a copy of The Well-Informed Schoolmaster, and the latter book did indeed contain illustrations of the runic alphabet.

THE Kensington Stone remains a mystery today. But for the ingenuity and energy of Hjalmar Holand, it would be an all-but-forgotten hoax. Holand has managed to persuade a fair number of people, particularly in the region around Minnesota, that the stone is a genuine relic of a four-teenth-century Norse visit to North America's interior.

It would be pleasant to think so, and exciting to contemplate the bravery of those thirty Vikings who made such a great voyage of exploration. Cold scientific scrutiny, though, is often the enemy of romance. Despite Holand's decades-long campaign, the weight of evidence seems against him.

The truth appears to be that the Kensington Stone was the work of a few clever Swedes in nineteenth-century Minnesota, with a knowledge of runes, a knack for stone-carving, and an urge to glorify the deeds of their ancestors. Perhaps Olof Ohman was in on the hoax, and perhaps he was innocent. Holand himself is certainly in the clear. He is no hoaxer, though he seems guilty of self-delusion.

Oddly, there is one slim possibility that the Kensington Stone may be genuine after all. In 1738, a French explorer, the Sieur de la Verendrye, undertook an expedition west of Lake Superior. In what is now central North Dakota, he discovered a curious stone inscribed on both sides with mysterious characters. When he returned to Quebec in 1743, he brought the stone with him, and showed it to some Jesuit priests.

They could not decipher the inscription. Consulting their books, though, they found that the writing looked very much like "Tataric"—the script of the Tatars of Central Asia. This seemed strange, and the stone was sent on to Paris for further study.

Does that mean that Tatars somehow traveled out of Mongolia into North America? Not really. But, according to the Encyclopaedia Britannica, early Tatar inscriptions "bear a superficial resemblance to runes."

though this is just a coincidence and there is no connection with Scandinavia.

COULD it be that the carvers of the Kensington Stone ventured even further west and set up a second rune-stone? And that the French Jesuits innocently and understandably mistook those runes for Tataric?

Very possibly. Holand tells us that "only an expert in runic or Tatarian writing would be able to distinguish between the two," and the Jesuit priests at Quebec were neither. A close examination of Verendrye's stone, then, would explain a great deal because an expert on runes could translate its inscription, which would certainly be a genuine Norse relic, since nobody in North Dakota in 1738

knew anything about runes. Verendrye's stone could not be a forgery—and therefore that other rune stone, the famous one from Minnesota, would probably be authentic too.

But where is the Verendrye stone?

It was last heard of in eighteenth-century Paris. Holand went to Europe in 1911 to look for it, but no one had heard of it in any Parisian museum. He looked again in 1928 and in 1950, without luck. The stone has disappeared, and with it any hope of proving that Norsemen visited the heart of North America before Columbus was born. So long as Verendrye's find remains a phantom, the Kensington Stone must be considered a hoax.

#### Editorial (Cont. from page 4)

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The ingenious Ensign De Ruyter has a question posed by a reckless scientist, a maneating monster, and an unescapable pit. But he finds a...

# Dusty Answer

#### By ARTHUR PORGES

I DON'T like it," Captain Morse said bluntly. "Especially our being out of radio contact for twenty-four hours."

In his mild, nasal voice, Dr. Hayley, senior scientist aboard the scoutship *Herschel*, said, "After all, it's only an earth-type planet."

"Not quite," Ensign De Ruyter pointed out. "A good deal more oxygen—nearly thirty per cent—and a 'g' of roughly forty. We'll be hopped up in terms of respiration, and a bit heavier."

"To me," Lieutenant Burton said, "earth-type isn't any great recommendation. I can imagine an alien—one of small size—having quite a bad time at home: foxes, weasels, hawks; or a nest of angry yellow jackets."

"There will be three of us,"

the second scientist, Goodrich, said. "Your ensign looks very competent to protect the group. Besides, the survey fifty-odd years ago disclosed no large, dangerous animals—or plants."

"That was hardly conclusive," Morse said. "They touched down for a few hours, in a different part of the planet, at another time of the year. Our experience," he added gently, "suggests that such factors can be significant. For example, one wouldn't meet a grizzly on earth in winter or in the everglades; but in the remote Rockies, in summer—I'm sure you see my point."

"I appreciate your caution in our behalf," Hayley said a bit coldly, "but I must insist. This chance to check *Euler* must not be wasted. You and Lieutenant Burton can go to the other planet —Abel, isn't it?—and measure the magnetic field, or whatever was ordered. Just leave Goodrich and me here, under the care of young De Ruyter. We'll be all right; it's only a matter of a few hours."

"On one condition," the captain said. "Stay within a mile of this planetfall, and be extremely careful."

"Agreed," the scientist said, with relief. He had feared that Morse might be adamant, and nobody could over-rule a captain on duty in space. He might be given a nasty reprimand by his seniors later, if a man like Hayley had a case, and pressed it; but here, many light-years from base, there was only one commander.

So, two hours later, the trio were landed at a promising location: a large clearing with brush, trees, rocks, and a lake all available within the specified mile radius. They had food and water for at least forty-eight hours, and De Ruyter had his heavy-duty Markov pistol, which could deliver many lethal bolts of electric energy before its power-pack failed.

The scientists, naturally, carried other equipment: collecting vials, magnifiers, and a small, but effective rock-drill.

"Keep your eyes open, Ensign," Captain Morse said formally. Although the three officers,

when alone, were more like brothers than a hierarchy in miniature, it was best to be more G. I. with outsiders about.

"Yes, sir," De Ruyter said, his face wooden. But his eyes twinkled, and Burton suppressed a grin.

The three watched as the scoutship took off in a coruscating blast of flame, heading for the other planet of the system, where Morse had been charged with certain duties. Although it was not against his orders to stop at Euler as well, it was not in them. On the other hand, he had been asked, by people too big to ignore, to cooperate with the two scientists as completely as possible. Their main goal was actually another solar system, with Abel as a brief and intermediate stop.

"Well, they're gone," Dr. Hayley said. "We don't have too much time, Fred, so let's get started.

"Don't you want me to set up the tent first?" De Ruyter asked.

"We can do that at lunchtime," Hayley said. "There's more important work now." He was obviously impatient to investigate flora and fauna, just as Goodrich was looking hungrily at the nearest rocky outcrops, and hefting his sampling drill.

"All right," the ensign said, a little reluctantly. It chafed his military soul to be so unsystematic. You set up a base first, then started exploring. But the two men had fifty years on him, and a dozen levels of official standing, so why argue?

FOR two hours they prowled the area, finding some small living things that excited Hayley and Goodrich, and a few minerals that interested neither, being common throughout space. The air was cool and distinctively invigorating, thanks to its high oxygen content; and it gave them enough energy to counteract the greater pull of gravity. This was fortunate in Hayley's case, since he was definitely overweight. Goodrich, however, was not only small, but to De Ruyter, seemed puny as well. He was soon out of breath and tired, even with only a hundred and forty pounds-at this "g"-to carry.

DeRuyter was beginning to think longingly of lunch, when Hayley gave a choked cry of astonishment. Goodrich echoed the exclamation, and De Ruyter, who had been looking the other way, whirled, hand on gun, just in time to see a small, quasi-human figure vanish into the rocky foothills a few hundred yards away.

"Les!" Hayley cried. "Did you see that? Anthropoid—definitely. That's so damned rare around this galaxy—let's go! Don't just stand there!" And he was off at a lurching, bearlike trot.

Goodrich panted after him, and De Ruyter swore.

"Hey!" he yelled. "Hold it! That's out of our area."

He was completely ignored; the two men kept going. There was nothing to do but follow. He was faster and in better condition, and caught up quickly. He grabbed Hayley's shoulder, pulling him to a halt.

"Doctor," he said, breathing heavily, but far from winded. "You promised the captain. I can't let you go into those rocks, sir."

"Nonsense!" Hayley shook off the boy's hand. "Didn't you see that little monkey thing? An amazing find; it would be criminal not to follow it up." He started to trot again.

"No," the ensign said. "It's against orders; I can't allow it."

"Don't be foolish, boy," Goodrich panted. "There's no danger. Hayley's right; this is an emergency—something special."

"Stop, damn it!" De Ruyter roared, furious.

"Shoot when you're ready," Hayley called back. "That's the only way I'll stop."

For a moment the boy seriously thought of sending a good jolt through the scientist's leg, but that was tricky shooting, and even a non-lethal hit from a Markov has been known to do serious and quite unexpected damage to some organisms. It wouldn't be hard to miss the man's leg and burn his spine, and that might be very bad, indeed. These were V. I. P.'s, and he was a new ensign. Fuming, De Ruyter holstered the pistol and tried to catch up with the pair ahead.

He did so just as they stopped. The little man-ape was cowering in a kind of cul-de-sac, an alcove in a brushy cliff-face. Clearly, it was trapped, having run down a path that ended there, and was bordered by thorny plants that had millions of black spines serrated and gummy with some exudation that reeked of acid.

Making soothing noises, Hayley and Goodrich advanced, the former pulling out a sleep-gun that fired a hypodermic bullet filled with a harmless—it was hoped—drug. Not knowing anything about the specimen's physiology, the scientist couldn't be sure whether he was dealing out unconsciousness, death, or just a pinprick.

In other circumstances, De Ruyter might have guessed that the trapper-trapped relationship could be symmetrical, working both ways. But, at the moment, he thought in more military terms of some kind of ambush, and was scrutinizing all points of the compass in case a platoon of apemen was closing in.

Consequently, as the three men, moving in on the specimen, came down the blind alley, they changed from hunters to prey. A circular trap, indistinguishable to the keenest sight from the surrounding terrain, opened suddenly under the two scientists. There were two yells of surprise and terror, one high, the other higher; and both men fell down a black, yawning shaft.

De Ruyter, just behind, caught himself on the brink, fighting for balance. He would have made it, but a second little apeman, that had been stalking him, and waiting for this very distraction, exploded into motion, bounding with arms, legs, and muscular body against the boy's back. He, too, with a yelp of dismay, was flung into the opening.

THE three might have been I badly hurt, except that there was soft dirt below. As it was, De Ruyter almost fell on Goodrich, whom his hundred and seventy pounds of muscle could have flattened in a crippling blow. But, luckily, the smaller man had just scrambled to his feet, and was stepping aside when De Ruyter, cat-like, landed on his toes. In a flash, the boy had a lightpack in one hand, and the Markov in the other. Almost at the same moment, the circular trapdoor swung shut with a booming sound.

"Don't move," the ensign snapped, swinging the beam of his light. With the shaft blocked, there was no other illumination.

"Where are we-?"

"What is this place-?"

The two scientists spoke in unison.

"I don't know," De Ruyter said.
"But we were suckered; that's obvious. The apeman was bait. But for what?"

As he poked the beam around, they could see that the vertical shaft bent, becoming almost horizontal, and opened into a large chamber. All was of heavy, slick rock, so that their descent was like passage down a laundry chute. The big room had another opening, and through it, in the blackness, something stirred. De Ruyter felt his neckhairs prickle; he heard Hayley suck in his breath.

Then, slowly, there emerged from the hidden chamber the master and maker of the trap. It was a huge, many-legged creature, insect-like, but with more of the rippling vitality of a centipede. It glared at them with faceted eyes that spat fire in De Ruyter's beam; its mandibles, curved, sharp, and horny, rubbed together with a rasping sound. More like a cat than an arthropod, it was gathering its dozens of jointed legs for a charge.

But this sort of thing was part of De Ruyter's training. At the cadet school, through 3-D movies, models, and "monster runs," he had been well prepared. The Markov was in his hand, its button set for a suitable spread, and

as the big predator launched its spring, the boy fired. The crackling, bluish discharge of fifty thousand amps at over two hundred thousand volts pressure, hurtling at light-speed along a special carrier wave that nullified the air's insulating power, struck the arthropod squarely. Big as the thing was, it had no more chance than a mouse hit by a .350 magnum bullet. With a brief stridulating cry, it collapsed where it stood poised-a smoking, twitching mass, dead even if bound to quiver for hours.

"Br-o-other!" Hayley gulped; and Goodrich said very quietly, "Oh. mv!"

"You would follow that little monkey," De Ruyter said in a reproachful voice.

"A remarkable situation," Hayley said. "Do you see it, Goodrich? Symbiosis, very nearly." He forgot the terror just passed in his enthusiasm as a biologist. "No doubt the monkey is permitted to—ah—clean up after the arthropod has fed. A trap-door spider's sort of den, this. Most remarkable!"

"Very," the ensign said dryly.
"Now let's get out of it." Even as he spoke, he felt a sudden, almost intuitive doubt. His light confirmed it. There was the opening to the shaft; it began easily enough, tilting up at a slight angle of perhaps fifteen degrees. But it quickly increased in slope,

and the vertical part of the same solid, slippery rock extended at least twenty feet to the surface. And worse, at the top, was the heavy, circular trap, which was tightly closed.

"I don't see how we can reach it," the boy said, adding thoughtfully, "or how we can get any push or pull on it if we do."

"That hardly matters," Hayley said, his voice calm. "You have the little radio. Just call the ship, when it's back." He peered at the luminous dial of his watch. "In about four hours. They'll soon have us up and out."

"I think not," Goodrich said, rapping a rock-face with his knuckles. "This stuff is very metallic. I doubt that any carrier wave could get through. How about that, De Ruyter?"

The boy felt a pang of dismay.

"If we're in a metal cave, you're right; this transmitter is useless. And," he pointed out gravely, "they won't have any idea where to look—we're far out of the specified area."

"It's our fault," Hayley said.
"I won't deny it; we're guilty as hell. But I'm sure there's a way out. Where's your rock-drill?" he snapped.

"On the floor somewhere," Goodrich said, a little sheepishly. "I dropped it when we fell."

"So would I have," De Ruyter assured him, searching with his flash. "There it is." GOODRICH picked it up, turned it on, and listened to the shrill whirring.

"It's okay, but if you think it can cut through these walls, forget it. They must be yards thick."

"I was thinking about the plug—the door up at the mouth," Hay-ley said. "That can't be very thick. Even if we can't drill it all out, with a hole we could yell when Morse or Burton comes by—which they're bound to do when they find we're missing."

"They've no reason to look for us here—you heard what the boy said. But with a hole, we can also send out smoke, or fire the gun or use the light at night; flash a beam across the sky. Let's get at it."

"Fine," De Ruyter said. "How do three men, totalling less than eighteen feet in height, reach the top of a thirty-foot slick shaft, of which the last twenty feet or so are vertical?"

"Don't be so negative," Hayley said sharply. "We'll find a way."

But after trying until bodies and brains were exhausted, they found no way. Nothing would hold on the slippery rock; they could neither reach the door nor get any leverage if they ever did.

"We've missed a simple solution," Goodrich exclaimed suddenly, getting up from where he had lain on the hard floor. "With my drill I can cut some footholds. That way, one of us can get to the top and work on the door."

"You've got it!" Hayley exclaimed. "Damned if he hasn't, eh, De Ruyter?"

"Could be," was the cautious reply. "You people know more about geologists' drills than I do. How much power does that little thing have?"

"Enough, I think," Goodrich said. "It's still fully charged. I didn't take many samples out there; nothing good. But this stuff I don't recognize. But here goes; I'd like to get out of here."

The drill was powerful, its bits harder than diamonds, but the black mineral was harder still. To make even one foothold would take hours and exhaust the stored energy of the tool. De Ruyter's light-pack, set for 'Lantern' and placed on the floor, made the chamber bright, emphasizing their drawn, discouraged faces.

"That's bad," Goodrich said.
"This drill goes through boron carbide like soft cheese. In other circumstances I'd be gloating over such rocks, but here—" He shook his head dolefully.

De Ruyter stood up. "We still don't know what's in that other chamber. Let's find out."

Listlessly, the two scientists followed him past the still quivering remains of the great predator.

"How did he make that shaft?" Goodrich wondered aloud.

"Not by drilling," Hayley assured him, losing his lackadaisical air for the moment. "Probably etched it out with some strong acid secretion. See those gland openings among the scales?"

"Say," his partner said eagerly. "Could we get some acid from the body, and—"

"Forget it," was the short reply. "It must have taken him weeks, using fresh secretions; with what we could get from the corpse, you couldn't dissolve an inch-thick wall, even."

THE next room, where the arth-I ropod lived, was a shambles of organic remains: horny shells, abortive leathery wings, feathered antennae, and similar undigestible parts of many a victim. One fact about the chamber was of possible interest: the rocky walls were different, and softer. With his drill, Goodrich quickly produced a shower of fine dust as the bit bored deep. But he was the first to point out that this room was a number of feet lower and that fifty such drills could never get them through the tons of rock and earth overhead. For the first time it came to Havley and Goodrich that this might be more than an unpleasant incident -that they could die here, and their bodies never be found.

"I'm a fool," Hayley said quietly. "A hasty, blundering fool. I deserve to die, but I can't forgive myself for dragging you along, son. I'm very, very sorry. Not that I ask you to forgive me; I wouldn't expect that."

"Don't take all the blame, sir," De Ruyter said. "I can imagine anybody getting so enthusiastic and excited over a discovery—I've goofed more than once myself."

"You're young," the scientist said. "I'm supposed to be mature and balanced in my behavior. I've no excuse—only regret."

"I'm just as much at fault," Goodrich said. Then he added, with little conviction in his voice, "They'll find us somehow. We're only a mile, at most, out of the area."

"A mile radius," Hayley said meaningly, "takes in a hell of a lot of area—three point one square miles, I believe; math isn't my best subject. That's a lot of territory, what with brush and trees-and don't forget how beautifully that trapdoor blended with the ground. We couldn't see it from a few feet away; how can a search-party spot it from the ship? We can't hear them if they walk near; and we can't yell day and night-and I doubt if we'd be heard if they were at the door now. No, Goodrich, it's silly to raise false hopes. We'll soon be dust, like this stuff your drill throws out." He sifted some of the powdery spoil through his fingers.

As he did so, De Ruyter tensed. "What is it, son?" Hayley asked. "Say," he cried. "Of course! Are we a stupid bunch—or oxygen happy. You can blast that door out with your gun—isn't that so? Then, when we yell, or flash a light—"

"No," the ensign said, cutting him off. "I thought of that long ago, but it won't work. The Markov's designed to kill or stun living things—as you saw, luckily. The current won't smash the door; it would bounce off, and maybe get us, if we weren't well clear. No, I was thinking about something else, but it's pretty wild. Look," he added in an urgent voice, "I need a plug to fit the end of the shaft down there. Goodrich can make it with the drill-from that softer rock in here. Top of this hump."

He pulled a beautiful little chain-measure of platinum-a graduation gift-from a pocket, and snatching up the light, went past the dead monster to the other room, followed by the two puzzled but hopeful scientists. There he quickly measured the bottom of the cylindrical bore, where it opened into the chamber. Thirtyfour-and-a-half inches." he announced. "Goodrich should be able to slice off the top of that hump, and then work on the rim of the slab until it's a tight fit. Make it a circle of thirty-four inches, and not too thick, or we

won't be able to move it at all. About four inches, say."

"Would you mind telling us just what you're doing," Hayley asked.

"You'll see," was the evasive reply. "It may not work at all, and I'd just as soon not stir anybody up now." He handed Goodrich the light. "I have a tiny one on my keychain; it's all I need for now. Go to it! Give him a hand, will you Hayley?"

THE two men left, and were soon at work on the rocky hump, using De Ruyter's chainmeasure as a guide. A few minutes later, the boy joined them briefly, and to Hayley's wonder—and annoyance—began carrying out fistfuls of dust from the little heap left by Goodrich's earlier drillings.

Finally the two scientists had a disc of rock that met De Ruyter's specifications. They rolled and tugged it into the other room, and gaped to see the boy tossing handfuls of dust up the shaft. He grunted approvingly as they came in with the plug and a better light. He took the flash from Hayley, and sent the bright beam up the bore. The air was milky with a billion motes, and blocked the rays almost completely.

De Ruyter tossed a last fistful, and helped the two men fit the disc into the opening. It was a remarkably snug match, but the ensign used his pistol butt to ram rock chips and bits of cloth from their clothing around the few gaps.

"Good thing for us," he remarked cheerfully, "that the critter made such a smooth, round hole."

"I doubt if it was intentional," Hayley said. "By squirming and secreting acid, it pretty well had to make it like this."

De Ruyter had left one small gap at the rim. Now he led the two scientists back to the entrance of the second chamber, where at his word, they crouched behind the dead arthropod. Using the light as a guide, the ensign aimed his Markov at the gap between disc and shaft.

"Here goes," he breathed. "Oxygen and dust. It killed plenty of miners in the Nineteenth Century—poor devils!"

He pressed the firing button; the bluish ray jabbed into the dust-filled chamber, where the suspended motes, surrounded by oxygen, were ready to explode.

Instantly, or so it seemed, the cave quivered to a pounding shock, and the shaft said "Whoo-omp!" in a deep, authoritative voice. Then the rock plug flew back several yards, rolling like a huge poker chip, and finally falling flat with many ringing vibrations. Smoke poured from the mouth of the shaft. But as it cleared, they saw something else

—the reddish light of sunset crimsoning a patch on the floor. The trapdoor had been blown open by the force of the exploding dust.

Shortly after dark, the scoutship, skilfully piloted by a worried Captain Morse, made its tenth pass over the area, and Burton, with a yell, spotted the beam of light below.

Twenty minutes later, on foot, the two men stood at the mouth of the well. While Burton went back for a rope, Morse, in a low, even voice, told the two V. I. P.'s exactly what he thought of their behavior. They took it meekly, knowing he was right.

"If I could swear like that," De Ruyter said admiringly, later, on board the ship, "I could have burned that door away just by—um—addressing it in the captain's language."

"You did all right: you found the Dusty Answer."

THE END

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#### **LETTERS**

Dear Mr. Cohen:

After awaiting some results from the word that Ziff-Davis would no longer publish Amazing and Fantastic, I came across the August 1965 issue of Amazing today at the local newsstand. All I can say is Congratulations on a great first issue!

Although I did not purchase Amazing while it was published by Z-D, I followed it with interest, it being the science fiction magazine with the longest history, etc. I watched it sadly, as it wasted away into a limbo, falling to depths of mediocrity which did not befit its heritage, and I pessimistically awaited the day when Z-D would lose interest in it, and it would sink, probably forever, below the waves of inactivity. With such a dire outlook on the whole thing, you can imagine how elated I was when I learned that you were taking over the reins of both magazines. (I did subscribe to Fantastic, and still do, although I haven't gotten one of the issues that you edited, mainly because of the fact that I am a fan of the Sword and Sorcerv type of fiction, and Fantastic was the last stronghold of that type.) You did a very good-in fact, in my opinion, a GREAT!-job with the old If. and I often take the dozen-or-so issues that I have of it that you published and go through them for the pleasure of just looking at them. Now it looks like you've done it again. As I said, I never bought *Amazing* under Z-D, but enclosed is a check for a subscription to the New *Amazing*.

Not yet having had a chance to read the issue, I did page through it, page by page, cover to cover, and am very pleased with the issue, especially with the 32 extra pages and the good artwork, as that is something that I missed while it was under Z-D.

Although I'm not old enough to remember the Good Old Days of the Pulps (I was born in 1946), I do collect pulp magazines, and think that that was the Golden Era of s-f adventure. so to speak, and I was therefore glad to see the two Classic Reprints in this issue. I recognized. right off, the tale of "The Weapon Too Dreadful to Use" by Isaac Asimov, as I have that issue of Amazing in the dusty corridors of my collection. The Hasse-Bradbury tale looks faintly familiar, too, and I'm glad to see that you will be bringing back other stories. I would make some suggestions, but I imagine that becomes grating to an editor's nerves. Glad to see the reprints. tho.

I was also elated, as I mentioned before, by the very good artwork. I hope that you can get much more work from Gray Morrow, as his material is really

great! Can you possibly get some in from Dan Adkins, too?

I could ramble on here for a few pages recording impressions of the new *Amazing*, but I'm sure that other people will, so I won't take up time that you can use on the next issue.

All-in-all, though, it looks like you've done the impossible: given *Amazing* a chance to regain its former position as a leader in the s-f magazine field.

I see from the cover pictured for the issue of *Fantastic* that it is s-f-slanted. Could I plead with you, for the sake of the Sword and Sorcery fans, to keep it oriented in the weird, supernatural and swashbuckling genre?

Again, thanks for the revival, and best of luck with it. (The new-look of *Amazing* makes me want to sit down again and try to sell pro. Maybe . . . real soon now. . . .)

Best of luck.

Richie Benyo 118 South Street Jim Thorpe, Pa. 18229

Thanks for the kind words. One exception though: We're never too busy for helpful suggestions, and no editor worth his salt would find criticism grating to his nerves. So go right ahead.

Mr. Benyo's letter is only one of many we received offering advice and comment on the new

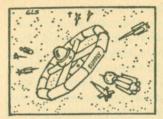
Amazing, but since we tried to pack into this issue as much solid reading matter as we could, "Letters" was almost squeezed out. So to all those not in this time, many thanks and keep writing—because on one point at least, there seems to be strong general agreement: if a magazine wants to be lively, it needs a good letter column to open up a stimulating channel of communication.

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