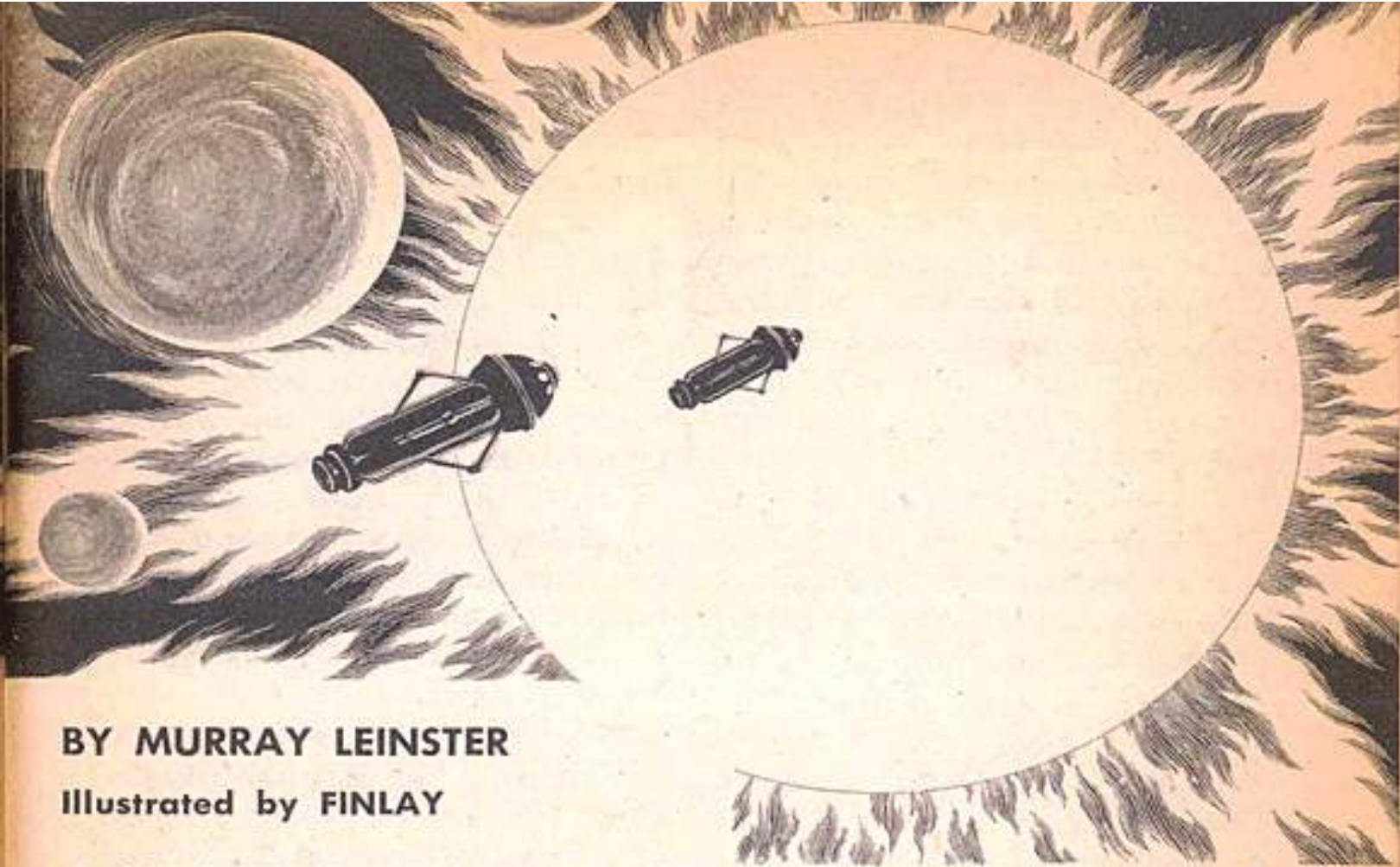


A stylized illustration of a starry space scene. The background is a dark, textured field filled with numerous small, bright stars. Several planets of various sizes and colors (shades of brown, tan, and grey) are scattered throughout the scene. Some planets have concentric rings or bands. In the upper right and lower right corners, there are large, dark, flame-like or nebula-like structures. A prominent, bright, circular light source, possibly a sun or a large planet, is located in the upper right quadrant. The overall style is reminiscent of mid-20th-century science fiction art.

**DOCTOR**





BY MURRAY LEINSTER

Illustrated by FINLAY

**Suddenly the biggest thing in the universe was the very tiniest.**

**T**HERE were suns, which were nearby, and there were stars which were so far away that no way of telling their distance had any meaning. The suns had planets, most of which did not matter, but the ones that did count had seas and continents, and the continents had cities and highways and spaceports. And people.

The people paid no attention to their insignificance. They built ships which went through emptiness beyond imagining, and they landed upon planets and rebuilt them to their own liking. Suns flamed terribly, re-





senting their impertinence, and storms swept across the planets they preëmpted, but the people built more strongly and were secure. Everything in the universe was bigger or stronger than the people, but they ignored the fact. They went about the businesses they had contrived for themselves.

They were not afraid of anything until somewhere on a certain small planet an infinitesimal single molecule changed itself.

It was one molecule among unthinkably many, upon one planet of one solar system among uncountable star clusters. It was not exactly alive, but it acted as if it were, in which it was like all the important matter of the cosmos. It was actually a combination of two complicated substances not too firmly joined together. When one of the parts changed, it became a new molecule. But, like the original one, it was still capable of a process called autocatalysis. It practiced that process and catalyzed other molecules into existence, which in each case were duplicates of itself. Then mankind had to take notice, though it ignored flaming suns and monstrous storms and emptiness past belief.

Men called the new molecule a virus and gave it a name. They called it and its duplicates

"chlorophage." And chlorophage was, to people, the most terrifying thing in the universe.

**I**N A strictly temporary orbit around the planet Altaira, the *Star Queen* floated, while lift-ships brought passengers and cargo up to it. The ship was too large to be landed economically at an unimportant spaceport like Altaira. It was a very modern ship and it made the Regulus-to-Cassim run, which is five hundred light-years, in only fifty days of Earthtime.

Now the lift-ships were busy. There was an unusual number of passengers to board the *Star Queen* at Altaira and an unusual number of them were women and children. The children tended to pudginess and the women had the dieted look of the wives of well-to-do men. Most of them looked red-eyed, as if they had been crying.

One by one the lift-ships hooked onto the airlock of the *Star Queen* and delivered passengers and cargo to the ship. Presently the last of them was hooked on, and the last batch of passengers came through to the liner, and the ship's doctor watched them stream past him.

His air was negligent, but he was actually impatient. Like most doctors, Nordenfeld approved of lean children and wiry women.



They had fewer things wrong with them and they responded better to treatment. Well, he was the doctor of the *Star Queen* and he had much authority. He'd exerted it back on Regulus to insist that a shipment of botanical specimens for Cassim travel in quarantine—to be exact, in the ship's practically unused hospital compartment—and he was prepared to exercise authority over the passengers.

He had a sheaf of health slips from the examiners on the ground below. There was one slip for each passenger. It certified that so-and-so had been examined and could safely be admitted to the *Star Queen's* air, her four restaurants, her two swimming pools, her recreation areas and the six levels of passenger cabins the ship contained.

He impatiently watched the people go by. Health slips or no health slips, he looked them over. A characteristic gait or a typical complexion tint, or even a certain lack of hair luster, could tell him things that ground physicians might miss. In such a case the passenger would go back down again. It was not desirable to have deaths on a liner in space. Of course nobody was ever refused passage because of chlorophage. If it were ever discovered, the discovery would already be too late. But the

health regulations for space travel were very, very strict.

He looked twice at a young woman as she passed. Despite applied complexion, there was a trace of waxiness in her skin. Nordenfeld had never actually seen a case of chlorophage. No doctor alive ever had. The best authorities were those who'd been in Patrol ships during the quarantine of Kamerun when chlorophage was loose on that planet. They'd seen beamed-up pictures of patients, but not patients themselves. The Patrol ships stayed in orbit while the planet died. Most doctors, and Nordenfeld was among them, had only seen pictures of the screens which showed the patients.

**H**E looked sharply at the young woman. Then he glanced at her hands. They were normal. The young woman went on, unaware that for the fraction of an instant there had been the possibility of the landing of the *Star Queen* on Altaira, and the destruction of her space drive, and the establishment of a quarantine which, if justified, would mean that nobody could ever leave Altaira again, but must wait there to die. Which would not be a long wait.

A fat man puffed past. The gravity on Altaira was some five



per cent under ship-normal and he felt the difference at once. But the veins at his temples were ungorged. Nordenfeld let him go by.

There appeared a white-haired, space-tanned man with a briefcase under his arm. He saw Nordenfeld and lifted a hand in greeting. The doctor knew him. He stepped aside from the passengers and stood there. His name was Jensen, and he represented a fund which invested the surplus money of insurance companies. He traveled a great deal to check on the business interests of that organization.

The doctor grunted, "What're you doing here? I thought you'd be on the far side of the cluster."

"Oh, I get about," said Jensen. His manner was not quite normal. He was tense. "I got here two weeks ago on a Q-and-C tramp from Regulus. We were a ship load of salt meat. There's romance for you! Salt meat by the spaceship load!"

The doctor grunted again. All sorts of things moved through space, naturally. The *Star Queen* carried a botanical collection for a museum and pig-beryllium and furs and enzymes and a list of items no man could remember. He watched the passengers go by, automatically counting them against the number of health slips in his hand.

"Lots of passengers this trip," said Jensen.

"Yes," said the doctor, watching a man with a limp. "Why?"

Jensen shrugged and did not answer. He was uneasy, the doctor noted. He and Jensen were as much unlike as two men could very well be, but Jensen was good company. A ship's doctor does not have much congenial society.

The file of passengers ended abruptly. There was no one in the *Star Queen's* airlock, but the "Connected" lights still burned and the doctor could look through into the small lift-ship from the planet down below. He frowned. He fingered the sheaf of papers.

"Unless I missed count," he said annoyedly, "there's supposed to be one more passenger. I don't see —"

A door opened far back in the lift-ship. A small figure appeared. It was a little girl perhaps ten years old. She was very neatly dressed, though not quite the way a mother would have done it. She wore the carefully composed expression of a child with no adult in charge of her. She walked precisely from the lift-ship into the *Star Queen's* lock. The opening closed briskly behind her. There was the rumbling of seals making themselves tight. The lights flickered for



"Disconnect" and then "All Clear." They went out, and the lift-ship had pulled away from the *Star Queen*.

"There's my missing passenger," said the doctor.

THE child looked soberly about. She saw him. "Excuse me," she said very politely. "Is this the way I'm supposed to go?"

"Through that door," said the doctor gruffly.

"Thank you," said the little girl. She followed his direction. She vanished through the door. It closed.

There came a deep, droning sound, which was the interplanetary drive of the *Star Queen*, building up that directional stress in space which had seemed such a triumph when it was first contrived. The ship swung gently. It would be turning out from orbit around Altaira. It swung again. The doctor knew that its astrogators were feeling for the incredibly exact pointing of its nose toward the next port which modern commercial ship operation required. An error of fractional seconds of arc would mean valuable time lost in making port some ten light-years of distance away. The drive droned and droned, building up velocity while the ship's

aiming was refined and re-refined.

The drive cut off abruptly. Jensen turned white.

The doctor said impatiently, "There's nothing wrong. Probably a message or a report should have been beamed down to the planet and somebody forgot. We'll go on in a minute."

But Jensen stood frozen. He was very pale. The interplanetary drive stayed off. Thirty seconds. A minute. Jensen swallowed audibly. Two minutes. Three.

The steady, monotonous drone began again. It continued interminably, as if while it was off the ship's head had swung wide of its destination and the whole business of lining up for a jump in overdrive had to be done all over again.

Then there came that "Ping-g-g-g!" and the sensation of spiral fall which meant overdrive. The droning ceased.

Jensen breathed again. The ship's doctor looked at him sharply. Jensen had been taut. Now the tensions had left his body, but he looked as if he were going to shiver. Instead, he mopped a suddenly streaming forehead.

"I think," said Jensen in a strange voice, "that I'll have a drink. Or several. Will you join me?"

Nordenfeld searched his face.



A ship's doctor has many duties in space. Passengers can have many things wrong with them, and in the absolute isolation of overdrive they can be remarkably affected by each other.

"I'll be at the fourth-level bar in twenty minutes," said Nordenfeld. "Can you wait that long?"

"I probably won't wait to have a drink," said Jensen. "But I'll be there."

The doctor nodded curtly. He went away. He made no guesses, though he'd just observed the new passengers carefully and was fully aware of the strict health regulations that affect space travel. As a physician he knew that the most deadly thing in the universe was chlorophage and that the planet Kamerun was only one solar system away. It had been a stop for the *Star Queen* until four years ago. He puzzled over Jensen's tenseness and the relief he'd displayed when the overdrive field came on. But he didn't guess. Chlorophage didn't enter his mind.

Not until later.

**H**E SAW the little girl who'd come out of the airlock last of all the passengers. She sat on a sofa as if someone had told her to wait there until something or other was arranged. Doctor Nordenfeld barely glanced at

her. He'd known Jensen for a considerable time. Jensen had been a passenger on the *Star Queen* half a dozen times, and he shouldn't have been upset by the temporary stoppage of an interplanetary drive. Nordenfeld divided people into two classes, those who were not and those who were worth talking to. There weren't many of the latter. Jensen was.

He filed away the health slips. Then, thinking of Jensen's palor, he asked what had happened to make the *Star Queen* interrupt her slow-speed drive away from orbit around Altaira.

The purser told him. But the purser was fussily concerned because there were so many extra passengers from Altaira. He might not be able to take on the expected number of passengers at the next stop-over point. It would be bad business to have to refuse passengers! It would give the space line a bad name.

Then the air officer stopped Nordenfeld as he was about to join Jensen in the fourth-level bar. It was time for a medical inspection of the quarter-acre of Banthyan jungle which purified and renewed the air of the ship. Nordenfeld was expected to check the complex ecological system of the air room. Specifically, he was expected to look for and identify any patches of



colorlessness appearing on the foliage of the jungle plants the *Star Queen* carried through space.

The air officer was discreet and Nordenfeld was silent about the ultimate reason for the inspection. Nobody liked to think about it. But if a particular kind of bleaching appeared, as if the chlorophyll of the leaves were being devoured by something too small to be seen by an optical microscope — why, that would be chlorophage. It would also be a death sentence for the *Star Queen* and everybody in her.

But the jungle passed medical inspection. The plants grew lushly in soil which periodically was flushed with hydroponic solution and then drained away again. The UV lamps were properly distributed and the different quarters of the air room were alternately lighted and darkened. And there were no colorless patches. A steady wind blew through the air room and had its excess moisture and unpleasant smells wrung out before it recirculated through the ship. Doctor Nordenfeld authorized the trimming of some liana-like growths which were developing woody tissue at the expense of leaves.

The air officer also told him about the reason for the turning off of the interplanetary drive.

He considered it a very curious happening.

The doctor left the air room and passed the place where the little girl — the last passenger to board the *Star Queen* — waited patiently for somebody to arrange something. Doctor Nordenfeld took a lift to the fourth level and went into the bar where Jensen should be waiting.

He was. He had an empty glass before him. Nordenfeld sat down and dialed for a drink. He had an indefinite feeling that something was wrong, but he couldn't put his finger on it. There are always things going wrong for a ship's doctor, though. There are so many demands on his patience that he is usually short of it.

Jensen watched him sip at his drink.

"A bad day?" he asked. He'd gotten over his own tension.

**NORDENFELD** shrugged, but his scowl deepened. "There are a lot of new passengers." He realized that he was trying to explain his feelings to himself. "They'll come to me feeling miserable. I have to tell each one that if they feel heavy and depressed, it may be the gravity-constant of the ship, which is greater than their home planet. If they feel light-headed and giddy, it may be because the



gravity-constant of the ship is less than they're used to. But it doesn't make them feel better, so they come back for a second assurance. I'll be overwhelmed with such complaints within two hours."

Jensen waited. Then he said casually — too casually, "Does anybody ever suspect chlorophage?"

"No," said Nordenfeld shortly.

Jensen fidgeted. He sipped. Then he said, "What's the news from Kamerun, anyhow?"

"There isn't any," said Nordenfeld. "Naturally! Why ask?"

"I just wondered," said Jensen. After a moment: "What was the last news?"

"There hasn't been a message from Kamerun in two years," said Nordenfeld curtly. "There's no sign of anything green anywhere on the planet. It's considered to be — uninhabited."

Jensen licked his lips. "That's what I understood. Yes."

Nordenfeld drank half his drink and said unpleasantly, "There were thirty million people on Kamerun when the chlorophage appeared. At first it was apparently a virus which fed on the chlorophyll of plants. They died. Then it was discovered that it could also feed on hemoglobin, which is chemically close to chlorophyll. Hemoglobin is the red coloring matter of the

blood. When the virus consumed it, people began to die. Kamerun doctors found that the chlorophage virus was transmitted by contact, by inhalation, by ingestion. It traveled as dust particles and on the feet of insects, and it was in drinking water and the air one breathed. The doctors on Kamerun warned spaceships off and the Patrol put a quarantine fleet in orbit around it to keep anybody from leaving. And nobody left. And everybody died. *And* so did every living thing that had chlorophyll in its leaves or hemoglobin in its blood, or that needed plant or animal tissues to feed on. There's not a person left alive on Kamerun, nor an animal or bird or insect, nor a fish nor a tree, or plant or weed or blade of grass. There's no longer a quarantine fleet there. Nobody'll go there and there's nobody left to leave. But there are beacon satellites to record any calls and to warn any fool against landing. If the chlorophage got loose and was carried about by spaceships, it could kill the other forty billion humans in the galaxy, together with every green plant or animal with hemoglobin in its blood."

"That," said Jensen, and tried to smile, "sounds final."

"It isn't," Nordenfeld told him. "If there's something in the universe which can kill every



living thing except its maker, that something should be killed. There should be research going on about the chlorophage. It would be deadly dangerous work, but it should be done. A quarantine won't stop contagion. It can only hinder it. That's useful, but not enough."

Jensen moistened his lips.

Nordenfeld said abruptly, "I've answered your questions. Now what's on your mind and what has it to do with chlorophage?"

Jensen started. He went very pale.

"It's too late to do anything about it," said Nordenfeld. "It's probably nonsense anyhow. But what is it?"

Jensen stammered out his story. It explained why there were so many passengers for the *Star Queen*. It even explained his departure from Altaira. But it was only a rumor — the kind of rumor that starts up untraceably and can never be verified. This one was officially denied by the Altairan planetary government. But it was widely believed by the sort of people who usually were well-informed. Those who could send their families up to the *Star Queen*. And that was why Jensen had been tense and worried until the liner had actually left Altaira behind. Then he felt safe.

Nordenfeld's jaw set as Jensen told his tale. He made no comment, but when Jensen was through he nodded and went away, leaving his drink unfinished. Jensen couldn't see his face; it was hard as granite.

And Nordenfeld, the ship's doctor of the *Star Queen*, went into the nearest bathroom and was violently sick. It was a reaction to what he'd just learned.

**T**HERE WERE stars which were so far away that their distance didn't mean anything. There were planets beyond counting in a single star cluster, let alone the galaxy. There were comets and gas clouds in space, and worlds where there was life, and other worlds where life was impossible. The quantity of matter which was associated with life was infinitesimal, and the quantity associated with consciousness — animal life — was so much less that the difference couldn't be expressed. But the amount of animal life which could reason was so minute by comparison that the nearest ratio would be that of a single atom to a sun. Mankind, in fact, was the least impressive fraction of the smallest category of substance in the galaxy.

But men did curious things.

There was the cutting off of the *Star Queen's* short-distance



drive before she'd gotten well away from *Altaira*. There had been a lift-ship locked to the liner's passenger airlock. When the last passenger entered the big ship — a little girl — the airlocks disconnected and the lift-ship pulled swiftly away.

It was not quite two miles from the *Star Queen* when its emergency airlocks opened and spacesuited figures plunged out of it to emptiness. Simultaneously, the ports of the lift-ship glowed and almost immediately the whole plating turned cherry-red, crimson, and then orange, from unlimited heat developed within it.

The lift-ship went incandescent and ruptured and there was a spout of white-hot air, and then it turned blue-white and puffed itself to nothing in metallic steam. Where it had been there was only shining gas, which cooled. Beyond it there were figures in spacesuits which tried to swim away from it.

The *Star Queen's* control room, obviously, saw the happening. The lift-ship's atomic pile had flared out of control and melted down the ship. It had developed something like sixty thousand degrees Fahrenheit when it ceased to flare. It did not blow up; it only vaporized. But the process must have begun within seconds after the

lift-ship broke contact with the *Star Queen*.

In automatic reaction, the man in control of the liner cut her drive and offered to turn back and pick up the spacesuited figures in emptiness. The offer was declined with almost hysterical haste. In fact, it was barely made before the other lift-ships moved in on rescue missions. They had waited. And they were picking up castaways before the *Star Queen* resumed its merely interplanetary drive and the process of aiming for a solar system some thirty light-years away.

When the liner flicked into overdrive, more than half the floating figures had been recovered, which was remarkable. It was almost as remarkable as the flare-up of the lift-ship's atomic pile. One has to know exactly what to do to make a properly designed atomic pile vaporize metal. Somebody had known. Somebody had done it. And the other lift-ships were waiting to pick up the destroyed lift-ship's crew when it happened.

The matter of the lift-ship's destruction was fresh in Nordenfeld's mind when Jensen had told his story. The two items fitted together with an appalling completeness. They left little doubt or hope.



**N**ORDENFELD consulted the passenger records and presently was engaged in conversation with the sober-faced, composed little girl on a sofa in one of the cabin levels of the *Star Queen*.

"You're Kathy Brand, I believe," he said matter-of-factly. "I understand you've been having a rather bad time of it."

She seemed to consider.

"It hasn't been too bad," she assured him. "At least I've been seeing new things. I got dreadfully tired of seeing the same things all the time."

"What things?" asked Nordenfeld. His expression was not stern now, though his inner sensations were not pleasant. He needed to talk to this child, and he had learned how to talk to children. The secret is to talk exactly as to an adult, with respect and interest.

"There weren't any windows," she explained, "and my father couldn't play with me, and all the toys and books were ruined by the water. It was dreadfully tedious. There weren't any other children, you see. And presently there weren't any grownups but my father."

Nordenfeld only looked more interested. He'd been almost sure ever since knowing of the lift-ship's destruction and listening to Jensen's account of the

rumor the government of Altaira denied. He was horribly sure now.

"How long were you in the place that hadn't any windows?"

"Oh, dreadfully long!" she said. "Since I was only six years old! Almost half my life!" She smiled brightly at him. "I remember looking out of windows and even playing out-of-doors, but my father and mother said I had to live in this place. My father talked to me often and often. He was very nice. But he had to wear that funny suit and keep the glass over his face because he didn't live in the room. The glass was because he went under the water, you know."

Nordenfeld asked carefully conversational-sounding questions. Kathy Brand, now aged ten, had been taken by her father to live in a big room without any windows. It hadn't any doors, either. There were plants in it, and there were bluish lights to shine on the plants, and there was a place in one corner where there was water. When her father came in to talk to her, he came up out of the water wearing the funny suit with glass over his face. He went out the same way. There was a place in the wall where she could look out into another room, and at first her mother used to come and smile at her through the



glass, and she talked into something she held in her hand, and her voice came inside. But later she stopped coming.

**T**HERE was only one possible kind of place which would answer Kathy's description. When she was six years old she had been put into some university's aseptic-environment room. And she had stayed there. Such rooms were designed for biological research. They were built and then made sterile of all bacterial life and afterward entered through a tank of antiseptic. Anyone who entered wore a suit which was made germ-free by its passage through the antiseptic, and he did not breathe the air of the aseptic room, but air which was supplied him through a hose, the exhaled-air hose also passing under the antiseptic outside. No germ or microbe or virus could possibly get into such a room without being bathed in corrosive fluid which would kill it. So long as there was someone alive outside to take care of her, a little girl could live there and defy even chlorophage.

And Kathy Brand had done it. But, on the other hand, Kamerun was the only planet where it would be necessary, and it was the only world from which a father would land his

small daughter on another planet's spaceport. There was no doubt. Nordenfeld grimly imagined someone — he would have had to be a microbiologist even to attempt it — fighting to survive and defeat the chlorophage while he kept his little girl in an aseptic-environment room.

She explained quite pleasantly as Nordenfeld asked more questions. There had been other people besides her father, but for a long time there had been only him. And Nordenfeld computed that somehow she'd been kept alive on the dead planet Kamerun for four long years.

Recently, though — very recently — her father told her that they were leaving. Wearing his funny, antiseptic-wetted suit, he'd enclosed her in a plastic bag with a tank attached to it. Air flowed from the tank into the bag and out through a hose that was all wetted inside. She breathed quite comfortably.

It made sense. An air tank could be heated and its contents sterilized to supply germ-free — or virus-free — air. And Kathy's father took an axe and chopped away a wall of the room. He picked her up, still inside the plastic bag, and carried her out. There was nobody about. There was no grass. There were no trees. Nothing moved.



Here Kathy's account was vague, but Nordenfeld could guess at the strangeness of a dead planet, to the child who barely remembered anything but the walls of an aseptic-environment room.

Her father carried her to a little ship, said Kathy, and they talked a lot after the ship took off. He told her that he was taking her to a place where she could run about outdoors and play, but he had to go somewhere else. He did mysterious things which to Nordenfeld meant a most scrupulous decontamination of a small spaceship's interior and its airlock. Its outer surface would reach a temperature at which no organic material could remain uncooked.

And finally, said Kathy, her father had opened a door and told her to step out and good-by, and she did, and the ship went away — her father still wearing his funny suit — and people came and asked her questions she did not understand.

**K**ATHY'S narrative fitted perfectly into the rumor Jensen said circulated among usually well-informed people on Altaira. They believed, said Jensen, that a small spaceship had appeared in the sky above Altaira's spaceport. It ignored all calls, landed swiftly, opened an airlock and

let someone out, and plunged for the sky again. And the story said that radar telescopes immediately searched for and found the ship in space. They trailed it, calling vainly for it to identify itself, while it drove at top speed for Altaira's sun.

It reached the sun and dived in.

Nordenfeld reached the skipper on intercom vision-phone. Jensen had been called there to repeat his tale to the skipper.

"I've talked to the child," said Nordenfeld grimly, "and I'm putting her into isolation quarters in the hospital compartment. She's from Kamerun. She was kept in an aseptic-environment room at some university or other. She says her father looked after her. I get an impression of a last-ditch fight by microbiologists against the chlorophage. They lost it. Apparently her father landed her on Altaira and dived into the sun. From her story, he took every possible precaution to keep her from contagion or carrying contagion with her to Altaira. Maybe he succeeded. There's no way to tell — yet."

The skipper listened in silence.

Jensen said thinly, "Then the story about the landing was true."

"Yes. The authorities isolated her, and then shipped her off on the *Star Queen*. Your well-in-



formed friends, Jensen, didn't know what their government was going to do!" Nordenfeld paused, and said more coldly still, "They didn't handle it right. They should have killed her, painlessly but at once. Her body should have been immersed, with everything that had touched it, in full-strength nitric acid. The same acid should have saturated the place where the ship landed and every place she walked. Every room she entered, and every hall she passed through, should have been doused with nitric and then burned. It would still not have been all one could wish. The air she breathed couldn't be recaptured and heated white-hot. But the chances for Altaira's population to go on living would be improved. Instead, they isolated her and they shipped her off with us — and thought they were accomplishing something by destroying the lift-ship that had her in an airtight compartment until she walked into the *Star Queen's* lock!"

The skipper said heavily, "Do you think she's brought chlorophages on board?"

"I've no idea," said Nordenfeld. "If she did, it's too late to do anything but drive the *Star Queen* into the nearest sun . . . No. Before that, one should give warning that she was aground

on Altaira. No ship should land there. No ship should take off. Altaira should be blocked off from the rest of the galaxy like Kamerun was. And to the same end result."

Jensen said unsteadily; "There'll be trouble if this is known on the ship. There'll be some unwilling to sacrifice themselves."

"Sacrifice?" said Nordenfeld. "They're dead! But before they lie down, they can keep everybody they care about from dying too! Would you want to land and have your wife and family die of it?"

The skipper said in the same heavy voice, "What are the probabilities? You say there was an effort to keep her from contagion. What are the odds?"

"Bad," said Nordenfeld. "The man tried, for the child's sake. But I doubt he managed to make a completely aseptic transfer from the room she lived in to the spaceport on Altaira. The authorities on Altaira should have known it. They should have killed her and destroyed everything she'd touched. And *still* the odds would have been bad!"

Jensen said, "But you can't do that, Nordenfeld! Not now!"

"I shall take every measure that seems likely to be useful." Then Nordenfeld snapped, "Dam-



nation, man! Do you realize that this chlorophage can wipe out the human race if it really gets loose? Do you think I'll let sentiment keep me from doing what has to be done?"

He flicked off the vision-phone.

**T**HE *Star Queen* came out of overdrive. Her skipper arranged it to be done at the time when the largest possible number of her passengers and crew would be asleep. Those who were awake, of course, felt the peculiar inaudible sensation which one subjectively translated into sound. They felt the momentary giddiness which — having no natural parallel — feels like the sensation of treading on a stair-step that isn't there, combined with a twisting sensation so it is like a spiral fall. The passengers who were awake were mostly in the bars, and the bartenders explained that the ship had shifted overdrive generators and there was nothing to it.

Those who were asleep started awake, but there was nothing in their surroundings to cause alarm. Some blinked in the darkness of their cabins and perhaps turned on the cabin lights, but everything seemed normal. They turned off the lights again. Some babies cried and had to be

soothed. But there was nothing except wakening to alarm anybody. Babies went back to sleep and mothers returned to their beds and — such awakenings being customary — went back to sleep also.

It was natural enough. There were vague and commonplace noises, together making an indefinite hum. Fans circulated the ship's purified and reinvigorated air. Service motors turned in remote parts of the hull. Cooks and bakers moved about in the kitchens. Nobody could tell by any physical sensation that the *Star Queen* was not in overdrive, except in the control room.

There the stars could be seen. They were unthinkably remote. The ship was light-years from any place where humans lived. She did not drive. Her skipper had a family on Cassim. He would not land a plague ship which might destroy them. The executive officer had a small son. If his return meant that small son's death as well as his own, he would not return. All through the ship, the officers who had to know the situation recognized that if chlorophage had gotten into the *Star Queen*, the ship must not land anywhere. Nobody could survive. Nobody must attempt it.

So the huge liner hung in the emptiness between the stars,



waiting until it could be known definitely that chlorophage was aboard or that with absolute certainty it was absent. The question was up to Doctor Nordenfeld.

He had isolated himself with Kathy in the ship's hospital compartment. Since the ship was built it had been used once by a grown man who developed mumps, and once by an adolescent boy who developed a raging fever which antibiotics stopped. Health measures for space travel were strict. The hospital compartment had only been used those two times.

**O**N THIS voyage it had been used to contain an assortment of botanical specimens from a planet seventy light-years beyond Regulus. They were on their way to the botanical research laboratory on Cassim. As a routine precaution they'd been placed in the hospital, which could be fumigated when they were taken out. Now the doctor had piled them in one side of the compartment, which he had divided in half with a transparent plastic sheet. He stayed in that side. Kathy occupied the other.

She had some flowering plants to look at and admire. They'd come from the air room and she was delighted with their coloring









and beauty. But Doctor Nordenfeld had put them there as a continuing test for chlorophage. If Kathy carried that murderous virus on her person, the flowering plants would die of it — probably even before she did.

It was a scrupulously scientific test for the deadly stuff. Completely sealed off except for a circulator to freshen the air she breathed, Kathy was settled with toys and picture books. It was an improvised but well-designed germproof room. The air for Kathy to breathe was sterilized before it reached her. The air she had breathed was sterilized as it left her plastic-sided residence. It should be the perfection of protection for the ship — if it was not already too late.

The vision-phone buzzed. Doctor Nordenfeld stirred in his chair and flipped the switch. The *Star Queen's* skipper looked at him out of the screen.

"I've cut the overdrive," said the skipper. "The passengers haven't been told."

"Very sensible," said the doctor.

"When will we know?"

"That we can go on living? When the other possibility is exhausted."

"Then, how will we know?" asked skipper stonily.

Doctor Nordenfeld ticked off the possibilities. He bent down

a finger. "One, her father took great pains. Maybe he did manage an aseptic transfer from a germ-free room to Altaira. Kathy may not have been exposed to the chlorophage. If she hasn't, no bleached spots will show up on the air-room foliage or among the flowering plants in the room with her. Nobody in the crew or among the passengers will die."

He bent down a second finger. "It is probably more likely that white spots will appear on the plants in the air room *and* here, and people will start to die. That will mean Kathy brought contagion here the instant she arrived, and almost certainly that Altaira will become like Kamerun — uninhabited. In such a case we are finished."

**H**E BENT down a third finger. "Not so likely, but preferable, white spots may appear on the foliage inside the plastic with Kathy, but not in the ship's air room. In that case she was exposed, but the virus was incubating when she came on board, and only developed and spread after she was isolated. Possibly, in such a case, we can save the passengers and crew, but the ship will probably have to be melted down in space. It would be tricky, but it might be done."

The skipper hesitated. "If that last happened, she — "



"I will take whatever measures are necessary," said Doctor Nordenfeld. "To save your conscience, we won't discuss them. They should have been taken on Altaira."

He reached over and flipped off the phone. Then he looked up and into the other part of the ship's hospital space. Kathy came out from behind a screen, where she'd made ready for bed. She was beaming. She had a large picture book under one arm and a doll under the other.

"It's all right for me to have these with me, isn't it, Doctor Nordenfeld?" she asked hopefully. "I didn't have any picture books but one, and it got worn out. And my doll — it was dreadful how shabby she was!"

The doctor frowned. She smiled at him. He said, "After all, picture books are made to be looked at and dolls to be played with."

She skipped to the tiny hospital bed on the far side of the presumably virusproof partition. She climbed into it and zestfully arranged the doll to share it. She placed the book within easy reach.

She said, "I think my father would say you were very nice, Doctor Nordenfeld, to look after me so well."

"No-o-o-o," said the doctor in

a detached voice. "I'm just doing what anybody ought to do."

She snuggled down under the covers. He looked at his watch and shrugged. It was very easy to confuse official night with official day, in space. Everybody else was asleep. He'd been putting Kathy through tests which began with measurements of pulse and respiration and temperature and went on from there. Kathy managed them herself, under his direction.

He settled down with one of the medical books he'd brought into the isolation section with him. Its title was *Decontamination of Infectious Material from Different Planets*. He read it grimly.

**T**HE TIME came when the *Star Queen* should have come out of overdrive with the sun Circe blazing fiercely nearby, and a green planet with ice caps to be approached on interplanetary drive. There should have been droning, comforting drive noises to assure the passengers — who naturally could not see beyond the ship's steel walls — that they were within a mere few million miles of a world where sunshine was normal, and skies were higher than ship's ceilings, and there were fascinating things to see and do.



Some of the passengers packed their luggage and put it outside their cabins to be picked up for landing. But no stewards came for it. Presently there was an explanation. The ship had run under maximum speed and the planetfall would be delayed.

The passengers were disappointed but not concerned. The luggage vanished into cabins again.

The *Star Queen* floated in space among a thousand thousand million stars. Her astrographs had computed a course to the nearest star into which to drive the *Star Queen*, but it would not be used unless there was mutiny among the crew. It would be better to go in remote orbit around Circe III and give the news of chlorophage on Altaira, if Doctor Nordenfeld reported it on the ship.

Time passed. One day. Two. Three. Then Jensen called the hospital compartment on vision-phone. His expression was dazed. Nordenfeld saw the interior of the control room behind Jensen. He said, "You're a passenger, Jensen. How is it you're in the control room?"

Jensen moistened his lips. "The skipper thought I'd better not associate with the other passengers. I've stayed with the officers the past few days. We—the ones who know what's in

prospect — we're keeping separate from the others so — nobody will let anything out by accident."

"Very wise. When the skipper comes back on duty, ask him to call me. I've something interesting to tell him."

"He's — checking something now," said Jensen. His voice was thin and reedy. "The — air officer reports there are white patches on the plants in the air room. They're growing. Fast. He told me to tell you. He's — gone to make sure."

"No need," said Nordenfeld bitterly.

He swung the vision-screen. It faced that part of the hospital space beyond the plastic sheeting. There were potted flowering plants there. They had pleased Kathy. They shared her air. And there were white patches on their leaves.

"I thought," said Nordenfeld with an odd mirthless levity, "that the skipper'd be interested. It is of no importance whatever now, but I accomplished something remarkable. Kathy's father didn't manage an aseptic transfer. She brought the chlorophage with her. But I confined it. The plants on the far side of that plastic sheet show the chlorophage patches plainly. I expect Kathy to show signs of anemia shortly. I'd decided that drastic



measures would have to be taken, and it looked like they might work, because I've confined the virus. It's there where Kathy is, but it isn't where I am. All the botanical specimens on my side of the sheet are untouched. The phage hasn't hit them. It is remarkable. But it doesn't matter a damn if the air room's infected. And I was so proud!"

Jensen did not respond.

**N**ORDENFELD said ironically, "Look what I accomplished! I protected the air plants on my side. See? They're beautifully green! No sign of infection! It means that a man can work with chlorophage! A laboratory ship could land on Kamerun and keep itself the equivalent of an aseptic-environment room while the damned chlorophage was investigated and ultimately whipped! And it doesn't matter!"

Jensen said numbly, "We can't ever make port. We ought — we ought to —"

"We'll take the necessary measures," Nordenfeld told him. "Very quietly and very efficiently, with neither the crew nor the passengers knowing that Altaira sent the chlorophage on board the *Star Queen* in the hope of banishing it from there. The passengers won't know that their own officials shipped it off with

them as they tried to run away . . . And I was so proud that I'd improvised an aseptic room to keep Kathy in! I sterilized the air that went in to her, and I sterilized —"

Then he stopped. He stopped quite short. He stared at the air unit, set up and with two pipes passing through the plastic partition which cut the hospital space in two. He turned utterly white. He went roughly to the air machine. He jerked back its cover. He put his hand inside.

Minutes later he faced back to the vision-screen from which Jensen looked apathetically at him.

"Tell the skipper to call me," he said in a savage tone. "Tell him to call me instantly he comes back! Before he issues any orders at all!"

He bent over the sterilizing equipment and very carefully began to disassemble it. He had it completely apart when Kathy waked. She peered at him through the plastic separation sheet.

"Good morning, Doctor Nordenfeld," she said cheerfully.

The doctor grunted. Kathy smiled at him. She had gotten on very good terms with the doctor, since she'd been kept in the ship's hospital. She did not feel that she was isolated. In having the doctor where she



could talk to him at any time, she had much more company than ever before. She had read her entire picture book to him and discussed her doll at length. She took it for granted that when he did not answer or frowned that he was simply busy. But he was company because she could see him.

Doctor Nordenfeld put the air apparatus together with an extremely peculiar expression on his face. It had been built for Kathy's special isolation by a ship's mechanic. It should sterilize the used air going into Kathy's part of the compartment, and it should sterilize the used air pushed out by the supplied fresh air. The hospital itself was an independent sealed unit, with its own chemical air freshener, and it had been divided into two. The air freshener was where Doctor Nordenfeld could attend to it, and the sterilizer pump simply shared the freshening with Kathy. But —

But the pipe that pumped air to Kathy was brown and discolored from having been used for sterilizing, and the pipe that brought air back was not. It was cold. It had never been heated.

So Doctor Nordenfeld had been exposed to any contagion Kathy could spread. He hadn't been protected at all. Yet the potted plants on Kathy's side of

the barrier were marked with great white splotches which grew almost as one looked, while the botanical specimens in the doctor's part of the hospital — as much infected as Kathy's could have been, by failure of the ship's mechanic to build the sterilizer to work two ways: the stacked plants, the alien plants, the strange plants from seventy light-years beyond Regulus — they were vividly green. There was no trace of chlorophage on them. Yet they had been as thoroughly exposed as Doctor Nordenfeld himself!

The doctor's hands shook. His eyes burned. He took out a surgeon's scalpel and ripped the plastic partition from floor to ceiling. Kathy watched interestedly.

"Why did you do that, Doctor Nordenfeld?" she asked.

He said in an emotionless, unnatural voice, "I'm going to do something that it was very stupid of me not to do before. It should have been done when you were six years old, Kathy. It should have been done on Kamerun, and after that on Altaira. Now we're going to do it here. You can help me."

**T**HE *Star Queen* had floated out of overdrive long enough to throw all distance computations off. But she swung about,



and swam back, and presently she was not too far from the world where she was now many days overdue. Lift-ships started up from the planet's surface. But the *Star Queen* ordered them back.

"Get your spaceport health officer on the vision-phone," ordered the *Star Queen's* skipper. "We've had chlorophage on board."

There was panic. Even at a distance of a hundred thousand miles, chlorophage could strike stark terror into anybody. But presently the image of the spaceport health officer appeared on the *Star Queen's* screen.

"We're not landing," said Doctor Nordenfeld. "There's almost certainly an outbreak of chlorophage on Altaira, and we're going back to do something about it. It got on our ship with passengers from there. We've whipped it, but we may need some help."

The image of the health officer aground was a mask of horror for seconds after Nordenfeld's last statement. Then his expression became incredulous, though still horrified.

"We came on to here," said Doctor Nordenfeld, "to get you to send word by the first other ship to the Patrol that a quarantine has to be set up on Altaira, and we need to be inspected for

recovery from chlorophage infection. And we need to pass on, officially, the discovery that whipped the contagion on this ship. We were carrying botanical specimens to Cassim and we discovered that they were immune to chlorophage. That's absurd, of course. Their green coloring is the same substance as in plants under Sol-type suns anywhere. They couldn't be immune to chlorophage. So there had to be something else."

"Was — was there?" asked the health officer.

"There was. Those specimens came from somewhere beyond Regulus. They carried, as normal symbiotes on their foliage, microorganisms unknown both on Kamerun and Altaira. The alien bugs are almost the size of virus particles, feed on virus particles, and are carried by contact, air, and so on, as readily as virus particles themselves. We discovered that those microorganisms devoured chlorophage. We washed them off the leaves of the plants, sprayed them in our air-room jungle, and they multiplied faster than the chlorophage. Our whole air supply is now loaded with an airborne antichlorophage organism which has made our crew and passengers immune. We're heading back to Altaira to turn loose our merry little bugs on that planet.



It appears that they grow on certain vegetation, but they'll live anywhere there's phage to eat. We're keeping some chlorophage cultures alive so our microorganisms don't die out for lack of food!"

The medical officer on the ground gasped. "Keeping phage alive?"

"I HOPE you've recorded this," said Nordenfeld. "It's rather important. This trick should have been tried on Kammerun and Altaira and everywhere else new diseases have turned up. When there's a bug on one planet that's deadly to us, there's bound to be a bug on some other planet that's deadly to it! The same goes for any pests or vermin — the principle of natural enemies. All we have to do is find the enemies!"

There was more communication between the *Star Queen* and the spaceport on Circe III, which the *Star Queen* would not make other contact with on this trip, and presently the big liner headed back to Altaira. It was necessary for official as well as humanitarian reasons. There would need to be a health examination of the *Star Queen* to cer-

tify that it was safe for passengers to breathe her air and eat in her restaurants and swim in her swimming pools and occupy the six levels of passenger cabins she contained. This would have to be done by a Patrol ship, which would turn up at Altaira.

The *Star Queen's* skipper would be praised by his owners for not having driven the liner into a star, and the purser would be forgiven for the confusion in his records due to off-schedule operations of the big ship, and Jensen would find in the ending of all terror of chlorophage an excellent reason to look for appreciation in the value of the investments he was checking up. And Doctor Nordenfeld . . .

He talked very gravely to Kathy. "I'm afraid," he told her, "that your father isn't coming back. What would you like to do?"

She smiled at him hopefully. "Could I be your little girl?" she asked. Doctor Nordenfeld grunted. "Hm . . . I'll think about it."

But he smiled at her. She grinned at him. And it was settled.

— MURRAY LEINSTER



(Continued from page 5)

we lost our rudder. It all sounds funny — like our boiler going out and being reconnected to the scuttlebutt, which, for those who haven't had the pleasure, is a drinking fountain, and our ack-ack and the DE's practicing on helium-filled balloons and not downing a single one, while, a day ahead of us, a cruiser was sunk — but funny it wasn't in waters like those, with more than a sufficiency of sharks and Portuguese men-of-war all around.

Up came our lovable top sergeant with the same challenge, when the chant was "Golden Gate in '48!" Again there was that awful clench and I said, "August 13th." But this time I was a bit smarter; I got 2-to-1 odds and a leeway of a month in either direction. I was off by only a day.

With the war over, I was beset by buddies wanting to know when they would be going home. I told them I didn't know about them, but I was leaving in February. Until recently, I thought I left in March. I didn't. It was February.

For those who collect such documented instances, please leave me out of it and hound the 1294th Combat Engineers for confirmation.

And, yes, I had my run-ins with telepathy as well as pre-

cognition. I have had no personal experience with the other psi factors, if any of them actually exist. And I have to get to my point in a rather round-about fashion.

Some time back, poker hunger brought me into contact with odd lots of people — writers and artists and editors, of course, but also composers, musicians, clothing manufacturers, a whole cross-section that eventually led to psychoanalysts — two, to be exact. One always looked green and ill; if you feel like laughing, hold on a moment — the evidence seems to indicate that only the sick can truly abide sickness.

The other analyst was big and bouncy — he had clearly been told in his analysis to be bouncy. He kicked off his shoes as soon as he entered, flung himself at furniture and women, and tried infuriatingly to play wild games. Traits aside, he's the one who counts here. He needed a Ph.D. thesis and asked if I had an idea. I did.

Camille Flammarion, a French astronomer of the 19th century, spent — as far as I know — his last years checking out reports of fisher folk knowing when their men were drowning at sea. Vivid dreams, sudden frightening visions, that sort of thing. Flammarion found that these were all but universal in the fishing vil-



lages whenever the men put out. Only the ones that proved true were remembered. He naturally drew the wrong conclusion.

In the psych journals today, analysts are mooning around with startling examples of telepathy and foreknowledge in their patients, and, like Flammarion, drawing wrong conclusions, but for opposite reasons — the ones that have held psi in an iron grip since *Odd John*.

Olaf Stapledon, the author of *Odd John*, confessed even before being asked that he was not a storyteller, as if that weren't completely apparent. He came closest to telling a story in this book, however, and of course I used it as a Galaxy Novel — I'm a professional editor, which means I put aside my convictions if they get in the way of a story. But as a professional editor, had Stapledon been alive, I would have had him do two things:

— Tell the story entirely through the narrator, without once quoting Odd John. If he's that much beyond *sapiens*, John would be as incomprehensible, barring a handful of phrases, as a man to a dog. Instead, he sounds like a jackass, and an unforgivably wordy one.

— For the love of plain common sense, make that whole last section add up! Why go to all that trouble if that colony of

psis, gathered with such care and secrecy, suddenly knows it is endangered — and goes under rather than disperse at once to protect its precious alleged genes?

But those two changes would be for story, nothing else. The common denominator would not be involved. Nor would it be now if that suction pump would get out of authors' typewriters. For psi must revert to just another theme, to be explored from *all* angles, not frozen to the belief that it is a superior faculty, or blasted out of our path.

Flammarion was the first to note that psi does not hold up under statistical conditions. But he was in the right place — the common denominator is anxiety.

Anyone who thinks that anxiety is a necessary or even useful human condition should envy Pavlov's dogs — anxiety is precisely what he was inducing and the pathetic creatures were doing their canine best to read him. They didn't do very well — and neither do humans; the accuracy is spottily startling, nothing to bet on as a whole.

Think back on the overwhelms that temporarily made you a ham radio in a pstatic pstorm. You were functioning at your best? Higher faculty, huh?

—H. L. GOLD



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